

Peekskill Firehouse Kitchen Incubator
EDA Project # 01-01-15338

Project Manual

VOLUME 1 (of 2)

May 7, 2025

Contract 1: General Construction Work (GC)

Contract 2: Kitchen Equipment Work (KE)

Contract 3: Cooling Equipment Work (CE)

Owner:

**Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566**

Architect:

**Joseph G Thompson Architect, PLLC
108 N Division Street, Ste 100
Peekskill, New York 10566
PH: (845) 532-8156
EM: joe@jthompsonarch.com**



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Section 001113: Advertisement for Bids

Name of Project: **Peekskill Firehouse Kitchen Incubator**

Prime Bids shall be received for the following classes of work:

Contract 1 – GENERAL CONSTRUCTION WORK (GC)

Contract 2 – KITCHEN EQUIPMENT WORK (KE)

Contract 3 – COOLING EQUIPMENT WORK (CE)

Bids for the above project will be received by:

**Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566
Phone (914) 490-9634**

on or before the Bid Opening scheduled at **4:00 PM** on **June 9, 2025**, and at which time the bids will be publicly opened and read aloud. Bids received after that time will not be accepted. All interested parties are invited to attend.

An authorized representative for each Bidder is required to attend the Bid Opening. An interview of the apparent low Bidder is planned to be conducted immediately following the Bid Opening to determine the ability of the bidder to perform the work (see the Instructions to Bidders contained in the Project Manual for further information). Should an authorized representative not be available for interview at this time it may be considered grounds for rejection of the bid at the Owner's option.

Plans and specifications may be obtained by mail or in person at Copy Center & Services, 1006 Park Street, Peekskill New York 10566, (914) 739-8342. A deposit of **One Hundred Dollars (\$100.00)** will be required for each set of plans and specifications. Deposit is refundable in accordance with General Municipal Law Section 102. Checks should be made payable to the **Peekskill Facilities Development Corporation**. Documents can be mailed to prospective bidders upon receipt of the following:

1. Written request on Bidder's letterhead, which must include: Contact person, both the mailing address and street address, voice phone number and FAX phone number and;
2. Receipt of Bidders UPS, FEDEX, or priority mail next day delivery ticket marked to bill receiver's account.
3. Deposit as described above.

Bid and Contract Documents may be examined free of charge at the following location:

**Office of Joseph G Thompson Architect, PLLC
108 N Division Street, Suite 100
Peekskill, New York 10566**

A bid bond or certified check made out to **Peekskill Facilities Development Corporation**, in the amount of 5% of the bid amount must accompany each bid. The successful bidder's security will be retained until he has signed the Owner-Contractor Agreement and furnished the required 100% Labor and Materials Payment Bond and 100% Performance Bond and acceptable certificates of insurance.

Each bid shall be enclosed in a sealed envelope bearing the name of the Project, Name of the Bidder, and the date and hour of the Bid opening.

A pre-bid meeting will be held at the **Future Peekskill Firehouse Kitchen Incubator** located at, **701 Washington Street, Peekskill, New York 10566** on **Wednesday, May 14, 2025** at **10:30 AM** to review the scope of the work. It is strongly recommended that all prospective bidders attend this meeting however all bidders are required to examine work conditions immediately prior to submission of a bid. If a potential bidder is unable to attend the pre-bid meeting, appointments for site visits must be scheduled, 48 hours in advance of the intended date of the site visit, through the Architect:

Contact:

Joseph Thompson, RA

Joseph G Thompson Architect, PLLC

108 N Division Street, Suite 100

Peekskill, New York 10566

PH: (845)532-8156

EM: joe@jthompsonarch.com

The Peekskill Facilities Development Corporation reserves the right to waive any informalities or irregularities in bids and in bidding and to reject any or all proposals without explanation.

By Order Of: **The Peekskill Facilities Development Corporation**

Section 002113: Instructions to Bidders

Note: This project will be partially funded with Federal funds from the United States Department of Commerce, Economic Development Administration and therefore is subject to the Federal Laws and regulations associated with that program. Contract compliance is required with the following US Department of Commerce EDA (Economic Development Administration) documents:

- **Standard Terms and Conditions for Construction Projects dated March 22, 2021**
- **Specific Award Conditions (Project #01-01-15338)**

1. PROJECT AND BID INFORMATION:

A. Project Title:

Peekskill Firehouse Kitchen Incubator

B. Owner:

Peekskill Facilities Development Corporation

840 Main Street

Peekskill, New York 10566

Phone (914) 490-9634

C. Architect:

Joseph G Thompson Architect, PLLC

108 N Division Street, Suite 100

Peekskill, New York 10566

PH: (845) 532-8156

EM: joe@jthompsonarch.com

D. Bid Opening Location, Date and Time:

Bids will be received at the following location until Bid Opening Date and Time stated in the Notice to Bidders:

City of Peekskill City Hall

Attention: Peekskill Facilities Development Corporation

840 Main Street

Peekskill, New York 10566

Phone (914) 490-9634

Proposals received after the time stated in the bid due date will not be considered and will be returned to the bidder unopened. The bidder assumes the risk of any delay in the mail or in the handling of the mail by Owner employees. The bidder assumes all responsibility for having the proposal deposited on time at the place specified.

E. Pre-Bid Conferences:

Pre-Bid Conferences will be held at the project site (refer to the Notice to Bidders for meeting date and time). Tours of the work areas will be conducted. Failure to attend does not absolve bidder from compliance with all Terms and Conditions of said contract.

F. Bidders are invited to submit Bids for any, or all of the Prime Contracts

G. Access to the Site:

Bidders were permitted access to the site at the Pre-Bid Conference. Access to the site to view areas of renovation work at other times may be possible if arranged through the Architect:

Joseph G Thompson Architect, PLLC

108 N Division Street, Suite 100

Peekskill, New York 10566

PH: (845) 532-8156

EM: joe@jthompsonarch.com

2. BIDDING DOCUMENTS / SUBMISSION OF BIDS:

- A. Complete sets of Bidding Documents must be used in the preparing bids. The Owner does not assume any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- B. The Owner reserves the right to consider informal any bid not prepared and submitted in accordance with the provisions of this information for Bidders and the General Conditions and to waive any informalities in or to reject any or all bids either before or after opening. No bidder may withdraw a bid within forty-five (45) days after the actual date of the opening thereof.

3. PREPARATION OF PROPOSAL:

- A. Bidders shall prepare their bids on the "Bid" Forms furnished in the Project Manual. Photocopy the forms from the Project Manual. All blank spaces pertinent to the contract category proposal must be filled in, in both words and figures, with the unit price for the time or the lump sum for which the proposal is made.
- B. All bids, together with bid security, must be submitted in sealed envelopes bearing on the outside of the envelope "SEALED BID", the name of the bidder, his address, the name of the project and the Contract No and branch of work covered by the bid. If forwarded by mail, the sealed envelope containing the proposal, marked as above, must be enclosed in another envelope addressed to the Owner. Each bidder shall assume the risk of any delay in the mail or in handling of mail by employees of the Owner or others.

- C. **IMPORTANT:** In the event that a prospective bidder, after securing drawings and specifications, decides not to present a proposal for the work, it is requested that the Architect be so notified at the earliest possible moment prior to the date of receipt of bids. All drawings and specifications shall be returned to the Printer.

4. BID PROPOSALS AND BIDDERS:

- A. The Owner reserves the right to reject any or all bid proposals and to waive any informalities or defects in such proposals either before or after the time of opening of bids. Grounds for rejection of proposals include, but shall not be limited to:
1. Failure of a proposal to conform to the requirements of the bidding documents, including the specifications, advertisement to bid and instructions to bidders.
 2. Failure of a proposal to conform to the delivery or completion dates established in the bidding documents.
 3. Submission of a proposal that imposes conditions that would modify the terms and conditions of the bidding documents or limit the proposer's liability to the Owner on the contract awarded on the basis of such proposal.
 4. Submission of a proposal determined by the Owner to be unreasonable as to price.
 5. Submission of a proposal determined not to be from responsible proposers.
 6. Submission of a proposal determined not to be responsive.
- B. Bidders may not withdraw proposals within forty-five (45) days following date of opening of bids.
- C. All costs in connection with preparation and submission of bid proposals shall be borne by the bidders.
- D. Bidders shall submit promptly, upon request of the Owner or Architect, documentary evidence as to financial, technical, and practical ability to carry out the work.
- E. In the event that there is a discrepancy between the Bid in written word and the Bid written in figures, the Bid in words shall govern. Bid Forms without the Bids written in words, will not be accepted.
- F. The Owner reserves the right to reject any and all proposals and to re-advertise for new proposals. Award of the contract will be made as provided in Specific Award Conditions (Project #01-1-15338) to a responsive and responsible bidder offering best value, taking into consideration the reliability of the bidder, the quality of the materials, equipment, supplies or services to be furnished, conformity with specifications and bidding documents, all for the purpose for which they are required and the terms of delivery of the materials or services.

5. QUALIFICATIONS OF BIDDERS:

- A. The Owner may make such investigation as he deems necessary to determine the ability of the bidder to perform the work. The bidder shall furnish to the Owner all information and data for this purpose as the Owner may request including, but not limited to, current financial statements and a list of completed projects (within the last three years) with names and addresses of Owners. Refer to AIA Document A-305 for typical information that is to be submitted.
- B. The Owner reserves the right to reject any bid if the evidence submitted by or investigation of such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.

6. BID SECURITY:

- A. Each bid must be accompanied by cash, by certified check of the bidder or by a bid bond prepared on a standard approved form, duly executed by the bidder as principal, and having as surety thereon a surety company authorized to do business within the State of New York.
- B. Bid security shall be in an amount not less than 5% of the base bid or not less than 5% of the sum of base bids where such base bids may be considered cumulative. Such cash or checks will be returned to all, except the three lowest formal bidders, within three working days after the formal opening of bids and the remaining cash or checks will be returned to the three lowest bidders within 48 hours after the Owner and the accepted bidder have executed a contract. If no contract has been so executed within 45 days after the opening of bids, bid security will be returned upon demand of the bidder at any time thereafter so long as he has not been notified of the acceptance of his bid.

7. LIQUIDATED DAMAGES

- A. Failure to Enter into Contract: The successful bidder, upon his failure or refusal to execute and deliver the contract and bond required within seven (7) days after he had received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid, as specified in paragraph 6.
- B. Failure to Perform the Contract: The Contract to be executed with the Owner shall specify liquidated damages of a value of \$20,000/ Month or approximately \$700/ Day (based on duration of month), equal to the value of the future tenant rent for the completed facility, to be enforced per day beyond the agree upon date for substantial completion (refer to project schedule).

8. CONDITIONS OF WORK:

- A. Each bidder must inform himself fully of the conditions relating to the construction and labor under which the work is now being or will be performed. Failure to do so will not relieve a successful bidder of his obligations to furnish all material and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid. Bidders shall promptly notify the Owner of any ambiguity, inconsistency or error, which they may discover upon examination of the bidding documents, specifications or of the local conditions.
- B. Insofar as possible, the Contractor in the carrying out of his work must employ such methods or means as will not cause an interruption of or interference with the work of any other contractor.

9. ADDENDA AND INTERPRETATIONS:

- A. No interpretations of the meaning of the plans, specifications or other contract documents will be made to any bidder orally. Every question for such interpretations shall be in writing, using the **RFC** form provided at the end of this section.
- B. Any and all such interpretations and any supplemental instruction will be in the form of Addenda. Addenda will be mailed, emailed or delivered to the best of the Owner's ability to all who are known by the Owner to have requested and been furnished with the bidding documents. It will be the bidder's responsibility to ascertain that they have received all addenda. The Owner is in no way liable for proposer not having all addenda and cannot be held accountable in any respect for noncompliance or financial or physical loss due to proposer not having required addenda.

Each bidder shall ascertain prior to submitting its proposal that it has received all addenda issued.

10. SECURITY FOR FAITHFUL PERFORMANCE:

- A. Simultaneously with his delivery of the executed contract, the successful bidder must deliver to the Owner three (3) copies of an executed bond in the amount of 100% of the accepted bid as security for the faithful performance of the contract and for the payment of all persons performing labor or furnishing materials in connection therewith, prepared in the standard form of Performance Bond, Labor and Materials Payment Bond, AIA Form A-3 12 and having as surety thereon such surety company or companies as are acceptable to and approved by the Owner, and as are authorized to transact business in New York State. This requirement will not apply in the case of contracts for supplies only and involving no labor on the site.

11. POWER OF ATTORNEY:

- A. Attorneys-in-fact who sign bid bonds or contract bonds must file with each bond, a certified copy of their power of attorney to sign said bonds.

12. MODIFICATION OR WITHDRAWAL OF PROPOSAL:

- A. A proposal may not be modified, withdrawn or canceled by the proposer following the time and date designated for the receipt of proposals.
- B. Prior to the closing time and date designated for the receipt of proposals, proposals submitted early may be modified or withdrawn only by notice to the party receiving proposals at the place and prior to the closing time designated for receipt of proposals. Such notice shall be in writing with the signature of the proposer prior to the official closing time and date of proposals.
- C. Any modification shall be so worded as not to reveal the amount of the original proposed sum. To do so will render the modification and original proposal invalid.
- D. Withdrawn proposals may be resubmitted up to the closing time designated for the receipt of the proposals provided that they are then fully in conformance with these instructions to proposers.

13. STATE LAWS AND REGULATIONS:

- A. The Contractor and each and every subcontractor performing the work at the site of the project to which this contract relates shall comply with the applicable provisions of the "Labor Law", as amended, of the State of New York, and all other applicable laws and regulations governing such activities.

14. OBLIGATION OF BIDDER:

- A. At the time of the opening of bids, each bidder will be presumed to have read and to be thoroughly familiar with the drawings and contract documents including all addenda. The failure or omission of any bidder to receive or examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect to his bid.
- B. Bidders shall be presumed to have visited the site prior to submission of proposals and to have familiarized themselves with surface and subsurface conditions, existing structures and any and all conditions that may in any way affect the work. Failure to have so acted shall in no way relieve bidders from any obligations in respect to their bids.
- C. If the bidder, prior to the submission of his bid, fails to notify the Architect in writing of the existence of any condition, ambiguity, inconsistency or error in any of the contract documents, or of a conflict between provisions in a contract document and provisions of a State Law or any applicable code, not less than 5 working days prior to the specified Bid Opening Date, his bid will be conclusively presumed to have been based upon the interpretation of such ambiguity or inconsistency, or the directions correcting such error or conflict which may subsequently be given by the Architect.

15. EXEMPTION FROM SALES AND COMPENSATING USE TAXES:

- A. The Owner is exempt from payment of sales and compensation use taxes of the State of New York and of cities, counties and other subdivisions of the State, of materials sold to it pursuant to the provisions of this contract. These taxes are not to be included in bids.
- B. Contractor's purchases of tangible personal property which does not become an integral component part of the exempt organization's real property, and are consumed by the Contractor as well as purchases of taxable services are subject to tax.

16. TIME OF COMPLETION:

- A. Bidders are advised that time of completion is of the essence and shall be taken into account by the bidders in the preparation of the proposals.
- B. See Preliminary Project Schedule for completion date.
- C. Any schedule problems or hardships must be brought to the attention of the Architect one (1) week prior to the bid date so that an adjustment to the Project Schedule can be made by addendum prior to the bid date. Submission of a bid is full acceptance of the Project Schedule as specified.

17. POST BID INFORMATION:

- A. Within 72 hours of the bid opening, the apparent low bidder shall furnish in writing, the following information to the Architect:
 - 1. List of proposed major subcontractors.
 - 2. List of Substitutions
 - 3. Bidder Qualifications AIA Document A-305 per ITB item 5 above
 - 4. Schedule of Values: The Schedule must list:
 - a) A line for General Conditions,
 - b) A line for Temporary Facilities
 - c) Each CSI Section assigned to this contract by the Scopes of Work section.

(NOTE: The Schedule of Values must total the contract amount.)

18. SUBCONTRACTORS:

- A. Subcontractors must be persons or firms that perform work with persons whether in their direct employ or over whom they have personal and direct supervision.
- B. Requests for approval of major subcontractors, and other subcontractors as may be designated by the Architect, shall include a written statement by the proposed

subcontractor that delivery and installation of materials and equipment can and will be performed in accordance with the specified project schedule.

19. MINIMUM WAGE RATE SCHEDULE:

- A. Wage Rates: In accordance with Section 220, Subdivision 3, and 220-D of the New York State Labor Law, there shall be paid each employee engaged in work on the project under this contract in the trades or occupations on the following list, not less than the prevailing rate set for the trade or occupation in which he is engaged.
- B. Unlisted Wage Rates: In the event that Contractor wishes to employ occupation other than listed, he shall request the establishment of a rate for that occupation and he shall pay the rate so established. This payment shall be retroactive if applicable.
- C. Wage Rate Redetermination: New Wage Rates may be predetermined during the course of work under this contract by the New York State Department of Labor; Contractors shall use the predetermined Wage Rates when applicable and shall compensate for this increase in their bid proposal. The contract will not be changed nor will the Owner pay for any Wage Rate increases after the agreements have been signed.
- D. Certified Payroll: Certified Payroll shall be submitted bi-weekly by the Contractor and shall accompany applications for payment.

20. SPECIFICATION BY MANUFACTURER'S NAME ("OR EQUAL"):

- A. When in the specifications, kinds, types, brands, or manufacturers of materials are named they are regarded as the required standard of quality. The contractor may select one of these items or, if the contractor desires to use any kind, type, brand, or manufacturer of material other than those named in the specifications, he shall indicate in writing, prior to award of contract if so requested, what kind, type, brand, or manufacturer is proposed for the specified item, along with adequate technical documentation to demonstrate equivalency.
- B. Similar products of other manufacturers which are equivalent in quality, in the opinion of the Architects, may be acceptable for the Architects. If any item or manufacturer is disapproved, the Architects need not give reasons for such disapproval. "No Exceptions Taken" means acceptance by the Architects.
- C. To be accepted as an equivalent, the equipment or material must fit the space available for it in the building. No item will be accepted as an equivalent if alteration of building structure or space is made necessary by a proposed substitution. If a proposed equivalent material or equipment items is accepted the contractor is required to make all necessary corrections to details, clearances, etc., add to, furnish and install all additional material or items required by the substitution, as determined by the Architects at no additional cost to the Owner.

- D. Each type or group of materials shall be the same brand (ie: hardware, casework, etc.). If materials are supplied by different suppliers or subcontractors, the Contractor shall verify that all materials are the same brand, finish, etc.

21. SUBSTITUTE PRODUCTS

- A. The Owner and the Architects will consider a formal request for the substitution of products in place of those specified only under the conditions set forth in the General Requirements (Division 0 & 1 of the Specifications) and as set forth below:
- B. Requests for substitution will be considered if received in a timely manner allowing adequate duration for processing and review so as not to delay any portion of the project and no later than 10 days, after Notice of Award of Contract. Requests received more than 10 days after award of Contract may be considered or rejected at the discretion of the Architect/Engineer.
- C. By making requests for substitutions, the Contractor:
 - a) Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to the specified;
 - b) Represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
 - c) certifies that the cost data presented is complete and includes all related costs under additional costs related to the substitution which subsequently become apparent; and
 - d) Will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
 - e) Any additional costs that will be incurred by other Contractors as a result of a substitution must be identified with the cost data presented. Costs by other Contractors, if not identified with a Request for Substitution, will become the responsibility of the Contractor making the substitution.
- D. 'No exceptions taken' or 'as accepted,' 'or acceptable substitute,' and 'for review' mean the Architect is the sole judge of the quality and suitability of the proposed substitutions. Where used in conjunction with the Architect's response to submittals, requests, applications, inquiries, reports, and claims by the Contractor, the meaning will be held to the limitations of the Architect's responsibilities and duties as stated in the General and Supplementary Conditions. In no case will 'accepted' by the Architect be interpreted as an assurance to the Contractor that the requirements of the Contract Documents have been fulfilled.

22. ALTERNATES:

- A. Alternate bid proposals as listed on the Bid Forms, shall be awarded by Owner's selection and not by sequential order as they are listed.

Request For Clarification of Bid Documents -“RFC”

Peekskill Firehouse Kitchen Incubator

Instructions: Complete this form and email it to Joseph G Thompson Architect, PLLC:
joe@jthompsonarch.com

Deadline to submit RFC's is **Monday, December 9, 2024 at 5:00 PM.**
No RFC's will be accepted after this time.

Contractor's Company Name & Address: _____

Contractor's Phone No: _____

Date: _____

Drawing No & Detail: _____

Specification Section: _____

Contract this bidder is bidding (ie:“GC”): _____

Question... or description of item needing clarification: _____

Name of Person asking Question:

U. S. DEPARTMENT OF COMMERCE ECONOMIC DEVELOPMENT ADMINISTRATION



EDA CONTRACTING PROVISIONS FOR CONSTRUCTION PROJECTS

These EDA Contracting Provisions for Construction Projects (EDA Contracting Provisions) are intended for use by recipients receiving federal assistance from the U. S. Department of Commerce - Economic Development Administration (EDA). They contain provisions specific to EDA and other federal provisions not normally found in non-federal contract documents. The requirements contained herein must be incorporated into all construction contracts and subcontracts funded wholly or in part with federal assistance from EDA.

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1. **DEFINITIONS**

Agreement – The written instrument that is evidence of the agreement between the Owner and the Contractor overseeing the Work.

Architect/Engineer - The person or other entity engaged by the Recipient to perform architectural, engineering, design, and other services related to the work as provided for in the contract.

Contract – The entire and integrated written agreement between the Owner and the Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

Contract Documents – Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents.

Contractor – The individual or entity with whom the Owner has entered into the Agreement.

Drawings or Plans – That part of the Contract Documents prepared or approved by the Architect/Engineer that graphically shows the scope, extent, and character of the Work to be performed by the Contractor.

EDA - The United States of America acting through the Economic Development Administration of the U.S. Department of Commerce or any other person designated to act on its behalf. EDA has agreed to provide financial assistance to the Owner, which includes assistance in financing the Work to be performed under this Contract. Notwithstanding EDA's role, nothing in this Contract shall be construed to create any contractual relationship between the Contractor and EDA.

Owner – The individual or entity with whom the Contractor has entered into the Agreement and for whom the Work is to be performed.

Project – The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.

Recipient – A non-Federal entity receiving a Federal financial assistance award directly from EDA to carry out an activity under an EDA program, including any EDA-approved successor to the entity.

Specifications – That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.

Subcontractor – An individual or entity having direct contract with the Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.

Work – The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

2. **APPLICABILITY**

The Project to which the construction work covered by this Contract pertains is being assisted by the United States of America through federal assistance provided by the U.S. Department of Commerce - Economic Development Administration (EDA). Neither EDA, nor any of its departments, entities, or employees is a party to this Contract. The following EDA Contracting Provisions are included in this Contract and all subcontracts or related instruments pursuant to the provisions applicable to such federal assistance from EDA.

3. **FEDERALLY REQUIRED CONTRACT PROVISIONS**

(a) All contracts in excess of the simplified acquisition threshold - currently fixed at \$150,000 (*see* 41 U.S.C. §§ 134 and 1908) must address administrative, contractual, or legal remedies in instances where contractors violate or breach contract terms, and provide for such sanctions and penalties as may be appropriate.

(b) All contracts in excess of \$10,000 must address termination for cause and for convenience by the Recipient including the manner by which it will be effected and the basis for settlement.

(c) All construction contracts awarded in excess of \$10,000 by recipients of federal assistance and their contractors or subcontractors shall contain a provision requiring compliance with Executive Order 11246 of September 24, 1965, *Equal Employment Opportunity*, as amended by Executive Order 11375 of October 13, 1967, and Department of Labor implementing regulations at 41 C.F.R. part 60.

(d) All prime construction contracts in excess of \$2,000 awarded by Recipients must include a provision for compliance with the Davis-Bacon Act (40 U.S.C. §§ 3141-3148) as supplemented by Department of Labor regulations at 29 C.F.R. part 5. The contracts must also include a provision for compliance with the Copeland "Anti-Kickback" Act (18 U.S.C. § 874 and 40 U.S.C. § 3145) as supplemented by Department of Labor regulations at 29 C.F.R. part 3.

(e) All contracts awarded by the Recipient in excess of \$100,000 that involve the employment of mechanics or laborers must include a provision for compliance with 40 U.S.C. §§ 3702 and 3704 (the Contract Work Hours and Safety Standards Act) as supplemented by Department of Labor regulations at 29 C.F.R. part 5.

(f) All contracts must include EDA requirements and regulations that involve a requirement on the contractor or sub-contractor to report information to EDA, the Recipient or any other federal agency.

- (g) All contracts must include EDA requirements and regulations pertaining to patent rights with respect to any discovery or invention which arises or is developed in the course of or under such contract.
- (h) All contracts must include EDA requirements and regulations pertaining to copyrights and rights in data.
- (i) All contracts and subgrants in excess of \$150,000 must contain a provision that requires compliance with all applicable standards, orders, or requirements issued under the Clean Air Act (42 U.S.C. § 7401 *et seq.*) and the Federal Water Pollution Control Act (Clean Water Act) (33 U.S.C. § 1251 *et seq.*), and Executive Order 11738, *Providing for Administration of the Clean Air Act and the Federal Water Pollution Control Act With Respect to Federal Contracts, Grants, or Loans*.
- (j) Contracts must contain mandatory standards and policies relating to energy efficiency which are contained in the state energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201).
- (k) Contracts must contain a provision ensuring that contracts are not to be made to parties on the government wide Excluded Parties List System in the System for Award Management (SAM), in accordance with the OMB guidelines at 2 C.F.R. part 180.
- (l) Contracts must contain a provision ensure compliance with the Byrd Anti-Lobbying Amendment (31 U.S.C. § 1352) under which contractors that apply or bid for an award of \$100,000 or more must file the required certification. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant or any other award covered by 31 U.S.C. § 1352. Each tier must also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the non-Federal award.
- (m) If the Recipient is a state agency or agency of a political subdivision of a state, any contract awarded must contain a provision ensuring compliance with section 6002 of the Solid Waste Disposal Act (42 U.S.C. § 6962), as amended by the Resource Conservation and Recovery Act related to the procurement of recovered materials.

4. **REQUIRED PROVISIONS DEEMED INSERTED**

Each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and the contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the contract shall forthwith be physically amended to make such insertion of correction.

5. **INSPECTION BY EDA REPRESENTATIVES**

The authorized representatives and agents of EDA shall be permitted to inspect all work, materials, payrolls, personnel records, invoices of materials, and other relevant data and records.

6. **EXAMINATION AND RETENTION OF CONTRACTOR'S RECORDS**

(a) The Owner, EDA, or the Comptroller General of the United States, or any of their duly authorized representatives shall, generally until three years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.

(b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders that do not exceed \$10,000.

(c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the Owner, EDA, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

7. **CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES**

Immediately after execution and delivery of the contract, and before the first partial payment is made, the Contractor shall deliver to the Owner an estimated construction progress schedule in a form satisfactory to the Owner, showing the proposed dates of commencement and completion of each of the various subdivisions of work required under the Contract Documents and the anticipated amount of each monthly payment that will become due to the Contractor in accordance with the progress schedule. The Contractor also shall furnish the Owner (a) a detailed estimate giving a complete breakdown of the contract price and (b) periodic itemized estimates of work done for the purpose of making partial payments thereon. The costs employed in making up any of these schedules will be used only to determine the basis of partial payments and will not be considered as fixing a basis for additions to or deductions from the contract price.

8. **CONTRACTOR'S TITLE TO MATERIAL**

No materials, supplies, or equipment for the work shall be purchased by the Contractor or by any subcontractor that is subject to any chattel mortgage or under a conditional sale contract or other agreement by which an interest is retained by the seller. The Contractor warrants and guarantees that he/she has good title to all work, materials, and equipment used by him/her in the Work, free and clear of all liens, claims, or encumbrances.

9. **INSPECTION AND TESTING OF MATERIALS**

All materials and equipment used in the completion of the Work shall be subject to adequate inspection and testing in accordance with accepted standards. The laboratory or inspection agency shall be selected by the Owner. Materials of construction, particularly those upon which the strength and durability of any structure may depend, shall be subject to inspection and testing to establish conformance with specifications and suitability for intended uses.

10. **"OR EQUAL" CLAUSE**

Whenever a material, article, or piece of equipment is identified in the Contract Documents by reference to manufacturers' or vendors' names, trade names, catalogue numbers, etc., it is intended merely to establish a standard. Any material, article, or equipment of other manufacturers and vendors that will perform adequately the duties imposed by the general design will be considered equally acceptable provided the material, article, or equipment so proposed is, in the opinion of the Architect/Engineer, of equal substance and function. However, such substitution material, article, or equipment shall not be purchased or installed by the Contractor without the Architect/Engineer's written approval.

11. **PATENT FEES AND ROYALTIES**

(a) Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device that is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Architect/Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by the Owner in the Contract Documents.

(b) To the fullest extent permitted by Laws and Regulations, the Contractor shall indemnify and hold harmless the Owner and the Architect/Engineer, and the officers, directors, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

12. **CLAIMS FOR EXTRA COSTS**

No claims for extra work or cost shall be allowed unless the same was done in pursuance of a written order from the Architect/Engineer approved by the Owner.

13. **CONTRACTORS AND SUBCONTRACTORS INSURANCE**

(a) The Contractor shall not commence work under this Contract until the Contractor has obtained all insurance reasonably required by the Owner, nor shall the Contractor allow any subcontractor to commence work on his/her subcontract until the insurance required of the subcontractor has been so obtained and approved.

(b) Types of insurance normally required are:

- (1) Workers' Compensation
- (2) Contractor's Public Liability and Property Damage
- (3) Contractor's Vehicle Liability
- (4) Subcontractors' Public Liability, Property Damage and Vehicle Liability
- (5) Builder's Risk (Fire and Extended Coverage)

(c) **Scope of Insurance and Special Hazards:** The insurance obtained, which is described above, shall provide adequate protection for the Contractor and his/her subcontractors, respectively, against damage claims that may arise from operations under this contract, whether such operations be by the insured or by anyone directly or indirectly employed by him/her and also against any of the special hazards that may be encountered in the performance of this Contract.

(d) **Proof of Carriage of Insurance:** The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates, and dates of expiration of applicable insurance policies.

14. **CONTRACT SECURITY BONDS**

(a) If the amount of this Contract exceeds \$150,000, the Contractor shall furnish a performance bond in an amount at least equal to one hundred percent (100%) of the Contract price as security for the faithful performance of this Contract and also a payment bond in an amount equal to one hundred percent (100%) of the Contract price or in a penal sum not less than that prescribed by State, Territorial, or local law, as security for the payment of all persons performing labor on the Work under this Contract and furnishing materials in connection with this Contract. The performance bond and the payment bond may be in one or in separate instruments in accordance with local law. Before final acceptance, each bond must be approved by EDA. If the amount of this Contract does not exceed \$150,000, the Owner shall specify the amount of the payment and performance bonds.

(b) All bonds shall be in the form prescribed by the Contract Documents except as otherwise provided in applicable laws or regulations, and shall be executed by such sureties as are named in the current list of *Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies* as published in Treasury Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent must be accompanied by a certified copy of the agent's

authority to act. Surety companies executing the bonds must also be authorized to transact business in the state where the Work is located.

15. **LABOR STANDARDS - DAVIS-BACON AND RELATED ACTS**
(as required by section 602 of PWEDA)

(a) **Minimum Wages**

(1) All laborers and mechanics employed or working upon the site of the Work in the construction or development of the Project will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act at 29 C.F.R. part 3, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at the time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor, which is attached hereto and made a part hereof, regardless of any contractual relationship that may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 C.F.R. § 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 C.F.R. § 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates determined under 29 C.F.R. § 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(2) (i) Any class of laborers or mechanics to be employed under the Contract, but not listed in the wage determination, shall be classified in conformance with the wage determination. EDA shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(A) The work to be performed by the classification requested is not performed by a classification in the wage determination;

(B) The classification is utilized in the area by the construction industry; and

(C) The proposed wage rate, including any bona fide fringe benefits, bears a

reasonable relationship to the wage rates contained in the wage determination.

(ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and EDA or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by EDA or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210.

(iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and EDA or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), EDA or its designee shall refer the questions, including the views of all interested parties and the recommendation of EDA or its designee, to the Administrator for determination.

(iv) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(2)(ii) or (iii) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

(b) **Withholding**

EDA or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the Contractor under this Contract or any other federal contract with the same prime Contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the Contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper employed or working on the site of the Work in the construction or development of the Project, all or part of the wages required by the Contract, EDA or its designee may, after written notice to the Contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations

have ceased. EDA or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

(c) **Payrolls and basic records**

(1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the Work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the Work in the construction or development of the Project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 C.F.R. § 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, the plan or program is financially responsible, and the plan or program has been communicated in writing to the laborers or mechanics affected, and provide records that show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

(2) (i) For each week in which Contract work is performed, the Contractor shall submit a copy of all payrolls to the Owner for transmission to EDA or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 C.F.R. part 5.5(a)(3)(i). This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose. It may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U.S. Government Printing Office, Washington, D.C. 20402; or downloaded from the U.S. Department of Labor's website at <https://www.dol.gov/whd/forms/wh347.pdf>. The prime Contractor is responsible for the submission of copies of payrolls by all subcontractors

(ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the Contract and shall certify the following:

(A) That the payroll for the payroll period contains the information required to be maintained under 29 C.F.R. § 5.5(a)(3)(i) and that such information is correct and complete;

(B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the Contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 C.F.R. part 3; and

(C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the Contract.

(iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 15(c)(2)(ii) of this section.

(iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under section 1001 of Title 18 and section 3729 of Title 31 of the U.S. Code.

(3) The Contractor or subcontractor shall make the records required under paragraph 15(c)(1) of this section available for inspection, copying, or transcription by authorized representatives of EDA or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, EDA or its designee may, after written notice to the Contractor or Owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 C.F.R. § 5.12.

(d) **Apprentices and Trainees.**

(1) **Apprentices.** Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training (Bureau), or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any

apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a Contractor is performing construction on a Project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or a State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) **Trainees.** Except as provided in 29 C.F.R. § 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program that has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman's hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(3) **Equal employment opportunity.** The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity

requirements of Executive Order 11246, *Equal Employment Opportunity*, as amended, and 29 C.F.R. part 30.

(e) **Compliance with Copeland Anti-Kickback Act Requirements.** The Contractor shall comply with the Copeland Anti-Kickback Act (18 U.S.C. § 874 and 40 U.S.C. § 3145) as supplemented by Department of Labor regulations (29 C.F.R. part 3, “Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States”). The Act provides that the Contractor and any subcontractors shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which they are otherwise entitled. The Owner shall report all suspected or reported violations to EDA.

(f) **Subcontracts.** The Contractor and any subcontractors will insert in any subcontracts the clauses contained in 29 C.F.R. §§ 5.5(a)(1) through (10) and such other clauses as EDA or its designee may require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 C.F.R. § 5.5.

(g) **Contract termination; debarment.** The breach of the contract clauses in 29 C.F.R. § 5.5 may be grounds for termination of the contract, and for debarment as a Contractor and a subcontractor as provided in 29 C.F.R. § 5.12.

(h) **Compliance with Davis-Bacon and Related Act Requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 C.F.R. parts 1, 3, and 5 are herein incorporated by reference in this contract.

(i) **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this Contract shall not be subject to the general disputes clause of this Contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 C.F.R. parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and EDA or its designee, the U.S. Department of Labor, or the employees or their representatives.

(j) **Certification of Eligibility.**

(1) By entering into this Contract, the Contractor certifies that neither it nor any person or firm that has an interest in the Contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 C.F.R. § 5.12(a)(1).

(2) No part of this Contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 C.F.R. § 5.12(a)(1).

(3) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. § 1001.

16. **LABOR STANDARDS - CONTRACT WORK HOURS AND SAFETY STANDARDS ACT**

As used in this paragraph, the terms “laborers” and “mechanics” include watchmen and guards.

(a) **Overtime requirements.** No Contractor or subcontractor contracting for any part of the Contract work, which may require or involve the employment of laborers or mechanics, shall require or permit any such laborer or mechanic in any workweek in which that person is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(b) **Violation; liability for unpaid wages, liquidated damages.** In the event of any violation of the clause set forth in paragraph (a) of this section, the Contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (a) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (a) of this section.

(c) **Withholding for unpaid wages and liquidated damages.** EDA or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the Contractor or subcontractor under any such Contract or any other federal contract with the same prime Contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b) of this section.

(d) **Subcontracts.** The Contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs (a) through (c) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime Contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (a) through (c) of this section.

17. **EQUAL EMPLOYMENT OPPORTUNITY**

(a) The Recipient hereby agrees that it will incorporate or cause to be incorporated into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 C.F.R. chapter 60, which is paid for in whole or in part with funds obtained from EDA, the following equal opportunity clause:

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

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(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training including apprenticeship. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor 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 race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the contractor's legal duty to furnish information.

(4) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers representatives of the Contractor's commitments hereunder, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965 and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by EDA and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of

this Contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally-assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

(8) The Contractor will include the portion of the sentence immediately preceding paragraph 17(a)(1) and the provisions of paragraphs 17(a)(1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as EDA or the Secretary of Labor may direct as a means of enforcing such provisions, including sanctions for noncompliance. Provided, however, that in the event the Contractor becomes involved in or is threatened with litigation with a subcontractor or vendor as a result of such direction by EDA or the Secretary of Labor, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

(9) The Recipient further agrees that it will be bound by the above equal opportunity clause with respect to its own employment practices when it participates in federally-assisted construction work. Provided, however, that if the Recipient so participating is a State or local government, the above equal opportunity clause is not applicable to any agency, instrumentality, or subdivision of such government that does not participate in work on or under the Contract.

(10) The Recipient agrees that it will assist and cooperate actively with EDA and the Secretary of Labor in obtaining the compliance of contractors and subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that it will furnish EDA and the Secretary of Labor such information as they may require for the supervision of such compliance, and that it will otherwise assist EDA in the discharge of the EDA's primary responsibility for securing compliance.

(11) The Recipient further agrees that it will refrain from entering into any contract or contract modification subject to Executive Order 11246 of September 24, 1965, with a Contractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order and will carry out such sanctions and penalties for violation of the equal opportunity clause as may be imposed upon contractors and subcontractors by EDA or the Secretary of Labor pursuant to Part II, Subpart D of the Executive Order. In addition, the Recipient agrees that if it fails or refuses to comply with these undertakings, EDA may take any or all of the following actions: Cancel, terminate, or suspend in whole or in part this EDA financial assistance; refrain from extending any further assistance to the applicant under the program with respect to which the failure or refund occurred until satisfactory assurance of future compliance has been received from such applicant; and refer the case

to the Department of Justice for appropriate legal proceedings.

(b) Exemptions to Above Equal Opportunity Clause (41 C.F.R. chapter 60):

(1) Contracts and subcontracts not exceeding \$10,000 (other than Government bills of lading, and other than contracts and subcontracts with depositories of Federal funds in any amount and with financial institutions which are issuing and paying agents for U.S. savings bonds and savings notes) are exempt. The amount of the Contract, rather than the amount of the federal financial assistance, shall govern in determining the applicability of this exemption.

(2) Except in the case of subcontractors for the performance of construction work at the site of construction, the clause shall not be required to be inserted in subcontracts below the second tier.

(3) Contracts and subcontracts not exceeding \$10,000 for standard commercial supplies or raw materials are exempt.

18. **CONTRACTING WITH SMALL, MINORITY AND WOMEN'S BUSINESSES**

(a) If the Contractor intends to let any subcontracts for a portion of the work, the Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services.

(b) Affirmative steps shall consist of:

(1) Placing qualified small and minority businesses and women's business enterprises on solicitation lists;

(2) Ensuring that small and minority businesses and women's business enterprises are solicited whenever they are potential sources;

(3) Dividing total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by small and minority businesses and women's business enterprises;

(4) Establishing delivery schedules, where the requirements of the contract permit, which encourage participation by small and minority businesses and women's business enterprises;

(5) Using the services and assistance of the U.S. Small Business Administration, the Minority Business Development Agency of the U.S. Department of Commerce, and State and local governmental small business agencies;

(6) Requiring each party to a subcontract to take the affirmative steps of this section; and

(7) The Contractor is encouraged to procure goods and services from labor surplus area firms.

19. **HEALTH, SAFETY, AND ACCIDENT PREVENTION**

(a) In performing this contract, the Contractor shall:

- (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to their health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
- (2) Protect the lives, health, and safety of other persons;
- (3) Prevent damage to property, materials, supplies, and equipment; and
- (4) Avoid work interruptions.

(b) For these purposes, the Contractor shall:

- (1) Comply with regulations and standards issued by the Secretary of Labor at 29 C.F.R. part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 3701 – 3708); and
- (2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.

(c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this Contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 C.F.R. part 1904.

(d) The Owner shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the Work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Owner may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.

(e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as EDA, or the Secretary of Labor shall direct as a means of enforcing such provisions.

20. **CONFLICT OF INTEREST AND OTHER PROHIBITED INTERESTS**

(a) No official of the Owner who is authorized in such capacity and on behalf of the Owner to negotiate, make, accept, or approve, or to take part in negotiating, making, accepting, or approving any architectural, engineering, inspection, construction or material supply contract or any subcontract in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part hereof.

(b) No officer, employee, architect, attorney, engineer, or inspector of or for the Owner who is authorized in such capacity and on behalf of the Owner to exercise any legislative, executive, supervisory or other similar functions in connection with the construction of the Project, shall become directly or indirectly interested personally in this Contract or in any part thereof, any material supply contract, subcontract, insurance contract, or any other contract pertaining to the Project.

(c) The Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the Contract Documents has a corporate or financial affiliation with the supplier or manufacturer.

(d) The Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, may be involved. Such a conflict may arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in the Contractor. The Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors, or anything of monetary value from the Contractor or subcontractors.

(e) If the Owner finds after a notice and hearing that the Contractor, or any of the Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of the Owner or EDA in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, the Owner may, by written notice to the Contractor, terminate this Contract. The Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which the Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.

(f) In the event this Contract is terminated as provided in paragraph (e) of this section, the Owner may pursue the same remedies against the Contractor as it could pursue in the event of a breach of this Contract by the Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, the Owner may pursue exemplary damages in an amount (as determined by the Owner) which shall not be less than three nor more than ten times the costs the Contractor incurs in providing any such gratuities to any such officer or employee.

21. **RESTRICTIONS ON LOBBYING**

(a) This Contract, or subcontract is subject to 31 U.S.C. § 1352, regarding lobbying restrictions. The section is explained in the common rule, 15 C.F.R. part 28 (55 FR 6736-6748, February 26, 1990). Each bidder under this Contract or subcontract is generally prohibited from using federal funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with this EDA Award.

(b) **Contract Clause Threshold:** This Contract Clause regarding lobbying must be included in each bid for a contract or subcontract exceeding \$100,000 of federal funds at any tier under the EDA Award.

(c) **Certification and Disclosure:** Each bidder of a contract or subcontract exceeding \$100,000 of federal funds at any tier under the federal Award must file Form CD-512, *Certification Regarding Lobbying – Lower Tier Covered Transactions*, and, if applicable, Standard Form-LLL, *Disclosure of Lobbying Activities*, regarding the use of any nonfederal funds for lobbying. Certifications shall be retained by the Contractor or subcontractor at the next higher tier. All disclosure forms, however, shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(d) **Continuing Disclosure Requirement:** Each Contractor or subcontractor that is subject to the Certification and Disclosure provision of this Contract Clause is required to file a disclosure form at the end of each calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed by such person. Disclosure forms shall be forwarded from tier to tier until received by the Recipient of the EDA Award, who shall forward all disclosure forms to EDA.

(e) **Indian Tribes, Tribal Organizations, or Other Indian Organizations:** Indian tribes, tribal organizations, or any other Indian organizations, including Alaskan Native organizations, are excluded from the above lobbying restrictions and reporting requirements, but only with respect to expenditures that are by such tribes or organizations for lobbying activities permitted by other federal law. An Indian tribe or organization that is seeking an exclusion from Certification and Disclosure requirements must provide EDA with the citation of the provision or provisions of federal law upon which it relies to conduct lobbying activities that would otherwise be subject to the prohibitions in and to the Certification and Disclosure requirements of 31 U.S.C. § 1352, preferably through an attorney's opinion. Note, also, that a non-Indian subrecipient, contractor, or subcontractor under an award to an Indian tribe, for example, is subject to the restrictions and reporting requirements.

22. **HISTORICAL AND ARCHAEOLOGICAL DATA PRESERVATION**

The Contractor agrees to facilitate the preservation and enhancement of structures and objects of historical, architectural or archaeological significance and when such items are found and/or unearthed during the course of project construction. Any excavation by the Contractor that uncovers an historical or archaeological artifact shall be immediately reported to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the State Historic

Preservation Officer (SHPO) for recovery of the items. *See* the National Historic Preservation Act of 1966 (54 U.S.C. § 300101 *et seq.*, formerly at 16 U.S.C. § 470 *et seq.*) and Executive Order No. 11593 of May 31, 1971.

23. **CLEAN AIR AND WATER**

Applicable to Contracts in Excess of \$150,000

(a) **Definition.** “Facility” means any building, plant, installation, structure, mine, vessel, or other floating craft, location, or site of operations, owned, leased, or supervised by the Contractor or any subcontractor, used in the performance of the Contract or any subcontract. When a location or site of operations includes more than one building, plant, installation, or structure, the entire location or site shall be deemed a facility except when the Administrator, or a designee, of the United States Environmental Protection Agency (EPA) determines that independent facilities are collocated in one geographical area.

(b) In compliance with regulations issued by the EPA, 2 C.F.R. part 1532, pursuant to the Clean Air Act, as amended (42 U.S.C. § 7401 *et seq.*); the Federal Water Pollution Control Act, as amended (33 U.S.C. § 1251 *et seq.*); and Executive Order 11738, the Contractor agrees to:

(1) Not utilize any facility in the performance of this contract or any subcontract which is listed on the Excluded Parties List System, part of the System for Award Management (SAM), pursuant to 2 C.F.R. part 1532 for the duration of time that the facility remains on the list;

(2) Promptly notify the Owner if a facility the Contractor intends to use in the performance of this contract is on the Excluded Parties List System or the Contractor knows that it has been recommended to be placed on the List;

(3) Comply with all requirements of the Clean Air Act and the Federal Water Pollution Control Act, including the requirements of section 114 of the Clean Air Act and section 308 of the Federal Water Pollution Control Act, and all applicable clean air and clean water standards; and

(4) Include or cause to be included the provisions of this clause in every subcontract and take such action as EDA may direct as a means of enforcing such provisions.

24. **USE OF LEAD-BASED PAINTS ON RESIDENTIAL STRUCTURES**

(a) If the work under this Contract involves construction or rehabilitation of residential structures over \$5,000, the Contractor shall comply with the Lead-based Paint Poisoning Prevention Act (42 U.S.C. § 4831). The Contractor shall assure that paint or other surface coatings used in a residential property does not contain lead equal to or in excess of 1.0 milligram per square centimeter or 0.5 percent by weight or 5,000 parts per million (ppm) by weight. For purposes of this section, “residential property” means a dwelling unit, common areas, building exterior surfaces, and any surrounding land, including outbuildings, fences and play equipment affixed to the land, belonging to an owner and available for use by residents, but not

including land used for agricultural, commercial, industrial or other non-residential purposes, and not including paint on the pavement of parking lots, garages, or roadways.

- (b) As a condition to receiving assistance under PWEDA, recipients shall assure that the restriction against the use of lead-based paint is included in all contracts and subcontracts involving the use of federal funds.

25. **ENERGY EFFICIENCY**

The Contractor shall comply with all standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (42 U.S.C. § 6201) for the State in which the Work under the Contract is performed.

26. **ENVIRONMENTAL REQUIREMENTS**

When constructing a Project involving trenching and/or other related earth excavations, the Contractor shall comply with the following environmental constraints:

- (1) **Wetlands.** When disposing of excess, spoil, or other construction materials on public or private property, the Contractor shall not fill in or otherwise convert wetlands.
- (2) **Floodplains.** When disposing of excess, spoil, or other construction materials on public or private property, the Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency (FEMA) Floodplain Maps, or other appropriate maps, i.e., alluvial soils on Natural Resource Conservation Service (NRCS) Soil Survey Maps.
- (3) **Endangered Species.** The Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of the Contractor, the Contractor will immediately report this evidence to the Owner and a representative of EDA. Construction shall be temporarily halted pending the notification process and further directions issued by EDA after consultation with the U.S. Fish and Wildlife Service.

27. **DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSIONS**

As required by Executive Orders 12549 and 12689, *Debarment and Suspension*, 2 C.F.R. Part 180 and implemented by the Department of Commerce at 2 C.F.R. part 1326, for prospective participants in lower tier covered transactions (except subcontracts for goods or services under the \$25,000 small purchase threshold unless the subrecipient will have a critical influence on or substantive control over the award), the Contractor agrees that:

- (1) By entering into this Contract, the Contractor and subcontractors certify, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared
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ineligible, or voluntarily excluded from participation in this Contract by any federal department or agency.

(2) Where the Contractor or subcontractors are unable to certify to any of the statements in this certification, the Contractor or subcontractors shall attach an explanation to this bid.

See also 2 C.F.R. part 180 and 2 C.F.R. § 200.342.

28. **EDA PROJECT SIGN**

The Contractor shall supply, erect, and maintain in good condition a Project sign according to the specifications provided by EDA. To the extent practical, the sign should be a free standing sign. Project signs shall not be located on public highway rights-of-way. Location and height of signs will be coordinated with the local agency responsible for highway or street safety in the Project area, if any possibility exists for obstructing vehicular traffic line of sight. Whenever the EDA site sign specifications conflict with State law or local ordinances, the EDA Regional Director will permit such conflicting specifications to be modified so as to comply with State law or local ordinance.

29. **BUY AMERICA**

To the greatest extent practicable, contractors are encouraged to purchase American-made equipment and products with funding provided under EDA financial assistance awards.

ECONOMIC DEVELOPMENT ADMINISTRATION EDA CONSTRUCTION SITE SIGN

- The EDA-approved sign must be erected at the project location as soon as possible after construction begins. Evidence of this must be provided to the Regional Office Project Engineer.
- Below are sign specifications for construction projects funded through:
 - **America Rescue Plan Act (ARPA) funds and other special programs as directed by EDA**
 - **EDA other construction program funds (e.g. Public Works, EAA Construction)**
 - *Not sure which sign applies to your project? Please contact your EDA Project Engineer*
- The space labeled “EDA Grant Recipient Name” on the EDA sign must be replaced by the actual name of the EDA Grant Recipient.
- Below are some available files that can be provided to the contractor or sign-maker.
 - **EDA Construction Site Sign Useful Files for ARPA Projects and other special programs as directed by EDA**
 - [ARPA Site Sign Specifications](#) Written details and instructions
 - **EDA Construction Site Sign Useful Files for Other Projects**
 - [Site Sign Specifications](#) Written details and instructions
 - [EDA Site Sign Image](#) Adobe Acrobat (Includes proper dimensions)
 - [EDA Site Sign Image](#) Adobe Acrobat (Image)
 - [DOC seal](#) Jpeg image (Color)
 - [DOC seal](#) Jpeg image (Black & White)
 - [DOC seal](#) Adobe Acrobat (Color)
 - [DOC seal](#) Adobe Acrobat (Black & White)
 - [DOC seal](#) Encapsulated Postscript Vector Graphic (Adobe Illustrator)

**U.S. DEPARTMENT OF COMMERCE
ECONOMIC DEVELOPMENT ADMINISTRATION
STANDARD TERMS AND CONDITIONS FOR CONSTRUCTION PROJECTS**

Title II of the Public Works and Economic Development Act of 1965

Public Works and Economic Development Facilities
and
Economic Adjustment Assistance Construction Components



March 22, 2021

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PART I: GENERAL PROVISIONS

A. Construction Award Purpose

This financial assistance award (the Award), executed by the Economic Development Administration (EDA) and the recipient (Recipient or non-Federal entity), is awarded for the purpose of carrying out the design, engineering, or construction of certain physical infrastructure as specifically set forth in the Award's scope of work.

B. Authorities

1. In General

Recipient must administer this Award in conformance with the terms of the Award, including any properly executed amendment thereto, the EDA-approved budget and scope of work, these EDA Standard Terms and Conditions for Construction Projects (EDA Construction STCs) and the Department of Commerce (DOC) Financial Assistance Standard Terms and Conditions (DOC Standard Terms and Conditions), as well as any specific award conditions; relevant policies issued by EDA; applicable Federal statutes, regulations, and Executive Orders; and the provisions of the Office of Management and Budget (OMB) *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* codified at 2 CFR part 200 (OMB Uniform Guidance).

2. PWEDA

The Public Works and Economic Development program is authorized under section 201 and the Economic Adjustment Assistance program is authorized under section 209 of PWEDA (42 U.S.C. §§ 3141 and 3149, respectively).

3. EDA Regulations

The regulations implementing PWEDA are contained in chapter III of title 13 of the Code of Federal Regulations (CFR), and apply in full to this Award. The regulations specific to EDA construction projects can be found at 13 CFR parts 305 and 314, and subpart A to part 307.

4. Conflicts Among Authorities

Any inconsistency or conflict among the authorities governing the Recipient's administration of this Award will be resolved in the following order of precedence: Federal laws and regulations (including the OMB Uniform Guidance), applicable notices published in the *Federal Register*, Executive Orders, OMB circulars, these EDA Construction STCs, specific award conditions, and any written policy guidance issued by EDA. However, a specific award condition may amend or take precedence over a provision of these EDA Construction STCs on a case-by-case basis, when warranted by the specific circumstances of the Award. In the event of a conflict between Parts I or II of these EDA Construction STCs and Part III, which incorporates the DOC Standard Terms and Conditions, Parts I and II will control.

C. Updates to Authorities

1. Updates to Regulations and Requirements

The DOC, EDA, or OMB may issue changes from time to time to the regulations and other policies and requirements that apply to this Award. Such changes may upon occasion increase

administrative or programmatic flexibility in administering this Award in a manner that is mutually beneficial to EDA and the Recipient. In addition, if required by law, these changes may impose new requirements. The implementation of any such regulatory, administrative, or programmatic change in administering this Award requires EDA's prior written approval.

2. Applicability to the Award

These EDA Construction STCs apply to the Award as of the Federal award date, as defined at 2 CFR § 200.1, or, if attached to the Award by amendment, as of the effective date of such amendment.

D. Variances

EDA's policy is to administer all awards uniformly; however, there may be special circumstances that warrant a variance. To accommodate these circumstances and to encourage innovative and creative ways to address economic development problems, EDA will consider requests for variances to the procedures set out in these EDA Construction STCs if they do not conflict with applicable Federal statutory and regulatory requirements, are consistent with the goals of EDA's programs, and make sound economic and financial sense. Any approved variance will be implemented through a specific award condition incorporated under the Award.

E. Recipient as Trustee

The Recipient holds grant funds and any property acquired or improved with EDA assistance in trust for the public purposes of an Award. The Recipient's obligation to the Federal Government continues for the estimated useful life of the Project, as determined by EDA, during which EDA retains an undivided equitable reversionary interest (the Federal Interest) in property acquired or improved, in whole or in part, with EDA investment assistance. *See* 13 CFR § 314.2 ("Federal Interest").

If EDA determines that the Recipient fails or has failed to meet this obligation, EDA may exercise any rights or remedies with respect to its Federal Interest in the Project. However, EDA's forbearance in exercising any right or remedy in connection with the Federal Interest does not constitute a waiver thereof.

F. Additional Funding

EDA has no obligation to provide any additional funding in connection with the Award. Any change to the Award to increase funding or to extend the period of performance is at the discretion of EDA, subject to the availability of funds, via an amendment executed by the Grants Officer.

G. Definitions

Capitalized terms and acronyms used but not otherwise defined in these EDA Construction STCs have the meaning ascribed to them at 13 CFR §§ 300.3, 302.20, 307.8, and 314.1, and subpart A to 2 CFR part 200.

H. Reaffirmation of Application and Award Acceptance

By accepting this Award, the Recipient's authorized representative hereby reaffirms and states that:

1. All data in the Application were true and correct when the Application was submitted and remain

- true and correct as of the date of this Award;
2. The Application was, as of the date of submission and the date of this Award, duly authorized as required by local law by the governing body of the Recipient; and
 3. The Recipient has read, understood, and will comply with all terms of this Award, including the assurances and certifications submitted as part of the Application (including assurances submitted through the System for Award Management (SAM.gov)).

Acceptance of the Award is established by any action on the part of the Recipient indicating an intent to accept the Award, including by signing the Financial Assistance Award (Form CD-450) (either via a “wet” signature or electronically) or by requesting any disbursement of Award funds. “Application” means all forms, documentation, and any information submitted to EDA as part and in furtherance of a request for an Award and includes submissions made in response to any request by EDA after submission of the initial Application.

PART II:
SPECIAL REQUIREMENTS FOR EDA CONSTRUCTION PROJECTS

A. Financial Requirements

1. Financial Reports

- a. During the period of performance, the Recipient must submit financial reports as follows, unless otherwise specified in a specific award condition.
 - i. *Reports on Award reimbursements.* In accordance with 2 CFR § 200.328 (“Financial reporting”), the Recipient must submit a “Federal Financial Report” (Form SF-425 or any successor form) on a semi-annual basis for the periods ending March 31 and September 30, or any portion thereof, unless otherwise specified in a specific award condition. Reports are due no later than 30 calendar days following the end of each reporting period, and instructions for completing and submitting Form SF-425 will be discussed during the Project kick-off meeting. Recipients may contact their EDA Project Officer with questions on how to complete or submit the report, if necessary, but they must submit reports on time and are encouraged to pose such questions sufficiently before the deadline to allow for complete, accurate, and timely submission of required reports.
 - ii. *Reports on Award advances.* While EDA generally does not advance funds, when the agency does so, the Recipient must submit Form SF-425 within 15 business days following the end of each quarter for an award where the Federal share of costs is under \$1 million. In accordance with 2 CFR § 200.328, because of increased risk and the need to ensure the appropriate use of Federal funds, where EDA advances funds under an award where the Federal share of costs is \$1 million or more the Recipient must submit Form SF-425 within 15 business days following the end of each month, or as otherwise specified in a specific award condition.
- b. The Recipient must submit a final Form SF-425 no later than 120 calendar days after the end date of the period of performance. *See also* Part II, section B.16.c “Final reporting deadline” of these EDA Construction STCs.
- c. Noncompliance with the financial reporting requirements may result in appropriate enforcement action under this Award, including but not limited to suspension of Award payments, disallowance of costs or termination of an award. A Recipient’s non-compliance with financial reporting requirements will also be taken into account in EDA’s consideration of any future applications for EDA financial assistance (*see* 2 CFR § 200.206(b)(2)(iii) and section A.06 (Unsatisfactory Performance or Non-Compliance with Award Provisions) of the DOC Standard Terms and Conditions, which are incorporated in Part III of these EDA Construction STCs).
- d. Financial reports should be submitted to the Project Officer in electronic format, unless otherwise specified in the specific award conditions.

2. Disbursements

- a. *Method of payment.* The Grants Officer determines the appropriate method of payment.

Unless otherwise specified in a specific award condition, the method of payment under this Award will be reimbursement. Payments will be made through electronic funds transfers directly to the Recipient's bank account and in accordance with the requirements of the Debt Collection Improvement Act of 1996 (31 U.S.C. § 3720B *et seq.*). The Award number must be included on all payment-related correspondence, information, and forms.

- b. *Disbursement requests.* The Recipient must use Form SF-271, "Outlay Report and Request for Reimbursement for Construction Programs," to request reimbursement under the Award. Substantiating invoices and/or vouchers also must be provided. Each request for the disbursement of funds must be made to the Project Officer. Form SF-271 can be downloaded from the Grants.gov post-award reporting forms website at <https://www.grants.gov/web/grants/forms/post-award-reporting-forms.html>.
 - i. *Initial disbursement request.* For the initial disbursement only, the Recipient must complete and submit Form SF-3881, "ACH Vendor/Miscellaneous Payment Enrollment Form," along with Form SF-271, to the Project Officer.
 - ii. *Interim disbursement requests.* All requests for interim disbursement must be submitted using Form SF-271 and include substantiating invoices and/or vouchers.
 - iii. *Final disbursement request.* See Part II, section B.16 "Project Closeout Procedures" of these EDA Construction STCs.

3. Federal and Non-Federal Cost Sharing

- a. For purposes of this Award, the Federal share is the amount of EDA funds invested under the Award, while the non-Federal share, or "Matching Share," means non-EDA funds and any in-kind contributions that are approved by EDA and provided by the Recipient or by third parties as a condition of the Award.
- b. By accepting the Award, the Recipient certifies that the Matching Share of Project costs is committed to the Project, available as needed, and not conditioned or encumbered in any way that precludes its use consistent with the requirements of the Award. See 13 CFR § 301.5 ("Matching share requirements").
- c. In the case of an overrun at the construction bid opening, the Recipient may augment the Matching Share by an amount sufficient to cover the excess cost. The Recipient must furnish a letter to EDA identifying the source of the additional funds and confirming that all Matching Share meets the requirements of 13 CFR § 301.5. See 13 CFR § 305.10 ("Bid underrun and overrun").

4. Budget Revisions and Transfer of Funds

- a. *Approved budget plan; notification of deviations.* The EDA-approved budget set forth in the specific award conditions or otherwise incorporated under the Award is the budget plan for the Project. The Recipient must notify EDA of deviations from the budget in accordance with 2 CFR § 200.308 ("Revision of budget and program plans"). If prior written approval is not required under 2 CFR § 200.308, the Recipient may request the Grants Officer's review of

and guidance on proposed revisions to the budget.

- b. *Requesting budget revisions.* Requests for budget revisions to the EDA-approved budget must be submitted through the Project Officer to the Grants Officer, who will make the final determination on such requests and notify the Recipient in writing.
- c. *Budget revisions that require an amendment.* In accordance with 2 CFR § 200.308(f) and (h), an amendment executed by the Grants Officer are required for budget revisions when:
 - i. The revision results from changes in the scope or the objective of the Project;
 - ii. The need arises for additional EDA funds to complete the Project;
 - iii. The Federal share exceeds the simplified acquisition threshold (currently set at \$250,000) and the cumulative amount of transfers among direct cost categories exceeds or is expected to exceed 10 percent of the total budget as last approved by EDA; and
 - iv. A revision is desired that involves specific costs for which prior written approval requirements may be imposed consistent with applicable cost principles listed in subpart E of 2 CFR part 200 (“Cost Principles”).
- d. *Prior approval for transfers between construction and non-construction items.* When an Award supports both construction and non-construction work, the Recipient must obtain prior written approval from the Grants Officer before making any fund or budget transfer from non-construction to construction or vice versa. *See* 2 CFR § 200.308(h)(5).
- e. *Project underrun amounts.* Underrun amounts will be transferred to the contingencies line item. Contingency funds are to be used to address situations resulting from unknown conditions and changes required for the fulfillment of authorized activities under this Award. EDA may approve the use of underrun funds to increase the Federal share of the Project or further improve the Project, as long as EDA determines that the use is consistent with the original purpose of the Award. *See* 13 CFR § 308.1 (“Use of funds in projects constructed under projected cost”).
- f. *Additional EDA funding in case of Project overrun amounts.* In accepting this Award, the Recipient agrees to fund any overrun amounts from non-Federal sources, or if the Recipient is unable or unwilling to do so, to request termination of the Award. Additional EDA assistance for the Project is at the discretion of EDA and may not be approved.

5. Indirect Costs and Facilities and Administrative Costs

- a. Indirect costs, or facilities and administrative (F&A) costs for educational institutions, are generally not applicable under this Award. See the definition of “indirect (facilities and administrative) (F&A) costs” at 2 CFR § 200.1.
- b. When indirect costs are applicable, they will not be allowable charges against the Award unless approved under the Award and specifically included as a line item in the Award’s approved budget. *See* section B.06 of the DOC Standard Terms and Conditions (“Indirect or Facilities and Administrative Costs”), which are incorporated into these EDA Construction STCs in Part III.

6. Incurring Costs Prior to Award

Project activities, including the procurement of good and services, which may include construction activities, carried out prior to EDA's approval of this Award are done at the sole risk of the Recipient and at the risk of not being reimbursed by EDA. Such activity may result in the rejection of the Application, the disallowance of costs, or other adverse consequences as a result of noncompliance with EDA or Federal requirements, including but not limited to procurement requirements, civil rights requirements, Federal labor standards, or environmental and historic preservation requirements. The Grants Officer must authorize pre-award costs and activities in writing, and such costs must also be allowable under relevant Federal cost principles and the specific Award terms and be included in the EDA-approved budget. Pre-award costs not included in the authorized budget are not allowable and will not be reimbursed. *See* 13 CFR § 302.8 ("Pre-approval Investment Assistance costs").

7. Program Income

For Projects that generate revenue (*e.g.*, rent for buildings or real property constructed or improved with EDA funds, rent or fees charged for use of equipment purchased with EDA funds, fees charged by the Recipient or a third party in connection with Project operations, etc.), the Recipient agrees, for the estimated useful life of the EDA-assisted facility or equipment, to use income generated from the facility or equipment, in the following order of priority unless modified by a specific award condition:

- a. Administration, operation, maintenance, and repair of Project facilities in a manner consistent with good property management practice and in accordance with established building codes. This includes, where applicable, repayment of indebtedness resulting from any EDA-approved encumbrance (*e.g.*, approved mortgage) on the EDA-assisted facility. In the case of equipment, administration, operation, maintenance, and repair of the equipment, or the facility in which the equipment is located as required to maintain and operate the equipment, for the equipment's estimated useful life.
- b. Economic development activities that are authorized for support by EDA, provided such activities meet the economic development purposes of PWEDA and are located within the designated Project region.
- c. Any program income in excess of paragraphs a. and b. of this section that is generated during the period of performance must be deducted from total allowable Project costs in accordance with 2 CFR § 200.307(e)(1). *See also* 2 CFR § 200.307 ("Program income").

- 8. Information on Recipient integrity.** The Recipient agrees to provide EDA with information and documentation necessary for EDA to conduct due diligence to ensure the financial integrity and responsibility of the Recipient and key individuals associated with the Recipient in the management or administration of this Award.

B. Programmatic Requirements

1. Project Progress and Performance Reporting

- a. Project progress reports must be submitted in accordance with the procedures set out in 2 CFR § 200.329 ("Monitoring and reporting program performance"), as applicable, and as

indicated below. Failure to submit required reports in a complete, accurate, and timely manner may result in the withholding of payments under this Award; deferral of processing of new awards, amendments, or supplemental funding; or other appropriate enforcement action. *See* 13 CFR § 302.18 (“Post-approval requirements”) and section A.06 (Unsatisfactory Performance or Non-Compliance with Award Provisions) of the DOC Standard Terms and Conditions, which are incorporated in Part III of these EDA Construction STCs.

- b. Unless otherwise specified in a specific award condition, the Project progress report must contain the following information for each Project program, function, or activity:
 - i. A comparison of planned and actual accomplishments according to the timetable or list of Project objectives in this Award;
 - ii. An explanation of any delays or failures to meet the Project timetable or Project goals; and
 - iii. Any other pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.

Project progress reports must be submitted for each calendar quarter to the Project Officer. Each Project progress report must be submitted in accordance with the deadlines outlined in the specific award conditions, or, when not otherwise specified, Project progress reports will be due on a quarterly basis not later than January 31, April 30, July 31, and October 31 for the immediately previous quarter. The final Project progress report must be submitted to EDA no later than 120 calendar days after the end date of the period of performance. *See* Part II, section B.16.c “Project Closeout Procedures” of these EDA Construction STCs for more information on Project Closeout.

- c. The Recipient must submit quarterly Project progress reports to the EDA Project Officer electronically unless otherwise specified in the specific award conditions.

2. Time Extensions

- a. Unless otherwise authorized by a specific award condition, any extension of the period of performance can only be authorized by the Grants Officer in writing.
- b. The Recipient is responsible for implementing the Project in accordance with the development time schedule contained in this Award. As soon as the Recipient becomes aware that it may not be possible to meet the development time schedule, the Recipient must notify the Grants Officer. The Recipient’s notice to EDA must contain the following:
 - i. An explanation of the Recipient’s inability to complete work by the specified date (*e.g.*, a lengthy period of unusual weather delayed the contractor’s ability to excavate the site, major re-engineering required in order to obtain State or Federal approvals, unplanned environmental mitigation required);
 - ii. A statement describing any other contemplated changes to the Project;
 - iii. Documentation that demonstrates there is still a bona fide need for the Project; and
 - iv. A statement that no further delay is anticipated and that the Project can be completed within the revised time schedule.

EDA reserves the right to withhold disbursements while the Recipient is not in compliance with the time schedule and to suspend or terminate this Award if the Recipient fails to proceed with reasonable diligence to accomplish the Project as intended.

3. Interim Reporting of Significant Project Developments

The Recipient must promptly report any event that may have a significant impact upon the Project, including delays or adverse conditions that may materially affect the ability of the Recipient to attain Project objectives within established time periods or meet the development time schedule without waiting for the next quarterly progress report. The Recipient should report such events to the Project Officer in the most time-expedient way possible and then, if the initial report was not in writing, report the event to the Project Officer in writing. Such a report must include a statement of the event or issue, a statement of the course of action taken or contemplated to resolve the matter, and any Federal assistance needed to resolve the situation. If budget changes are required, the Recipient must submit a written budget revision request. *See* 2 CFR § 200.329(e) (“Monitoring and reporting program performance”) and Part II, section A.4. “Budget Revisions and Transfers of Funds” of these EDA Construction STCs.

4. Programmatic Changes

- a. In accordance with 2 CFR § 200.308 (“Revision of budget and program plans”), the Recipient must submit a written request for any proposed programmatic changes, including all changes to the scope of the Award, to the Project Officer. *See* Part II, section A.4 “Budget Revisions and Transfers of Funds” of these EDA Construction STCs for budget revisions that may require the prior written approval of EDA. In these cases, the Project Officer will forward the request to the Grants Officer, who makes the final decision on approving the request. In addition, the Recipient must request prior written approvals for certain items of cost in accordance with 2 CFR § 200.407 (“Prior written approval (prior approval)”).
- b. Any changes made to the Project without EDA’s approval are made at the Recipient’s own risk, and may result in disallowance of costs, suspension, termination, or other EDA action with respect to the Award. *See* 13 CFR § 302.7(b) (“Amendments and changes”).
- c. *Contract Change Orders.* After construction contracts for the Project have been executed, it may become necessary to alter them through a formal contract change order that must be issued by the Recipient and accepted by the contractor. All contract change orders must be reviewed by EDA, even if EDA is not participating in the cost of the change order or the contract price is to be reduced. Work on the Project may continue pending EDA review and approval of the change order, but all such work will be at the Recipient’s risk as to whether the cost of the work is eligible for EDA reimbursement. *See* 13 CFR § 305.13 (“Contract change orders”).

5. Government Performance and Results Act

In addition to quarterly Project progress reports, EDA may require the Recipient to report on Project performance beyond the end date of the period of performance for Government Performance and Results Act (GPRA) or other purposes. In no case will the Recipient be required to submit any GPRA report more than ten years after the date of Award closeout. Data used by the Recipient in preparing reports must be accurate and, whenever possible, from independent sources. *See* 13 CFR § 302.16 (“Accountability”).

6. Beneficiary Compliance

In the event a beneficiary of the Project fails to comply in any manner with certifications, assurances, or agreements that such beneficiary has entered into in accordance with EDA's requirements, the Recipient will reimburse EDA the Award amount or an amount to be determined by the EDA pursuant to 13 CFR §§ 314.4 ("Unauthorized use of property") and 314.5 ("Federal share"). When EDA determines that the failure of a beneficiary to comply with EDA requirements affects a portion of the property benefited by the Award, the Recipient will reimburse EDA proportionately.

7. Hold Harmless

To the maximum extent permitted by law, the Recipient agrees to indemnify and hold the United States harmless from and against all liabilities that the United States may incur due to the actions or omissions of the Recipient, including to the extent that such liabilities are incurred because of toxic or hazardous contamination or groundwater, surface water, soil, or other conditions caused by actions of the Recipient or any of its predecessors (other than the United States or its agents) on the property. *See* 13 CFR § 302.19 ("Indemnification").

8. Prohibition on Use of Third Parties to Secure Award

Unless otherwise specified in the application materials supporting this Award, the Recipient warrants that no person or selling agency has been employed or retained to solicit or secure this Award upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees, or bona fide established commercial or selling agencies maintained by the Recipient for the purpose of securing business. For breach or violation of this warranty, EDA has the right to terminate this Award for material noncompliance, or at its discretion, to deduct from the Award amount, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

9. Payment of Attorneys' or Consultants' Fees

No Award funds may be used, directly or indirectly, to reimburse attorneys' or consultants' fees incurred in connection with obtaining an award under PWEDA, such as, for example, preparing an application for EDA assistance. However, ordinary and reasonable attorneys' and consultants' fees incurred for meeting Award requirements (*e.g.*, conducting a title search or preparing plans and specifications) may be eligible Project costs and may be paid out of Award funds, provided such costs are otherwise eligible. *See* 13 CFR § 302.10 ("Attorneys' and consultants' fees, employment of expeditors, and post-employment restriction").

10. Recipient's Duty to Refrain from Employing Certain Government Employees

- a. Pursuant to section 606(2) of PWEDA (42 U.S.C. § 3216), for the two-year period beginning on the date EDA executes this Award, any Recipient that is a nonprofit organization, District Organization, or for-profit entity agrees that it will not employ, offer any office or employment to, or retain for professional services any person who:
 - i. On the date EDA executes this Award or within the one-year period ending on that date, served as an officer, attorney, agent, or employee of the Department, and
 - ii. Occupied a position or engaged in activities that the Assistant Secretary determines

involved discretion with respect to the funding of an Award.

- b. In addition to the types of Recipients noted in paragraph a. above, EDA may require another Eligible Applicant to execute an agreement to abide by the above-described post-employment restriction on a case-by-case basis—for example, when an institution of higher education implements activities under or related to the Award through a separate nonprofit organization or association.
- c. The two-year period and associated restrictions referenced above also will apply beginning on the date that EDA executes any cost amendment to this Award that provides additional funds to the Recipient.

See also 13 CFR § 302.10 (“Attorneys’ and consultants’ fees, employment of expeditors, and post-employment restriction”).

11. Commencement of Construction

- a. *Delayed construction starts.* If significant construction (as determined by EDA) is not commenced within two years of the Award date or by the date estimated for start of construction in this Award (or the expiration of any extension granted in writing by EDA), whichever is later, this Award will be automatically suspended by a written notification issued by the Grants Officer and may be terminated if EDA determines, after consultation with the Recipient, that construction to completion cannot reasonably be expected to proceed promptly and expeditiously.
- b. *Early construction starts.* The Recipient must make a written request to EDA for early construction start permission (that is, after the date of Award, but before EDA gives formal approval for construction to commence). Costs incurred under a contract are only allowable after EDA determines that the award of the contract is in compliance with all terms and conditions of the Award. If construction commences prior to EDA’s determination, the Recipient proceeds at its own risk until EDA’s review and concurrence. *See* 13 CFR § 305.11 (“Contract awards; early construction start”).

12. Project Sign and Use of EDA Logo

- a. *Project sign.* The Recipient is responsible for constructing, erecting, and maintaining in good condition throughout the construction period a sign (or signs) in a conspicuous place at the Project site indicating that the Federal Government is participating in the Project. EDA will provide specifications for the sign and may require more than one sign if site conditions so warrant. If the EDA-recommended sign specifications conflict with State or local law, the Recipient may modify such recommended specifications so as to comply with State or local law. *See* 13 CFR § 305.12 (“Project sign”).
- b. *Use of EDA logo.* With EDA’s prior written permission, the Recipient may use the EDA logo to publicize the Award as well as to amplify the impact of the Award. In such cases, the EDA logo may be displayed on Award-related materials that discuss or advertise the purpose or use of the Project (e.g. websites, social media, fliers, pamphlets, brochures). To seek permission to use the EDA logo, the Recipient must contact the EDA Project Officer and provide a written description of how the Recipient proposes to use the EDA logo. In general,

the EDA logo may be used either alone or next to Recipient's logo. The EDA logo may not be used to endorse a third party as interpreted at EDA's sole discretion. The Recipient must not use the EDA logo in a negative or defamatory manner, and the Recipient must not use the U.S. Department of Commerce (DOC) logo. EDA may rescind such permission at any time.

13. Efficient Administration of Project

The Recipient agrees to properly and efficiently administer, operate, and maintain the Project for its estimated useful life, as required by section 504 of PWEDA (42 U.S.C. § 3194). If EDA determines at any time during the estimated useful life of the facility that the Project is not being properly and efficiently administered, operated, and maintained, EDA may terminate this Award (if it is still active) and/or may take appropriate enforcement action to protect the Federal Interest in the Project, including requiring the Recipient to repay the Federal Share. *See* 13 CFR §§ 302.12 ("Project administration, operation and maintenance"), 302.18 ("Post-approval requirements"), and 314.2 ("Federal Interest") through 314.5 ("Federal Share").

14. Conflicts-of-Interest Rules

- a. An "Interested Party" is defined in 13 CFR § 300.3 ("Definitions") as "any officer, employee, or member of the board of directors or other governing board of the Recipient, including any other parties that advise, approve, recommend, or otherwise participate in the business decisions of the Recipient, such as agents, advisors, consultants, attorneys, accountants, or shareholders." An Interested Party includes the Interested Party's Immediate Family and other persons directly connected to the Interested Party by law or through a business organization. "Immediate Family" is defined in 13 CFR § 300.3 as "a person's spouse (or domestic partner or significant other), parents, grandparents, siblings, children and grandchildren, but does not include distant relatives, such as cousins, unless the distant relative lives in the same household as the person."
- b. The Recipient must disclose in writing any potential conflicts of interest to EDA or the pass-through entity as soon as practicable after the identification of such potential conflict. In addition, the Recipient must maintain written standards of conduct to establish safeguards to prohibit an Interested Party from using its position for a purpose that constitutes or presents the appearance of personal or organizational conflicts-of-interest or of personal gain in the administration of an award. *See* 13 CFR § 302.17(a) and (b) ("Conflicts of interest"), 2 CFR § 200.112 ("Conflict of interest"), as applicable, and assurances submitted as part of the Application, including assurances submitted through SAM.gov or via Form SF-424D ("Assurances – Construction Projects").
- c. An Interested Party must not receive any direct or indirect financial or personal benefit in connection with this Award or its use for payment or reimbursement of costs by or to the Recipient. A conflict of interest generally exists when an Interested Party participates in a matter that has a direct and predictable effect on the Interested Party's personal or financial interests. A conflict also may exist where there is an appearance that an Interested Party's objectivity in performing his or her responsibilities under the Project is impaired. For example, an appearance of impairment of objectivity may result from an organizational conflict where, because of other activities or relationships with other persons or entities, an Interested Party is unable to render impartial assistance, services or advice to the Recipient, a participant in the Project or to the Federal government. Additionally, a conflict of interest

may result from non-financial gain to an Interested Party, such as benefit to reputation or prestige in a professional field. *See* 13 CFR § 302.17(a) and (b).

- d. Section F.01.c of the DOC Standard Terms and Conditions, which are incorporated as Part III of these EDA Construction STCs, specifies procurement-related conflicts of interest requirements. *See also* 2 CFR §§ 200.317-200.327 (“Procurement Standards”).

15. Records-Keeping Requirements

- a. *Records.* The Recipient must maintain records that document compliance with the terms and conditions of this Award. At a minimum, the Recipient’s records must fully disclose:
 - i. The amount and disposition of all EDA funding under the Award;
 - ii. All Project expenditures and procurement actions;
 - iii. The total cost of the Project that the Award funds;
 - iv. Copies of all reports and disbursement requests submitted to EDA;
 - v. The benefits/impacts of the Project, as reported through GPRA and other reports to EDA;
 - vi. The amount and nature of the portion of Project costs provided by non-EDA sources;
 - vii. Contractor compliance with applicable Federal requirements; and
 - viii. Such other records as EDA requires the Recipient to maintain, including such records as will facilitate an effective audit.
- b. *Records retention.* In general, and in accordance with 2 CFR § 200.334 (“Retention requirements for records”), all records pertinent to this Award must be retained for a period of three years from the date of submission of the final Project expenditure report (the final Form SF-271 for disbursement). The only exceptions are the following:
 - i. If any litigation, claim, or audit is started before the expiration of the three-year period, the records must be retained until all litigation, claims, or audit findings involving the records have been resolved and final actions taken.
 - ii. When the Recipient is notified in writing by EDA, its cognizant agency for either audit or indirect costs, its oversight agency for audit, or the relevant pass-through entity to extend the retention period, it must retain the records as directed.
 - iii. Records for real property and equipment acquired with Federal funds must be retained for three years after final disposition of the relevant real property or equipment.
 - iv. When records are transferred to or maintained by EDA or pass-through entity, the three-year retention requirement is not applicable to the Recipient.
 - v. *Records for program income transactions after the period of performance.* In some cases, Recipients must report program income after the period of performance. Where there is such a requirement, the retention period for the records pertaining to the earning of the program income starts from the end of the Recipient’s fiscal year in which the program income is earned. *See also* Part II, section A.7 “Program Income” of these EDA Construction STCs.

- vi. *Indirect cost rate proposals and cost allocation plans.* This paragraph applies to the following types of documents and their supporting records: indirect cost rate computations or proposals, cost allocation plans, and any similar accounting computations of the rate at which a particular group of costs is chargeable (such as computer usage chargeback rates or composite fringe benefit rates).
 - (1) *If submitted for negotiation.* If the proposal, plan, or other computation is required to be submitted to the Federal Government (or to the pass-through entity) to form the basis for negotiation of the rate, then the three-year retention period for its supporting records starts from the date of such submission.
 - (2) *If not submitted for negotiation.* If the proposal, plan, or other computation is not required to be submitted to the Federal Government (or to the pass-through entity) for negotiation purposes, then the three-year retention period for the proposal, plan, or computation and its supporting records starts from the end of the fiscal year (or other accounting period) covered by the proposal, plan, or other computation.
- c. **Monitoring and reporting obligations.** The Recipient is responsible for monitoring any subrecipients and contractors to ensure their compliance with the records retention requirements. The Recipient must immediately notify the Project Officer if records are lost. *See 2 CFR §§ 200.331 – 200.333 (“Subrecipient Monitoring and Management”).*

16. Termination Actions

- a. In accordance with 2 CFR § 200.340 (“Termination”), this Award may be terminated in whole or in part as follows:
 - i. *Termination by EDA for the Recipient’s failure to comply with the terms and conditions of the Award.* EDA may terminate this Award, in whole or in part, if the Recipient fails to comply with the Terms and Conditions of the Award, including but not limited to:
 - (1) Any representation made by the Recipient to the Federal awarding agency in connection with the Application for Federal assistance is incorrect or incomplete in any material respect;
 - (2) The Project has changed substantially, without EDA prior approval, so as to affect significantly the accomplishment of the Project as intended (including an unauthorized use of property as provided in 13 CFR § 314.4 (“Unauthorized use of property”));
 - (3) The Recipient has violated commitments it made in its Application and supporting documents or has violated any of the Terms and Conditions of the Award;
 - (4) The conflicts-of-interest rules at 13 CFR § 302.17 (“Conflicts of interest”) are violated; or
 - (5) The Recipient fails to report immediately to EDA any change of authorized representative acting in lieu of or on behalf of the Recipient.

See also section A.06 (Unsatisfactory Performance or Non-Compliance with Award Provisions) of the DOC Standard Terms and Conditions, which are incorporated in Part III of these EDA Construction STCs.

- ii. *Termination by EDA when the Award no longer effectuates program goals or agency priorities.* To the greatest extent authorized by law, EDA may terminate this Award if it no longer effectuates program goals or agency priorities.
 - iii. *Termination by the Recipient.* The Recipient may terminate this Award in whole or in part upon by sending the EDA Grants Officer written notification setting forth the reasons for such termination, the effective date, and, in the case of partial termination, the portion to be terminated. However, if EDA determines in the case of partial termination that the reduced or modified portion of the EDA Award will not accomplish the purposes for which the EDA Award was made, EDA may terminate the Award in its entirety.
 - iv. *Termination pursuant to Award termination provisions.* EDA or the pass-through entity may terminate this Award pursuant to termination provisions included in the Award. Any Award-specific termination provision will be included as a specific award condition.
 - v. *Termination upon mutual agreement.* EDA and the Recipient may mutually agree to terminate this Award in whole or in part. In such cases, EDA and the Recipient must agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated.
- b. If the Award is wholly or partially terminated, the Recipient remains responsible for compliance with the requirements in 2 CFR §§ 200.344 (“Closeout”) and 200.345 (“Post-closeout adjustments and continuing responsibilities”).

17. Project Closeout Procedures

- a. *Project Closeout.* As defined at 2 CFR § 200.1, Project Closeout means the process by which EDA determines that all applicable administrative actions and all required work of the Award have been completed and takes actions as described at 2 CFR § 200.344 (“Closeout”). In the context of an EDA construction award, Project Closeout generally begins with the Recipient’s acceptance of the Project from the contractor(s).
- b. *Final disbursement.* When Project construction and final inspection have been completed, or substantially completed as determined by EDA, and the Recipient has accepted the Project from the contractor(s), the Recipient can begin the Closeout process by submitting the following documentation to EDA:
 - i. A request for final disbursement on an executed Form SF-271;
 - ii. A written certification that all costs charged against this Award (Federal and non-Federal shares) are for eligible activities and represent allowable costs, for which there is documentation in the Recipient’s records;
 - iii. An executed certificate of final acceptance signed by the Recipient and the Recipient’s architect/engineer;
 - iv. The Recipient’s certification that its current audit (in accordance with subpart F of 2 CFR part 200), if applicable, has been submitted to the Federal Audit Clearinghouse;

- v. The Recipient's certification that its currently valid single or program-specific audit in accordance with subpart F of 2 CFR part 200 ("Audit Requirements"), if applicable, does not contain any material findings (if the Recipient's currently valid audit does contain material findings, the Recipient must submit the applicable audit preferably via e-mail to the Project Officer, who will review with the Grants Officer); and
- vi. Other documentation as may be required by EDA.

EDA will advise the Recipient of costs determined to be allowable and unallowable. If a balance of this Award is due to the Recipient, the balance will be paid by EDA. If the Recipient has received an amount in excess of the amount due the Recipient, the Recipient must refund the excess to EDA. The Recipient must contact the Project Officer for refund instructions.

As noted above, if the Recipient's most recent audit completed pursuant to subpart F of 2 CFR part 200 contains material findings, the Recipient must submit the audit, preferably via e-mail, to the Project Officer, who will review with the Grants Officer before final disbursement. If e-mail is unavailable, the Recipient may submit a hardcopy version of the audit to the Project Officer.

- c. *Final reporting deadline.* The Recipient must submit, no later than 120 calendar days after the end date of the period of performance, all financial, performance, and other reports as required by the Terms and Conditions of this Award. The Grants Officer may extend the 120 calendar day submission period upon a written request from the Recipient.
- d. *Deadline to liquidate obligations.* Unless EDA authorizes an extension, the Recipient must liquidate all financial obligations incurred under this Award no later than 120 calendar days after the end date of the period of performance.
- e. *Post-Closeout requirements.* As noted above in section B.12 "Efficient Administration of Project" of these EDA Construction STCs, after construction is completed and the Project is closed out financially, the Recipient has an ongoing responsibility to properly administer, operate, and maintain the Project for its estimated useful life (as determined by EDA) in accordance with Award purposes. *See* 13 CFR § 302.12 ("Project administration, operation and maintenance"). The Recipient must comply with all Award requirements and maintain records to document such compliance, which must be made available for inspection by EDA or other Government officials as required.

In addition, in accordance with 2 CFR § 200.345 "Post-closeout adjustments and continuing responsibilities," the Closeout of this Award does not affect any of the following:

- i. The right of EDA to disallow costs and recover funds on the basis of a later audit or other Project review;
- ii. The Recipient's obligation to return any funds due as a result of later corrections or other transactions;
- iii. Audit requirements per subpart F of 2 CFR part 200; and
- iv. Requirements for property management and disposition, records retention, and

performance measurement reports. *See* subpart D of 2 CFR part 200 (“Post Federal Award Requirements”), as applicable.

- f. *GPRA reporting.* As required under GPRA and in accordance with a schedule that will be provided by EDA, the Recipient must submit additional Performance Measurement Reports, generally three, six, and nine years after the date of the Award to accurately and completely report the impacts of the Project, especially in terms of job creation and private investment leveraging.

18. Freedom of Information Act

EDA is responsible for meeting its Freedom of Information Act (“FOIA”) (5 U.S.C. § 552) responsibilities for its records. DOC regulations at 15 CFR part 4 set forth the requirements and procedures that EDA must follow in order to make the requested material, information, and records publicly available. Unless prohibited by law and to the extent required under the FOIA, contents of Applications and other information submitted by applicants and Recipients may be released in response to a FOIA request. The Recipient should be aware that EDA may make certain Application and other submitted information publicly available. Accordingly, as set forth in 15 CFR § 4.9 (“Confidential commercial information”), the Recipient should identify in its Application any “business information” it believes to be protected from disclosure pursuant to 5 U.S.C. § 552(b)(4).

C. Additional Requirements Related to Construction Projects

The Recipient and any subrecipients, must, in addition to other statutory and regulatory requirements detailed in these EDA Construction STCs and the assurances made to EDA in connection with the Award, comply and require each of its contractors and subcontractors employed in the completion of the Project to comply with all applicable Federal, State, territorial, and local laws, and in particular, the following Federal laws (and the regulations issued thereunder), executive orders, OMB circulars, OMB Uniform Guidance, and local law requirements.

1. **The Davis-Bacon Act, as amended (40 U.S.C. §§ 3141–3144, 3146, 3147; 42 U.S.C. § 3212)**, which requires minimum wages for mechanics and laborers employed on Federal Government public works projects to be based on the wages that the Secretary of Labor determines to be prevailing for the corresponding classes of laborers and mechanics employed on projects of a character similar to the contract work in the civil subdivision of the State in which the Project is to be performed, or in the District of Columbia if the Project is to be performed there.
2. **The Contract Work Hours and Safety Standards Act, as amended (40 U.S.C. §§ 3701-3708)**, which provides work hour standards for every laborer and mechanic employed by any contractor or subcontractor in the performance of a Federal public works project.
3. **The National Historic Preservation Act of 1966, as amended (54 U.S.C. § 300101 *et seq.*), and the Advisory Council on Historic Preservation Guidelines (36 CFR part 800)**, which require stewardship of historic properties in projects involving Federal funds.
4. **Preservation of Historical and Archeological Data (54 U.S.C. § 312502)**, which requires appropriate surveys and preservation efforts if a Federally licensed project may cause

irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data.

5. **The Architectural Barriers Act of 1968, as amended (42 U.S.C. § 4151 *et seq.*)**, and the regulations issued thereunder, which prescribe standards for the design and construction of any building or facility intended to be accessible to the public or that may house handicapped employees.
6. **The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. § 4601 *et seq.*)**, and implementing regulations issued at 49 CFR part 24 (“Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs”), which establish uniform policies for the fair and equitable treatment of persons, businesses, or farm operations affected by the acquisition, rehabilitation, or demolition of real property acquired for a project financed wholly or in part with Federal financial assistance.
7. **The Energy Conservation and Production Act (42 U.S.C. § 6834 *et seq.*)**, which establishes energy efficiency performance standards for the construction of new residential and commercial structures undertaken with Federal financial assistance.
8. **Executive Order 13717, “Seismic Safety of Federal and Federally Assisted or Regulated New Building Construction”**, which requires that new buildings constructed with Federal assistance comply with the earthquake-resistant design provisions of the 2015 editions of the International Building Code (IBC) or the International Residential Code (IRC), nationally recognized building codes promulgated by the International Code Council (ICC), or equivalent codes, consistent with the provisions of and to the extent required by 40 U.S.C. § 3312.
9. **Compliance with Local Construction Requirements.** The Recipient will comply with current local building codes, standards, and other requirements applicable to the Project.

D. Non-Discrimination Requirements

No person in the United States shall, on the ground of race, color, national origin, handicap, age, religion, or sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving Federal financial assistance. In addition to the non-discrimination requirements set forth in section G.02 “Non-Discrimination Requirements” of the DOC Standard Terms and Conditions, which are incorporated in Part III of these Construction STCs, the Recipient agrees to comply with Pub. L. No. 92-65, 42 U.S.C. § 3123, which proscribes discrimination on the basis of sex in assistance provided under PWEDA.

E. Audits

1. General

- a. Recipients must comply with the audit requirements set out as subpart F to 2 CFR part 200 (“Audit Requirements”). Generally, if the Recipient expends \$750,000 or more in Federal awards during the Recipient’s fiscal year, the Recipient must have a single or program-specific audit conducted for that fiscal year. The cost of preparing the audit may be

included in the Project budget.

- b. For program specific audits, EDA's Public Works and Economic Adjustment Assistance programs generally have specific audit guidelines that will be incorporated into the Award and may be found in the annual Compliance Supplement, which is Appendix XI to 2 CFR part 200 and available on OMB's website. When DOC does not have a program-specific audit guide available for the program, the auditor will follow the requirements for a program-specific audit as described in 2 CFR § 200.507 ("Program-specific audits").

2. Requirement to Submit a Copy of the Audit to EDA

If the Recipient's current audit required under subpart F of 2 CFR part 200 ("Audit Requirements") contains material findings, the Recipient must submit a copy of the audit to the Project Officer, who will review it with the Grants Officer. *See also* Part II, section B.16 "Project Closeout Procedures" of these EDA Construction STCs.

See section D "Audits" of the DOC Standard Terms and Conditions, which are incorporated in Part III of these EDA Construction STCs, for additional information related to audit requirements.

F. Tribal Employment Rights Ordinances

As set out in 31 U.S.C. § 1352, special provisions are applicable to Indian Tribes, Tribal organizations, and other Indian organizations eligible to receive Federal contracts, grants, loans, or cooperative agreements. In accordance with DOC policy, EDA recognizes Tribal Employment Rights Ordinances ("TEROs"), which may provide for preferences in contracting and employment, in connection with its financial assistance awards. Federal awards granted to American Indian and Alaska Native Tribal governments generally may provide for preference to qualified Indians in all aspects of employment, contracting, and other business activities, as well as the payment of a TERO fee. The payment of the TERO fee, which supports the Tribal employment rights office to administer the preferences, should generally be allowable as an expense that is "necessary and reasonable for the performance of the Federal award," as provided under 2 CFR § 200.403 ("Factors affecting allowability of costs").

G. EDA Contracting Provisions for Construction Projects

The Recipient must use the "*EDA Contracting Provisions for Construction Projects*" as guidance in developing all construction contracts. The "*EDA Contracting Provisions for Construction Projects*" lists applicable EDA and other Federal requirements for construction contracts.

H. Property

1. Standards

With respect to any property acquired or improved in whole or in part with Award funds, the Recipient must comply with the Property Standards set forth at 2 CFR §§ 200.310 ("Insurance coverage") through 200.316 ("Property trust relationship"), and EDA's regulations at 13 CFR part 314. Property acquired or improved in whole or in part by the Recipient under this Award may consist of real property; personal property, including equipment and supplies; and intangible property, such as money, notes, contractual rights, and security interests. Any property reports required under 2 CFR §§ 200.310 through 200.316, such as periodic inventories and requests for disposition instructions, must be submitted to the Grants Officer through the Project Officer on

Form SF-428 and/or SF-429, as applicable. *See also* section A.01.d “Real Property, Tangible Property and Intangible Property Reports and Requests for Dispositions” of the DOC Standard Terms and Conditions, which are incorporated in Part III of these EDA Construction STCs.

2. Title

- a. Title to equipment, supplies, and intangible property acquired in whole or in part under this Award generally vests upon acquisition in the Recipient. The use, management and disposition of equipment, supplies, and intangible property acquired in whole or in part under this Award must be in accordance with 2 CFR §§ 200.313 (“Equipment”), 200.314 (“Supplies”), and 200.315 (“Intangible property”), as applicable, and EDA regulations at 13 CFR part 314. *See also* section C.03 “Intellectual Property Rights” of the DOC Standard Terms and Conditions, which are incorporated in Part III of these EDA Construction STCs.
- b. Title to real property acquired in whole or in part under this Award generally vests upon acquisition in the Recipient, subject to the condition that the Recipient uses the real property for the authorized purpose of the Project. *See* 2 CFR § 200.311 (“Real property”) and EDA regulations at 13 CFR part 314.

3. EDA’s Interest in Award Property

- a. *General - evidence of title.* As stated in Part I, section E, of these EDA Construction STCs “Recipient as Trustee”, real property, equipment, and intangible property acquired or improved under this Award must be held in trust by the Recipient as trustee for the public purposes of an Award. This trust relationship exists throughout the duration of the property’s estimated useful life, as determined by EDA, during which time EDA retains an undivided, equitable reversionary interest in the property (“Federal Interest”). *See* 13 CFR § 314.2.

Before advertising for construction bids or at such other time as EDA requires, the Recipient must furnish evidence, satisfactory in form and substance to EDA, that title to real property required for the Project (other than property of the United States and as provided in 13 CFR § 314.7(c) (“Title”)) is vested in the Recipient and that such easements, rights-of-way, State or local government occupancy or use permits, long-term leases, or other property interests or access rights required for the Project have been or will be obtained by the Recipient within an acceptable time, as determined by EDA. All liens, mortgages, other encumbrances, reservations, reversionary interests, or other restrictions on title or the Recipient’s interest in the property must be disclosed to EDA. *See* 13 CFR § 314.7 (“Title”). With limited exceptions set forth at 13 CFR §§ 314.6(a) and (b) (“Encumbrances”) or as otherwise authorized by EDA, Recipient-owned property acquired or improved in whole or in part with Award funds must not be used to secure a mortgage or deed of trust or in any way otherwise encumbered. *See* 13 CFR § 314.6.

- b. *Recording EDA’s Interest in Real Property.*
 - i. For all Projects involving the acquisition, construction, or improvement of a building, infrastructure, or other real property, as determined by EDA, the Recipient must execute and furnish to EDA, prior to initial Award disbursement or at such other time as EDA requires, a lien, covenant, or other statement, satisfactory to EDA in form and substance, of EDA’s interest in the property acquired or improved in whole or in part with the funds made available under this Award. EDA may permit such statement to be recorded after

initial Award disbursement in the event that grant funds are being used to acquire such property or for authorized costs, such as design and engineering services. The statement must specify the estimated useful life of the Project and must include the disposition, encumbrance, and the Federal Share compensation requirements, as well as any other requirements specified by EDA in its reasonable discretion. *See* 13 CFR §§ 314.1 (“Definitions”) and 314.8(a) (“Recorded statement for real property”). *See also* 2 CFR § 200.316 (“Property trust relationship”).

- ii. This lien, covenant, or other statement of the Federal interest must be perfected and placed of record in the real property records of the jurisdiction in which the property is located, all in accordance with applicable law. EDA may require an opinion of counsel for the Recipient to substantiate that the document was validly executed and properly recorded. *See* 13 CFR § 314.8(b).
 - iii. Facilities in which the EDA assistance is only a small part of a larger project, as determined by EDA, may be exempted from the requirements listed in paragraphs H.3.b.i and ii above. *See* 13 CFR § 314.8(c).
 - iv. In extraordinary circumstances and at EDA’s discretion, EDA may choose to accept another instrument to protect EDA’s interest in the Project property, such as an escrow agreement or letter of credit, provided that EDA determines such instrument is adequate and a recorded statement in accord with section H.3.b.i above is not reasonably available. The terms and provisions of the relevant instrument must be satisfactory to EDA. The costs and fees for escrow services or letters of credit must be paid by the Recipient. *See* 13 CFR § 314.8(d).
- c. *Recording EDA’s Interest in Personal Property.* For all Projects involving the acquisition or improvement of significant items of equipment or other tangible personal property, including but not limited to watercraft, motor vehicles, machinery, equipment, removable fixtures, or structural components of buildings, the Recipient must execute a security interest, covenant, or other statement of EDA’s reversionary interest in the personal property acceptable in form and substance to EDA, which statement must be perfected and placed of record in accordance with applicable law (usually accomplished by filing a Uniform Commercial Code Financing Statement (Form UCC-1), as provided by State law), with continuances re-filed as appropriate. EDA may require an opinion of counsel for the Recipient to substantiate that the Form UCC-1 or other filing was validly executed and properly recorded. *See* 13 CFR § 314.9 (“Recorded statement for Project personal property”).
- d. *EDA’s Interest and the estimated useful life.* The Recipient acknowledges that EDA retains an undivided equitable reversionary interest in property acquired or improved in whole or in part with grant funds made available through this Award throughout the estimated useful life (as determined by EDA) of the Project, except in applicable instances set forth at 13 CFR § 314.7(c) (“Title”). *See* 13 CFR § 314.2(a) (“Federal interest”).
- e. *Unauthorized Use of Award Property.* The Recipient agrees that if any interest in property acquired or improved in whole or in part with Award funds is disposed of, encumbered, or alienated in any manner, or no longer used for the authorized purposes of the Award during the Project’s estimated useful life without EDA’s written approval, EDA will be entitled to recover the Federal Share, as defined at 13 CFR § 314.5 (“Federal share”). Examples of

alienation of Award property include sale or other conveyance of the Recipient's interest, leasing or mortgaging the property, or granting an option for any of the foregoing.

If, during the Project's estimated useful life, the property is no longer needed for the purposes of the Award, as determined by EDA, EDA may permit its use for other acceptable purposes consistent with those authorized by PWEDA and 13 CFR Chapter III. *See* 13 CFR § 314.3(b) ("Authorized use of property") or may direct the Recipient to sell the property and remit the Federal Share of the sales proceeds to EDA. *See* 2 C.F.R. §§ 200.311, 200.313.

- f. *Calculating the Federal Share.* For purposes of any lien or security interest, the amount of the Federal Share is the portion of the current fair market value of any property (after deducting any actual and reasonable selling and repair expenses incurred to put the property into marketable condition) attributable to EDA's participation in the Project. *See* 13 CFR § 314.5 ("Federal share").

4. **Insurance and Bonding**

- a. *Insurance.* The Recipient must, at a minimum, provide the equivalent insurance coverage for real property and equipment acquired or improved with Federal funds as provided for property owned by the Recipient. Federally owned property need not be otherwise insured unless required by the Terms and Conditions of the Award. *See* 2 CFR § 200.310 ("Insurance coverage").
- b. *Bonding.* If the Award exceeds the simplified acquisition threshold as defined at 2 CFR § 200.1, EDA may accept the Recipient's or subrecipient's bonding policy and requirements if EDA or the pass-through entity determines that the Federal Interest is adequately protected. If not, the following minimum requirements will apply:
 - i. A bid guarantee from each bidder equivalent to five percent of the bid price. The "bid guarantee" must consist of a firm commitment such as a bid bond, certified check, or other negotiable instrument accompanying a bid as assurance that the bidder will, upon acceptance of the bid, execute such contractual documents as may be required within the time specified.
 - ii. A performance bond on the part of the contractor for 100 percent of the contract price. A "performance bond" is one executed in connection with a contract to secure fulfillment of all the contractor's obligations under such contract.
 - iii. A payment bond on the part of the contractor for 100 percent of the contract price. A "payment bond" is one executed in connection with a contract to ensure payment as required by law of all persons supplying labor and material in the execution of the work provided for in the contract. *See* 2 CFR § 200.326 ("Bonding requirements").

5. **Leasing Restrictions.**

Leasing or renting of facilities or property is prohibited unless specifically authorized by EDA. The Recipient agrees that any leasing or renting of any facilities or property involved in this Project will be subject to the following:

- a. That said lease arrangement is consistent with the authorized general and special purpose of

the Award;

- b. That said lease arrangement is for adequate consideration;
- c. That said lease arrangement is consistent with applicable EDA requirements concerning but not limited to nondiscrimination and environmental compliance; and
- d. That all revenue derived from said leasing arrangement shall be subject to Part II, section A.7 “Program Income” of these EDA Construction STCs.

6. Eminent Domain

The Recipient will use funds solely for the authorized purpose of the Project. Pursuant to Executive Order 13406, “Protecting the Property Rights of the American People,” the Recipient agrees:

- a. Not to exercise any power of eminent domain available to the Recipient (including the commencement of eminent domain proceedings) for use in connection with the Project for the purpose of advancing the economic interests of private parties; and
- b. Not to accept title to land, easements, or other interests in land acquired by the exercise of any power of eminent domain for use in connection with the Project for such purposes. The Recipient agrees that any use of the power of eminent domain to acquire land, easements, or interests in land, whether by the Recipient or any other entity that has the power of eminent domain, in connection with the Project without the prior written consent of EDA is an unauthorized use of the Project. If the Recipient puts the Project to an unauthorized use, the Recipient must compensate EDA for the Federal Share in accordance with 13 CFR §§ 314.4 (“Unauthorized use of property”) and 314.5 (“Federal share”), as the same may be amended from time to time.

7. Disposal of Real Property

- a. During the estimated useful life of the Project, if EDA and the Recipient determine that property acquired or improved in whole or in part with Award funds is no longer needed for the original purposes of this Award, EDA may, in its discretion, approve use of the property in other Federal grant programs or in programs that have purposes consistent with those authorized by PWEDA and 13 CFR chapter III. *See* 13 CFR § 314.3(b) (“Authorized use of property”).
- b. When property is not authorized for other uses as provided in section H.7.a above, EDA will provide disposition instructions to the Recipient, which may include directing the Recipient to sell the property and remit the Federal Share of the sales proceeds to EDA.

8. Reporting on Property.

- a. *Real Property status reports and requests for disposition.* In accordance with 2 CFR § 200.330 “Reporting on real property”, the Recipient must submit reports using Form SF-429 (Real Property Status Report), including appropriate attachments, at least annually on the status of real property in which EDA retains an interest, which generally includes real property acquired or improved under the award, unless such interest extends 15 years or longer. If EDA’s interest is for a period of 15 years or longer, unless otherwise specified in a specific award condition, the Recipient must submit an annual report for the

first three years of the award and thereafter submit a real property status report every five years. If the Recipient wishes to dispose of real property acquired or improved under an EDA award, the Recipient must request disposition instructions, including the submission of Form SF-429, with appropriate attachments, from the Grants Officer in accordance with 2 CFR 200.311(c).

- b. *Tangible Personal Property status reports and requests for dispositions.* The Recipient must submit periodic reports as specified in the terms of the Award using Form SF-428 (Tangible Personal Property Report), including appropriate attachments thereto, concerning tangible personal property that is Federally owned or tangible personal property in which EDA retains an interest. In addition, if the Recipient wishes to dispose of tangible personal property acquired or improved under an EDA award, the Recipient must request disposition instructions, including the submission of Form SF-428, with appropriate attachments, from the Grants Officer in accordance with 2 CFR 200.313(e).

See also section A.01.d of the DOC Standard Terms and Conditions, which are incorporated in Part III of these EDA Construction STCs.

I. Environmental Requirements

1. **General.** In addition to the environmental statutes, executive orders, and requirements set forth in section G.04 of the DOC Standard Terms and Conditions “Environmental Requirements,” which are incorporated in Part III of these EDA Construction STCs, the Recipient must comply with the following:
 - a. **Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. §§ 4371-4375).** Federally supported public works facilities and activities that affect the environment must be implemented in compliance with policies established under existing law.
 - b. **The Lead-Based Paint Poisoning Prevention Act (42 U.S.C. § 4821 *et seq.*).** Use of lead-based paint in residential structures improved with Federal assistance is prohibited.
 - c. **The Farmland Protection Policy Act (7 U.S.C. §§ 4201–4209).** Projects are subject to review under this Act if they may irreversibly directly or indirectly convert farmland, including forest land, pastureland, cropland, or other land, to nonagricultural use.
 - d. **The Noise Control Act of 1972 (42 U.S.C. § 4901 *et seq.*).** Federally supported facilities and activities must comply with Federal, State, interstate, and local requirements respecting control and abatement of environmental noise to the same extent that any person is subject to such requirements.
 - e. **The Native American Graves Protection and Repatriation Act (25 U.S.C. § 3001 *et seq.*).** This Act provides a process for returning certain Native American cultural items to lineal descendants, culturally affiliated Indian tribes, and Native Hawaiian organizations.
2. **Compliance with Other Applicable Environmental Requirements**

The Recipient agrees to promptly notify the Grants Officer in writing of any environmental requirement or restriction, regulatory or otherwise, with which it must comply. Before Project Closeout and final disbursement of Award funds, the Recipient further agrees to provide evidence

satisfactory to the Grants Officer that any required environmental remediation has been completed: (1) in compliance with all applicable Federal, State and local regulations; and (2) in accordance with any legally enforceable restrictions related to environmental restriction on the property such as environmental easements, deed restrictions, no further action determinations, or voluntary cleanup certifications. Compliance with said laws or restrictions must be included in any contract documents for Project construction. The Recipient must certify compliance before final disbursement of grant funds.

J. American-Made Equipment and Products

Recipients are hereby notified that they are encouraged, to the greatest extent practicable, to purchase American-made equipment and products with funding provided under this Award.

See also section G.05.a (Buy-American Preferences) of the DOC Standard Terms and Conditions, which are incorporated in Part III of these EDA Construction STCs.

**PART III:
DEPARTMENT OF COMMERCE
STANDARD TERMS & CONDITIONS**

The DOC Standard Terms and Conditions dated November 12, 2020 are incorporated herein by reference herein as Part III of these EDA Construction STCs.

In the event of a conflict between Parts I or II of these EDA Construction STCs and Part III, which incorporates the DOC Standard Terms and Conditions, Parts I and II will control.

DEPARTMENT OF COMMERCE
FINANCIAL ASSISTANCE
STANDARD TERMS AND CONDITIONS



DEPARTMENT OF COMMERCE
FINANCIAL ASSISTANCE STANDARD TERMS AND CONDITIONS

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PREFACE

This document sets out the standard terms and conditions (ST&Cs) applicable to this U.S. Department of Commerce (DOC or Commerce) financial assistance award (hereinafter referred to as the DOC ST&Cs or Standard Terms). A non-Federal entity¹ receiving a DOC financial assistance award must, in addition to the assurances made as part of the application, comply and require each of its subrecipients, contractors, and subcontractors employed in the completion of the project to comply with all applicable statutes, regulations, executive orders (E.O.s), Office of Management and Budget (OMB) circulars, provisions of the OMB Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (codified at 2 C.F.R. Part 200) (OMB Uniform Guidance), provisions of these Standard Terms, and any other terms and conditions incorporated into this DOC financial assistance award. In addition, unless otherwise provided by the terms and conditions of this DOC financial assistance award, Subparts A through E of 2 C.F.R. Part 200 and the Standard Terms are applicable to for-profit entities, foreign public entities and to foreign organizations that carry out a DOC financial assistance award.²

This award is subject to the laws and regulations of the United States. Any inconsistency or conflict in terms and conditions specified in the award will be resolved according to the following order of precedence: federal laws and regulations, applicable notices published in the *Federal Register*, E.O.s, OMB circulars, DOC ST&Cs, agency standard award conditions (if any), and specific award conditions. A specific award condition may amend or take precedence over a Standard Term on a case-by-case basis, when indicated by the specific award condition.

Some of the Standard Terms herein contain, by reference or substance, a summary of the pertinent statutes, regulations published in the *Federal Register* or Code of Federal Regulations (C.F.R.), E.O.s, OMB circulars, or the certifications and assurances provided by applicants through Standard Forms (*e.g.*, SF-424s) or through DOC forms (*e.g.* Form CD-511). To the extent that it is a summary, such Standard Term provision is not in derogation of, or an amendment to, any such statute, regulation, E.O., OMB circular, certification, or assurance.

¹ Note that the OMB Uniform Guidance uses the term “non-Federal entity” to generally refer to an entity that carries out a Federal award as a recipient or subrecipient. Because some of the provisions of these DOC ST&Cs apply to recipients rather than subrecipients, or vice versa, for clarity, these DOC ST&Cs use the terms “non-Federal entity,” “recipient,” and “subrecipient” consistent with their meanings in the OMB Uniform Guidance. In addition, the OMB Uniform Guidance uses the term “pass-through entity” to refer to a non-Federal entity that makes a subaward. As defined at 2 C.F.R. § 200.1:

“Non-Federal entity” is “a state, local government, Indian tribe, institution of higher education (IHE), or nonprofit organization that carries out a Federal award as a recipient or subrecipient.”

“Recipient” is “an entity, usually but not limited to non-Federal entities, that receives a Federal award directly from a Federal awarding agency. The term recipient does not include subrecipients or individuals that are beneficiaries of the award.”

“Subrecipient” is “an entity, usually but not limited to non-Federal entities, that receives a subaward from a pass-through entity to carry out part of a Federal award; but does not include an individual that is a beneficiary of such award. A subrecipient may also be a recipient of other Federal awards directly from a Federal awarding agency.”

“Pass-through entity” is “a non-Federal entity that provides a subaward to a subrecipient to carry out part of a Federal program.”

² See 2 C.F.R. § 200.1 for the definitions of “foreign public entity” and “foreign organization.”

DOC commenced implementation of the Research Terms and Conditions (RT&Cs) for Federal awards effective October 1, 2017; the RT&Cs address and implement the Uniform Guidance issued by OMB. For awards designated on the Form CD-450 (Financial Assistance Award) as Research, both the DOC ST&Cs and the RT&Cs as implemented by DOC apply to the award. The RT&Cs as well as the DOC implementation statement, agency specific requirements, prior approval matrix, subaward requirements, and national policy requirements are posted on the National Science Foundation's website – <https://www.nsf.gov/awards/managing/rtc.jsp>. The DOC ST&Cs and the RT&Cs are generally intended to harmonize with each other; however, where the DOC ST&Cs and the RT&Cs differ in a Research award, the RT&Cs prevail, unless otherwise indicated in a specific award condition.

A. PROGRAMMATIC REQUIREMENTS

.01 Reporting Requirements

a. Recipients must submit all reports as required by DOC, electronically or, if unable to submit electronically, in hard copy, as outlined below and as may be supplemented by the terms and conditions of a specific DOC award.

b. Performance (Technical) Reports. Recipients must submit performance (technical) reports to the Program Officer. Performance (technical) reports should be submitted in the same frequency as the Form SF-425 (Federal Financial Report), unless otherwise directed by the Grants Officer.

1. Performance (technical) reports must contain the information prescribed in 2 C.F.R. § 200.329 (Monitoring and reporting program performance), unless otherwise specified in the award conditions.

2. As appropriate and in accordance with the format provided by the Program Officer (or other OMB-approved information collections, including the Research Program Performance Report [RPPR] as adopted by DOC for use in research awards), recipients are required to relate financial data to the performance accomplishments of this Federal award. When applicable, recipients must also provide cost information to demonstrate cost effective practices (e.g., through unit cost data). The recipient's performance will be measured in a way that will help DOC to improve program outcomes, share lessons learned, and spread the adoption of best or promising practices. As described in 2 C.F.R. § 200.211 (Information contained in a Federal award), DOC will identify the timing and scope of expected performance by the recipient as related to the outcomes intended to be achieved by the Federal program.

3. Recipients (or pass-through entities as applicable) must submit a final performance report within 120 calendar days after the expiration of the period of performance. The subrecipient is required to submit its final performance report to the pass-through entity within 90 calendar days unless an extension has been granted.

c. Financial Reports. In accordance with 2 C.F.R. § 200.328 (Financial reporting), the recipient must submit a Form SF-425 (Federal Financial Report) or any successor form on a semi-annual basis for the periods ending March 31 and September 30, or any portion thereof, unless otherwise specified in a specific award condition. Reports must be submitted to DOC as directed by the Grants Officer, in accordance with the award conditions and are due no later than 30 calendar days following the end of each reporting period. Recipients (or pass-through entities as applicable) must submit a final Form SF-425 within 120 calendar days after the expiration of the period of performance. The subrecipient is required to submit its financial report to the pass-through entity within 90 calendar days unless an extension has been granted. A recipient may submit a final financial report in lieu of an interim financial report due at the end of the period of performance (*e.g.*, in lieu of submitting a financial report for the last semi-annual or other reporting under an award, a recipient may submit a final (cumulative) financial report covering the entire award period).

d. Real Property, Tangible Personal Property and Intangible Property Reports and Requests for Dispositions. Unless otherwise required by the terms and conditions of a DOC financial assistance award, where real property, tangible personal property or intangible property is acquired or improved (in the case of real property or tangible personal property), or produced or acquired (in the case of intangible property), pursuant to a DOC award, non-Federal entities are required to submit the following real property, tangible personal property and intangible property reports (as appropriate):

1. Real Property Status Reports and Requests for Dispositions: Non-Federal entities must submit reports using Form SF-429 (Real Property Status Report) or any successor form, including appropriate attachments thereto, at least annually disclosing the status of real property that is Federally-owned property or real property in which the Federal Government retains a Federal Interest, unless the Federal Interest in the real property extends 15 years or longer. In cases where the Federal Interest attached is for a period of 15 years or more, the DOC or pass-through entity, at its option, may require the non-Federal entity to report at various multi-year frequencies (*e.g.*, every two years or every three years, not to exceed a five-year reporting period; or, the DOC or pass-through entity may require annual reporting for the first three years of a Federal award and thereafter require reporting every five years). In addition, DOC or a pass-through entity may require a non-Federal entity to submit Form SF-429, with appropriate attachments, relating to a non-Federal entity's request to acquire, improve or contribute real property under a DOC financial assistance award.

Non-Federal entities wishing to dispose of real property acquired or improved, in whole or in part, pursuant to a DOC award must request disposition instructions, including the submission of Form SF-429, with appropriate attachments, from the Grants Officer in accordance with the requirements set forth in 2 C.F.R. § 200.311(c). *See also* the real property standards set forth in Section C. of these Standard Terms (Property Standards).

2. Tangible Personal Property Status Reports and Requests for Dispositions: DOC or a pass-through entity may also require a non-Federal entity to submit periodic reports using Form SF-428 (Tangible Personal Property Report) or any successor form, including appropriate attachments thereto, concerning tangible personal property that is Federally-owned or tangible personal property in which the Federal Government retains an interest. In

addition, DOC or a pass-through entity may require a non-Federal entity to submit Form SF-428 in connection with a non-Federal entity's request to dispose of tangible personal property acquired under a DOC financial assistance award. Non-Federal entities wishing to dispose of tangible personal property acquired or improved, in whole or in part, pursuant to a DOC award must request disposition instructions, including the submission of Form SF-428, with appropriate attachments, from the Grants Officer in accordance with the requirements set forth in 2 C.F.R. § 200.313(e). *See also* the tangible property standards set forth in Section C. of these Standard Terms (Property Standards).

3. Intangible Property Status Reports and Requests for Dispositions: The specific requirements governing the development, reporting, and disposition of rights to intangible property, including inventions and patents resulting from DOC awards, are set forth in 37 C.F.R. Part 401, which is hereby incorporated by reference into this award. Non-Federal entities are required to submit their disclosures, elections, and requests for waiver from any requirement for substantial U.S. manufacture, electronically using the Interagency Edison extramural invention reporting system (iEdison) at www.iedison.gov. Non-Federal entities may obtain a waiver of this electronic submission requirement by providing to the Grants Officer compelling reasons for allowing the submission of paper reports. When no longer needed for the originally authorized purpose, disposition of the intangible property must occur in accordance with the provisions in 2 C.F.R. § 200.313(e). *See also* the intangible property standards set forth in Section C. of these Standard Terms (Property Standards).

e. Subawards and Executive Compensation Reports. For reporting requirements on subawards and Executive Compensation, see paragraph G.05.o of these Standard Terms (The Federal Funding Accountability and Transparency Act (FFATA) (31 U.S.C. § 6101 note)).

f. Recipient Integrity and Performance Matters. For reporting requirements pertaining to integrity and performance matters, see paragraph G.05.p of these Standard Terms (Recipient Integrity and Performance Matters (Appendix XII to 2 C.F.R. Part 200)).

g. Research Performance Progress Reports. All research awards shall submit the Research Performance Progress Report (RPPR) in accordance with instructions set forth in the following link: [RPPR Instructions](#).

.02 Revisions of Program Plans

In accordance with 2 C.F.R. § 200.308 (Revision of budget and program plans) and 2 C.F.R. § 200.407 (Prior written approval (prior approval)), the recipient must obtain prior written approval from the DOC Grants Officer for certain proposed programmatic change requests, unless otherwise provided by the terms and conditions of a DOC award. Requests for prior approval for changes to program plans must be submitted to the Federal Program Officer (or electronically for awards administered through Grants Online). Requests requiring prior DOC approval are not effective unless and until approved in writing by the DOC Grants Officer.

.03 Other Federal Awards with Similar Programmatic Activities

The recipient must immediately provide written notification to the DOC Program Officer and the DOC Grants Officer if, subsequent to receipt of the DOC award, other financial assistance is received to support or fund any portion of the scope of work incorporated into the DOC award. DOC will not pay for costs that are funded by other sources.

.04 Prohibition against Assignment by a Non-Federal Entity

A non-Federal entity must not transfer, pledge, mortgage, assign, encumber or hypothecate a DOC financial assistance award or subaward, or any rights to, interests therein or claims arising thereunder, to any party or parties, including but not limited to banks, trust companies, other financing or financial institutions, or any other public or private organizations or individuals without the express prior written approval of the DOC Grants Officer or the pass-through entity (which, in turn, may need to obtain prior approval from the DOC Grants Officer).

.05 Disclaimer Provisions

a. The United States expressly disclaims all responsibility or liability to the non-Federal entity or third persons (including but not limited to contractors) for the actions of the non-Federal entity or third persons resulting in death, bodily injury, property damages, or any other losses resulting in any way from the performance of this award or any subaward, contract, or subcontract under this award.

b. The acceptance of this award or any subaward by the non-Federal entity does not in any way constitute an agency relationship between the United States and the non-Federal entity or the non-Federal entity's contractors or subcontractors.

.06 Unsatisfactory Performance or Non-Compliance with Award Provisions

a. Failure to perform the work in accordance with the terms of the award and maintain satisfactory performance as determined by DOC may result in the imposition of additional award conditions pursuant to 2 C.F.R. § 200.208 (Specific conditions) or other appropriate enforcement action as specified in 2 C.F.R. § 200.339 (Remedies for noncompliance).

b. Failure to comply with the provisions of an award will be considered grounds for appropriate enforcement action pursuant to 2 C.F.R. § 200.339 (Remedies for noncompliance), including but not limited to: the imposition of additional award conditions in accordance with 2 C.F.R. § 200.208 (Specific conditions); temporarily withholding award payments pending the correction of the deficiency; changing the payment method to reimbursement only; the disallowance of award costs and the establishment of an accounts receivable; wholly or partially suspending or terminating an award; initiating suspension or debarment proceedings in accordance with 2 C.F.R. Parts 180 and 1326; and such other remedies as may be legally available.

c. 2 C.F.R. §§ 200.340 (Termination) through 200.343 (Effects of suspension and termination) apply to an award that is terminated prior to the end of the period of performance

due to the non-federal entity's material failure to comply with the award terms and conditions. In addition, the failure to comply with the provisions of a DOC award may adversely impact the availability of funding under other active DOC or Federal awards and may also have a negative impact on a non-Federal entity's eligibility for future DOC or Federal awards.

B. FINANCIAL REQUIREMENTS

.01 Financial Management

a. In accordance with 2 C.F.R. § 200.302(a) (Financial Management), each State must expend and account for the Federal award in accordance with State laws and procedures for expending and accounting for the State's own funds. In addition, the State's and any other non-Federal entity's financial management systems, including records documenting compliance with Federal statutes, regulations, and the terms and conditions of the Federal award, must be sufficient to permit the preparation of reports required by general and program-specific terms and conditions; and the tracing of funds to a level of expenditures adequate to establish that such funds have been used in accordance with Federal statutes, regulations, and the terms and conditions applicable to the Federal award. *See also* 2 C.F.R. § 200.450 (Lobbying) for additional management requirements to verify that Federal funds are not used for unallowable lobbying costs.

b. The financial management system of each non-Federal entity must provide all information required by 2 C.F.R. § 200.302(b). *See also* 2 C.F.R. §§ 200.334 (Retention requirements for records); 200.335 (Requests for transfer of records); 200.336 (Methods for collection, transmission and storage of information); 200.337 (Access to records); and 200.338 (Restrictions on public access to records).

.02 Award Payments

a. Consistent with 2 C.F.R. § 200.305(a) (Federal payment), for States, payments are governed by Treasury-State Cash Management Improvement Act (CMIA) agreements and default procedures codified at 31 C.F.R. Part 205 (Rules and Procedures for Efficient Federal-State Funds Transfers) and Treasury Financial Manual Volume I, 4A-2000 (Overall Disbursing Rules for All Federal Agencies).

b. Consistent with 2 C.F.R. § 200.305(b), for non-Federal entities other than States, payment methods must minimize the amount of time elapsing between the transfer of funds from the U.S. Treasury or the pass-through entity and the disbursement by the non-Federal entity.

1. The Grants Officer determines the appropriate method of payment and, unless otherwise stated in a specific award condition, the advance method of payment must be authorized. Advances must be limited to the minimum amounts needed and be timed to be in accordance with the actual, immediate cash requirements of the non-Federal entity in carrying out the purpose of the approved program or project. Unless otherwise provided by the terms and conditions of a DOC award, non-Federal entities must time advance payment requests so that Federal funds are on hand for a maximum of 30 calendar days before being disbursed by the

non-Federal entity for allowable award costs.

2. If a non-Federal entity demonstrates an unwillingness or inability to establish procedures that will minimize the time elapsing between the transfer of funds and disbursement by the non-Federal entity or if a non-Federal entity otherwise fails to continue to qualify for the advance method of payment, the Grants Officer or the pass-through entity may change the method of payment to reimbursement only.

c. Unless otherwise provided for in the award terms, payments from DOC to recipients under this award will be made using the Department of Treasury's Automated Standard Application for Payment (ASAP) system. Under the ASAP system, payments are made through preauthorized electronic funds transfers directly to the recipient's bank account, in accordance with the requirements of the Debt Collection Improvement Act of 1996. To receive payments under ASAP, recipients are required to enroll with the Department of Treasury, Financial Management Service, Regional Financial Centers, which allows them to use the on-line and Voice Response System (VRS) method of withdrawing funds from their ASAP established accounts. The following information will be required to make withdrawals under ASAP:

1. ASAP account number – the Federal award identification number found on the cover sheet of the award;
2. Agency Location Code (ALC); and
3. Region Code.

d. Recipients enrolled in the ASAP system do not need to submit a Form SF-270 (Request for Advance or Reimbursement) for payments relating to their award. Awards paid under the ASAP system will contain a specific award condition, clause, or provision describing enrollment requirements and any controls or withdrawal limits set in the ASAP system.

e. When the Form SF-270 or successor form is used to request payment, the recipient must submit the request no more than monthly, and advances must be approved for periods to cover only expenses reasonably anticipated over the next 30 calendar days. Prior to receiving payments via the Form SF-270, the recipient must complete and submit to the Grants Officer the Form SF-3881 (ACH Vendor Miscellaneous Payment Enrollment Form) or successor form along with the initial Form SF-270. Form SF-3881 enrollment must be completed before the first award payment can be made via a Form SF-270 request.

f. The Federal award identification number must be included on all payment-related correspondence, information, and forms.

g. Non-Federal entities receiving advance award payments must adhere to the depository requirements set forth in 2 C.F.R. §§ 200.305(b)(7) through (b)(11). Interest amounts up to \$500 per non-Federal entity's fiscal year may be retained by the non-Federal entity for administrative expenses.

.03 Federal and Non-Federal Sharing

a. Awards that include Federal and non-Federal sharing incorporate a budget consisting of shared allowable costs. If actual allowable costs are less than the total approved budget, the Federal and non-Federal cost shares must be calculated by applying the approved Federal and non-Federal cost share ratios to actual allowable costs. If actual allowable costs exceed the total approved budget, the Federal share must not exceed the total Federal dollar amount authorized by the award.

b. The non-Federal share, whether in cash or third-party in-kind contributions, is to be paid out at the same general rate as the Federal share. Exceptions to this requirement may be granted by the Grants Officer based on sufficient documentation demonstrating previously determined plans for, or later commitment of, cash or third-party in-kind contributions. In any case, the recipient must meet its cost share commitment as set forth in the terms and conditions of the award; failure to do so may result in the assignment of specific award conditions or other further action as specified in Standard Term A.06 (Unsatisfactory Performance or Non-Compliance with Award Provisions). The non-Federal entity must create and maintain sufficient records justifying all non-Federal sharing requirements to facilitate questions and audits; see Section D of these Standard Terms (Audits), for audit requirements. *See* 2 C.F.R. § 200.306 for additional requirements regarding cost sharing.

.04 Budget Changes and Transfer of Funds among Categories

a. Recipients are required to report deviations from the approved award budget and request prior written approval from DOC in accordance with 2 C.F.R. § 200.308 (Revision of budget and program plans) and 2 C.F.R. § 200.407 (Prior written approval (prior approval)). Requests for such budget changes must be submitted to the Grants Officer (or electronically for awards serviced through Grants Online) who will notify the recipient of the final determination in writing. Requests requiring prior DOC approval do not become effective unless and until approved in writing by the DOC Grants Officer.

b. In accordance with 2 C.F.R. § 200.308(f), transfers of funds by the recipient among direct cost categories are permitted for awards in which the Federal share of the project is equal to or less than the simplified acquisition threshold. For awards in which the Federal share of the project exceeds the simplified acquisition threshold, transfers of funds among direct cost categories must be approved in writing by the Grants Officer when the cumulative amount of such direct costs transfers exceeds 10 percent of the total budget as last approved by the Grants Officer. The 10 percent threshold applies to the total Federal and non-Federal funds authorized by the Grants Officer at the time of the transfer request. This is the accumulated amount of Federal funding obligated to date by the Grants Officer along with any non-Federal share. The same requirements apply to the cumulative amount of transfer of funds among programs, functions, and activities. This transfer authority does not authorize the recipient to create new budget categories within an approved budget without Grants Officer approval. Any transfer that causes any Federal appropriation, or part thereof, to be used for an unauthorized purpose is not and will not be permitted. In addition, this provision does not prohibit the recipient from requesting Grants Officer approval for revisions to the budget. *See* 2 C.F.R. § 200.308 (Revision

of budget and program plans) (as applicable) for specific requirements concerning budget revisions and transfer of funds between budget categories.

.05 Program Income

Unless otherwise indicated in the award terms, program income may be used for any required cost sharing or added to the project budget, consistent with 2 C.F.R. § 200.307 (Program income).

.06 Indirect or Facilities and Administrative Costs

a. Indirect costs (or facilities and administration costs (F&A)) for major institutions of higher education and major nonprofit organizations can generally be defined as costs incurred for a common or joint purpose benefitting more than one cost objective, and not readily assignable to the cost objectives specifically benefited, without effort disproportionate to the results achieved. Indirect costs will not be allowable charges against an award unless permitted under the award and specifically included as a line item in the award's approved budget.

b. Unrecovered indirect costs, including unrecovered indirect costs on cost sharing or matching, may be included as part of cost sharing or matching as allowed under 2 C.F.R. § 200.306(c) (Cost sharing or matching) or the terms and conditions of a DOC award.

c. Cognizant Agency for Indirect (F&A) Costs. OMB established the cognizant agency concept, under which a single agency represents all others in dealing with non-Federal entities in common areas. The cognizant agency for indirect costs reviews and approves non-Federal entities' indirect cost rates. In accordance with Appendices III – VII to 2 C.F.R. Part 200 the cognizant agency for indirect costs reviews and approves non-Federal entities' indirect cost rates. With respect to for-profit organizations, the term cognizant Federal agency generally is defined as the agency that provides the largest dollar amount of negotiated contracts, including options. *See* 48 C.F.R. § 42.003. If the only Federal funds received by a commercial organization are DOC award funds, then DOC becomes the cognizant Federal agency for indirect cost negotiations.

1. General Review Procedures Where DOC is the Cognizant Agency.

i. Within 90 calendar days of the award start date, the recipient must submit to the Grants Officer any documentation (indirect cost proposal, cost allocation plan, etc.) necessary to allow DOC to perform the indirect cost rate proposal review. Below are two sources available for guidance on how to put an indirect cost plan together:

- (A) Department of Labor: <https://www.dol.gov/oasam/boc/dcd/np-comm-guide.htm>
or
- (B) Department of the Interior: <https://www.doi.gov/ibc/services/finance/indirect-Cost-Services/>.

ii. The recipient may use the rate proposed in the indirect cost plan as a provisional rate until the DOC provides a response to the submitted plan.

- iii. The recipient is required to annually submit indirect cost proposals no later than six months after the recipient's fiscal year end, except as otherwise provided by 2 C.F.R. § 200.414(g).
2. When DOC is not the oversight or cognizant Federal agency, the recipient must provide the Grants Officer with a copy of a negotiated rate agreement or a copy of the transmittal letter submitted to the cognizant or oversight Federal agency requesting a negotiated rate agreement within 30 calendar days of receipt of a negotiated rate agreement or submission of a negotiated rate proposal.
3. If the recipient is proposing indirect costs as part of a project budget, but is not required to have a negotiated rate agreement pursuant to 2 C.F.R. Part 200, Appendix VII, Paragraph D.1.b (*i.e.*, a governmental department or agency that receives \$35 million or less in direct Federal funding), the recipient may be required to provide the Grants Officer with a copy of its Certificate of Indirect Costs as referenced in 2 C.F.R. Part 200, Appendix VII, Paragraph D.3. or such other documentation, acceptable in form and substance to the Grants Officer, sufficient to confirm that proposed indirect costs are calculated and supported by documentation in accordance with 2 C.F.R. Part 200, Appendix VII. In cases where the DOC is the recipient's cognizant Federal agency, the DOC reserves the right, pursuant to 2 C.F.R. Part 200, Appendix VII, Paragraph D.1.b, to require the recipient to submit its indirect cost rate proposal for review by DOC.
- d. If the recipient fails to submit required documentation to DOC within 90 calendar days of the award start date, the Grants Officer may amend the award to preclude the recovery of any indirect costs under the award. If the DOC, oversight, or cognizant Federal agency determines there is a finding of good and sufficient cause to excuse the recipient's delay in submitting the documentation, an extension of the 90-day due date may be approved by the Grants Officer.
- e. The maximum dollar amount of allocable indirect costs for which DOC will reimburse the recipient is the lesser of:
 1. The line item amount for the Federal share of indirect costs contained in the approved award budget, including all budget revisions approved in writing by the Grants Officer; or
 2. The Federal share of the total indirect costs allocable to the award based on the indirect cost rate approved by the cognizant agency for indirect costs and applicable to the period in which the cost was incurred, in accordance with 2 C.F.R. 200 Appendix III, C.7, provided that the rate is approved on or before the award end date.
- f. In accordance with 2 CFR § 200.414(c)(3), DOC set forth policies, procedures, and general decision-making criteria for deviations from negotiated indirect cost rates. These policies and procedures are applicable to all Federal financial assistance programs awarded and administered by DOC bureaus as Federal awarding agencies and may be found at http://www.osec.doc.gov/oam/grants_management/policy/documents/FAM%202015-02.pdf.

g. In accordance with 2 CFR § 200.414(g), any non-Federal entity that has a negotiated indirect cost rate may apply to the entity's cognizant agency for indirect costs for a one-time extension of a currently negotiated indirect cost rate for a period of up to four years, reducing the frequency of rate calculations and negotiations between an institution and its cognizant agency.

h. In accordance with 2 CFR § 200.414(f), any non-Federal entity that does not have a current negotiated (including provisional) rate, except for those non-Federal entities described in paragraph D.1.b of Appendix VII to 2 CFR Part 200, may elect to charge a de minimis rate of 10 percent of modified total direct costs. No documentation is required to justify the 10 percent de minimis indirect cost rate.

.07 Incurring Costs or Obligating Federal Funds Before and After the Period of Performance

a. In accordance with 2 C.F.R. § 200.309 (Modifications to Period of Performance) and the terms and conditions of a DOC award, a non-Federal entity may charge to the Federal award only allowable costs incurred during the period of performance, which is established in the award document. As defined at 2 C.F.R. § 200.1, the "period of performance" means the total estimated time interval between the start of an initial Federal award and the planned end date, which may include one or more funded portions, or budget periods. Identification of the Period of Performance in the Federal award per § 200.211(b)(5) does not commit the awarding agency to fund the award beyond the currently approved budget period." The period of performance may sometimes be referred to as the project period or award period. This Standard Term is subject to exceptions for allowable costs pertaining to: (i) pre-award costs (*see* 2 C.F.R. § 200.458); (ii) publication and printing costs (*see* 2 C.F.R. § 200.461); and administrative costs incurred relating to the close-out of an award (*see* 2 C.F.R. § 200.344).

b. Reasonable, necessary, allowable and allocable administrative award closeout costs are authorized for a period of up to 120 calendar days following the end of the period of performance. For this purpose, award closeout costs are those strictly associated with close-out activities and are typically limited to the preparation of final progress, financial, and required project audit reports, unless otherwise approved in writing by the Grants Officer. A non-Federal entity may request an extension of the 120-day closeout period, as provided in 2 C.F.R. § 200.344 (Closeout).

c. Unless authorized by a specific award condition, any extension of the period of performance may only be authorized by the Grants Officer in writing. This is not a delegable authority. Verbal or written assurances of funding from anyone other than the Grants Officer does not constitute authority to obligate funds for programmatic activities beyond the end of the period of performance.

d. The DOC has no obligation to provide any additional prospective funding. Any amendment of the award to increase funding and to extend the period of performance is at the sole discretion of DOC.

.08 Tax Refunds

The non-Federal entity shall contact the Grants Officer immediately upon receipt of the refund of any taxes, including but not limited to Federal Insurance Contributions Act (FICA) taxes, Federal Unemployment Tax Act (FUTA) taxes, or Value Added Taxes (VAT) that were allowed as charges to a DOC award, regardless of whether such refunds are received by the non-Federal entity during or after the period of performance. The Grants Officer will provide written disposition instructions to the non-Federal entity, which may include the refunded taxes being credited to the award as either a cost reduction or a cash refund, or may allow the non-Federal entity to use such refunds for approved activities and costs under a DOC award. *See* 2 C.F.R. § 200.470 (Taxes (including Value Added Tax)).

.09 Internal Controls

Each recipient must comply with standards for internal controls described at 2 C.F.R. § 200.303 (Internal controls). The “Standards for Internal Control in the Federal Government” issued by the Comptroller General of the United States referenced in § 200.303 are available online at <http://www.gao.gov/assets/80/76455.pdf> and the “Internal Control Integrated Framework” issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) is available online at [Internal Control Guidance](#).

C. PROPERTY STANDARDS

.01 Standards

Each non-Federal entity must comply with the Property Standards set forth in 2 C.F.R. §§ 200.310 (Insurance coverage) through 200.316 (Property trust relationship).

.02 Real and Personal Property

a. In accordance with 2 C.F.R. § 200.316 (Property trust relationship), real property, equipment, and other personal property acquired or improved with a Federal award must be held in trust by the non-Federal entity as trustee for the beneficiaries of the project or program under which the property was acquired or improved. This trust relationship exists throughout the duration of the property’s estimated useful life, as determined by the Grants Officer in consultation with the Program Office, during which time the Federal Government retains an undivided, equitable reversionary interest in the property (Federal Interest). During the duration of the Federal Interest, the non-Federal entity must comply with all use and disposition requirements and restrictions as set forth in 2 C.F.R. §§ 200.310 (Insurance coverage) through 200.316 (Property trust relationship), as applicable, and in the terms and conditions of the Federal award.

b. The Grants Officer may require a non-Federal entity to execute and to record (as applicable) a statement of interest, financing statement (form UCC-1), lien, mortgage or other public notice of record to indicate that real or personal property acquired or improved in whole or in part with Federal funds is subject to the Federal Interest, and that certain use and disposition

requirements apply to the property. The statement of interest, financing statement (Form UCC 1), lien, mortgage or other public notice must be acceptable in form and substance to the DOC and must be placed on record in accordance with applicable State and local law, with continuances re-filed as appropriate. In such cases, the Grants Officer may further require the non-Federal entity to provide the DOC with a written statement from a licensed attorney in the jurisdiction where the property is located, certifying that the Federal Interest has been protected, as required under the award and in accordance with applicable State and local law. The attorney's statement, along with a copy of the instrument reflecting the recordation of the Federal Interest, must be returned to the Grants Officer. Without releasing or excusing the non-Federal entity from these obligations, the non-Federal entity, by execution of the financial assistance award or by expending Federal financial assistance funds (in the case of a subrecipient), authorizes the Grants Officer and/or program office to file such notices and continuations as it determines to be necessary or convenient to disclose and protect the Federal Interest in the property. The Grants Officer may elect not to release any or a portion of the Federal award funds until the non-Federal entity has complied with this provision and any other applicable award terms or conditions, unless other arrangements satisfactory to the Grants Officer are made.

.03 Intellectual Property Rights

a. General. The rights to any work or other intangible property produced or acquired under a Federal award are determined by 2 C.F.R. § 200.315 (Intangible property). The non-Federal entity owns any work produced or purchased under a Federal award subject to the DOC's royalty-free, nonexclusive, and irrevocable right to obtain, reproduce, publish, or otherwise use the work or authorize others to receive, reproduce, publish, or otherwise use the work for Government purposes.

b. Inventions. Unless otherwise provided by law, the rights to any invention made by a non-Federal entity under a DOC financial assistance award are determined by the Bayh-Dole Act, Pub. L. No. 96-517, as amended, and as codified in 35 U.S.C. § 200 *et seq.*, and modified by E.O. 12591 (52 FR 13414), as amended by E.O. 12618 (52 FR 48661). 35 U.S.C. § 201(h) defines "small business firm" as "a small business concern as defined at section 2 of Public Law 85-536 (15 U.S.C. 632) and implementing regulations of the Administrator of the Small Business Administration." Section 1(b)(4) of E.O. 12591 extended the Bayh-Dole Act to non-Federal entities "regardless of size" to the extent permitted by law. The specific requirements governing the development, reporting, and disposition of rights to inventions and patents resulting from Federal awards are described in more detail in 37 C.F.R. Part 401, which implements 35 U.S.C. 202 through 204 and includes standard patent rights clauses in 37 C.F.R. § 401.14, which is hereby incorporated by reference into this award.

The Bayh-Dole regulations set forth in 37 C.F.R. parts 401 and 404 were amended by 83 FR 15954, with an effective date of May 14, 2018 (Amended Bayh-Dole Regulations). The Amended Bayh-Dole Regulations apply to all new financial assistance awards issued on or after May 14, 2018. The Amended Bayh-Dole Regulations do not apply to financial assistance awards issued prior to May 14, 2018, including amendments made to such awards, unless an award amendment includes a specific condition incorporating the Amended Bayh-Dole Regulations into the terms and conditions of the subject award.

1. Ownership. A non-Federal entity may have rights to inventions in accordance with 37 C.F.R. Part 401. These requirements are technical in nature and non-Federal entities are encouraged to consult with their Intellectual Property counsel to ensure the proper interpretation of and adherence to the ownership rules. Unresolved questions pertaining to a non-Federal entities' ownership rights may further be addressed to the Grants Officer.

2. Responsibilities - iEdison. The non-Federal entity must comply with all the requirements of the standard patent rights clause and 37 C.F.R. Part 401, including the standard patent rights clause in 37 C.F.R. § 401.14. Non-Federal entities are required to submit their disclosures, elections, and requests for waiver from any requirement for substantial U.S. manufacture, electronically using the Interagency Edison extramural invention reporting system (iEdison) at www.iedison.gov. Non-Federal entities may obtain a waiver of this electronic submission requirement by providing the Grants Officer with compelling reasons for allowing the submission of paper reports.

c. Patent Notification Procedures. Pursuant to E.O. 12889 (58 FR 69681), the DOC is required to notify the owner of any valid patent covering technology whenever the DOC or a non-Federal entity, without making a patent search, knows (or has demonstrable reasonable grounds to know) that technology covered by a valid United States patent has been or will be used without a license from the owner. To ensure proper notification, if the non-Federal entity uses or has used patented technology under this award without a license or permission from the owner, the non-Federal entity must notify the Grants Officer.

This notice does not constitute authorization or consent by the Government to any copyright or patent infringement occurring under the award.

d. A non-Federal entity may copyright any work produced under a Federal award, subject to the DOC's royalty-free, nonexclusive, and irrevocable right to obtain, reproduce, publish, or otherwise use the work, or authorize others to do so for Government purposes. Works jointly authored by DOC and non-Federal entity employees may be copyrighted, but only the part of such works authored by the non-Federal entity is protectable in the United States because, under 17 U.S.C. § 105, copyright protection is not available within the United States for any work of the United States Government. On occasion and as permitted under 17 U.S.C. § 105, DOC may require the non-Federal entity to transfer to DOC a copyright in a particular work for Government purposes or when DOC is undertaking primary dissemination of the work.

e. Freedom of Information Act (FOIA). In response to a FOIA request for research data relating to published research findings (as defined by 2 C.F.R. § 200.315(e)(2)) produced under a Federal award that were used by the Federal government in developing an agency action that has the force and effect of law, the DOC will request, and the non-Federal entity must provide, within a reasonable time, the research data so that they can be made available to the public through the procedures established under the FOIA.

D. AUDITS

Under the Inspector General Act of 1978, as amended, 5 U.S.C. App. 3, §§ 1 *et seq.*, an audit of the award may be conducted at any time. The Inspector General of the DOC, or any of his or her duly authorized representatives, must have the right to access any pertinent books, documents, papers, and records of the non-Federal entity, whether written, printed, recorded, produced, or reproduced by any electronic, mechanical, magnetic, or other process or medium, to make audits, inspections, excerpts, transcripts, or other examinations as authorized by law. This right also includes timely and reasonable access to the non-Federal entity's personnel for interview and discussion related to such documents. *See* 2 C.F.R. § 200.337 (Access to records). When the DOC Office of Inspector General (OIG) requires a program audit on a DOC award, the OIG will usually make the arrangements to audit the award, whether the audit is performed by OIG personnel, an independent accountant under contract with DOC, or any other Federal, State, or local audit entity.

.01 Organization-Wide, Program-Specific, and Project Audits

a. A recipient must, within 90 days of the end of its fiscal year, notify the Grants Officer of the amount of Federal awards, including all DOC and non-DOC awards, that the recipient expended during its fiscal year.

b. Recipients that are subject to the provisions of Subpart F of 2 C.F.R. Part 200 and that expend \$750,000 or more in a year in Federal awards during their fiscal year must have an audit conducted for that year in accordance with the requirements contained in Subpart F of 2 C.F.R. Part 200. Within the earlier of 30 calendar days after receipt of the auditor's report(s), or nine months after the end of the audit period, unless a different period is specified in a program-specific audit guide, a copy of the audit must be submitted electronically to the Federal Audit Clearinghouse (FAC) through the FAC's Internet Data Entry System (IDES) (<https://harvester.census.gov/facides/>). In accordance with 2 C.F.R. § 200.425 (Audit services), the recipient may include a line item in the budget for the allowable costs associated with the audit, which is subject to the approval of the Grants Officer.

c. Unless otherwise specified in the terms and conditions of the award, entities that are not subject to Subpart F of 2 C.F.R. Part 200 (e.g., for-profit entities, foreign public entities and foreign organizations) and that expend \$750,000 or more in DOC funds during their fiscal year (including both as a recipient and a subrecipient) must submit to the Grants Officer either: (i) a financial related audit of each DOC award or subaward in accordance with Generally Accepted Government Auditing Standards (GAGAS); or (ii) a project specific audit for each award or subaward in accordance with the requirements contained in 2 C.F.R. § 200.507. Within the earlier of 30 calendar days after receipt of the auditor's report(s), or nine months after the end of the audit period, unless a different period is specified in a program-specific audit guide, a copy of the audit must be submitted to the Grants Officer. In accordance with 2 C.F.R. § 200.425, the recipient may include a line item in the budget for the allowable costs associated with the audit, which is subject to the approval of the Grants Officer. Entities that are not subject to Subpart F of 2 C.F.R. Part 200 and that expend less than \$750,000 in DOC funds in a given fiscal year are

not required to submit an audit(s) for that year, but must make their award-related records available to DOC or other designated officials for review and audit.

d. Recipients are responsible for compliance with the above audit requirements and for informing the Grants Officer of the status of their audit, including when the relevant audit has been completed and submitted in accordance with the requirements of this section. Failure to provide audit reports within the timeframes specified above may result in appropriate enforcement action, up to and including termination of the award, and may jeopardize eligibility for receiving future DOC awards.

e. In accordance with 2 C.F.R. § 200.332(d)(3), pass-through entities are responsible for issuing a management decision for applicable audit findings pertaining only to the Federal award provided by the pass-through entity to a subrecipient.

.02 Audit Resolution Process

a. An audit of the award may result in the disallowance of costs incurred by the recipient and the establishment of a debt (account receivable) due to DOC. For this reason, the recipient should take seriously its responsibility to respond to all audit findings and recommendations with adequate explanations and supporting evidence whenever audit results are disputed.

b. A recipient whose award is audited has the following opportunities to dispute the proposed disallowance of costs and the establishment of a debt:

1. The recipient has 30 calendar days from the date of the transmittal of the draft audit report to submit written comments and documentary evidence.
2. The recipient has 30 calendar days from the date of the transmittal of the final audit report to submit written comments and documentary evidence.
3. The DOC will review the documentary evidence submitted by the recipient and will notify the recipient of the results in an *Audit Resolution Determination Letter*. The recipient has 30 calendar days from the date of receipt of the *Audit Resolution Determination Letter* to submit a written appeal, unless this deadline is extended in writing by the DOC. The appeal is the last opportunity for the recipient to submit written comments and documentary evidence to the DOC to dispute the validity of the audit resolution determination.
4. An appeal of the Audit Resolution Determination does not prevent the establishment of the audit-related debt nor does it prevent the accrual of applicable interest, penalties and administrative fees on the debt in accordance with 15 C.F.R. Part 19. If the Audit Resolution Determination is overruled or modified on appeal, appropriate corrective action will be taken retroactively.
5. The DOC will review the recipient's appeal and notify the recipient of the results in an *Appeal Determination Letter*. After the opportunity to appeal has expired or after the appeal determination has been rendered, DOC will not accept any further documentary evidence from the recipient. No other administrative appeals are available in DOC.

E. DEBTS

.01 Payment of Debts Owed to the Federal Government

a. The non-Federal entity must promptly pay any debts determined to be owed to the Federal Government. Any funds paid to a non-Federal entity in excess of the amount to which the non-Federal entity is finally determined to be entitled under the terms of the Federal award constitute a debt to the Federal government. In accordance with 2 C.F.R. § 200.346 (Collection of amounts due), if not paid within 90 calendar days after demand, DOC may reduce a debt owed to the Federal Government by:

1. Making an administrative offset against other requests for reimbursement;
2. Withholding advance payments otherwise due to the non-Federal entity; or
3. Taking any other action permitted by Federal statute.

The foregoing does not waive any claim on a debt that DOC may have against another entity, and all rights and remedies to pursue other parties are preserved.

b. DOC debt collection procedures are set out in 15 C.F.R. Part 19. In accordance with 2 C.F.R. § 200.346 (Collection of amounts due) and 31 U.S.C. § 3717, failure to pay a debt owed to the Federal Government must result in the assessment of interest, penalties and administrative costs in accordance with the provisions of 31 U.S.C. § 3717 and 31 C.F.R. § 901.9. Commerce entities will transfer any Commerce debt that is delinquent for more than 120 calendar days to the U.S. Department of the Treasury's Financial Management Service for debt collection services, a process known as cross-servicing, pursuant to 31 U.S.C. § 3711(g), 31 C.F.R. § 285.12, and 15 C.F.R. § 19.9. DOC may also take further action as specified in DOC ST&C A.06 (Unsatisfactory Performance or Non-Compliance with Award Provisions). Funds for payment of a debt must not come from other Federally-sponsored programs, and the DOC may conduct on-site visits, audits, and other reviews to verify that other Federal funds have not been used to pay a debt.

.02 Late Payment Charges

a. Interest will be assessed on the delinquent debt in accordance with section 11 of the Debt Collection Act of 1982, as amended (31 U.S.C. § 3717(a)). The minimum annual interest rate to be assessed is the U.S. Department of the Treasury's Current Value of Funds Rate (CVFR). The CVFR is available online at https://www.fiscal.treasury.gov/fsreports/rpt/cvfr/cvfr_home.htm and also published by the Department of the Treasury in the *Federal Register* (<http://www.gpo.gov/fdsys/browse/collection.action?collectionCode=FR>) and in the *Treasury Financial Manual Bulletin*. The assessed rate must remain fixed for the duration of the indebtedness.

b. Penalties will accrue at a rate of not more than six percent per year or such other higher rate as authorized by law.

c. Administrative charges, i.e., the costs of processing and handling a delinquent debt, will be determined by the Commerce entity collecting the debt, as directed by the Office of the Chief Financial Officer and Assistant Secretary for Administration.

.03 Barring Delinquent Federal Debtors from Obtaining Federal Loans or Loan Insurance Guarantees

Pursuant to 31 U.S.C. § 3720B and 31 C.F.R. § 901.6, unless waived by DOC, the DOC is not permitted to extend financial assistance in the form of a loan, loan guarantee, or loan insurance to any person delinquent on a nontax debt owed to a Federal agency. This prohibition does not apply to disaster loans.

.04 Effect of Judgment Lien on Eligibility for Federal Grants, Loans, or Programs

Pursuant to 28 U.S.C. § 3201(e), unless waived by the DOC, a debtor who has a judgment lien against the debtor's property for a debt to the United States is not eligible to receive any grant or loan that is made, insured, guaranteed, or financed directly or indirectly by the United States or to receive funds directly from the Federal Government in any program, except funds to which the debtor is entitled as beneficiary, until the judgment is paid in full or otherwise satisfied.

F. CONFLICT OF INTEREST, CODE OF CONDUCT AND OTHER REQUIREMENTS PERTAINING TO DOC FINANCIAL ASSISTANCE AWARDS, INCLUDING SUBAWARD AND PROCUREMENT ACTIONS

.01 Conflict of Interest and Code of Conduct

a. DOC Conflict of Interest Policy. In accordance with 2 C.F.R. § 200.112 (Conflict of interest), the non-Federal entity must disclose in writing any potential conflict of interest to the DOC or pass-through entity. In addition, a non-Federal entity will establish and maintain written standards of conduct that include safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain in the administration of an award. It is the DOC's policy to maintain the highest standards of conduct and to prevent real or apparent conflicts of interest in connection with DOC financial assistance awards.

b. A conflict of interest generally exists when an interested party participates in a matter that has a direct and predictable effect on the interested party's personal or financial interests. A financial interest may include employment, stock ownership, a creditor or debtor relationship, or prospective employment with the organization selected or to be selected for a subaward. A conflict also may exist where there is an appearance that an interested party's objectivity in performing his or her responsibilities under the project is impaired. For example, an appearance of impairment of objectivity may result from an organizational conflict where, because of other activities or relationships with other persons or entities, an interested party is unable to render

impartial assistance, services or advice to the recipient, a participant in the project or to the Federal Government. Additionally, a conflict of interest may result from non-financial gain to an interested party, such as benefit to reputation or prestige in a professional field. For purposes of the DOC Conflict of Interest Policy, an interested party includes, but is not necessarily limited to, any officer, employee or member of the board of directors or other governing board of a non-Federal entity, including any other parties that advise, approve, recommend, or otherwise participate in the business decisions of the recipient, such as agents, advisors, consultants, attorneys, accountants or shareholders. This also includes immediate family and other persons directly connected to the interested party by law or through a business arrangement.

c. Procurement-related conflict of interest. In accordance with 2 C.F.R. § 200.318 (General procurement standards), non-Federal entities must maintain written standards of conduct covering conflicts of interest and governing the performance of their employees engaged in the selection, award and administration of contracts. *See* paragraph F.04 of these Standard Terms (Requirements for Procurements).

.02 Nonprocurement Debarment and Suspension

Non-Federal entities must comply with the provisions of 2 C.F.R. Part 1326 (Nonprocurement Debarment and Suspension), which generally prohibit entities that have been debarred, suspended, or voluntarily excluded from participating in Federal nonprocurement transactions either through primary or lower tier covered transactions, and which set forth the responsibilities of recipients of Federal financial assistance regarding transactions with other persons, including subrecipients and contractors.

.03 Requirements for Subawards

a. The recipient or pass-through entity must require all subrecipients, including lower tier subrecipients, to comply with the terms and conditions of a DOC financial assistance award, including applicable provisions of the OMB Uniform Guidance (2 C.F.R. Part 200), and all associated Terms and Conditions set forth herein. *See* 2 C.F.R. § 200.101(b)(2) (Applicability to different types of Federal awards), which describes the applicability of 2 C.F.R. Part 200 to various types of Federal awards and §§ 200.331-333 (Subrecipient monitoring and management).

b. The recipient or pass through entity may have more restrictive policies for the RTC ***waived*** prior approvals (no-cost extensions, re-budgeting, etc.) for their subaward recipients. Such restrictive policies must be addressed in their subaward agreements and in accordance with §200.331.

.04 Requirements for Procurements

a. States. Pursuant to 2 C.F.R. § 200.317 (Procurements by states), when procuring property and services under this Federal award, a State must follow the same policies and procedures it uses for procurements from its non-Federal funds. The State must comply with 2 C.F.R. §§ 200.321 (Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms), 200.322 (Domestic preferences for procurements), and

200.323 (Procurement of recovered materials), and ensure that every purchase order or other contract includes any clauses required by 2 C.F.R. § 200.327 (Contract provisions).

b. **Other Non-Federal Entities.** All other non-Federal entities, including subrecipients of a State, must follow the procurement standards in 2 C.F.R. §§ 200.318 (General procurement standards) through 200.327 (Contract provisions) which include the requirement that non-Federal entities maintain written standards of conduct covering conflicts of interest and governing the performance of their employees engaged in the selection, award, and administration of contracts. No employee, officer, or agent may participate in the selection, award, or administration of a contract supported by a Federal award if he or she has a real or apparent conflict of interest.

.05 Whistleblower Protections

This award is subject to the whistleblower protections afforded by 41 U.S.C. § 4712 (Enhancement of contractor protection from reprisal for disclosure of certain information), which generally provide that an employee or contractor (including subcontractors and personal services contractors) of a non-Federal entity may not be discharged, demoted, or otherwise discriminated against as a reprisal for disclosing to a person or body information that the employee reasonably believes is evidence of gross mismanagement of a Federal award, subaward, or a contract under a Federal award or subaward, a gross waste of Federal funds, an abuse of authority relating to a Federal award or subaward or contract under a Federal award or subaward, a substantial and specific danger to public health or safety, or a violation of law, rule, or regulation related to a Federal award, subaward, or contract under a Federal award or subaward. These persons or bodies include:

- a. A Member of Congress or a representative of a committee of Congress.
- b. An Inspector General.
- c. The Government Accountability Office.
- d. A Federal employee responsible for contract or grant oversight or management at the relevant agency.
- e. An authorized official of the Department of Justice or other law enforcement agency.
- f. A court or grand jury.
- g. A management official or other employee of the contractor, subcontractor, or grantee who has the responsibility to investigate, discover, or address misconduct.

Non-Federal entities and contractors under Federal awards and subawards must inform their employees in writing of the rights and remedies provided under 41 U.S.C. § 4712, in the predominant native language of the workforce.

.06 Small Businesses, Minority Business Enterprises and Women's Business Enterprises

In accordance with 2 C.F.R. § 200.321 (Contracting with small and minority businesses, women's business enterprises, and labor surplus area firms), the recipient must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible. DOC encourages non-Federal entities to use small

businesses, minority business enterprises and women's business enterprises in contracts under financial assistance awards. The Minority Business Development Agency within the DOC will assist non-Federal entities in matching qualified minority business enterprises with contract opportunities. For further information visit MBDA's website at <http://www.mbda.gov>. If you do not have access to the Internet, you may contact MBDA via telephone or mail:

U.S. Department of Commerce
Minority Business Development Agency
Herbert C. Hoover Building
14th Street and Constitution Avenue, N.W.
Washington, D.C. 20230
(202) 482-0101

G. NATIONAL POLICY REQUIREMENTS

.01 United States Laws and Regulations

This award is subject to the laws and regulations of the United States. The recipient must comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

.02 Non-Discrimination Requirements

No person in the United States may, on the ground of race, color, national origin, handicap, age, religion, or sex, be excluded from participation in, be denied the benefits of, or be subject to discrimination under, any program or activity receiving Federal financial assistance. The recipient agrees to comply with the non-discrimination requirements below:

a. Statutory Provisions

1. Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d *et seq.*) and DOC implementing regulations published at 15 C.F.R. Part 8 prohibiting discrimination on the grounds of race, color, or national origin under programs or activities receiving Federal financial assistance;
2. Title IX of the Education Amendments of 1972 (20 U.S.C. §§ 1681 *et seq.*) prohibiting discrimination on the basis of sex under Federally assisted education programs or activities;
3. The Americans with Disabilities Act of 1990 (42 U.S.C. §§ 12101 *et seq.*) prohibiting discrimination on the basis of disability under programs, activities, and services provided or made available by State and local governments or instrumentalities or agencies thereto, as well as public or private entities that provide public transportation;
4. Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), and DOC implementing regulations published at 15 C.F.R. Part 8b prohibiting discrimination on the

basis of handicap under any program or activity receiving or benefiting from Federal assistance.

For purposes of complying with the accessibility standards set forth in 15 C.F.R. § 8b.18(c), non-federal entities must adhere to the regulations, published by the U.S. Department of Justice, implementing Title II of the Americans with Disabilities Act (ADA) (28 C.F.R. part 35; 75 FR 56164, as amended by 76 FR 13285) and Title III of the ADA (28 C.F.R. part 36; 75 FR 56164, as amended by 76 FR 13286). The revised regulations adopted new enforceable accessibility standards called the “2010 ADA Standards for Accessible Design” (2010 Standards), which replace and supersede the former Uniform Federal Accessibility Standards for new construction and alteration projects;

5. The Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101 *et seq.*), and DOC implementing regulations published at 15 C.F.R. Part 20 prohibiting discrimination on the basis of age in programs or activities receiving Federal financial assistance; and
6. Any other applicable non-discrimination law(s).

b. Other Provisions

1. Parts II and III of E.O. 11246 (Equal Employment Opportunity, 30 FR 12319),³ which requires Federally assisted construction contracts to include the nondiscrimination provisions of §§ 202 and 203 of E.O. 11246 and Department of Labor regulations implementing E.O. 11246 (41 C.F.R. § 60-1.4(b)).
2. E.O. 13166 (65 FR 50121, Improving Access to Services for Persons with Limited English Proficiency), requiring Federal agencies to examine the services provided, identify any need for services to those with limited English proficiency (LEP), and develop and implement a system to provide those services so LEP persons can have meaningful access to them. The DOC issued policy guidance on March 24, 2003 (68 FR 14180) to articulate the Title VI prohibition against national origin discrimination affecting LEP persons and to help ensure that non-Federal entities provide meaningful access to their LEP applicants and beneficiaries.
3. In accordance with E.O. 13798 and Office of Management and Budget, M-20-09 – Guidance Regarding Federal Grants, states or other public grantees may not condition sub-awards of Federal grant money in a manner that would disadvantage grant applicants based on their religious character.

³ As amended by E.O. 11375(32 FR 14303), E.O. 11478 (34 FR 12985), E.O. 12086 (43 FR 46501), E.O. 12107 (44 FR 1055), E.O. 13279 (F67 FR 77141), E.O. 13665 (79 FR 20749), and E.O. 13672 (79 FR 42971).

c. Title VII Exemption for Religious Organizations

Generally, Title VII of the Civil Rights Act of 1964, 42 U.S.C. §§ 2000e *et seq.*, provides that it is an unlawful employment practice for an employer to discharge any individual or otherwise to discriminate against an individual with respect to compensation, terms, conditions, or privileges of employment because of such individual's race, color, religion, sex, or national origin. However, Title VII, 42 U.S.C. § 2000e-1(a), expressly exempts from the prohibition against discrimination based on religion, "a religious corporation, association, educational institution, or society with respect to the employment of individuals of a particular religion to perform work connected with the carrying on by such corporation, association, educational institution, or society of its activities."

.03 LOBBYING RESTRICTIONS

a. Statutory Provisions

Non-Federal entities must comply with 2 C.F.R. § 200.450 (Lobbying), which incorporates the provisions of 31 U.S.C. § 1352; and OMB guidance and notices on lobbying restrictions. In addition, non-Federal entities must comply with the DOC regulations published at 15 C.F.R. Part 28, which implement the New Restrictions on Lobbying. These provisions prohibit the use of Federal funds for lobbying the executive or legislative branches of the Federal Government in connection with the award and require the disclosure of the use of non-Federal funds for lobbying. Lobbying includes attempting to improperly influence, meaning any influence that induces or tends to induce a Federal employee or officer to give consideration or to act regarding a Federal award or regulatory matter on any basis other than the merits of the matter, either directly or indirectly. Costs incurred to improperly influence are unallowable. *See* 2 C.F.R. § 200.450(b) and (c).

b. Disclosure of Lobbying Activities

Any recipient that receives more than \$100,000 in Federal funding and conducts lobbying with non-federal funds relating to a covered Federal action must submit a completed Form SF-LLL (Disclosure of Lobbying Activities). The Form SF-LLL must be submitted within 30 calendar days following the end of the calendar quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any disclosure form previously filed. The recipient must submit any required SF-LLL forms, including those received from subrecipients, contractors, and subcontractors, to the Grants Officer.

.04 Environmental Requirements

Environmental impacts must be considered by Federal decision makers in their decisions whether or not to approve: (1) a proposal for Federal assistance; (2) the proposal with mitigation; or (3) a different proposal having less adverse environmental impacts. Federal environmental laws require that the funding agency initiate an early planning process that considers potential impacts that projects funded with Federal assistance may have on the environment. Each non-Federal entity must comply with all environmental standards, to include those prescribed under

the following statutes and E.O.s and must identify to the awarding agency any impact the award may have on the environment. In some cases, award funds can be withheld by the Grants Officer under a specific award condition requiring the non-Federal entity to submit additional environmental compliance information sufficient to enable the DOC to make an assessment on any impacts that a project may have on the environment.

a. The National Environmental Policy Act (42 U.S.C. §§ 4321 *et seq.*)

The National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) implementing regulations (40 C.F.R. Parts 1500 through 1508) require that an environmental analysis be completed for all major Federal actions to determine whether they have significant impacts on the environment. NEPA applies to the actions of Federal agencies and may include a Federal agency's decision to fund non-Federal projects under grants and cooperative agreements when the award activities remain subject to Federal authority and control. Non-Federal entities are required to identify to the awarding agency any direct, indirect or cumulative impact an award will have on the quality of the human environment and assist the agency in complying with NEPA. Non-Federal entities may also be requested to assist DOC in drafting an environmental assessment or environmental impact statement if DOC determines such documentation is required, but DOC remains responsible for the sufficiency and approval of the final documentation. Until the appropriate NEPA documentation is complete and in the event that any additional information is required during the period of performance to assess project environmental impacts, funds can be withheld by the Grants Officer under a specific award condition requiring the non-Federal entity to submit the appropriate environmental information and NEPA documentation sufficient to enable DOC to make an assessment on any impacts that a project may have on the environment.

b. The National Historic Preservation Act (16 U.S.C. §§ 470 *et seq.*)

Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. § 470f) and the Advisory Council on Historic Preservation (ACHP) implementing regulations (36 C.F.R. Part 800) require that Federal agencies take into account the effects of their undertakings on historic properties and, when appropriate, provide the ACHP with a reasonable opportunity to comment. Historic properties include but are not necessarily limited to districts, buildings, structures, sites and objects. In this connection, archeological resources and sites that may be of traditional religious and cultural importance to Federally-recognized Indian Tribes, Alaskan Native Villages and Native Hawaiian Organizations may be considered historic properties. Non-Federal entities are required to identify to the awarding agency any effects the award may have on properties included on or eligible for inclusion on the National Register of Historic Places. Non-Federal entities may also be requested to assist DOC in consulting with State or Tribal Historic Preservation Officers, ACHPs or other applicable interested parties necessary to identify, assess, and resolve adverse effects to historic properties. Until such time as the appropriate NHPA consultations and documentation are complete and in the event that any additional information is required during the period of performance in order to assess project impacts on historic properties, funds can be withheld by the Grants Officer under a specific award condition requiring the non-Federal entity to

submit any information sufficient to enable DOC to make the requisite assessment under the NHPA.

Additionally, non-Federal entities are required to assist the DOC in assuring compliance with the Archeological and Historic Preservation Act of 1974 (54 U.S.C. § 312502 *et seq.*, formerly 16 U.S.C. § 469a-1 *et seq.*); Executive Order 11593 (Protection and Enhancement of the Cultural Environment, May 13, 1971); Executive Order 13006 (Locating Federal Facilities on Historic Properties in Our Nation's Central Cities, May 21, 1996); and Executive Order 13007 (Indian Sacred Sites, May 24, 1996).

c. Executive Order 11988 (Floodplain Management) and Executive Order 11990 (Protection of Wetlands)

Non-Federal entities must identify proposed actions in Federally defined floodplains and wetlands to enable DOC to decide whether there is an alternative to minimize any potential harm.

d. Clean Air Act (42 U.S.C. §§ 7401 *et seq.*), Federal Water Pollution Control Act (33 U.S.C. §§ 1251 *et seq.*) (Clean Water Act), and Executive Order 11738 ("Providing for administration of the Clean Air Act and the Federal Water Pollution Control Act with respect to Federal contracts, grants or loans")

Non-Federal entities must comply with the provisions of the Clean Air Act (42 U.S.C. §§ 7401 *et seq.*), Clean Water Act (33 U.S.C. §§ 1251 *et seq.*), and E.O. 11738 (38 FR 25161), and must not use a facility on the Excluded Parties List (EPL) (located on the System for Award Management (SAM) website, SAM.gov) in performing any award that is nonexempt under 2 C.F.R. § 1532, and must notify the Program Officer in writing if it intends to use a facility that is on the EPL or knows that the facility has been recommended to be placed on the EPL.

e. The Flood Disaster Protection Act (42 U.S.C. §§ 4002 *et seq.*)

Flood insurance, when available, is required for Federally assisted construction or acquisition in flood-prone areas. Per 2 C.F.R. § 200.447(a), the cost of required flood insurance is an allowable expense, if it is reflected in the approved project budget.

f. The Endangered Species Act (16 U.S.C. §§ 1531 *et seq.*)

Non-Federal entities must identify any impact or activities that may involve a threatened or endangered species. Federal agencies have the responsibility to ensure that no adverse effects to a protected species or habitat occur from actions under Federal assistance awards and conduct the reviews required under the Endangered Species Act, as applicable.

g. The Coastal Zone Management Act (16 U.S.C. §§ 1451 *et seq.*)

Funded projects must be consistent with a coastal State's approved management program for the coastal zone.

h. The Coastal Barriers Resources Act (16 U.S.C. §§ 3501 *et seq.*)

Only in certain circumstances can Federal funding be provided for actions within a Coastal Barrier System.

i. The Wild and Scenic Rivers Act (16 U.S.C. §§ 1271 *et seq.*)

This Act applies to awards that may affect existing or proposed components of the National Wild and Scenic Rivers system.

j. The Safe Drinking Water Act of 1974, as amended, (42 U.S.C. §§ 300f *et seq.*)

This Act precludes Federal assistance for any project that the EPA determines may contaminate a sole source aquifer which threatens public health.

k. The Resource Conservation and Recovery Act (42 U.S.C. §§ 6901 *et seq.*)

This Act regulates the generation, transportation, treatment, and disposal of hazardous wastes, and provides that non-Federal entities give preference in their procurement programs to the purchase of recycled products pursuant to EPA guidelines.

l. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, commonly known as Superfund) (42 U.S.C. §§ 9601 *et seq.*) and the Community Environmental Response Facilitation Act (42 U.S.C. § 9601 note *et seq.*)

These requirements address responsibilities related to hazardous substance releases, threatened releases and environmental cleanup. There are also reporting and community involvement requirements designed to ensure disclosure of the release or disposal of regulated substances and cleanup of hazards to state and local emergency responders.

m. Executive Order 12898 (“Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations”)

Federal agencies are required to identify and address the disproportionately high and adverse human health or environmental effects of Federal programs, policies, and activities on low income and minority populations.

n. The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 *et seq.*)

Non-Federal entities must identify to DOC any effects the award may have on essential fish habitat (EFH). Federal agencies which fund, permit, or carry out activities that may adversely impact EFH are required to consult with the National Marine Fisheries Service (NMFS) regarding the potential effects of their actions and respond in writing to NMFS recommendations. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH. In addition, NMFS is required to comment on any state agency activities that would impact EFH. Provided the specifications outlined in the regulations are met, EFH consultations will be incorporated into interagency

procedures previously established under NEPA, the ESA, Clean Water Act, Fish and Wildlife Coordination Act, or other applicable statutes.

o. Clean Water Act (CWA) Section 404 (33 U.S.C. § 1344)

CWA Section 404 regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as levees and some coastal restoration activities), and infrastructure development (such as highways and airports). CWA Section 404 requires a permit from the U.S. Army Corps of Engineers before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

p. Rivers and Harbors Act (33 U.S.C. § 407)

A permit may be required from the U.S. Army Corps of Engineers if the proposed activity involves any work in, over or under navigable waters of the United States. Recipients must identify any work (including structures) that will occur in, over or under navigable waters of the United States and obtain the appropriate permit, if applicable.

q. The Migratory Bird Treaty Act (16 U.S.C. §§ 703-712), Bald and Golden Eagle Protection Act (16 U.S.C. § 668 *et seq.*), and Executive Order 13186 (Responsibilities of Federal Agencies to Protect Migratory Birds, January 10, 2001)

Many prohibitions and limitations apply to projects that adversely impact migratory birds and bald and golden eagles. Executive Order 13186 directs Federal agencies to enter a Memorandum of Understanding with the U.S. Fish and Wildlife Service to promote conservation of migratory bird populations when a Federal action will have a measurable negative impact on migratory birds.

r. Executive Order 13112 (Invasive Species, February 3, 1999)

Federal agencies must identify actions that may affect the status of invasive species and use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them. In addition, an agency may not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere.

s. Fish and Wildlife Coordination Act (16 U.S.C. § 661 *et seq.*)

During the planning of water resource development projects, agencies are required to give fish and wildlife resources equal consideration with other values. Additionally, the U.S.

Fish and Wildlife Service and fish and wildlife agencies of states must be consulted whenever waters of any stream or other body of water are “proposed or authorized, permitted or licensed to be impounded, diverted... or otherwise controlled or modified” by any agency under a Federal permit or license.

.05 OTHER NATIONAL POLICY REQUIREMENTS

a. Buy-American Preferences

Strengthening Buy-American Preferences for Infrastructure Projects. Recipients of covered programs (as defined in Executive Order 13858, 31 January 2019, and 2 C.F.R. §200.322 (Domestic preferences for procurements)) are hereby notified that they are encouraged to use, to the greatest extent practicable, iron and aluminum as well as steel, cement, and other manufactured products produced in the United States in every contract, subcontract, purchase order, or subaward that is chargeable under this Award.

b. Criminal and Prohibited Activities

1. The Program Fraud Civil Remedies Act (31 U.S.C. § 3801 *et seq.*), provides for the imposition of civil penalties against persons who make false, fictitious, or fraudulent claims to the Federal Government for money (including money representing grants, loans, or other benefits).
2. The False Claims Amendments Act of 1986 and the False Statements Accountability Act of 1996 (18 U.S.C. §§ 287 and 1001, respectively), provide that whoever makes or presents any false, fictitious, or fraudulent statement, representation, or claim against the United States must be subject to imprisonment of not more than five years and must be subject to a fine in the amount provided by 18 U.S.C. § 287.
3. The Civil False Claims Act (31 U.S.C. §§ 3729 - 3733), provides that suits can be brought by the government, or a person on behalf of the government, for false claims made under Federal assistance programs.
4. The Copeland Anti-Kickback Act (18 U.S.C. § 874), prohibits a person or organization engaged in a Federally supported project from enticing an employee working on the project from giving up a part of his compensation under an employment contract. The Copeland Anti-Kickback Act also applies to contractors and subcontractors pursuant to 40 U.S.C. § 3145.
5. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. § 4601 *et seq.*) and implementing regulations issued at 15 C.F.R. Part 11, which provides for fair and equitable treatment of displaced persons or persons whose property is acquired as a result of Federal or Federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

6. The Hatch Act (5 U.S.C. §§ 1501-1508 and 7321-7326), which limits the political activities of employees or officers of state or local governments whose principal employment activities are funded in whole or in part with Federal funds.

7. To ensure compliance with Federal law pertaining to financial assistance awards, an authorized representative of a non-Federal entity may be required to periodically provide certain certifications to the DOC regarding Federal felony and Federal criminal tax convictions, unpaid federal tax assessments, delinquent Federal tax returns and such other certifications that may be required by Federal law.

c. Drug-Free Workplace

The non-Federal entity must comply with the provisions of the Drug-Free Workplace Act of 1988 (41 U.S.C. § 8102) and DOC implementing regulations published at 2 C.F.R. Part 1329 (Requirements for Drug-Free Workplace (Financial Assistance)), which require that the non-Federal entity take certain actions to provide a drug-free workplace.

d. Foreign Travel

1. Each non-Federal entity must comply with the provisions of the Fly America Act (49 U.S.C. § 40118). The implementing regulations of the Fly America Act are found at 41 C.F.R. §§ 301-10.131 through 301-10.143.

2. The Fly America Act requires that Federal travelers and others performing U.S. Government-financed air travel must use U.S. flag air carriers, to the extent that service by such carriers is available. Foreign air carriers may be used only in specific instances, such as when a U.S. flag air carrier is unavailable or use of U.S. flag air carrier service will not accomplish the agency's mission.

3. One exception to the requirement to fly U.S. flag carriers is transportation provided under a bilateral or multilateral air transport agreement, to which the United States Government and the government of a foreign country are parties, and which the Department of Transportation has determined meets the requirements of the Fly America Act pursuant to 49 U.S.C. § 40118(b). The United States Government has entered into bilateral/multilateral "Open Skies Agreements" (U.S. Government Procured Transportation) that allow federal funded transportation services for travel and cargo movements to use foreign air carriers under certain circumstances. There are multiple "Open Skies Agreements" currently in effect. For more information about the current bilateral and multilateral agreements, visit the GSA [website](#). Information on the Open Skies agreements (U.S. Government Procured Transportation) and other specific country agreements may be accessed via the Department of State's [website](#).

4. If a foreign air carrier is anticipated to be used for any portion of travel under a DOC financial assistance award, the non-Federal entity must receive prior approval from the Grants Officer. When requesting such approval, the non-Federal entity must provide a justification in accordance with guidance provided by 41 C.F.R. § 301-10.142, which requires the non-Federal entity to provide the Grants Officer with the following: name; dates

of travel; origin and destination of travel; detailed itinerary of travel; name of the air carrier and flight number for each leg of the trip; and a statement explaining why the non-Federal entity meets one of the exceptions to the regulations. If the use of a foreign air carrier is pursuant to a bilateral agreement, the non-Federal entity must provide the Grants Officer with a copy of the agreement or a citation to the official agreement available on the GSA website. The Grants Officer must make the final determination and notify the non-Federal entity in writing (which may be done through the recipient in the case of subrecipient travel). Failure to adhere to the provisions of the Fly America Act will result in the non-Federal entity not being reimbursed for any transportation costs for which any non-Federal entity improperly used a foreign air carrier.

Note: When using code-sharing flights (two or more airlines having flight numbers assigned to the same flight) involving U.S. flag carriers and non-U.S. flag carriers, the airline symbol and flight number of the U.S. flag carrier must be used on the ticket to qualify as a U.S. flag carrier (e.g. "*Delta Airlines Flight XXXX, operated by KLM*"). Conversely, if the ticket shows "[*Foreign Air Carrier*] XXX, operated by Delta," that travel is using a foreign air carrier and is subject to the Fly America Act and must receive prior approval from the Grants Officer as outlined in paragraph G.05.d.4.

e. Increasing Seat Belt Use in the United States

Pursuant to E.O. 13043 (62 FR 19217), non-Federal entities should encourage employees and contractors to enforce on-the-job seat belt policies and programs when operating company-owned, rented, or personally owned vehicles.

f. Federal Employee Expenses and Subawards or Contracts Issued to Federal Employees or Agencies

1. Use of award funds (Federal or non-Federal) or the non-Federal entity's provision of in-kind goods or services for the purposes of transportation, travel, or any other expenses for any Federal employee may raise appropriation augmentation issues. In addition, DOC policy may prohibit the acceptance of gifts, including travel payments for federal employees, from non-Federal entities regardless of the source. Therefore, before award funds may be used by Federal employees, non-Federal entities must submit requests for approval of such action to the Federal Program Officer who must review and make a recommendation to the Grants Officer. The Grants Officer will notify the non-Federal entity in writing (generally through the recipient) of the final determination.
2. A non-Federal entity or its contractor may not issue a subaward, contract or subcontract of any part of a DOC award to any agency or employee of DOC or to other Federal employee, department, agency, or instrumentality, without the advance prior written approval of the DOC Grants Officer.

g. Minority Serving Institutions Initiative

Pursuant to E.O.s 13555 (White House Initiative on Educational Excellence for Hispanics) (75 FR 65417), 13592 (Improving American Indian and Alaska Native

Educational Opportunities and Strengthening Tribal Colleges and Universities) (76 FR 76603), and 13779 (White House Initiative to Promote Excellence and Innovation at Historically Black Colleges and Universities) (82 FR 12499), DOC is strongly committed to broadening the participation of minority serving institutions (MSIs) in its financial assistance programs. DOC's goals include achieving full participation of MSIs to advance the development of human potential, strengthen the Nation's capacity to provide high-quality education, and increase opportunities for MSIs to participate in and benefit from Federal financial assistance programs. DOC encourages all applicants and non-Federal entities to include meaningful participation of MSIs. Institutions eligible to be considered MSIs are listed on the Department of Education website.

h. Research Misconduct

The DOC adopts, and applies to financial assistance awards for research, the Federal Policy on Research Misconduct (Federal Policy) issued by the Executive Office of the President's Office of Science and Technology Policy on December 6, 2000 (65 FR 76260). As provided for in the Federal Policy, research misconduct refers to the fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. Research misconduct does not include honest errors or differences of opinion. Non-Federal entities that conduct extramural research funded by DOC must foster an atmosphere conducive to the responsible conduct of sponsored research by safeguarding against and resolving allegations of research misconduct. Non-Federal entities also have the primary responsibility to prevent, detect, and investigate allegations of research misconduct and, for this purpose, may rely on their internal policies and procedures, as appropriate, to do so. Non-Federal entities must notify the Grants Officer of any allegation that meets the definition of research misconduct and detail the entity's inquiry to determine whether there is sufficient evidence to proceed with an investigation, as well as the results of any investigation. The DOC may take appropriate administrative or enforcement action at any time under the award, up to and including award termination and possible suspension or debarment, and referral to the Commerce OIG, the U.S. Department of Justice, or other appropriate investigative body.

i. Research Involving Human Subjects

1. All proposed research involving human subjects must be conducted in accordance with 15 C.F.R. Part 27 (Protection of Human Subjects). No research involving human subjects is permitted under this award unless expressly authorized by specific award condition, or otherwise in writing by the Grants Officer.
2. Federal policy defines a human subject as a living individual about whom an investigator (whether professional or student) conducting research (1) Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (2) Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens. Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

3. DOC regulations at 15 C.F.R. Part 27 require that non-Federal entities maintain appropriate policies and procedures for the protection of human subjects. In the event it becomes evident that human subjects may be involved in this project, the non-Federal entity (generally through the recipient) must submit appropriate documentation to the Federal Program Officer for approval by the appropriate DOC officials. As applicable, this documentation must include:

- i. Documentation establishing approval of an activity in the project by an Institutional Review Board (IRB) under a Federal wide Assurance issued by Department of Health and Human Services or other Federal agency guidelines (*see also* 15 C.F.R. § 27.103);
- ii. Documentation to support an exemption for an activity in the project under 15 C.F.R. § 27.104(d);
- iii. Documentation of IRB approval of any modification to a prior approved protocol or to an informed consent form;
- iv. Documentation of an IRB approval of continuing review approved prior to the expiration date of the previous IRB determination; and
- v. Documentation of any reportable events, such as serious adverse events, unanticipated problems resulting in risk to subjects or others, and instances of noncompliance.

4. No work involving human subjects may be undertaken, conducted, or costs incurred and/or charged for human subjects research, until the appropriate documentation is approved in writing by the Grants Officer. In accordance with 15 C.F.R. § 27.118, if research involving human subjects is proposed after an award is made, the non-Federal entity must contact the Federal Program Officer and provide required documentation. Notwithstanding this prohibition, work may be initiated or costs incurred and/or charged to the project for protocol or instrument development related to human subjects research.

j. Care and Use of Live Vertebrate Animals

Non-Federal entities must comply with the Laboratory Animal Welfare Act of 1966, as amended, (Pub. L. No. 89-544, 7 U.S.C. §§ 2131 *et seq.*) (animal acquisition, transport, care, handling, and use in projects), and implementing regulations (9 C.F.R. Parts 1, 2, and 3); the Endangered Species Act (16 U.S.C. §§ 1531 *et seq.*); Marine Mammal Protection Act (16 U.S.C. §§ 1361 *et seq.*) (taking possession, transport, purchase, sale, export or import of wildlife and plants); the Nonindigenous Aquatic Nuisance Prevention and Control Act (16 U.S.C. §§ 4701 *et seq.*) (ensure preventive measures are taken or that probable harm of using species is minimal if there is an escape or release); and all other applicable statutes pertaining to the care, handling, and treatment of warm-blooded animals held for research, teaching, or other activities supported by Federal financial assistance. No research involving vertebrate animals is permitted under any DOC financial assistance award unless authorized by the Grants Officer.

k. Management and Access to Data and Publications

1. In General. The recipient acknowledges and understands that information and data contained in applications for financial assistance, as well as information and data contained in financial, performance and other reports submitted by recipients, may be used by the DOC in conducting reviews and evaluations of its financial assistance programs. For this purpose, recipient information and data may be accessed, reviewed and evaluated by DOC employees, other Federal employees, Federal agents and contractors, and/or by non-Federal personnel, all of who enter into appropriate or are otherwise subject to confidentiality and nondisclosure agreements covering the use of such information. Recipients are expected to support program reviews and evaluations by submitting required financial and performance information and data in an accurate and timely manner, and by cooperating with DOC and external program evaluators. In accordance with 2 C.F.R. § 200.303(e), recipients are reminded that they must take reasonable measures to safeguard protected personally identifiable information and other confidential or sensitive personal or business information created or obtained relating to a DOC financial assistance award.

2. Scientific Data. Non-Federal entities must comply with the data management and access to data requirements established by the DOC funding agency as set forth in the applicable Notice of Funding Opportunity and/or in Specific Award Conditions.

3. Publications, Videos, and Acknowledgment of Sponsorship.

i. Publication of results or findings in appropriate professional journals and production of video or other media is encouraged as an important method of recording, reporting and otherwise disseminating information and expanding public access to federally-funded projects (*e.g.*, scientific research). Non-Federal entities must comply with the data management and access to data requirements established by the DOC funding agency as set forth in the applicable Notice of Funding Opportunity and/or in Specific Award Conditions.

ii. Non-Federal entities may be required to submit a copy of any publication materials, including but not limited to print, recorded, or Internet materials, to the funding agency.

iii. When releasing information related to a funded project, non-Federal entities must include a statement that the project or effort undertaken was or is sponsored by DOC and must also include the applicable financial assistance award number.

iv. Non-Federal entities are responsible for assuring that every publication of material based on, developed under, or otherwise produced pursuant to a DOC financial assistance award contains the following disclaimer or other disclaimer approved by the Grants Officer:

This [report/video/etc.] was prepared by [recipient name] using Federal funds under award [number] from [name of operating unit], U.S. Department of Commerce. The statements, findings, conclusions, and recommendations are those of the author(s) and do

not necessarily reflect the views of the [name of operating unit] or the U.S. Department of Commerce.

I. Homeland Security Presidential Directive

If the performance of this DOC financial assistance award requires non-Federal entity personnel to have routine access to Federally-controlled facilities and/or Federally-controlled information systems (for purpose of this term “routine access” is defined as more than 180 calendar days), such personnel must undergo the personal identity verification credential process. In the case of foreign nationals, the DOC will conduct a check with U.S. Citizenship and Immigration Services’ (USCIS) Verification Division, a component of the Department of Homeland Security (DHS), to ensure the individual is in a lawful immigration status and that he or she is eligible for employment within the United States. Any items or services delivered under a financial assistance award must comply with DOC personal identity verification procedures that implement Homeland Security Presidential Directive 12 (Policy for a Common Identification Standard for Federal Employees and Contractors), Federal Information Processing Standard (FIPS) PUB 201, and OMB Memorandum M-05-24. The recipient must ensure that its subrecipients and contractors (at all tiers) performing work under this award comply with the requirements contained in this term. The Grants Officer may delay final payment under an award if the subrecipient or contractor fails to comply with the requirements listed in the term below. The recipient must insert the following term in all subawards and contracts when the subaward recipient or contractor is required to have routine physical access to a Federally-controlled facility or routine access to a Federally-controlled information system:

The subrecipient or contractor must comply with DOC personal identity verification procedures identified in the subaward or contract that implement Homeland Security Presidential Directive 12 (HSPD-12), Office of Management and Budget (OMB) Guidance M-05-24, as amended, and Federal Information Processing Standards Publication (FIPS PUB) Number 201, as amended, for all employees under this subaward or contract who require routine physical access to a Federally-controlled facility or routine access to a Federally-controlled information system.

The subrecipient or contractor must account for all forms of Government-provided identification issued to the subrecipient or contractor employees in connection with performance under this subaward or contract. The subrecipient or contractor must return such identification to the issuing agency at the earliest of any of the following, unless otherwise determined by DOC: (1) When no longer needed for subaward or contract performance; (2) Upon completion of the subrecipient or contractor employee’s employment; (3) Upon subaward or contract completion or termination.

m. Compliance with Department of Commerce Bureau of Industry and Security Export Administration Regulations

1. This clause applies to the extent that this financial assistance award encompasses activities that involve export-controlled items.

2. In performing this financial assistance award, a non-Federal entity may participate in activities involving items subject to export control (export-controlled items) under the Export Administration Regulations (EAR). The non-Federal entity is responsible for compliance with all applicable laws and regulations regarding export-controlled items, including the EAR's deemed exports and re-exports provisions. The non-Federal entity must establish and maintain effective export compliance procedures at DOC and non-DOC facilities, including facilities located abroad, throughout performance of the financial assistance award. At a minimum, these export compliance procedures must include adequate restrictions on export-controlled items, to guard against any unauthorized exports, including in the form of releases or transfers to foreign nationals. Such releases or transfers may occur through visual inspection, including technology transmitted electronically, and oral or written communications.

3. Definitions

- i. Export-controlled items. Items (commodities, software, or technology), that are subject to the EAR (15 C.F.R. §§ 730-774), implemented by the DOC's Bureau of Industry and Security. These are generally known as "dual-use" items, items with a military and commercial application. The export (shipment, transmission, or release/transfer) of export-controlled items may require a license from DOC.
 - ii. Deemed Export/Re-export. The EAR defines a deemed export as a release or transfer of export-controlled items (specifically, technology or source code) to a foreign person (foreign national) in the U.S. Such release is "deemed" to be an export to the foreign person's most recent country of citizenship or permanent residency (*see* 15 C.F.R. § 734.13(a)(2) & (b)). A release may take the form of visual inspection or oral or written exchange of information. *See* 15 C.F.R. § 734.15(a). If such a release or transfer is made abroad to a foreign person of a country other than the country where the release occurs, it is considered a deemed re-export to the foreign person's most recent country of citizenship or permanent residency. *See* 15 C.F.R. § 734.14(a)(2). Licenses from DOC may be required for deemed exports or re-exports. An act causing the release of export-controlled items to a foreign person (e.g., providing or using an access key or code) may require authorization from DOC to the same extent that an export or re-export of such items to the foreign person would. *See* 15 C.F.R. § 734.15(b).
4. The non-Federal entity must secure all export-controlled items that it possesses or that comes into its possession in performance of this financial assistance award, to ensure that the export of such items, including in the form of release or transfer to foreign persons, is prevented, or licensed, as required by applicable Federal laws, E.O.s, and/or regulations, including the EAR.
5. As applicable, non-Federal entity personnel and associates at DOC sites will be informed of any procedures to identify and protect export-controlled items from unauthorized export.

6. To the extent the non-Federal entity wishes to release or transfer export-controlled items to foreign persons, the non-Federal entity will be responsible for obtaining any necessary licenses, including licenses required under the EAR for deemed exports or deemed re-exports. Failure to obtain any export licenses required under the EAR may subject the non-Federal entity to administrative or criminal enforcement. See 15 C.F.R. part 764.
7. Nothing in the terms of this financial assistance award is intended to change, supersede, or waive the requirements of applicable Federal laws, E.O.s or regulations.
8. Compliance with this term will not satisfy any legal obligations the non-Federal entity may have regarding items that may be subject to export controls administered by other agencies such as the Department of State, which has jurisdiction over exports and re-exports of defense articles and services subject to the International Traffic in Arms Regulations (ITAR) (22 C.F.R. §§ 120-130), including the release of defense articles to foreign persons in the United States and abroad.
9. The non-Federal entity must include the provisions contained in this term in all lower tier transactions (subawards, contracts, and subcontracts) under this financial assistance award that may involve research or other activities that implicate export-controlled items.

n. The Trafficking Victims Protection Act of 2000 (22 U.S.C. § 7104(g)), as amended, and the implementing regulations at 2 C.F.R. Part 175

The Trafficking Victims Protection Act of 2000 authorizes termination of financial assistance provided to a private entity, without penalty to the Federal Government, if any non-Federal entity engages in certain activities related to trafficking in persons. The DOC hereby incorporates the following award term required by 2 C.F.R. § 175.15(b):

Trafficking in persons.

a. Provisions applicable to a recipient that is a private entity.

1. You as the recipient, your employees, subrecipients under this award, and subrecipients' employees may not—

- i. Engage in severe forms of trafficking in persons during the period of time that the award is in effect;*
- ii. Procure a commercial sex act during the period of time that the award is in effect; or*
- iii. Use forced labor in the performance of the award or subawards under the award.*

2. *We as the Federal awarding agency may unilaterally terminate this award, without penalty, if you or a subrecipient that is a private entity —*

i. Is determined to have violated a prohibition in paragraph a.1 of this award term; or

ii. Has an employee who is determined by the agency official authorized to terminate the award to have violated a prohibition in paragraph a.1 of this award term through conduct that is either— (A) Associated with performance under this award; or (B) Imputed to you or the subrecipient using the standards and due process for imputing the conduct of an individual to an organization that are provided in 2 C.F.R. Part 180 (OMB Guidelines to Agencies on Governmentwide Debarment and Suspension – Nonprocurement), as implemented by DOC at 2 C.F.R. Part 1326 (Nonprocurement Debarment and Suspension).

b. Provision applicable to a recipient other than a private entity. *We as the Federal awarding agency may unilaterally terminate this award, without penalty, if a subrecipient that is a private entity—*

1. Is determined to have violated an applicable prohibition in paragraph a.1 of this award term; or

2. Has an employee who is determined by the agency official authorized to terminate the award to have violated an applicable prohibition in paragraph a.1 of this award term through conduct that is either—

i. Associated with performance under this award; or

ii. Imputed to the subrecipient using the standards and due process for imputing the conduct of an individual to an organization that are provided in 2 C.F.R. Part 180 (OMB Guidelines to Agencies on Governmentwide Debarment and Suspension – Nonprocurement), as implemented by DOC at 2 C.F.R. Part 1326, (Nonprocurement Debarment and Suspension).

c. Provisions applicable to any recipient.

1. You must inform us immediately of any information you receive from any source alleging a violation of a prohibition in paragraph a.1 of this award term.

2. Our right to terminate unilaterally that is described in paragraph a.2 or b of this section:

i. Implements section 106(g) of the Trafficking Victims Protection Act of 2000 (TVPA), as amended (22 U.S.C. 7104(g)), and

ii. Is in addition to all other remedies for noncompliance that are available to us under this award.

3. *You must include the requirements of paragraph a.1 of this award term in any subaward you make to a private entity.*

d. Definitions. For purposes of this award term:

1. *“Employee” means either:*

i. An individual employed by you or a subrecipient who is engaged in the performance of the project or program under this award; or

ii. Another person engaged in the performance of the project or program under this award and not compensated by you including, but not limited to, a volunteer or individual whose services are contributed by a third party as an in-kind contribution toward cost sharing or matching requirements.

2. *“Forced labor” means labor obtained by any of the following methods: the recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery.*

3. *“Private entity”:*

i. Means any entity other than a State, local government, Indian tribe, or foreign public entity, as those terms are defined in 2 C.F.R. § 175.25;

ii. Includes: (A) A nonprofit organization, including any nonprofit institution of higher education, hospital, or tribal organization other than one included in the definition of Indian tribe at 2 C.F.R. § 175.25(b); and (B) A for-profit organization.

4. *“Severe forms of trafficking in persons,” “commercial sex act,” and “coercion” have the meanings given at section 103 of the TVPA, as amended (22 U.S.C. § 7102).*

o. The Federal Funding Accountability and Transparency Act (FFATA) (31 U.S.C. § 6101 note)

1. **Reporting Subawards and Executive Compensation.** Under FFATA, recipients of financial assistance awards of \$30,000 or more are required to report periodically on executive compensation and subawards, as described in the following term from 2 C.F.R. Part 170, Appendix A, which is incorporated into this award:

Reporting Subawards and Executive Compensation

a. Reporting of first-tier subawards.

1. Applicability. Unless you are exempt as provided in paragraph d. of this award term, you must report each action that equals or exceeds \$30,000 in Federal funds for a subaward

to a non-Federal entity or Federal agency (see definitions in paragraph e. of this award term).

2. *Where and when to report.*

i. *You must report each obligating action described in paragraph a.1. of this award term to <http://www.fsrs.gov>.*

ii. *For subaward information, report no later than the end of the month following the month in which the obligation was made. (For example, if the obligation was made on November 7, 2010, the obligation must be reported by no later than December 31, 2010.)*

3. *What to report. You must report the information about each obligating action that the submission instructions posted at <http://www.fsrs.gov> specify.*

b. Reporting Total Compensation of Recipient Executives for non-Federal entities.

1. *Applicability and what to report. You must report total compensation for each of your five most highly compensated executives for the preceding completed fiscal year, if—*

i. *the total Federal funding authorized to date under this Federal award equals or exceeds \$30,000 as defined in 2 C.F.R § 170.320;*

ii. *in the preceding fiscal year, you received—*

(A) *80 percent or more of your annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 C.F.R. § 170.320 (and subawards), and*

(B) *\$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 C.F.R. § 170.320 (and subawards); and,*

iii. *The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. § 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>.)*

2. *Where and when to report. You must report executive total compensation described in paragraph b.1. of this award term:*

i. *As part of your registration profile found at the System for Award Management (SAM) website located at <https://www.sam.gov>.*

- ii. *By the end of the month following the month in which this award is made, and annually thereafter.*

c. *Reporting of Total Compensation of Subrecipient Executives.*

1. Applicability and what to report. Unless you are exempt as provided in paragraph d. of this award term, for each first-tier non-Federal entity subrecipient under this award, you shall report the names and total compensation of each of the subrecipient's five most highly compensated executives for the subrecipient's preceding completed fiscal year, if—

- i. *in the subrecipient's preceding fiscal year, the subrecipient received—*

(A) 80 percent or more of its annual gross revenues from Federal procurement contracts (and subcontracts) and Federal financial assistance subject to the Transparency Act, as defined at 2 C.F.R. § 170.320 (and subawards) and,

(B) \$25,000,000 or more in annual gross revenues from Federal procurement contracts (and subcontracts), and Federal financial assistance subject to the Transparency Act (and subawards); and

- ii. *The public does not have access to information about the compensation of the executives through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. (To determine if the public has access to the compensation information, see the U.S. Security and Exchange Commission total compensation filings at <http://www.sec.gov/answers/execomp.htm>).*

See also 2 C.F.R. § 200.300(b).

2. Where and when to report. You must report subrecipient executive total compensation described in paragraph c.1. of this award term:

- i. *To the recipient.*

- ii. *By the end of the month following the month during which you make the subaward. For example, if a subaward is obligated on any date during the month of October of a given year (i.e., between October 1 and 31), you must report any required compensation information of the subrecipient by November 30 of that year.*

d. *Exemptions.* *If, in the previous tax year, you had gross income, from all sources, under \$300,000, you are exempt from the requirements to report: i. Subawards, and ii. The total compensation of the five most highly compensated executives of any subrecipient.*

*e. **Definitions.** For purposes of this award term:*

- 1. **Federal Agency** means a Federal agency as defined at 5 U.S.C. 551(1) and further clarified by 5 U.S.C. 552(f).*
- 2. **Non-Federal entity** means all of the following, as defined in 2 C.F.R. Part 25:*
 - i. A Governmental organization, which is a State, local government, or Indian tribe;*
 - ii. A foreign public entity;*
 - iii. A domestic or foreign nonprofit organization; and,*
 - iv. A domestic or foreign for-profit organization.*
- 3. **Executive** means officers, managing partners, or any other employees in management positions.*
- 4. **Subaward**:*
 - i. This term means a legal instrument to provide support for the performance of any portion of the substantive project or program for which you received this award and that you as the recipient award to an eligible subrecipient.*
 - ii. The term does not include your procurement of property and services needed to carry out the project or program (for further explanation, see 2 C.F.R § 200.331).*
 - iii. A subaward may be provided through any legal agreement, including an agreement that you or a subrecipient considers a contract.*
- 5. **Subrecipient** means a non-Federal entity or Federal agency that:*
 - i. Receives a subaward from you (the recipient) under this award; and*
 - ii. Is accountable to you for the use of the Federal funds provided by the subaward.*
- 6. **Total compensation** means the cash and noncash dollar value earned by the executive during the recipient's or subrecipient's preceding fiscal year and includes the following (for more information see 17 C.F.R. § 229.402(c)(2)):*
 - i. Salary and bonus.*
 - ii. Awards of stock, stock options, and stock appreciation rights. Use the dollar amount recognized for financial statement reporting purposes with respect to the fiscal year in accordance with the Statement of Financial Accounting Standards No. 123 (Revised 2004) (FAS 123R), Shared Based Payments.*

- iii. *Earnings for services under non-equity incentive plans. This does not include group life, health, hospitalization or medical reimbursement plans that do not discriminate in favor of executives, and are available generally to all salaried employees.*
- iv. *Change in pension value. This is the change in present value of defined benefit and actuarial pension plans.*
- v. *Above-market earnings on deferred compensation which is not tax-qualified.*
- vi. *Other compensation, if the aggregate value of all such other compensation (e.g. severance, termination payments, value of life insurance paid on behalf of the employee, perquisites or property) for the executive exceeds \$10,000.*

2. **System for Award Management (SAM) and Universal Identifier Requirements** -- as described in 2 C.F.R. Part 25, Appendix A, which is incorporated into this award:

System for Award Management (SAM) and Universal Identifier Requirements

a. ***Requirement for System for Award Management.*** *Unless you are exempted from this requirement under 2 C.F.R. § 25.110, you as the recipient must maintain current information in the SAM. This includes information on your immediate and highest level owner and subsidiaries, as well as on all of your predecessors that have been awarded a Federal contract or Federal financial assistance within the last three years, if applicable, until you submit the final financial report required under this Federal award or receive the final payment, whichever is later. This requires that you review and update the information at least annually after the initial registration, and more frequently if required by changes in your information or another Federal award term.*

b. ***Requirement for Unique Entity Identifier.*** *If you are authorized to make subawards under this Federal award, you:*

- 1. *Must notify potential subrecipients that no entity (see definition in paragraph c of this award term) may receive a subaward from you until the entity has provided its Unique Entity Identifier to you.*
- 2. *May not make a subaward to an entity unless the entity has provided its Unique Entity Identifier to you. Subrecipients are not required to obtain an active SAM registration, but must obtain a Unique Entity Identifier.*

c. ***Definitions for purposes of this term:***

- 1. *SAM means the Federal repository into which a recipient must provide information required for the conduct of business as a recipient. Additional information about registration procedures may be found at the SAM Internet site (currently at <https://www.SAM.gov>).*

2. *Unique Entity Identifier means the identifier assigned by SAM to uniquely identify business entities.*
3. *Entity includes non-Federal entities as defined at 2 C.F.R. § 200.1 and also includes all of the following, for purposes of this part:*
 - i. *A foreign organization;*
 - ii. *A foreign public entity;*
 - iii. *A domestic for-profit organization; and*
 - iv. *A Federal agency.*
4. *Subaward has the meaning given in 2 C.F.R § 200.1.*
5. *Subrecipient has the meaning given in 2 C.F.R § 200.1.*

See also 2 C.F.R. § 200.300(b).

p. Recipient Integrity and Performance Matters (Appendix XII to 2 C.F.R. Part 200)

Reporting of Matters Related to Recipient Integrity and Performance

1. **General Reporting Requirement.** If the total value of your currently active grants, cooperative agreements, and procurement contracts from all Federal awarding agencies exceeds \$10,000,000 for any period of time during the period of performance of this Federal award, then you as the recipient during that period of time must maintain the currency of information reported to the System for Award Management (SAM) that is made available in the designated integrity and performance system (currently the Federal Awardee Performance and Integrity Information System (FAPIIS)) about civil, criminal, or administrative proceedings described in paragraph 2 of this award term and condition. This is a statutory requirement under section 872 of Public Law 110-417, as amended (41 U.S.C. 2313). As required by section 3010 of Public Law 111-212, all information posted in the designated integrity and performance system on or after April 15, 2011, except past performance reviews required for Federal procurement contracts, will be publicly available.
2. **Proceedings About Which You Must Report.** Submit the information required about each proceeding that:
 - i. Is relating to the award or performance of a grant, cooperative agreement, or procurement contract from the Federal Government;
 - ii. Reached its final disposition during the most recent five-year period; and

iii. Is one of the following:

- (A) A criminal proceeding that resulted in a conviction, as defined in paragraph 5 of this award term and condition;
- (B) A civil proceeding that resulted in a finding of fault and liability and payment of a monetary fine, penalty, reimbursement, restitution, or damages of \$5,000 or more;
- (C) An administrative proceeding, as defined in paragraph 5 of this award term and condition, that resulted in a finding of fault and liability and your payment of either a monetary fine or penalty of \$5,000 or more or reimbursement, restitution, or damages in excess of \$100,000; or
- (D) Any other criminal, civil, or administrative proceeding if:
 - I. It could have led to an outcome described in paragraph 2.c.(1), (2), or (3) of this award term and condition;
 - II. It had a different disposition arrived at by consent or compromise with an acknowledgment of fault on your part; and
 - III. The requirement in this award term and condition to disclose information about the proceeding does not conflict with applicable laws and regulations.

3. Reporting Procedures. Enter in the SAM Entity Management area the information that SAM requires about each proceeding described in paragraph 2 of this award term and condition. You do not need to submit the information a second time under assistance awards that you received if you already provided the information through SAM because you were required to do so under Federal procurement contracts that you were awarded.

4. Reporting Frequency. During any period when you are subject to the requirement in paragraph 1 of this award term and condition, you must report proceedings information through SAM for the most recent five-year period, either to report new information about any proceeding(s) that you have not reported previously or affirm that there is no new information to report. Recipients that have Federal contract, grant, and cooperative agreement awards with a cumulative total value greater than \$10,000,000 must disclose semiannually any information about the criminal, civil, and administrative proceedings.

5. Definitions. For purposes of this award term and condition:

- i. Administrative proceeding means a non-judicial process that is adjudicatory in nature to make a determination of fault or liability (e.g., Securities and Exchange Commission Administrative proceedings, Civilian Board of Contract Appeals proceedings, and Armed Services Board of Contract Appeals proceedings). This includes proceedings at the Federal and State level but only in connection with performance of a Federal contract or grant. It does not include audits, site visits, corrective plans, or inspection of deliverables.

ii. Conviction, for purposes of this award term and condition, means a judgment or conviction of a criminal offense by any court of competent jurisdiction, whether entered upon a verdict or a plea, and includes a conviction entered upon a plea of nolo contendere.

iii. Total value of currently active grants, cooperative agreements, and procurement contracts includes:

(A) Only the Federal share of the funding under any Federal award with a recipient cost share or match; and

(B) The value of all expected funding increments under a Federal award and options, even if not yet exercised.

q. Never Contract with the Enemy (2 C.F.R Part 183; 2 C.F.R. § 200.215)

Under 2 C.F.R. § 200.215 (Never contract with the enemy) Federal awarding agencies and recipients are subject to the regulations implementing Never Contract with the Enemy in 2 C.F.R. Part 183. These regulations affect covered contracts, grants and cooperative agreements that are expected to exceed \$50,000 within the period of performance, are performed outside the United States and its territories, and are in support of a contingency operation in which members of the Armed Forces are actively engaged in hostilities.

1. **Applicability.** This term applies only to recipients of covered grants or cooperative agreements, as defined in 2 C.F.R. § 183.35 Definitions.

2. **Requirements.** As applicable, recipients must fulfill the requirements as described in the following terms from 2 C.F.R. Part 183, Appendix A, which is incorporated into this award:

a. Term 1. Prohibition on Providing Funds to the Enemy.

1. *The recipient must—*

i. *Exercise due diligence to ensure that none of the funds, including supplies and services, received under this grant or cooperative agreement are provided directly or indirectly (including through subawards or contracts) to a person or entity who is actively opposing the United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities, which must be completed through 2 CFR Part 180.300 prior to issuing a subaward or contract and;*

ii. *Terminate or void in whole or in part any subaward or contract with a person or entity listed in SAM as a prohibited or restricted source pursuant to subtitle E of Title VIII of the NDAA for FY 2015, unless the Federal awarding agency provides written approval to continue the subaward or contract.*

2. *The recipient may include the substance of this clause, including this paragraph (1), in subawards under this grant or cooperative agreement that have an estimated value over \$50,000 and will be performed outside the United States, including its outlying areas.*

3. *The Federal awarding agency has the authority to terminate or void this grant or cooperative agreement, in whole or in part, if the Federal awarding agency becomes aware that the recipient failed to exercise due diligence as required by paragraph (1) of this clause or if the Federal awarding agency becomes aware that any funds received under this grant or cooperative agreement have been provided directly or indirectly to a person or entity who is actively opposing coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities*

b. Term 2. Additional Access to Recipient Records.

1. *In addition to any other existing examination-of-records authority, the Federal Government is authorized to examine any records of the recipient and its subawards or contracts to the extent necessary to ensure that funds, including supplies and services, available under this grant or cooperative agreement are not provided, directly or indirectly, to a person or entity that is actively opposing United States or coalition forces involved in a contingency operation in which members of the Armed Forces are actively engaged in hostilities, except for awards awarded by the Department of Defense on or before Dec 19, 2017 that will be performed in the United States Central Command (USCENTCOM) theater of operations*

2. *The substance of this clause, including this paragraph (2), is required to be included in subawards or contracts under this grant or cooperative agreement that have an estimated value over \$50,000 and will be performed outside the United States, including its outlying areas.*

r. Prohibition on certain telecommunications and video surveillance services or equipment (Public Law 115-232, section 889; 2 C.F.R. § 200.216)

(a) Recipients and subrecipients are prohibited from obligating or expending loan or grant funds to:

- (1) Procure or obtain,
- (2) Extend or renew a contract to procure or obtain, or
- (3) Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system.

As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by Huawei Technologies Company or ZTE Corporation (or any subsidiary or affiliate of such entities).

- (i). For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
- (ii). Telecommunications or video surveillance services provided by such entities or using such equipment.
- (iii). Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

(b) In implementing the prohibition under Public Law 115-232, section 889, subsection (f), paragraph (1), heads of executive agencies administering loan, grant, or subsidy programs shall prioritize available funding and technical support to assist affected businesses, institutions and organizations as is reasonably necessary for those affected entities to transition from covered communications equipment and services, to procure replacement equipment and services, and to ensure that communications service to users and customers is sustained.

(c) See Public Law 115-232, section 889 for additional information.

(d) See also §200.471.

s. Federal Financial Assistance Planning During a Funding Hiatus or Government Shutdown

This term sets forth initial guidance that will be implemented for Federal assistance awards in the event of a lapse in appropriations, or a government shutdown. The Grants Officer may issue further guidance prior to an anticipated shutdown.

1. Unless there is an actual rescission of funds for specific grant or cooperative agreement obligations, non-Federal entities under Federal financial assistance awards for which funds have been obligated generally will be able to continue to perform and incur allowable expenses under the award during a funding hiatus. Non-Federal entities are advised that ongoing activities by Federal employees involved in grant or cooperative agreement administration (including payment processing) or similar operational and administrative work cannot continue when there is a funding lapse. Therefore, there may be delays, including payment processing delays, in the event of a shutdown.

2. All award actions will be delayed during a government shutdown; if it appears that a non-Federal entity's performance under a grant or cooperative agreement will require agency involvement, direction, or clearance during the period of a possible government shutdown, the Program Officer or Grants Officer, as appropriate, may attempt to provide such involvement, direction, or clearance prior to the shutdown or advise non-Federal entities that such involvement, direction, or clearance will not be forthcoming during the shutdown. Accordingly, non-Federal entities whose ability to withdraw funds is subject to prior agency approval, which in general are non-Federal entities that have been designated high risk, non-Federal entities under construction awards, or are otherwise limited to reimbursements or subject to agency review, will be able to draw funds down from the relevant Automatic Standard Application for Payment (ASAP) account only if agency approval is given and coded into ASAP prior to any government shutdown or closure. This limitation may not be lifted during a government shutdown. Non-Federal entities should plan to work with the Grants Officer to request prior approvals in advance of a shutdown wherever possible. Non-Federal entities whose authority to draw down award funds is restricted may decide to suspend work until the government reopens.
3. The ASAP system should remain operational during a government shutdown. Non-Federal entities that do not require any Grants Officer or agency approval to draw down advance funds from their ASAP accounts should be able to do so during a shutdown. The 30-day limitation on the drawdown of advance funds will still apply notwithstanding a government shutdown (see section B.02.b.1 of these terms).

SPECIFIC AWARD CONDITIONS
U.S. DEPARTMENT OF COMMERCE
Economic Development Administration (EDA)

Construction Projects: Public Works and Economic Adjustment Assistance Programs
under Sections 201 and 209 of the Public Works and Economic Development Act, as amended,
42 U.S.C. §§ 3141 and 3149

Project Title: Peekskill Firehouse Kitchen Incubator Project	
Recipient Name: Peekskill Facilities Development Corporation & City of Peekskill, Inc.	Project Number: 01-01-15338

1. This EDA Award supports the work described in the approved final scope of work, which is incorporated by reference into this Award as the *Authorized Scope of Work*. All work on this project must be consistent with the *Authorized Scope of Work*, unless the Grants Officer has authorized a modification of the scope of work in writing through an amendment memorialized by a fully executed Form CD-451.

The *Authorized Scope of Work* for this project includes: Renovation of a former 8,000 square foot fire station for adaptive reuse as the Peekskill Commercial Kitchen Food Incubator to facilitate start-up and expanding food businesses. The project will create 5 licensed fully complying commercial kitchens with storage and related support auxiliary operations available for lease to food entrepreneurs. The project will include all building, hvac, and other mechanical requirements as well as parking and outdoor site improvements.

2. The Recipients Contacts' names, titles, address, and telephone number are:

Matthew Rudikoff Executive Director Phone: (914) 490-9634 Email: mrudikoff@cityofpeekskill.com	Peekskill Facilities Development Corporation Peekskill City Hall, 840 Main Street Peekskill, New York 10566-2016
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Matthew Alexander City Manager Phone: (914) 734-4923 Email: malexander@cityofpeekskill.com	City of Peekskill, Inc. Peekskill City Hall, 840 Main Street Peekskill, New York 10566-2016
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3. The Grants Officer is authorized to award, amend, suspend, and terminate financial assistance awards. The Grants Officer is:

Linda Cruz-Carnall Regional Director Phone: (215) 597-4603 Fax: (215) 597-1063 Email: lcruz-carnall@eda.gov	Economic Development Administration Philadelphia Regional Office Robert N.C. Nix Federal Building 900 Market Street, Room 602 Philadelphia, PA 19107
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4. The Federal Program Officer (Area Director) oversees the programmatic aspects of this Award. The Federal Program Officer is:

Christopher Christian Area Director Phone: (215) 597-8795 Fax: (215) 597-1063 Email: CChristian1@eda.gov	Economic Development Administration Philadelphia Regional Office Robert N.C. Nix Federal Building 900 Market Street, Room 602 Philadelphia, PA 19107
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5. The EDA Project Officer is responsible for day-to-day administration and liaison with the Recipient and receives all reports and payment requests. The Project Officer is:

Brett Steinberg Project Engineer Phone: (215) 597-0642 Fax: (215) 597-1063 Email: BSteinberg@eda.gov	Economic Development Administration Philadelphia Regional Office Robert N.C. Nix Federal Building 900 Market Street, Room 602 Philadelphia, PA 19107
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6. **ADDITIONAL INCLUDED DOCUMENTS:** In addition to the regulations, documents, or authorities incorporated by reference on the Financial Assistance Award (Form CD-450), the following additional documents are hereby incorporated by reference into this Award:

- i. EDA Standard Terms and Conditions for Construction Projects (March 22, 2021); and
- ii. The Recipient's application, including any attachments, project descriptions, schedules, and subsequently submitted supplemental documentation.

Should there be a discrepancy among these documents, the Specific Award Conditions (this document), including any attachments, shall control.

7. **PROJECT DEVELOPMENT TIME SCHEDULE:** The Recipient agrees to the following Project Development Time Schedule:

Return of Executed Financial Assistance Award30 calendar days after receipt of
Form CD-450/CD-451

Start of Construction.....15 Months from the Date of Award

Construction Completed.....	27 Months from the Date of Award
Authorized Award End Date	27 Months from the Date of Award
Submission of Final Financial Report (SF-425).....	No later than 120 calendar days from the Award End Date

Project Closeout – All project closeout documents, including final financial reports (Form SF-425 or any successor form) and any required program reports, shall be submitted to EDA not more than 120 calendar days after the date the Recipient accepts the completed project from the contractor(s) unless an extension is granted in writing by the project officer, but in no event later than 120 days after the Award End Date.

The Recipient shall diligently pursue the development of the project so as to ensure completion within this time schedule and shall promptly notify EDA in writing of any event that could substantially delay meeting any of the prescribed time limits for the project as set forth above. The Recipient further acknowledges that failure to meet the development time schedule may result in EDA taking action to terminate the Award in accordance with the regulations set forth at 2 C.F.R. §§ 200.338–200.342, as applicable.

8. PROJECT REPORTING AND FINANCIAL DISBURSEMENTS INSTRUCTIONS:

A. AWARD DISBURSEMENTS: Reimbursement basis only. EDA will make disbursements under this Award on a reimbursement basis only, based on actual costs incurred, after all preconditions set forth in these Specific Award Conditions have been met.

The “Request for Reimbursement” (Form SF-271 or any successor form) is used to request a disbursement, which must be approved in writing by the Project Officer.

Please note that prior to the initial disbursement, the Recipient must complete the attached Form SF-3881 (or any successor form) “ACH Vendor/Miscellaneous Payment Enrollment Form” and submit it to NOAA’s Accounting Office by FAX at (301) 528-3675. (FAX is required to secure confidentiality of sensitive information.) The form must be completed by the respective parties (EDA, Recipient Bank, and Recipient) at the start of each new award.

B. REPORTS:

Project Progress Reports: The Recipient shall submit project progress reports to the Project Officer on a quarterly basis for the periods ending March 31, June 30, September 30, and December 31, or any portion thereof, until the final disbursement is made by EDA. Reports should be submitted using the approved EDA template, which will be provided by the Project Officer and discussed during the project kick-off meeting. Reports are due no later than 1 month following the end of the quarterly period.

Financial Reports: The Recipient shall submit a “Federal Financial Report” (Form SF-425 or any successor form) on a semi-annual basis for the periods ending March 31 and

September 30, or any portion thereof, for the entire project period. Form SF-425 and instructions for completing this form are available at:

<https://www.grants.gov/web/grants/forms/post-award-reporting-forms.html>.

A final Form SF-425 must be submitted no more than 90 calendar days after the expiration date of the Award (i.e., the Award End Date specified on the Form CD-450 or a subsequently executed Form CD-451). Final Financial Reports should follow the guidance outlined in the instructions for submitting mid-term financial reports, but should ensure that all fields accurately reflect the total outlays for the entire project period and that all matching funds and program income (if applicable) are fully reported. Determination of the final grant rate and final balances owed to the government will be determined based on the information on the final Form SF-425, so it is imperative that it be submitted in a timely and accurate manner.

9. **ALLOWABLE COSTS AND AUTHORIZED BUDGET:** Total allowable costs will be determined after the final financial documents are submitted in accordance with the applicable authorities specified on the Financial Assistance Award (Form CD-450), including the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. part 200.

Except as otherwise expressly provided for within these Specific Award Conditions, the Federal share of the allowable costs shall be based on the Investment Rate for the Award, as established on the Form CD-450 or any subsequent amendment (Form CD-451). In the event of an underrun in total allowable costs for this project, the Federal share of allowable costs shall be determined by the Investment Rate. The Federal share of total allowable costs shall not exceed the dollar amount specified on the original Award or any subsequent amendments.

Line Item Budget:

- A. Under the terms of the Award, the total approved authorized budget is:

Federal Share (EDA Amount)	\$2,396,668
Non-Federal Matching Share	\$599,167
Total Project Cost	\$2,995,835

- B. Under the terms of this Award, the total approved line item budget is:

COST CLASSIFICATION	Proposed	Approved
Administrative and legal expenses	\$4,000	\$4,000
Land, structures, rights-of-way, etc.	\$	\$
Relocation expenses and payments	\$	\$
Architectural and engineering fees	\$250,000	\$250,000
Other architectural and engineering fees	\$55,000	\$55,000
Project inspection fees	\$	\$
Site work	\$	\$

Demolition and removal	\$	\$
Construction	\$1,190,000	\$1,190,000
Equipment	\$1,283,018	\$1,283,018
Miscellaneous	\$	\$
Contingencies	\$213,817	\$213,817
Total Project Cost	\$2,995,835	\$2,995,835

10. MATCHING SHARE: The Recipient agrees to provide the Recipient's non-Federal Matching Share contribution for eligible project expenses in proportion to the Federal share requested for such project expenses (see 13 C.F.R. § 300.3). By accepting the Award, the Recipient also certifies that the Matching Share of the project costs is committed to the project, is not encumbered in any way that would prevent its use for the project, and will be available as needed for the project.

11. REFUND CHECKS, INTEREST, OR UNUSED FUNDS: Treasury has given EDA two options for having payments deposited to EDA's account:

- A. The first is the [pay.gov](https://www.pay.gov) website. This option allows the payee to pay EDA through the internet. The payee will have the option to make a one-time payment or to set up an account to make regular payments.
- B. The second is paper check conversion. All checks must include on their face the name of the DOC agency funding the Award, the Award number, and a description of no more than two words identifying the reason for the check. A copy of the check should be provided to the EDA Project Officer. This option allows the payee to send a check to NOAA's Accounting Office, which processes EDA's accounting functions, at the following address:

NOAA OCFO
Attn: Finance Office, Travel Dept.
1315 East West Highway, SSMC3
Silver Spring, MD 20910

The accounting staff will scan the checks into an encrypted file and transfer the file to the Federal Reserve Bank, where the funds will be deposited in EDA's account. While this process will not be an issue with most payees, there are occasionally issues for entities remitting funds to EDA via check. If you are remitting funds to EDA via check, please make note of the following:

- If a check is sent to EDA, it will be converted into an electronic funds transfer by copying the check and using the account information to electronically debit your account for the amount of the check. The debit from your account will usually occur within 24 hours and will appear on your regular account statement.
- EDA will not return your original check; the original will be destroyed and a copy will be maintained in our office. If the Electronic Funds Transfer (EFT) cannot be

processed for technical reasons, the copy will be processed in place of the original check. If the EFT cannot be completed because of insufficient funds, EDA will charge you a one-time fee of \$25.00, which will be collected by EFT.

12. **CONSTRUCTION COMPLETION:** In keeping with prudent grants management policy, EDA construction projects must be completed within five years of the date the Form CD-450 is signed by the Recipient accepting the Award. If construction is not completed by that date and the Grants Officer determines, after consultation with the Recipient, that construction completion cannot reasonably be expected to be completed promptly and expeditiously, the grant may be terminated. Extensions beyond the five-year project period are exceedingly rare and can only be authorized by the Assistant Secretary. Nothing in this paragraph is intended to alter the Project Development Time Schedule set out in paragraph 7, above.
13. **USEFUL LIFE:** The useful life of this project is hereby determined to be 15 years from the date of construction completion.
14. **GOALS FOR WOMEN AND MINORITIES IN CONSTRUCTION:** Department of Labor regulations set forth at 41 C.F.R. part 60-4 establish goals and timetables for the participation of minorities and women in the construction industry. Those regulations apply to all federally assisted construction contracts in excess of \$10,000. The Recipient shall comply with those regulations and shall obtain compliance with 41 C.F.R. part 60-4 from contractors and subcontractors employed on the project by including such notices, clauses, and provisions in the Solicitations for Offers or Bids as required by 41 C.F.R. part 60-4. The goal for the participation of women in each trade area shall be as follows: from April 1, 1981 until further notice: 6.9 percent.

All changes to this goal, as published in the Federal Register in accordance with the Office of Federal Contract Compliance Programs regulations at 41 C.F.R. § 60-4.6, or any successor regulations, shall hereafter be incorporated by reference into these Specific Award Conditions.

Goals for minority participation shall be as prescribed by Appendix B-80 of the Federal Register notice published October 3, 1980 at 45 Fed. Reg. 65984–65991, or any subsequently published amendments. The Recipient shall include the *Standard Federal Equal Employment Opportunity Construction Contract Specifications* (or cause them to be included, if appropriate) in all Federally assisted contracts and subcontracts. The goals and timetables for minority and female participation may not be less than those published pursuant to 41 C.F.R. § 60-4.6.

15. **PROCUREMENT:** The Recipient agrees that all procurement transactions shall be in accordance with the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards at 2 C.F.R. §§ 200.317–200.326.
16. **EVIDENCE OF GOOD TITLE:** Prior to advertising for construction bids, the Recipient shall provide an opinion of counsel, satisfactory to EDA, that the Recipient has acquired

good and marketable title to land, free of all encumbrances, to all real property necessary for completion of the project, as well as any necessary rights-of-way, easements, State or local government permits, or long-term lease interests necessary for the completion of the project in accordance with 13 C.F.R. part 314.

- 17. NONRELOCATION:** By accepting this Award of financial assistance, the Recipient attests that the EDA-funded project will not be used to induce the relocation or the movement of existing jobs from one Region to another Region by a primary beneficiary of the Award (see 13 C.F.R. § 300.3). In the event that EDA determines that its assistance was used for such purposes, EDA reserves the right to pursue all rights and remedies, including suspension of disbursements, termination of the Award for convenience or cause, and disallowance of any costs attributable, directly or indirectly, to the relocation.

For purposes of ensuring that EDA assistance will not be used for relocation purposes, each applicant must inform EDA of all employers that constitute primary beneficiaries of the project. EDA considers an employer to be a “primary beneficiary” if the applicant estimates that such employer will create or save 100 or more permanent jobs as a result of the investment assistance and specifically names the employer in its application to EDA. In smaller communities, EDA may consider a primary beneficiary to be an employer of 50 or more permanent jobs so identified.

- 18. PERFORMANCE MEASURES:** The Recipient agrees to report on program performance measures and program outcomes in such a form and at such intervals as may be prescribed by EDA in compliance with the Government Performance and Results Act (GPRA) of 1993 and the Government Performance and Results Modernization Act of 2010.

At this time, all Awards for construction assistance require Recipients to report actual job creation/retention and private investment leverage at three, six, and nine years after an EDA investment. The Recipient must retain sufficient documentation so that they can submit these required reports. Failure to submit these reports may adversely impact the ability of the Recipient to secure future funding from EDA.

Performance measures and reporting requirements that apply to program activities funded by this investment will be provided in a separate GPRA information collection document. EDA staff will contact the Recipient in writing within a reasonable period prior to the time of submission of the reports with information on how this data should be submitted. The Recipient must ensure adequate and sufficient records are kept to support the methodology for computing initial job creation/retention and private investment estimates and all subsequent actual performance data, and must make this information available at EDA’s request, including in the event of an audit or performance site visit.

- 19. REAFFIRMATION OF APPLICATION:** Recipient acknowledges that Recipient’s application for this Award may have been submitted to the Government and signed by Recipient, or by an authorized representative of Recipient, electronically. Regardless of the means by which Recipient submitted its application to the Government or whether Recipient

or an authorized representative of Recipient submitted its application to the Government, the Recipient hereby reaffirms and states that:

- i. All data in the application and documents submitted with the application are true and correct as of the date the application was submitted and remain true and correct as of the date of this Award;
- ii. The application was, as of the date of submission and the date of this Award, duly authorized as required by local law by the governing body of the Recipient; and
- iii. Recipient has read, understood, and will comply with all terms of this Award, including the Assurances and Certifications submitted with, or attached to, the application.

The term “application” includes all documentation and any information provided to the Government as part of, and in furtherance to, the request for funding, including submissions made in response to information requested by the Government after submission of the initial application.

- 20. SIMPLIFIED ACQUISITION THRESHOLD:** In accordance with OMB Memorandum M-18-18 (June 20, 2018), the Simplified Acquisition Threshold (see 2 C.F.R. § 200.88) and Micro-purchase Threshold (see 2 C.F.R. § 200.67) applicable to this Award are \$250,000 and \$10,000, respectively. The Recipient may utilize Small Purchase Procedures or Procurement by Micro-purchases, as applicable, for purchases below these thresholds (see 2 C.F.R. § 200.320).
- 21. PROOF OF PERMITTING:** Prior to advertising for construction bids, the Recipient shall provide satisfactory evidence to EDA that all permits required for the project have been received.
- 22. BUY AMERICAN POLICY:** Consistent with Executive Order 13858, “Strengthening Buy-American Preferences for Infrastructure Projects,” the Recipient is encouraged to use, to the greatest extent practicable, iron and aluminum as well as steel, cement, and other manufactured products produced in the United States in every contract, subcontract, purchase order, or sub-award that is chargeable under this Award.
- 23. WASTE, FRAUD AND ABUSE:** Consistent with 2 CFR part 200, Recipient’s personnel responsible for managing each Recipient’s finances and overseeing any contractors, sub-contractors or sub-grantees, will monitor award activities for common fraud schemes. Should Recipient detect any suspicious activity, Recipient will contact EDA staff listed above and the Office of Inspector General, as indicated at <https://www.oig.doc.gov/Pages/Contact-Us.aspx>, as soon as possible.
- 24. GRANT ADMINISTRATION PLAN:** Within sixty days of accepting the EDA Financial Assistance Award, the Recipient shall provide to the Project Officer a Grant Administration Plan that outlines how the Recipient will administer the EDA Award. The plan must include the following information:

1. The names, addresses, phone numbers, facsimile numbers, and email addresses of all personnel responsible for activities pertaining to the EDA Award, including compliance with grant conditions, processing payment requests to EDA, engineering and design activities, and inspection and legal services.
 2. A proposed detailed project implementation schedule. The schedule shall contain at a minimum, the following milestones:
 - a. Completion of final plans and specifications
 - b. Date all permits will be obtained
 - c. Advertisement for bids
 - d. Bid opening
 - e. Construction contract award
 - f. Pre-construction conference
 - g. Issuance of Notice-to-Proceed
 - h. Substantial completion date
 - i. Final completion date/acceptance by Owner
 3. A Project Financial Plan addressing how expenses will be paid prior to the disbursement of funds by EDA. The plan must also identify the person responsible for preparing payment requests to EDA. EDA funds will not be disbursed until all prerequisites set forth in these Special Award Conditions are satisfied and all construction contracts are awarded.
- 25. RECORDED MORTGAGE:** To better memorialize and protect the Federal Interest in real property improved, in whole or in part, with the funds made available under this Award, Recipient shall, prior to advertising for construction bids, execute and cause to be recorded a first priority mortgage lien in favor of EDA, which shall be satisfactory to EDA in form and substance. Upon request by EDA, Recipient shall furnish an opinion of counsel for the Recipient that the Mortgage is a valid and enforceable agreement according to its terms and that it has been duly recorded in the appropriate office where mortgages are recorded for the applicable jurisdiction.

The Recipient further agrees that:

- (a) Except as provided in 13 C.F.R. § 314.3(b), (c) or (d), whenever, during the expected useful life of the project, any property acquired or improved in whole or in part with grant assistance is disposed of, or no longer used for the authorized purpose of the project, the Government must be compensated by Recipient for the Federal Share of the value of the property.
- (b) If property is disposed of or encumbered without EDA approval, EDA may assert its interest in the property to recover the Federal Share of the value of the property for the Government. EDA may pursue its rights under both paragraphs (a) and (b) of this section to recover the Federal Share, plus costs and interest.

- (c) The Federal Share of the value of the property is that percentage of the current fair market value of the property attributable to EDA's participation in the project after deducting actual and reasonable fix-up and marketing expenses, as more fully defined at 13 C.F.R. § 314.5. The Federal Share excludes that value of the property attributable to acquisition or improvements before or after EDA's participation in the project and not included in project costs.
- (d) The mortgage must remain in effect throughout the useful life of the Project.

26. MASTER LEASE AGREEMENT: Prior to the final disbursement of grant funds, the Recipient (referred to as Lessor below, as applicable) shall submit for EDA review and approval a model Lease Agreement that meets the requirements of EDA's Property Management Standards at 13 C.F.R. part 314, and contains language substantially similar to the following provisions:

COMPLIANCE WITH EDA RESTRICTIVE COVENANTS: The Lessor and Lessee acknowledge that the premises were improved, in part, with funding from the United States Department of Commerce, Economic Development Administration (EDA), EDA Project No. 01-01-15338, and are subject to the terms and conditions of the EDA financial assistance award and applicable EDA Property Management regulations. Consequently, Lessor and Lessee, for themselves and their successors and assigns, agree as follows:

1. During the Useful Life of the EDA-funded improvements (as defined in the financial assistance award), the premises shall be used in a manner that is consistent with the authorized general and specific purposes of the financial assistance award and EDA policies including non-relocation, adequate consideration and environmental compliance.
2. At no time, during or after the Useful Life, shall the premises be used in violation of the nondiscrimination requirements set forth at 13 C.F.R. § 302.20 or for inherently religious activities prohibited by applicable federal law.
3. Lessee agrees to provide Lessor and EDA with any document, evidence, or report required to assure compliance with federal and state law, including but not limited to applicable federal and state environmental laws.

In addition, any deeds or instruments of conveyance shall contain (i) a covenant, running with the land, prohibiting the use of the subject property for any purpose other than the authorized purpose of the EDA award during the Useful Life of the EDA-funded improvements and (ii) a perpetual covenant, running with the land, prohibiting use of the property in violation of the nondiscrimination requirements set forth at 13 C.F.R. § 302.20 or for inherently religious activities prohibited by applicable federal law.

27. PROGRAM INCOME: In affirming this Award, Recipient acknowledges that all revenues it derives from ownership of the EDA-funded property improvements during the Useful Life of the project shall constitute Program Income. Recipient agrees to use Program Income generated from this project in the following order of priority:

- (a) Administration, operation, and maintenance of the project facilities during their Useful Life.
- (b) Economic development projects that are authorized for support by EDA, provided such projects are within the designated project region.

Prior to the final disbursement of grant funds, the Recipient will develop and furnish to EDA for approval an income reutilization plan to demonstrate an intent that the funds generated from the EDA-assisted project will be expended for the purposes set forth above. Any changes made to the plan during the Useful Life of the project shall also be submitted to EDA for review and approval. Recipient shall maintain records adequate to demonstrate compliance with the requirements of this paragraph.

28. PROJECT INSPECTION AGREEMENT: Prior to advertising for construction bids, the Recipient shall submit to EDA for approval a Project Inspection Agreement that meets the requirements of EDA's *Summary of EDA Construction Standards*, as well as the competitive procurement requirements set out at 2 C.F.R. §§ 200.317—200.326, as applicable. The agreement must provide for all construction inspection services required by the Recipient for the project.

29. SECURITY AGREEMENT/FORM UCC-1: The Recipient agrees to provide EDA with a Security Agreement, satisfactory to EDA, for any equipment purchased with funds from this Award for which the unit cost is \$5,000 or greater (collectively, the "Equipment"). Recipient further agrees to place a lien on the Equipment by filing with the appropriate public official in the State of New York, a Form UCC-1. The costs of preparing the Security Agreement and Form UCC-1 and for the filing and recording of the Form UCC-1 are allowable costs under this Award; however, the Recipient must bear any costs related to the preparation, filing, or recording of the Security Agreement or Form UCC-1 not included in the Authorized Budget. The Recipient shall be responsible for taking necessary action, at Recipient's expense, to ensure that the lien in favor of EDA remains perfected throughout the Useful Life of the Equipment and that the filing and recording of the Form UCC-1 do not expire.

30. ARCHITECT/ENGINEER AGREEMENT: Prior to incurring costs for architectural or engineering services, the Recipient shall submit to EDA for approval an Architect/Engineer Agreement that meets the requirements of EDA's *Summary of EDA Construction Standards*, as well as the competitive procurement requirements set out at 2 C.F.R. §§ 200.317—200.326, as applicable. The fee for basic Architect/Engineer Services will be a lump sum or an agreed maximum, and no part of the fees for other services will be based on a cost-plus-a-percentage-of-cost or a cost using a multiplier.

31. LEAD RECIPIENT DESIGNATION AND OBLIGATIONS: This Award is made to multiple Recipients as identified in the Financial Assistance Award Form CD-450 to which these Special Award Conditions are attached. EDA requested that one of the Recipients be designated as the Lead Recipient to facilitate the administration of this Award. The Recipient named first in the Recipient name block on the CD-450 has agreed in writing to be designated as Lead

Recipient. The co-Recipient acknowledges, agrees with, and consents to this designation. The co-Recipient agrees that all funds available pursuant to this Award will be disbursed by EDA to the Lead Recipient. The Lead Recipient agrees to be responsible for the further disbursement of all such funds received from EDA to the co-Recipient in accordance with the Budget attached to this Award. Such disbursement by the Lead Recipient to the co-Recipient will be made in accordance with all applicable Federal requirements as identified and set forth on the Financial Assistance Award Form CD-450. The Lead Recipient further agrees to be responsible for accumulating all necessary information for and the submission of all reports required to be submitted to EDA pursuant to this Award.

32. USE OF EDA LOGO: Recipient may use the EDA logo pursuant to the below terms and conditions for the following limited purposes:

- Press releases, social media posts, and websites that build awareness of this Award (note that some advertising and marketing activities are not allowable costs under federal awards as provided at 2 CFR 200.421);
- Work products and deliverables developed under this Award (e.g. tools, publications, resource guides, brochures, PowerPoint presentations, technical assistance materials); and
- Signage for construction projects funded under this Award and materials that promote the purpose or use of the construction project (e.g. fliers, pamphlets, brochures).

Recipient may not use the EDA logo for other purposes, including lobbying or issue advocacy, endorsing a product or organization, or communications to elected officials or federal agencies. Recipient may not use the EDA logo in a negative or defamatory manner. Recipient must request and obtain EDA permission prior to certain uses of the EDA logo (see section 2, below).

A. Grant of License: EDA hereby grants to Recipient a non-exclusive, royalty-free right to use the EDA logo for the limited purposes described above (the “License”). Recipient agrees that: (1) the EDA logo will not be used in a way that would suggest that it is the property of Recipient or any other third party, and (2) Recipient will include the following notice in conjunction with its use of the EDA logo, as appropriate: “The EDA logo is a trademark of the Economic Development Administration, used with permission.” This License does not grant Recipient the right to use any seal, emblem, logo, or other symbol of the U.S. Department of Commerce or EDA that is not the EDA logo.

B. Required Approvals for Certain Uses of the EDA Logo: Before Recipient uses the EDA logo for press releases and related materials, Recipient shall send a sample of each print, product, design, or other work to show the proposed use to the EDA Regional Office Public Affairs Specialist (whose contact information may be obtained from the Project Officer for this Award). Recipient shall not use the EDA logo for the above uses until receiving written approval (including via email) from EDA of the proposed use.

C. Quality Control: EDA shall have the right, at all reasonable times, to inspect Recipient’s goods, services, and promotional activities employing the EDA logo to ensure that such use is of proper quality and otherwise consistent with this License.

D. Duration and Termination: The License shall terminate on the Award End Date. Recipient may request a renewal of the License for an additional term subject to the express written consent of EDA. Such consent shall be in the form of a properly executed agreement signed by authorized signatories of EDA and Recipient. Upon termination of the License, all rights of Recipient to use the EDA logo shall immediately terminate. EDA may terminate the License unilaterally and without cause at any time, including if EDA determines that Recipient's use of the EDA logo is inconsistent with the License.

E. Validity and Ownership of EDA Logo: Recipient acknowledges and agrees that EDA is the owner of all right, title, and interest in the EDA logo, and all such right, title, interest, and ownership shall remain with EDA. Recipient further acknowledges that Recipient shall not acquire any right, title, interest, or ownership in the EDA logo by virtue of the License or use other than the license granted hereunder and disclaims any such right, title, interest, or ownership. Recipient is prohibited from interfering with EDA's rights in the EDA logo, including challenging EDA's use, registration of, or application to register the EDA logo alone or in combination with other words or designs, as a U.S. or foreign trademark anywhere in the world. Recipient is further prohibited from attempting to register the EDA logo, any derivatives thereof, or any confusingly similar mark, whether or not registered by EDA, alone or in combination with other words or designs, as a U.S. or foreign trademark or as a part of a domain name.

F. Assignments and Sub-Licenses: The License is not assignable, and any attempt by Recipient to assign any portion of the License shall be deemed a breach of the License and will result in immediate termination of the License. Recipient may subcontract, thereby engaging in a limited sublicensing arrangement as applicable, for manufacturing and distribution activities under the License; Recipient shall provide notice to EDA—and must receive prior approval from EDA—of any such subcontract prior to manufacturing and distribution activities.

G. Governing Law: The License shall be interpreted and implemented in accordance with the Federal common law as interpreted by the U.S. District Court for the District of Columbia, without giving effect to any conflict of law principle that would result in the application of the substantive law of another jurisdiction.

H. Indemnification: Recipient agrees to indemnify and hold EDA harmless from any and all claims, damages, and attorneys' fees arising from the use of the EDA logo by the Recipient and its operations, except to the extent that any such claims, damages, or attorneys' fees arose in connection with any act or failure to act by the U.S. Department of Commerce or any agency, department, or subdivision thereof.

I. Obtaining the EDA Logo: For an electronic version of the EDA logo, Recipient should contact the EDA Regional Office Public Affairs Specialist (whose contact information may be obtained from the Project Officer for this Award).

The foregoing SACs represent a true and complete version of same, effective the date of this electronic signature:

###

Section 003113: Project Schedule

Bids Due (All Contracts).....	June 9, 2025
Bids Qualification.....	Week of June 9, 2025
PFDC Board Approval of Contracts.....	June 13, 2025
Obtain EDA Authorization to Award Contracts.....	June 16- July 11, 2025
Award Contracts (All Contracts).....	July 14, 2025
Start of Work.....	July 21, 2025
Substantial Completion	March 23, 2026
Architect Write Punch List.....	March 24, 2025
Perform Punch List.....	March 25-April 15, 2025
Kitchen Equipment Install (Contracts 2 & 3).....	March 25-April 15, 2025
Physical Completion of all work.....	*April 16, 2025

*Liquidated Damages shall apply for any delay to complete per schedule as indicated in the Instructions to Bidders Section 002113 Item 7.B.

Section 004116: Bid Form

(NOTE: Bid Form must be signed on Page 5 and 6)

PRIME CONTRACT: **Contract 1: General Construction Work (GC)****PROJECT TITLE:** **Peekskill Firehouse Kitchen Incubator****BID TO (Owner):** **Peekskill Facilities Development Corporation**
840 Main Street
Peekskill, New York 10566**BID FROM** (Bidder's Name): _____

(Address): _____

(Bidder's Telephone): _____

(Bidder's Fax): _____

In submitting this Bid, BIDDER represents the following:

1. BIDDER has examined copies of all procurement documents.
2. BIDDER has visited the site and become familiar with the general, local and site condition.
3. BIDDER is familiar with federal, state and local laws and regulations applicable to this project.
4. BIDDER accepts that the OWNER has the right to reject this Bid.

The BIDDER (identified above) hereby certifies that he has examined and fully understands the requirements and intent of the BIDDING AND CONTRACT DOCUMENTS, including Drawings, Project Manual, and Addenda; and proposes to furnish all labor, materials, and equipment necessary to complete the Work on, or before, the dates specified in the Contract Documents, for the Base Bid sum of:

TOTAL BASE BID:

_____	(\$)	_____
(Words)		(Figures)

Show the amount of each BID Item in both words and figures; in case of discrepancy between words and figures shown, the amount shown in words will govern.

Alternates:**ADD-ALTERNATE 1: Add New Generator Work**

_____	(\$) _____
(Words)	(Figures)

ADD-ALTERNATE 2: Add Window Replacement Work

_____	(\$) _____
(Words)	(Figures)

ADD-ALTERNATE 3: Add Freight Elevator

_____	(\$) _____
(Words)	(Figures)

Note: Alternates, if accepted, are planned to be implemented in the numerical order listed.

Unit Prices (Add or Delete from Base Bid): N/A

Bidder shall complete either page 3 or 4:

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she is the _____ of the _____ Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED

SWORN to before me this _____ day of _____ 201____

Notary Public: _____

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN
DIVESTMENT ACT**

Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.

Name of the Bidder: _____

Address of Bidder _____

Has bidder been involved in investment activities in Iran? _____

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate):

If so, when did the first investment activity occur? _____

Have the investment activities ended? _____

If so, what was the date of the last investment activity? _____

If not, have the investment activities increased or expanded since April 12, 2012?

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran?

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. _____

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

I, _____ being duly sworn, deposes and says that he/she is the
_____ of the _____ Corporation and the foregoing
is true and accurate.

SIGNED

SWORN to before me this _____ day of _____ 201____

Notary Public: _____

EXECUTION OF CONTRACT

If written notice of the acceptance of this BID is mailed, telegraphed, or otherwise delivered to the undersigned within (45) days after the date of opening of the Bids, or any time thereafter, the undersigned will, within seven (7) days after the date of such delivery, execute and deliver a contract in the form as required by the Architect.

This BID may be withdrawn at any time prior to the scheduled time for the opening of Bids, or any authorized postponement thereof

SIGNATURE

()	NAME OF BIDDER (Corporate Name)
()	
()	
()	
()	SIGNATURE (Corporate Officer)
()	
()	
()	
()	DATE:

ATTACHED HERETO is Bid Security in the form of (circle connect form)

Bid Bond, Certified Check, Cash in the amount of _____

If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within 45 days after the date of the opening of the bids, or any time thereafter before this Bid is withdrawn, the undersigned will, within seven (7) days after date of such mailing, telegraphing or delivering of such notice, execute and deliver a contract in the form of contract (set forth in the Contract Documents).

THE UNDERSIGNED AGREES to comply with the requirements as to the conditions of employment, wage rates, etc., set forth in the Contract Documents.

NON-COLLUSIVE BIDDING CERTIFICATION

Name: _____ **Address:** _____

1. General Certification:

- a. The bidder certifies that they will furnish, at the prices herein quoted, the services and equipment as proposed on these forms.

2. Non-Collusion Certification

- a. By submission of this bid, the bidder certifies that it is complying with Section 103 of the General Municipal Law.
- b. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
 - i. the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purposes of restricting competition, as to any matter relating to such prices with any other bidder or competitor;
 - ii. unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor, and;
 - iii. no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not submit a bid for the purpose of restricting competition.
- c. A proposal shall not be considered for award nor shall any award be made where II(B)(1)(2)(3) above have not been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where II(B)(1)(2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official there of which the bid is made, or their designee, determines that such disclosure was not made for the purpose of restricting competition. The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publications of new or revised price lists for such items or (C) has sold the same items to other customers at the same prices being proposed, does not constitute, without more, a disclosure within the meaning subparagraph (b).

3. Certification and Authorization

- a. Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by corporate bidder for work or services performed or to be performed or goods sold or to be sold, where a competitive bidding is required by statute,

rule, regulation, or local law and where such bid contains the certification referred to in subdivision II(B), shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to the non-collusion as the act and deed of the corporation.

4. Department and Suspension Certification

- a. By signing the certification statement, the bidder certifies that neither it nor any of its principals (e.g. key employees) have been proposed for debarment, debarred, or suspended by Federal or State agency. It is the responsibility of each bidder to sign the certification statement and submit it with any bid. The Owner will rely upon the certification statement submitted by the bidder unless the Owner's personnel know that the certification is in error. In such cases, the Owner may contact the Federal or State agency for confirmation of the bidder's status relative to debarment and suspension.

ACKNOWLEDGE RECEIPT OF ADDENDA NO. (S) _____

****** _____

Signature: _____ **Date:** _____

Title: _____ **Federal I.D. No.:** _____

Business Address: _____

SAM Registration Number: _____ **Telephone:** _____

Email: _____

****** Insert Bidder's correct legal name. If a corporation, give the State of incorporation, using the phrase: "A corporation organized under the laws of the State of _____. " If a partnership, give names of partners, using also the phrase: "Co-Partners, trading and doing business under the firm name and style of _____. If an individual using a trade name, give individual name, using also the phrase: "An individual doing business under the firm name and style of _____

CERTIFICATION REGARDING LOBBYING LOWER TIER COVERED TRANSACTIONS

Applicants should review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying."

LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over \$100,000 or a loan or loan guarantee over \$150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

NAME OF APPLICANT

AWARD NUMBER AND/OR PROJECT NAME

PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE

DATE

Section 004116: Bid Form

(NOTE: Bid Form must be signed on Page 5 and 6)

PRIME CONTRACT: Contract 2: Kitchen Equipment Work (KE)**PROJECT TITLE:** Peekskill Firehouse Kitchen Incubator**BID TO (Owner):** Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566**BID FROM** (Bidder's Name): _____

(Address): _____

(Bidder's Telephone): _____

(Bidder's Fax): _____

In submitting this Bid, BIDDER represents the following:

1. BIDDER has examined copies of all procurement documents.
2. BIDDER has visited the site and become familiar with the general, local and site condition.
3. BIDDER is familiar with federal, state and local laws and regulations applicable to this project.
4. BIDDER accepts that the OWNER has the right to reject this Bid.

The BIDDER (identified above) hereby certifies that he has examined and fully understands the requirements and intent of the BIDDING AND CONTRACT DOCUMENTS, including Drawings, Project Manual, and Addenda; and proposes to furnish all labor, materials, and equipment necessary to complete the Work on, or before, the dates specified in the Contract Documents, for the Base Bid sum of:

TOTAL BASE BID:

_____	(\$)	_____
(Words)		(Figures)

Show the amount of each BID Item in both words and figures; in case of discrepancy between words and figures shown, the amount shown in words will govern.

Alternates: N/A

Unit Prices (Add or Delete from Base Bid): N/A

Bidder shall complete either page 3 or 4:

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she is the _____ of the _____ Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED

SWORN to before me this _____ day of _____ 201____

Notary Public: _____

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN
DIVESTMENT ACT**

Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.

Name of the Bidder: _____

Address of Bidder _____

Has bidder been involved in investment activities in Iran? _____

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate):

If so, when did the first investment activity occur? _____

Have the investment activities ended? _____

If so, what was the date of the last investment activity? _____

If not, have the investment activities increased or expanded since April 12, 2012?

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran?

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. _____

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

I, _____ being duly sworn, deposes and says that he/she is the
_____ of the _____ Corporation and the foregoing
is true and accurate.

SIGNED

SWORN to before me this _____ day of _____ 201____

Notary Public: _____

EXECUTION OF CONTRACT

If written notice of the acceptance of this BID is mailed, telegraphed, or otherwise delivered to the undersigned within (45) days after the date of opening of the Bids, or any time thereafter, the undersigned will, within seven (7) days after the date of such delivery, execute and deliver a contract in the form as required by the Architect.

This BID may be withdrawn at any time prior to the scheduled time for the opening of Bids, or any authorized postponement thereof

SIGNATURE

()	NAME OF BIDDER (Corporate Name)
()	
()	
()	
()	SIGNATURE (Corporate Officer)
()	
()	
()	
()	DATE:

ATTACHED HERETO is Bid Security in the form of (circle connect form)

Bid Bond, Certified Check, Cash in the amount of _____

If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within 45 days after the date of the opening of the bids, or any time thereafter before this Bid is withdrawn, the undersigned will, within seven (7) days after date of such mailing, telegraphing or delivering of such notice, execute and deliver a contract in the form of contract (set forth in the Contract Documents).

THE UNDERSIGNED AGREES to comply with the requirements as to the conditions of employment, wage rates, etc., set forth in the Contract Documents.

NON-COLLUSIVE BIDDING CERTIFICATION

Name: _____ **Address:** _____

1. General Certification:

- a. The bidder certifies that they will furnish, at the prices herein quoted, the services and equipment as proposed on these forms.

2. Non-Collusion Certification

- a. By submission of this bid, the bidder certifies that it is complying with Section 103 of the General Municipal Law.
- b. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
 - i. the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purposes of restricting competition, as to any matter relating to such prices with any other bidder or competitor;
 - ii. unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor, and;
 - iii. no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not submit a bid for the purpose of restricting competition.
- c. A proposal shall not be considered for award nor shall any award be made where II(B)(1)(2)(3) above have not been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where II(B)(1)(2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof of which the bid is made, or their designee, determines that such disclosure was not made for the purpose of restricting competition. The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publications of new or revised price lists for such items or (C) has sold the same items to other customers at the same prices being proposed, does not constitute, without more, a disclosure within the meaning subparagraph (b).

3. Certification and Authorization

- a. Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by corporate bidder for work or services performed or to be performed or goods sold or to be sold, where a competitive bidding is required by statute,

rule, regulation, or local law and where such bid contains the certification referred to in subdivision II(B), shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to the non-collusion as the act and deed of the corporation.

4. Department and Suspension Certification

- a. By signing the certification statement, the bidder certifies that neither it nor any of its principals (e.g. key employees) have been proposed for debarment, debarred, or suspended by Federal or State agency. It is the responsibility of each bidder to sign the certification statement and submit it with any bid. The Owner will rely upon the certification statement submitted by the bidder unless the Owner's personnel know that the certification is in error. In such cases, the Owner may contact the Federal or State agency for confirmation of the bidder's status relative to debarment and suspension.

ACKNOWLEDGE RECEIPT OF ADDENDA NO. (S) _____

****** _____

Signature: _____ **Date:** _____

Title: _____ **Federal I.D. No.:** _____

Business Address: _____

SAM Registration Number: _____ **Telephone:** _____

Email: _____

****** Insert Bidder's correct legal name. If a corporation, give the State of incorporation, using the phrase: "A corporation organized under the laws of the State of _____. " If a partnership, give names of partners, using also the phrase: "Co-Partners, trading and doing business under the firm name and style of _____. If an individual using a trade name, give individual name, using also the phrase: "An individual doing business under the firm name and style of _____

CERTIFICATION REGARDING LOBBYING LOWER TIER COVERED TRANSACTIONS

Applicants should review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying."

LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over \$100,000 or a loan or loan guarantee over \$150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

NAME OF APPLICANT

AWARD NUMBER AND/OR PROJECT NAME

PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE

DATE

Section 004116: Bid Form

(NOTE: Bid Form must be signed on Page 5 and 6)

PRIME CONTRACT: **Contract 3: Cooling Equipment Work (CE)****PROJECT TITLE:** **Peekskill Firehouse Kitchen Incubator****BID TO (Owner):** **Peekskill Facilities Development Corporation**
840 Main Street
Peekskill, New York 10566**BID FROM** (Bidder's Name): _____

(Address): _____

(Bidder's Telephone): _____

(Bidder's Fax): _____

In submitting this Bid, BIDDER represents the following:

1. BIDDER has examined copies of all procurement documents.
2. BIDDER has visited the site and become familiar with the general, local and site condition.
3. BIDDER is familiar with federal, state and local laws and regulations applicable to this project.
4. BIDDER accepts that the OWNER has the right to reject this Bid.

The BIDDER (identified above) hereby certifies that he has examined and fully understands the requirements and intent of the BIDDING AND CONTRACT DOCUMENTS, including Drawings, Project Manual, and Addenda; and proposes to furnish all labor, materials, and equipment necessary to complete the Work on, or before, the dates specified in the Contract Documents, for the Base Bid sum of:

TOTAL BASE BID:

_____	(\$)	_____
(Words)		(Figures)

Show the amount of each BID Item in both words and figures; in case of discrepancy between words and figures shown, the amount shown in words will govern.

Alternates: N/A

ADD-ALTERNATE 1: Add Garage Walk-in Cooling Units

_____	(\$)	_____
(Words)		(Figures)

Unit Prices (Add or Delete from Base Bid): N/A

Bidder shall complete either page 3 or 4:

CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective April 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, _____, being duly sworn, deposes and says that he/she is the _____ of the _____ Corporation and that neither the Bidder/Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

SIGNED

SWORN to before me this _____ day of _____ 201____

Notary Public: _____

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN
DIVESTMENT ACT**

Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.

Name of the Bidder: _____

Address of Bidder _____

Has bidder been involved in investment activities in Iran? _____

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate):

If so, when did the first investment activity occur? _____

Have the investment activities ended? _____

If so, what was the date of the last investment activity? _____

If not, have the investment activities increased or expanded since April 12, 2012?

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran?

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. _____

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

I, _____ being duly sworn, deposes and says that he/she is the
_____ of the _____ Corporation and the foregoing
is true and accurate.

SIGNED

SWORN to before me this _____ day of _____ 201____

Notary Public: _____

EXECUTION OF CONTRACT

If written notice of the acceptance of this BID is mailed, telegraphed, or otherwise delivered to the undersigned within (45) days after the date of opening of the Bids, or any time thereafter, the undersigned will, within seven (7) days after the date of such delivery, execute and deliver a contract in the form as required by the Architect.

This BID may be withdrawn at any time prior to the scheduled time for the opening of Bids, or any authorized postponement thereof

SIGNATURE

()	NAME OF BIDDER (Corporate Name)
()	
()	
()	
()	SIGNATURE (Corporate Officer)
()	
()	
()	
()	DATE:

ATTACHED HERETO is Bid Security in the form of (circle connect form)

Bid Bond, Certified Check, Cash in the amount of _____

If written notice of the acceptance of this bid is mailed, telegraphed or delivered to the undersigned within 45 days after the date of the opening of the bids, or any time thereafter before this Bid is withdrawn, the undersigned will, within seven (7) days after date of such mailing, telegraphing or delivering of such notice, execute and deliver a contract in the form of contract (set forth in the Contract Documents).

THE UNDERSIGNED AGREES to comply with the requirements as to the conditions of employment, wage rates, etc., set forth in the Contract Documents.

NON-COLLUSIVE BIDDING CERTIFICATION

Name: _____ **Address:** _____

1. General Certification:

- a. The bidder certifies that they will furnish, at the prices herein quoted, the services and equipment as proposed on these forms.

2. Non-Collusion Certification

- a. By submission of this bid, the bidder certifies that it is complying with Section 103 of the General Municipal Law.
- b. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of knowledge and belief:
 - i. the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purposes of restricting competition, as to any matter relating to such prices with any other bidder or competitor;
 - ii. unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor, and;
 - iii. no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not submit a bid for the purpose of restricting competition.
- c. A proposal shall not be considered for award nor shall any award be made where II(B)(1)(2)(3) above have not been complied with; provided, however, that if in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefore. Where II(B)(1)(2) and (3) above have not been complied with, the bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof of which the bid is made, or their designee, determines that such disclosure was not made for the purpose of restricting competition. The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed or pending publications of new or revised price lists for such items or (C) has sold the same items to other customers at the same prices being proposed, does not constitute, without more, a disclosure within the meaning subparagraph (b).

3. Certification and Authorization

- a. Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by corporate bidder for work or services performed or to be

performed or goods sold or to be sold, where a competitive bidding is required by statute, rule, regulation, or local law and where such bid contains the certification referred to in subdivision II(B), shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to the non-collusion as the act and deed of the corporation.

4. Department and Suspension Certification

- a. By signing the certification statement, the bidder certifies that neither it nor any of its principals (e.g. key employees) have been proposed for debarment, debarred, or suspended by Federal or State agency. It is the responsibility of each bidder to sign the certification statement and submit it with any bid. The Owner will rely upon the certification statement submitted by the bidder unless the Owner's personnel know that the certification is in error. In such cases, the Owner may contact the Federal or State agency for confirmation of the bidder's status relative to debarment and suspension.

ACKNOWLEDGE RECEIPT OF ADDENDA NO. (S) _____

** _____

Signature: _____ Date: _____

Title: _____ Federal I.D. No.: _____

Business Address: _____

SAM Registration Number: _____ Telephone: _____

Email: _____

** Insert Bidder's correct legal name. If a corporation, give the State of incorporation, using the phrase: "A corporation organized under the laws of the State of _____. " If a partnership, give names of partners, using also the phrase: "Co-Partners, trading and doing business under the firm name and style of _____. If an individual using a trade name, give individual name, using also the phrase: "An individual doing business under the firm name and style of _____

CERTIFICATION REGARDING LOBBYING LOWER TIER COVERED TRANSACTIONS

Applicants should review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 15 CFR Part 28, "New Restrictions on Lobbying."

LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 15 CFR Part 28, for persons entering into a grant, cooperative agreement or contract over \$100,000 or a loan or loan guarantee over \$150,000 as defined at 15 CFR Part 28, Sections 28.105 and 28.110, the applicant certifies that to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

In any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure occurring on or before October 23, 1996, and of not less than \$11,000 and not more than \$110,000 for each such failure occurring after October 23, 1996.

As the duly authorized representative of the applicant, I hereby certify that the applicant will comply with the above applicable certification.

NAME OF APPLICANT

AWARD NUMBER AND/OR PROJECT NAME

PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

SIGNATURE

DATE

AIA® Document A310™ – 2010

Bid Bond

(Table deleted)

KNOW ALL MEN BY THESE PRESENTS, that we
(Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and
(Here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of as Surety, hereinafter called the
Surety, are held and firmly bound unto
(Here insert full name and address or legal title of Owner)

as Obligee, hereinafter called the Obligee, in the sum of (\$), for the payment of
which sum well and truly to be made, the said Principal and the said Surety, bind ourselves,
our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, the Principal has submitted a bid for
(Here insert full name, address and description of project)

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal
shall enter into a Contract with the Obligee in accordance with the terms of such bid, and
give such bond or bonds as may be specified in the bidding or Contract Documents with
good and sufficient surety for the faithful performance of such Contract and for the prompt
payment of labor and material furnished in the prosecution thereof, or in the event of the
failure of the Principal to enter such Contract and give such bond or bonds, if the Principal
shall pay to the Obligee the difference not to exceed the penalty hereof between the amount
specified in said bid and such larger amount for which the Obligee may in good faith
contract with another party to perform the Work covered by said bid, then this obligation
shall be null and void, otherwise to remain in full force and effect.

(Paragraphs deleted)

ADDITIONS AND DELETIONS:

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

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

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

Signed and sealed this day of ,

_____	_____
(Witness)	(Principal) (Seal)
_____	_____
(Witness)	(Title)
_____	_____
(Witness)	(Surety)
_____	_____
	(Title) (Seal)

Init.

AIA® Document A101® – 2017

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

AGREEMENT made as of the day of in the year 2024
(In words, indicate day, month and year.)

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

Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566

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

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

Peekskill Firehouse Kitchen
Incubator Project

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

Joseph G. Thompson Architect, PLLC
108 N. Division Street, Ste. 100
Peekskill, New York 10566

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

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

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

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

TABLE OF ARTICLES

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

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

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

(Check one of the following boxes.)

☒ [X] The date of this Agreement.

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

☐ [] Established as follows:

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

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

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

Init.

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User Notes:

(3B9ADA3B)

§ 3.3 Substantial Completion

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

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

[X] By the following date: October 13, 2025

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

Portion of Work	Substantial Completion Date
-----------------	-----------------------------

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

ARTICLE 4 CONTRACT SUM

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

§ 4.2 Alternates

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

Item	Price
------	-------

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

Item	Price	Conditions for Acceptance
------	-------	---------------------------

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

Item	Price
------	-------

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

Item	Units and Limitations	Price per Unit (\$0.00)
------	-----------------------	-------------------------

Any work to be performed under a unit price is acknowledged to be a change in the Work and will require a Change Order based upon an agreement among the Owner, Architect and Contractor. Compensation and final unit price costs for any such work shall be subject to negotiation and approval by the Owner through a Change Order prior to the work being performed.

§ 4.5 Liquidated damages, if any:

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

§ 4.5.1 Owner and Contractor agree that the failure of Contractor to achieve Substantial Completion by the date set forth in paragraph 3.3 will directly cause substantial damage to Owner, which damage is incapable of exact measurement or prediction. Therefore, the parties have agreed that the Liquidated Damages set forth in this paragraph 4.5 may be assessed against Contractor based upon the time within which Contractor completes the Work. The Liquidated Damages sums specified in paragraph 4.5.2 below bear a substantial relationship to and approximate the actual damages the Owner is expected to incur from the failure of Contractor to achieve Substantial Completion, represent reasonable compensation to the Owner from damages anticipated from such delays, and are not a penalty. The Liquidated Damages are based on a fair and methodically reasonable attempt to predict damages resulting from delays, including, but not limited to, (a) Owner's loss of revenues; (b) Owner's rent expenses; (c) Owner's increased costs of financing and other costs of carry; and (d) Owner's increased costs of taxes and insurance. Accordingly, neither party may change the Liquidated Damages or the basis therefor, in any future setting.

A material part of the consideration for which the Owner has bargained is the Contractor's willingness to assume the risk of pre-determined damages for delays. The Contractor has attempted to bargain for additional consideration (e.g. an increased fee) in return for this risk and in fact is free to decline the Agreement altogether.

§ 4.5.2 In the event Contractor fails to achieve Substantial Completion on or before the date set forth in paragraph 3.3 herein, the Contractor shall pay Owner, as Liquidated Damages, Seven Hundred and 00/100 Dollars (\$700.00) for each day of delay until Substantial Completion is achieved. If the Owner terminates the Contractor's right to proceed, other than a termination by Owner for convenience, Liquidated Damages will continue to accrue until the Work meets the criteria for Substantial Completion.

§ 4.5.3 Owner may invoice Contractor on a monthly basis for the applicable Liquidated Damages as set forth under paragraph 4.5.2. Contractor shall pay each invoice within ten (10) days following submission. Owner may offset any Liquidated Damages, in whole or in part, against any monies due Contractor under the Contract.

§ 4.5.4 It is understood and agreed between Owner and Contractor that the terms, conditions and amounts fixed under paragraph 4.5 as Liquidated Damages for failure to timely achieve the Substantial Completion are reasonable, considering the damages that Owner would sustain in such event, and that these amounts are agreed upon and fixed as liquidated damages because of the difficulty in ascertaining the exact amount of damages that would be sustained as a result of delay in achieving Substantial Completion.

§ 4.5.5 The Owner's right to recover such Liquidated Damages shall in no way limit (a) the Owner's entitlement to damages for any other injury, damage or loss, other than for delay, (b) right to indemnification, or (c) other non-monetary remedies (e.g. the right to terminate the Contract) to which the Owner may be entitled pursuant to the terms of this Contract or applicable law.

§ 4.6 Other:

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

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 An architect, if retained by the Owner for the purposes of this Article 5, shall perform all the contract administration services under Article 5. If an architect is not retained by the Owner for purposes of this Article 5, the Owner shall perform all contract administration services under Article 5. Based upon Applications for Payment submitted to the Owner by the Contractor and Certificates for Payment issued by the Owner, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

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

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the 15th day of the month it is submitted in, the Owner shall make payment of the amount certified to the Contractor not later than the 15th

day of the following month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than thirty (30) days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

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

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

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

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

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

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

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

§ 5.1.6.3 In taking action on the Contractor's Applications for Payment the Architect shall be entitled to reasonably rely on the accuracy and completeness of the information furnished by the Contractor and such action shall not be deemed to be a representation that (1) the Architect has made a detailed examination, audit, or arithmetic verification of the documentation or other supporting data submitted by the Contractor; (2) that the Architect has made exhaustive or continuous on-site inspections; or (3) that the Architect has made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract.

§ 5.1.7 Retainage

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

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

Retainage shall be 5%.

§ 5.1.7.1.1 The following items are not subject to retainage:

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

Not applicable

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

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

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

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

To be determined by a written change order agreement by the parties.

§ 5.1.8

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

§ 5.2 Final Payment

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

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

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

§ 5.3 Interest

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

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

2 % per annum simple interest

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

An architect, if retained by the Owner for the purposes of this Article 6., will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201-2017. If an architect is not retained by the Owner for purposes of this Article 6, the Owner shall serve as the Initial Decision Maker, unless the Owner appoints another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(Paragraph Deleted)

§ 6.2 Binding Dispute Resolution

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

- ☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- ☒ Litigation in a court of competent jurisdiction located in County where the project is located
- ☐ Other (Specify)

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

ARTICLE 7 TERMINATION OR SUSPENSION

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

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:
(Insert the amount of or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

None

§ 7.1.2 In the case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work performed up to the date of termination.

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

ARTICLE 8 MISCELLANEOUS PROVISIONS

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

§ 8.2 The Owner's representative:
(Name, address, email address, and other information)

Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566

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

To be determined prior to Owner issuing the Notice to Proceed

Init.

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

§ 8.5 Insurance and Bonds

§ 8.5.1 The Contractor shall purchase and maintain insurance as set forth in Article 10 of this Agreement and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in Article 10 of this Agreement, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201-2017, may be given by email delivery to the recipient provided proof of delivery and/or receipt of the email can be provided upon demand.

§ 8.7 Other provisions:

§ 8.7.1 This Agreement shall be governed by the laws of the State of New York.

§ 8.7.2 The Owner and Contractor, respectively, bind themselves, their agents, successors, assigns and legal representatives to this Agreement. Neither the Owner nor the Contractor shall assign this Agreement without the written consent of the other.

§ 8.7.3 Nothing contained in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the Owner or Contractor.

§ 8.7.4 If the Contractor receives information specifically designated by the other party as "confidential" or "business proprietary," the receiving party shall keep such information strictly confidential and shall not disclose it to any other person except to (1) its employees, (2) those who need to know the content of such information in order to perform services or construction solely and exclusively for the Project, or (3) its consultants and contractors whose contracts include similar restrictions on the use of confidential information.

§ 8.7.5 Nothing contained in this Agreement shall be construed as creating any personal liability on the part of any officer, employee or agent of the Owner.

§ 8.7.6 Contractor agrees to comply with all Federal and New York State laws and regulations which may be applicable to this Agreement, and to require similar compliance from its subcontractors and consultants.

§ 8.7.7 Contractor, in accordance with its status as
an independent contractor, covenants and agrees that it shall conduct itself in a manner consistent with such status, that it will neither hold itself nor its employees out as, nor claim to be an officer or employee of the Owner, and that it will not by reason hereof, make any claims, demand or application for any right or privilege applicable to an officer or employee of the Owner, including but not limited to workmen's compensation coverage, unemployment insurance benefits, Social Security coverage and retirement membership or credit.

§ 8.7.8 Contractor agrees to maintain sufficient on-site records and information necessary for the documentation of any and all facets of program operation specified by this Agreement. Contractor agrees to permit on-site inspection and auditing of all records, books, papers and documents associated with this Agreement by authorized representatives of the Owner, and further agrees to provide necessary staff support in the performance of such audit. Contractor agrees to maintain for a period of five (5) consecutive years following termination of this Agreement.

Init.

any and all records, reports and other documentation arising from the performance of this Agreement; however, this period shall be extended beyond five years for any and all records and information pertaining to unresolved questions which have been brought to Contractor's attention by written notice.

§ 8.7.9 Contractor agrees to pay, when due, all claims for labor and/or materials furnished for Work, and to prevent the filing of any liens, attachments, garnishments or suits involving the contract funds or title of the property on which the Work is performed. Contractor agrees to cause the effect of any such suit or lien to be removed from the premises within fifteen (15) days after written demand from the Owner.

§ 8.7.10 Unless the Owner specifically retains an architect to perform services for the Project before and/or after the effective date of this Agreement, the Owner shall perform all contract administration services under the Agreement customary for the project and those detailed A201-2017, including, but not limited to, contract administration services related to Pay Applications, Certifications for Payment, submittals, change orders, inspections and determination of substantial and/or final completion.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1** AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- .2** AIA Document A201™-2017, General Conditions of the Contract for Construction, as amended for the Project
- .3** Project Manual Volumes 1 & 2, dated October 5, 2024
(Paragraph Deleted)
- .4** Reserved

.5 Drawings

Number
As provided in Project Manual
Volumes 1 & 2, dated October 5,
2024

.6 Specifications

Section
As provided in Project Manual
Volumes 1 & 2, dated October 5,
2024

.7 Addenda, if any:

Number	Date
---------------	-------------

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

.8 Other Exhibits:

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

[]

(Paragraph Deleted)

(Table Deleted)

[X] Supplementary and other Conditions of the Contract:

Document

As provided in Project Manual
Volumes 1 & 2, dated October 5,
2024

.9 Other documents, if any, listed below:

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

ARTICLE 10 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in Article 11 of AIA Document A201-2017.

(State bonding requirements, if any, and limits of liability for insurance required in Article 11 of AIA Document A201-2017.)

Type of insurance or bond	Limit of liability or bond amount
Payment and Performance Bonds in a form mutually agreed upon by the parties	100% of the Contract Sum

§ 10.1 The Contractor shall provide to the Owner certificates of insurance evidencing compliance with the requirements in this Article 10. The certificates will show the Owner and the Architect as additional insureds on the Comprehensive General Liability, Automobile and Umbrella/Excess policies.

§ 10.2 The Contractor's insurance policies for the additional insured required under this Article 10 shall apply as primary insurance on a non-contributing basis before any other insurance or self-insurance, including any deductible, maintained by or provided to, the additional insured.

§ 10.3 Upon the Owner's request, the Contractor shall provide copies of policies and all endorsements for the insurance requirements under this Article 10.

§ 10.4 The Contractor shall provide the Owner 30 days' prior written notice of any cancellation of any insurance policies required under this Section 10 and notice as soon as reasonably practicable of any reduction of available coverage on account of a modification of any insurance policies required under Section 10 or claims paid under such policies.

Init.

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

OWNER *(Signature)*

(Printed name and title)

CONTRACTOR *(Signature)*

(Printed name and title)

Init.

/

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User Notes:

(3B9ADA3B)

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Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description:

(Name and location)

Peekskill Firehouse Kitchen
Incubator Project

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond: ☐ None ☒ See Section 18

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature: _____

Name and

Title:

Signature: _____

Name and

Title:

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

(FOR INFORMATION ONLY --- Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

ADDITIONS AND DELETIONS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

§ 16 Definitions

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

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

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

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

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

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

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

§ 18 Modifications to this bond are as follows:

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

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

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

SURETY

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____



AIA® Document A312® – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description:

(Name and location)

Peekskill Firehouse Kitchen
Incubator Project

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond: ☐ None ☒ See Section 16

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

Signature: _____

Name and

Title:

SURETY

Company: (Corporate Seal)

Signature: _____

Name and

Title:

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

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

ADDITIONS AND DELETIONS:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

§ 14 Definitions

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

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

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

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

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

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

§ 16 Modifications to this bond are as follows:

§ 16.1 Replace Section 11 with the following: Any proceeding, legal or equitable, under this Bond shall be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after termination by the Owner of the Contractor's contract or within two years after final completion by the Contractor, whichever is later. In the event the Contractor files for bankruptcy, the commencement of the two year period shall not start to run until the bankruptcy proceeding is finalized or the Owner obtains relief from an automatic stay, whichever is later.

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

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

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

SURETY

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

SUBMITTAL TRANSMITTAL FORM

Contract:	Submittal Type: <input type="checkbox"/> Product Data
Contractor:	<input type="checkbox"/> Shop Drawings
Address:	<input type="checkbox"/> Samples
Phone:	<input type="checkbox"/> Other

Project: Peekskill Firehouse Kitchen Incubator	
Submittal Item:	Spec. Section:
Resubmittal: <input type="checkbox"/> Yes or <input type="checkbox"/> No	Paragraph:
Revision No.:	Drawings List:
Manufacturer:	Received by A/E:
Subcontractor:	
Specified Product: <input type="checkbox"/> Yes or <input type="checkbox"/> No	

Contractor Stamp:	A/E Stamp:
Contractor Comments:	A/E Comments:

SAMPLE CERTIFICATE OF INSURANCE

Date: _____

Producer (Name and Address) Name: PRODUCER NAME Address: ADDRESS Phone No. PHONE NUMBER AND FAX	This certificate is issued as a matter of information only and confers no rights upon the certificate holder The certificate does not alter amend, extend or alter the coverage afforded by the policies below. <div style="text-align: center; border: 1px solid black; padding: 2px;">INSURERS AFFORDING COVERAGE</div> INSURER A: Carrier A INSURER B: Carrier B INSURER C: Carrier C INSURER D: Carrier D INSURER E: Carrier E
Insured: (Name and Address) Name: PRIME CONTRACTORS NAME AND ADDRESS Address: Phone No.	

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 NO.	TYPE OF INSURANCE	POLICY NUMBER	EFFECTIVE DATE	EXPIRATION DATE	LIMITS
A	GENERAL LIABILITY	POLICY NUMBER	ANNUAL	TERM	EACH OCCURRENCE
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY				\$ 1,000,000
	<input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCURRENCE				FIRE DAMAGE (Any one fire)
					\$50,000
					MED EXPENSE
B	GEN'L AGGREGATE LIMIT APPLIES PER	POLICY NUMBER	ANNUAL	TERM	\$5,000
	<input type="checkbox"/> (POLICY <input checked="" type="checkbox"/> PROJECT <input type="checkbox"/> LOC				PERSONAL & ADV INJURY
					\$1,000,000
					GENERAL AGGREGATE
					\$2,000,000
C	AUTOMOBILE LIABILITY	POLICY NUMBER	ANNUAL	TERM	PRODUCTS-COMP/OP AGG
	<input checked="" type="checkbox"/> ANY AUTO				COMBINED SINGLE LIMIT
	<input checked="" type="checkbox"/> ALL OWNED AUTOS				(each accident)
	<input checked="" type="checkbox"/> SCHEDULED AUTOS				\$1,000,000
	<input checked="" type="checkbox"/> HIRED AUTOS				BODILY INJURY
D	<input checked="" type="checkbox"/> NON OWNED AUTOS	POLICY NUMBER	ANNUAL	TERM	(Per Person)
					PROPERTY DAMAGE
					(Per Accident)
E	GARAGE LIABILITY	POLICY NUMBER	ANNUAL	TERM	AUTO ONLY -EA ACCIDENT
	<input type="checkbox"/> ANY AUTO				OTHER THAN EA ACC
					AUTO ONLY AGG
F	EXCESS LIABILITY	POLICY NUMBER	ANNUAL	TERM	EACH OCCURRENCE
	<input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE				\$5,000,000
	<input type="checkbox"/> DEDUCTIBLE				AGGREGATE
	<input type="checkbox"/> RETENTION \$				\$5,000,000
G	WORKERS COMPENSATION AND EMPLOYERS LIABILITY	POLICY NUMBER	ANNUAL	TERM	<input checked="" type="checkbox"/> WC STATU <input type="checkbox"/> OTHER TORY LIMIT
					\$500,000
					E.L. EACH ACCIDENT
					\$500,000
					E.L. DISEASE-EA EMPLOYEE
H	OTHER	POLICY NUMBER	ANNUAL	TERM	\$500,000
	NYS Disability				E.L. DISEASE-POLICY LIMIT
					\$500,000
I		POLICY NUMBER	ANNUAL	TERM	Statutory

DESCRIPTION OF OPERATIONS/ LOCATIONS/VEHICLES/ EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS
 General Liability, Automobile Liability & Excess Liability As Required by Contract- Construction Manager, Owner and other parties as Designated in Contract are Named Additional Insureds on a Primary and Non Contributing Basis (30) Day Notification Included for any policy change or Non Renewal to Certificate Holder via Certified Mail/ Registered Mail.

CERTIFICATE HOLDER <input type="checkbox"/> ADDITIONAL INSURED: INSURER LETTER Newburgh Enlarged City School District, 124 Grand Street Newburgh, NY 12550 BBL Construction Services LLC 302 Washington Ave Ext., Albany, NY 12203 Joseph J Minuta Architecture 345 Windsor Highway #202, New Windsor, NY 12553	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY 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
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STATE OF NEW YORK
WORKERS' COMPENSATION BOARD

CERTIFICATE OF NYS WORKERS' COMPENSATION INSURANCE COVERAGE

<p>1a. Legal Name and address of Insured (Use street address only)</p> <p>Work Location of Insured (<i>Only required if coverage is specifically limited to certain locations in New York State, i.e. a Wrap-Up Policy</i>)</p>	<p>1b. Business Telephone Number of Insured</p> <p>1c. NYS Unemployment Insurance Employer Registration Number of Insured</p> <p>1d. Federal Employer Identification Number of Insured or Social Security Number</p>
<p>2. Name and Address of the Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder)</p>	<p>3a. Name of Insurance Carrier</p> <p>3b. Policy Number of entity listed in box "1a":</p> <p>3c. Policy effective period:</p> <p>_____ to _____</p> <p>3d. The Proprietor, Partners or Executive Officers are:</p> <p><input type="checkbox"/> included. (Only check box if all partners/officers included)</p> <p><input type="checkbox"/> all excluded or certain partners/officers excluded.</p> <p>3e. Demolition is: (<i>Definition of Demolition on Reverse</i>)</p> <p><input type="checkbox"/> included.</p> <p><input type="checkbox"/> excluded.</p>

This certifies that the insurance carrier indicated above in box "3" insures the business referenced above in box "1a" for workers' compensation under the New York State Workers' Compensation Law. (To use this form, New York (NY) must be listed under **Item 3A** on the INFORMATION PAGE of the workers' compensation insurance policy). The Insurance Carrier or its licensed agent will send this Certificate of Insurance to the entity listed above as the certificate holder in box "2".

The Insurance Carrier will also notify the above certificate holder within 10 days IF a policy is canceled due to nonpayment of premiums or within 30 days IF there are reasons other than nonpayment of premiums that cancel the policy or eliminate the insured from the coverage indicated on this Certificate. (These notices may be sent by regular mail.) Otherwise, this Certificate is valid for a maximum of one year after this form is approved by the insurance carrier or its licensed agent.

Please Note: Upon the cancellation of the workers' compensation policy indicated on this form, if the business continues to be named on a permit, license or contract issued by a certificate holder, the business must provide that certificate holder with a new Certificate of Workers' Compensation Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Workers' Compensation Law.

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has the coverage as depicted on this form.

Approved by: _____
(Print name of authorized representative or licensed agent of insurance carrier)

Approved by: _____
(Signature) (Date)

Title: _____

Telephone Number of authorized representative or licensed agent of insurance carrier: _____

Please Note: Only insurance carriers and their licensed agents are authorized to issue the C-105.2 form. Insurance brokers are **NOT** authorized to issue it.

Workers' Compensation Law

Section 57. Restriction on issue of permits and the entering into contracts unless compensation is secured.

1. The head of a state or municipal department, board, commission or office authorized or required by law to issue any permit for or in connection with any work involving the employment of employees in a hazardous employment defined by this chapter, and notwithstanding any general or special statute requiring or authorizing the issue of such permits, shall not issue such permit unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that compensation for all employees has been secured as provided by this chapter. Nothing herein, however, shall be construed as creating any liability on the part of such state or municipal department, board, commission or office to pay any compensation to any such employee if so employed.

2. The head of a state or municipal department, board, commission or office authorized or required by law to enter into any contract for or in connection with any work involving the employment of employees in a hazardous employment defined by this chapter, notwithstanding any general or special statute requiring or authorizing any such contract, shall not enter into any such contract unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that compensation for all employees has been secured as provided by this chapter.

Definition of Demolition (Box "3e." on the reverse side of this form)

A building wrecking or demolition is one where a building, chimney or steeple is razed, or where a floor, exterior wall or roof is removed. If the contract involves only the removal of interior walls, partitions or the facing only of any exterior wall, it is not considered demolition.

Out-of-State Companies Working in NYS -- NYS Workers' Compensation and Disability Benefits Requirements for Permits, Licenses or Contracts issued by NYS Government Entities

Generally, employers must have a workers' compensation policy or a combination of policies that cover each state in which they employ permanent employees to cover on-the-job accidents and disabilities. As you are probably aware, certain insurance carriers write policies that cover multiple states. "Riders" found under sections 3A and 3C on the Information Page of the policy specify the states of coverage. In addition, the operations covered in each state are identified in attachments to the policy.

In addition to any other state's workers' compensation coverages, an out-of-state employer needs to be specifically covered for NYS workers' compensation insurance when there are "sufficient contacts" between that employer and the state. While there is no single determinative factor, any of the following criteria could be the basis for finding "sufficient contacts" requiring New York coverage:

- ♦ a physical location within New York State;
- ♦ \$50,000 in payroll during a calendar year in New York State;
- ♦ one or more employees (including subcontractors) with a primary work location or hired within New York State; or
- ♦ employees (including subcontractors) working in New York State for more than 90 days during a calendar year.

If an out-of-state employer meets any of the above criteria, it is required to carry a New York State workers' compensation policy. When New York is listed in **Item 3A** on the Information Page of an employer's workers' compensation insurance policy, the employer is fully covered under the NYS Workers' Compensation Law. If insured through a private insurance carrier, the out-of-state employer must file a C-105.2 -- Certificate of Workers' Compensation Insurance (the business' insurance carrier will send this form to the government entity upon request) **PLEASE NOTE:** The New York State Insurance Fund provides its own version of this form, the U-26.3. If the out-of-state employer is legally, fully self-insured in New York State, the out-of-state employer must file a SI-12 -- Certificate of Workers' Compensation Self-Insurance (the business calls the Board's Self-Insurance Office at 518-402-0247). If the out-of-state employer is participating in group self-insurance, the out-of-state employer must file a GSI-105.2 -- Certificate of Participation in Worker's Compensation Group Self-Insurance (the business' Group Self-Insurance Administrator will send this form to the government entity upon request).

If an out-of-state employer **does not** meet any of the above criteria and has New York (NY) listed in **Item 3C** on the Information Page of its workers' compensation insurance policy (the Other States Insurance section), NYS specific coverage is not required and the employer may be able to use its own state's workers' compensation coverage by filing a WC/DB-101 form. [The out-of-state employer's employees will be covered under NY benefits when working in New York by having NY listed in **Item 3C** on the Information Page of the workers' compensation insurance policy (the Other States Insurance section).]

STATE OF NEW YORK
WORKERS' COMPENSATION BOARD

THIS AGENCY EMPLOYS AND SERVES
PEOPLE WITH DISABILITIES WITHOUT
DISCRIMINATION.

EMPLOYER'S APPLICATION FOR CERTIFICATE OF
COMPLIANCE WITH DISABILITY BENEFITS LAW

INSTRUCTIONS TO EMPLOYER: Complete PART 1 ONLY and have your Disability Benefits Insurance Carrier complete Part 2.

PART 1. TO BE COMPLETED BY EMPLOYER	
EMPLOYER'S NAME AND ADDRESS (Home or Main Office)	LOCATION OF OPERATIONS
NAME UNDER WHICH BUSINESS IS CONDUCTED, IF DIFFERENT FROM ABOVE	OPERATIONS TO BEGIN ON OR ABOUT:
DISABILITY BENEFITS CARRIER (If more than one, list all)	NYS UNEMPLOYMENT INSURANCE EMPLOYER'S REG. NO.
Application is hereby made to the CARRIER for a Certificate of Compliance with the Disability Benefits Law.	
Date Signed _____ By _____ (Signature of owner, partner, or authorized officer)	
Tel. No.: (_____) _____ Title _____	

PART 2. TO BE COMPLETED BY DISABILITY BENEFITS CARRIER	
CERTIFICATE OF COMPLIANCE WITH DISABILITY BENEFITS LAW	
This is to certify that the above employer is insured with _____	
and that the policy covers: * a. <input type="checkbox"/> ALL of the EMPLOYER'S employees eligible under the New York Disability Benefits Law.	
* b. <input type="checkbox"/> ONLY the following class or classes of the EMPLOYER'S employees:	
Date Signed _____ By _____ (Signature of carrier's authorized representative (currently on file with DB Bureau))	
Tel. No.: (_____) _____ Title _____	
*IMPORTANT: If Box "a" is checked, this certificate is COMPLETE. Mail it directly to the employer. If Box "b" is checked, this certificate is NOT COMPLETE for purposes of Section 220, subd. 8 of the Disability Benefits Law. It must be mailed for completion to the Workers' Compensation Board, Disability Benefits Bureau, 100 Broadway Menands, Albany, NY 12241-0005.	

PART 3. TO BE COMPLETED BY WORKERS' COMPENSATION BOARD (Only if box "b" of Part 2 has been checked)	
STATE OF NEW YORK WORKERS' COMPENSATION BOARD	
There is on file with the Workers' Compensation Board, Certificate of Insurance indicating that the above-named employer has complied with the Disability Benefits Law with respect to all of his/her employees.	
DISABILITY BENEFITS BUREAU	
Date Signed _____ By _____	
Tel. No.: (_____) _____ Title _____	

DISABILITY BENEFITS LAW

Section 220 Penalties

8. (a) The head of a state or municipal department, board, commission or office authorized or required by law to issue any permit for or in connection with any work involving the employment of employees in employment as defined in this article, and notwithstanding any general or special statute requiring or authorizing the issue of such permits, shall not issue such permit unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chairman, that the payment of disability benefits for all employees has been secured as provided by this article. Nothing herein, however, shall be construed as creating any liability on the part of such state or municipal department, board, commission or office to pay any disability benefits to any such employee if so employed.
- (b) The head of a state or municipal department, board, commission or office authorized or required by law to enter into any contract for or in connection with any work involving the employment of employees in employment as defined in this article, and notwithstanding any general or special statute requiring or authorizing any such contract, shall not enter into any such contract unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chairman, that the payment of disability benefits for all employees has been secured as provided by this article.

AIA[®] Document G702[™] - 1992

Application and Certificate for Payment

TO OWNER: PROJECT: BLANK

Distribution to:
OWNER ☐
ARCHITECT ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

APPLICATION NO:
PERIOD TO:
CONTRACT FOR: General Construction
CONTRACT DATE:
PROJECT NOS: / /

FROM
CONTRACTOR:
VIA
ARCHITECT:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM \$ 0.00
2. Net change by Change Orders \$ 0.00
3. CONTRACT SUM TO DATE (Line 1 + 2) \$ 0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) \$ 0.00

5. RETAINAGE:

a. 0 % of Completed Work
(Column D + E on G703) \$ 0.00
b. 0 % of Stored Material
(Column F on G703) \$ 0.00
Total Retainage (Lines 5a + 5b or Total in Column I of G703) \$ 0.00

6. TOTAL EARNED LESS RETAINAGE \$ 0.00
(Line 4 Less Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$ 0.00
(Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE \$ 0.00

9. BALANCE TO FINISH, INCLUDING RETAINAGE
(Line 3 less Line 6) \$ 0.00

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$ 0.00	\$ 0.00
Total approved this Month	\$ 0.00	\$ 0.00
TOTALS	\$ 0.00	\$ 0.00
NET CHANGES by Change Order	\$	\$ 0.00

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____

Date: _____

State of: _____

County of: _____

Subscribed and sworn to before
me this _____ day of _____

Notary Public: _____

My Commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED \$ 0.00

(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____

Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract



AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO: 0
APPLICATION DATE:
PERIOD TO:

ARCHITECT'S PROJECT NO:

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User Notes: (301705)

AIA® Document G706™ – 1994

Contractor's Affidavit of Payment of Debts and Claims

OWNER	<input type="checkbox"/>
ARCHITECT	<input type="checkbox"/>
CONTRACTOR	<input type="checkbox"/>
SURETY	<input type="checkbox"/>
OTHER	<input type="checkbox"/>

PROJECT: *(Name and address)*
BLANK

ARCHITECT'S PROJECT NUMBER:

TO OWNER: *(Name and address)*

CONTRACT FOR: General Construction
CONTRACT DATED:

STATE OF:
COUNTY OF:

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

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

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

Indicate Attachment ☐ Yes ☒ No

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

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

CONTRACTOR: *(Name and address)*

BY: _____
(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:

AIA[®] Document G706A[™] – 1994

Contractor's Affidavit of Release of Liens

OWNER	<input type="checkbox"/>
ARCHITECT	<input type="checkbox"/>
CONTRACTOR	<input type="checkbox"/>
SURETY	<input type="checkbox"/>
OTHER	<input type="checkbox"/>

PROJECT: *(Name and address)*

BLANK

ARCHITECT'S PROJECT NUMBER:

TO OWNER: *(Name and address)*

CONTRACT FOR: General Construction

CONTRACT DATED:

STATE OF:
COUNTY OF:

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

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

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

CONTRACTOR: *(Name and address)*

BY:

*(Signature of authorized
representative)*

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:

AIA® Document G716™ – 2004

Request for Information ("RFI")

TO:

FROM:

PROJECT:

ISSUE DATE:

RFI No.

PROJECT NUMBERS: /

REQUESTED REPLY DATE:
COPIES TO:

RFI DESCRIPTION: *(Fully describe the question or type of information requested.)*

REFERENCES/ATTACHMENTS: *(List specific documents researched when seeking the information requested.)*

SPECIFICATIONS:

DRAWINGS:

OTHER:

SENDER'S RECOMMENDATION: *(If RFI concerns a site or construction condition, the sender may provide a recommended solution, including cost and/or schedule considerations.)*

RECEIVER'S REPLY: *(Provide answer to RFI, including cost and/or schedule considerations.)*

BY

DATE

COPIES TO

Note: This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive or a Minor Change in the work must be executed in accordance with the Contract Documents.

AIA® Document G710™ – 1992

Architect's Supplemental Instructions

PROJECT *(Name and address):*

**ARCHITECT'S SUPPLEMENTAL
INSTRUCTION NO:**

OWNER: ☐

ARCHITECT: ☐

CONSULTANT: ☐

CONTRACTOR: ☐

FIELD: ☐

OTHER: ☐

OWNER *(Name and address):*

DATE OF ISSUANCE:

CONTRACT FOR:

FROM ARCHITECT *(Name and
address):*

CONTRACT DATE:

TO CONTRACTOR *(Name and
address):*

ARCHITECT'S PROJECT NUMBER:

The Work shall be carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Proceeding with the Work in accordance with these instructions indicates your acknowledgment that there will be no change in the Contract Sum or Contract Time.

DESCRIPTION:

ATTACHMENTS:

(Here insert listing of documents that support description.)

ISSUED BY THE ARCHITECT:

(Signature)

(Printed name and title)

AIA® Document G714™ – 2007

Construction Change Directive

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

You are hereby directed to make the following change(s) in this Contract:
(Describe briefly any proposed changes or list any attached information in the alternative)

PROPOSED ADJUSTMENTS

- The proposed basis of adjustment to the Contract Sum or Guaranteed Maximum Price is:
 - ☒ • Lump Sum increase of \$0.00
 - ☐ • Unit Price of \$ per
 - ☐ • As provided in Section 7.3.3 of AIA Document A201-2007
 - ☐ • As follows:

- The Contract Time is proposed to (remain unchanged). The proposed adjustment, if any, is 0 days.

When signed by the Owner and Architect and received by the Contractor, this document becomes effective IMMEDIATELY as a Construction Change Directive (CCD), and the Contractor shall proceed with the change(s) described above.

Contractor signature indicates agreement with the proposed adjustments in Contract Sum and Contract Time set forth in this CCD.

ARCHITECT *(Firm name)*

OWNER *(Firm name)*

CONTRACTOR *(Firm name)*

ADDRESS

ADDRESS

ADDRESS

BY *(Signature)*

BY *(Signature)*

BY *(Signature)*

(Typed name)

(Typed name)

(Typed name)

DATE

DATE

DATE

AIA® Document G701™ – 2001

Change Order

OWNER	<input type="checkbox"/>
ARCHITECT	<input type="checkbox"/>
CONTRACTOR	<input type="checkbox"/>
FIELD	<input type="checkbox"/>
OTHER	<input type="checkbox"/>

PROJECT (Name and address):
BLANK

CHANGE ORDER NUMBER: 001

DATE: October 24, 2004

TO CONTRACTOR (Name and address):

ARCHITECT'S PROJECT NUMBER:

CONTRACT DATE:

CONTRACT FOR: General Construction

THE CONTRACT IS CHANGED AS FOLLOWS:

(Include, where applicable, any undisputed amount attributable to previously executed Construction Change Directives)

The original Contract Sum was	\$	0.00
The net change by previously authorized Change Orders	\$	0.00
The Contract Sum prior to this Change Order was	\$	0.00
The Contract Sum will be increased by this Change Order in the amount of	\$	0.00
The new Contract Sum including this Change Order will be	\$	0.00

The Contract Time will be increased by Zero (0) days.

The date of Substantial Completion as of the date of this Change Order therefore is

NOTE: This Change Order does not include changes in the Contract Sum, Contract Time or Guaranteed Maximum Price which have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.

ARCHITECT (Firm name)

CONTRACTOR (Firm name)

OWNER (Firm name)

ADDRESS

ADDRESS

ADDRESS

BY (Signature)

BY (Signature)

BY (Signature)

(Typed name)

(Typed name)

(Typed name)

DATE

DATE

DATE

AIA® Document G707™ – 1994

Consent Of Surety to Final Payment

OWNER	<input type="checkbox"/>
ARCHITECT	<input type="checkbox"/>
CONTRACTOR	<input type="checkbox"/>
SURETY	<input type="checkbox"/>
OTHER	<input type="checkbox"/>

PROJECT: *(Name and address)*
BLANK

ARCHITECT'S PROJECT NUMBER:

CONTRACT FOR: General Construction

TO OWNER: *(Name and address)*

CONTRACT DATED:

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

on bond of
(Insert name and address of Contractor)

, SURETY,

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

, CONTRACTOR,

as set forth in said Surety's bond.

, OWNER,

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

(Surety)

(Signature of authorized representative)

Attest:
(Seal):

(Printed name and title)

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

Peekskill Firehouse Kitchen
Incubator Project

THE OWNER:

(Name, legal status and address)

Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566

THE ARCHITECT:

(Name, legal status and address)

Jospeh G. Thompson Architect, PLLC
108 N. Division Street, Ste. 100
Peekskill, New York 10566

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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.

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

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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. The Contract Documents 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 and addenda relating to bidding requirements.

§ 1.1.2 The Contract

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

§ 1.1.3 The Work

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

§ 1.1.4 The Project

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

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

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

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. Any Work, materials or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be furnished and performed whether or not specifically called for. When words or phrases which have a well-known technical or construction industry or trade meaning are used to describe Work, materials or equipment, such words or phrases shall be interpreted in accordance with that meaning.

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

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

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

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

§ 1.2.5 When reference is made to specifications of a manufacturer, trade association, governmental agency, reference standard or similar source (such as ASTM, ASA, AISC, ACI, etc.) such is made part of these Specifications, having the force and effect as though reproduced herein, and upon entering into the Contract the Contractor acknowledges his familiarity with those pertaining to his Work.

§ 1.2.6 Within the Contract Documents for which each Prime Contractor is responsible, any Work included by reference in any section to another Specification's Section shall be included as Work under the Contract, whether or not it is called for under the Section referred to. Failure to cross-reference such items shall not relieve the Contractor or any Prime Contractor from the obligations to provide such 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.

§ 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 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.

§ 1.9 Miscellaneous Definitions

§ 1.9.1 The term "Product" as used herein includes materials, systems and equipment.

§ 1.9.2 The terms "Install" or "Furnish all labor" are used herein as term contractions and unless specifically noted otherwise are to mean "perform all operations connected with installation of work including unloading materials to be installed, supplying all necessary equipment and rigs to do the work, test, place in operation and service.

§ 1.9.3 The terms "Furnish" or "Furnish all material" are used herein as term contractions and unless specifically noted otherwise are to mean "supply and deliver to the job site all materials and/or equipment so specified.

§ 1.9.4 The word "Provide" is used herein as a term contraction and unless otherwise specifically noted is to mean "furnish, install, connect up complete, test, place in operation and service.

§ 1.9.5 The terms "Approved", "Equal", "Proper" and "Adequate" and words of similar meaning are understood to mean "in the opinion of the architect".

§ 1.9.6 The word "Replace" is used herein as a term contraction and unless otherwise specifically noted is to mean "remove existing and provide new.

ARTICLE 2 OWNER

§ 2.1 General

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

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

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

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Intentionally Omitted.

§ 2.2.2 Intentionally Omitted.

§ 2.2.3 Intentionally Omitted.

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

§ 2.3 Information and Services Required of the Owner

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

§ 2.3.2 The Owner may 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. The Architect, if retained by the Owner, will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment.

Unless the Owner specifically retains an architect to perform services for the Project before and/or after the effective date of this Agreement, the Owner shall perform all contract administration services under the Agreement customary for the project and those detailed A201-2017, including, but not limited to, contract administration services related to Pay Applications, Certifications for Payment, submittals, change orders, inspections and determination of substantial and/or final completion.

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

§ 2.3.4 The Owner may furnish information describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. Locations of existing utilities shown on the plans have been taken from record drawings and are based upon the best available information. Actual field conditions may vary from the conditions shown on the plans and other Infrastructure not shown may exist near or within the area of work. It is the contractor's responsibility to determine the exact locations of all utilities prior to working in the area and to avoid interference.

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

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

§ 2.4 Owner's Right to Stop the Work

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

§ 2.5 Owner's Right to Carry Out the Work

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

§ 2.6 ACCELERATION CLAUSE

§ 2.6.1 The Owner reserves the right to accelerate the work of the Contract. In the event that the Owner directs acceleration, such directive will be only in written form. The Contractor shall keep cost and other project records related to the written acceleration directive separately from normal project costs and records and shall provide a written record of acceleration cost to the Owner on a daily basis.

§ 2.6.2 In order to recover additional costs due to a written acceleration directive, the Contractor must document that additional expenses were incurred and paid by the Contractor. Labor costs recoverable will be only overtime or shift premium costs or the cost of additional laborers brought to the site to accomplish the accelerated work effort. Equipment costs recoverable will be only the cost of added equipment mobilized to the site to accomplish the accelerated work effort.

ARTICLE 3 CONTRACTOR

§ 3.1 General

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

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect and Owner any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect or Owner 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 which involves an error, inconsistency or omission in the Contract Documents without first providing notice to the Owner and Architect of such condition and receiving authorization to proceed, the Contractor shall assume responsibility for such performance and shall bear an appropriate amount of the attributable 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 Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require

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

§ 3.2.5 Whenever the Drawings show existing or other construction not required as part of the Contract Work, it is understood that it is so shown as a matter of information and that the Owner, while believing such information to be substantially correct, assumes no responsibility thereof.

§ 3.3 Supervision and Construction Procedures

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

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

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

§ 3.3.4 Where equipment lines, piping, conduit or any other systems are shown diagrammatically, the Contractor shall be responsible for the coordination and orderly arrangement of the various lines of piping, conduit, etc. included in the Work of his Contract. He shall coordinate the work of his Subcontractors and prevent all interferences between equipment, lines of piping, architectural features, etc. and avoid any unsightly arrangements in Work whether exposed or concealed. In the event there are other separate Contractors he shall also coordinate the Work of his Contract with the Work of any such separate Contractors.

§ 3.3.5 The Contractor, its employees and Subcontractors shall be subject to such rules and regulations for the conduct of the Work as the Owner may establish. The Contractor shall be responsible for the enforcement among his employees of the Owner's instructions.

§ 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.

§ 3.4.1.1 Contractor shall warrant that it has good title to all materials used by it as part of the Work of this Contract. No materials or supplies shall be purchased by Contractor or any of its Subcontractors that are subject to any chattel mortgage, conditional sale or other agreement by which an interest is retained by Seller.

§ 3.4.1.2 On receipt of a signed Contract, Contractor, whether directly or through its Subcontractors, Suppliers or Vendors, will be expected to place firm orders for needed materials in sufficient time to ensure delivery at such times as will ensure speedy and uninterrupted progress of the Work. Contractor shall not be entitled to an increase in the contract price or the contract time for the failure to do so. If deemed necessary to assure timely delivery of materials for the Project, Contractor may accept delivery of such materials at any time with prior written approval of the Owner, and may include the cost of such materials in its applicable monthly application for payment, provided such materials have actually been delivered to Contractor and properly stored by him with approval or under direction of the Architect or Owner either at the job site or in an approved storage facility, as provided elsewhere in these General Conditions.

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

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

§ 3.4.3.1 Persons whose work is unsatisfactory to the Owner or Architect, or who is reasonably considered by them to be unskilled or otherwise objectionable, may be immediately dismissed from the Project site upon notice to the Contractor. Any persons so dismissed shall be immediately replaced by the Contractor so as not to delay the progress of the Work.

§ 3.4.4 After the Contract has been executed, the Owner and Architect will consider a formal request for the substitution of products in place of those specified in the Project Specifications. The Architect will be allowed a reasonable time within which to evaluate each proposed substitution. The burden of proof regarding the merit of a substitution is on the Contractor. The Architect will be the sole judge of equivalence, and no substitute will be ordered, installed or utilized without the Architect's prior written acceptance which will be evidenced by either a Change Order or an approved Shop Drawing.

§ 3.4.5 By making requests for substitutions based on Subparagraph 3.4.4 contained herein, the Contractor.

1. Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
2. Represents that the Contractor will provide the same warranty for the substitution that the Contractor would for that specified;
3. Certifies that the cost data presented is complete and includes all related costs under this Contract except the Architects redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent; and
4. Will coordinate the installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.

§ 3.4.6 If in the Project Specifications, two or more kinds, types, brands, manufacturers or materials are named, they are regarded as the required standard of quality, and are presumed to be equal. The Contractor may select one of these items or, if the Contractor desires to use any kind, type, brand, manufacturer or material other than those named in the Specification, he shall indicate in writing, when requested, and prior to award of contract, what kind, type, brand, manufacturer is included in the base bid for the specified item.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or

equipment not conforming to these requirements may be considered defective. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of Owner. If required by Architect, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with instructions of the applicable Supplier, except as otherwise provided in the Contract Documents. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

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

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

§ 3.5.4 The Contractor shall warrant all materials and operating systems to be free from any defects and faulty equipment for a minimum period of one (1) year from the date of Substantial Completion.

§ 3.5.5 Upon written notice from Architect or Owner, Contractor shall remedy any defects in the Work, and pay for any damage to other Work resulting therefrom, which shall appear within a period of one (1) year from the date of Substantial Completion, unless longer period is specified in the Contract Documents. Notwithstanding anything to the contrary herein contained, it is understood and agreed that the foregoing warranty shall not affect, limit or impair Owner's rights against Contractor with regard to latent defects in the Work which do not appear within the applicable warranty period and which could not, by the exercise of reasonable care and due diligence, be ascertained or discovered by Owner within such warranty period provided that all claims for latent defects shall be asserted within five (5) years after Substantial Completion. Contractor shall be and remain liable and responsible to correct and cure any such latent defects which are reported to Contractor by Owner in writing within ninety (90) days after any such latent defects first appear or could, by the exercise of reasonable care and due diligence, be ascertained or discovered by Owner. Notwithstanding anything to the contrary, if Contractor fails to promptly commence and diligently perform and complete all corrective Work required hereunder, Owner shall have the right (but not the obligation) in each instance, at Owner's election, to cause such corrective Work to be done by others and recover the costs thereof, together with damages and reasonable attorneys' fees, from Contractor, in addition to all other rights and remedies available to Owner against Contractor hereunder and at law and in equity for such default by Contractor.

§ 3.5.6 All guarantees or warranties upon any Work, labor, materials, or equipment by any subcontractor or supplier of Contractor shall be deemed made by Contractor to Owner. The Contractor shall obtain and furnish to the Owner written manufacturer's warranties for all major materials, systems and equipment. All factory and manufacturers' guarantees and warranties shall be assigned by Contractor to Owner and all such warranty documents shall be delivered by Contractor to Owner prior to final payment by Owner hereunder; provided, however, that no such assignment of factory or manufacturers' warranties shall release or relieve Contractor from any of its warranty obligations or liability hereunder. Contractor shall obtain the manufacturer's warranty for all major materials, systems and equipment, including the plumbing, electrical, HVAC and roof systems and components and all structural components for the longest period available, and shall obtain consent to the assignment of the same to Owner; provided, however, if such extended warranty exceeds that required by the Plans and Specifications, Contractor shall notify Owner thereof and of any additional cost for such extended warranty and if Owner elects to obtain such extended warranty, such excess cost shall be paid by Owner; if no term is specified, the terms shall be a minimum of one year, but not less than the standard period of the manufacturer's warranty for the item. Contractor covenants to perform the Work in such a manner as to preserve any and all such warranties. The provisions of this subparagraph shall survive Owner's final acceptance of the Project.

§ 3.5.7 Any and all warranties and guarantees provided herein shall be assignable to any person or entity that succeeds Owner in the ownership of the premises.

§ 3.5.8 Should the Contractor be required to correct any defects or damage, under the provisions of this Article, he further agrees to make good, without cost to the Owner, and subsequent defects in the work or materials furnished or built; by him, or damage due to faulty workmanship or materials in the work furnished or built by him, which occur within a one-year

period after the original defect or damage is corrected or replaced, but such additional guarantee shall apply only to the actual facility, material or structure initially found to be defective or damaged.

All related components of the work under this Contract not showing defects or damage within one year of the date of Substantial Completion shall be exempt from the addition guarantee, except that the original guarantee on a related component shall be extended for a period of time corresponding to the period of non-use of such component if it cannot be used due to the condition of the defective work, and/or due to the repair or replacement of such work.

§ 3.5.9 Contractor shall perform all Work in accordance with and in compliance with all applicable federal, state and local rules, regulations, agency directives and courts orders, and with all applicable rules, regulations, bylaws, policies and procedures of the Owner.

§ 3.5.10 In emergencies occurring during the guarantee period, the Owner may correct any defect immediately and charge the cost to the Contractor. The Owner shall at once notify the Contractor, who may take over the Work and make any corrections remaining after his forces arrive at the Work. Repair work not started within seven days following notice to the Contractor of any defect may be considered an emergency.

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

§ 3.7.1.1 If, in connection with the Project, the Owner has obtained certain permits, licenses, or agreements from State and Federal Agencies and adjacent property owners for the Project, the Owner will furnish copies of these permits to the Contractor. It is the Contractor's responsibility to comply with any conditions or limitations placed on the Project by these permits. The Contractor shall fully cooperate with Owner in meeting the permit requirements and accommodations of regulatory inspections/directives.

§ 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. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Architect shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

§ 3.7.2.1 Owner will not be responsible for contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

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

§ 3.7.4 Concealed or Unknown Conditions

Contractor agrees that before making his proposal he carefully examined the Contract Documents, together with the site of the proposed work, as well as its surrounding territory, is fully informed regarding all of the conditions affecting the work to be done and labor and materials to be furnished for the completion of this contract, including the existence of poles, wires, pipes and other facilities and structures of municipal and other public service corporations on, over or under the site, and that this information was secured by personal investigation and research, and that he will make no claim by reason of estimates, tests or representations of the Owner.

The Contractor shall refer to the reports of investigations and tests of subsurface and latent physical conditions at the site or otherwise affecting cost, progress or performance of the Work which have been relied upon in preparation of the Contract Documents. Such reports are not guaranteed as to accuracy or completeness. The Contractor shall not be

entitled to an increase in the contract price or an extension of contract time because of inaccuracy or incompleteness of reports on or tests of subsurface and latent physical conditions.

In addition to showing the structures to be built under these Contract Documents, the Drawings may show certain information obtained by the Owner regarding the conduits, pipe-lines, existing pavements, concrete slabs and rock, and other structures which exist at the Site of the Work, both at and below the surface of the ground. The Owner expressly disclaims any responsibility for the accuracy or completeness of the information given on the Drawings with regard to existing structures, conduits, pipe-lines, existing pavements, concrete slabs and rock, and the Contractor will not be entitled to an increase in the contract price or an extension of contract time on account of inaccuracy or incompleteness of such information. Said structures, conduits, pipe-lines, existing pavements, concrete slabs and rock, are being shown only for convenience of the Contractor who must verify the information to its own satisfaction.

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

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

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

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

§ 3.9 Superintendent

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

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

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

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work ("Construction Schedule"). 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. Any modifications to the Construction Schedule must be agreed to by the Contractor and Owner and contained in a Change Order signed by the Contractor and Owner. The Contractor shall cooperate with the Owner 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.

§ 3.10.1.1 The Construction Schedule shall be a Critical Path Method (CPM) type of schedule in a form approved by the Architect and Owner, consisting of: (1) a single critical path delineation and other sequencing, and early and late start, float, and completion dates for each activity; and (2) milestones, interrelationships, and restraints for all activities, including Owner-awarded contracts through the date of Project completion. The Construction Schedule must show all activities necessary for Substantial and Final Completion as defined in Section 9.8, Section 9.10, and elsewhere in the Contract Documents.

§ 3.10.1.2 Periodic meetings will be held at least monthly or at more frequent times as may be required by the Contract Documents, to assess the state of the completion of the Project. In advance of each such meeting, Contractor shall provide Architect and Owner a status report identifying whether the Work is on schedule in accordance with the Construction Schedule or whether there are anticipated or potential delays to any critical path elements in the construction of the Work (in which event Contractor shall provide notice and an analysis as reasonably requested by Owner).

§ 3.10.1.3 If the Contractor neglects to carry out the Work in accordance with the Construction Schedule or progress of the Work indicates it will not timely achieve Substantial Completion of the Work, the Owner shall have the right to direct the Contractor to take corrective measures necessary to expedite the progress of construction, including, without limitation: (1) working additional shifts or overtime; (2) supplying additional manpower, equipment, facilities; (3) rescheduling activities, and; (4) any other similar measures (hereinafter referred to collectively as "Recovery Measures"). Such Recovery Measures shall continue until the progress of the Work complies with the state of completion required by the Construction Schedule. The Owner's right to require Recovery Measures is for the purpose of ensuring the Contractor's compliance with the Construction Schedule.

- .1** Contractor shall not be entitled to seek and adjustment in the Contract Sum or Contract Time in connection with any Recovery Measures required by the Owner.
- .2** Notwithstanding the above, if the Owner determines that the Contractor is behind the Construction Schedule, the Owner may alternatively give the Contractor ten (10) days to take whatever Recovery Measures are necessary to return the Work to adherence to the Construction Schedule. Contractor shall not be entitled to seek and adjustment in the Contract Sum or Contract Time for any such Recovery Measures. After such ten (10) day period, if the Owner determines that the Work is still behind the Construction Schedule, and Contractor fails to initiate the cure and fails to continue to progress with the cure of correcting the deficiency to the satisfaction of the Owner, the Owner may terminate the Contract without any further notice required under General Conditions Article 14 or correct the deficiency at the Contractor's expense.
- .3** Owner may exercise the rights furnished to the Owner under or pursuant to this Subparagraph 3.10.1.3 as frequently as is reasonably necessary to ensure that the Contractor's performance of the Work will comply with any milestone date or completion date set forth in the Construction Schedule.

§ 3.10.1. The Contractor is solely responsible for the timing, sequencing coordination, and supervision of the work in accordance with the Construction Schedule. Review or approval of the initial Construction Schedule and subsequent reviews of the Construction Schedule by the Architect and Owner do not operate to imply agreement by the Architect or Owner that the means and methods of planning of the Work utilized by the Contractor are adequate or will accomplish the Work in the time shown on the Construction Schedule. The Contractor shall take all actions necessary to ensure the Work's successful planning and execution within the stipulated Contract Time. Additionally, review or approval of the Construction Schedule by the Owner or its consultants shall not make the Owner or its consultants responsible for Contractor's scheduling obligations or the accuracy of the Construction Schedule prepared by the Contractor.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's

construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the Construction Schedule approved by the Owner and Architect.

§ 3.10.4 Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor.

§ 3.11 Documents and Samples at the Site

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

§ 3.11.2 Contractor shall provide a set of reproducible record drawings showing significant changes in the Work made during construction based on marked-up prints, Drawings and other data including, but not limited to location of water, sewer, telephone, electric, gas and any other utility lines as they relate to the Project. If the Contractor fails to provide such drawings, the Architect shall do so as an additional service and the Contractor will be required to pay the costs of the Architect providing such service.

§ 3.12 Shop Drawings, Product Data and Samples

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

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

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

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

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

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

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect. Any portion of the Work performed prior to review and approval by the Owner and Architect of required Shop Drawings, Product Data, Samples, or other Submittals, is performed at Contractor's risk. No Contract adjustments will be made to correct or modify Work installed without prior written approval of the Owner and Architect.

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

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

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

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

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

§ 3.13 Use of Site

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

§ 3.14 Cutting and Patching

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

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except

with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

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

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

§ 3.16 Access to Work

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

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent by permitted by law, the Contractor shall indemnify, defend and hold harmless the Owner, Owner's consultant's, Architect, Architect's consultants, and each of their respective representatives, employees, directors, officers, and agents, from and against any and all claims, suits, actions, debts, damages, fines, penalties, costs, charges and expenses, including attorneys' fees and court costs, arising out of, relating to or resulting from the Work, including, but not limited to, bodily injury and/or property damage, to the extent caused, in whole or in part, by acts, actions, omissions, negligence, fault or breach of the Contractor, its employees, agents, subcontractors, suppliers and/or materialmen, regardless of whether or not such claim 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.

§ 3.18.3 The Contractor agrees to include the following or similar indemnity provision in each and every contract it enters into with a subcontractor, and to require that subcontractor to include such provision in each contract it enters into with any lower tier subcontractor: "To the fullest extent permitted by law, Subcontractor shall indemnify, defend and hold harmless the Contractor, Owner, Owner's consultant's, Architect, Architect's consultants, and each of their respective representatives, employees, directors, officers, and agents, from and against any and all claims, suits, actions, debts, damages, fines, penalties, costs, charges and expenses, including attorneys' fees and court costs, arising out of, relating to or resulting from the performance of this Subcontract, including, but not limited to, bodily injury and/or property damage, to the extent caused, in whole or in part, by acts, actions, omissions, negligence, fault or breach of the Subcontractor, its employees, agents, subcontractors, suppliers and/or materialmen, regardless of whether or not such claim is caused in part by a party indemnified hereunder."

§ 3.19 Site Conditions Investigated

§ 3.19.1 The Contractor acknowledges he has satisfied itself as to the nature and location of the Work, the general and local conditions, particularly those bearing on transportation, disposal, handling and storage of materials, availability of labor,

materials, equipment, utilities, roads, weather, ground water table, character of surface and subsurface materials and conditions, the facilities needed to prosecute the Work, and all other factors which in any way affect the Work or the cost thereof under this Contract. Any failure by the Contractor to acquaint himself with the available information concerning these conditions will not relieve it from the responsibility of successfully performing work. Subject to Paragraph 3.7.4, the Contractor will not be entitled to an increase in the contract price or an extension of contract time on account of any changes to these conditions and the Contractor shall make no claim against the Owner or Architect with respect to the same.

§ 3.20 Existing Features and Underground Data

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

§ 3.20.2 The locations, depths and data as to underground conditions have been obtained from records, surface indications and data furnished by others. The information furnished is solely for the convenience of the Contractor without any warranty, expressed or implied as to its accuracy or completeness. Subject to Paragraph 3.7.4, the Contractor shall make no claim against the Owner or Architect with respect to the accuracy or completeness of such information if it is erroneous, or if the conditions found at the time of construction are different from those as indicated.

§ 3.21 Construction Stresses

§ 3.21.1 The Contractor shall be solely responsible for the conditions which develop during construction as a result of its activities and in the event any structure is dislocated, over strained, or damaged so as to affect its usefulness, the Contractor shall be solely responsible. The Contractor shall take whatever steps necessary to strengthen, relocate or rebuild the structure to meet requirements.

§ 3.21.2 The Contractor is responsible for restoration and/or repair of utilities, private property, buildings, pavement, walkways, roads, etc. damaged by its activities under this Agreement.

ARTICLE 4 ARCHITECT

§ 4.1 General

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

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

§ 4.2 Administration of the Contract

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

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not

have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

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

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

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

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

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

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

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

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

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

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

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

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

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

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

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

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

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

§ 5.3 Subcontractual Relations

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

proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

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

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

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

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

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

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

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

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

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

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

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

§ 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed

construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent

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

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

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

§ 6.3 Owner's Right to Clean Up

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

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

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

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

§ 7.1.4 The Contractor shall not be entitled to receive any additional compensation or extension of time for changes in the work, regardless of whether such changes were ordered by the Owner or Architect, unless a written Change Order for such changes in the work has been issued in writing by the Owner. If the Contractor performed a change in the work without receipt of a written Change Order or Construction Change Directive, the Contractor shall be deemed to have waived any claim for any additional compensation or extension of time for changes in the work.

§ 7.1.5 In no case shall the Contractor delay the progress of the Work, or any part thereof, in response to changes in the Work or disputes caused by proposed or ordered changes in the Work, or any disputes or disagreements as to equitable value of the changes.

§ 7.1.6 Cost shall not be allowed in excess of usual rentals charged in area for similar equipment of like size and condition, including costs of necessary supplies and repairs for operating equipment on site in connection with other work unless its use incurs actual and additional costs to Contractor. If equipment not on site is required for change in work only, cost of transporting equipment to and from site will be allowed.

§ 7.2 Change Orders

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

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

§ 7.2.2 Labor costs shall include items incidental to labor such as workmen's compensation insurance social security, fringe benefits (exclusive of transportation) and all mandatory costs in connection with labor.

§ 7.2.3 Overhead shall include insurance other than those incidental to labor mentioned above, any premiums on bonds required by the Contract, Contractor's supervisory employees, home and field office expenses, transportation costs and both manual and power small tools and manual and power small equipment.

§ 7.2.4 For work done by the Contractor's own forces, mark-up for combined overhead and profit on materials and on cost of labor shall not exceed 10%.

§ 7.2.5 For work done by the subcontractors, mark-up of costs as defined herein by subcontractor's for combined overhead and profit on materials and on cost of labor shall not exceed 10%.

a. To this amount, 5% may be added for the Contractor's combined overhead and profit.

§ 7.2.6 To facilitate reviewing quotations for either extra charges or deductions, all proposals shall be accompanied by a complete itemization of costs including labor, materials, subcontracts, and if allowed, mark-ups for overhead and profit. Subcontracts shall be similarly itemized.

§ 7.2.7 Agreement on any Change Order shall constitute a final settlement of all matters relating to the change in the Work which is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule.

§ 7.3 Construction Change Directives

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

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

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

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

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

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

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

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

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

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

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

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

§ 7.3.11 If any material previously required is omitted by written order of the Owner after it has been delivered to, or partially worked on by the Contractor, and consequently will not retain its full value for other uses, Contractor shall be allowed actual cost of omitted material, less fair market value of material, as determined by Architect.

§ 7.4 Minor Changes in the Work

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

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

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

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

§ 8.2 Progress and Completion

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

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

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

§ 8.2.4 In no case shall the Contractor delay the progress of the Work, or any part thereof, in response to changes in the Work or disputes caused by proposed or ordered changes in the Work, or any disputes or disagreements as to equitable value of the changes, except if a change in the Work sequentially affects the progress of the project.

§ 8.3 Delays and Extensions of Time

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

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

§ 8.3.3 Notwithstanding anything to the contrary in the Contract Documents, an extension of the Contract Time and actual increased costs, to the extent permitted under Paragraph 8.3.1 shall be the sole remedy of the Contractor for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity; or (4) any delay-related claim (collectively referred in this subparagraph 8.3.3 as "Delay") whether or not such Delay is foreseeable. In no event shall the Contractor be entitled to any compensation or recovery of any other damages, in connection with any Delay, including, without limitation, consequential damages, lost opportunity costs, impact damages, labor inefficiency damages, or overhead costs.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

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

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

§ 9.2 Schedule of Values

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

§ 9.3 Applications for Payment

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

requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

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

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

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

§ 9.3.2.1 Procedures required by Owner shall include, but are not necessarily limited to, submission by the Contractor to the Architect of bills of sale and bills of lading for such materials and equipment, provision of opportunity for Architect's visual verification that such materials and equipment are in fact in storage, and, if stored off-site, submission by the Contractor of verification that such materials and equipment are stored in a bonded warehouse.

§ 9.3.2.2 All such materials and equipment, including materials and equipment stored on-site but not yet incorporated into the Work, upon which partial payments have been made shall become the property of the Owner, but the care and protection of such materials and equipment shall remain the responsibility of the Contractor until incorporation into the Work, including maintaining insurance coverage on a replacement cost basis without voluntary deductible.

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

§ 9.3.4 Along with its Application for Payment, Contractor shall submit to Architect a written acknowledgement of payment and waiver of lien rights with respect to the Application for Payment submitted. Contractor shall also submit acknowledgments of payment and waiver of lien rights from each of its Subcontractors for the time period through and including the Application for Payment being submitted to the Contractor. Architect shall hold all acknowledgments of payment and waiver of lien rights in escrow until the applicable payment has been made by the Owner.

§ 9.3.5 Along with its Application for Payment, Contractor shall submit to Architect its certified payroll records.

§ 9.4 Certificates for Payment

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

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract

Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

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

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 failure to carry out the Work in accordance with the Contract Documents.

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

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

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

§ 9.6 Progress Payments

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

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

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

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor

fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

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

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

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

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

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately.

§ 9.8 Substantial Completion

§ 9.8.1 The Date of Substantial Completion of the Project or a designated portion thereof is the date when construction is sufficiently complete in accordance with the Drawing and Specifications so the Owner can occupy or utilize the entire Project (or such portion thereof as Owner earlier elects to occupy or utilize) for the use for which it is intended. Substantial Completion shall not be deemed to exist until the Owner receives a Certificate of Occupancy for the Project (or such portion as elected by Owner), and the Contractor, architect and Owner have agreed upon a schedule to provide the Owner with all as built drawings, operating manuals and warranties. Warranties called for by the Agreement or by the Drawings and Specifications shall commence on the date of Substantial Completion of the Project or designated portion thereof, or any later date that the parties agree. This date shall be established by a Certificate of Substantial Completion signed by the Owner, Architect and Contractor and shall state their respective responsibilities for security, maintenance, hear utilities, damage to the Work and insurance. This Certificate shall also list the items to be completed or corrected together with a price for each time and a time for their completion and correction.

§ 9.8.1.1 Commissioning. Contractor shall provide all services necessary for the functional testing and certification of all building systems, utility systems and equipment. All forms and documentation which record the certification and performance of the building systems, utility systems and equipment shall be fully executed and provided to the Owner and Architect as required by the plans and specifications.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Owner shall have the right to exclude Contractor from the Work after the date of Substantial Completion, but Owner shall allow Contractor reasonable access to complete or correct items on the tentative list.

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

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

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

§ 9.9 Partial Occupancy or Use

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

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

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

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete and upon receipt of a Final Application for Payment, Architect will make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor

knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees. Upon demand by the Owner, Contractor shall provide and file a bond for discharge of any lien, as required by Lien Law, State of New York, Section 21.

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

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

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

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment. Owner has the right to demand such waiver in writing from Contractor as a condition precedent to making final payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

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

§ 10.2 Safety of Persons and Property

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

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

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

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

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

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

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

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

§ 10.2.8 Injury or Damage to Person or Property

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

§ 10.3 Hazardous Materials and Substances

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

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or

expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances. Unless required by the Contract Documents, the Contractor shall not be required to perform without its consent, any Work relating to a hazardous material or substance, provided that such Contractor consent shall not be unreasonably withheld.

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

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

§ 10.4 Emergencies

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

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or companies licensed to do business in the state in which the Project is located and one to which the Owner has no reasonable objection. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents. Each policy of Commercial General Liability insurance, Automobile Liability insurance and excess or umbrella liability insurance will be endorsed to name Owner. All liability insurance shall be written on an occurrence basis, and the Contractor's insurance shall be primary and noncontributory. The Contractor shall immediately notify the Owner of any claims made against or with respect to any of the policies required by this Article 11. Contractor's failure to maintain insurance in accordance with this section shall be a material breach of this Agreement.

§ 11.1.1.1 The Contractor will require each of its contractors and subcontractors (at any tier) engaged in connection with the performance of any services in connection with the Project to obtain and maintain insurance coverage of the types, in the amounts, and on the terms as are required of the Contractor under this Article 11, or shall include coverage of such consultants and subcontractors in its own policies of insurance. The Contractor will require each of its contractors to notify the Contractor immediately of any lapse of or change in any such coverage, and the Contractor will promptly forward to the Owner a copy of any such notice as the Contractor receives.

§ 11.1.1.2 If there is a lapse in any coverage required to be maintained pursuant to this Article 11, the Contractor will cease performing services under this Agreement or, if the lapse is in the coverage of a contractor or subcontractor of the Contractor, require such subcontractor or subcontractor to cease performing services in connection with the Project, until such time as the Contractor, contractor, or subcontractor (as the case may be) is once again in compliance with the requirements of this Article 11, and the Contractor will have no claim against the Owner for nor shall there be any adjustment in the Project schedule or the Contractor's compensation as a result of any delay occasioned by any such lapse. At its option, the Owner may, but will have no obligation to, pay the premium due for any policy of insurance required to be obtained and maintained pursuant to this Article 11 and take such other actions as the Owner may reasonably deem necessary to prevent a lapse of or to reinstate such coverage, and debit the amount of premiums paid and other costs and expenses incurred by the Owner in doing the same from amounts due or to become due to the Contractor under this Agreement.

§ 11.1.1.3 Nothing in this Article 11 will be construed as a limitation on the Contractor's obligations or liabilities under this Agreement.

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

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

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.1.5 **Schedule of Insurance**

- .1 WORKERS COMPENSATION - A policy covering the obligations of the Contractor in accordance with the Workers Compensation Law and the Disability Benefits Law covering all operations under this Contract whether performed by the Contractor or its Subcontractors
- .2 COMMERCIAL GENERAL LIABILITY - Written on an occurrence basis with coverage issued to and covering the liability of the Contractor and each Subcontractor for all the work and operations relating thereto and all obligations assumed by Contractor under this Contract, with the aggregate limit to apply on a "per-project" basis to the Project and contractual liability will be endorsed to identify this Agreement as an "insured contract", in an amount which shall not be less than the following limits:
 - (a) Bodily Injury and Property Damage

Each Occurrence	\$1,000,000.
General Aggregate	\$2,000,000.
 - (b) Products & Completed Operations

Aggregate	\$2,000,000.
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 - (c) Personal & Advertising Injury

Each Occurrence	\$1,000,000.
Each Occurrence	\$1,000,000.
- (d) If the CGL coverage contains a General Aggregate Limit, such General Aggregate shall apply separately to each project and location.
- (e) CGL coverage shall be written on ISO Occurrence form CG00 01 (10/93) or a substitute form providing equivalent coverage and shall cover liability arising from premises and operations, independent contractors, products & completed operations, personal and advertising injury and liability an insured contract (including the tort liability of another assumed in a business contract)
- (f) Owner and all other parties as shall be required by Owner to be an additional insured, shall be included as an additional insured on ISO Additional Insured Endorsement CG 20 10 (11/85) or both CG 20 10 (7/04) and CG 2037 (7/04) or an equivalent coverage to the additional insured.

Insurance for the additional insured shall be as broad as the coverage provided for the named insured. It shall apply as primary insurance on a non-contributing basis before any other insurance or self-insurance, including any deductible, maintained by or provided to, the additional insured.

- (g) There shall be no endorsement or modification of Contractor's CGL policy arising from pollution, explosion, collapse, underground property damage of work performed by Contractor.

- 3 AUTOMOBILE LIABILITY - Bodily Injury and Property damage Insurance covering all automobiles, trucks, tractors, trailers, motorcycles or other automotive equipment whether owned or rented by the Contractor or by employees of the Contractor.

(a) Liability Limit: each accident \$1,000,000.

- 4 UMBRELLA LIABILITY - Contractor shall be required to provide Bodily Injury and Property Damage Insurance limits in excess of those limits shown herein. The additional limits shall be as follows:

Each Occurrence: \$5,000,000.

Aggregate: \$5,000,000.

Retained Limit: \$ 10,000.

- 5 Contractor shall maintain Employers' Liability Insurance for Property Damage in an amount not less than \$1,000,000.

- 6 The Contractor shall name the Owner and Architect as an additional insured in all insurance for the Project

- 7 The Owner and Architect shall be indemnified by the Contractor as required by Paragraph 3.18

Indemnification, of these General Conditions.

§ 11.1.6 Where the Contract or Subcontract involves asbestos, the insurance required by paragraph 11.1 shall specifically include the words asbestos abatement work and shall specify any limitations on completed operation time period. If there is a limitation it will be at the Owner's discretion to accept or reject that limitation.

§ 11.1.7 Insurance must remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing or replacing defective Work.

§ 11.1.8 The submittal of the Certificates of Insurance shall include a disclosure of any prior and/or pending claims against the submitted policies. In addition, the Contractor shall immediately make known to the Owner, any subsequent claims against the aforementioned policies.

§ 11.1.9 Contractor shall provide Owner with performance and labor and material payment bonds guarantying faithful performance of the Contract and payment of obligations arising thereunder from an acceptable surety company in the penal sum of 100% of the Contract Sum.

§ 11.1.10 The Contractor acknowledges that the Labor Law of the State of New York, and regulations adopted there under, place upon both the Owner and the Contractor certain duties and that liability for failure to comply therewith is imposed on both the Owner and the Contractor regardless of their respective fault. The Contractor hereby agrees that, as between the Owner and the Contractor, the Contractor is solely responsible for compliance with all such laws and regulations imposed for the protection of persons performing the Contract. The Contractor shall indemnify and hold harmless the Owner of and from any and all liability for violation of such laws and regulations and shall defend any claims or actions which may be brought against the Owner as a result thereof. In the event that the Contractor shall fail or refuse to defend any such action, the Contractor shall be liable to the Owner for all costs of the Owner in defending such claim or action and all costs of the Owner, including, without limitation, attorneys' fees incurred in recovering such defense costs from the Contractor.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

(Paragraphs deleted)

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3)

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

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

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

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss.

§ 11.5 Adjustment and Settlement of Insured Loss

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

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

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

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

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

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed.

Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition (the "Correction of Work Period"). The Owner shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 Contractor shall, at its sole expense, repair, replace, modify, correct or alter any Work that does not comply with the Contract Documents within the Correction of Work Period, provided that Owner gives notice to Contractor within a reasonable period of time after discovery of Work that is defective, deficient or otherwise does not comply with the Contract Documents.

§ 12.2.2.3 The Correction of Work Period with respect to any Work that is repaired, replaced, modified or otherwise altered after Substantial Completion shall extend for a period of one year from the date of completion of such repair, replacement, modification, correction or alteration.

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

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

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

§ 12.2.6 If Contractor fails to cure any defective work during the Correction of Work Period or other warranty period, Owner may, at its option, perform such cure itself or another source and Contractor shall reimburse Owner for all costs incurred by Owner. All such work shall be warranted by Contractor as provided in Section 12.2.2.1, or, at Owner's option, Contractor shall reimburse Owner for its cost in obtaining equivalent warranty coverage from third-parties performing the work.

§ 12.2.7 In addition to Contractor's obligations under Section 3.5, in case of emergencies occurring during the Correction of Work Period, the Owner may correct any defect immediately and charge the cost to the Contractor. The Owner shall at once notify the Contractor, who may take over the Work and make any corrections remaining after its forces arrive on site. Repair work not started within seven days following notice to the Contractor of any defect may be considered an emergency.

§ 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

§ 12.3.1 If, instead of requiring correction or removal and replacement of defective Work, Owner may accept Work that is not in accordance with the requirements of the Contract Documents. Contractor shall pay all claims, costs,

losses and damages arising from such defective Work, including the cost of correcting the defective Work. If any such acceptance occurs prior to Architect's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract sum. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

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

§ 13.2 Successors and Assigns

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

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

§ 13.3 Rights and Remedies

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

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

§ 13.4 Tests and Inspections

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

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

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

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

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

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

§ 13.5 Interest

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

§ 13.6 CONTRACT DEEMED EXECUTORY

§ 13.6.1 The Contractor agrees that the Contract shall be deemed executory to the extent of the monies available and that no liability shall be incurred by the Owner beyond the monies available therefor. The Contractor is entitled to request of the Owner documentation sufficient to evidence appropriate financing of the Project.

§ 13.7 USE OR OCCUPANCY OF BUILDING BY OWNER

§ 13.7.1 Contractors shall cooperate with Owner in order to make portions of project available as soon as possible.

§ 13.7.2 Site and building, whether work of various Contractors is partially or fully completed or not, is property of Owner who shall have certain rights and privileges in connection with use of same, including the following:

.1 Should there be unwarranted delay on the part of any Contractor in completion of incomplete or defective Work or other Contract requirements, Owner may have full or partial use and occupancy of any or all portions of buildings as required for moving in or installing furniture, fixtures, supplies, or equipment and for general cleaning and maintenance work. In such event, Contractor whose unfinished Work is performed subsequent to installation of furniture, fixtures, equipment, etc., shall be responsible for the prevention of any damage to such installation. Such use or occupancy by Owner shall in no instance constitute acceptance of any portion of the Work.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

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

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 If, through no fault of the Contractor, the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents, but only where the Owner has not given notice to the Contractor that it is withholding payment to such extent as may be necessary in the Owner's opinion to protect the Owner from a loss for which the Contractor is responsible for Work not performed in accordance with Contract Documents, including, but not limited to, all acts and omissions described in Section 9.5.1; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

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

§ 14.1.3 If one of the reasons described in Section 14.1.1 or Section 14.1.2 exists, the Contractor may, upon ten days' written notice to the Owner and Architect, terminate the Contract and recover from Owner payment for Work performed up to the date of termination.

§ 14.1.4 If one of the reasons described in Section 14.1.1 or Section 14.1.2 exists, the Contractor may, upon thirty (30) days' written notice to the Owner and Architect, terminate the Contract and recover from Owner payment for Work performed up to the date of termination. Contractor shall make no Claim nor seek to recover overhead, lost anticipated profit or damages in contract for Work not performed by Contractor.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

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

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor seven days' notice, terminate employment of the Contractor and may:

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

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

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

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

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

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

§ 14.4 Termination by the Owner for Convenience

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

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

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

§ 14.4.3 In the case of such termination for the Owner's convenience, the Contractor shall be entitled to receive payment for Work performed up to the date of termination. Contractor shall make no Claim nor seek to recover overhead, lost anticipated profit or damages in contract for Work not performed by Contractor.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

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

§ 15.1.2 Time Limits on Claims

Claims by either the Owner or the Contractor must be initiated by written notice to the other party and the Initial Decision Maker. Claims by the Contractor must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the Contractor first recognizes the condition giving rise to the Claim, whichever is earlier. Claims by the Owner must be initiated within a reasonable time after occurrence of the event giving rise to such claim or after the Owner recognizes the condition giving rise to the Claim. The Contractor waives 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 shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker, in accordance with the time limits provided in Section 15.1.2. The Contractor waives all Claims and causes of action not commenced in accordance with this Section 15.1.3.1.

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

§ 15.1.4 Continuing Contract Performance

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

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

§ 15.1.5 Claims for Additional Cost

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

§ 15.1.6 Claims for Additional Time

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

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

§ 15.1.7 Waiver of Claims for Consequential Damages

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

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

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

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement.

§ 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.

§ 15.2.4 If the Initial Decision Maker requests the Contractor 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. The Contractor shall be deemed to have waived its Claim and related causes of action if it fails to furnish, or confirm the lack of the existence, of any additional supporting data requested by the Initial Decision Maker.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation subject to Section 15.3.1, 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 15.3.1.

§ 15.2.6.1 Subject to Section 15.3.1, 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 subject to Section 15.3.1, the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

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

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

§ 15.3 Mediation

§ 15.3.1 All Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation at the sole discretion of the Owner. Upon the Contractor's notice of mediation or intent to mediate, the Owner shall have 30 days to elect that the Claims,

disputes, or other matters in controversy noticed in the mediation demand not be subject to mediation as a precondition for the commencement of litigation. The Owner shall have no obligation to pay for and will not be responsible for any share of the mediator's fee and/or any filing fees for the mediation if the Owner elects to not proceed with the mediation as provided in this Section.

§ 15.3.2 Subject to Section 15.3.1, the parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Subject to Section 15.3.1, 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 Subject to Section 15.3.1, 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.

(Paragraphs deleted)

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Section 007346: Wage Determination Schedule

Prevailing wage rates for this project can be obtained on the NYSDOL (New York State Department of Labor) website at the following address:

<https://apps.labor.ny.gov/wpp/showSearchWageSchedulePublic.do?method=showIt>

Enter the following PRC# for this project: **2024012733**

Project Title: **Peekskill FH Kitchen Incubator**

Note: The Peekskill Facilities Development Corporation is not subject to the standards set forth within Section 103 of the General Municipal Law ("GML"), nor the contracting requirements commonly referred to as the "Wick's Law".



Kathy Hochul, Governor

Roberta Reardon, Commissioner

Peekskill Facilities Dev. Corp.

Joseph Thompson
108 N Division Street
Suite 100
Peekskill NY 10566

Schedule Year 2024 through 2025
Date Requested 10/07/2024
PRC# 2024012733

Location 701 Washington Street

Project ID#

Project Type Renovation and alterations to facilitate the adaptive Reuse of former firehouse building into a new kitchen incubator.

PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Rate Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2024 through June 2025. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website www.labor.ny.gov. Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: _____ Date Cancelled: _____

Name & Title of Representative: _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

General Provisions of Laws Covering Workers on Article 8 Public Work Contracts

Introduction

The Labor Law requires public work contractors and subcontractors to pay laborers, workers, or mechanics employed in the performance of a public work contract not less than the prevailing rate of wage and supplements (fringe benefits) in the locality where the work is performed.

Responsibilities of the Department of Jurisdiction

A Department of Jurisdiction (Contracting Agency) includes a state department, agency, board or commission; a county, city, town or village; a school district, board of education or board of cooperative educational services; a sewer, water, fire, improvement and other district corporation; a public benefit corporation; and a public authority awarding a public work contract.

The Department of Jurisdiction (Contracting Agency) awarding a public work contract MUST obtain a Prevailing Rate Schedule listing the hourly rates of wages and supplements due the workers to be employed on a public work project. This schedule may be obtained by completing and forwarding a "Request for wage and Supplement Information" form (PW 39) to the Bureau of Public Work. The Prevailing Rate Schedule MUST be included in the specifications for the contract to be awarded and is deemed part of the public work contract.

Upon the awarding of the contract, the law requires that the Department of Jurisdiction (Contracting Agency) furnish the following information to the Bureau: the name and address of the contractor, the date the contract was let and the approximate dollar value of the contract. To facilitate compliance with this provision of the Labor Law, a copy of the Department's "Notice of Contract Award" form (PW 16) is provided with the original Prevailing Rate Schedule.

The Department of Jurisdiction (Contracting Agency) is required to notify the Bureau of the completion or cancellation of any public work project. The Department's PW 200 form is provided for that purpose.

Both the PW 16 and PW 200 forms are available for completion [online](#).

Hours

No laborer, worker, or mechanic in the employ of a contractor or subcontractor engaged in the performance of any public work project shall be permitted to work more than eight hours in any day or more than five days in any week, except in cases of extraordinary emergency. The contractor and the Department of Jurisdiction (Contracting Agency) may apply to the Bureau of Public Work for a dispensation permitting workers to work additional hours or days per week on a particular public work project.

Wages and Supplements

The wages and supplements to be paid and/or provided to laborers, workers, and mechanics employed on a public work project shall be not less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. If a prime contractor on a public work project has not been provided with a Prevailing Rate Schedule, the contractor must notify the Department of Jurisdiction (Contracting Agency) who in turn must request an original Prevailing Rate Schedule from the Bureau of Public Work. Requests may be submitted by: mail to NYSDOL, Bureau of Public Work, State Office Bldg. Campus, Bldg. 12, Rm. 130, Albany, NY 12226; Fax to Bureau of Public Work (518) 485-1870; or electronically at the NYSDOL website www.labor.ny.gov.

Upon receiving the original schedule, the Department of Jurisdiction (Contracting Agency) is REQUIRED to provide complete copies to all prime contractors who in turn MUST, by law, provide copies of all applicable county schedules to each subcontractor and obtain from each subcontractor, an affidavit certifying such schedules were received. If the original schedule expired, the contractor may obtain a copy of the new annual determination from the NYSDOL website www.labor.ny.gov.

The Commissioner of Labor makes an annual determination of the prevailing rates. This determination is in effect from July 1st through June 30th of the following year. The annual determination is available on the NYSDOL website www.labor.ny.gov.

Payrolls and Payroll Records

Every contractor and subcontractor MUST keep original payrolls or transcripts subscribed and affirmed as true under penalty of perjury. As per Article 6 of the Labor law, contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records. At a minimum, payrolls must show the following information for each person employed on a public work project: Name, Address, Last 4 Digits of Social Security Number, Classification(s) in which the worker was employed, Hourly wage rate(s) paid, Supplements paid or provided, and Daily and weekly number of hours worked in each classification.

The filing of payrolls to the Department of Jurisdiction is a condition of payment. Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury. The Department of Jurisdiction (Contracting Agency) shall collect, review for facial validity, and maintain such payrolls.

In addition, the Commissioner of Labor may require contractors to furnish, with ten (10) days of a request, payroll records sworn to as their validity and accuracy for public work and private work. Payroll records include, but are not limited to time cards, work description sheets, proof that supplements were provided, cancelled payroll checks and payrolls. Failure to provide the requested information within the allotted ten (10) days will result in the withholding of up to 25% of the contract, not to exceed \$100,000.00. If the contractor or subcontractor does not maintain a place of business in New York State and the amount of the contract exceeds \$25,000.00, payroll records and certifications must be kept on the project worksite.

The prime contractor is responsible for any underpayments of prevailing wages or supplements by any subcontractor.

All contractors or their subcontractors shall provide to their subcontractors a copy of the Prevailing Rate Schedule specified in the public work contract as well as any subsequently issued schedules. A failure to provide these schedules by a contractor or subcontractor is a violation of Article 8, Section 220-a of the Labor Law.

All subcontractors engaged by a public work project contractor or its subcontractor, upon receipt of the original schedule and any subsequently issued schedules, shall provide to such contractor a verified statement attesting that the subcontractor has received the Prevailing Rate Schedule and will pay or provide the applicable rates of wages and supplements specified therein. (See NYS Labor Laws, Article 8 . Section 220-a).

Determination of Prevailing Wage and Supplement Rate Updates Applicable to All Counties

The wages and supplements contained in the annual determination become effective July 1st whether or not the new determination has been received by a given contractor. Care should be taken to review the rates for obvious errors. Any corrections should be brought to the Department's attention immediately. It is the responsibility of the public work contractor to use the proper rates. If there is a question on the proper classification to be used, please call the district office located nearest the project. Any errors in the annual determination will be corrected and posted to the NYSDOL website on the first business day of each month. Contractors are responsible for paying these updated rates as well, retroactive to July 1st.

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. To the extent possible, the Department posts rates in its possession that cover periods of time beyond the July 1st to June 30th time frame covered by a particular annual determination. Rates that extend beyond that instant time period are informational ONLY and may be updated in future annual determinations that actually cover the then appropriate July 1st to June 30th time period.

Withholding of Payments

When a complaint is filed with the Commissioner of Labor alleging the failure of a contractor or subcontractor to pay or provide the prevailing wages or supplements, or when the Commissioner of Labor believes that unpaid wages or supplements may be due, payments on the public work contract shall be withheld from the prime contractor in a sufficient amount to satisfy the alleged unpaid wages and supplements, including interest and civil penalty, pending a final determination.

When the Bureau of Public Work finds that a contractor or subcontractor on a public work project failed to pay or provide the requisite prevailing wages or supplements, the Bureau is authorized by Sections 220-b and 235.2 of the Labor Law to so notify the financial officer of the Department of Jurisdiction (Contracting Agency) that awarded the public work contract. Such officer MUST then withhold or cause to be withheld from any payment due the prime contractor on account of such contract the amount indicated by the Bureau as sufficient to satisfy the unpaid wages and supplements, including interest and any civil penalty that may be assessed by the Commissioner of Labor. The withholding continues until there is a final determination of the underpayment by the Commissioner of Labor or by the court in the event a legal proceeding is instituted for review of the determination of the Commissioner of Labor.

The Department of Jurisdiction (Contracting Agency) shall comply with this order of the Commissioner of Labor or of the court with respect to the release of the funds so withheld.

Summary of Notice Posting Requirements

The current Prevailing Rate Schedule must be posted in a prominent and accessible place on the site of the public work project. The prevailing wage schedule must be encased in, or constructed of, materials capable of withstanding adverse weather conditions and be titled "PREVAILING RATE OF WAGES" in letters no smaller than two (2) inches by two (2) inches.

The "[Public Work Project](#)" notice must be posted at the beginning of the performance of every public work contract, on each job site.

Every employer providing workers. compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers. Compensation Board in a conspicuous place on the jobsite.

Every employer subject to the NYS Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers, notices furnished by the State Division of Human Rights.

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the NYS Department of Labor.

Apprentices

Employees cannot be paid apprentice rates unless they are individually registered in a program registered with the NYS Commissioner of Labor. The allowable ratio of apprentices to journeyworkers in any craft classification can be no greater than the statewide building trade ratios promulgated by the Department of Labor and included with the Prevailing Rate Schedule. An employee listed on a payroll as an apprentice who is not registered as above or is performing work outside the classification of work for which the apprentice is indentured, must be paid the prevailing journeyworker's wage rate for the classification of work the employee is actually performing.

NYSDOL Labor Law, Article 8, Section 220-3, require that only apprentices individually registered with the NYS Department of Labor may be paid apprenticeship rates on a public work project. No other Federal or State Agency of office registers apprentices in New York State.

Persons wishing to verify the apprentice registration of any person must do so in writing by mail, to the NYSDOL Office of Employability Development / Apprenticeship Training, State Office Bldg. Campus, Bldg. 12, Albany, NY 12226 or by Fax to NYSDOL Apprenticeship Training (518) 457-7154. All requests for verification must include the name and social security number of the person for whom the information is requested.

The only conclusive proof of individual apprentice registration is written verification from the NYSDOL Apprenticeship Training Albany Central office. Neither Federal nor State Apprenticeship Training offices outside of Albany can provide conclusive registration information.

It should be noted that the existence of a registered apprenticeship program is not conclusive proof that any person is registered in that program. Furthermore, the existence or possession of wallet cards, identification cards, or copies of state forms is not conclusive proof of the registration of any person as an apprentice.

Interest and Penalties

In the event that an underpayment of wages and/or supplements is found:

- Interest shall be assessed at the rate then in effect as prescribed by the Superintendent of Banks pursuant to section 14-a of the Banking Law, per annum from the date of underpayment to the date restitution is made.
- A Civil Penalty may also be assessed, not to exceed 25% of the total of wages, supplements, and interest due.

Debarment

Any contractor or subcontractor and/or its successor shall be ineligible to submit a bid on or be awarded any public work contract or subcontract with any state, municipal corporation or public body for a period of five (5) years when:

- Two (2) willful determinations have been rendered against that contractor or subcontractor and/or its successor within any consecutive six (6) year period.
- There is any willful determination that involves the falsification of payroll records or the kickback of wages or supplements.

Criminal Sanctions

Willful violations of the Prevailing Wage Law (Article 8 of the Labor Law) may be a felony punishable by fine or imprisonment of up to 15 years, or both.

Discrimination

No employee or applicant for employment may be discriminated against on account of age, race, creed, color, national origin, sex, disability or marital status.

No contractor, subcontractor nor any person acting on its behalf, shall by reason of race, creed, color, disability, sex or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates (NYS Labor Law, Article 8, Section 220-e(a)).

No contractor, subcontractor, nor any person acting on its behalf, shall in any manner, discriminate against or intimidate any employee on account of race, creed, color, disability, sex, or national origin (NYS Labor Law, Article 8, Section 220-e(b)).

The Human Rights Law also prohibits discrimination in employment because of age, marital status, or religion.

There may be deducted from the amount payable to the contractor under the contract a penalty of \$50.00 for each calendar day during which such person was discriminated against or intimidated in violation of the provision of the contract (NYS Labor Law, Article 8, Section 220-e(c)).

The contract may be cancelled or terminated by the State or municipality. All monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of the anti-discrimination sections of the contract (NYS Labor Law, Article 8, Section 220-e(d)).

Every employer subject to the New York State Human Rights Law must conspicuously post at its offices, places of employment, or employment training centers notices furnished by the State Division of Human Rights.

Workers' Compensation

In accordance with Section 142 of the State Finance Law, the contractor shall maintain coverage during the life of the contract for the benefit of such employees as required by the provisions of the New York State Workers' Compensation Law.

A contractor who is awarded a public work contract must provide proof of workers' compensation coverage prior to being allowed to begin work.

The insurance policy must be issued by a company authorized to provide workers' compensation coverage in New York State. Proof of coverage must be on form C-105.2 (Certificate of Workers' Compensation Insurance) and must name this agency as a certificate holder.

If New York State coverage is added to an existing out-of-state policy, it can only be added to a policy from a company authorized to write workers' compensation coverage in this state. The coverage must be listed under item 3A of the information page.

The contractor must maintain proof that subcontractors doing work covered under this contract secured and maintained a workers' compensation policy for all employees working in New York State.

Every employer providing worker's compensation insurance and disability benefits must post notices of such coverage in the format prescribed by the Workers' Compensation Board in a conspicuous place on the jobsite.

Unemployment Insurance

Employers liable for contributions under the Unemployment Insurance Law must conspicuously post on the jobsite notices furnished by the New York State Department of Labor.



Kathy Hochul, Governor

Roberta Reardon, Commissioner

Peekskill Facilities Dev. Corp.

Joseph Thompson
108 N Division Street
Suite 100
Peekskill NY 10566

Schedule Year 2024 through 2025
Date Requested 10/07/2024
PRC# 2024012733

Location 701 Washington Street

Project ID#

Project Type Renovation and alterations to facilitate the adaptive Reuse of former firehouse building into a new kitchen incubator.

Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

Contractor Information

All information must be supplied

Federal Employer Identification Number: _____

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Amount of Contract: \$ _____ Contract Type:

Approximate Starting Date: ____/____/____ ☐ (01) General Construction

Approximate Completion Date: ____/____/____ ☐ (02) Heating/Ventilation

☐ (03) Electrical

☐ (04) Plumbing

☐ (05) Other : _____

Phone: (518) 457-5589 Fax: (518) 485-1870
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12226

Social Security Numbers on Certified Payrolls:

The Department of Labor is cognizant of the concerns of the potential for misuse or inadvertent disclosure of social security numbers. Identity theft is a growing problem and we are sympathetic to contractors' concern regarding inclusion of this information on payrolls if another identifier will suffice.

For these reasons, the substitution of the use of the last four digits of the social security number on certified payrolls submitted to contracting agencies on public work projects is now acceptable to the Department of Labor. This change does not affect the Department's ability to request and receive the entire social security number from employers during its public work/ prevailing wage investigations.

Construction Industry Fair Play Act: Required Posting for Labor Law Article 25-B § 861-d

Construction industry employers must post the "Construction Industry Fair Play Act" notice in a prominent and accessible place on the job site. Failure to post the notice can result in penalties of up to \$1,500 for a first offense and up to \$5,000 for a second offense. The posting is included as part of this wage schedule. Additional copies may be obtained from the NYS DOL website, <https://dol.ny.gov/public-work-and-prevailing-wage>

If you have any questions concerning the Fair Play Act, please call the State Labor Department toll-free at 1-866-435-1499 or email us at: dol.misclassified@labor.ny.gov .

Worker Notification: (Labor Law §220, paragraph a of subdivision 3-a)

Effective June 23, 2020

This provision is an addition to the existing wage rate law, Labor Law §220, paragraph a of subdivision 3-a. It requires contractors and subcontractors to provide written notice to all laborers, workers or mechanics of the *prevailing wage and supplement rate* for their particular job classification *on each pay stub**. It also requires contractors and subcontractors to *post a notice* at the beginning of the performance of every public work contract *on each job site* that includes the telephone number and address for the Department of Labor and a statement informing laborers, workers or mechanics of their right to contact the Department of Labor if he/she is not receiving the proper prevailing rate of wages and/or supplements for his/her job classification. The required notification will be provided with each wage schedule, may be downloaded from our website www.labor.ny.gov or be made available upon request by contacting the Bureau of Public Work at 518-457-5589. *In the event the required information will not fit on the pay stub, an accompanying sheet or attachment of the information will suffice.

**To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND**

Budget Policy & Reporting Manual

B-610

Public Work Enforcement Fund

effective date December 7, 2005

1. Purpose and Scope:

This Item describes the Public Work Enforcement Fund (the Fund, PWEF) and its relevance to State agencies and public benefit corporations engaged in construction or reconstruction contracts, maintenance and repair, and announces the recently-enacted increase to the percentage of the dollar value of such contracts that must be deposited into the Fund. This item also describes the roles of the following entities with respect to the Fund:

- New York State Department of Labor (DOL),
- The Office of the State of Comptroller (OSC), and
- State agencies and public benefit corporations.

2. Background and Statutory References:

DOL uses the Fund to enforce the State's Labor Law as it relates to contracts for construction or reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law. State agencies and public benefit corporations participating in such contracts are required to make payments to the Fund.

Chapter 511 of the Laws of 1995 (as amended by Chapter 513 of the Laws of 1997, Chapter 655 of the Laws of 1999, Chapter 376 of the Laws of 2003 and Chapter 407 of the Laws of 2005) established the Fund.

3. Procedures and Agency Responsibilities:

The Fund is supported by transfers and deposits based on the value of contracts for construction and reconstruction, maintenance and repair, as defined in subdivision two of Section 220 of the Labor Law, into which all State agencies and public benefit corporations enter.

Chapter 407 of the Laws of 2005 increased the amount required to be provided to this fund to .10 of one-percent of the total cost of each such contract, to be calculated at the time agencies or public benefit corporations enter into a new contract or if a contract is amended. The provisions of this bill became effective August 2, 2005.

To all State Departments, Agency Heads and Public Benefit Corporations
IMPORTANT NOTICE REGARDING PUBLIC WORK ENFORCEMENT FUND

OSC will report to DOL on all construction-related ("D") contracts approved during the month, including contract amendments, and then DOL will bill agencies the appropriate assessment monthly. An agency may then make a determination if any of the billed contracts are exempt and so note on the bill submitted back to DOL. For any instance where an agency is unsure if a contract is or is not exempt, they can call the Bureau of Public Work at the number noted below for a determination. Payment by check or journal voucher is due to DOL within thirty days from the date of the billing. DOL will verify the amounts and forward them to OSC for processing.

For those contracts which are not approved or administered by the Comptroller, monthly reports and payments for deposit into the Public Work Enforcement Fund must be provided to the Administrative Finance Bureau at the DOL within 30 days of the end of each month or on a payment schedule mutually agreed upon with DOL.

Reports should contain the following information:

- Name and billing address of State agency or public benefit corporation;
- State agency or public benefit corporation contact and phone number;
- Name and address of contractor receiving the award;
- Contract number and effective dates;
- Contract amount and PWEF assessment charge (if contract amount has been amended, reflect increase or decrease to original contract and the adjustment in the PWEF charge); and
- Brief description of the work to be performed under each contract.

Checks and Journal Vouchers, payable to the "New York State Department of Labor" should be sent to:

Department of Labor
Administrative Finance Bureau-PWEF Unit
Building 12, Room 464
State Office Campus
Albany, NY 12226

Any questions regarding billing should be directed to NYSDOL's Administrative Finance Bureau-PWEF Unit at (518) 457-3624 and any questions regarding Public Work Contracts should be directed to the Bureau of Public Work at (518) 457-5589.



Required Notice under Article 25-B of the Labor Law

**Attention All Employees, Contractors and Subcontractors:
You are Covered by the Construction Industry Fair Play Act**

The law says that you are an employee unless:

- You are free from direction and control in performing your job, **and**
- You perform work that is not part of the usual work done by the business that hired you, **and**
- You have an independently established business.

Your employer cannot consider you to be an independent contractor unless all three of these facts apply to your work.

It is against the law for an employer to misclassify employees as independent contractors or pay employees off the books.

Employee Rights: If you are an employee, you are entitled to state and federal worker protections. These include:

- Unemployment Insurance benefits, if you are unemployed through no fault of your own, able to work, and otherwise qualified,
- Workers' compensation benefits for on-the-job injuries,
- Payment for wages earned, minimum wage, and overtime (under certain conditions),
- Prevailing wages on public work projects,
- The provisions of the National Labor Relations Act, and
- A safe work environment.

It is a violation of this law for employers to retaliate against anyone who asserts their rights under the law. Retaliation subjects an employer to civil penalties, a private lawsuit or both.

Independent Contractors: If you are an independent contractor, **you must pay all taxes and Unemployment Insurance contributions required by New York State and Federal Law.**

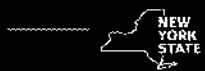
Penalties for paying workers off the books or improperly treating employees as independent contractors:

- **Civil Penalty**
 - First offense: Up to \$2,500 per employee
 - Subsequent offense(s): Up to \$5,000 per employee
- **Criminal Penalty**
 - First offense: Misdemeanor - up to 30 days in jail, up to a \$25,000 fine and debarment from performing public work for up to one year.
 - Subsequent offense(s): Misdemeanor - up to 60 days in jail or up to a \$50,000 fine and debarment from performing public work for up to 5 years.

If you have questions about your employment status or believe that your employer may have violated your rights and you want to file a complaint, call the Department of Labor at (866) 435-1499 or send an email to dol.misclassified@labor.ny.gov. All complaints of fraud and violations are taken seriously. You can remain anonymous.

Employer Name:

IA 999 (09/16)



Attention Employees

THIS IS A: **PUBLIC WORK PROJECT**

If you are employed on this project as a **worker, laborer, or mechanic** you are entitled to receive the **prevailing wage and supplements rate** for the classification at which you are working.

Your pay stub and wage notice received upon hire must clearly state your wage rate and supplement rate.

Chapter 629 of
the Labor Laws
of 2007:

These wages are set by law and must be posted at the work site. They can also be found at:
<https://dol.ny.gov/bureau-public-work>



If you feel that you have not received proper wages or benefits, please call our nearest office.*

Albany	(518) 457-2744	Patchogue	(631) 687-4882
Binghamton	(607) 721-8005	Rochester	(585) 258-4505
Buffalo	(716) 847-7159	Syracuse	(315) 428-4056
Garden City	(516) 228-3915	Utica	(315) 793-2314
New York City	(212) 932-2419	White Plains	(914) 997-9507
Newburgh	(845) 568-5287		

* For New York City government agency construction projects, please contact the Office of the NYC Comptroller at (212) 669-4443, or www.comptroller.nyc.gov – click on Bureau of Labor Law.

Contractor Name: _____

Project Location: _____

Requirements for OSHA 10 Compliance

Article 8 §220-h requires that when the advertised specifications, for every contract for public work, is \$250,000.00 or more the contract must contain a provision requiring that every worker employed in the performance of a public work contract shall be certified as having completed an OSHA 10 safety training course. The clear intent of this provision is to require that all employees of public work contractors, required to be paid prevailing rates, receive such training "prior to the performing any work on the project."

The Bureau will enforce the statute as follows:

All contractors and sub contractors must attach a copy of proof of completion of the OSHA 10 course to the first certified payroll submitted to the contracting agency and on each succeeding payroll where any new or additional employee is first listed.

Proof of completion may include but is not limited to:

- Copies of bona fide course completion card (*Note: Completion cards do not have an expiration date.*)
- Training roster, attendance record or other documentation from the certified trainer pending the issuance of the card.
- Other valid proof

**A certification by the employer attesting that all employees have completed such a course is not sufficient proof that the course has been completed.

Any questions regarding this statute may be directed to the New York State Department of Labor, Bureau of Public Work at 518-457-5589.

WICKS

Public work projects are subject to the Wicks Law requiring separate specifications and bidding for the plumbing, heating and electrical work, when the total project's threshold is \$3 million in Bronx, Kings, New York, Queens and, Richmond counties; \$1.5 million in Nassau, Suffolk and Westchester counties; and \$500,000 in all other counties.

For projects below the monetary threshold, bidders must submit a sealed list naming each subcontractor for the plumbing, HVAC and electrical and the amount to be paid to each. The list may not be changed unless the public owner finds a legitimate construction need, including a change in specifications or costs or the use of a Project Labor Agreement (PLA), and must be open to public inspection.

Allows the state and local agencies and authorities to waive the Wicks Law and use a PLA if it will provide the best work at the lowest possible price. If a PLA is used, all contractors shall participate in apprentice training programs in the trades of work it employs that have been approved by the Department of Labor (DOL) for not less than three years. They shall also have at least one graduate in the last three years and use affirmative efforts to retain minority apprentices. PLA's would be exempt from Wicks, but deemed to be public work subject to prevailing wage enforcement.

The Commissioner of Labor shall have the power to enforce separate specification requirements on projects, and may issue stop-bid orders against public owners for non-compliance.

Other new monetary thresholds, and similar sealed bidding for non-Wicks projects, would apply to certain public authorities including municipal housing authorities, NYC Construction Fund, Yonkers Educational Construction Fund, NYC Municipal Water Finance Authority, Buffalo Municipal Water Finance Authority, Westchester County Health Care Association, Nassau County Health Care Corp., Clifton-Fine Health Care Corp., Erie County Medical Center Corp., NYC Solid Waste Management Facilities, and the Dormitory Authority.

Contractors must pay subcontractors within a 7 days period.

(07.19)

Introduction to the Prevailing Rate Schedule

Information About Prevailing Rate Schedule

This information is provided to assist you in the interpretation of particular requirements for each classification of worker contained in the attached Schedule of Prevailing Rates.

Classification

It is the duty of the Commissioner of Labor to make the proper classification of workers taking into account whether the work is heavy and highway, building, sewer and water, tunnel work, or residential, and to make a determination of wages and supplements to be paid or provided. It is the responsibility of the public work contractor to use the proper rate. If there is a question on the proper classification to be used, please call the district office located nearest the project. District office locations and phone numbers are listed below.

Prevailing Wage Schedules are issued separately for "General Construction Projects" and "Residential Construction Projects" on a county-by-county basis.

General Construction Rates apply to projects such as: Buildings, Heavy & Highway, and Tunnel and Water & Sewer rates.

Residential Construction Rates generally apply to construction, reconstruction, repair, alteration, or demolition of one family, two family, row housing, or rental type units intended for residential use.

Some rates listed in the Residential Construction Rate Schedule have a very limited applicability listed along with the rate. Rates for occupations or locations not shown on the residential schedule must be obtained from the General Construction Rate Schedule. Please contact the local Bureau of Public Work office before using Residential Rate Schedules, to ensure that the project meets the required criteria.

Payrolls and Payroll Records

Contractors and subcontractors are required to establish, maintain, and preserve for not less than six (6) years, contemporaneous, true, and accurate payroll records.

Every contractor and subcontractor shall submit to the Department of Jurisdiction (Contracting Agency), within thirty (30) days after issuance of its first payroll and every thirty (30) days thereafter, a transcript of the original payrolls, subscribed and affirmed as true under penalty of perjury.

Paid Holidays

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

Overtime

At a minimum, all work performed on a public work project in excess of eight hours in any one day or more than five days in any workweek is overtime. However, the specific overtime requirements for each trade or occupation on a public work project may differ. Specific overtime requirements for each trade or occupation are contained in the prevailing rate schedules.

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays.

The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Supplemental Benefits

Particular attention should be given to the supplemental benefit requirements. Although in most cases the payment or provision of supplements is straight time for all hours worked, some classifications require the payment or provision of supplements, or a portion of the supplements, to be paid or provided at a premium rate for premium hours worked. Supplements may also be required to be paid or provided on paid holidays, regardless of whether the day is worked. The Overtime Codes and Notes listed on the particular wage classification will indicate these conditions as required.

Effective Dates

When you review the schedule for a particular occupation, your attention should be directed to the dates above the column of rates. These are the dates for which a given set of rates is effective. The rate listed is valid until the next effective rate change or until the new annual determination which takes effect on July 1 of each year. All contractors and subcontractors are required to pay the current prevailing rates of wages and supplements. If you have any questions please contact the Bureau of Public Work or visit the New York State Department of Labor website (www.labor.ny.gov) for current wage rate information.

Apprentice Training Ratios

The following are the allowable ratios of registered Apprentices to Journey-workers.

For example, the ratio 1:1,1:3 indicates the allowable initial ratio is one Apprentice to one Journeyworker. The Journeyworker must be in place on the project before an Apprentice is allowed. Then three additional Journeyworkers are needed before a second Apprentice is allowed. The last ratio repeats indefinitely. Therefore, three more Journeyworkers must be present before a third Apprentice can be hired, and so on.

Please call Apprentice Training Central Office at (518) 457-6820 if you have any questions.

Title (Trade)	Ratio
Boilermaker (Construction)	1:1,1:4
Boilermaker (Shop)	1:1,1:3
Carpenter (Bldg.,H&H, Pile Driver/Dockbuilder)	1:1,1:4
Carpenter (Residential)	1:1,1:3
Electrical (Outside) Lineman	1:1,1:2
Electrician (Inside)	1:1,1:3
Elevator/Escalator Construction & Modernizer	1:1,1:2
Glazier	1:1,1:3
Insulation & Asbestos Worker	1:1,1:3
Iron Worker	1:1,1:4
Laborer	1:1,1:3
Mason	1:1,1:4
Millwright	1:1,1:4
Op Engineer	1:1,1:5
Painter	1:1,1:3
Plumber & Steamfitter	1:1,1:3
Roofer	1:1,1:2
Sheet Metal Worker	1:1,1:3
Sprinkler Fitter	1:1,1:2

If you have any questions concerning the attached schedule or would like additional information, please contact the nearest BUREAU of PUBLIC WORK District Office or write to:

New York State Department of Labor
Bureau of Public Work
State Office Campus, Bldg. 12
Albany, NY 12226

District Office Locations:	Telephone #	FAX #
Bureau of Public Work - Albany	518-457-2744	518-485-0240
Bureau of Public Work - Binghamton	607-721-8005	607-721-8004
Bureau of Public Work - Buffalo	716-847-7159	716-847-7650
Bureau of Public Work - Garden City	516-228-3915	516-794-3518
Bureau of Public Work - Newburgh	845-568-5287	845-568-5332
Bureau of Public Work - New York City	212-932-2419	212-775-3579
Bureau of Public Work - Patchogue	631-687-4882	631-687-4902
Bureau of Public Work - Rochester	585-258-4505	585-258-4708
Bureau of Public Work - Syracuse	315-428-4056	315-428-4671
Bureau of Public Work - Utica	315-793-2314	315-793-2514
Bureau of Public Work - White Plains	914-997-9507	914-997-9523
Bureau of Public Work - Central Office	518-457-5589	518-485-1870

Westchester County General Construction

Boilermaker	10/01/2024
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JOB DESCRIPTION Boilermaker

DISTRICT 4

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES		
Per Hour:	07/01/2024	01/01/2025
Boilermaker	\$ 67.38	\$ 68.88
Repairs & Renovations	67.38	68.88

Repairs & Renovation: Includes Repairing, Renovating replacement of parts to an existing unit(s).

SUPPLEMENTAL BENEFITS		
Per Hour:		
Boilermaker	33.5% of hourly	33.5% of Hourly
Repair & Renovations	Wage Paid	Wage Paid
	+ \$ 26.85	+ \$26.85

NOTE: "Hourly Wage Paid" shall include any and all premium(s) pay.

Repairs & Renovation Includes replacement of parts and repairs & renovation of existing unit.

OVERTIME PAY
See (*B, O, **U) on OVERTIME PAGE
Note:* Includes 9th & 10th hours, double for 11th or more.
** Labor Day ONLY, if worked.

Repairs & Renovation see (B,E,Q) on OT Page

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 12, 15, 25, 26, 29) on HOLIDAY PAGE

REGISTERED APPRENTICES
Wage per hour:
(1/2) Year Terms at the following percentage of Boilermaker's Wage

1st	2nd	3rd	4th	5th	6th	7th
65%	70%	75%	80%	85%	90%	95%

Supplemental Benefits Per Hour:

	33.5% of Hourly Wage Paid Plus Amount Below	33.5% of Hourly Wage Paid Plus Amount Below
1st Term	\$ 20.36	\$ 20.36
2nd Term	21.28	21.28
3rd Term	22.22	22.22
4th Term	23.12	23.12
5th Term	24.07	24.07
6th Term	25.00	25.00
7th Term	25.93	25.93

NOTE: "Hourly Wage Paid" shall include any and all premium(s)

4-5

Carpenter	10/01/2024
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JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES	
Per hour:	07/01/2024

Piledriver	\$ 60.59 + 10.00*
Dockbuilder	\$ 60.59 + 10.00*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker	\$ 45.79
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OVERTIME PAY

See (B, E2, O) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.

Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour

(1)year terms:

1st	2nd	3rd	4th
\$26.98	\$32.58	\$40.96	\$49.35
+ 5.50*	+ 5.50*	+ 5.50*	+ 5.50*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

All Terms: \$ 32.34

8-1556 Db

Carpenter

10/01/2024

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2024

Carpet/Resilient

Floor Coverer	\$ 55.05 + 8.25*
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*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

INCLUDES HANDLING & INSTALLATION OF ARTIFICIAL TURF AND SIMILAR TURF INDOORS/OUTDOORS.

SUPPLEMENTAL BENEFITS

Per hour:

\$ 39.45

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE.

Paid for 1st & 2nd yr.

Apprentices See (5,6,11,13,16,18,19,25)

Overtime: See (5,6,11,13,16,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wage per hour - (1) year terms:

1st	2nd	3rd	4th
\$ 25.20	\$ 28.20	\$ 32.45	\$ 40.33

+ 1.85* + 2.35* + 2.85* + 3.85*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

1st	2nd	3rd	4th
\$ 15.22	\$ 16.22	\$ 19.32	\$ 20.32

8-2287

Carpenter**10/01/2024**

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per Hour: 07/01/2024

Marine Construction:

Marine Diver \$ 75.46
 + 10.00*

Marine Tender \$ 55.00
 + 10.00*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker \$ 45.65

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 13, 16, 18, 19, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour:

One (1) year terms.

1st year	\$ 26.98
	+ 5.50*
2nd year	32.58
	+ 5.50*
3rd year	40.96
	+ 5.50*
4th year	49.35
	+ 5.50*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits

Per Hour:

All terms \$ 32.20

8-1456MC

Carpenter**10/01/2024**

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per hour: 07/01/2024

Building
Millwright \$ 59.35
 + 13.12*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour:

Millwright \$ 45.41

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (18, 19) on HOLIDAY PAGE

Paid: See (18,19) on HOLIDAY PAGE.

Overtime See (5,6,8,11,13,18,19,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour:

One (1) year terms:

1st.	2nd.	3rd.	4th.
\$ 32.16	\$ 37.61	\$ 43.06	\$ 53.96
+ 7.08*	+ 8.25*	+ 9.42*	+ 11.76*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

One (1) year terms:

1st.	2nd.	3rd.	4th.
\$ 30.56	\$ 33.09	\$ 36.27	\$ 40.69

8-740.1

Carpenter

10/01/2024

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:

07/01/2024

Timberman \$ 55.59
 + 10.26*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per Hour:

07/01/2024

\$ 44.96

OVERTIME PAY

See (B, E, E2, Q) on OVERTIME PAGE

HOLIDAY

Overtime: See (5, 6, 11, 13, 25) on HOLIDAY PAGE

Paid: See (1) on HOLIDAY PAGE.

Paid: for 1st & 2nd yr.

Apprentices See (5,6,11,13,25)

Overtime: See (5,6,11,13,25) on HOLIDAY PAGE.

REGISTERED APPRENTICES

Wages per hour:

One (1) year terms:

1st	2nd	3rd	4th
-----	-----	-----	-----

\$24.96	\$30.07	\$37.72	\$45.38
+ 5.55*	+ 5.55*	+ 5.55*	+ 5.55*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental benefits per hour:

All terms \$ 31.95

8-1556 Tm

Carpenter

10/01/2024

JOB DESCRIPTION Carpenter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Westchester

PARTIAL COUNTIES

Orange: South of but including the following, Waterloo Mills, Slate Hill, New Hampton, Goshen, Blooming Grove, Mountainville, east to the Hudson River.

Putnam: South of but including the following, Cold Spring, TompkinsCorner, Mahopac, Croton Falls, east to Connecticut border.

Suffolk: West of Port Jefferson and Patchogue Road to Route 112 to the Atlantic Ocean.

WAGES

Per hour: 07/01/2024

Core Drilling:

Driller \$ 46.25
+ 3.25*

Driller Helper \$ 36.28
+ 3.25*

Note: Hazardous Waste Pay Differential:

For Level C, an additional 15% above wage rate per hour

For Level B, an additional 15% above wage rate per hour

For Level A, an additional 15% above wage rate per hour

Note: When required to work on water: an additional \$ 3.00 per hour.

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour:

Driller and Helper \$ 30.24

OVERTIME PAY

See (B, G, P) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

8-1536-CoreDriller

Carpenter - Building / Heavy&Highway

10/01/2024

JOB DESCRIPTION Carpenter - Building / Heavy&Highway

DISTRICT 11

ENTIRE COUNTIES

Putnam, Rockland, Westchester

WAGES

WAGES:(per hour)

Applies to CAPRENTER BUILDING/HEAVY & HIGHWAY/TUNNEL:

	07/01/2024	07/01/2025	07/01/2026
		Additional	Additional
Base Wage	\$ 42.76	\$ 1.25**	\$ 1.25**
	+\$6.62*		

*For all hours paid straight or premium.

**To be allocated at a later date.

SHIFT WORK

SHIFT DIFFERENTIAL: When it is mandated by a Government Agency irregular or off shift can be worked. The Carpenter shall receive an additional fifteen percent (15%) of wage plus applicable benefits.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker \$ 31.60

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

BUILDING:

Paid: See (1) on HOLIDAY PAGE.

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE.

- Holidays that fall on Sunday will be observed Monday.

HEAVY&HIGHWAY/TUNNEL:

Paid: See (5, 6, 25) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

- Holidays that fall on Sunday will be observed Monday

- Must be employed during the five (5) work days immediately preceding a holiday or during the five (5) work days following the paid holiday to receive holiday pay

- If Employee is entitled to a paid holiday, the Employee is paid the Holiday wage and supplemental benefits whether they work or not. If Employee works the Holiday, the Employee will receive holiday pay (including supplemental benefits), plus the applicable premium wage for working the Holiday. If Employee works in excess of 8 hours on Holiday, then benefits will be paid for any hours in excess of 8 hours.

REGISTERED APPRENTICES

1 year terms at the following wage rates:

1st	2nd	3rd	4th
\$ 21.38	\$ 25.66	\$ 29.93	\$ 34.21
+3.84*	+3.84*	+3.84*	+3.84*

*For all hours paid straight or premium

SUPPLEMENTAL BENEFITS per hour:

All terms \$ 16.25

11-279.1B/HH

Electrician

10/01/2024

JOB DESCRIPTION Electrician

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, New York, Queens, Richmond, Westchester

WAGES

Per hour: 07/01/2024

Service Technician \$ 37.40

Service and Maintenance on Alarm and Security Systems.

Maintenance, repair and /or replacement of defective (or damaged) equipment on, but not limited to, Burglar - Fire - Security - CCTV - Card Access - Life Safety Systems and associated devices. (Whether by service contract of T&M by customer request.)

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker: \$ 21.85

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 11, 15, 16, 17, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 17, 25, 26) on HOLIDAY PAGE

9-3H

Electrician

10/01/2024

JOB DESCRIPTION Electrician

DISTRICT 8

ENTIRE COUNTIES

Westchester

WAGES

Per hour:	07/01/2024	04/17/2025
*Electrician/A-Technician	\$ 56.75	\$ 58.75
Teledata	56.75	58.75

*All new installations of wiring, conduit, junction boxes and light fixtures for projects with a base bid of more than \$325,000. For projects with a base bid of \$325,000 or less, see Maintenance and Repair rates.

Note: On a job where employees are required to work on bridges over navigable waters, transmission towers, light poles, bosun chairs, swinging scaffolds, etc. 40 feet or more above the water or ground or under compressed air, or tunnel projects under construction or where assisted breathing apparatus is required, they will be paid at the rate of time and one-half for such work except on normal pole line or building construction work.

SUPPLEMENTAL BENEFITS

Per hour:		
Journeyworker	\$ 59.39	\$61.09

OVERTIME PAY

See (A, G, *J, P) on OVERTIME PAGE

*NOTE: Emergency work on Sunday and Holidays is at the time and one-half overtime rate.

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year terms at the following wage rates:

	07/01/2024	04/17/2025
1st term	\$ 16.00	\$16.00
2nd term	17.00	17.00
3rd term	19.00	19.00
4th term	21.00	21.00
MIJ 1-12 months	26.50	26.50
MIJ 13-18 months	30.00	30.00

Supplemental Benefits per hour:

	07/01/2024	04/17/2025
1st term	\$ 12.40	\$ 12.72
2nd term	15.07	15.89
3rd term	16.40	17.23
4th term	17.73	18.57
MIJ 1-12 months	15.72	15.89
MIJ 13-18 months	16.17	16.29

8-3/W

Electrician

10/01/2024

JOB DESCRIPTION Electrician

DISTRICT 8

ENTIRE COUNTIES

Westchester

WAGES

Per hour	07/01/2024	04/17/2025
Electrician -M	\$ 30.00	\$ 30.00
H - Telephone	30.00	30.00

All work with a base bid amount of \$325,000 or less. Including repairs and /or replacement of defective electrical and teledata equipment, all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls, and washing and cleaning of foregoing fixtures.

*If the project exceeds \$375,000 due to changes in the scope of work, an Electrician/A Technician must be part of the labor ratio.

SUPPLEMENTAL BENEFITS

	07/01/2024	04/17/2025
Electrician &		
H - Telephone	\$ 16.17	\$ 16.29

OVERTIME PAY

See (B, G, *J, P) on OVERTIME PAGE

*Note: Emergency work on Sunday and Holidays is at the time and one-half overtime rate.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

8-3m

Elevator Constructor

10/01/2024

JOB DESCRIPTION Elevator Constructor

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk

PARTIAL COUNTIES

Rockland: Entire County except for the Township of Stony Point

Westchester: Entire County except for the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES

Per hour:

07/01/2024

03/17/2025

Elevator Constructor

\$ 80.35

\$ 83.37

Modernization &
Service/Repair

63.16

65.54

SUPPLEMENTAL BENEFITS

Per Hour:

Elevator Constructor

\$ 46.367

\$ 47.654

Modernization &
Service/Repairs

45.217

46.470

OVERTIME PAY

Constructor See (D, M, T) on OVERTIME PAGE.

Modern/Service See (B, F, S) on OVERTIME PAGE.

HOLIDAY

Paid: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES PER HOUR:

6 MONTH TERMS:

1st Term*
50%

2nd & 3rd Term*
50%

4th & 5th Term
55%

6th & 7th Term
65%

8th & 9th Term
75%

* Note: 1st, 2nd, 3rd Terms are based on Average wage of Constructor, Modernization & Service.
Terms 4 thru 9 Based on Journeyman's wage of classification Working in.

SUPPLEMENTAL BENEFITS:

07/01/2024

03/17/2025

Elevator Constructor

1st Term

\$ 0.00

\$ 0.00

2nd & 3rd Term

36.15

36.90

4th & 5th Term

37.19

37.99

6th & 7th Term

38.80

39.70

8th & 9th Term

40.41

41.40

Modernization &
Service/Repair

1st Term

\$ 0.00

\$ 0.00

2nd & 3rd Term

36.15

36.90

4th & 5th Term

37.19

37.99

6th & 7th Term

38.80

39.70

8th & 9th Term	40.41	41.40	4-1
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Elevator Constructor	10/01/2024
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JOB DESCRIPTION Elevator Constructor

DISTRICT 1

ENTIRE COUNTIES

Columbia, Dutchess, Greene, Orange, Putnam, Sullivan, Ulster

PARTIAL COUNTIES

Delaware: Towns of Andes, Bovina, Colchester, Davenport, Delhi, Harpersfield, Hemdon, Kortright, Meredith, Middletown, Roxbury, Hancock & Stamford

Rockland: Only the Township of Stony Point.

Westchester: Only the Townships of Bedford, Lewisboro, Cortland, Mt. Kisco, North Salem, Pound Ridge, Somers and Yorktown.

WAGES

Per Hour	07/01/2024	01/01/2025
Mechanic	\$ 70.15	\$ 73.07
Helper	70% of Mechanic Wage Rate	70% of Mechanic Wage Rate

SUPPLEMENTAL BENEFITS

Per hour	07/01/2024	01/01/2025
Journeyworker/Helper	\$ 37.885*	\$ 38.435*

(*)Plus 6% of regular hourly if less than 5 years of service. Plus 8% of regular hourly rate if more than 5 years of service.

OVERTIME PAY

See (D, O) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 15, 16) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 16) on HOLIDAY PAGE

Note: When a paid holiday falls on Saturday, it shall be observed on Friday. When a paid holiday falls on Sunday, it shall be observed on Monday.

REGISTERED APPRENTICES

Wages per hour:

0-6 mo*	6-12 mo	2nd yr	3rd yr	4th yr
50 %	55 %	65 %	70 %	80 %

(*)Plus 6% of the hourly rate, no additional supplemental benefits.

Supplemental Benefits per hour worked:

Same as Journeyperson/Helper

1-138

Glazier	10/01/2024
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JOB DESCRIPTION Glazier

DISTRICT 8

ENTIRE COUNTIES

Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES

Per hour:	07/01/2024	05/01/2025
Glazier, Glass Tinting and Window Film	\$ 63.28	Additional \$ 1.11***
Scaffolding, including swing scaffold	67.28	
*Mechanical Equipment	64.28	
**Repair & Maintenance	30.76	

*Mechanical equipment, scissor jacks, man lifts, booms & buckets 30' or more, but not pipe scaffolding.

**Repair & Maintenance- All repair & maintenance work on a particular building whenever performed, where the total cumulative Repair & Maintenance contract value is under \$193,000.

***To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per hour: 7/01/2024

Glazier, Glass Tinting \$ 42.13
Window Film, Scaffolding
and Mechanical Equipment

Repair & Maintenance 24.62

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

For 'Repair & Maintenance' see (B, B2, I, S) on overtime page.

HOLIDAY

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

For 'Repair & Maintenance'

Paid: See(5, 6, 16, 25)

Overtime: See(5, 6, 16, 25)

REGISTERED APPRENTICES

Wage per hour:

(1) year terms at the following wage rates:

7/01/2024

1st term \$ 22.34
2nd term 30.64
3rd term 40.87
4th term 50.14

Supplemental Benefits:

(Per hour)

1st term \$ 19.27
2nd term 27.34
3rd term 32.85
4th term 36.01

8-1087 (DC9 NYC)

Insulator - Heat & Frost

10/01/2024

JOB DESCRIPTION Insulator - Heat & Frost

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour: 07/01/2024

Insulators
Heat & Frost \$ 71.01

SUPPLEMENTAL BENEFITS

Per Hour:

Insulators \$ 36.76
Heat & Frost

OVERTIME PAY

See (B, E, *Q, V) on OVERTIME PAGE

* Triple time for Labor Day (If worked)

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages:

1 year terms.

Wages Per Hour:

1st	2nd	3rd	4th
\$ 31.96	\$ 39.06	\$ 46.16	\$ 53.26

Supplemental Benefits:

\$ 16.56 \$ 20.23 \$ 23.91 \$ 27.06

4-12

Insulator - Heat & Frost

10/01/2024

JOB DESCRIPTION Insulator - Heat & Frost

DISTRICT 8

ENTIRE COUNTIES

Dutchess, Orange, Putnam, Rockland, Westchester

WAGES

Per hour: 07/01/2024

Insulator \$ 60.85

Discomfort & Additional Training** 63.92

Fire Stop Work* 32.97

* Applies on all exclusive Fire Stop Work (When contract is for Fire Stop work only). No apprentices on these contracts only.

**Applies to work requiring: garb or equipment worn against the body not customarily worn by insulators; psychological evaluation ;special training, including but not limited to "Yellow Badge" radiation training

Note: Additional \$0.50 per hour for work 30 feet or more above floor or ground level.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker \$ 38.25

Discomfort & Additional Training 40.32

Fire Stop Work:
Journeyworker 19.48

OVERTIME PAY

See (B, E, E2, Q, *T) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Note: Last working day preceding Christmas and New Years day, workers shall work no later than 12:00 noon and shall receive 8 hrs pay.

Overtime: See (2*, 4, 6, 16, 25) on HOLIDAY PAGE.

*Note: Labor Day triple time if worked.

REGISTERED APPRENTICES

(1) year terms:

Insulator Apprentices:

1st	2nd	3rd	4th
\$ 32.97	\$ 38.54	\$ 44.12	\$ 49.70

Discomfort & Additional Training Apprentices:

1st	2nd	3rd	4th
\$ 34.51	\$ 40.38	\$ 46.27	\$ 52.16

Supplemental Benefits paid per hour:

Insulator Apprentices:

1st term	\$ 19.48
2nd term	23.23
3rd term	26.98
4th term	30.74

Discomfort & Additional Training Apprentices:

1st term	\$ 20.50
2nd term	24.47

3rd term	28.43	
4th term	32.39	
		8-91

Ironworker	10/01/2024
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JOB DESCRIPTION Ironworker

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:	07/01/2024	01/01/2025 Additional
Stone Derrickmen Rigger	\$ 75.40	\$ 1.64*
Stone Handset Derrickman	72.55	1.11*

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per hour:

Stone Derrickmen Rigger	\$ 45.52
Stone Handset Derrickman	44.76

OVERTIME PAY

See (B, D1, *E, Q, **V) on OVERTIME PAGE

*Time and one-half shall be paid for all work on Saturday up to eight (8) hours and double time shall be paid for all work thereafter.

** Benefits same premium as wages on Holidays only

HOLIDAY

Paid: See (18) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 25) on HOLIDAY PAGE
Work stops at schedule lunch break with full day's pay.

REGISTERED APPRENTICES

Wage per hour:

Stone Derrickmen Rigger:	1st	2nd	3rd	4th
07/01/2024	\$ 37.20	\$ 53.28	\$ 59.32	\$ 65.36

Supplemental Benefits:

Per hour:				
07/01/2024	23.27	34.39	34.39	34.39

Stone Handset:

1/2 year terms at the following hourly wage rate:

	1st	2nd	3rd	4th
07/01/2024	\$ 35.78	\$ 51.04	\$ 56.79	\$ 62.55

Supplemental Benefits:

Per hour:				
07/01/2024	22.95	34.08	34.08	34.08

9-197D/R

Ironworker	10/01/2024
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JOB DESCRIPTION Ironworker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per Hour:	07/01/2024	01/01/2025
Ornamental Chain Link Fence	\$ 47.65 47.65	Additional \$ 1.25/hr*

Guide Rail 47.65

(*)To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker: \$ 66.29

OVERTIME PAY

See (B, B1, Q, V) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

1 year terms

07/01/2024

1st Term \$ 25.98

2nd Term 28.45

3rd Term 30.80

4th Term 34.39

Supplemental Benefits per hour:

1st Term \$ 16.29

2nd Term 18.29

3rd Term 19.29

4th Term 20.29

4-580-Or

Ironworker

10/01/2024

JOB DESCRIPTION Ironworker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

PER HOUR:

07/01/2024

01/01/2025

Ironworker:

Structural \$ 57.20

Additional

\$ 1.75/Hr.*

Bridges

Machinery

(*)To be allocated at a later date.

SUPPLEMENTAL BENEFITS

PER HOUR PAID:

Journeyman \$ 89.85

OVERTIME PAY

See (B, B1, Q, *V) on OVERTIME PAGE

*NOTE: Benefits are calculated for every hour paid.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 18, 19) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES PER HOUR:

6 month terms at the following rate:

1st \$ 30.23

2nd 30.83

3rd - 6th 31.44

Supplemental Benefits

PER HOUR PAID: 62.47

4-40/361-Str

Ironworker

10/01/2024

JOB DESCRIPTION Ironworker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES

Rockland: Southern section - south of Convent Road and east of Blue Hills Road.

WAGES

Per hour: 07/01/2024

Reinforcing &
Metal Lathing \$ 56.95

"Base" Wage 55.20
plus \$ 1.75

"Base" Wage is used to calculate overtime hours only.

SUPPLEMENTAL BENEFITS

Per hour:
Reinforcing & \$ 44.63
Metal Lathing

OVERTIME PAY

See (B, E, Q, *X) on OVERTIME PAGE

*Only \$23.50 per Hour for non worked hours

Supplemental Benefit Premiums for Overtime Hours worked:

Time & One Half \$ 51.13
Double Time 57.63

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 13, *18, **19, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year terms at the following wage rates:

Prior to 01/01/2020:

1st term	2nd term	3rd term	4th Term
Wage Per Hour:			
\$ 22.55	\$ 28.38	\$ 34.68	\$ 37.18
"Base" Wage			
\$21.00	\$26.80	\$33.10	\$35.60
plus \$1.55	plus \$1.58	plus \$1.58	plus \$1.58

"Base" Wage is used to calculate overtime hours ONLY.

SUPPLEMENTAL BENIFITS

Per Hour:

1st term	2nd term	3rd term	4th Term
\$18.17	\$21.34	\$22.00	\$22.50

After 01/01/2020:

1st term	2nd term	3rd term	4th Term
Wage Per Hour:			
\$ 22.55	\$ 23.60	\$ 24.60	\$ 25.65
"Base" Wage			
\$21.00	\$22.00	\$23.00	\$24.00
plus \$1.55	plus \$1.60	plus \$1.60	plus \$1.65

"Base" Wage is used to calculate overtime hours ONLY.

SUPPLEMENTAL BENIFITS

Per Hour:

1st term	2nd term	3rd term	4th Term
\$18.40	\$17.40	\$16.45	\$15.45

Laborer - Building

10/01/2024

JOB DESCRIPTION Laborer - Building

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

WAGES

Per hour 07/01/2024

Laborer \$ 37.95
plus \$5.45**

Laborer/Asbestos & Hazardous
Materials Removal \$ 39.60*
plus \$5.45**

* Abatement/Removal of:

- Lead based or lead containing paint on materials to be repainted is classified as Painter.
- Asbestos containing roofs and roofing material is classified as Roofer.

** This portion is not subject to overtime premium.

NOTE: Upgrade/Material condition work plan for work performed during non-outage under a wage formula of 90% wage/100% fringe benefits at nuclear power plants.

SUPPLEMENTAL BENEFITS

Per hour: 07/01/2024

Journeyworker \$ 31.95

OVERTIME PAY

See (B, E, E2, Q, *V) on OVERTIME PAGE

*Note: For Sundays and Holidays worked benefits are at the same premium as wages.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

LABORER ONLY

Hourly terms at the following wage:

Level A	Level B	Level C	Level D
0-1000	1001-2000	2001-3000	3001-4000
\$ 28.08	\$ 31.90	\$ 35.72	\$ 39.54

Supplemental Benefits per hour:

Apprentices
All terms \$ 23.60

8-235/B

Laborer - Heavy&Highway

10/01/2024

JOB DESCRIPTION Laborer - Heavy&Highway

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

WAGES

PUTNAM: APPLIES TO ALL HEAVY & HIGHWAY WORK EXCLUDING HIGHWAYS, STREETS, AND BRIDGES

GROUP I: Blaster, Quarry Master, Curbs/Asphalt Screedman, Pipe Jacking and Boring Operations Operator, Qualified Dead Condition Pipe Fuser (B Mechanic)

GROUP II: Burner, Drillers(jumbo, joy, wagon, air track, hydraulic), Drill Operator, Self Contained Rotary Drill, Curbs, Raker, Bar Person, Concrete Finisher.

GROUP III: Pavement Breakers, Jeep Operator, Jack Hammer, Pneumatic Tools (all), Gas Driller, Guniting, Railroad Spike Puller, Pipelayer, Chain Saw, Deck winches on scows, Power Buggy Operator, Power Wheelbarrow Operator, Bar Person Helper, Compressed Airline, Water Jet Lance.

GROUP IV: Concrete Laborers, Asph. Worker, Rock Scaler, Vibrator Oper., Bit Grinder, Air Tamper, Pumps, Epoxy (adhesives, fillers and troweled on), Barco Rammer, Concrete Grinder, Crack Router Operator, Guide Rail-digging holes and placing concrete and demolition when not to be replaced, distribution of materials and tightening of bolts.

GROUP V: Drillers Helpers, Common Laborer, Mason Tenders, Signal Person, Pit Person, Truck Spotter, Powder Person, Landscape/Nursery Person, Dump Person, Temp. Heat.

GROUP VIA: Asbestos/Toxic Waste Laborer-All removal (Roads, Tunnels, Landfills, etc.) Confined space laborer, Bio-remediation, Phyto-remediation, Lead or Hazardous material, Abatement Laborer.

Wages:(per hour) 07/01/2024

GROUP I	\$ 50.62*
GROUP II	49.27*
GROUP III	48.87*
GROUP IV	48.52*
GROUP V	48.17*
GROUP VIA	50.17*
Operator Qualified	
Gas Mechanic(A Mech)	60.62*
Flagperson	41.82*

*NOTE: To calculate overtime premiums, deduct \$0.10 from above wages

SHIFT WORK

A shift premium will be paid on Public Work contracts for off-shift or irregular shift work when mandated by the NYS D.O.T. or other Governmental Agency contracts. Employees shall receive an additional 15% per hour above current rate for all regular and irregular shift work. Premium pay shall be calculated using the 15% per hour differential as base rate.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:

First 40 Hours	
Per Hour	\$ 27.78
Over 40 Hours	
Per Hour	21.03

OVERTIME PAY

See (B, E, P, R, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE

NOTE: For Holiday Overtime: 5, 6 - Code 'S' applies

For Holiday Overtime: 8, 15, 25, 26 - Code 'R' applies

REGISTERED APPRENTICES

	1st term	2nd term	3rd term	4th term
	1-1000hrs	1001-2000hrs	2001-3000hrs	3001-4000hrs
07/01/2024	\$ 28.07	\$ 33.12	\$ 37.94	\$ 42.76

Supplemental Benefits per hour:

1st term	\$ 3.85 - After 40 hours: \$ 3.50
2nd term	\$ 3.95 - After 40 hours: 3.50
3rd term	\$ 4.45 - After 40 hours: 3.90
4th term	\$ 5.00 - After 40 hours: 4.40

8-60H/H

Laborer - Tunnel

10/01/2024

JOB DESCRIPTION Laborer - Tunnel

DISTRICT 11

ENTIRE COUNTIES

Columbia, Dutchess, Greene, Orange, Otsego, Putnam, Rockland, Sullivan, Ulster, Westchester

PARTIAL COUNTIES

Chenango: Townships of Columbus, Sherburne and New Berlin.

Delaware: Townships of Andes, Bovina, Middletown, Roxbury, Franklin, Hamden, Stamford, Delhi, Kortright, Harpersfield, Merideth and Davenport.

WAGES

Class 1: All support laborers/sandhogs working above the shaft or tunnel.

Class 2: All laborers/sandhogs working in the shaft or tunnel.

Class 4: Safety Miners

Class 5: Site work related to Shaft/Tunnel

WAGES: (per hour)

	07/01/2024	06/01/2025
Class 1	\$ 57.05	\$ 58.55
Class 2	59.20	60.70
Class 4	65.60	67.10
Class 5	49.90	51.40

Toxic and hazardous waste, lead abatement and asbestos abatement work will be paid an additional \$ 3.00 an hour.

SHIFT WORK

SHIFT DIFFERENTIAL...On all Government mandated irregular shift work:

- Employee shall be paid at time and one half the regular rate Monday through Friday.
- Saturday shall be paid at 1.65 times the regular rate.
- Sunday shall be paid at 2.15 times the regular rate.

SUPPLEMENTAL BENEFITS

Per hour:

Benefit 1	\$ 36.98	\$ 38.23
Benefit 2	55.39	59.99
Benefit 3	74.58	76.73

Benefit 1 applies to straight time hours, paid holidays not worked.

Benefit 2 applies to over 8 hours in a day (M-F), irregular shift work hours worked, and Saturday hours worked.

Benefit 3 applies to Sunday and Holiday hours worked.

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 15, 16, 25) on HOLIDAY PAGE

When a recognized Holidays falls on Saturday or Sunday, holidays falling on Saturday shall be recognized or observed on Friday and holidays falling on Sunday shall be recognized or observed on Monday. Employees ordered to work on the Saturday or Sunday of the holiday or on the recognized or the observed Friday or Monday for those holidays falling on Saturday or Sunday shall receive double time the established rate and benefits for the holiday.

REGISTERED APPRENTICES

FOR APPRENTICE RATES, refer to the appropriate Laborer Heavy & Highway wage rate contained in the wage schedule for the County and location where the work is to be performed.

11-17/60/235/754Tun

Lineman Electrician

10/01/2024

JOB DESCRIPTION Lineman Electrician

DISTRICT 6

ENTIRE COUNTIES

Westchester

WAGES

A Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors, assembly of all electrical materials, conduit, pipe or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

Crane Operators: Operation of any type of crane on line projects.

Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on line projects.

Digging Machine Operator: All other digging equipment and augering on line projects.

A Groundman/Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator equipment/operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

NOTE: Includes Teledata Work within ten (10) feet of High Voltage Transmission Lines. Also includes digging of holes for poles, anchors, footer, and foundations for electrical equipment.

Below rates apply to electrical overhead and underground distribution and maintenance work and overhead and underground transmission line work, electrical substations, switching structures, continuous pipe-type underground fluid or gas filled transmission conduit and cable installations, maintenance jobs or projects, railroad catenary installations and maintenance, third rail installations, the bonding of rails and the installation of fiber optic cable. Includes access matting for line work.

Per hour: 07/01/2024

Group A:

Lineman, Tech, Welder	\$ 61.91
Crane, Crawler Backhoe	61.91
Cable Splicer-Pipe Type	68.10
Cert. Welder-Pipe Type	65.01

Group B:

Digging Mach Operator	55.72
Tractor Trailer Driver	52.62
Groundman, Truck Driver	49.53
Equipment Mechanic	49.53
Flagman	37.15

Additional \$1.00 per hour for entire crew when a helicopter is used.

SHIFT WORK

THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM REGULAR RATE PLUS 31.4%

SUPPLEMENTAL BENEFITS

Per hour worked (but also required on non-worked holidays):

07/01/2024

Group A	\$ 30.90
	*plus 7% of the hourly wage paid

Group B	\$ 26.90
	*plus 7% of the hourly wage paid

*The 7% is based on the hourly wage paid, straight time or premium time.

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE. NOTE: Double time for emergency work designated by the Dept. of Jurisdiction.

WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.
Overtime	See (5, 6, 8, 13, 25) on HOLIDAY PAGE plus Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

07/01/2024

\$ 26.90

*plus 7% of
the hourly
wage paid

*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249aWest

Lineman Electrician - Teledata

10/01/2024

JOB DESCRIPTION Lineman Electrician - Teledata

DISTRICT 6

ENTIRE COUNTIES

Albany, Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Lewis, Livingston, Madison, Monroe, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour:

For outside work, stopping at first point of attachment (demarcation).

07/01/2024

01/01/2025

Cable Splicer	\$ 39.24	\$ 40.81
Installer, Repairman	\$ 37.24	\$ 38.73
Teledata Lineman	\$ 37.24	\$ 38.73
Tech., Equip. Operator	\$ 37.24	\$ 38.73
Groundman	\$ 19.74	\$ 20.53

NOTE: EXCLUDES Teledata work within ten (10) feet of High Voltage (600 volts and over) transmission lines. For this work please see LINEMAN.

SHIFT WORK

THE FOLLOWING RATES APPLY WHEN THE CONTRACTING AGENCY MANDATES MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION ARE WORKED. WHEN TWO (2) OR THREE (3) SHIFTS ARE WORKED THE FOLLOWING RATES APPLY:

1ST SHIFT	REGULAR RATE
2ND SHIFT	REGULAR RATE PLUS 10%
3RD SHIFT	REGULAR RATE PLUS 15%

SUPPLEMENTAL BENEFITS

Per hour:

07/01/2024

01/01/2025

Journeyworker	\$ 5.70	\$ 5.70
	*plus 3% of the hour wage paid	*plus 3% of the hour wage paid

*The 3% is based on the hourly wage paid, straight time rate or premium rate.

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16) on HOLIDAY PAGE

6-1249LT - Teledata

Lineman Electrician - Traffic Signal, Lighting

10/01/2024

JOB DESCRIPTION Lineman Electrician - Traffic Signal, Lighting

DISTRICT 6

ENTIRE COUNTIES

Westchester

WAGES

Lineman/Technician shall perform all overhead aerial work. A Lineman/Technician on the ground will install all electrical panels, connect all grounds, install and connect all electrical conductors which includes, but is not limited to road loop wires; conduit and plastic or other type pipes that carry conductors, flex cables and connectors, and to oversee the encasement or burial of such conduits or pipes.

Crane Operators: Operation of any type of crane on Traffic Signal/Lighting projects.

Crawler Backhoe: Operation of tracked excavator/crawler backhoe with 1/2 yard bucket or larger on Traffic Signal/Lighting projects.

Digging Machine Operator: All other digging equipment and augering on Traffic Signal/Lighting projects.

A Groundman/Groundman Truck Driver shall: Build and set concrete forms, handle steel mesh, set footer cages, transport concrete in a wheelbarrow, hand or machine concrete vibrator, finish concrete footers, mix mortar, grout pole bases, cover and maintain footers while curing in cold weather, operate jack hammer, operate hand pavement breaker, tamper, concrete and other motorized saws, as a drill helper, operate and maintain generators, water pumps, chainsaws, sand blasting, operate mulching and seeding machine, air tools, electric tools, gas tools, load and unload materials, hand shovel and/or broom, prepare and pour mastic and other fillers, assist digger operator/equipment operator in ground excavation and restoration, landscape work and painting. Only when assisting a lineman technician, a groundman/truck driver may assist in installing conduit, pipe, cables and equipment.

A flagger's duties shall consist of traffic control only.

Per hour: 07/01/2024

Group A:

Lineman, Technician	\$ 55.95
Crane, Crawler Backhoe	55.95
Certified Welder	58.75

Group B:

Digging Machine	50.36
Tractor Trailer Driver	47.56
Groundman, Truck Driver	44.76
Equipment Mechanic	44.76
Flagman	33.57

Above rates are applicable for installation, testing, operation, maintenance and repair on all Traffic Control (Signal) and Illumination (Lighting) projects, Traffic Monitoring Systems, and Road Weather Information Systems. Includes digging of holes for poles, anchors, footer foundations for electrical equipment; assembly of all electrical materials or raceway; placing of fish wire; pulling of cables, wires or fiber optic cable through such raceways; splicing of conductors; dismantling of such structures, lines or equipment.

SHIFT WORK

THE FOLLOWING RATES WILL APPLY ON ALL CONTRACTING AGENCY MANDATED MULTIPLE SHIFTS OF AT LEAST FIVE (5) DAYS DURATION WORKED BETWEEN THE HOURS LISTED BELOW:

1ST SHIFT	8:00 AM TO 4:30 PM REGULAR RATE
2ND SHIFT	4:30 PM TO 1:00 AM REGULAR RATE PLUS 17.3%
3RD SHIFT	12:30 AM TO 9:00 AM REGULAR RATE PLUS 31.4%

SUPPLEMENTAL BENEFITS

Per hour worked:

07/01/2024

Group A

\$ 30.90
*plus 7% of
the hourly
wage paid

Group B

\$ 26.90
*plus 7% of
the hourly
wage paid

*The 7% is based on the hourly wage paid, straight time or premium time.

OVERTIME PAY

See (B, E, Q, X) on OVERTIME PAGE. *Note* Double time for emergency work designated by the Dept. of Jurisdiction.

WAGE CAP - Double the straight time hourly base wage shall be the maximum hourly wage compensation for any hour worked. Contractor is still responsible to pay the hourly benefit amount for each hour worked.

HOLIDAY

Paid: See (5, 6, 8, 13, 25) on HOLIDAY PAGE and Governor of NYS Election Day.
Overtime: See (5, 6, 8, 13, 25) on HOLIDAY PAGE and Governor of NYS Election Day.

NOTE: All paid holidays falling on Saturday shall be observed on the preceding Friday. All paid holidays falling on Sunday shall be observed on the following Monday. Supplements for holidays paid at straight time.

REGISTERED APPRENTICES

WAGES per hour: 1000 hour terms at the following percentage of the applicable Journeyworker's Lineman wage.

1st	2nd	3rd	4th	5th	6th	7th
60%	65%	70%	75%	80%	85%	90%

SUPPLEMENTAL BENEFITS per hour:

07/01/2024

\$ 26.90
*plus 7% of
the hourly
wage paid

*The 7% is based on the hourly wage paid, straight time or premium time.

6-1249aWestLT

Mason - Building

10/01/2024

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Nassau, Rockland, Suffolk, Westchester

WAGES

Per hour:	07/01/2024	12/02/2024
Tile Setters	\$ 63.91	Additional \$ 0.71*

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per Hour:	\$ 27.66* + \$8.50
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* This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE
Work beyond 10 hours on Saturday shall be paid at double the hourly wage rate.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage per hour:

(750 hour) term at the following wage rate:

Term:									
1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1-750	751-1500	1501-2250	2251-3000	3001-3750	3751-4500	4501-5250	5251-6000	6001-6750	6501-7000
07/01/2024									
\$22.19	\$27.21	\$34.45	\$39.46	\$43.07	\$46.58	\$50.23	\$55.24	\$57.71	\$62.00

Supplemental Benefits per hour:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
07/01/2024									

\$12.55*	\$12.55*	\$15.36*	\$15.36*	\$16.36*	\$17.86*	\$18.86*	\$18.86*	\$18.86*	\$24.11*
+\$.76	+\$.81	+\$.91	+\$.96	+\$ 1.43	+\$ 1.48	+\$ 1.91	+\$ 1.97	+\$ 4.57	+\$ 5.18

* This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/52A

Mason - Building	10/01/2024
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JOB DESCRIPTION Mason - Building

DISTRICT 11

ENTIRE COUNTIES

Putnam, Rockland, Westchester

PARTIAL COUNTIES

Orange: Only the Township of Tuxedo.

WAGES

Per hour:

07/01/2024

Bricklayer	\$ 47.44
Cement Mason	47.44
Plasterer/Stone Mason	47.44
Pointer/Caulker	47.44

Additional \$1.00 per hour for power saw work

Additional \$0.50 per hour for swing scaffold or staging work

SHIFT WORK

SHIFT WORK: When shift work or an irregular workday is mandated or required by state, federal, county, local or other governmental agency contracts, the following premiums apply:

Irregular workday requires 15% premium

Second shift an additional 15% of wage plus benefits to be paid

Third shift an additional 25% of wage plus benefits to be paid

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman	\$ 38.50
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OVERTIME PAY

OVERTIME:

Cement Mason See (B, E, Q, W) on OVERTIME PAGE.

All Others See (B, E, Q) on OVERTIME PAGE.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

REGISTERED APPRENTICES

Wages per hour:

750 hour terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of journeyman supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Apprentices indentured before June 1st, 2011 receive full journeyman benefits

11-5wp-b

Mason - Building	10/01/2024
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JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Building

	07/01/2024	01/01/2025
Wages per hour:		Additional

Mosaic & Terrazzo Mechanic	\$ 60.98	\$ 1.06*
Mosaic & Terrazzo Finisher	58.96	

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per hour:

Mosaic & Terrazzo Mechanic	\$ 31.36*
	+ \$9.78

Mosaic & Terrazzo Finisher	\$ 31.36*
	+ \$9.77

*This portion of benefits subject to same premium rate as shown for overtime wages.

OVERTIME PAY

See (A, E, Q) on OVERTIME PAGE

07/01/2024- Deduct \$7.00 from hourly wages before calculating overtime.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

Easter Sunday is an observed holiday. Holidays falling on a Saturday will be observed on that Saturday. Holidays falling on a Sunday will be celebrated on the Monday.

REGISTERED APPRENTICES

Wages Per hour:

	1st 0- 1500	2nd 1501- 3000	3rd 3001- 3750	4th 3751- 4500	5th 4501- 5250	6th 5251- 6000
07/01/2024	\$ 25.19	\$ 32.39	\$ 38.18	\$ 40.78	\$ 49.00	\$ 55.75

Supplemental Benefits per hour:

07/01/2024	\$7.12*	\$9.16*	\$17.22*	\$23.86*	\$24.86*	\$27.36*
	+ 3.43	+ 4.40	+ 5.87	+ 6.84	+ 7.83	+ 8.80

*This portion of benefits subject to same premium rate as shown for overtime wages.

9-7/3

Mason - Building

10/01/2024

JOB DESCRIPTION Mason - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:	07/01/2024	01/06/2025
		Additional

Building-Marble Restoration:

Marble, Stone &	\$ 47.72	\$ 0.57*
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Terrazzo Polisher

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker:

Building-Marble Restoration:
Marble, Stone &
Polisher \$ 31.50

OVERTIME PAY
See (B, *E, Q, V) on OVERTIME PAGE
* On Saturdays, 8th hour and successive hours paid at double hourly rate.

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

WAGES per hour:

900 hour term at the following wage:

1st 1- 900	2nd 901- 1800	3rd 1801- 2700	4th 2701
\$ 33.40	\$ 38.18	\$ 42.94	\$ 47.72

Supplemental Benefits Per Hour:

29.06	29.87	30.69	31.50
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9-7/24-MP

Mason - Building	10/01/2024
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JOB DESCRIPTION Mason - Building **DISTRICT 9**

ENTIRE COUNTIES
Bronx, Dutchess, Kings, Nassau, New York, Orange, Putnam, Queens, Richmond, Rockland, Suffolk, Sullivan, Ulster, Westchester

WAGES
Per Hour:

	07/01/2024	01/06/2025 Additional \$ 0.75*
Marble Cutters & Setters	\$ 63.92	

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS
Per Hour:

Journeyworker \$ 40.05

OVERTIME PAY
See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY
Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage Per Hour:
07/01/2024

750 hour terms at the following wage

1st	2nd	3rd	4th	5th	6th	7th	8th
0- 3000	3001- 3750	3751- 4500	4501- 5250	5251- 6000	6001- 6750	6751- 7500	7500+
\$ 27.01	\$ 40.52	\$ 43.88	\$ 47.26	\$ 50.64	\$ 54.32	\$ 60.71	\$ 63.92

Supplemental Benefits per hour:

07/01/2024

1st	2nd	3rd	4th	5th	6th	7th	8th
\$ 26.42	\$ 29.76	\$ 30.61	\$ 31.44	\$ 32.28	\$ 37.55	\$ 39.23	\$ 40.05

Mason - Building	10/01/2024
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JOB DESCRIPTION Mason - Building **DISTRICT 9**

ENTIRE COUNTIES
Nassau, Rockland, Suffolk, Westchester

WAGES

Per hour:	07/01/2024	12/02/2024
		Additional
Tile Finisher	\$ 49.08	\$ 0.59*

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per Hour:

\$ 24.56*
+ 8.32

*This portion of benefits is subjected to same premium rate as shown for overtime wages

OVERTIME PAY

See (B, E, Q, *V) on OVERTIME PAGE

*Work beyond 10 hours on a Saturday shall be paid at double the hourly wage rate.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 11, 15, 16, 25) on HOLIDAY PAGE

9-7/88A-tf

Mason - Building	10/01/2024
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JOB DESCRIPTION Mason - Building **DISTRICT 9**

ENTIRE COUNTIES
Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:	07/01/2024	01/06/2025
Marble, Stone,		Additional
Maintenance Finishers:	\$ 27.72	\$ 0.41*

Note 1: An additional \$2.00 per hour
for time spent grinding floor using
"60 grit" and below.

Note 2: Flaming equipment operator
shall be paid an additional \$25.00 per day.

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Per Hour:

Marble, Stone
Maintenance Finishers: \$ 15.74

OVERTIME PAY

See (B, *E, Q, V) on OVERTIME PAGE

*Double hourly rate after 8 hours on Saturday

HOLIDAY

Paid: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 11, 15, 25) on HOLIDAY PAGE
1st term apprentice gets paid for all observed holidays.

REGISTERED APPRENTICES

WAGES per hour:

	07/01/2024
0-750	\$ 22.32
751-1500	23.04
1501-2250	23.75
2251-3000	24.48

3001-3750	25.56
3751-4500	27.00
4501+	27.72

Supplemental Benefits:
Per hour:

0-750	12.69
751-1500	13.10
1501-2250	13.51
2251-3000	13.91
3001-3750	14.52
3751-4500	15.33
4501+	15.74

9-7/24M-MF

Mason - Building / Heavy&Highway

10/01/2024

JOB DESCRIPTION Mason - Building / Heavy&Highway

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour: 07/01/2024 01/06/2025
Additional

Marble-Finisher \$ 49.99 \$ 0.53*

*To be allocated at a later date.

SUPPLEMENTAL BENEFITS

Journeyworker:
Per hour

Marble- Finisher \$ 37.39

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

Work beyond 8 hours on a Saturday shall be paid at double the rate.

HOLIDAY

Overtime: See (5, 6, 8, 11, 15, 16, 25) on HOLIDAY PAGE

When an observed holiday falls on a Sunday, it will be observed the next day.

9-7/20-MF

Mason - Heavy&Highway

10/01/2024

JOB DESCRIPTION Mason - Heavy&Highway

DISTRICT 11

ENTIRE COUNTIES

Putnam, Rockland, Westchester

PARTIAL COUNTIES

Orange: Only the Township of Tuxedo.

WAGES

Per hour: 07/01/2024

Bricklayer	\$ 47.94
Cement Mason	47.94
Marble/Stone Mason	47.94
Plasterer	47.94
Pointer/Caulker	47.94

Additional \$1.00 per hour for power saw work

Additional \$0.50 per hour for swing scaffold or staging work

SHIFT WORK

When shift work or an irregular workday is mandated or required by state, federal, county, local or other governmental contracts, the following rates apply:

Irregular workday requires 15% premium

Second shift an additional 15% of wage plus benefits to be paid

Third shift an additional 25% of wage plus benefits to be paid

SUPPLEMENTAL BENEFITS

Per hour:

Journeyman \$ 38.50

OVERTIME PAY

Cement Mason See (B, E, Q, W)

All Others See (B, E, Q,)

HOLIDAY

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

- Whenever any of the above holidays fall on Sunday, they will be observed on Monday. Whenever any of the above holidays fall on Saturday, they will be observed on Friday.

- Supplemental Benefits are not paid for paid Holiday

- If Holiday is worked, Supplemental Benefits are paid for hours worked.

- Whenever an Employee works within three (3) calendar days before a holiday, the Employee shall be paid for the Holiday.

REGISTERED APPRENTICES

Wages per hour:

750 hour terms at the following percentage of Journeyman's wage

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Supplemental Benefits per hour

750 hour terms at the following percentage of journeyman supplements

1st	2nd	3rd	4th	5th	6th	7th	8th
50%	55%	60%	65%	70%	75%	80%	85%

Apprentices indentured before June 1st, 2011 receive full journeyman benefits

11-5WP-H/H

Operating Engineer - Building

10/01/2024

JOB DESCRIPTION Operating Engineer - Building

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, New York, Putnam, Queens, Richmond, Westchester

PARTIAL COUNTIES

Dutchess: that part of Dutchess County lying south of the North City Line of the City of Poughkeepsie.

WAGES

NOTE: Construction surveying

Party Chief--One who directs a survey party

Instrument Man--One who runs the instrument and assists Party Chief.

Rodman--One who holds the rod and assists the Survey Crew

Wages:(Per Hour) 07/01/2024

Building Construction:

Party Chief	\$ 79.99
Instrument Man	60.36
Rodman	40.45

Steel Erection:

Party Chief	83.13
Instrument Man	64.21
Rodman	44.33

Heavy Construction-NYC counties only:
(Foundation, Excavation.)

Party Chief	88.06
Instrument man	65.66
Rodman	55.70

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2024
Building Construction	\$ 28.63* +\$ 7.65
Steel Erection	29.23* + 7.65
Heavy Construction	30.04* + 7.64

* This portion subject to SAME premium as wages

Non-Worked Holiday Supplemental Benefit:	21.83
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OVERTIME PAY

See (A, B, E, Q) on OVERTIME PAGE

Code "A" applies to Building Construction and has double the rate after 7 hours on Saturdays.

Code "B" applies to Heavy Construction and Steel Erection and had double the rate after 8 hours on Saturdays.

HOLIDAY

Paid:	See (5, 6, 9, 11, 15, 16, 25) on HOLIDAY PAGE
Overtime:	See (5, 6, 9, 11, 15, 16, 25) on HOLIDAY PAGE

9-15Db

Operating Engineer - Building

10/01/2024

JOB DESCRIPTION Operating Engineer - Building

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

PARTIAL COUNTIES

Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES

GROUP I:

Cranes (All Types up to 49 tons), Boom Trucks, Cherry Pickers (All Types), Clamshell Crane, Derrick (Stone and Steel), Dragline, Franki Pile Rig or similar, High Lift (Lull or similar) with crane attachment and winch used for hoisting or lifting, Hydraulic Cranes, Pile Drivers, Potain and similar.

Cranes (All types 50-99 tons), Drill Rig Casa Grande (CAT or similar), Franki Pile Rig or similar, Hydraulic Cranes (All types including Crawler Cranes- No specific boom length).

Cranes (All types 100 tons and over), All Tower Cranes, All Climbing Cranes irrespective of manufacturer and regardless of how the same is rigged, Franki Pile Rig or similar, Conventional Cranes (All types including Crawler Cranes-No specific boom length), Hydraulic Cranes.

GROUP I-A: Barber Green Loader-Euclid Loader, Bulldozer, Carrier-Trailer Horse, Concrete Cleaning Decontamination Machine Operator, Concrete-Portable Hoist, Conway or Similar Mucking Machines, Elevator & Cage, Excavators all types, Front End Loaders, Gradall, Shovel, Backhoe, etc.(Crawler or Truck), Heavy Equipment Robotics Operator/Mechanic, Hoist Engineer-Material, Hoist Portable Mobile Unit, Hoist(Single, Double or Triple Drum), Horizontal Directional Drill Locator, Horizontal Directional Drill Operator and Jersey Spreader, Letourneau or Tournapull(Scrapers over 20 yards Struck), Lift Slab Console, etc., Lull HiLift or Similar, Master Environmental Maintenance Mechanics, Mucking Machines Operator/Mechanic or Similar Type, Overhead Crane, Pavement Breaker(Air Ram), Paver(Concrete), Post Hole Digger, Power House Plant, Road Boring Machine, Road Mix Machine, Ross Carrier and Similar Machines, Rubber tire double end backhoes and similar machines, Scoopmobile Tractor-Shovel Over 1.5 yards, Shovel (Tunnels), Spreader (Asphalt) Telephie(Cableway), Tractor Type Demolition Equipment, Trenching Machines-Vermeer Concrete Saw Trencher and Similar, Ultra High Pressure Waterjet Cutting Tool System, Vacuum Blasting Machine operator/mechanic, Winch Truck A Frame.

GROUP I-B: Compressor (Steel Erection), Mechanic (Outside All Types), Negative Air Machine (Asbestos Removal), Push Button (Buzz Box) Elevator.

GROUP II: Compactor Self-Propelled, Concrete Pump, Crane Operator in Training (Over 100 Tons), Grader, Machines Pulling Sheep's Foot Roller, Roller (4 ton and over), Scrapers (20 yards Struck and Under), Vibratory Rollers, Welder.

GROUP III-A: Asphalt Plant, Concrete Mixing Plants, Forklift (All power sources), Joy Drill or similar, Tractor Drilling Machine, Loader (1 1/2 yards and under), Portable Asphalt Plant, Portable Batch Plant, Portable Crusher, Skid Steer (Bobcat or similar), Stone Crusher, Well Drilling Machine, Well Point System.

GROUP III-B: Compressor Over 125 cu. Feet, Conveyor Belt Machine regardless of size, Compressor Plant, Ladder Hoist, Stud Machine.

GROUP IV-A: Batch Plant, Concrete Breaker, Concrete Spreader, Curb Cutter Machine, Finishing Machine-Concrete, Fine Grading Machine, Hepa Vac Clean Air Machine, Material Hopper(sand, stone, cement), Mulching Grass Spreader, Pump Gypsum etc, Pump-Plaster-Grout-Fireproofing. Roller(Under 4 Ton),Spreading and Fine Grading Machine, Steel Cutting Machine, Siphon Pump, Tar Joint Machine, Television Cameras for Water, Sewer, Gas etc. Turbo Jet Burner or Similar Equipment, Vibrator (1 to 5).

GROUP IV-B: Compressor (all types), Heater (All Types), Fire Watchman, Lighting Unit (Portable & Generator) Pump, Pump Station(Water, Sewer, Portable, Temporary), Welding Machine (Steel Erection & Excavation).

GROUP V: Mechanics Helper, Motorized Roller (walk behind), Stock Attendant, Welder's Helper, Maintenance Engineer Crane(75 ton and over).

Group VI-A: Welder Certified

GROUP VI-B: Utility Man, Warehouse Man.

WAGES: (per hour)

07/01/2024

GROUP I

Cranes- up to 49 tons \$ 67.43

Cranes- 50 tons to 99 tons 69.77

Cranes- 100 tons and over 79.64

GROUP I-A 59.04

GROUP I-B 54.41

GROUP II 56.97

GROUP III-A 54.88

GROUP III-B 52.25

GROUP IV-A 54.33

GROUP IV-B 45.94

GROUP V 49.53

Group VI-A 57.96

GROUP VI-B

Utility Man 47.00

Warehouse Man 49.26

An additional 20% to wage when required to wear protective equipment on hazardous/toxic waste projects.

Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional \$2.00 per hour.

Engineers operating cranes with booms 149 feet or over in length will be paid an additional \$3.00 per hour.

Loader operators over 5 cubic yard capacity additional .50 per hour.

Shovel operators over 4 cubic yard capacity additional \$1.00 per hour.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker \$ 32.32

OVERTIME PAY

See (B, E, Q, V) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE

8-137B

Operating Engineer - Heavy&Highway

10/01/2024

JOB DESCRIPTION Operating Engineer - Heavy&Highway

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

PARTIAL COUNTIES

Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES

GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane, (Crawler, Truck), Dragline, Drill Rig (Casa Grande, Cat, or Similar), Floating Crane (Crane on Barges) under 100 tons, Gin Pole, Hoist Engineer-Concrete (Crane-Derrick-Mine Hoist), Knuckle Boom Crane, Rough Terrain Crane.

GROUP I-A: Auger (Truck or Truck Mounted), Boat Captain, Bulldozer-All Sizes, Central Mix Plant Operator, Chipper (all types), Close Circuit T.V., Combination Loader/Backhoe, Compactor with Blade, Concrete Finishing Machine, Gradall, Grader (Motor Grader), Elevator & Cage (Materials or Passenger), Excavator (and all attachments), Front End Loaders (1 1/2 yards and over), High Lift Lull and similar, Hoist (Single, Double, Triple Drum), Hoist Portable Mobile Unit, Hoist Engineer (Material), Jack and Bore Machine, Log Skidders, Mill Machines, Mucking Machines, Overhead Crane, Paver (concrete), Post Pounder (of any type), Push Cats, Road Reclaimer, Robot Hammer (Brokk or similar), Robotic Equipment (Scope of Engineer Schedule), Ross Carrier and similar, Scrapers (20 yard struck and over), Side Boom, Slip Form Machine, Spreader (Asphalt), Trenching Machines (Telephies-Vermeer Concrete Saw), Tractor Type Demolition Equipment, Vacuum Truck. Vibratory Roller(Riding) or Roller used in mainline paving operations.

GROUP I-B: Asphalt Mobile Conveyor/Transfer Machine, Road Paver (Asphalt).

GROUP II-A: Ballast Regulators, Compactor Self Propelled, Fusion Machine, Rail Anchor Machines, Roller (4 ton and over), Scrapers (20 yard struck and under).

GROUP II-B: Mechanic (Outside) All Types, Shop Mechanic.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler (High Pressure), Concrete Breaker (Track or Rubber Tire), Concrete Pump, Concrete Spreader, Excavator Drill, Farm Tractor, Forklift (all types), Gas Tapping (Live), Hydroseeder, Loader (1 1/2 yards and under), Locomotive (all sizes), Machine Pulling Sheeps Foot Roller, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher (Apprentice), Powerhouse Plant, Roller (under 4 ton), Sheer Excavator, Skid Steer/Bobcat, Stone Crusher, Sweeper (with seat), Well Drilling Machine.

GROUP IV: Service Person (Grease Truck), Deckhand.

GROUP IV-B: Conveyor Belt Machine (Truck Mounted), Heater (all types), Lighting Unit (Portable), Maintenance Engineer (For Crane Only), Mechanics Helper, Pump (Fireproofing), Pumps-Pump Station/Water/Sewer/Gypsum/Plaster, etc., Pump Truck (Sewer Jet or Similar), Welders Helper, Welding Machine (Steel Erection), Well Point System.

GROUP V: All Tower Cranes-All Climbing Cranes and all cranes of 100-ton capacity or greater (3900 Manitowac or similar) irrespective of manufacturer and regardless of how the same is rigged, Hoist Engineer (Steel), Engineer-Pile Driver, Jersey Spreader, Pavement Breaker/Post Hole Digger.

WAGES: Per hour: 07/01/2024

Group I	\$ 68.63
Group I-A	60.42
Group I-B	63.70
Group II-A	57.84
Group II-B	59.67
Group III	56.81
Group IV	51.57
Group IV-B	44.19
Group V	
Engineer All Tower, Climbing and	
Cranes of 100 Tons	77.82
Hoist Engineer(Steel)	70.41
Engineer(Pile Driver)	75.13
Jersey Spreader, Pavement Breaker (Air	
Ram)Post Hole Digger	59.19

Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional \$2.00 per hour over the rate listed in the Wage Schedule. Engineers operating cranes with booms 149 feet or over in length will be paid an additional \$3.00 per hour over the rate listed in the Wage Schedule. Loader and Excavator Operators: over 5 cubic yards capacity \$0.50 per hour over the rate listed in the Wage Schedule. Shovel Operators: over 4 cubic yards capacity \$1.00 per hour over the rate listed in the Wage Schedule.

SHIFT WORK

A 15% premium on all hours paid, including overtime hours for 2nd, 3rd shifts on all government mandated off-shift work

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:	\$ 34.85 up to 40 Hours
	After 40 hours \$ 25.55* PLUS

\$ 1.25 on all
hours worked

*This amount is subject to premium

OVERTIME PAY

See (B, E, P, *R, **U) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE

Overtime..... See (5, 6, 8, 15, 25, 26) on OVERTIME PAGE

* For Holiday codes 8,15,25,26 code R applies

** For Holiday Codes 5 & 6 code U applies

Note: If employees are required to work on Easter Sunday they shall be paid at the rate of triple time.

REGISTERED APPRENTICES

(1)year terms at the following rate.

1st term	\$ 30.21
2nd term	36.25
3rd term	42.30
4th term	48.34
Supplemental Benefits per hour:	

26.85

8-137HH

Operating Engineer - Heavy&Highway

10/01/2024

JOB DESCRIPTION Operating Engineer - Heavy&Highway

DISTRICT 9

ENTIRE COUNTIES

Putnam, Westchester

PARTIAL COUNTIES

Dutchess: South of the North city line of Poughkeepsie

WAGES

Party Chief - One who directs a survey party

Instrument Man - One who runs the instrument and assists Party Chief

Rodman - One who holds the rod and in general, assists the Survey Crew

Categories cover GPS & Underground Surveying

Per Hour: 07/01/2024

Party Chief	\$ 84.94
Instrument Man	63.15
Rodman	53.43

SUPPLEMENTAL BENEFITS

Per Hour: 07/01/2024

All Categories
Straight Time: \$ 30.04* + \$7.64

Premium:
Time & 1/2 \$ 45.06* + \$7.64

Double Time \$ 60.08* + \$7.64

Non-Worked Holiday Supplemental Benefits:
\$ 21.83

OVERTIME PAY

See (B, *E, Q) on OVERTIME PAGE

* Doubletime paid on all hours in excess of 8 hours on Saturday

HOLIDAY

Paid: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

Overtime: See (5, 6, 7, 11, 12) on HOLIDAY PAGE

9-15Dh

Operating Engineer - Heavy&Highway - Tunnel

10/01/2024

JOB DESCRIPTION Operating Engineer - Heavy&Highway - Tunnel

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

PARTIAL COUNTIES

Dutchess: All the counties of Westchester and Putnam and the southern part of Dutchess County defined by the northern boundary line of the City of Poughkeepsie, then due east to Route 115, then north along Route 115 to Bedell Road, then east along Bedell Road to Van Wagner Road, then north along Van Wagner Road to Bower Road, then east along Bower Road to Route 44 and along Route 44 east to Route 343, then along Route 343 east to the northern boundary of Town of Dover Plains and east along the northern boundary of Town of Dover Plains to the border line of the State of Connecticut and bordered on the west by the middle of the Hudson River.

WAGES

GROUP I: Boom Truck, Cherry Picker, Clamshell, Crane(Crawler, Truck), Dragline, Drill Rig Casa Grande(Cat or Similar), Floating Crane(Crane on Barge-Under 100 Tons), Hoist Engineer(Concrete/Crane-Derrick-Mine Hoist), Knuckle Boom Crane, Rough Terrain Crane.

GROUP I-A: Auger(Truck or Truck Mounted), Boat Captain, Bull Dozer-all sizes, Central Mix Plant Operator, Chipper-all types, Close Circuit T.V., Combination Loader/Backhoe, Compactor with Blade, Concrete Finishing Machine, Gradall, Grader(Motor Grader), Elevator & Cage(Materials or Passengers), Excavator(and all attachments), Front End Loaders(1 1/2 yards and over), High Lift Lull, Hoist(Single, Double, Triple Drum), Hoist Portable Mobile Unit, Hoist Engineer(Material), Jack and Bore Machine, Log Skidder, Milling Machine, Moveable Concrete Barrier Transfer & Transport Vehicle, Mucking Machines. Overhead Crane, Paver(Concrete), Post Pounder of any type, Push Cats, Road Reclaimer, Robot Hammer(Brokk or similar), Robotic Equipment(Scope of Engineer Schedule), Ross Carrier and similar machines, Scrapers(20 yards struck and over), Side Boom, Slip Form Machine, Spreader(Asphalt), Trenching Machines, Telephies-Vermeer Concrete Saw, Tractor type demolition equipment, Vacuum Truck, Vibratory Roller (Riding) used in mainline paving operations.

GROUP I-B: Asphalt Mobile Conveyor/Transfer Machine, Road Paver(Asphalt).

GROUP II-A: Ballast Regulators, Compactor(Self-propelled), Fusion Machine, Rail Anchor Machines, Roller(4 ton and over), Scrapers(20 yard struck and under).

GROUP II-B: Mechanic(outside)all types, Shop Mechanic.

GROUP III: Air Tractor Drill, Asphalt Plant, Batch Plant, Boiler(High Pressure), Concrete Breaker(Track or Rubber Tire), Concrete Pump, Concrete Spreader, Excavator Drill, Farm Tractor, Forklift(all types of power), Gas Tapping(Live), Hydroseeder, Loader(1 1/2 yards and under), Locomotive(all sizes), Machine Pulling Sheeps Foot Roller, Portable Asphalt Plant, Portable Batch Plant, Portable Crusher(Apprentice), Powerhouse Plant, Roller(under 4 ton), Sheer Excavator, Skidsteer/Bobcat, Stone Crusher, Sweeper(with seat), Well Drilling Machine.

GROUP IV-A: Service Person(Grease Truck), Deckhand.

GROUP IV-B: Conveyor Belt Machine(Truck Mounted), Heater(all types), Lighting Unit(Portable), Maintenance Engineer(for Crane only), Mechanics Helper, Pump(Fireproofing), Pumps-Pump Station/Water/Sewer/Gypsum/Plaster, etc., Pump Truck(Sewer Jet or similar), Welding Machine(Steel Erection), Welders Helper.

GROUP V-A: Engineer(all Tower Cranes, all Climbing Cranes & all Cranes of 100 ton capacity or greater),Hoist Engineer(Steel-Sub Structure), Engineer-Pile Driver, Jersey-Spreader, Pavement breaker, Post Hole Digger

WAGES: (per hour)

07/01/2024

GROUP I	\$ 68.63
GROUP I-A	60.42
GROUP I-B	63.70
GROUP II-A	57.84
GROUP II-B	59.67
GROUP III	56.81
GROUP IV-A	51.57
GROUP IV-B	44.19
GROUP V-A	
Engineer-Cranes	77.82
Engineer-Pile Driver	75.13
Hoist Engineer	70.41
Jersey Spreader/Post Hole Digger	59.19

An additional 20% to wage when required to wear protective equipment on hazardous/toxic waste projects. Operators required to use two buckets pouring concrete on other than road pavement shall receive \$0.50 per hour over scale. Engineers operating cranes with booms 100 feet but less than 149 feet in length will be paid an additional \$2.00 per hour. Engineers operating cranes with booms 149 feet or over in length will be paid an additional \$3.00 per hour. Operators of shovels with a capacity over (4) cubic yards shall be paid an additional \$1.00 per hour. Operators of loaders with a capacity over (5) cubic yards shall be paid an additional \$0.50 per hour.

SHIFT WORK

A 15% premium on all hours paid, including overtime hours for 2nd, 3rd shifts
on all government mandated off-shift work

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker:

\$ 34.85 up to
40 hours
After 40 hours
\$25.55 plus
\$1.25 on all
hours worked

OVERTIME PAY

See (D, O, *U, V) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 15, 25, 26) on HOLIDAY PAGE

* Note: For Holiday codes 5 & 6, code U applies. For Holiday codes 8, 15, 25, 26, code R applies.

Note: If employees are required to work on Easter Sunday, they shall be paid at the rate of triple time.

REGISTERED APPRENTICES

(1)year terms at the following rates:

1st term	\$ 30.21
2nd term	36.25
3rd term	42.30
4th term	48.34

Supplemental Benefits per hour:

All terms	\$ 26.85
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8-137Tun

Operating Engineer - Marine Dredging

10/01/2024

JOB DESCRIPTION Operating Engineer - Marine Dredging

DISTRICT 4

ENTIRE COUNTIES

Albany, Bronx, Cayuga, Clinton, Columbia, Dutchess, Essex, Franklin, Greene, Jefferson, Kings, Monroe, Nassau, New York, Orange, Oswego, Putnam, Queens, Rensselaer, Richmond, Rockland, St. Lawrence, Suffolk, Ulster, Washington, Wayne, Westchester

WAGES

These wages do not apply to Operating Engineers on land based construction projects. For those projects, please see the Operating Engineer Heavy/Highway Rates. The wage rates below for all equipment and operators are only for marine dredging work in navigable waters found in the counties listed above.

Per Hour: 07/01/2024

CLASS A1	\$ 45.26
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Deck Captain, Leverman,
Mechanical Dredge Operator,
Licensed Tug Operator 1000HP or more.

CLASS A2	40.33
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Crane Operator (360 swing)

CLASS B	To conform to Operating Engineer Prevailing Wage in locality where work is being performed including benefits.
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Dozer, Front Loader
Operator on Land

CLASS B1	39.14
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Derrick Operator (180 swing)
Spider/Spill Barge Operator

Operator II, Fill Placer, Engineer
Chief Mate, Electrician, Chief Welder,
Maintenance Engineer, Licensed Boat, Crew Boat Operator

CLASS B2 36.84
Certified Welder

CLASS C1 35.83
Drag Barge Operator,
Steward, Mate,
Assistant Fill Placer

CLASS C2 34.68
Boat Operator

CLASS D 28.81
Shoreman, Deckhand, Oiler,
Rodman, Scowman, Cook,
Messman, Porter/Janitor

SUPPLEMENTAL BENEFITS

Per Hour:

THE FOLLOWING SUPPLEMENTAL BENEFITS APPLY TO ALL CATEGORIES

All Classes A & B \$ 12.00 plus 7%
of straight time
wage, Overtime hours
add \$ 0.63

All Class C & D \$ 11.75 plus 7%
of straight time
wage, Overtime hours
add \$ 0.50

OVERTIME PAY

See (B2, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 15, 26) on HOLIDAY PAGE

4-25a-MarDredge

Operating Engineer - Survey Crew - Consulting Engineer

10/01/2024

JOB DESCRIPTION Operating Engineer - Survey Crew - Consulting Engineer

DISTRICT 9

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

PARTIAL COUNTIES

Dutchess: That part in Dutchess County lying South of the North City line of Poughkeepsie.

WAGES

Feasibility and preliminary design surveying, any line and grade surveying for inspection or supervision of construction.

Per hour: 07/01/2024
Survey Classifications

Party Chief \$ 49.39
Instrument Man 40.96
Rodman 35.63

SUPPLEMENTAL BENEFITS

Per Hour:

All Crew Members: \$ 23.75

OVERTIME PAY

OVERTIME:.... See (B, E*, Q, V) ON OVERTIME PAGE.

*Double-time paid on the 9th hour on Saturday.

HOLIDAY

Paid: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

Overtime: See (5, 6, 7, 11, 16) on HOLIDAY PAGE

Painter	10/01/2024
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JOB DESCRIPTION Painter

DISTRICT 8

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, Westchester

WAGES

Per hour:	07/01/2024	05/01/2025 Additional
Brush	52.86*	\$ 2.62**
Abatement/Removal of lead based or lead containing paint on materials to be repainted.	52.86*	
Spray & Scaffold	\$ 55.86*	
Fire Escape	55.86*	
Decorator	55.86*	
Paperhanger/Wall Coverer	55.09*	

*Subtract \$ 0.10 to calculate premium rate.

** To be allocated at a later date.

SHIFT WORK

Counties of Bronx, Kings, Nassau, New York, Putnam, Queens, Richmond, Suffolk, and Westchester; Agency/Government mandated off-shift work to be paid at time and one-half the hourly wage.

SUPPLEMENTAL BENEFITS

Per hour:

Paperhanger	\$ 36.73
All others	34.31
Premium	38.28**

**Applies only to "All others" category, not paperhanger journeyworker.

OVERTIME PAY

See (A, E, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

One (1) year terms at the following wage rate.

Per hour:	07/01/2024
Appr 1st term...	\$ 20.22*
Appr 2nd term...	25.93*
Appr 3rd term...	31.61*
Appr 4th term...	42.40*

*Subtract \$ 0.10 to calculate premium rate.

Supplemental benefits:

Per Hour:	
Appr 1st term...	\$ 16.89
Appr 2nd term...	20.95
Appr 3rd term...	24.10
Appr 4th term...	30.57

8-NYDC9-B/S

Painter	10/01/2024
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JOB DESCRIPTION Painter

DISTRICT 8

ENTIRE COUNTIES

Putnam, Suffolk, Westchester

PARTIAL COUNTIES

Nassau: All of Nassau except the areas described below: Atlantic Beach, Ceaderhurst, East Rockaway, Gibson, Hewlett, Hewlett Bay, Hewlett Neck, Hewlett Park, Inwood, Lawrence, Lido Beach, Long Beach, parts of Lynbrook, parts of Oceanside, parts of Valley Stream, and Woodmere. Starting on the South side of Sunrise Hwy in Valley Stream running east to Windsor and Rockaway Ave., Rockville Centre is the boundary line up to Lawson Blvd. turn right going west all the above territory. Starting at Union Turnpike and Lakeville Rd. going north to Northern Blvd. the west side of Lakeville road to Northern blvd. At Northern blvd. going east the district north of Northern blvd. to Port Washington Blvd. West of Port Washington blvd.to St.Francis Hospital then north of first traffic light to Port Washington and Sands Point, Manor HAVen, Harbour Acres.

WAGES

Per hour:	07/01/2024	05/01/2025
Drywall Taper:	\$ 52.86*	Additional
Scaffold:	\$ 55.86*	\$ 2.62**

*Subtract \$ 0.10 to calculate premium rate.

** To be allocated a later date.

SHIFT WORK

Agency/Government mandated off-shift work to be paid at time and one-half hourly wage

SUPPLEMENTAL BENEFITS

Per hour:	
Journeyman	\$ 34.31

OVERTIME PAY

See (A, E, R) on OVERTIME PAGE

HOLIDAY

Paid:	See (1) on HOLIDAY PAGE
Overtime:	See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages - Per Hour:

1500 hour terms at the following wage rate:

1st term	\$ 20.22*
2nd term	25.93*
3rd term	31.61*
4th term	42.40*

*Subtract \$ 0.10 to calculate premium rate.

Supplemental Benefits - Per hour:

One year term (1500 hours) at the following dollar amount.

1st year	\$ 16.89
2nd year	20.95
3rd year	24.10
4th year	30.57

8-NYDCT9-DWT

Painter - Bridge & Structural Steel

10/01/2024

JOB DESCRIPTION Painter - Bridge & Structural Steel

DISTRICT 8

ENTIRE COUNTIES

Albany, Bronx, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Kings, Montgomery, Nassau, New York, Orange, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per Hour:	
STEEL:	
Bridge Painting:	07/01/2024
	\$ 56.00
	+ 10.35*

ADDITIONAL \$7.00 per hour for POWER TOOL/SPRAY, whether straight time or overtime.

NOTE: All premium wages are to be calculated on base rate per hour only.

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (50 hour cap).

NOTE: Generally, for Bridge Painting Contracts, ALL WORKERS on and off the bridge (including Flagmen) are to be paid Painter's Rate; the contract must be ONLY for Bridge Painting.

SHIFT WORK

When directly specified in public agency or authority contract documents for an employer to work a second shift and works the second shift with employees other than from the first shift, all employees who work the second shift will be paid 10% of the base wage shift differential in lieu of overtime for the first eight (8) hours worked after which the employees shall be paid at time and one half of the regular wage rate. When a single irregular work shift is mandated in the job specifications or by the contracting agency, wages shall be paid at time and one half for single shifts between the hours of 3pm-11pm or 11pm-7am.

SUPPLEMENTAL BENEFITS

Per Hour:

Journeyworker:

\$ 12.43
+ 31.55*

* For the period of May 1st to November 15th, this amount is payable up to 40 hours. For the period of Nov 16th to April 30th, this amount is payable up to 50 hours. EXCEPTION: First and last week of employment, and for the weeks of Memorial Day, Independence Day and Labor Day, where the amount is paid for the actual number of hours worked (50 hour cap).

OVERTIME PAY

See (B, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (4, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wage - Per hour:

Apprentices: (1) year terms.

1st year	\$ 22.40 + 4.14
2nd year	\$ 33.60 + 6.21
3rd year	\$ 44.80 + 8.28
Supplemental Benefits - Per hour:	
1st year	\$ 1.16 + 12.62
2nd year	\$ 7.46 + 18.93
3rd year	\$ 9.94 + 25.24

NOTE: All premium wages are to be calculated on base rate per hour only.

8-DC-9/806/155-BrSS

Painter - Line Striping	10/01/2024
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JOB DESCRIPTION Painter - Line Striping

DISTRICT 8

ENTIRE COUNTIES

Albany, Clinton, Columbia, Dutchess, Essex, Franklin, Fulton, Greene, Hamilton, Montgomery, Nassau, Orange, Putnam, Rensselaer, Rockland, Saratoga, Schenectady, Schoharie, Suffolk, Sullivan, Ulster, Warren, Washington, Westchester

WAGES

Per hour:

Painter (Striping-Highway):	07/01/2024	04/01/2025	04/01/2026
Striping-Machine Operator*	\$ 34.12	\$ 35.49	\$ 36.93

Linerman Thermoplastic	41.12	42.74	44.44
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Note: * Includes but is not limited to: Positioning of cones and directing of traffic using hand held devices. Excludes the Driver/Operator of equipment used in the maintenance and protection of traffic safety.

SHIFT WORK

When directly specified in public agency or authority contract documents there shall be a 30% night shift premium pay differential for all work performed after 9:00pm and before 5:00am.

SUPPLEMENTAL BENEFITS

Per hour paid:

Journeyworker:

Striping Machine Operator: \$23.65 \$ 24.30 \$ 24.95

Linerman Thermoplastic: 23.65 24.30 24.95

OVERTIME PAY

See (B, B2, E2, F, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 20) on HOLIDAY PAGE

Overtime: See (5, 20) on HOLIDAY PAGE

REGISTERED APPRENTICES

One (1) year terms at the following wage rates:

1st Term:	\$ 16.00	\$ 16.00	\$ 16.00
2nd Term:	20.47	21.29	22.16
3rd Term:	27.30	28.39	29.54

Supplemental Benefits per hour:

All terms:	\$ 23.65	\$ 24.30	\$ 24.95
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8-1456-LS

Painter - Metal Polisher

10/01/2024

JOB DESCRIPTION Painter - Metal Polisher

DISTRICT 8

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

07/01/2024

Metal Polisher \$ 39.33

Metal Polisher* 40.43

Metal Polisher** 43.33

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

SUPPLEMENTAL BENEFITS

Per Hour: 07/01/2024

Journeyworker:

All classification \$ 12.79

OVERTIME PAY

See (B, E, P, T) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

Overtime: See (5, 6, 11, 15, 16, 25, 26) on HOLIDAY PAGE

REGISTERED APPRENTICES

Wages per hour:

One (1) year term at the following wage rates:

07/01/2024

1st year \$ 19.67

2nd year 21.63

3rd year	23.60
1st year*	\$ 22.06
2nd year*	22.07
3rd year*	24.14
1st year**	\$ 22.17
2nd year**	24.13
3rd year**	26.10

*Note: Applies on New Construction & complete renovation

** Note: Applies when working on scaffolds over 34 feet.

Supplemental benefits:

Per hour:

1st year	\$ 8.69
2nd year	8.69
3rd year	8.69

8-8A/28A-MP

Plumber

10/01/2024

JOB DESCRIPTION Plumber

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

WAGES

Per hour:

07/01/2024

Plumber and

Steamfitter

\$ 63.76

SHIFT WORK

SHIFT WORK:

When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker \$ 43.61

OVERTIME PAY

See (B, E, E2, Q, V) on OVERTIME PAGE

OVERTIME:... See on OVERTIME PAGE.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1)year terms at the following wages:

1st Term	\$ 23.75
2nd Term	27.23
3rd Term	31.47
4th Term	44.80
5th Term	48.05

Supplemental Benefits per hour:

1st term	\$ 17.94
2nd term	20.05
3rd term	23.82
4th term	31.51
5th term	33.42

8-21.1-ST

Plumber - HVAC / Service**10/01/2024**

JOB DESCRIPTION Plumber - HVAC / Service**DISTRICT** 8**ENTIRE COUNTIES**

Dutchess, Putnam, Westchester

PARTIAL COUNTIES

Delaware: Only the townships of Middletown and Roxbury

Ulster: Entire County(including Wallkill and Shawangunk Prisons) except for remainder of Town of Shawangunk and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES

Per hour: 07/01/2024

HVAC Service \$ 43.43
+ \$ 4.47*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker HVAC Service
\$ 30.39**OVERTIME PAY**

See (B, F, R) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

HVAC SERVICE

(1)year terms at the following wages:

1st yr.	2nd yr.	3rd yr.	4th yr.	5th yr.
\$ 19.66	\$ 23.32	\$ 29.05	\$ 35.73	\$ 38.83
+\$2.43*	+\$2.76*	+\$3.31*	+\$3.96*	+\$4.21*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour:

Apprentices 07/01/2024

1st term	\$ 21.47
2nd term	23.05
3rd term	24.76
4th term	27.13
5th term	28.81

8-21.1&2-SF/Re/AC

Plumber - Jobbing & Alterations**10/01/2024**

JOB DESCRIPTION Plumber - Jobbing & Alterations**DISTRICT** 8**ENTIRE COUNTIES**

Dutchess, Putnam, Westchester

PARTIAL COUNTIES

Ulster: Entire county (including Wallkill and Shawangunk Prisons in Town of Shawangunk) EXCEPT for remainder of Town of Shawangunk, and Towns of Plattekill, Marlboro, and Wawarsing.

WAGES

Per hour: 07/01/2024

Journeyworker: \$ 49.63

Repairs, replacements and alteration work is any repair or replacement of a present plumbing system that does not change existing roughing or water supply lines.

SHIFT WORK

When directly specified in public agency or authority contract documents, shift work outside the regular hours of work shall be comprised of eight (8) hours per shift not including Saturday, Sundays and holidays. One half (1/2) hour shall be allowed for lunch after the first four (4) hours of each shift. Wage and Fringes for shift work shall be straight time plus a shift premium of twenty-five (25%) percent. A minimum of five days Monday through Friday must be worked to establish shift work.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker

\$ 36.44

OVERTIME PAY

See (B, *E, E2, Q, V) on OVERTIME PAGE

*When used as a make-up day, hours after 8 on Saturday shall be paid at time and one half.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year terms at the following wages:

1st year	\$ 21.35
2nd year	23.73
3rd year	25.87
4th year	36.28
5th year	38.34

Supplemental Benefits per hour:

1st year	\$ 12.11
2nd year	14.21
3rd year	18.38
4th year	24.86
5th year	26.96

8-21.3-J&A

Roofer

10/01/2024

JOB DESCRIPTION Roofer

DISTRICT 9

ENTIRE COUNTIES

Bronx, Dutchess, Kings, New York, Orange, Putnam, Queens, Richmond, Rockland, Sullivan, Ulster, Westchester

WAGES

Per Hour: 07/01/2024

Roofer/Waterproofer \$ 48.50
+ \$7.00*

* This portion is not subjected to overtime premiums.

Note: Abatement/Removal of Asbestos containing roofs and roofing material is classified as Roofer.

SUPPLEMENTAL BENEFITS

Per Hour: \$ 31.87

OVERTIME PAY

See (B, H) on OVERTIME PAGE

Note: An observed holiday that falls on a Sunday will be observed the following Monday.

HOLIDAY

Overtime: See (5, 6) on HOLIDAY PAGE

REGISTERED APPRENTICES

(1) year term apprentices indentured prior to 01/01/2023

1st	2nd	3rd	4th
\$ 16.97	\$ 24.25	\$ 29.10	\$ 36.37
	+ 3.50*	+ 4.20*	+ 5.26*

Supplements:

1st	2nd	3rd	4th
\$ 4.10	\$ 16.17	\$ 19.31	\$ 24.02

* This portion is not subjected to overtime premiums.

(1) year term apprentices indentured after 01/01/2023

	1st	2nd	3rd	4th	5th
	\$ 18.43	\$ 21.82	\$ 24.25	\$ 29.10	\$ 36.37
		+ 3.16*	+ 3.50*	+ 4.20*	+ 5.26
Supplements:					
	1st	2nd	3rd	4th	5th
	\$ 7.73	\$ 14.59	\$ 16.17	\$ 19.31	\$ 24.02

* This portion is not subjected to overtime premiums.

9-8R

Sheetmetal Worker	10/01/2024
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JOB DESCRIPTION Sheetmetal Worker

DISTRICT 8

ENTIRE COUNTIES

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES

	07/01/2024
SheetMetal Worker	\$ 49.51
	+ 3.71*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

SHIFT WORK

For all NYS D.O.T. and other Governmental mandated off-shift work:
10% increase for additional shifts for a minimum of five (5) days

SUPPLEMENTAL BENEFITS

Journeyworker \$ 46.20

OVERTIME PAY

OVERTIME:.. See (B, E, Q,) on OVERTIME PAGE.

HOLIDAY

Paid: See (1) on HOLIDAY PAGE
Overtime: See (5, 6, 8, 15, 16, 23) on HOLIDAY PAGE

REGISTERED APPRENTICES

1st	2nd	3rd	4th	5th	6th	7th	8th
\$ 20.20	\$ 20.81	\$ 23.12	\$ 25.42	\$ 27.74	\$ 30.08	\$ 32.86	\$ 35.63
+ 1.48*	+ 1.67*	+ 1.86*	+ 2.04*	+ 2.23*	+ 2.41*	+ 2.60*	+ 2.78*

*This portion of the benefit is NOT subject to the SAME PREMIUM as shown for overtime.

Supplemental Benefits per hour:

Apprentices	
1st term	\$ 18.07
2nd term	22.24
3rd term	24.71
4th term	27.21
5th term	29.67
6th term	32.12
7th term	34.12
8th term	36.15

8-38

Sheetmetal Worker	10/01/2024
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JOB DESCRIPTION Sheetmetal Worker

DISTRICT 4

ENTIRE COUNTIES

Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, Westchester

WAGES

Per Hour:	07/01/2024	08/01/2024
Sign Erector	\$ 58.00	\$ 60.00

NOTE: Structurally Supported Overhead Highway Signs(See STRUCTURAL IRON WORKER CLASS)

SUPPLEMENTAL BENEFITS

Per Hour:	07/01/2024	08/01/2024
Sign Erector	\$ 57.12	\$ 58.31

OVERTIME PAY

See (B, F, S) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 10, 11, 12, 16, 25) on HOLIDAY PAGE

REGISTERED APPRENTICES

Per Hour:

6 month Terms at the following percentage of Sign Erectors wage rate:

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
35%	40%	45%	50%	55%	60%	65%	70%	75%	80%

SUPPLEMENTAL BENEFITS

Per Hour:

07/01/2024

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 18.27	\$ 20.75	\$ 25.22	\$ 25.70	\$ 34.66	\$ 37.74	\$ 41.65	\$ 44.78	\$ 47.93	\$ 51.04

08/01/2024

\$ 18.65	\$ 21.16	\$ 23.69	\$ 26.22	\$35.39	\$ 38.52	\$ 42.55	\$ 45.75	\$ 48.96	\$ 52.15 4-137-SE
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Sprinkler Fitter 10/01/2024

JOB DESCRIPTION Sprinkler Fitter

DISTRICT 1

ENTIRE COUNTIES

Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, Westchester

WAGES

Per hour 07/01/2024

Sprinkler \$ 53.34
Fitter

SUPPLEMENTAL BENEFITS

Per hour

Journeyworker \$ 30.77

OVERTIME PAY

See (B, E, Q) on OVERTIME PAGE

HOLIDAY

Paid: See (1) on HOLIDAY PAGE

Overtime: See (5, 6) on HOLIDAY PAGE

Note: When a holiday falls on Sunday, the following Monday shall be considered a holiday and all work performed on either day shall be at the double time rate. When a holiday falls on Saturday, the preceding Friday shall be considered a holiday and all work performed on either day shall be at the double time rate.

REGISTERED APPRENTICES

Wages per hour

One Half Year terms at the following wage.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 25.89	\$ 28.77	\$ 31.39	\$ 34.27	\$ 37.14	\$ 40.02	\$ 42.90	\$ 45.77	\$ 48.65	\$ 51.53

Supplemental Benefits per hour

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
\$ 9.18	\$ 9.18	\$ 20.90	\$ 20.90	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15	\$ 21.15 1-669.2

Teamster - Building / Heavy&Highway 10/01/2024

JOB DESCRIPTION Teamster - Building / Heavy&Highway

DISTRICT 8

ENTIRE COUNTIES

Putnam, Westchester

WAGES

GROUP A: Straight Trucks (6-wheeler and 10-wheeler), A-frame, Winch, Dynamite Seeding, Mulching, Agitator, Water, Attenuator, Light Towers, Cement (all types), Suburban, Station Wagons, Cars, Pick Ups, any vehicle carrying materials of any kind.

GROUP AA: Tack Coat

GROUP B: Tractor & Trailers (all types).

GROUP BB: Tri-Axle, 14 Wheeler

GROUP C: Low Boy (carrying equipment).

GROUP D: Fuel Trucks, Tire Trucks.

GROUP E: Off-road Equipment (over 40 tons): Athey Wagons, Belly Dumps, Articulated Dumps, Trailer Wagons.

GROUP F: Off-road Equipment (over 40 tons) Euclid, DJB.

GROUP G: Off-road Equipment (under 40 tons) Athey Wagons, Belly Articulated Dumps, Trailer Wagons.

GROUP H: Off-road Equipment (under 40 tons), Euclid.

GROUP HH: Off-road Equipment (under 40 tons) D.J.B.

GROUP I: Off-road Equipment (under 40 tons) Darts.

GROUP II: Off-road Equipment (under 40 tons) RXS.

WAGES: (per hour)

07/01/2024

GROUP A	\$ 47.86*
GROUP AA	50.86*
GROUP B	48.48*
GROUP BB	47.98*
GROUP C	50.61*
GROUP D	48.31*
GROUP E	48.86*
GROUP F	49.86*
GROUP G	48.61*
GROUP H	49.23*
GROUP HH	49.61*
GROUP I	49.36*
GROUP II	49.73*

* To calculate premium wage, subtract \$.10 from the hourly wage.

Note: Fuel truck operators on construction sites addit. \$5.00 per day.

For work on hazardous/toxic waste site addit. 20% of hourly rate.

SHIFT WORK

When mandated by the contracting agency, DOT, or any governmental agency contracts shall receive a shift differential of fifteen (15%) above the wage rate.

SUPPLEMENTAL BENEFITS

Per hour:

Journeyworker

First 40 hours	\$ 37.33
41st-45th hours	16.73
Over 45 hours	1.60

OVERTIME PAY

See (B, E, P, R) on OVERTIME PAGE

HOLIDAY

Paid: See (5, 6, 8, 15, 25) on HOLIDAY PAGE

Overtime: See (5, 6, 8, 15, 25) on HOLIDAY PAGE

8-456

Welder

10/01/2024

JOB DESCRIPTION Welder

DISTRICT 1

ENTIRE COUNTIES

Albany, Allegany, Bronx, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Columbia, Cortland, Delaware, Dutchess, Erie, Essex, Franklin, Fulton, Genesee, Greene, Hamilton, Herkimer, Jefferson, Kings, Lewis, Livingston, Madison, Monroe, Montgomery, Nassau, New York, Niagara, Oneida, Onondaga, Ontario, Orange, Orleans, Oswego, Otsego, Putnam, Queens, Rensselaer, Richmond, Rockland, Saratoga, Schenectady, Schoharie, Schuyler, Seneca, St. Lawrence, Steuben, Suffolk, Sullivan, Tioga, Tompkins, Ulster, Warren, Washington, Wayne, Westchester, Wyoming, Yates

WAGES

Per hour 07/01/2024

Welder: To be paid the same rate of the mechanic performing the work.*

*EXCEPTION: If a specific welder certification is required, then the 'Certified Welder' rate in that trade tag will be paid.

OVERTIME PAY

HOLIDAY

1-As Per Trade

Overtime Codes

Following is an explanation of the code(s) listed in the OVERTIME section of each classification contained in the attached schedule. Additional requirements may also be listed in the HOLIDAY section.

NOTE: Supplemental Benefits are 'Per hour worked' (for each hour worked) unless otherwise noted

- (AA) Time and one half of the hourly rate after 7 and one half hours per day
- (A) Time and one half of the hourly rate after 7 hours per day
- (B) Time and one half of the hourly rate after 8 hours per day
- (B1) Time and one half of the hourly rate for the 9th & 10th hours week days and the 1st 8 hours on Saturday.
Double the hourly rate for all additional hours
- (B2) Time and one half of the hourly rate after 40 hours per week
- (C) Double the hourly rate after 7 hours per day
- (C1) Double the hourly rate after 7 and one half hours per day
- (D) Double the hourly rate after 8 hours per day
- (D1) Double the hourly rate after 9 hours per day
- (E) Time and one half of the hourly rate on Saturday
- (E1) Time and one half 1st 4 hours on Saturday; Double the hourly rate all additional Saturday hours
- (E2) Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- (E3) Between November 1st and March 3rd Saturday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather, provided a given employee has worked between 16 and 32 hours that week
- (E4) Saturday and Sunday may be used as a make-up day at straight time when a day is lost during that week due to inclement weather
- (E5) Double time after 8 hours on Saturdays
- (F) Time and one half of the hourly rate on Saturday and Sunday
- (G) Time and one half of the hourly rate on Saturday and Holidays
- (H) Time and one half of the hourly rate on Saturday, Sunday, and Holidays
- (I) Time and one half of the hourly rate on Sunday
- (J) Time and one half of the hourly rate on Sunday and Holidays
- (K) Time and one half of the hourly rate on Holidays
- (L) Double the hourly rate on Saturday
- (M) Double the hourly rate on Saturday and Sunday
- (N) Double the hourly rate on Saturday and Holidays
- (O) Double the hourly rate on Saturday, Sunday, and Holidays
- (P) Double the hourly rate on Sunday
- (Q) Double the hourly rate on Sunday and Holidays
- (R) Double the hourly rate on Holidays
- (S) Two and one half times the hourly rate for Holidays

- (S1) Two and one half times the hourly rate the first 8 hours on Sunday or Holidays One and one half times the hourly rate all additional hours.
- (T) Triple the hourly rate for Holidays
- (U) Four times the hourly rate for Holidays
- (V) Including benefits at SAME PREMIUM as shown for overtime
- (W) Time and one half for benefits on all overtime hours.
- (X) Benefits payable on Paid Holiday at straight time. If worked, additional benefit amount will be required for worked hours. (Refer to other codes listed.)

Holiday Codes

PAID Holidays:

Paid Holidays are days for which an eligible employee receives a regular day's pay, but is not required to perform work. If an employee works on a day listed as a paid holiday, this remuneration is in addition to payment of the required prevailing rate for the work actually performed.

OVERTIME Holiday Pay:

Overtime holiday pay is the premium pay that is required for work performed on specified holidays. It is only required where the employee actually performs work on such holidays. The applicable holidays are listed under HOLIDAYS: OVERTIME. The required rate of pay for these covered holidays can be found in the OVERTIME PAY section listings for each classification.

Following is an explanation of the code(s) listed in the HOLIDAY section of each classification contained in the attached schedule. The Holidays as listed below are to be paid at the wage rates at which the employee is normally classified.

- (1) None
- (2) Labor Day
- (3) Memorial Day and Labor Day
- (4) Memorial Day and July 4th
- (5) Memorial Day, July 4th, and Labor Day
- (6) New Year's, Thanksgiving, and Christmas
- (7) Lincoln's Birthday, Washington's Birthday, and Veterans Day
- (8) Good Friday
- (9) Lincoln's Birthday
- (10) Washington's Birthday
- (11) Columbus Day
- (12) Election Day
- (13) Presidential Election Day
- (14) 1/2 Day on Presidential Election Day
- (15) Veterans Day
- (16) Day after Thanksgiving
- (17) July 4th
- (18) 1/2 Day before Christmas
- (19) 1/2 Day before New Years
- (20) Thanksgiving
- (21) New Year's Day
- (22) Christmas
- (23) Day before Christmas
- (24) Day before New Year's
- (25) Presidents' Day
- (26) Martin Luther King, Jr. Day
- (27) Memorial Day
- (28) Easter Sunday

(29) Juneteenth

New York State Department of Labor - Bureau of Public Work
State Office Building Campus
Building 12 - Room 130
Albany, New York 12226

REQUEST FOR WAGE AND SUPPLEMENT INFORMATION

As Required by Articles 8 and 9 of the NYS Labor Law

Fax (518) 485-1870 or mail this form for new schedules or for determination for additional occupations.

This Form Must Be Typed

Submitted By:

(Check Only One)

☐

Contracting Agency

☐

Architect or Engineering Firm

☐

Public Work District Office

Date:

A. Public Work Contract to be let by: (Enter Data Pertaining to Contracting/Public Agency)

1. Name and complete address ☐ (Check if new or change)

Telephone

Fax

E-Mail:

2. NY State Units (see Item 5).

☐ 01 DOT

☐ 02 OGS

☐ 03 Dormitory Authority

☐ 04 State University
Construction Fund

☐ 05 Mental Hygiene
Facilities Corp.

☐ 06 OTHER N.Y. STATE UNIT

☐ 07 City

☐ 08 Local School District

☐ 09 Special Local District, i.e.,
Fire, Sewer, Water District

☐ 10 Village

☐ 11 Town

☐ 12 County

☐ 13 Other Non-N.Y. State
(Describe)

3. SEND REPLY TO ☐ (check if new or change)
Name and complete address:

Telephone

Fax

E-Mail:

4. SERVICE REQUIRED. Check appropriate box and provide project information.

☐ New Schedule of Wages and Supplements.

APPROXIMATE BID DATE :

☐ Additional Occupation and/or Redetermination

PRC NUMBER ISSUED PREVIOUSLY FOR
THIS PROJECT :

OFFICE USE ONLY

B. PROJECT PARTICULARS

5. Project Title

Description of Work

Contract Identification Number

Note: For NYS units, the OSC Contract No.

6. Location of Project:
Location on Site

Route No/Street Address

Village or City

Town

County

7. Nature of Project - Check One:

☐

1. New Building

☐

2. Addition to Existing Structure

☐

3. Heavy and Highway Construction (New and Repair)

☐

4. New Sewer or Waterline

☐

5. Other New Construction (Explain)

☐

6. Other Reconstruction, Maintenance, Repair or Alteration

☐

7. Demolition

☐

8. Building Service Contract

8. OCCUPATION FOR PROJECT :

☐ Construction (Building, Heavy
Highway/Sewer/Water)

☐ Tunnel

☐ Residential

☐ Landscape Maintenance

☐ Elevator maintenance

☐ Exterminators, Fumigators

☐ Fire Safety Director, NYC Only

☐ Fuel Delivery

☐ Guards, Watchmen

☐ Janitors, Porters, Cleaners,
Elevator Operators

☐ Moving furniture and
equipment

☐ Trash and refuse removal

☐ Window cleaners

☐ Other (Describe)

9. Does this project comply with the Wicks Law involving separate bidding? YES ☐ NO ☐

10. Name and Title of Requester

Signature



NEW YORK STATE DEPARTMENT OF LABOR
Bureau of Public Work - Debarment List

**LIST OF EMPLOYERS INELIGIBLE TO BID ON OR BE
AWARDED ANY PUBLIC WORK CONTRACT**

Under Article 8 and Article 9 of the NYS Labor Law, a contractor, sub-contractor and/or its successor shall be debarred and ineligible to submit a bid on or be awarded any public work or public building service contract/sub-contract with the state, any municipal corporation or public body for a period of five (5) years from the date of debarment when:

- Two (2) final determinations have been rendered within any consecutive six-year (6) period determining that such contractor, sub-contractor and/or its successor has WILLFULLY failed to pay the prevailing wage and/or supplements;
- One (1) final determination involves falsification of payroll records or the kickback of wages and/or supplements.

The agency issuing the determination and providing the information, is denoted under the heading 'Fiscal Officer'. DOL = New York State Department of Labor; NYC = New York City Comptroller's Office; AG = New York State Attorney General's Office; DA = County District Attorney's Office.

Debarment Database: To search for contractors, sub-contractors and/or their successors debarred from bidding or being awarded any public work contract or subcontract under NYS Labor Law Articles 8 and 9, or under NYS Workers' Compensation Law Section 141-b, access the database at this link: <https://apps.labor.ny.gov/EDList/searchPage.do>

For inquiries please call 518-457-5589.

NYSDOL Bureau of Public Work Debarment List 09/20/2024

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AGENCY	Fiscal Officer	FEIN	EMPLOYER NAME	EMPLOYER DBA NAME	ADDRESS	DEBARMENT START DATE	DEBARMENT END DATE
DOL	DOL	*****5754	0369 CONTRACTORS, LLC		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL	*****5784	A.J.M. TRUCKING, INC.		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	NYC		ALL COUNTY SEWER & DRAIN, INC.		7 GREENFIELD DR WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL	*****8387	AMERICAN PAVING & MASONRY, CORP.		8 FOREST AVE GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL	*****8654	AMERICAN PAVING, INC.		8 FORREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	NYC		AMJED PARVEZ		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL		ANGELO F COKER		2610 SOUTH SALINA STREET SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		ANGELO GARCIA		515 WEST AVE UNIT PH 13NORWALK CT 06850	05/12/2021	05/12/2026
DOL	DOL		ANGELO STANCO		8 FOREST AVE. GLEN COVE NY 11542	05/24/2024	05/24/2029
DOL	DOL		ANGELO TONDO		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****4231	ANKER'S ELECTRIC SERVICE, INC.		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL		ANTHONY MONGELLI		PO BOX 2064 MONROE NY 10950	02/12/2024	02/12/2029
DOL	NYC		ARADCO CONSTRUCTION CORP		115-46 132RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	DOL		ARNOLD A. PAOLINI		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC		ARSHAD MEHMOOD		168-42 88TH AVENUE JAMAICA NY 11432	11/20/2019	11/20/2024
DOL	NYC		AVM CONSTRUCTION CORP		117-72 123RD ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	NYC		AZIDABEGUM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****8421	B & B DRYWALL, INC		206 WARREN AVE APT 1WHITE PLAINS NY 10603	12/14/2021	12/14/2026
DOL	DOL		B&L RENOVATION CO.		618 OCEAN PARKWAY APT A6BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	DOL		BERNARD BEGLEY		38 LONG RIDGE ROAD BEDFORD NY 10506	12/18/2019	12/18/2024
DOL	NYC	*****2113	BHW CONTRACTING, INC.		401 HANOVER AVENUE STATEN ISLAND NY 10304	01/11/2021	01/11/2026
DOL	DOL	*****3627	BJB CONSTRUCTION CORP.		38 LONG RIDGE ROAD BEDFORD NY 10506	12/18/2019	12/18/2024
DOL	DOL	*****5078	BLACK RIVER TREE REMOVAL, LLC		29807 ANDREWS ROAD BLACK RIVER NY 13032	10/17/2023	10/17/2028
DOL	DOL		BRADLEY J SCHUKA		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	DOL	*****9383	C.C. PAVING AND EXCAVATING, INC.		2610 SOUTH SALINA ST SUITE 12SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL	*****4083	C.P.D. ENTERPRISES, INC		P.O BOX 281 WALDEN NY 12586	03/03/2020	03/03/2025
DOL	DOL	*****5161	CALADRI DEVELOPMENT CORP.		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****3391	CALI ENTERPRISES, INC.		1223 PARK STREET PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	DOL	*****4155	CASA BUILDERS, INC.	FRIEDLANDER CONSTRUCTI ON	64 N PUTT CONNERS ROAD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	AG	*****7247	CENTURY CONCRETE CORP		2375 RAYNOR ST RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****0026	CHANTICLEER CONSTRUCTION LLC		4 BROTHERS ROAD WAPPINGERS FALLS NY 12590	10/20/2020	10/20/2025
DOL	NYC	*****2117	CHARAN ELECTRICAL ENTERPRISES		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	NYC		CHARLES ZAHRAKKA		863 WASHINGTON STREET FRANKLIN SQUARE NY 11010	03/10/2020	03/10/2025
DOL	DOL		CHRISTOPHER GRECO		26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026

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DOL	DOL		CRAIG JOHANSEN		10 SOUTH 5TH ST LOCUST VALLEY NY 11560	09/26/2022	09/26/2027
DOL	DOL	*****3228	CROSS-COUNTY LANDSCAPING AND TREE SERVICE, INC.	ROCKLAND TREE SERVICE	26 NORTH MYRTLE AVENUE SPRING VALLEY NY 10956	02/18/2021	02/18/2026
DOL	DOL	*****7619	DANCO CONSTRUCTION UNLIMITED INC.		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL		DANIEL ROBERT MCNALLY		7 GREENFIELD DRIVE WARWICK NY 10990	03/25/2022	03/25/2027
DOL	DOL		DARIAN L COKER		2610 SOUTH SALINA ST SUITE 2CSYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		DAVID FRIEDLANDER		64 NORTH PUTT CORNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	NYC		DAVID WEINER		14 NEW DROP LANE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	DOL		DINA TAYLOR		64 N PUTT CONNERS RD NEW PALTZ NY 12561	05/10/2023	05/10/2028
DOL	DOL	*****5175	EAGLE MECHANICAL AND GENERAL CONSTRUCTION LLC		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	AG		EDWIN HUTZLER		23 NORTH HOWELLS RD BELLPORT NY 11713	08/04/2021	08/04/2026
DOL	DA		EDWIN HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****0780	EMES HEATING & PLUMBING CONTR		5 EMES LANE MONSEY NY 10952	01/20/2002	01/20/3002
DOL	DOL		EMIL KISZKO		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION CORP.		84 DIAMOND ST BROOKLYN NY 11222	07/18/2024	07/18/2029
DOL	DOL	*****3298	EMJACK CONSTRUCTION LLC		4192 SIR ANDREW CIRCLE DOYLESTOWN PA 18902	07/18/2024	07/18/2029
DOL	DOL		EUGENIUSZ "GINO" KUCHAR		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	DA		FREDERICK HUTZLER		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	NYC	*****6616	G & G MECHANICAL ENTERPRISES, LLC.		1936 HEMPSTEAD TURNPIKE EAST MEDOW NY 11554	11/29/2019	11/29/2024
DOL	DOL	*****2998	G.E.M. AMERICAN CONSTRUCTION CORP.		195 KINGSLAND AVE BROOKLYN NY 11222	12/22/2023	12/22/2028
DOL	NYC		GAYATRI MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	DA		GEORGE LUCEY		150 KINGS STREET BROOKLYN NY 11231	01/19/1998	01/19/2998
DOL	DA		GIOVANNA TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DA		GIOVANNI NAPOLITANO		2501 BAYVIEW AVENUE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DA	*****0213	GORILLA CONTRACTING GROUP, LLC		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DA	*****4760	GTX CONSTRUCTION ASSOCIATES, CORP		2501 BAYVIEW AVE WANTAGH NY 11793	02/21/2024	02/21/2029
DOL	DOL		HANS RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	DOL		HERBERT CLEMEN		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****9211	J. WASE CONSTRUCTION CORP.		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		J.M.J CONSTRUCTION		151 OSTRANDER AVENUE SYRACUSE NY 13205	11/21/2022	11/21/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON CONSTRUCTION		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R. NELSON, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027

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DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	12/12/2022	12/12/2027
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		J.R.N COMPANIES, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	J.R.N. CONSTRUCTION, LLC		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JAMES J. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		JASON P. RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****7993	JBS DIRT, INC.		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL	*****2435	JEFFEL D. JOHNSON	JMJ7 AND SON	5553 CAIRNSTRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JEFFEL JOHNSON ELITE CARPENTER REMODEL AND CONSTRUCTION		C2 EVERGREEN CIRCLE LIVERPOOL NY 13090	11/21/2022	11/21/2027
DOL	DOL	*****2435	JEFFREY M. JOHNSON	JMJ7 AND SON	5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	NYC		JENNIFER GUERRERO		1936 HEMPSTEAD TURNPIKE EAST MEADOW NY 11554	11/29/2019	11/29/2024
DOL	DOL		JIM PLAUGHER		17613 SANTE FE LINE ROAD WAYNEFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL		JMJ7 & SON CONSTRUCTION, LLC		5553 CAIRNS TRAIL LIVERPOOL NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 AND SONS CONTRACTORS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS		7014 13TH AVENUE BROOKLYN NY 11228	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS AND SONS		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JMJ7 CONTRACTORS, LLC		5553 CAIRNS TRAIL CLAY NY 13041	11/21/2022	11/21/2027
DOL	DOL		JOHN GOCEK		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL		JOHN MARKOVIC		47 MANDON TERRACE HAWTHORN NJ 07506	03/29/2021	03/29/2026
DOL	DOL		JOHN WASE		8545 RT 9W ATHENS NY 12015	03/09/2021	03/09/2026
DOL	DOL		JORGE RAMOS		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	DOL		JOSEPH K. SALERNO		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL		JOSEPH K. SALERNO II		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL	*****5116	JP RACE PAINTING, INC. T/A RACE PAINTING		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		JRN CONSTRUCTION CO, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL	*****1147	JRN CONSTRUCTION, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028

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DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		JRN PAVING, LLC		531 THIRD STREET ALBANY NY 12206	11/07/2023	11/07/2028
DOL	DOL		JULIUS AND GITA BEHREND		5 EMES LANE MONSEY NY 10952	11/20/2002	11/20/3002
DOL	DOL		KARIN MANGIN		796 PHELPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	DOL		KATE E. CONNOR		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KEAN INDUSTRIES, LLC		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL	*****2959	KELC DEVELOPMENT, INC		7088 INTERSTATE ISLAND RD SYRACUSE NY 13209	03/31/2021	03/31/2026
DOL	DOL		KIMBERLY F. BAKER		7901 GEE ROAD CANASTOTA NY 13032	08/17/2021	08/17/2026
DOL	DOL		KMA GROUP II, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL	*****1833	KMA GROUP INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KMA INSULATION, INC.		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
DOL	DOL		KRIN HEINEMANN		2345 ROUTE 52, SUITE 2N HOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	NYC		KULWANT S. DEOL		9-11 40TH AVENUE LONG ISLAND CITY NY 11101	09/26/2023	09/26/2028
DOL	DA	*****8816	LAKE CONSTRUCTION AND DEVELOPMENT CORPORATION		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	10/25/2022	10/25/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	12/22/2022	12/22/2027
DOL	DOL		LEROY E. NELSON JR		531 THIRD ST ALBANY NY 12206	11/07/2023	11/07/2028
DOL	AG	*****3291	LINTECH ELECTRIC, INC.		3006 TILDEN AVE BROOKLYN NY 11226	02/16/2022	02/16/2027
DOL	DOL		LOUIS A. CALICCHIA		1223 PARK ST. PEEKSKILL NY 10566	05/17/2021	05/17/2026
DOL	NYC		LUBOMIR PETER SVOBODA		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	NYC		M & L STEEL & ORNAMENTAL IRON CORP.		27 HOUSMAN AVE STATEN ISLAND NY 10303	12/26/2019	12/26/2024
DOL	DOL	*****2196	MAINSTREAM SPECIALTIES, INC.		11 OLD TOWN RD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DA		MANUEL P TOBIO		150 KINGS STREET BROOKLYN NY 14444	08/19/1998	08/19/2998
DOL	DA		MANUEL TOBIO		150 KINGS STREET BROOKLYN NY 11231	08/19/1998	08/19/2998
DOL	DOL		MAQSOOD AHMAD		618 OCEAN PKWY BROOKLYN NY 11230	09/17/2020	09/17/2025
DOL	NYC		MARIA NUBILE		84-22 GRAND AVENUE ELMHURST NY 11373	03/10/2020	03/10/2025
DOL	NYC	*****9926	MILLENNIUM FIRE PROTECTION, LLC		325 W. 38TH STREET SUITE 204NEW YORK NY 10018	11/14/2019	11/14/2024
DOL	NYC	*****0627	MILLENNIUM FIRE SERVICES, LLC		14 NEW DROP LNE 2ND FLOORSTATEN ISLAND NY 10306	11/14/2019	11/14/2024
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	10/25/2022	10/25/2027
DOL	DOL	*****1320	MJC MASON CONTRACTING, INC.		42 FOWLER AVENUE CORTLAND MANOR NY 10567	01/24/2023	01/24/2028
DOL	NYC		MUHAMMED A. HASHEM		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	NYC		NAMOW, INC.		84-22 GRAND AVENUE ELMHURST NY 11373	03/10/2020	03/10/2025
DOL	DOL	*****7790	NATIONAL BUILDING & RESTORATION CORP		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028
DOL	DOL	*****1797	NATIONAL CONSTRUCTION SERVICES, INC		1010 TILDEN AVE UTICA NY 13501	07/24/2023	07/24/2028

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DOL	NYC		NAVIT SINGH		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		NELCO CONTRACTING, LLC		1024 BROADWAY ALBANY NY 12204	11/07/2023	11/07/2028
DOL	DA		NICHOLAS T. ANALITIS		505 MANHATTAN AVE WEST BABYLON NY 11704	10/05/2023	10/05/2028
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	03/01/2022	03/01/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	11/15/2022	11/15/2027
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	09/29/2021	09/29/2026
DOL	DOL		NICHOLE E. FRASER A/K/A NICHOLE RACE		3469 STATE RT. 69 PERISH NY 13131	02/09/2022	02/09/2027
DOL	DOL	*****7429	NICOLAE I. BARBIR	BESTUCCO CONSTRUCTI ON, INC.	444 SCHANTZ ROAD ALLENTOWN PA 18104	09/17/2020	09/17/2025
DOL	NYC	*****5643	NYC LINE CONTRACTORS, INC.		402 JERICHO TURNPIKE NEW HYDE PARK NY 11040	08/10/2022	08/10/2027
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PATRICK PENNACCHIO		2345 RT. 52 SUITE 2NHOPEWELL JUNCTION NY 12533	12/18/2023	12/18/2028
DOL	DOL		PAULINE CHAHALES		935 S LAKE BLVD MAHOPAC NY 10541	03/02/2021	03/02/2026
DOL	DOL		PETER STEVENS		11 OLD TOWN ROAD SELKIRK NY 12158	02/02/2021	02/02/2026
DOL	DOL		PETER STEVENS		8269 21ST ST BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL	*****4168	PHANTOM CONSTRUCTION CORP.		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL	*****0466	PRECISION BUILT FENCES, INC.		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	NYC		RASHEL CONSTRUCTION CORP		524 MCDONALD AVENUE BROOKLYN NY 11218	09/17/2020	09/17/2025
DOL	DOL	*****1068	RATH MECHANICAL CONTRACTORS, INC.		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	*****2633	RAW POWER ELECTRIC CORP.		3 PARK CIRCLE MIDDLETOWN NY 10940	07/11/2022	07/11/2027
DOL	DA	*****7559	REGAL CONTRACTING INC.		24 WOODBINE AVE NORTHPORT NY 11768	10/01/2020	10/01/2025
DOL	DOL		RICHARD REGGIO		1617 MAIN ST PEEKSKILL NY 10566	03/03/2020	03/03/2025
DOL	DOL		ROBBYE BISSEsar		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	01/11/2003	01/11/3003
DOL	DOL		ROMEO WARREN		161 ROBYN RD MONROE NY 10950	07/11/2022	07/11/2027
DOL	DOL		RONALD MESSEN		14B COMMERCIAL AVE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL	*****7172	RZ & AL INC.		198 RIDGE AVENUE VALLEY STREAM NY 11581	06/06/2022	06/06/2027
DOL	DOL		SAL FRESINA MASONRY CONTRACTORS, INC.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL		SAL MASONRY CONTRACTORS, INC.		(SEE COMMENTS) SYRACUSE NY 13202	07/16/2021	07/16/2026
DOL	DOL	*****9874	SALFREE ENTERPRISES INC		P.O BOX 14 2821 GARDNER RD POMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		SALVATORE A FRESINA A/K/A SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	DOL		SAM FRESINA		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13218	07/16/2021	07/16/2026
DOL	NYC	*****0349	SAM WATERPROOFING INC		168-42 88TH AVENUE APT.1 AJAMAICA NY 11432	11/20/2019	11/20/2024
DOL	DA	*****0476	SAMCO ELECTRIC CORP.		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	NYC	*****1130	SCANA CONSTRUCTION CORP.		863 WASHINGTON STREET FRANKLIN SQUARE NY 11010	03/10/2020	03/10/2025

NYSDOL Bureau of Public Work Debarment List 09/20/2024

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DOL	DOL	*****2045	SCOTT DUFFIE	DUFFIE'S ELECTRIC, INC.	P.O BOX 111 CORNWALL NY 12518	03/03/2020	03/03/2025
DOL	DOL		SCOTT DUFFIE		P.O BOX 111 CORNWALL NY 12518	03/03/2020	03/03/2025
DOL	DA		SILVANO TRAVALJA		3735 9TH ST LONG ISLAND CITY NY 11101	01/05/2023	01/05/2028
DOL	DOL	*****0440	SOLAR GUYS INC.		8970 MIKE GARCIA DR MANASSAS VA 20109	07/16/2021	07/16/2026
DOL	NYC		SOMATIE RAMSUNAHAI		115-46 132ND ST SOUTH OZONE PARK NY 11420	09/17/2020	09/17/2025
DOL	DOL	*****2221	SOUTH BUFFALO ELECTRIC, INC.		1250 BROADWAY ST BUFFALO NY 14212	02/03/2020	02/03/2025
DOL	NYC	*****3661	SPANIER BUILDING MAINTENANCE CORP		200 OAK DRIVE SYOSSET NY 11791	03/14/2022	03/14/2027
DOL	DOL		STANADOS KALOGELAS		485 RAFT AVENUE HOLBROOK NY 11741	10/19/2021	10/19/2026
DOL	DOL	*****3496	STAR INTERNATIONAL INC		89-51 SPRINGFIELD BLVD QUEENS VILLAGE NY 11427	08/11/2003	08/11/3003
DOL	DOL	*****6844	STEAM PLANT AND CHX SYSTEMS INC.		14B COMMERCIAL AVENUE ALBANY NY 12065	11/14/2019	11/14/2024
DOL	DOL	*****9528	STEEL-IT, LLC.		17613 SANTE FE LINE ROAD WAYNESFIELD OH 45896	07/16/2021	07/16/2026
DOL	DOL	*****3800	SUBURBAN RESTORATION CO. INC.		5-10 BANTA PLACE FAIR LAWN PLACE NJ 07410	03/29/2021	03/29/2026
DOL	DOL	*****9150	SURGE INC.		8269 21ST STREET BELLEROSE NY 11426	12/22/2022	12/22/2027
DOL	DOL		SYED RAZA		198 RIDGE AVENUE NY 11581	06/06/2022	06/06/2027
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	05/28/2024	05/28/2029
DOL	DOL		TARLOK SINGH		95-27 116TH STREET QUEENS NY 11419	07/12/2024	07/12/2029
DOL	DOL		TERRY THOMPSON		11371 RIDGE RD WOLCOTT NY 14590	02/03/2020	02/03/2025
DOL	DOL	*****9733	TERSAL CONSTRUCTION SERVICES INC		107 FACTORY AVE P.O BOX 11070SYRACUSE NY 13208	07/16/2021	07/16/2026
DOL	DOL		TERSAL CONTRACTORS, INC.		221 GARDNER RD P.O BOX 14POMPEI NY 13138	07/16/2021	07/16/2026
DOL	DOL		TERSAL DEVELOPMENT CORP.		1935 TEALL AVENUE SYRACUSE NY 13206	07/16/2021	07/16/2026
DOL	DOL	*****5766	THE COKER CORPORATION	COKER CORPORATIO N	2610 SOUTH SALINA ST SUITE 14SYRACUSE NY 13205	09/17/2020	09/17/2025
DOL	DOL		TIMOTHY PERCY		29807 ANDREWS ROAD BLACK RIVER NY 13612	10/17/2023	10/17/2028
DOL	DA	*****1050	TRI STATE CONSTRUCTION OF NY CORP.		50-39 175TH PLACE FRESH MEADOWS NY 11365	03/28/2022	03/28/2027
DOL	DA	*****4106	TRIPLE H CONCRETE CORP		2375 RAYNOR STREET RONKONKOMA NY 11779	08/04/2021	08/04/2026
DOL	DOL	*****8210	UPSTATE CONCRETE & MASONRY CONTRACTING CO INC		449 WEST MOMBSHA ROAD MONROE NY 10950	06/06/2022	06/06/2027
DOL	DOL	*****6418	VALHALLA CONSTRUCTION, LLC.		796 PHLEPS ROAD FRANKLIN LAKES NJ 07417	12/01/2020	12/01/2025
DOL	NYC	*****2426	VICKRAM MANGRU	VICK CONSTRUCTI ON	21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	NYC		VICKRAM MANGRU		21 DAREWOOD LANE VALLEY STREAM NY 11581	09/17/2020	09/17/2025
DOL	DOL		VIKTORIA RATH		24 ELDOR AVENUE NEW CITY NY 10956	02/03/2020	02/03/2025
DOL	DOL	*****8266	WILLIAM CHRIS MCCLENDON	MCCLENDON ASPHALT PAVING	1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM CHRIS MCCLENDON		1646 FALLS STREET NIAGARA FALLS NY 14303	05/01/2023	05/01/2028
DOL	DOL		WILLIAM G. PROERFRIEDT		85 SPRUCEWOOD ROAD WEST BABYLON NY 11704	01/19/2021	01/19/2026
DOL	DOL	*****5924	WILLIAM G. PROPHY, LLC	WGP CONTRACTIN G, INC.	54 PENTAQUIT AVE BAYSHORE NY 11706	01/19/2021	01/19/2026
DOL	DOL		WILLIAM SCRIVENS		4192 SIR ANDREW CIRCLE DOYELSTOWN PA 18902	07/18/2024	07/18/2029

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DOL	DOL		XENOFON EFTHIMIADIS		29-10 38TH AVENUE LONG ISLAND CITY NY 11101	10/11/2023	10/11/2028
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Peekskill Firehouse Kitchen Incubator
EDA Project # 01-01-15338

Project Manual

VOLUME 2 (of 2)
May 7, 2025

Contract 1: General Construction Work (GC)
Contract 2: Kitchen Equipment Work (KE)
Contract 3: Cooling Equipment Work (CE)

Owner:

Peekskill Facilities Development Corporation
840 Main Street
Peekskill, New York 10566

Architect:

Joseph G Thompson Architect, PLLC
108 N Division Street, Ste 100
Peekskill, New York 10566
PH: (845) 532-8156
EM: joe@jthompsonarch.com



SECTION 011200: SUMMARY OF PROJECT**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including the General and Supplemental Conditions and Division 1 Specification Section, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. Project Identification: Project consists of but is not limited to the renovation of the existing former Peekskill Firehouse Building located at 701 Washington Street in the City of Peekskill with all associated site work, architectural upgrades, ADA compliant work, mechanical upgrade work, and Fire Alarm work.
 - A. Project Names: **Peekskill Firehouse Kitchen Incubator**
 - B. Owner's Name: **Peekskill Facilities Development Corporation**
 - C. Architect's Name: **Joseph G Thompson Architect, PLLC**

1.3 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General Conditions and Division 0 & 1 Specification Sections, apply to this Section.

1.4 THE CONTRACT

- A. The Project will be constructed under a multiple prime contracting arrangement with the Owner awarding and holding the separate Contracts. Each contractor shall furnish all labor, material, tools, equipment, supervision, layout, delivery, trucking, shop drawings, submittals, etc. necessary to complete the work described in the Division of Work of their respective Contracts, and based upon a complete set of Contract Documents.
- B. Scope of work for each Prime Contractor is defined in Section 01010 and takes precedence over all drawing notes that may refer to scoping.
- C. Each Contractor has been given the opportunity prior to bid to inspect the entire Project site for interferences to their Contract work, and agrees to accept the site as it exists on the date of the bid opening.
 - 1. It is the Owner's intention to continue to occupy the existing buildings and site for normal School operations during the Construction process. The Contractors all agree to:
 - a. Cooperate with the Owner's personnel in maintaining and facilitating access to the School buildings and its facilities by the School staff, Students, Owner's agents, service consultants and the public, throughout the construction process.

- b. Keep driveways and entrances serving the occupied School buildings clear and available to the Owner, the Owner's employees, the public, and to emergency vehicles at all times. Do not obstruct access to, or use these areas for parking, staging of equipment or materials. All access through these existing areas must be coordinated in advance and in accordance with the Owner's usage and occupancy schedule.
 - c. Schedule construction operations so as to minimize any conflicts or interruptions to the daily school functions. Coordinate any necessary interruptions with the designated project representative.
 - d. All existing Owner occupied buildings (not turned over to the Project Contractors) need to remain operational at all times. The contractors are responsible to maintain all systems, such as but not limited to: fire alarm, clocks, electric, public address system, gas service, heat etc.
- D. Each Prime Contractor shall:
- 1. Verify and obtain any permits or approvals required prior to start of work. Refer to Section 011200a Required Municipal Permits and Approvals. Contractor shall report any additional permitting or approvals necessary for their respective work to Architect prior to start of work.
 - 2. Provide field-engineering services, in addition to those provided by the General Work Prime Contract, to install site utilities included in the applicable Prime Contract.
 - 3. Coordinate construction schedule information in order to formulate one master schedule for the entire Project.
 - 4. Provide reflective vests to be worn by all on-site personnel at all times.
 - 5. Provide erosion and Sediment Control, and dewatering as it relates to any excavation associated with its own Prime Contract.
 - 6. Provide potable drinking water for its own employees.
 - 7. Provide access to all concealed systems as required for system maintenance and repair for items installed in their Prime Contract.
 - 8. Provide and maintain material lifting equipment required for the completion of their Contract requirements, and complying with NYS Labor Laws, OSHA Regulations, and other Federal, State, and local laws.
 - 9. Provide and maintain additional temporary stairs, ladders, ramps, scaffolding, and platforms required specifically for completion of work of their own Contract, and as further detailed in this section. All work needs to comply with the NYS Labor Laws, OSHA regulation, and other Federal, State, and local laws.

10. Provide Fire Prevention materials and equipment for fire protection related to the work of their own Prime Contract. Provide fire extinguishers, fire blankets, and fire watch during all cutting and welding operations.
11. Provide any supplemental lighting required to install the work of its own Contract, beyond the minimum OSHA levels provided under the Electrical Work Prime Contract.
12. Provide any supplemental heat required to install the work of its own Contract, beyond the levels owed by the General Work Contractor.
13. Provide traffic control for deliveries, and equipment needed to perform the work of their own Prime Contract.
14. Provide protection of its own finished Work, after installation, until accepted by the Owner.
15. Provide fire caulking for any penetration related to the work for its own Prime Contract.
16. Provide final cleaning per specifications.
17. Provide any office and storage trailers required to complete the work of their own Prime Contract.
18. Provide for a thorough final cleaning of the site, building, and equipment provided under their Prime Contract immediately before the final inspection. Each Prime Contractor is responsible for cleaning and dust and debris generated from the work of their own Contract.
 - a. Maintain areas in a cleaned condition until the Owner occupies the space.
 - b. Personnel: Experienced workman or professional cleaners approved by the Architects

1.5 SUMMARY OF WORK

The work will be constructed under multiple prime contracts. One set of contract documents is issued covering the multiple contracts.

1.6 WORK UNDER SEPARATE CONTRACTS

- A. The project will be constructed under a multiple-prime contracting arrangement
- B. One set of documents is issued covering all multiple prime contracts. Each prime contractor is to review ALL drawings and specifications for complete understanding and knowledge of the work.
- C. The following Contract Documents are specifically included and defined as integral to each Prime Contract.

1. Bidding Requirements
 2. Performance and Payment Bonds
 3. Conditions of the Contract, including
 - a. General Conditions & Supplementary Conditions
 - b. Insurance Requirements
 - c. NYS Prevailing Wage Rates.
 - d. Project Labor Agreement
- D. Extent of Contract: Unless the Contract Documents contain a more specific description of the Work, names and terminology on Drawings and in Specification Sections determine which contract includes a specific element of Project.
1. Unless otherwise indicated, the Work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
 2. The General Work Contract shall provide shoring, bracing, excavation and backfill for all other contractors from five (5) feet outside building foundation. Trenches, excavation, fill and compaction for the Work of all contracts (5) feet outside the building shall be provided by the General Work Contract. General work contractor is to refer to Mechanical, Electrical and Plumbing drawings for locations of utilities requiring shoring, bracing, excavation and backfilling.
 3. Concrete for the Work of each contract shall be provided by each contract for its own Work, unless specifically assigned to another Contract.
 4. Provide all cutting & patching associated with the Work of its Prime Contract. All patching is to be performed by mechanics qualified and experienced with the materials and finishes being patched, and hired by the responsible Prime Contractor.
 5. Firestopping for the Work of each contract shall be provided by each contract for its own Work. Firestopping shall comply with Division 7 Section "Firestopping"
 6. Access doors not shown on Architectural drawings and required for access to junction boxes, valves and similar equipment for the Work of each contract shall be furnished and installed by each contract for its own Work.
 7. Lead Based Paint precautions for the Work of each contract shall be provided by each contract for its own Work. Each Prime Contractor shall provide procedures for OSHA Lead precautions.
 8. Each Prime Contractor shall designate a full time superintendent to supervise the work of the Prime Contractor, who shall always be present on the job site when work is being performed; this person shall be familiar with Project and authorized to conclude matters relating to progress. This person shall also represent their company at weekly contractor meetings. Fine for missing regularly scheduled weekly meetings will be \$200 per meeting.

9. Termination and removal of its temporary facilities shall be provided by each contract for its own Work.
- E. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section and in Division 1 Section 01500 "Temporary Facilities and Controls," each Contract is responsible for the following:
 1. Installation, operation, maintenance, and removal of each temporary facility usually considered as its own normal construction activity, and costs and use charges associated with each facility
 2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
 3. Its own field office complete with necessary furniture, utilities, and telephone service.
 4. Its own storage and fabrication sheds.
 5. Temporary heat for construction at isolated work areas.
 6. Temporary enclosures for its own construction activities.
 7. Hoisting requirements for own construction activities.
 8. Each Prime Contractor is to stockpile his debris on a daily basis, and place it in the dumpster. Dumpsters will be provided by the General Work Contract for use by the prime contractors, recycling of materials will be instituted daily. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials will be by the Hazardous Material Abatement Contractor.
 9. Secure lockup of its own tools, materials, and equipment.
 10. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.
 11. Safety procedures as dictated by the district, OSHA, and the NYS Department of Labor.
 12. Labor for daily clean-up.

1.7 CONTRACT 1: GENERAL CONSTRUCTION CONTRACT

- A. The Work of the General Construction Work Contract includes but is not limited to, the following descriptions:
 1. Includes Site, Architectural, Structural, Masonry, Roofing, Flooring, Casework, plus other construction operations traditionally recognized as General Work Construction as well as Plumbing, Electrical, Fire Alarm, HVAC and Mechanical Work. This includes, but is not limited to, *all work shown* on the following:

- a. Drawings: All Drawings
- 2. Coordination:
 - a. Coordination with the work of all of the other contractors.
- 3. Demolition: All demolition work specified on project drawings and as needed to facilitate completion of specified scope of work including, but not limited to:
 - a. Asbestos containing material removal as shown in the contract documents and disposal per Code Rule 56.
 - b. Construction of hard barriers separating abatement areas from all other areas.
 - c. Removal of curbing, roadways, bituminous paving, concrete walks.
 - d. Removal and relocation of trees, shrubs and ground cover as necessary to perform work
 - e. Removal of all underground utilities and/or equipment as shown or described.
 - f. Removal of existing light pole bases to be replaced.
 - g. Removal and disposal of miscellaneous equipment including equipment not shown if impacting work to be demolished.
 - h. Removal of masonry walls, doors, windows, and interior partitions.
 - i. Removal of finishes noted on plans.
 - j. Removal and disposal of miscellaneous equipment including all existing wall mounted specialty items and/or equipment not shown if impacting work to be demolished.
 - k. Removal and disposal of attached furniture, appliances, lockers, benches, and architectural woodwork.
 - l. All toilet room demolition is the responsibility of the General Contractor including plumbing fixtures.
 - m. All roof penetrations at the existing building as required for work of the mechanical contractor. Existing roof warrantee to be reviewed and adhered to.
 - n. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, sawcuts, providing lintels, drywall work, plaster work, grouting, painting, ceiling removal and replacement, etc.
- 4. Temporary Facilities
 - a. Provide yard dumpsters as necessary to be used by all trades as part of his base bid.
 - b. Provide temporary silt fencing areas being renovated.
 - c. Provide dust protection and temporary fencing.
 - d. Provide temporary roads/ access and continuous exits in and out of all construction areas.
 - e. Provide all necessary erosion control measures specific to renovation of the parking / circulation.
 - f. Provide wash out area for construction vehicles.
 - g. Each Prime Contractor is to stockpile his debris on a daily basis, and place it in the dumpster.
 - h. Provide construction site ingress/egress, and contractor parking.

- i. Provide all temporary partitions, egress doors, and temporary fencing as shown on staging plan. Restore all areas to original condition upon completion.
- j. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01500, "Temporary Facilities and Controls"

5. New Construction:

- a. Provide services of a licensed surveyor for building layout, elevation and as-built foundation location as required for site work.
- b. Provide concrete sidewalks, asphalt paving, final landscaping, site appurtenances and curbing. Provide driveway and parking lot paving and drainage as shown.
- c. Provide suitable fill to replace unsuitable fill.
- d. Provide underground storm systems.
- e. Provide thermal and moisture protection.
- f. Provide:
 - 1) All site signage, see temporary facilities section
 - 2) Erosion controls, all necessary documentation and regular inspections of erosion control.
 - 3) Contractor shall obtain and pay for any permits, inspections, or certifications from governing authorities having jurisdiction over the work to be performed, or over the finished product to be installed by this Contractor. Project Building Permit is by others.
- g. Provide access doors that are shown on Architectural drawings.
- h. Provide repairs to masonry and concrete structures and openings as shown.
- i. Install miscellaneous metal fabrications furnished by other contractors but scheduled to be installed under the General Construction Contract as shown and/or specified in the contract documents. Reinforced roof penetrations and shear wall penetrations are by General Construction Contract. In existing construction, each Prime Contractor is to provide their own rough opening in walls and floors. All lintels and / or framing are to be sized in accordance with the lintel schedules and standard details within the contract documents. Installation is to be performed by a mechanic qualified and experienced with the materials and finishes being altered or installed. Submit to the Architect the name and qualification of the subcontractor performing the installation prior to starting the work.
- j. Provide structural framing for new roof openings. Coordinate with mechanical trades. Removal and replacement of ceilings as required performing this work.
- k. Provide rough and finish carpentry.
- l. Provide architectural woodwork.
- m. Provide thermal and moisture protection.
- n. Provide doors, frames, builders' hardware, and windows, skylights, glazing system, glazing and finishing for same. Provide miscellaneous steel required at new openings, coordinate with all prime contracts. Power for electrical hardware to be provided by the Electrical Contractor.
- o. Provide gypsum wallboard and finishing for same.
- p. Provide finishes including tile, sheet vinyl and ceramic tile. Provide suspended drywall grid system. Flooring, resilient vinyl tile, carpet, painting, and suspended acoustical ceilings.

- q. Provide toilet partitions, exterior louvers, all signage, fire-protection specialties, visual display boards, and toilet and bath equipment accessories (as indicated).
 - r. Contractor shall anticipate that all existing areas to receive new flooring shall require both light grinding and self leveling underlayment. Provide additional flash-patching where old walls were removed. Provide self leveling underlayment where required to allow for acceptable flooring installation. Pay particular attention to floor areas to be abated and renovation of floor areas that currently have ceramic tile.
 - s. Provide building paper protection over finished product. Include maintenance of protection and removal of paper.
 - t. All roofing work for new additions. Roof blocking and plywood, including:
 - 1) For cutting holes through existing deck, the following shall apply:
 - a) General Construction contractor shall cut and remove material.
 - b) All contractors requiring holes shall provide the necessary layout.
 - c) Temporary and final roofing and weather-tight protection for roof shall be by the General Construction Contractor.
 - u. Contractor shall include paint, stone, brick, ceiling tile, gypsum, plaster, and floor tile patch to match existing at the following conditions (patching shall commence one tile distant from the affected areas):
 - 1) At all removed existing walls.
 - 2) At all removed existing millwork and casework items.
 - 3) At all removed existing console unit ventilators. Louvers to be removed by General Contractor. Brick infill by General Contractor.
 - 4) At all relief grills removed in corridors.
 - 5) At all new door openings cut through existing walls.
 - 6) At all new walls in existing construction.
 - v. Include (furnish, and install, unless noted otherwise):
 - 1) Provide interior equipment and housekeeping pads and all exterior pads and any concrete tied to the Food Service addition.
 - w. Contractor shall coordinate and perform all mechanical, electrical power supply, gas power supply and exhaust requirements and installations to accommodate equipment to be supplied and installed by the Kitchen Equipment and Cooling Equipment Contractors. Coordination meetings shall be held with the Architect and other prime contractors as necessary to ensure proper installation.
- 6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
 - 7. Provide multiple shift work as needed to complete work as shown on milestone schedule. Schedule shows a significant amount of work to be performed second shift. Shift work will be required.
 - 8. Provide for a thorough cleaning of the site and building (interior and exterior) immediately before final inspection.
 - a. Maintain areas in a cleaned condition until the Owner occupies the space.
 - b. Personnel: Experienced workman or professional cleaners approved by the Architect.
- B. The Work of the General Construction Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans.

The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections

1.8 CONTRACT : KITCHEN EQUIPMENT

A. Work of this Contract includes, but is not limited to, the following descriptions:

1. Includes provision of all Kitchen Equipment, with the exception of walk-in cooling equipment, as specified on the drawings, specifically on the schedules as listed on the Architect's Drawing Sheets A4.01 and A4.02.
2. Coordination:
 - a. Coordinate performance of work with the General Contractor.
3. Demolition: N/A
4. Temporary Facilities
 - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01500, "Temporary Facilities and Controls"
5. Construction:
 - a. Purchase and provision of equipment as specified in contract documents.
 - b. Delivery and installation of equipment (Electrical, Plumbing & Exhaust Connections by General Work Contractor).
 - c. Startup and Testing of Equipment.
 - d. Provide owner training / commissioning of equipment and controls.
6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.

B. The Work of this Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all plan drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:

1. **Section 114000, Food Service Equipment**

1.9 CONTRACT : COOLING EQUIPMENT

A. Work of this Contract includes, but is not limited to, the following descriptions:

1. Includes provision of Walk-in Cooling Equipment as specified on the drawings, specifically on the schedules as listed on the Architect's Drawing Sheets A4.01 and A4.02.
 2. Coordination:
 - a. Coordinate performance of work with the General Contractor.
 3. Demolition: N/A
 4. Temporary Facilities
 - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01500, "Temporary Facilities and Controls"
 5. Construction:
 - a. Purchase and provision of equipment as specified in contract documents.
 - b. Installation of new cooling equipment. (Electrical, Plumbing & Exhaust Connections by General Work Contractor).
 - c. Electrical connections for new cooling equipment.
 - d. Startup and Testing of Equipment.
 - e. Provide owner training / commissioning of equipment and controls.
 6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
- B. The Work of this Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all plan drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
1. **Section 114000, Food Service Equipment**

1.10 ADDITIONAL SCOPING

- A. Definition of Extent of Prime Contract Work; Additional Prime Contract Work not previously described
1. All Prime Contractors are responsible for reviewing plans and specs as it pertains to their scope of work mentioned in the contract documents. Scopes of work referenced may be found in multiple locations throughout the plans and specifications.
 2. Local custom and trade union jurisdictional settlements do not control the scope of work included in each prime contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, the affected prime contracts shall

- promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.
3. All OSHA safety and hazardous materials regulations will be enforced on this project. All Contractors must submit a safety program, a hazardous materials program, (all required data must be maintained at the job site) and attend safety meetings. Toolbox talks will be required from each prime contractor.
 4. All Contractors are responsible for any debris caused by their work. A daily clean-up and disposal is required by each Contractor for the periods which that Contractor is performing work on site, on a day selected by the Construction Manager. Each trade will assign at least one person to the weekly clean-up; the name of this person is to be submitted to the Construction Manager. Any Contractor not providing personnel will be "back-charged" for labor provided by the Construction Manager.
 5. All Contractors are responsible for cutting/patching required to complete their work. All exposed finishes must be ready to receive paint, etc.; all concealed openings (piping, ductwork, conduit, etc.) must be repaired to comply with specified wall or deck conditions.
 6. Multiple Crews: To maintain the project schedule, each Prime Contractor is to provide multiple crews. Each crew is to be furnished with own supervision, cranes, scaffold and other means necessary to maintain the Project Schedule.
 7. Supervision: The proposed project manager and field superintendent for the project is to have at least five years experience in the proposed position. Each successful bidder shall submit resumes to the Construction Manager for the proposed project manager and field superintendent for the project. This information will be reviewed with the Owner, Architect and Construction Manager for approval. Should the Project Managers and/or Superintendent prove unqualified for the position at any point in the project, the Construction Manager shall issue a letter stating that the person is to be removed from involvement in the project. Action by the contractor must be made within seven working days of receipt of such letter.
 8. In existing construction, each Prime Contractor is to provide all labor and material for their own rough openings, including all lintels, and any required structural framing for penetrations as part of their Prime Contract. All lintels and / or structural framing are to be sized in accordance with the schedules and standard details within the contract documents. Installation is to be performed by a mechanic qualified and experienced with the materials and finishes being altered or installed. Submit the name and qualifications of the subcontractor that is performing the installation prior to starting the work.
 9. For new work each prime contract shall furnish and coordinate exact locations of embedded items in concrete or masonry work with General Construction Work Contract (Contract #1). Each Prime Contractor shall monitor such items throughout concrete/masonry activities to ensure proper placement
 10. General Construction Work Contractor (Contract #1) shall provide shoring identified on the drawings and any other shoring as may be required during construction.
 11. Miscellaneous steel including stairs and loose lintels shall be furnished and installed by General Contractor (Contract #1). Coordinate with all contracts.
 12. When selective demolition or cutting and patching (all demolition necessary for work of their contract, including layout, sleeves, coring, debris removal, sawcuts, drywall work, plaster work, grouting, painting, ceiling removal, etc) is required solely by another prime contract to perform their work it shall be by the Prime Contractor requiring the work to

- achieve the result indicated. Under this condition, the prime contractor needing the demolition to perform the work will accomplish the demolition and the cutting and patching as indicated in Subparagraph 5 above.
13. Each prime contractor shall return areas disturbed by their work activities to condition prior to start of work.
 14. Each prime contractor shall maintain within its field office a complete and current set of Contract Documents (including any Addenda, Change Orders, and Modifications thereto), approved shop drawings, samples, color schedules and other data pertinent to the Project.
 15. Each prime contractor is to survey existing work and submit to the Construction Manager a list of damaged areas (i.e. plaster walls, woodwork) prior to commencing work. Any damaged areas not identified prior to the work shall be the responsibility of the contractor/ Contractors working in that area. Construction Manager will have photos of existing conditions on file for reference.
 16. Roof penetration work is assigned as follows:
 - a. All blocking, flashing, and cutting of roof material and installation are by the General Construction Contractor.
 - b. Support framing for roof, and floor penetrations and equipment suspended from steel structure is by General Construction Work Contract (Contract #1). All hung lintels are by General Construction Work Contract (Contract #1).
 - c. Cutting of roof deck is by the General Construction Work Contractor and coordinated with prime contractor requiring the penetration.
 - d. Roof curbs are furnished by the General Contractor (Contract # 1) and set in place by the General Construction Work Contractor.
 - e. The General Construction Work Contractor shall provide all required boot, pitch pocket, flashing materials, etc., for making roofing penetrations by other trades watertight.
 - f. The General Construction Work Contractor is responsible for cabling or roping off all roof openings in an OSHA approved manner. Provide all necessary fall protection.
 17. Clean up: Each Prime Contractor is to stockpile his debris on a daily basis, and place it in the dumpster. Dumpsters for non-asbestos containing materials will be provided by the General Work Contractor for use by the prime contractors, recycling of materials will be instituted daily.
 18. The General Construction Work Contract (Contract #1) is required to submit a construction and submittal schedule based on the milestone dates to the Construction Manager for review and comment no later than 2 weeks after a Notice to Proceed for the work is issued.
 19. Unless a specific item or material is noted as to remain the Owner's property or to become the Contractor's property (or similar words), any material having salvage or reuse value shall be inspected by the Owner. If the Owner wishes to retain this material, it shall be turned over to him on the site where directed. If the Owner designates the material as scrap, it shall become the Construction Manager's property and removed from the site. Material having salvage value shall be carefully removed. If the Construction Manager designates the material as scrap, it shall become the contractor's property and removed from the site. Material having salvage value shall be carefully removed.

20. When the building is occupied and fire alarm and safety system work is in progress, the General Work Contractor shall continuously maintain the existing building's fire alarm and detection system and exit and emergency lighting system or provisions must be made by the General Work Contractor to provide equivalent safety. General Work Contractor must notify the local fire department of any non-operating systems.
21. General Work Contractor shall be responsible for all electrical conduit and associated work on site. General Contractor shall coordinate and install conduits as required for transformer, meter pad construction, and duct bank. The General Work contractor shall coordinate with all local utilities for installation of their work.
22. The General Construction Work Contract (Contract #1) will be responsible for de-watering all excavations pertaining to their scope of work for the duration that the excavations remain open.
23. Each prime contract shall supply and coordinate exact locations of embedded items in concrete or masonry work with General Construction Work Contract (Contract # 1). Each Prime Contractor shall monitor such items throughout concrete/masonry activities to ensure proper placement. The General Construction Work Contract shall layout and installs anchor bolts leveling plates and loose bearing plates. The General Construction Work Contract shall grout leveling plates in accordance with specification Section 05500.
24. All miscellaneous steel including stairs and loose lintels shall be furnished and installed by General Construction Contractor (Contract #1). All prime contractors will provide within 30 days of the project start a complete listing (quantity and size) of loose lintels required per the Contract documents to the Construction Manager and General Work Contractor. The General Construction Contractor (Contract #1) shall install all lintels, angles and clips that are in contact with and get shop welded, field welded, or bolted to structural steel members or that support structural steel or metal roof / floor decking. The General Work Contractor (Contract #1) shall install all lintels, angles and clips that are embedded, set in or bolted to all other construction material other than structural steel or that do not support structural steel or that do not support structural steel or decking.
25. All personnel required to be on site shall at all times have all required personnel protective equipment on at all times.
26. All personnel on site shall at all times have a photo ID displayed where visible. Those without will be removed from site at once. If the same individual fails to have the ID a second time they will be removed from site and not be allowed back on site.

1.11 TESTING

- A. Required testing and test procedures are indicated under each Division of the Technical Specifications. Other testing shall be performed per generally accepted standards.
- B. The Architect shall reserve the right to require additional information as is deemed necessary to fully evaluate testing results.
- C. The Owner shall employ and pay for an independent testing and inspection agency for testing requirements of their work as assigned by this scope of work. All testing shall be per technical specification requirements The Prime Contractor requiring testing will notify the Construction Manager twenty four hours in advance of the required testing to allow for coordination and

scheduling. Failure to give sufficient notice will require the prime contractor to pay for alternate testing to satisfy the specification.

1.12 WORK SEQUENCE

- A. The Work will be conducted to provide the least possible interference to the activities of the Owner's personnel.
- B. All contract scopes of work in unoccupied areas of work can be performed weekdays from 7:00 AM to 3:30 PM unless otherwise noted. Please see schedule for scheduled second shift work. Work cannot be performed in occupied areas. Work shall be scheduled off-hours, vacations and weekends for occupied areas. A Construction Manager Superintendent must be on site at all times that work is being performed. If a contractor fails to maintain the progress as indicated by the milestone schedule by no other fault but its own, and requires overtime to complete the work; the contractor shall make arrangements with the Construction Manager 24 hours in advance and pay for a Construction Manager's superintendent at \$95.00 per hour. In the event that the cause for delay is multi-contract, then the costs shall be distributed evenly among contracts. Advise the Construction Manager 48 hours prior to commencing work inside the building.
- C. Coordination of any utility and/or power interruption must be done with the Construction Manager. Shutdowns must occur during off-hours and on days when the building is not occupied by the owner.
- D. Construction access to the site shall be limited to those designated for contractor's personnel, equipment and deliveries by the Owner. Contractors' staging, parking and storage shall be coordinated by the Construction Manager.
- E. Each Contractor shall inspect the site and review the AHERA report on file for the presence of asbestos. Unless otherwise noted, there will be asbestos containing material in place that will require work to take place in the vicinity of, around and/or next to. Each prime contractor that will be working above ceilings, demolishing, in crawl spaces, boiler rooms and all other areas that may contain asbestos per the AHERA report, shall employ "Allied Trades: certified/licensed tradesman as part of the onsite workforce".

1.13 OCCUPANCY REQUIREMENTS

- A. The General Work Contractor (Contract #1) shall provide indoor air quality management as specified by the Department of Labor and OSHA for the building, when the building is enclosed, as determined by the Construction Manager.
 - 1. Provide an exhaust air system for the project indoor areas that could produce fumes, VOC's off-gasses, gasses, dusts, mists, or other emissions.
 - 2. Exhaust air system for the project areas that could produce emissions listed in Paragraph 1 shall be utilized.
 - 3. Provide temporary partitions and air seals to prevent the migration of airborne contaminants from unoccupied areas to occupied areas when applicable.
- B. Quality assurance:

1. Maintain a negative pressure between the work area and the space surrounding the work area.
 2. Before start of work, submit a design for the exhaust air system. Do not begin work until approval of the Newburgh Enlarged City School District is obtained.
 - a. The number of machines required.
 - b. Location of the machines in the work space.
 - c. Description of the methods used to test air flow and pressure differential.
- C. System operation:
1. A sufficient quantity of exhaust fans in existing window openings or other approved locations shall be operated in accordance with the following applicable standards.
 2. Exhaust air system shall operate for a minimum of 72 hours after work is completed, or until all materials have cured sufficiently as to stop out gassing of fumes or odors and area has been ventilated to remove all detectable traces of odors and fumes.
 3. Maintain twenty-five (25) feet clearance from all temporary exhaust outlets to all active building outdoor air intakes.

1.14 PROJECT MILESTONE SCHEDULE

- A. See the milestone schedule included in specifications
- B. All Prime Contractors are required to submit a schedule based on the milestone dates to the Construction Manager for review and comment no later than 10 days after a Notice to Proceed for the work is issued.

1.15 ALTERNATES

- A. The Contractor shall state where requested on the Bid Form the amount to be added to or deducted from the base bid for the alternates described.

END OF SECTION

Section 011200a: Required Permitting & Approvals

Permits and approvals required to complete the proposed work scope include:

- **Special Permit (City of Peekskill Common Council):** Approved May 13, 2024
- **Site Plan Review (City of Peekskill Planning Commission):** Approved May 17, 2024
 - Include SEQRA (Unlisted Action – Sale of City Property)
- **Building Permit (City of Peekskill Building Department):** Application submitted May 1, 2023. Permit issuance pending Contract Award/ naming of Contractor.
- **Plumbing Permits (City of Peekskill Building Department):** To be filed by Plumbers after Contract Award. Two separate Plumbing Permits required (GC Contract #1 & KE Contract #2).
- **Electrical Permit (City of Peekskill Building Department):** To be filed by Electricians after Contract Award. Three separate Plumbing Permits required (One per Contract).
- **HVAC Work Permit (City of Peekskill Building Department):** To be filed by HVAC Contractors after Contract Award. Two separate Plumbing Permits required (GC Contract #1 & CE Contract #3).
- **Fire Protection Permit (City of Peekskill Building Department):** To be filed by Fire Protection Contractor after Contract Award (Sub-Contractor to GC- Contract #1).
- **Sign Permit (City of Peekskill Building Department):** To be filed by Sign Contractor after Contract Award (Sub-Contractor to GC- Contract #1).
- **Exterior (Site Work) Permit (City of Peekskill Building Department):** To be filed by General Contractor after Contract Award (GC- Contract #1).
- **Sidewalk Permit (City of Peekskill Building Department):** To be filed by General Contractor after Contract Award (GC- Contract #1).
- **Generator Permit (City of Peekskill Building Department):** To be filed by Electrician after Contract Award (Sub-Contractor to GC- Contract #1).
- **Electrical Permit- Low-Voltage Security & Surveillance (City of Peekskill Building Department):** To be filed by Electrician after Contract Award (Sub-Contractor to GC- Contract #1).
- **Food Service Approval (Westchester County Department of Health):** Approval pending. Initial plan review performed dated October 1, 2024.
- **Backflow Prevention Approval (Westchester County Department of Health):** To be filed by Plumbing Contractor after Contract Award (Sub-Contractor to GC- Contract #1).
- **Certificate of Occupancy (City of Peekskill Building Department):** Application submitted May 1, 2023. Issuance pending completion of work and inspection by Building Department.

Contractor shall verify and obtain any permits or approvals required prior to start of work. Contractor shall report any additional permitting or approvals necessary for their respective work to Architect prior to start of work.

Permit fee costs, with the exception of the Building Permit to be paid by Owner, shall be paid by respective Contractors.

SECTION 012500: SUBSTITUTION PROCEDURES**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use form provided in the Project Manual.
 - 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and/or separate Contractors that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

- e. Samples.
 - f. Certificates and qualification data.
 - g. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building codes in effect for Project.
 - j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 14 days of receipt of a request for substitution. Architect will notify Contractor through Construction Manager of acceptance or rejection of proposed substitution within 15 days of receipt of request, or 14 days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order, Construction Change Directive, or Architect's Supplemental Instructions for minor changes in the Work.
 - b. Use product specified if Architect does not issue a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Modify or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2: PRODUCTS

2.1 SUBSTITUTIONS

- B. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

- C. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice of Award. Requests received after that time may be considered or rejected at discretion of Architect.
- D. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - 2. Substitution does not result in an increase in cost to the Owner.
 - 3. Substitution request is fully documented and properly submitted.
 - 4. Requested substitution will not adversely affect Contractor's construction schedule.
 - 5. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - 6. Requested substitution is compatible with other portions of the Work.
 - 7. Requested substitution has been coordinated with other portions of the Work.
 - 8. Requested substitution provides specified warranty.
 - 9. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3: EXECUTION (Not Applicable)

END OF SECTION

SECTION 013100: PROJECT MANAGEMENT AND COORDINATION**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Conservation.
 - 3. Coordination/Phasing Drawings.
 - 4. Administrative and supervisory personnel.
 - 5. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. The General Contractor will be acting as the Construction Manager/ Construction Coordinator.

1.3 COORDINATION

- A. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.

3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work.

1.4 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Indicate relationship of components shown on separate Shop Drawings.
 2. Indicate required installation sequences.
- B. Staff Names: Within 15 days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

1.5 COORDINATION DRAWINGS

- A. General: The Contract Drawings are diagrammatic in nature; performance by the Contractor shall be required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results. Where possible, the Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing coordination drawings.
- B. Coordination Drawings: Prepare and submit Coordination Drawings for all plumbing, HVAC and electrical products and materials, and where limited space availability necessitates maximum utilization of space for efficient installation of different components. Show the interrelationship of components shown on separate shop drawings. Indicate required installation sequences. Comply with requirements contained in Section "Submittals" for format and content of submittal.
1. Preparation Responsibility: Preparation of Coordination Drawings is the responsibility of the prime Contractor principally involved, where involvement by other prime Contractors is minor.
 - a. Where there is substantial participation by more than one prime Contractor, including the Contractor for General Construction, the Contractor for General Construction shall prepare the initial and final set of Coordination Drawings and the Owner's Construction Manager shall coordinate the participation of other Contractors in the preparation of the Coordination Drawings.

2. Indicate relationship of components shown on separate Shop Drawings.
 3. Indicate required installation sequences.
- C. Mechanical Coordination Drawings: Prepare coordination drawings to a scale of $3/8" = 1'-0"$ or larger; detailing major elements, components, and systems of mechanical equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the Work, including (but not necessarily limited to) the following:
1. Indicate the proposed locations of piping, ductwork, equipment, and materials. Include the following:
 - a. Clearances for installing and maintaining insulation.
 - b. Clearances for servicing and maintaining equipment, including tube removal, filter removal, and space for equipment disassembly required for periodic Maintenance.
 - c. Equipment connections and support details.
 2. Indicate all firewalls, rated partitions and smoke partitions on coordination drawings for coordination of life safety requirements.
- D. Coordination Process: All Contractors shall participate in the development of Mechanical/Electrical/Plumbing (MEP) Coordination Drawings for the entire project, both new construction and alterations to the existing areas. The process shall generally consist of the overlay of mechanical, electrical and plumbing information on the structural and architectural backgrounds to produce a coordinated drawing for the fabrication and installation of the mechanical (HVAC), electrical and plumbing work.
1. All coordination drawings and overlays shall be produced using latest version of AutoCad.
 2. General Contractor, shall produce the background structural and architectural information, which shall function as the project's base sheets. General Contractor, shall be responsible for printing of the final, coordinated, sign-off set of drawings to all involved parties. Each contractor shall be responsible for their own printing.
 3. General sequence of placing information on the backgrounds shall be: ductwork, plumbing work, hydronic work, electrical work. All work shall be of the exact size scale as the approved materials.
 4. Electrical work shown on the coordination drawings shall consist of panels, main conduit routing, light locations, transformers, switchgear and main equipment, cable tray, bus duct, etc.
 5. HVAC work shown on the coordination drawings shall consist of piping (with insulation), valves, strainers, thermometers, equipment, ductwork (with transitions and insulation) air handling devices, vents diffusers, dampers, boilers, flues, etc.
 6. Plumbing work shown on the coordination drawings shall consist of piping (with insulation), valves, cleanouts, drains, equipment, vents, etc.
 7. Mechanical (HVAC), Electrical and Plumbing Contractors and their pertinent sub-

contractors shall attend a formal meeting with the Construction Manager and the Architect and its design team within two weeks of notification of award with their intended coordination drawing draftsman/consultant. Document production and meeting schedule will be developed at that time. All contractors shall complete the MEP Coordination Drawing process within 8 weeks of the initial meeting.

8. Mechanical (HVAC), Electrical and Plumbing Contractors and their pertinent sub-contractors and their coordination drawing draftsman/consultant shall attend weekly Coordination Meetings. Refer to "Coordination Meeting" Article below.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
 1. Include special personnel required for coordination of operations with other contractors. Insert special requirements that exceed requirements contained in the General and Supplementary Conditions for superintendent and assistants.

1.6 PROJECT MEETINGS

- C. General: The Construction Manager shall schedule and conduct meetings and conferences at Project site, and be responsible for the following:
 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within 3 days of the meeting.
- D. Preconstruction Conference: Architect / Construction Manager will schedule a preconstruction conference before starting construction, no later than 15 days after execution of the Agreement. The purpose of the meeting is to review responsibilities and personnel assignments.
 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing.
 - d. Designation of responsible personnel.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for processing Applications for Payment.
 - g. Distribution of the Contract Documents.
 - h. Submittal procedures.
 - i. Preparation of Record Documents.
 - j. Use of the premises.
 - k. Responsibility for temporary facilities and controls.

- l. Parking availability.
 - m. Office, work, and storage areas.
 - n. Equipment deliveries and priorities.
 - o. First aid.
 - p. Security.
 - q. Progress cleaning.
 - r. Working hours.
 - 3. Each Prime Contractor shall submit the following items at this meeting:
 - a. Contractor's Construction Schedule
 - b. List of Subcontractors.
 - c. Schedule of Values.
 - d. Submittal Schedule.
 - e. Products List (Proposed products and manufacturers including any substitution products proposed).
- E. Preinstallation Conferences: When required in the individual Specification Section, conduct a Preinstallation conference at Project site before each construction activity that requires coordination with other construction.
 - 1. Attendees: Installer and representatives 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 Architect and Construction Manager of scheduled meeting dates in advance.
 - 2. Contractor shall prepare agenda, preside at conference, record minutes, and distribute copies after conference to participants. Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related Change Orders.
 - d. Purchases.
 - e. Deliveries.
 - f. Submittals.
 - g. Review of mockups.
 - h. Possible Conflicts.
 - i. Compatibility problems.
 - j. Time schedules.
 - k. Weather limitations.
 - l. Manufacturer's written recommendations.
 - m. Warranty requirements.
 - n. Compatibility problems.
 - o. Acceptability of substrates.
 - p. Temporary facilities and controls.
 - q. Space and access limitations.
 - r. Regulations of authorities having jurisdiction.
 - s. Testing and inspecting requirements.
 - t. Required performance results.
 - u. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements.
 4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- F. Progress Meetings: The Architect / Construction Manager will conduct progress meetings at prescheduled intervals. Coordinate dates of meetings with preparation of payment requests.
1. Construction Manager will preside over these meetings.
 2. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Adjust list below to suit Project.
 - 2) Interface requirements.
 - 3) Sequence of operations.
 - 4) Status of submittals.
 - 5) Deliveries.
 - 6) Off-site fabrication.
 - 7) Access.
 - 8) Site utilization.
 - 9) Temporary facilities and controls.
 - 10) Work hours.
 - 11) Hazards and risks.
 - 12) Progress cleaning.
 - 13) Quality and work standards.
 - 14) Change Orders.
 - 15) Documentation of information for payment requests.
 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

- a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
- G. Coordination Meetings: The Architect / Construction Coordinator will conduct coordination meetings at prescheduled intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
 - 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work
 - 2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
 - c. Review present and future needs of each contractor present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Change Orders / CFA's.
 - 3. Reporting: The Construction Manager shall record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting. If special meetings such as site mobilization conferences or Project closeout conferences are required, insert articles here specifying meeting requirements.

Parts 2 and 3 Not Used- END OF SECTION

SECTION 013200: CONSTRUCTION PROGRESS DOCUMENTATION**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Preliminary Construction Schedule.
 - 2. Contractor's Construction Schedule.
 - 3. Submittals Schedule.
 - 4. Daily construction reports.
 - 5. Material location reports.
 - 6. Field condition reports.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor activity is an activity that must be completed before a given activity can be started.
- B. Event: The starting or ending point of an activity.
- C. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- D. Major Area: A story of construction, a separate building, or a similar significant construction element.
- E. Milestone: A key or critical point in time for reference or measurement.

1.4 SUBMITTALS

- A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Submittals Schedule: Submit five (5) copies of schedule. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).

4. Name of subcontractor.
 5. Description of the Work covered.
 6. Scheduled date for Architect's final release or approval.
- C. Contractor's Construction Schedule: three (3) printed copies of initial schedule, one a reproducible print and one a blue- or black-line print, large enough to show entire schedule for entire construction period.
1. Submit an electronic copy of schedule, using software indicated, on compact disc, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated), and date, on label.

1.5 COORDINATION

- A. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
1. Secure time commitments for performing critical elements of the Work from parties involved.
 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2: PRODUCTS

2.1 SUBMITTALS SCHEDULE

- B. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
 2. Within 30 days after Notice to Proceed:
 - a. Structural Steel,
 - b. Soil proctors,
 - c. Concrete mix designs,
 - d. Billet steel shop drawings,
 - e. HVAC components,
 - f. Electrical panels,
 - g. and all other submittals required to commence work and long-lead items critical to job schedule
 3. Balance of Submittals- within 60 days after Notice to Proceed.
 4. Upon approval by the Architect, non-critical submittals may be transmitted later.
- C. Prepare a written schedule (or log) showing each specification item to be submitted, projected date into architect for review, lead time for procurement and required on job date.
- D. Distribution: Following response to the initial submittal, print and distribute copies for distribution to the Architect, Owner, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

- E. Schedule Updating: Revise the submittal schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- F. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart-type, contractor's construction schedule. Submit within 2 weeks days after Notice to Proceed is issued.
1. Provide a separate time bar for each significant construction activity. Show ordering and delivery times of all long-lead equipment and materials. Provide a continuous vertical line to identify the first working day of each week. Use the same breakdown of units of the Work as indicated in the "Schedule of Values".
 2. Within each time bar, indicate estimated completion percentage in 10 percent increments. As Work progresses, place a contracting mark in each bar to indicate Actual Completion.
 3. Prepare the schedule on a sheet, or series of sheets, of stable transparency, or other reproducible media, of sufficient width to show data for the entire construction period.
 4. Secure time commitments for performing critical elements of the Work from parties involved. Coordinate each element on the schedule with other construction activities; include minor elements involved in the sequence of the Work. Show each activity in proper sequence. Indicate graphically the sequences necessary for completion of related portions of the Work.
 5. Coordinate the Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other schedules.
 6. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the schedule to allow time for the Architect's procedures necessary for certification of Substantial Completion.
 7. The Architect shall be responsible for coordination of Prime Contractors. Each Prime Contractor is to coordinate the work of each other Prime Contractor so that the work and schedule is not impeded. The contractors shall modify schedules to the Architect's master CPM schedule from commencement of work to completion of work.
- G. Work Stages: Indicate important stages of construction for each major portion of the Work, including submittal review, testing, and installation.
- H. Cost Correlation: At the head of the schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of Work performed as of the dates used for preparation of payment requests.
1. Refer to Division 1 Section "APPLICATIONS FOR PAYMENT" for cost reporting and payment procedures.
- I. Distribution: Following response to the initial submittal, print and forward copies to the Architect for distribution to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Post copies in the Project meeting room and temporary field office.
1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

- J. Schedule Updating: Revise the schedule after each meeting, event, or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.
- K. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.

2.3 REPORTS

- L. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site and submit duplicate copies to the Architect at weekly intervals:
 - 1. List of subcontractors at Project site.
 - 2. List of separate contractors at Project site.
 - 3. Approximate count of personnel at Project site.
 - 4. High and low temperatures and general weather conditions.
 - 5. Accidents.
 - 6. Meetings and significant decisions.
 - 7. Unusual events (refer to special reports).
 - 8. Stoppages, delays, shortages, and losses.
 - 9. Meter readings and similar recordings.
 - 10. Emergency procedures.
 - 11. Orders and requests of authorities having jurisdiction.
 - 12. Change Orders received and implemented.
 - 13. Construction Change Directives received.
 - 14. Services connected and disconnected.
 - 15. Equipment or system tests and startups.
 - 16. Partial Completions and occupancies.
 - 17. Substantial Completions authorized.
- M. Material Location Reports: At weekly intervals, prepare a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- N. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare a detailed report. Submit with a request for information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

1.4 SPECIAL REPORTS

- A. General: Submit special reports directly to, Architect within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, and response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3: EXECUTION (Not Used)

END OF SECTION

SECTION 013300: SUBMITTAL PROCEDURES**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's approval. Submittals may be rejected for not complying with requirements.
- C. Field samples are full-size physical examples erected on site to illustrate finished, coatings, or finish materials. Field samples are used to establish the standard by which the Work will be judged.
- D. Mock-ups are full-size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

1.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Submittals Schedule: Comply with requirements in Division 1 Section "CONSTRUCTION PROGRESS DOCUMENTATION" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal.

1. Initial Review: Allow ten (10) working days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 2. If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Allow ten (10) working days for processing each resubmittal.
 4. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 4 by 5 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name and address of Architect.
 - d. Name and address of Contractor.
 - e. Name and address of subcontractor.
 - f. Name and address of supplier.
 - g. Name of manufacturer.
 - h. Unique identifier, including revision number.
 - i. Number and title of appropriate Specification Section.
 - j. Drawing number and detail references, as appropriate.
 - k. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Submit four more copies of each submittal than the number to be returned to the Contractor (example: if Contractor needs 3 copies returned, then 7 copies shall be submitted). Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions of the Contract Documents, initial submittal may serve as final submittal.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Attach the Submittal Cover Sheet (see Section 00331) to each copy of each submittal. Architect will return submittals, without review, received from sources other than Contractor.
1. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 2. Include Contractor's certification stating that information submitted complies with requirements of the Contract Documents.
 3. Transmittal Form: Use sample form in Section 00331.
- I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

- J. Use for Construction: Use only final submittals with mark indicating action taken by Architect in connection with construction.

PART 2: PRODUCTS

2.1 ACTION SUBMITTALS

- K. General: Prepare and submit Action Submittals required by individual Specification Sections.
1. Number of Copies: Submit four more copies of each submittal than the number to be returned to the Contractor (example: if Contractor needs 3 copies returned, then 7 copies shall be submitted). Retain one returned copy as a Project Record Document.
- L. Collect Product Data into a single submittal for each system or element of construction. Mark each copy to show specific product choices and options applicable to the project. Product Data shall include the following information, where applicable:
1. Mark each copy of each submittal to show which products and options are applicable.
 2. Manufacturer's written recommendations.
 3. Manufacturer's product specifications.
 4. Manufacturer's installation instructions.
 5. Standard color charts.
 6. Manufacturer's catalog cuts.
 7. Wiring diagrams showing factory-installed wiring.
 8. Printed performance curves.
 9. Operational range diagrams.
 10. Mill reports.
 11. Standard product operating and maintenance manuals.
 12. Compliance with recognized trade association standards.
 13. Compliance with recognized testing agency standards.
 14. Application of testing agency labels and seals.
 15. Notation of coordination requirements.
 16. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
 17. Do not permit use of unmarked copies of Product Data in connection with construction.
- M. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.
 - l. Notation of dimensions established by field measurement.

2. Wiring Diagrams: Differentiate between manufacturer and field-installed wiring.
 3. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
 4. Number of Copies: Submit four more copies of each submittal than the number to be returned to the Contractor (example: if Contractor needs 3 copies returned, then 7 copies shall be submitted). Retain one returned copy as a Project Record Document.
 5. Do not use Shop Drawings without an appropriate final stamp indicating action taken.
- N. Coordination Drawings: Comply with requirements in Division 1 Section "PROJECT MANAGEMENT AND COORDINATION."
- O. Samples: Prepare physical units of materials or products, including the following:
1. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 2. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material to be used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.
 4. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
 - a. Size limitations.
 - b. Compliance with recognized standards.
 - c. Availability.
 - d. Delivery time.
 5. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
 - a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
 - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, and details of assembly, connections, operation, and similar construction characteristics.
 6. Number of Samples for Initial Selection: Submit three full sets of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return one (1) submittal with options selected.

- 7. Number of Samples for Verification: Submit at least three sets of Samples. Architect will retain two Sample sets; remainder will be returned. Retain one returned Sample set as a Project Record Sample.
 - a. Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
- 8. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
- P. Product Schedule or List: Prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - 1. Type of product. Include unique identifier for each product.
 - 2. Number and name of room or space.
 - 3. Location within room or space.
- Q. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "CONSTRUCTION PROGRESS DOCUMENTATION".
- R. Submittals Schedule: Comply with requirements in Division 1 Section "CONSTRUCTION PROGRESS DOCUMENTATION".
- S. Application for Payment: Comply with requirements in Division 1 Section "PAYMENT PROCEDURES".
- T. Schedule of Values: Comply with requirements in Division 1 Section "PAYMENT PROCEDURES".
- U. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use form attached in Specification Section entitled "PROJECT FORMS AND RELATED DOCUMENTS". Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.

2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 - 1. Number of Copies: Submit four copies of each submittal, unless otherwise indicated. Architect will not return copies.
 - 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

- B. Contractor's Construction Schedule: Comply with requirements in Division 1 Section "CONSTRUCTION PROGRESS DOCUMENTATION."
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- D. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements.
- I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- J. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements.
- K. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- L. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements.
- M. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- N. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.

5. Description of product.
 6. Test procedures and results.
 7. Limitations of use.
- O. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Division 1 Section "CLOSEOUT PROCEDURES."
- P. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- Q. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- R. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- S. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- T. Material Safety Data Sheets: Submit information directly to Owner. If submitted to Architect, Architect will not review this information but will return it with no action taken.

PART 3: EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. No Exception Taken.
 - 2. Revise & Resubmit.
 - 3. Furnish as Corrected.
 - 4. Rejected.
- C. Informational Submittals: Architect will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- D. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION

SECTION 014000: QUALITY REQUIREMENTS**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Mockups: Full-size, physical assemblies that are constructed on-site. 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. Approved mockups establish the standard by which the Work will be judged.
- D. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.

- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: 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.
 - 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 trades people of the corresponding generic name.
- K. Experienced: When used with an entity, "experienced" 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.

1.4 CONFLICTING REQUIREMENTS

- A. General: 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 through the Construction Manager for a decision before proceeding.
- B. 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 through the Construction Manager for a decision before proceeding.

1.5 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. 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 performing tests and inspections.
 8. Requirements for obtaining samples.
 9. Unique characteristics of each quality-control service.
- C. 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. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 12. Name and signature of laboratory inspector.
 13. Recommendations on retesting and re-inspecting.
- D. 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.

1.6 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. 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.
- C. 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, as well as sufficient production capacity to produce required units.
- D. 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.

- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or products 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 regulations governing the Work.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.
 - 1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
 - 2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- H. 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.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

- J. 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 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.
 - a. Allow seven days for initial review and each re-review of each mockup.
 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.
- K. Laboratory Mockups: Comply with requirements of preconstruction testing and those specified in individual Sections in Divisions 2 through 16.

1.7 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
- 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 as specified in Division 1 Section "Submittal Procedures."
- C. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Manufacturer's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- D. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.

4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Does not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- E. 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:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
- G. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.
1. 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.

1.8 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 2. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 3. Submitting a final report of special tests and inspections at Substantial Completion, this includes a list of unresolved deficiencies.
 4. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 5. Retesting and re-inspecting corrected work.

PART 2: PRODUCTS (Not Used)**PART 3: EXECUTION****3.1 ACCEPTABLE TESTING AGENCIES**

- A. Any agencies which has the proper qualifications and certifications to perform the test and or inspection.

3.2 TEST AND INSPECTION LOG

- A. Prepare a record of tests and inspections. Include the following:
 - 1. Date test or inspection was conducted.
 - 2. Description of the Work tested or inspected.
 - 3. Date test or inspection results were transmitted to Architect.
 - 4. Identification of testing agency or special inspector conducting test or inspection.
- B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.3 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 Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.
 - 2. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 015000: TEMPORARY FACILITIES & CONTROLS**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Temporary heat.
 - 4. Ventilation.
 - 5. Telephone service.
 - 6. Sanitary facilities, including drinking water.
 - 7. Storm and sanitary sewer.
- C. Support facilities include, but are not limited to, the following:
 - 1. Field offices and storage sheds.
 - 2. Architects/Engineers field office.
 - 3. Temporary roads and paving.
 - 4. Dewatering facilities and drains.
 - 5. Temporary enclosures.
 - 6. Hoists and temporary elevator use.
 - 7. Temporary project identification signs and bulletin boards.
 - 8. Waste disposal services.
 - 9. Rodent and pest control.
 - 10. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Temporary fire protection.
 - 2. Barricades, warning signs, and lights.
 - 3. Environmental protection.
 - 4. Tree and plant protection.
 - 5. Pest control.
 - 6. Security enclosure and lockup.
 - 7. Temporary enclosures.
 - 8. Temporary partitions.

1.3 DIVISION OF RESPONSIBILITIES

- A. General: Each prime contractor is specifically assigned certain responsibilities for temporary services and facilities to be used by other prime contractors, and other nonprime contractors and separate entities at the site, Owner's workforces, Construction Manager, Architect, testing agencies, personnel of governing authorities, and personnel authorized to be at project site during contract time. The General Construction Work Contractor (Contract #1) is responsible for providing temporary facilities and controls that are not normal construction activities of other prime contractors and are not specifically assigned otherwise by the Contract Documents.

1.4 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to the Owner or the Architect. The Architect will not accept a prime contractor's cost or use charges for temporary services or facilities as a basis of claim for an adjustment in the Contract Sum or the Contract Time.
- B. Water Service: Use water from the Owner's existing water system without metering and without payment of use charges. Access to water shall be designated by the owner.
- C. Electric Power Service: Temporary electric power including set-up, maintenance and use charges is the responsibility of the Electrical Work Contractor (Contract #4).
1. Use of electric power from the Owner's permanent power system (when operational) will be granted to all prime contractors without payment of use charges.
- D. Temporary Heating, Cooling, and Ventilation for the Building: The General Construction Work Contractor (Contract #1) is responsible for temporary building heating, cooling, and ventilation, and shall pay for all utility use charges. Electric heat may not be used. See milestone schedule for temporary heat duration to be used for bidding purposes.

1.5 SUBMITTALS

- A. Temporary Utilities: The prime contractor shall submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for submittal of the Contractor's Construction Schedule, each prime contractor shall submit a schedule indicating implementation and termination of each temporary utility for which the Contractor is responsible.
- C. Temporary Signage: Provide shop drawings, indicating the size and layout of the signs, color choices for Owner selection and installation details.

1.6 QUALITY ASSURANCE

- A. Regulations: The prime contractor shall comply with industry standards and with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
1. Building code requirements.
 2. Health and safety regulations.
 3. Utility company regulations.
 4. Police, fire department and rescue squad rules.
 5. Environmental protection regulations.

- B. Standards: The prime contractor shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.
 - 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

- A. Temporary Utilities: The prime contractor shall prepare a schedule indicating dates for implementation and termination of each temporary utility for which the Contractor is responsible. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
 - 1. Temporary Use of Permanent Facilities: The Installer of each permanent service shall assume responsibility for its operation, maintenance, and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2: PRODUCTS

2.1 MATERIALS

- A. General: The prime contractor shall provide new materials. If acceptable to the Architect, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Miscellaneous Carpentry."
 - 1. For job-built temporary offices, shops, and sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
 - 2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
 - 3. For fences and vision barriers, provide minimum 3/8-inch- thick exterior plywood.
 - 4. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch- thick exterior plywood.
- C. Pavement: Comply with Division 2 Pavement Sections
- D. Insulation: Unfaced mineral-fiber blanket manufactured from glass, slag wool, or rock wool; with maximum flame spread and smoke developed indices of 25 and 50, respectively.

- E. Gypsum Wallboard: Provide gypsum wallboard on interior walls of temporary offices.
- F. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.
- G. Paint: Comply with requirements of Division 9 Section "Painting."
 - 1. For job-built temporary offices, shops, sheds, fences, and other exposed lumber and plywood, provide exterior-grade acrylic-latex emulsion over exterior primer.
 - 2. For sign panels and applied graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
 - 3. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.
- H. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- I. Water: Provide potable water approved by local health authorities.
- J. Open-Mesh Fencing: Provide 0.12-inch- thick, galvanized 2-inch chainlink fabric fencing 6 feet high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 inches I.D. for line posts and 2-1/2 inches I.D. for corner posts.

2.2 EQUIPMENT

- A. General: The prime contractor shall provide new equipment. If acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4-inch heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
- G. Temporary Offices: Each prime contractor shall provide its own prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

- H. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- I. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.
 - 1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

PART 3: EXECUTION

3.1 TEMPORARY UTILITY INSTALLATION

- A. See the Evaluations of Division 1 Section "Construction Facilities and Temporary Controls" for further discussion.
- B. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with the company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
- C. Water Service: The General Work Contractor (Contract #1) shall provide and maintain temporary water service and distribution piping of sizes and pressures adequate for construction and hose bibs on site as to provide service to all areas of construction activities as directed by the Construction Manager, as required throughout the construction period.
 - 1. Water service shall be potable and modified as required or as directed by the Construction Manager, as Work progresses.
 - a. Sterilization: Sterilize temporary water piping prior to use.
 - 2. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.
 - 3. Drinking Water Facilities: Provide bottled water drinking water units.
 - a. Where power is accessible, the General Work Contractor (Contract #1) shall provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F. Provide one per floor.
 - b. The Prime Contractor shall provide containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
 - 4. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
 - 5. Users shall provide their own hoses to points of need, but shall practice prudent conservation.

- D. Temporary Electric Power Service: The Electrical Work Contractor (Contract #4) shall provide and maintain temporary electric service consisting of main power hook-up and panel board and temporary lighting for site and existing building. Temporary service shall be maintained during all work days, and shall comply with all codes and regulations. System shall be modified as required or as directed by the Construction Manager as work progresses. Each Prime shall provide power distribution for its own use from EC's panel.

- Electrical service:

1. Obtain temporary service from existing building service or local power pole. If practical, power to each location shall be tapped at transformer vault or main distribution panel, ahead of main breakers to minimize demand on service equipment from operations. Overcurrent protection shall be installed as required.
 2. Provide disconnect at connection to service.
 3. Provide service conductors and equipment.
 4. Minimum power characteristics: 240/120 volt, single phase.
 5. Provide distribution equipment, feeders, and branch circuit panelboards to serve:
 - a. Temporary lighting.
 - b. Temporary convenience receptacles. (4 gang outlet boxes to allow for 50' extension cord; enough to accommodate requirements of the entire building)
 - c. To accommodate construction operations require power, use of power tools, electric heating and start up testing of permanent electric powered equipment prior to its permanent connection to electrical system.
 6. Each Contractor shall provide his own extension lines, and other special equipment; welding equipment shall run from generator trucks.
 7. The Electrical Work Contract (Contract #4) shall be responsible for initial connections and final demolition of all temporary fixtures and wiring at direction of the Construction Manager.
 8. The Electrical Work Contract (Contract #4) Contractor shall maintain OSHA standards for power and foot candle levels in all areas while workers occupy the space. The temporary lighting shall be energized daily at 6:50 A.M. to 4:35 P.M. as a minimum duration until permanent fixtures are installed.
 9. Not unlike other equipment in this contract, upon installation, the temporary electric system becomes the property of the Owner and shall not be controlled by any one contractor.
 10. Temporary Site Lighting: Electrical Work Contract (Contract #4) to maintain existing exterior Lighting to adequately light the entrances and exits of project site. Temporary lighting shall be controlled by time clocks and lighting contactors; settings to be coordinated by the Construction Manager.
 11. Each Prime Contractor will be responsible for hookup of own project trailers to temporary electric pedestal. If abused, power from temporary service will be disconnected. The Electric Contractor shall erect poles safely sufficient for site power and telephone service. All installations shall conform to strictest standards. The E.C. shall disconnect all items upon project completion.
- E. Temporary Lighting: When an overhead floor or roof deck has been installed, the General Work Contract shall provide temporary lighting with local switching.
1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.

- a. Temporary lighting shall be maintained in accordance with OSHA standards for power and foot candle levels in all areas while workers occupy the space.
 2. Temporary lighting shall be controlled by time clocks and lighting contactors; settings to be coordinated by the Construction Manager.
- F. Temporary Heat:
1. Upon enclosure of the new addition (by either temporary barriers or permanent wall systems) or as indicated by the milestone schedule, whichever is sooner, the General Work Contractor shall provide temporary heating equipment and all fuel necessary to continue construction work at proper heated conditions in the buildings. The means and methods shall be as field determined for specific buildings and/or areas. In no case shall temperature be less than 50°F; electrical power and connections shall be by General Work Contractor; Ventilation requirements by the General Work Contractor
 2. The General Construction Work Contractor (Contract #1) shall provide manpower for maintenance, operation and supervision for the temporary heating system, first and second shifts where applicable.
 3. The Owner will not accept utilization of permanent HVAC system for temporary heat until project acceptance.
 4. Temporary heating plants utilizing electric power as energy source shall not be used on this project.
 5. Temporary Heating and Cooling for Isolated work area: Each prime contractor shall provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize energy consumption.
 6. Use of gasoline-burning space heaters, open flame, or salamander-type heating units is prohibited.
- G. Temporary Telephones: Each Prime Contractor shall provide temporary telephone service throughout the construction period for all personnel engaged in construction activities.
1. Contractors are required to lease or purchase a cellular telephone – to be used by their site superintendents for communication with the other primes and the Construction Manager.
 2. Provide telephone lines for the following:
 - a. Provide a dedicated telephone line for a fax machine in each prime contractor's field office.
 - b. At each telephone, post a list of important telephone numbers.
- H. Sanitary Facilities: The General Work Contractor (Contract #1) shall provide temporary portable chemical toilet facilities for all construction personnel. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
 2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 - a. Provide separate facilities for male and female personnel.

I. Temporary Construction:

1. Temporary bridging, decks, hoists, lifts, scaffolding, and cranes shall be the responsibility of Contractor requiring same.
2. Provide temporary partitions to separate construction area from adjacent occupied areas. Construct partitions with non-combustible materials or fire-retardant plywood and seal seams and gaps to control transmission of dust to occupied areas. After completion of work, remove partitions and restore surfaces damaged by temporary provisions. This work is the responsibility of the General Work Contractor (Contract #1)
3. Temporary perimeter scaffolding and stairwell barricades at grade changes and multiple levels, shall be installed and maintained under the General Work Contractor (Contract #1); if a Contractor should need to temporarily relocate barrier, same Contractor shall protect personnel in the area and replace barrier to original location. This clause does not void any Contractor's liability to maintain a safe work site, but merely to assign temporary work to one contract.
4. Temporary entrances and exits to the building, shall be furnished, installed and maintained under the General Work Contractor (Contract #1) as directed by the Construction Manager. Exits shall be maintained for exiting in emergency conditions until permanent structures are in place.

J. Daily cleanup

1. Dumpsters are to be provided by the General Work Contractor (Contract #1). See allowance specified under the summary of work. Dumpsters will be inspected to assure they are not misused and removed and hauled to a recycling center off site for processing. OWNER will not be responsible for the removal of any hazardous materials; this will be the responsibility of the prime contractor doing the same.
2. The maintenance of a clean work site shall be the responsibility of each Contractor.
3. Each Contractor shall remove own debris daily from work area to waste disposal containers (dumpsters), time lapse not acceptable.
4. The condition of cleanliness in which an area is found, is the condition each Contractor shall leave.
5. Each and every Contractor working on site shall submit manpower on Friday at 8 A.M. to work as a team to remove debris to dumpsters until complete. At discretion of Construction Manager, a Contractor not complying may be back-charged for work performed by others. The responsibility of broom cleaning and debris disposal remains with General Construction Contract (#2) and shall include use of sweeping compound.
6. Final cleaning shall be the responsibility of each Prime Contractor for his/her own work.
7. Protection of Work: Each Prime Contractor is reminded to temporarily protect work in place until accepted by the Owner per Article 10 of the General Conditions of the Contract.
8. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 3 days during normal weather or 1 day when the temperature is expected to rise above 80°F (27°C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully. First aid requirements are the responsibility of each Contractor.

3.2 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. The prime contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C. The prime Contractor will be responsible for hookup of own project trailers. Use of energy, including heat (shall be set back at night) if practical from electric service will be available. If abused, power from temporary service will be disconnected. All installations shall conform to strictest standards.

3.3 SAFETY

- A. Identification Badges with picture of worker and Contractor employer will be required.
- B. Personal Protection while on site is strictly enforced in accordance with OSHA regulations (All contractors on site will be 10 Hr OSHA certified) NO TOLERANCE for non-compliance.
- C. All prime contractors must have a bona-fide safety program manual on file with Construction Manager.
- D. All prime contractors must have tool-box meeting reports updated prior to submission of pay apps. (Non-compliance will hold up req. process).
- E. Workers non-compliance of regs (includes ID badge, safety vests, personal protection as outlined by OSHA, security maintenance): Breech of rules ,will be reported to the Foreman and Company employing the worker, and an immediate response is expected, or worker will forfeit his ID badge and be removed from the Project.
- F. If removing the worker causes a delay to other trades, or to the Job schedule, The company employing the removed worker, will be charged for lost time at the rate dictated by the affected trades, and may include multiple trades for schedule delays. These charges will be assessed at the time of req request, and automatically deducted prior to payment process. Construction Manager will maintain records of notification as well as photos of infraction and proof of Contractor notification, in order to enforce "back charge" for infractions.
- G. Emergency Notification: Off hour phone numbers of all trades shall be on file in the Construction Manager Field office, each trade shall designate an ON CALL person in the event of an emergency.

3.4 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access as directed by the Construction Manager.
 - 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet of building lines. Comply with requirements of NFPA 241.

- C. Field Offices: Each prime contractor, when necessary, shall provide an insulated, weathertight temporary office of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small meetings. Furnish and equip offices as follows:
1. Furniture: Furnish with a desk and chairs, a 2-drawer file cabinet, plan table, plan rack, and a bookcase.
 2. Equip with a water cooler and private toilet complete with water closet, lavatory, and medicine cabinet unit with a mirror.
- D. Storage and Fabrication Sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on-site.
- E. Temporary Parking/Staging and Access Roads
1. Temporary roads are installed and/or maintained by the General Work Contractor (Contract #1) where designated on site logistics plans.
 2. Contractors will be permitted to utilize existing roads, as designated (as segregated by the Owner - if required).
 3. Road Cleaning: Maintain roads and walkways in an acceptably clean condition. This includes the removal of debris daily, if required, and/or a minimum of once a week due to all project traffic. Road cleaning equipment to be wet/vacuum type. General Work Contractor (Contract #1) will clean the roads affected by all contract work. General Construction Work Contractor (Contract #1) will maintain roads until project completion.
 4. Snow Plowing: Site Construction Work Contractor (Contract #1) will provide snow plowing of temporary road, parking area, access route, and a 5' walkway to all office trailers.
 5. Temporary parking by construction personnel shall be allowed only in areas so designated.
 6. Traffic Regulations:
 - a. Utilize only entrances/temporary roads as designated
 - b. Construction parking will not be allowed adjacent to residential buildings, additions or monuments.
 7. Traffic Controls: General Work Contractor (Contract #1) shall provide temporary traffic controls at junction of temporary roads with public roads. Include warning signs for public traffic and "STOP" signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.
- F. De-watering Facilities and Drains:
1. For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, use the same facilities. Maintain the site, excavations, and construction free of water.
 2. For temporary drainage and de-watering facilities and operations directly associated with the building and other construction activities, comply with Division 2; General Construction Work Contractor (Contract #1) is directly responsible for de-watering of all excavations associated with building additions.

- G. Temporary Enclosures / Signage: The General Work contractor (Contract #1) shall provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations, and similar activities as follows unless otherwise noted:
1. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood of similar materials.
 2. Close openings through floor decks and horizontal surfaces with load-bearing, wood-framed construction.
 3. Where temporary wood or plywood enclosure exceeds 100 sq. ft. (9.2 sq. m) in area, use UL-labeled, fire-retardant treated material for framing and main sheathing.
 4. Generally, temporary closures for specific openings for a prime contractor to perform their work openings are the responsibility of Contractor creating the opening and shall be installed to protect building from exterior elements.
 5. Temporary partitions shall be installed at all openings where additions connect to existing buildings, and where required to protect areas, spaces, property, personnel, students, and faculty; to separate and control dust, debris, noise, access, sight, fire areas, safety and security and to separate phased construction areas per the phasing plan. Temporary partitions shall be installed and maintained. Construction material and methods to suit need as determined by Construction Manager.
 6. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered “tools and equipment” and not temporary facilities.
 7. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors as follows: The Site Construction Work Contractor (Contract #1) shall furnish and install construction signage as required:
 - a. Engage an experienced sign painter to apply graphics. Comply with details indicated.
 - b. For construction traffic control/flow at entrances/exits, as designated by the Owner (3 required)
 - c. To direct visitors (1 required)
 - d. For construction parking (1 required)
 - e. To direct deliveries (2 required)
 - f. For warning signs as required
 - g. Per OSHA standards as necessary
 - h. For trailer identification
 - i. Temporary exit signs
- H. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F. Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Operations of the Contractor may not block, hinder, impede, or otherwise inhibit the safe and expeditious exiting of the building's occupants during an emergency.
- B. In the event of an emergency, (designated by the sounding of the fire alarm system) all construction activities must immediately cease. Contractor's work force will evacuate themselves from work areas and remain outside of work areas until the "all clear" is given. No work operations will be tolerated during the evacuation of the building or during an emergency.
- C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Construction Manager.
- D. Temporary Fire Protection: General Work Contractor (Contract #1) shall provide, until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10, "Standard for Portable Fire Extinguishers," and NFPA 241, "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
 - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
 - 2. Store combustible materials in containers in fire-safe locations.
 - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
 - 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
 - 5. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- E. Fall Protection:
 - 1. The General Work Contractor (Contract #1) shall provide temporary cable top & mid railings per OSHA regulations around mechanical floor openings. Most of the exterior can be done by running cables from column to column, but some areas may require installation of posts as well. Include toe boards around perimeter and openings where required. The Prime Contractor must provide his own means for providing OSHA approved fall protection for his work persons. Temporary railings removed by a Prime Contractor for some reason other than constructing the permanent wall, must be immediately replaced by that Prime Contractor.
 - 2. The General Work Contractor (Contract #1) shall rope off all roof openings in an OSHA approved manner. Include fluorescent ribbons or flags to accent the ropes.
- F. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- G. Enclosure Fence: General Work Contractor (Contract #1) shall before, site excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.

1. Provide 200' of open-mesh, 8-foot high chainlink fencing with posts at 8-feet on center, set in a compacted mixture of gravel and earth.
 2. Provide min. 3 double swing access gates and man gates. Each gate is to have a chain and padlock.
 - a. Provide (2) keys for each lock to the Construction Manager.
 3. Remove fence upon completion of all exterior activities or sooner if directed by Construction Manager.
- H. Security Enclosure and Lockup: General Work Contractor (Contract #1) shall install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- I. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid using tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities and good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
 2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Construction Manager requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the property of each prime contractor. The Owner reserves the right to take possession of project identification signs.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.

3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION

SECTION 015000a: TEMPORARY FACILITIES & CONTROLS**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
 - 1. Sanitary facilities, including drinking water.
- C. Support facilities include, but are not limited to, the following:
 - 1. Temporary project identification signs and bulletin boards.
 - 2. Waste disposal services.
- D. Security and protection facilities include, but are not limited to, the following:
 - 1. Barricades, warning signs, and lights.
 - 2. Security enclosure and lockup.

1.3 DIVISION OF RESPONSIBILITIES

- A. General: Each prime contractor is specifically assigned certain responsibilities for temporary services and facilities to be used by other prime contractors, and other nonprime contractors and separate entities at the site, Owner's workforces, Architect, testing agencies, personnel of governing authorities, and personnel authorized to be at project site during contract time. The General Construction Work Contractor (Contract #1) is responsible for providing temporary facilities and controls that are not normal construction activities of other prime contractors and are not specifically assigned otherwise by the Contract Documents.

1.4 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to the Owner or the Architect. The Architect will not accept a prime contractor's cost or use charges for temporary services or facilities as a basis of claim for an adjustment in the Contract Sum or the Contract Time.
- B. Water Service: Use water from the Owner's existing water system without metering and without payment of use charges. Access to water shall be designated by the owner.
- C. Electric Power Service: Temporary electric power including set-up, maintenance and use charges is the responsibility of the Electrical Work Contractor (Contract #4).
 - 1. Use of electric power from the Owner's permanent power system (when operational) will be granted to all prime contractors without payment of use charges.

1.5 SUBMITTALS

- A. Temporary Utilities: The prime contractor shall submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for submittal of the Contractor's Construction Schedule, each prime contractor shall submit a schedule indicating implementation and termination of each temporary utility for which the Contractor is responsible.
- C. Temporary Signage: Provide shop drawings, indicating the size and layout of the signs, color choices for Owner selection and installation details.

1.6 QUALITY ASSURANCE

- A. Regulations: The prime contractor shall comply with industry standards and with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
 - 1. Building code requirements.
 - 2. Health and safety regulations.
 - 3. Utility company regulations.
 - 4. Police, fire department and rescue squad rules.
 - 5. Environmental protection regulations.
- B. Standards: The prime contractor shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
 - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.
 - 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

- A. Temporary Utilities: The prime contractor shall prepare a schedule indicating dates for implementation and termination of each temporary utility for which the Contractor is responsible. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.
 - 1. Temporary Use of Permanent Facilities: The Installer of each permanent service shall assume responsibility for its operation, maintenance, and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned responsibilities.

- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2: PRODUCTS

2.1 MATERIALS

- A. General: The prime contractor shall provide new materials. If acceptable to the Architect, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Miscellaneous Carpentry."
1. For job-built temporary offices, shops, and sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
 2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
 3. For fences and vision barriers, provide minimum 3/8-inch- thick exterior plywood.
 4. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch- thick exterior plywood.
- C. Pavement: Comply with Division 2 Pavement Sections
- D. Paint: Comply with requirements of Division 9 Section "Painting."
1. For job-built temporary offices, shops, sheds, fences, and other exposed lumber and plywood, provide exterior-grade acrylic-latex emulsion over exterior primer.
 2. For sign panels and applied graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
 3. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.
- E. Open-Mesh Fencing: Provide 0.12-inch- thick, galvanized 2-inch chainlink fabric fencing 6 feet high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 inches I.D. for line posts and 2-1/2 inches I.D. for corner posts.

2.2 EQUIPMENT

- A. General: The prime contractor shall provide new equipment. If acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4-inch heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

PART 3: EXECUTION

3.1 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
 - 1. Arrange with the company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
 - 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 - 3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
- B. Sanitary Facilities: The General Work Contractor (Contract #1) shall provide temporary portable chemical toilet facilities for all construction personnel. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
 - 1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.
 - 2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
 - a. Provide separate facilities for male and female personnel.
- C. Temporary Construction:
 - 3. Temporary bridging, decks, hoists, lifts, scaffolding, and cranes shall be the responsibility of Contractor requiring same.
 - 4. Temporary entrances and exits to the building, shall be furnished, installed and maintained under the General Work Contractor (Contract #1) as directed by the Architect. Exits shall be maintained for exiting in emergency conditions until permanent structures are in place.
- D. Daily cleanup
 - 1. Dumpsters are to be provided by the General Work Contractor (Contract #1). See allowance specified under the summary of work. Dumpsters will be inspected to assure they are not misused and removed and hauled to a recycling center off site for processing. OWNER will not be responsible for the removal of any hazardous materials; this will be the responsibility of the prime contractor doing the same.
 - 2. The maintenance of a clean work site shall be the responsibility of each Contractor.
 - 3. Each Contractor shall remove own debris daily from work area to waste disposal containers (dumpsters), time lapse not acceptable.

4. The condition of cleanliness in which an area is found, is the condition each Contractor shall leave.
5. Each and every Contractor working on site shall submit manpower on Friday at 8 A.M. to work as a team to remove debris to dumpsters until complete. At discretion of the Architect, a Contractor not complying may be back-charged for work performed by others. The responsibility of broom cleaning and debris disposal remains with General Construction Contract and shall include use of sweeping compound.
6. Final cleaning shall be the responsibility of each Prime Contractor for his/her own work.
7. Protection of Work: Each Prime Contractor is reminded to temporarily protect work in place until accepted by the Owner per Article 10 of the General Conditions of the Contract.
8. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 3 days during normal weather or 1 day when the temperature is expected to rise above 80°F (27°C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully. First aid requirements are the responsibility of each Contractor.

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- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. The prime contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
- C. The prime Contractor will be responsible for hookup of own project trailers. Use of energy, including heat (shall be set back at night) if practical from electric service will be available. If abused, power from temporary service will be disconnected. All installations shall conform to strictest standards.

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- C. All prime contractors must have a bona-fide safety program manual on file with the Architect.
- D. All prime contractors must have tool-box meeting reports updated prior to submission of pay apps. (non-compliance will hold up req. process).
- E. Workers non-compliance of regs (includes ID badge, safety vests, personal protection as outlined by OSHA, security maintenance): Breach of rules, will be reported to the Foreman and Company employing the worker, and an immediate response is expected, or worker will forfeit his ID badge and be removed from the Project.

- F. If removing the worker causes a delay to other trades, or to the Job schedule, The company employing the removed worker, will be charged for lost time at the rate dictated by the affected trades, and may include multiple trades for schedule delays. These charges will be assessed at the time of req request, and automatically deducted prior to payment process. The Architect will maintain records of notification as well as photos of infraction and proof of Contractor notification, in order to enforce “back charge” for infractions.
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3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Operations of the Contractor may not block, hinder, impede, or otherwise inhibit the safe and expeditious exiting of the building’s occupants during an emergency.
- B. In the event of an emergency, (designated by the sounding of the fire alarm system) all construction activities must immediately cease. Contractor’s work force will evacuate themselves from work areas and remain outside of work areas until the “all clear” is given. No work operations will be tolerated during the evacuation of the building or during an emergency.
- C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.
- D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- E. Enclosure Fence: General Work Contractor (Contract #1) shall before, site excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.
 - 1. Provide 200’ of open-mesh, 8-foot high chainlink fencing with posts at 8-feet on center, set in a compacted mixture of gravel and earth.

2. Provide min. 3 double swing access gates and man gates. Each gate is to have a chain and padlock.
 - a. Provide (2) keys for each lock to the Architect.
 3. Remove fence upon completion of all exterior activities or sooner if directed by Architect.
- F. Security Enclosure and Lockup: General Work Contractor (Contract #1) shall install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the property of each prime contractor. The Owner reserves the right to take possession of project identification signs.
 2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.
 3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
 - a. Replace air filters and clean inside of ductwork and housings.
 - b. Replace significantly worn parts and parts subject to unusual operating conditions.
 - c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION

Section 015600: Affirmative Action

***The minimum contract award value to MWBEs by the General Work Contractor shall be a minimum of Two Hundred and Ninety-Eight Thousand Five Hundred Dollars (\$285,900).**

***Requirement established for compliance with NYSESD (New York State Empire State Development) Grant.**

1. UTILIZATION OF LOCAL MINORITY AND WOMEN OWNED BUSINESS ENTERPRISES (MWBEs) AND SERVICE DISABLED VETERAN-OWNED BUSINESSES (SDVOB)

A. Participation by local Minority and local Women-Owned Business Enterprises (MWBEs) and SDVOB (M/WBEs): The Contractor shall use every good faith effort to provide for meaningful Participation by M/WBEs and SDVOBs in the Work. Such good faith efforts shall include at least The following:

- i. Dividing the Work to be subcontracted into smaller portions where Technically feasible.
- ii. Actively and affirmatively soliciting bids for subcontracts from local Certified M/WBEs and SDVOBs including circulation of solicitations to local Minority And Women Contractors' Associations. Contractor shall maintain records Detailing the efforts made to provide for meaningful M/WBEs contacted And, if any such M/WBE is not selected as a joint venture or subcontractor, The reasons for such decision.
- iii. Making plans and specifications for prospective work available to certified M/WBEs and SDVOBs, in sufficient time for review.
- iv. Utilizing the services and cooperating with those organizations providing Technical assistance in connection with M/WBE and SDVOB participation.
- v. Utilizing the list of certified M/WBEs and SDVOBs maintained by the New York State Department of Economic Development, Division of Minority & Women's Business Development, NYSDOT, DASNY, OGS, Empire State Development, and any other certified Resource for the purpose of soliciting bids for subcontracts and supplies.
- vi. Encouraging the formation of joint ventures, partnerships or other similar Arrangements among subcontractors, where appropriate, to insure that Appropriate to insure that the Contractor will meet its obligations Hereunder.
- vii. Insuring that provisions are made to provide progress payments to certified M/WBEs and SDVOBs on a timely basis.
- viii. Not requiring bonds from and/or providing bonds and insurance for Certified M/WBEs and SDVOBs where appropriate.
- ix. The Contractor shall include the foregoing provisions (i) through (ix) in

Every subcontract or purchase order so that such provisions will be binding
Upon such subcontractor or supplier.

- x. NYS Certified MWBE Registry:
<https://ny.newnycontracts.com/FrontEnd/searchcertifieddirectory.asp>

2. AFFIRMATIVE ACTION: WORKFORCE (EEO)

A. Participation by local Minority Persons and Women: The Contractor shall use every
Good faith effort to ensure meaningful participation by local Minority persons and
Women in the Work. Such good faith efforts shall include at least the following:

- i. Ensure and maintain a working environment free of harassment,
Intimidation and coercion. The Contractor shall specifically ensure that all
Foremen, superintendents and other supervisory personnel are aware of and
Carry out the Contractor's obligation to maintain such a working
Environment.
- ii. Establish and maintain a current list of local Minority and Women
Recruitment sources and notifies such sources and Minority community
Organizations when employment opportunities are available, and maintain
A record of the sources' and organizations' responses.
- iii. Maintain a file of the names and addresses of each local Minority person
And Woman referred to it by an individual, recruitment source or
Community organization and of what action was taken with respect to each
Such referred individual. If the individual was not employed by the
Contractor, the file should set forth reasons therefore.
- iv. Promptly notify the District when the unions with which the Contractor
Has a collective bargaining agreement has not referred to Contractor a
Minority person or Woman sent by the Contractor to such union for
Employment in the work, or when it has other information that the union
Referral process has impeded efforts to meet its obligations.
- v. Disseminate the Contractor's equal employment opportunity policy within
Its organization by including it in any employee handbook or policy
Manual; by publicizing it in company newspapers and annual reports; and
By advertising such policy at reasonable intervals in union publications.
The equal employment opportunity policy should be further disseminated
By conduction staff meetings to explain and discuss the policy; by posting
Of the policy at the site of any work and by review of the policy with
Employees.
- vi. Disseminate the Contractor's equal employment opportunity policy
Externally by informing and discussing it with all recruitment sources and
Community organizations; by advertising in news media, specifically
Including Minority and Women news media; and by notifying and
Discussing it with all subcontractors.

- vii. Make specific and reasonably recurrent, written and oral recruitment Efforts, directed at Minority and Women's organizations, schools with Substantial Minority and Women enrollment, and to Minority and Women Recruitment and Training organizations within the Contractor's recruitment Area.
- ix. Ensure that seniority practices, job classifications, work assignments and Other personnel practices do not have a discriminatory effect.
- x. Ensure that all facilities and company activities are non-segregated except That to separate or single user toilet and necessary changing facilities shall Be provided to assure privacy between the sexes.
- xi. Continually monitor all personnel activities to ensure that it's equal Employment opportunity policy is being carried out including the Evaluation of Minority and Women employees for promotional Opportunities on an annual basis, and the encouragement of such Employees to seek those opportunities.
- xii. File monthly compliance reports relating to the operation and Implementations of Approved affirmative action programs.
- xiii. The contractor shall include the foregoing provisions (i) through (xiii) in Every subcontract or purchase order so that such provision will be binding Upon each subcontractor or supplier.

3. LOCAL MINORITY AND WOMEN PARTICIPATION

***The minimum contract award value to MWBEs by the General Work Contractor shall be a minimum of Two Hundred and Ninety-Eight Thousand Five Hundred Dollars (\$285,900).**

***Requirement established for compliance with NYSESD (New York State Empire State Development) Grant.**

A) Goals for Equal Employment Opportunity (EEO) Minority and Women Workforce Participation:

- i. The Contractor shall exert good faith efforts to achieve a 15% combined Goal for local minority and women workforce participation for each Occupation utilized in the work on an occupation basis including trainees.
- ii. The local Minority and Women workforce participation goals are Expressed for each occupation such that a percentage equal to the person hours Of training and employment in that occupation of Minority and Women workers used by the Contractor and any subcontractor in the work, Divided by the total person-hours of training and employment of all Workers in that occupation (including supervisory personnel) used by the Contractor and any subcontractor in the Work.
- iii. The Contractor shall not participate in the transfer of Minority or Women

Employees or trainees from employer-to-employer or from project-to-Project for the sole purpose of meeting the Contractor's obligations Hereunder.

- iv. In achieving the goals for local Minority and Women workforce Participation in the Work, the Contractor shall make every good faith and Reasonable effort to find and employ qualified local Minority and Women Supervisory personnel and journey persons.
- v. The non-working hours of trainees or apprentices may be considered in Meeting the goals for Minority and Women workforce participation if: (1) Such trainees or apprentices are employed by the Contractor during the Training period, (2) the Contractor has made a commitment to employ the Availability of employment opportunities; and (3) the trainees are trained Pursuant to a training program approved by the District.
- vi. The Contractor shall include the foregoing provisions (i) through (VI) in Every Subcontract, so that such provisions will be binding upon each Subcontractor.

B) Goals for local Minority and Women-Owned Business Enterprises Participation:

- i. The Contractor is required to achieve a 15% combined Goal for Minority Business Enterprise participation in the Work and Women Owned Business Enterprise participation in the Work.
- ii. The goal for participation in the conduct of the Work is expressed as a Percentage equal to the dollar value of the Work performed divided by the Contract Sum. Use of Minority Owner or Women Owned Supply firms is Encouraged but will not count toward achieving the above percentage goal.
- iii. The dollar value of the Work performed by MIWBEs will be determined As: (1) Where an MIWBE is not the Contractor - the dollar value of the Work subcontracted to Lobes, (2) where the Contractor is a joint Venture including one or more M/WBEs as joint ventures - the contract Sum multiplied by the percentage of the joint venture's profits (or losses) Which are to accrue to the M/WBE joint venture(s) under the joint venture? Agreement; and (3) Where any MIWBE is the Contractor or where the Contractor is a joint venture consisting entirely of MIWBEs, and the Contractor can document good faith efforts to subcontract to MIWBE Subcontractors and/or suppliers - the Contract Sum.

C. Compliance Reports: The Contractor shall file monthly compliance reports with The District regarding compliance with the provisions of this Article. Compliance Reports shall be filed within such time, shall contain such information and shall be In such form as the District may prescribe. Compliance Reports are to be Submitted with each monthly requisition for payment. Payment requisitions will Not be processed without the properly completed Compliance Reports.

D. Access to the Contractor's Books: The Contractor shall permit access to its books,

Records and accounts by the Owner for purposes of investigation to ascertain compliance with the provisions of this Article. The Contractor shall include this provision in every subcontract so that such provision will be binding upon each subcontractor.

4. DEFINITIONS

A. MINORITY OR WOMEN-OWNED BUSINESS ENTERPRISE (MWBE):

- At least 51% owned and controlled by the minority members and/or Women;
- The minority and/or women ownership interest, is real, substantial and Continuing;
- The minority and/or women ownership has and exercises the authority to Independently owned, operated and authorized to do business in NY State.
- Must be listed & certified by agencies per I.a.v on page AA-I.

Note: Businesses eligible to participate in the program must be owned and operated by women and/or minority group members who are citizens of the United States or permanent resident aliens. Generally they must be in operation for at least one year.

B. MINORITY GROUP MEMBER:

A United States citizen or permanent resident alien who has and can Demonstrate membership in one of the following groups:

- Black persons having origins in any of the Black African racial groups
- Hispanic persons of Mexican, Puerto Rican, Dominican, Cuban, Central or South American descent of either Indian or Hispanic origin, regardless of Race
- Native American or Alaskan native persons having origins in any of the Original people's of North America
- Asian and Pacific Islander persons having origins in any of the Far East countries, South East Asia, the Indian subcontinent or the Pacific Islands

C. CONTRACTOR:

An individual, a business enterprise including a sole proprietorship, a Partnership, a corporation, a not-for-profit corporation, or any other party to a State contract or a bidder in conjunction with the awarding of a state contract

END OF SECTION

Monthly Employment Utilization Report

U.S. Department of Labor

Employment Standards Administration
Office of Federal Contract Compliance Programs

This report is required by Executive Order 11246, Sec. 203. Failure to report can result in contracts being cancelled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts of federally assisted construction contracts.

1. Covered Area (SMSA or EA)

2. Employers I.D. No.

OMB No. 1215-01633
Expires: 12/13/92

3. Current Goals
Minority
Female **6.9%**

4. Reporting Period
From _____
To _____

Name and Location of Contractor

Federal
Funding
Agency

5. CONSTRUCTION TRADE	Classifications	6. TOTAL FEDERAL & NON-FEDERAL CONSTRUCTION WORK HOURS										7. Minority Percentage	8. Female Percentage	9. Total Number of Employees		10. Total Number of Minority Employees	
		6a. Total All Employees By Trade		6b. Black (Not of Hispanic Origin)		6c. Hispanic		6d. Asian or Pacific Islander		6e. American Indian or Native American				M	F	M	F
		M	F	M	F	M	F	M	F	M	F						
	Journey Worker																
	Apprentice																
	Trainee																
	Sub-Total																
	Journey Worker																
	Apprentice																
	Trainee																
	Sub-Total																
	Journey Worker																
	Apprentice																
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	Sub-Total																
	Journey Worker																
	Apprentice																
	Trainee																
	Sub-Total																
	Journey Worker																
	Apprentice																
	Trainee																
	Sub-Total																
Total Journey Worker																	
Total Apprentices																	
Total Trainees																	
Grand Total																	

11. Company Official's Signature and Title

12. Telephone Number
(Include area code)
()

13. Date Signed

Page
of

CONTRACTOR'S UTILIZATION PLAN

Contract No. _____

Contractor's Name, Address and Federal ID No.:		Contract Description/Location:		MBE <input type="checkbox"/> WBE <input type="checkbox"/>		Date Submitted:		Bid Date:		MWBE Goals	
Federal ID No. _____						Submittal No.:		Contract Amount:		<div>MBE</div> <div>WBE</div>	
Certified MBE/WBE Name and Address	Federal ID No.	MBE	WBE	Description of Subcontracting/Supplies		Contract Dollar Value					
		<input type="checkbox"/>	<input type="checkbox"/>								
		<input type="checkbox"/>	<input type="checkbox"/>								
		<input type="checkbox"/>	<input type="checkbox"/>								
		<input type="checkbox"/>	<input type="checkbox"/>								

Pursuant to Executive Law Article 15-A, my firm proposes to use the certified firms listed above.

Proposed Goal Attainment:

MBE % ☐ Accepted ☐ Rejected
 MBE \$ ☐ Accepted as Noted ☐ Rejected
 WBE % ☐ Accepted ☐ Rejected
 WBE \$ ☐ Accepted ☐ Rejected

Reasons: _____

Contractor's Signature _____ Title _____ Date _____
 Authorized Signature _____ Date _____



Dormitory Authority State of New York
515 Broadway
Albany, New York 12207-2964

COMPLIANCE REPORT

Page __ of __

Payment Requisition Date: __/__/____

Payment Requisition Amount: \$ _____

PRIME CONTRACTOR / CONSULTANT / VENDOR INFORMATION

NAME:	PROJECT#	CONTRACT#	WORK AUTH# (if applicable):
ADDRESS: CITY, STATE ZIP:	FEDERAL ID#	INSTITUTION:	
CONTACT PERSON: (person completing form)	TELEPHONE# - - EMAIL:	WORK DESCRIPTION:	

<input type="checkbox"/> Please check here if you were granted a Total Waiver of the M/WBE Goals by receipt of letter dated: / /	<input type="checkbox"/> Please check here if you are a Professional Service Consultant & the original contract or Term Work Authorization amount is under \$50,000
<input type="checkbox"/> Please check here if you are a Construction Contractor and the original contract amount is under \$100,000.	<input type="checkbox"/> Please check here if you are a Commodity Vendor & the original purchase order/contract amount is under \$25,000.

SUBCONTRACTOR/SUBCONSULTANT and SUPPLIER PAYMENT INFORMATION

*** ALL M/WBE Firms must be listed.**
*** Non-M/WBE Firms with a "Total Value of Subcontract/PO" over \$10,000 must be listed.**

<input type="checkbox"/> Please check here if <u>no</u> subcontractors or suppliers are being utilized on this contract COMPANY INFORMATION	FEDERAL TAX ID NUMBER	CLASSIFICATION (select from both categories)		AMOUNT TO BE PAID OUT OF THE PROCEEDS OF THIS REQUISITION	TOTAL AMOUNT OF ALL PAYMENTS MADE PRIOR TO THIS REQUISITION	TOTAL VALUE OF SUBCONTRACT/PO's ISSUED
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$

****False statements, information or data submitted on or with application for payment, may result in one or more of the following actions: Termination of Contract for cause; disapproval of future bids, contracts, or subcontracts; Withholding of final payments on the contract; and Civil and/or criminal prosecution.**

Principal's Signature:	Print Name and Title:	Date: / /
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Dormitory Authority State of New York
515 Broadway
Albany, New York 12207-2964

COMPLIANCE REPORT

Continuation Sheet

Page __ of __

Payment Requisition Date: __/__/____

PRIME CONTRACTOR / CONSULTANT / VENDOR INFORMATION

NAME:	PROJECT#	CONTRACT#	WORK AUTH# (if applicable):
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SUBCONTRACTOR/SUBCONSULTANT and SUPPLIER PAYMENT INFORMATION

* ALL M/WBE Firms must be listed.

* Non-M/WBE Firms with a "Total Value of Subcontract/PO" over \$10,000 must be listed.

COMPANY INFORMATION	FEDERAL TAX ID NUMBER	CLASSIFICATION (select from both categories)		AMOUNT TO BE PAID OUT OF THE PROCEEDS OF THIS REQUISITION	TOTAL AMOUNT OF ALL PAYMENTS MADE PRIOR TO THIS REQUISITION	TOTAL VALUE OF SUBCONTRACT/PO'S ISSUED
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$
Name: Address: Work Description:		<input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> Non-M/WBE	<input type="checkbox"/> Subcontractor <input type="checkbox"/> Subconsultant <input type="checkbox"/> Supplier	\$	\$	\$

Compliance Report Instructions

This report is required with the submittal of each payment requisition. Payment will not be processed without a completed report with an original signature.

PRIME CONTRACTOR/CONSULTANT /VENDOR INFORMATION	Please provide all of the Prime and Project information as requested.
SUBCONTRACTOR/SUBCONSULTANT and SUPPLIER PAYMENT INFORMATION	<p>If you are not reporting any sub/supplier payments, please check the appropriate box.</p> <p>All of the M/WBE sub/supplier information requested must be provided.</p> <p><u>ALL</u> M/WBE Firms must be listed.</p> <p>Non-M/WBE Firms with a “Total Value of Subcontract/PO” over \$10,000 must be listed.</p> <p>ABOVE FIRMS MUST BE REPORTED EVEN IF THEY ARE NOT RECEIVING A PAYMENT THIS MONTH.</p> <p><i>** Only firms that have NYS Certification by the Empire State Development Corporation can be counted towards the M/WBE goal achievement for this contract.</i></p>

*****Please follow the instructions below carefully.***

AMOUNT TO BE PAID OUT OF THE PROCEEDS OF THIS REQUISITION	<p>Indicate the amount <u>TO BE PAID</u> to each sub/supplier from the money you will receive from this requisition. If no payment will be made, enter \$0</p> <p><i>*This is not the amount that you “intend” to pay over the life of the contract.</i></p>
TOTAL AMOUNT OF ALL PAYMENTS MADE PRIOR TO THIS REQUISITION	<p>Indicate the amount that has <u>ACTUALLY</u> been paid to date.</p> <p>Note: DO NOT include the amount to be paid out of the proceeds of this requisition.</p> <p><i>*M/WBE amounts will be verified by DASNY’s Office of Opportunity Programs through the receipt of copies of canceled checks. You may attach (please staple!) check copies to the report for expediency.</i></p>
TOTAL VALUE OF ALL SUBCONTRACT/PO’s ISSUED	<p>Indicate the total value to date of ALL subcontract agreements issued by your company to the subcontractors/suppliers for this contract. This should be inclusive of any change orders issued to the original contract.</p> <p><i>-or-</i></p> <p>Indicate the total amount of ALL purchase orders issued by your company to the subcontractors/suppliers for this contract.</p>

Questions regarding the completion of the form may be directed to DASNY’s Office of Opportunity Programs at : (518) 257-3465 or you may e-mail your questions to croops@dasny.org



OCSD-4

MWBE AND SDVOB UTILIZATION PLAN

INSTRUCTIONS: This form must be submitted with any bid, proposal, or proposed negotiated contract or within a reasonable time thereafter, but prior to contract award. This MWBE and SDVOB Utilization Plan must contain a detailed description of the supplies and/or services to be provided by each certified Minority and Women-owned Business Enterprise (M/WBE) and/or Service Disabled Veteran Owned Business (SDVOB) under the contract. Attach additional sheets if necessary.

* indicates mandatory fields

* Contractor Name: _____

Address: _____

* Representative Name: _____

Town, State & Zip: _____

* Phone: _____

* ESD Contract/Project Number: _____

* Fax: _____

RFP/RFQ/Solicitation Number: _____

* Email: _____

* MWBE Goal: MBE _____% + WBE _____% = MWBE GOAL _____%

* Total Dollar Value of Contract/Grant: \$ _____

* SDVOB Goal: _____%

1. * Certified MWBE or SDVOB Firm Name, Contact Person's Name, Address, Phone and Email.	2. * Check All That Apply	3. * Federal ID No.	4. Detailed Description of Work (Attach additional sheets, if necessary, Attach Contract if available)	5. Dollar Value of Contract (if unavailable or yet undetermined, indicate \$1)
A.	<u>NYS CERTIFIED</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> SDVOB			
B.	<u>NYS CERTIFIED</u> <input type="checkbox"/> MBE <input type="checkbox"/> WBE <input type="checkbox"/> SDVOB			



6. If unable to fully meet the MWBE and/or SDVOB goals set forth in the contract, the Contractor must submit a Waiver Request form, which may be obtained from the Office of Contractor and Supplier Diversity, at OCSD@ESD.NY.GOV.

PREPARED BY (Signature): _____ DATE: _____

Preparer's Name (Print or Type): _____

Preparer's Title: _____

Date: _____

SUBMISSION OF THIS FORM CONSTITUTES THE CONTRACTOR'S ACKNOWLEDGEMENT AND AGREEMENT TO COMPLY WITH THE MWBE AND SDVOB REQUIREMENTS SET FORTH UNDER NYS EXECUTIVE LAW ARTICLES 15-A AND 17-B, 5 NYCRR PART 143, 9 NYCRR PART 252, AND THE ABOVE-REFERENCED SOLICITATION. FAILURE TO SUBMIT COMPLETE AND ACCURATE INFORMATION MAY RESULT IN A FINDING OF NONCOMPLIANCE AND POSSIBLE TERMINATION OF YOUR CONTRACT.

The MWBE Certification status of the firms listed on this form **MUST** be verified using the New York State Contract System's Directory of Certified Minority and Women-owned Business Enterprises.

This directory is available at <https://ny.newnycontracts.com>.

The SDVOB Certification status of the firms listed on this form **MUST** be verified using the Directory of New York State Certified Service-Disabled Veteran-Owned Businesses.

This directory is available at <https://online.ogs.ny.gov/SDVOB/search>.

TELEPHONE NO.:

EMAIL ADDRESS:

**** FOR OCSD USE ONLY ****

REVIEWED BY:

DATE:

UTILIZATION PLAN APPROVED?

☐ YES ☐ NO Date:

Contract No.:

Project No. (if applicable):

Contract Award Date:

Estimated Date of Completion:

Amount Obligated Under the Contract:

Description of Work:

NOTICE OF DEFICIENCY ISSUED?

☐ YES ☐ NO Date of Issue:

NOTICE OF ACCEPTANCE ISSUED?

☐ YES ☐ NO Date of Issue:

**NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION
TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY
(EXECUTIVE ORDER 11246 AND 41 CFR PART 60-4)**

The following Notice shall be included in, and shall be a part of all solicitations for offers and bids on all Federal and federally assisted construction contracts or subcontracts in excess of \$10,000.

The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Timetables	Goals for minority participation for each trade	Goals for female participation for each trade
	%	6.9%

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is:

State of _____

County of _____

City of _____

SECTION 016000: PRODUCT REQUIREMENTS**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes the following administrative and procedural requirements: selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and equivalent products.

1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation, shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
 - 3. Equivalent Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:
 - 1. Substitutions requested during the bidding period and accepted by Addendum prior to award of the Contract.
 - 2. Specified options for products and construction methods included in the Contract Documents.
 - 3. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating equivalent products of other named manufacturers.

- D. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
- E. Special Warranty: Written warranty required by or incorporated into the Contract Documents to extend time limit provided, either by manufacturer's warranty or to provide more rights for Owner.

1.4 SUBMITTALS

- A. Submittals shall comply with the requirements of the Construction Contract Clauses, Division 1 section "SUBMITTAL PROCEDURES" and the individual sections specifying the work.
- B. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
 - 1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
 - 2. Form: Tabulate information for each product under the following column headings:
 - a. Specification Section number and title.
 - b. Generic name used in the Contract Documents.
 - c. Proprietary name, model number, and similar designations.
 - d. Manufacturer's name and address.
 - e. Supplier's name and address.
 - f. Installer's name and address.
 - g. Projected delivery date or time span of delivery period.
 - h. Identification of items that require early submittal approval for scheduled delivery date.
 - 3. Initial Submittal: Within 15 workdays after date of commencement of the Work, submit 3 copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
 - a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
 - 4. Completed List: Within 30 workdays after date of commencement of the Work, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
 - 5. Architect's Action: Architect will respond in writing to Contractor within 10 workdays of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement that products comply with the Contract Documents.
- C. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Substitution Request Form: Use form provided in Specification Section entitled "PROJECT FORMS AND RELATED DOCUMENTS".
 - 2. Submit 3 copies of each request for substitution.
 - 3. Identify the product or the fabrication or installation method to be replaced in each request. Include related specification section and Drawing numbers.

4. Provide complete documentation including but not limited to the following information, as appropriate:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by others that will be necessary to accommodate the proposed substitution.
 - c. A detailed comparison of the significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include performance, weight, size, durability and visual effect.
 - d. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - e. Product data and drawings, including descriptions of products and fabrication and installation procedures.
 - f. Samples, where applicable or requested.
 - g. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - h. Cost information, including a proposal of the net change, if any, in the Contract price.
 - i. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - j. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
5. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 10 workdays of receipt of request, or 5 workdays of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if Architect can not make a decision on use of a proposed substitution within time allocated.

1.5 QUALITY ASSURANCE

- A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source. Equipment of the same function shall be manufactured by the same entity, unless otherwise indicated.

- B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Labels and nameplates: Except for required labels and operating data, do not attach or imprint manufacturers or producer's nameplates or trademarks on surfaces of products that will be exposed to view in occupied spaces or on the exterior.
 - 1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
 - 2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate nameplate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information:
 - a. Name of product manufacturer.
 - b. Model and serial numbers.
 - c. Operating data such as capacity, speed and ratings.
 - 3. Protection: Labels and nameplates shall be protected from defacement and other damage during the remainder of the Work.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 - 5. Store products to allow for inspection and measurement of quantity or counting of units.
 - 6. Store materials in a manner that will not endanger Project structure.
 - 7. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
 - 8. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 9. Protect stored products from damage.
- B. Storage: Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
 - 1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
 - 2. Specified Form: Forms are included with the Specifications. Prepare a written document using appropriate form properly executed.
 - 3. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties. Insert specific requirements if a single warranty must cover work by several contractors. Prepare draft of such warranty with advice of Owner's legal counsel and include it at end of this Section.

PART 2: PRODUCTS**2.1 PRODUCT OPTIONS**

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged, and unless otherwise indicated, that are new at time of installation.
 - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 - 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 - 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 - 4. Where products are accompanied by the term "as selected," Architect will make selection.
 - 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 - 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
 - 7. Equalivant: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in "Equalivant Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures: Procedures for product selection include the following:
 - 1. Available Products: Where Specification paragraphs or subparagraphs titled "Available Products" introduce a list of names of both products and manufacturers, provide one of the products listed or another product that complies with requirements. Comply with provisions in "Equalivant Products" Article to obtain approval for use of an unnamed product.

2. Available Manufacturers: Where Specification paragraphs or subparagraphs titled "Available Manufacturers" introduce a list of manufacturers' names, provide a product by one of the manufacturers listed or another manufacturer that complies with requirements. Comply with provisions in "Equalivnt Products" Article to obtain approval for use of an unnamed product.
3. Basis-of-Design Products: Where Specification paragraphs or subparagraphs titled "Basis-of-Design Products" are included and also introduce or refer to a list of manufacturers' names, provide either the specified product or an equalivnt product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in "Equalivnt Products" Article to obtain approval for use of an unnamed product.
4. Visual Matching Specification: Where Specifications require matching an established Sample, select a product (and manufacturer) that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches satisfactorily.
 - a. If no product available within specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents on "substitutions" for selection of a matching product.
5. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, and textures" or a similar phrase, select a product (and manufacturer) that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, or texture from manufacturer's product line that includes both standard and premium items.
6. Descriptive Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
7. Performance Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
8. Prescriptive Requirements: Where Specifications require products that are produced using specified ingredients and components, including specific requirements for mixing, fabricating, curing, finishing, testing and similar operations in the manufacturing process, provide products produced in accordance with the prescriptive requirements that otherwise comply with Contract requirements.
9. Codes, Standards and Regulations: Where Specifications require compliance with an imposed code, standard or regulation; select a product that complies with the codes, standards or regulations specified.

2.2

PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
 - 1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - 2. Requested substitution does not require extensive revisions to the Contract Documents.
 - 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - 4. The request is timely, fully documented, and properly submitted.
 - 5. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
 - 6. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that, the substitution will overcome the incompatibility.
 - 7. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
 - 8. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
 - 9. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - 10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 EQUALIVANT PRODUCTS

- A. Where products or manufacturers are specified by name, submit the following, in addition to other required submittals, to obtain approval of an unnamed product:
 - 1. Evidence that the proposed product does not require extensive revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 - 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - 3. Evidence that proposed product provides specified warranty.
 - 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 - 5. Samples, if requested.

PART 3: EXECUTION

3.1 INSTALLATION OF PRODUCTS

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
 - 1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 017300: EXECUTION**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. General installation of products.
 - 4. Coordination of Owner-installed products.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
 - 8. Correction of the Work.

1.3 SUBMITTALS

- A. Qualification Data: For land surveyor to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- B. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
- C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
- D. Certified Surveys: Submit two copies signed by land surveyor.
- E. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.4 QUALITY ASSURANCE

- A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

PART 2: PRODUCTS (Not Used)**PART 3: EXECUTION****3.1 EXAMINATION**

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and points of connection of utility services.
- C. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- D. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
 - 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Coordinate with requirements specified in Division 1 Section "Temporary Facilities and Controls" for temporary utilities.

- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Architect and Owner not less than five days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Architect's & Owner's written permission.
- D. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- E. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- F. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
 - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
 - 3. Inform installers of lines and levels to which they must comply.
 - 4. Check the location, level and plumb, of every major element as the Work progresses.
 - 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 - 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.
 - 1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
 - 2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
 - 3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
- D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and site work.
- E. Final Property Survey: Prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
 - 1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
 - 2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 10 feet in spaces without a suspended ceiling.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produces harmful noise levels.
- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
- G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.
 - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - 2. Preinstallation Conferences: Include Owner's construction forces at pre-installation conferences covering portions of the Work that are to receive Owner's work. Attend pre-installation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

- A. Requirements for final cleaning before Substantial Completion are included in Division 1 Section "Closeout Procedures."
- B. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- C. Site: Maintain Project site free of waste materials and debris.

- D. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- E. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- F. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- G. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- H. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
 - 1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.
- I. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- J. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- K. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- L. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equip. for oper.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

SECTION 017329: CUTTING AND PATCHING**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

1.3 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work, including, but not limited to; cutting, drilling, chopping, and other similar operations.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation or removal of other Work, including, but not limited to; patching, rebuilding, reinforcing, repairing, refurbishing, restoring, replacing, an other similar operations to match adjoining surfaces.

1.4 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. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 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.
 - 4. Dates: 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, submit details and engineering calculations showing integration of reinforcement with original structure.

1.5 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.
 - 1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:

- a. Foundation construction
 - b. Bearing and retaining walls
 - c. Structural concrete
 - d. Structural steel
 - e. Lintels
 - f. Timber and primary wood framing
 - g. Structural decking
 - h. Stair systems
 - i. Miscellaneous structural metals
 - j. Exterior curtain-wall construction
 - k. Equipment supports
 - l. Piping, ductwork, vessels, and equipment
 - m. Structural systems of special construction in Division 13 Sections.
- B. Operational 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 those results in increased maintenance or decreased operational life or safety.
- 1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:
 - a. Primary operational systems and equipment
 - b. Air or smoke barriers
 - c. Water, moisture, or vapor barriers
 - d. Membranes and flashings
 - e. Fire protection systems
 - f. Noise and vibration control elements and systems
 - g. Control systems
 - h. Communication systems
 - i. Conveying systems
 - j. Electrical wiring systems
 - k. Operating systems of special construction in Division 13 Sections
- C. 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. If possible, retain the original install or fabricator to cut and patch the exposed Work listed below. If it is impossible to engage the original installer or fabricator, engage another recognized experienced and specialized firm.
 - a. Firestopping
 - b. Acoustical ceilings
 - c. Acoustical panels
 - d. Finished wood flooring
 - e. Synthetic sports flooring
 - f. Carpeting
 - g. HVAC enclosures, cabinets, or covers
 - h. Ceramic and quarry tile
 - i. Gypsum board
 - j. Masonry (exterior and interior where exposed)

- k. Tack boards
 - l. Casework
 - m. Finish carpentry
- D. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or those results in increased maintenance or decreased operational life or safety.
 - 1. Water, moisture, or vapor barriers.
 - 2. Membranes and flashings.
 - 3. Exterior curtain-wall construction.
 - 4. Equipment supports.
 - 5. Piping, ductwork, vessels, and equipment.
 - 6. Noise- and vibration-control elements and systems.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2: PRODUCTS

2.1 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

1.7 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 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.

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 minimize interruption of services to occupied areas.

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. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: 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.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- 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. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 - 4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

END OF SECTION

SECTION 017419: CONSTRUCTION WASTE MANAGEMENT & DISPOSAL**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Disposing of nonhazardous demolition and construction waste.
- B. See Division 1 Section "Selective Demolition" for disposition of waste resulting from partial demolition of buildings.

1.3 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site 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.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.4 SUBMITTALS

- A. Waste Management Plan: Submit **3** copies of plan within **7** days of date established for the Notice to Proceed.

- B. 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.

1.5 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification and waste reduction work 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 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. 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 Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 3. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - 4. 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. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. 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.

3.2 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle all demolition materials accepted by local recyclers. Recycle paper and beverage containers used by on-site workers. Recycle packaging and shipping pallets.

1. As much as possible, require deliveries using pallets to remove pallets from Project site.
- 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. Do not store within drip line of remaining trees.
 4. Store components off the ground and protect from the weather.
 5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.3 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.
- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION

SECTION 017700: CLOSEOUT PROCEDURES**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Project Record Documents.
 - 3. Operation and maintenance manuals.
 - 4. Warranties.
 - 5. Instruction of Owner's personnel.
 - 6. Final cleaning.

1.3 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.
 - 1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.
 - a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
 - b. If 100 percent completion cannot be shown, 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, damage or settlement surveys, property 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. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 8. Complete startup testing of systems.

9. Submit test/adjust/balance records.
 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 11. Advise Owner of changeover in heat and other utilities.
 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 13. Complete final cleaning requirements, including touchup painting.
 14. 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 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.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 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 Division 1 Section entitled "PAYMENT PROCEDURES."
 - a. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
 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.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.
 5. Submit consent of surety to final payment.
 6. Submit pest-control final inspection report and warranty.
 7. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training videotapes.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect 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.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. 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.
1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, 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
 - d. Name of Contractor
 - e. Page Number

1.6 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 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 that 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; 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. Record Sample Submitted: Immediately prior to Substantial Completion, the Contractor shall meet with the Architect and the Owner's personnel at the Project Site to determine which Samples are to be transmitted to the Owner for record purposes. Comply with the Owner's instructions regarding delivery to the owner's Sample storage area.
- F. Miscellaneous Record Submittals: 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.

1.7 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.
 - i. Wiring Diagrams
 - j. Fixture lamping schedule

- 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.

1.8 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. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. 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 (115-by-280-mm) 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.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2: PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3: EXECUTION

3.1 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, with at least seven days' advance notice.
 - 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 / Maintenance agreements and similar continuing commitments
 7. Repair.
 8. Spare Parts and Materials
 9. Tools
 10. Lubricants
 11. Fuels
 12. Identification Systems
 13. Control Sequences
 14. Hazards
 15. Cleaning
- C. As part of instruction for operating equipment, demonstrate the following procedures:
1. Start-up
 2. Shutdown
 3. Emergency operations
 4. Noise and vibration adjustments
 5. Safety procedures
 6. Economy and efficiency adjustments
 7. Effective energy utilization
- D. Record "As-Built" Drawings
1. Upon completion of the Work, and review of the record drawings by the Architect, prepare a final set of record drawings. Submit final set of transparencies to the Architect.
 2. The cost of furnishing above prints and preparing these record drawings shall be included in the Contract price.

3.2 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- 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. If final cleaning is delayed until final acceptance, revise subparagraph below.

2. The General Work Contractor (Contract #1) shall 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. Remove snow and ice to provide safe access to building.
 - d. 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.
 - e. Sweep concrete floors broom clean in unoccupied spaces.
 - f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - g. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - h. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - i. 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.
 - j. Clean windows adjacent to areas of work, inside and outside including frames.
 - k. 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.
 - l. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - m. Leave Project clean and ready for occupancy.
- C. 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.

END OF SECTION

SECTION 017823: OPERATION AND MAINTENANCE DATA**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Maintenance manuals for the care and maintenance of systems and equipment.

1.3 DEFINITIONS

Definition in first paragraph below is from ASHRAE's "Technology Handbook."

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 SUBMITTALS

Usually retain first paragraph below, which gives Architect an opportunity to review contents before Substantial Completion.

- A. Initial Submittal: Submit 2 draft copies of each manual at least 15 days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory. Architect will return 1 copy of draft and mark whether general scope and content of manual are acceptable.
- B. Final Submittal: Submit 1 copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit 3 copies of each corrected manual within 15 days of receipt of Architect's comments.

1.5 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2: PRODUCTS**2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY**

- A. Organization: Include a section in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with the same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
 - 1. Title page.
 - 2. Table of contents.
 - 3. Manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

Revise list below to suit Project.

- 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.
 - 5. Name, address, and telephone number of Contractor.
 - 6. Name and address of Architect.
 - 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

Paragraph and subparagraphs below describe typical requirements for binding copies of operation and maintenance manuals. Revise to suit Project.

- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

Revise subparagraphs and associated subparagraphs below to suit Project. An alternate binding is a post-type fastener.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

Revise both subparagraphs below to suit Project.

- a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.

In subparagraph below, insert special requirements such as indicating five-digit Section number on bottom of spine for identification.

- b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

Subparagraph below provides protection for troubleshooting software diskettes used in some operation systems. Delete requirements if unnecessary.

3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.

Requirements in subparagraphs below are normal. Insert unique requirements, such as special paper or plastic lamination of important items for permanent preservation, if needed.

4. Supplementary Text: Prepared on 8-1/2-by-11-inch, 20-lb/sq. ft. white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.

Avoid placing loose, oversize drawings in binder pockets. Use reduced drawings or place folded drawings in labeled envelopes bound in manual.

- b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

- A. Include emergency information that must be immediately available during emergency situations to protect life and property and to minimize disruptions to building occupants.
- B. Content: Organize manual into a separate section for each of the following:
 - 1. Type of emergency.
 - 2. Emergency instructions.
 - 3. Emergency procedures.
- C. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 1. Fire.
 - 2. Flood.
 - 3. Gas leak.
 - 4. Water leak.
 - 5. Power failure.
 - 6. Water outage.
 - 7. System, subsystem, or equipment failure.
 - 8. Chemical release or spill.
- D. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- E. Emergency Procedures: Include the following, as applicable:
 - 1. Instructions on stopping.
 - 2. Shutdown instructions for each type of emergency.
 - 3. Operating instructions for conditions outside normal operating limits.
 - 4. Required sequences for electric or electronic systems.
 - 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

Include information needed for daily operations and management of systems and equipment.

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
 - 1. System, subsystem, and equipment descriptions.
 - 2. Performance and design criteria if Contractor is delegated design responsibility.
 - 3. Operating standards.
 - 4. Operating procedures.
 - 5. Operating logs.
 - 6. Wiring diagrams.
 - 7. Control diagrams.
 - 8. Piped system diagrams.
 - 9. Precautions against improper use.
 - 10. License requirements including inspection and renewal dates.
- B. Descriptions: Include the following:

1. Product name and model number.
 2. Manufacturer's name.
 3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include the following, as applicable:
1. Startup procedures.
 2. Equipment or system break-in procedures.
 3. Routine and normal operating instructions.
 4. Regulation and control procedures.
 5. Instructions on stopping.
 6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.

5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in the manual identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 1. Standard printed maintenance instructions and bulletins.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training videotape, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 3: EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
 - 1. Do not use original Project Record Documents as part of operation manuals.
 - 2. Comply with requirements of newly prepared Record Drawings in Division 1 Section "Project Record Documents."
- G. Comply with Division 1 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION

SECTION 017839: PROJECT RECORD DOCUMENTS**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up Record Prints.
 - 2. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Submit one set of plots from corrected Record CAD Drawings and one set of marked-up Record Prints. Architect will initial and date each plot and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return plots and prints for organizing into sets, printing, binding, and final submittal.
 - b. Final Submittal: Submit one set of marked-up Record Prints, one set of Record CAD Drawing files, one set of Record CAD Drawing plots, and three copies printed from record plots. Plot and print each Drawing, whether or not changes and additional information were recorded.
 - 1) Electronic Media: CD-ROM.
- B. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one copy of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

PART 2: PRODUCTS**2.1 RECORD DRAWINGS**

- A. Paragraph below contains normal recording procedures regardless of requirements for final output.
- B. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.

1. Preparation: 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 would be difficult to identify or measure and record 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.
 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 4. 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.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- C. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.
1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
 2. Refer instances of uncertainty to Architect for resolution.
 3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
 4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.
- D. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect. When authorized, prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:

1. Format: Same CAD program, version, and operating system as the original Contract Drawings.
 2. Format: DWG, Latest Version of AutoCAD, operating in Windows XP operating system.
 3. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
 4. Refer instances of uncertainty to Architect for resolution.
 5. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.
 - a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
 - b. CAD Software Program: The Contract Drawings are available in AutoCAD, operating in Windows XP operating system.
- E. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
 2. Consult with Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- F. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.
 3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications 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. Record the name of the manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
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 Product Data where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. 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.

PART 3: EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION

SECTION 017900: DEMONSTRATION AND TRAINING**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.

1.3 SUBMITTALS

- A. Instruction Program: Submit two copies of outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
 - 1. At completion of training, submit one complete training manual for Owner's use.
- B. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. Attendance Record: For each training module, submit list of participants and length of instruction time.
- D. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.
- E. Demonstration and Training Videotape: Submit two copies at end of each training module.

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Division 1 Section "Quality Requirements," experienced in operation and maintenance procedures and training.
- C. Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:

1. Inspect and discuss locations and other facilities required for instruction.
2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
3. Review required content of instruction.
4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Architect.

PART 2: PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. 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, and as follows:
 1. Motorized doors, including, overhead coiling doors, overhead coiling grilles and automatic entrance doors.
 2. Equipment, including stage equipment, projection screens, loading dock equipment, waste compactors, food-service equipment, residential appliances and laboratory fume hoods.
 3. Fire-protection systems, including fire alarm, fire pumps and fire-extinguishing systems.
 4. Intrusion detection systems.
 5. Conveying systems, including elevators, wheelchair lifts and cranes.
 6. Gas equipment, including medical gas equipment and piping.
 7. Laboratory equipment, including laboratory air and vacuum equipment and piping.
 8. Heat generation, including, boilers, feedwater equipment, pumps, steam distribution piping and water distribution piping.
 9. Refrigeration systems, including chillers, cooling towers, condensers, pumps and distribution piping.
 10. HVAC systems, including air-handling equipment, air distribution systems and terminal equipment and devices.
 11. HVAC instrumentation and controls.
 12. Electrical service and distribution, including transformers, switchboards panelboards, uninterruptible power supplies and motor controls.
 13. Packaged engine generators, including transfer switches.
 14. Lighting equipment and controls.
 15. Communication systems, including intercommunication, surveillance, clocks, programming voice and data and television equipment.
 16. Any other equipment not specifically listed that is part of these construction documents.

- B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project Record Documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
 3. Emergencies: Include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
 4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
 5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
 6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.

- b. Test and inspection procedures.
- 7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
- 8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.
 - c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 - d. Instructions for identifying parts and components.
 - e. Review of spare parts needed for operation and maintenance.

PART 3: EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.
- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Architect will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
 - 2. Owner will furnish an instructor to describe Owner's operational philosophy.
 - 3. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner, through Architect, with at least seven days' advance notice.
- D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a demonstration performance-based test.
- E. Demonstration and Training Videotape: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 - 1. Comply with requirements in Division 1 Section "Photographic Documentation."

2. At beginning of each training module, record each chart containing learning objective and lesson outline.
- F. Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION

SECTION 024119: SELECTIVE DEMOLITION**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.
- B. Special Conditions- wherever similar requirements of this section are present in the Special Conditions the more stringent of the two shall apply as determined by the Architect.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of selected portions of a building or structure.
 - 2. Demolition and removal of selected site elements.
 - 3. Repair procedures for selective demolition operations.
 - 4. Demolition and removal of building materials with Lead based paint.
 - 5. Coordination of Asbestos Containing Materials.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site and disposed of legally.
- B. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during selective demolition remain Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to Owner.

1.5 SUBMITTALS

- A. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

- B. Proposed Dust-Control and Noise-Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation. Identify options if proposed measures are later determined to be inadequate.
- C. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Use of elevator and stairs.
 - 5. Locations of temporary partitions and means of egress.
 - 6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- D. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
- E. Predemolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Submit before Work begins.
- F. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.6 QUALITY ASSURANCE

- A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
- B. Professional Engineer Qualifications: Comply with Division 1 Section "Quality Requirements."
- C. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Standards: Comply with ANSI A10.6 and NFPA 241.
- E. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
- F. Predemolition Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.

1.7 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
- B. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
 - 1. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.
- C. Owner assumes no responsibility for condition of areas to be selectively demolished.
 - 1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
 - 2. Before selective demolition, the prime contractors are to verify with the Owner, what will be removed and salvaged by those prime contractors for the Owner.
- D. Hazardous Materials: Hazardous materials are present in building to be selectively demolished. A report on the presence of hazardous materials is on file for review and use. Each prime contractor is to familiarize themselves with those reports prior to starting demolition or construction. Examine report to become aware of locations where hazardous materials are present.
 - 1. Do not disturb hazardous materials or items suspected of containing hazardous materials. If hazardous materials, or items suspected of containing hazardous materials, are encountered, Contractor shall notify Owner immediately.
- E. Storage or sale of removed items or materials on-site will not be permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

1.8 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.
 - 1. If possible, retain original Installer or fabricator to patch the exposed Work listed below that is damaged during selective demolition. If it is impossible to engage original Installer or fabricator, engage another recognized experienced and specialized firm.
 - a. Processed concrete finishes.
 - b. Stonework and stone masonry.
 - c. Ornamental metal.
 - d. Matched-veneer woodwork.
 - e. Preformed metal panels.
 - f. Roofing.
 - g. Firestopping.
 - h. Window wall system.
 - i. Stucco and ornamental plaster.
 - j. Terrazzo.
 - k. Finished wood flooring.
 - l. Fluid-applied flooring.

- m. Aggregate wall coating.
- n. Wall covering.
- o. HVAC enclosures, cabinets, or covers.

PART 2: PRODUCTS

2.1 REPAIR MATERIALS

- A. Use repair materials identical to existing materials.
 - 1. If identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. Use materials whose installed performance equal or surpasses that of existing materials.
- B. Comply with material and installation requirements specified in individual Specification Sections.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.
- F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES

- A. Existing Utilities: Maintain services indicated to remain and protect them against damage during selective demolition operations.
- B. Do not interrupt existing utilities serving occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to authorities having jurisdiction.
 - 1. Provide at least 72 hours' notice to Owner if shutdown of service is required during changeover.
- C. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utilities serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated utilities when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.

3. If utility services are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary utilities that bypass area of selective demolition and that maintain continuity of service to other parts of building.
 4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
- D. Utility Requirements: Refer to Division 15 and 16 Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.3 PREPARATION

- A. Dangerous Materials: Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.
- B. Pest Control: Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.
- C. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
 2. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
 3. Protect existing site improvements, appurtenances, and landscaping to remain.
 4. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
- D. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
- E. Temporary Enclosures: Provide temporary enclosures for protection of existing building and construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.

- F. Temporary Partitions: Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.
- G. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.

3.4 POLLUTION CONTROLS

- A. Revise methods in paragraph and subparagraphs below to suit Project. Water mist may not be acceptable and is of particular concern in healthcare renovations where infection-control measures, including suppressing fungal growth, are critical.
- B. Dust Control: Use water mist, temporary enclosures, and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
 - 1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.
 - 2. Wet mop floors to eliminate trackable dirt and wipe down walls and doors of demolition enclosure. Vacuum carpeted areas.
 - 3. In existing building areas where casework is being renovated, contractor is to provide plastic coverings on the remaining portion of the rooms and to protect owner equipment and materials with-in those rooms.
- C. Disposal: Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- D. Cleaning: Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.5 SELECTIVE DEMOLITION

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 - 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 9. Dispose of demolished items and materials promptly.
 10. Return elements of construction and surfaces that are to remain to condition existing before selective demolition operations began.
 11. In areas where tile work is to be removed from concrete or concrete block, contractor is to patch and repair concrete or concrete block flush prior to installation of new tile work.
- B. Existing Facilities: Comply with building manager's requirements for using and protecting elevators, stairs, walkways, loading docks, building entries and other building facilities during selective demolition operations.
- C. Removed and Salvaged Items: Comply with the following:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area, to be determined.
 5. Protect items from damage during transport and storage.
- D. Removed and Reinstalled Items: Comply with the following:
1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 3. Protect items from damage during transport and storage.
 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
 5. Appliances shown on the drawings to be relocated should be cleaned and operational.
- E. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.
- F. Concrete: Demolish in small sections. Cut concrete to a depth of at least 3/4 inch at junctures with construction to remain, using power-driven saw. Dislodge concrete from reinforcement at perimeter of areas being demolished, cut reinforcement, and then remove remainder of concrete indicated for selective demolition. Neatly trim openings to dimensions indicated.

- G. Concrete: Demolish in sections. Cut concrete full depth at junctures with construction to remain and at regular intervals, using power-driven saw, then remove concrete between saw cuts.
- H. Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain, using power-driven saw, and then remove masonry between saw cuts.
- I. Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.
- J. Resilient Floor Coverings: Remove floor coverings and adhesive according to recommendations in RFCI-WP and its Addendum.
 - 1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.
- K. Roofing: Remove no more existing roofing than can be covered in one day by new roofing. Refer to applicable Division 7 Section for new roofing requirements.
- L. Lead based paint materials: All areas that require demolition containing Lead based paint materials shall be plasticized using 1 layer of 6 mil polyethylene and employ negative pressure ventilation. The contractor shall protect his/her workers under the OSHA guidelines during demolition and removal sequence. Prior to the removal of the demolished materials the debris shall be sampled using TCLP analysis. If the results of the analysis indicate less than 5 ppm Lead the material can be disposed of as construction debris. If the results of the analysis indicate 5 ppm or greater the owner will compensate the contractor for any increased disposal costs. The prior to removal of the plastic sheeting the area shall be wipe sampled by an independent laboratory employed by the owner to check for compliance. Any re-cleaning of the areas due to high lead levels shall be paid for by the owner as long as the contractor has complied with the protocol for demolition outlined in this paragraph.
- M. Air-Conditioning Equipment: Remove equipment without releasing refrigerants.

3.6 PATCHING AND REPAIRS

- A. General: Promptly repair damage to adjacent construction caused by selective demolition operations.
- B. Patching: Comply with Division 1 Section "Cutting and Patching."
- C. Repairs: Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
 - 1. Completely fill holes and depressions in existing masonry walls that are to remain with an approved masonry patching material applied according to manufacturer's written recommendations.
- D. Finishes: Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.
- E. Floors and Walls: Where walls or partitions that are demolished extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 1. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

2. Where patching occurs in a painted surface, apply primer and intermediate paint coats over patch and apply final paint coat over entire unbroken surface containing patch. Provide additional coats until patch blends with adjacent surfaces.
 3. Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
- F. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.7 DISPOSAL OF DEMOLISHED MATERIALS

- A. Add other specific disposal, cleanup, or removal requirements to suit Project.
- B. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
- C. Burning: Do not burn demolished materials.
- D. Burning: Burning of demolished materials will be permitted only at designated areas on Owner's property, providing required permits are obtained. Provide full-time monitoring for burning materials until fires are extinguished.
- E. Disposal: Transport demolished materials and dispose of at designated spoil areas on Owner's property.
- F. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.8 SELECTIVE DEMOLITION SCHEDULE

- A. Delete this Article if Drawings show all selective demolition notes and lists.
- B. Review all drawings for items to be demolished.

END OF SECTION

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Footings.
 - 2. Foundation walls.
 - 3. Slabs-on-grade.
 - 4. Suspended slabs.
 - 5. Concrete toppings.
 - 6. Building frame members.
 - 7. Building walls.
- B. Related Sections include the following:
 - 1. Division 03 Section "Architectural Concrete" for general building applications of specially finished formed concrete.
 - 2. Division 03 Section "Concrete Topping" for emery- and iron-aggregate concrete floor toppings.
 - 3. Division 31 Section "Earth Moving" for drainage fill under slabs-on-grade.
 - 4. Division 32 Section "Concrete Paving" for concrete pavement and walks.
 - 5. Division 32 Section "Decorative Concrete Paving" for decorative concrete pavement and walks.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. LEED Submittals:

1. Product Data for Credit MR 4.1: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
 - a. Include statement indicating costs for each product having recycled content.
 2. Design Mixtures for Credit ID 1.1: For each concrete mixture containing fly ash as a replacement for portland cement or other portland cement replacements and for equivalent concrete mixtures that do not contain portland cement replacements.
- C. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
1. Indicate amounts of mixing water to be withheld for later addition at Project site.
- D. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- E. Formwork Shop Drawings: Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
1. Shoring and Reshoring: Indicate proposed schedule and sequence of stripping formwork, shoring removal, and installing and removing reshoring.
- F. Welding certificates.
- G. Qualification Data: For testing agency.
- H. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
1. Aggregates.
- I. Material Certificates: For each of the following, signed by manufacturers:
1. Cementitious materials.
 2. Admixtures.
 3. Form materials and form-release agents.
 4. Steel reinforcement and accessories.
 5. Curing compounds.
 6. Bonding agents.
 7. Adhesives.
 8. Vapor retarders.
 9. Semirigid joint filler.
 10. Joint-filler strips.
 11. Repair materials.

- J. Floor surface flatness and levelness measurements to determine compliance with specified tolerances.
- K. Field quality-control test and inspection reports.
- L. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. Testing Agency Qualifications: An independent agency, **acceptable to authorities having jurisdiction**, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
 - 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
- E. Welding: Qualify procedures and personnel according to AWS D1.4, "Structural Welding Code-Reinforcing Steel."
- F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specification for Structural Concrete," **Sections 1 through 5.**
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.
 - 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 - 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
 - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
 - a. High-density overlay, Class 1 or better.
 - b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
 - c. Structural 1, B-B or better; mill oiled and edge sealed.
 - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- B. Plain-Steel Wire: ASTM A 82.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut bars true to length with ends square and free of burrs.
- B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
 - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.
 - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
 - 3. For zinc-coated reinforcement, use galvanized wire or dielectric-polymer-coated wire bar supports.

2.5 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type **I**, **white**. **Supplement with the following:**
 - a. Fly Ash: ASTM C 618, Class **C**.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Normal-Weight Aggregates: ASTM C 33, coarse aggregate or better, graded. Provide aggregates from a single source.
 - 1. Maximum Coarse-Aggregate Size: **1 inch**.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M **and potable**.

2.6 ADMIXTURES

- A. Air-Entraining Admixture: ASTM C 260.

- B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- C. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C 494/C 494M, Type C.
1. **Available Products:**
 - a. Boral Material Technologies, Inc.; Boral BCN.
 - b. Euclid Chemical Company (The); Eucon CIA.
 - c. Grace Construction Products, W. R. Grace & Co.; DCI.
 - d. Master Builders, Inc.; Rheocrete CNI.
 - e. Sika Corporation; Sika CNI.
- D. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.
1. **Available Products:**
 - a. Axim Concrete Technologies; Catexol 1000CI.
 - b. Boral Material Technologies, Inc.; Boral BCN2.
 - c. Grace Construction Products, W. R. Grace & Co.; DCI-S.
 - d. Master Builders, Inc.; Rheocrete 222+.
 - e. Sika Corporation; FerroGard-901.

2.7 VAPOR RETARDERS

- A. Plastic Vapor Retarder: ASTM E 1745, Class A. Include manufacturer's recommended adhesive or pressure-sensitive tape.
1. **Available Products:**
 - a. Fortifiber Corporation; Moistop Ultra A.
 - b. Raven Industries Inc.; Vapor Block **15.**
 - c. Reef Industries, Inc.; Griffolyn Type-**65G.**
- B. Plastic Vapor Retarder: ASTM E 1745, Class B. Include manufacturer's recommended adhesive or pressure-sensitive tape.

1. **Available Products:**

- a. Fortifiber Corporation; Moistop Ultra.
- b. Raven Industries Inc.; Vapor Block 10.
- c. Stego Industries, LLC; Stego Wrap, 15 mils.

- C. Plastic Vapor Retarder: ASTM E 1745, Class C, **or polyethylene sheet, ASTM D 4397, not less than 10 mils thick.** Include manufacturer's recommended adhesive or pressure-sensitive joint tape.

1. **Available Products:**

- a. Fortifiber Corporation; Moistop Plus.
- b. Raven Industries Inc.; Dura Skrim [6] [8].
- c. Reef Industries, Inc.; Griffolyn Type-[65] [85].
- d. Stego Industries, LLC; Stego Wrap, 10 mils.

- D. Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

- E. Fine-Graded Granular Material: Clean mixture of crushed stone, crushed gravel, and manufactured or natural sand; ASTM D 448, Size 10, with 100 percent passing a 3/8-inch sieve, 10 to 30 percent passing a No. 100 (0.15-mm) sieve, and at least 5 percent passing No. 200 sieve; complying with deleterious substance limits of ASTM C 33 for fine aggregates.

2.8 FLOOR AND SLAB TREATMENTS

- A. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or silicate materials and proprietary components; odorless; colorless; that penetrates, hardens, and densifies concrete surfaces.

1. **Products:**

- a. Burke by Edoco; Titan Hard.
- b. ChemMasters; Chemisil Plus.
- c. ChemTec International; ChemTec One.
- d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Intraseal.
- e. Curecrete Distribution Inc.; Ashford Formula.
- f. Dayton Superior Corporation; Day-Chem Sure Hard.
- g. Euclid Chemical Company (The); Euco Diamond Hard.
- h. Kaufman Products, Inc.; SureHard.
- i. L&M Construction Chemicals, Inc.; Seal Hard.
- j. Meadows, W. R., Inc.; Liqui-Hard.
- k. Metalcrete Industries; Floorsaver.
- l. Nox-Crete Products Group, Kinsman Corporation; Duranox.
- m. Symons Corporation, a Dayton Superior Company; Buff Hard.
- n. US Mix Products Company; US Spec Industraseal.
- o. Vexcon Chemicals, Inc.; Vexcon StarSeal PS.

2.9 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
1. Products:
- a. Axim Concrete Technologies; Cimfilm.
 - b. Burke by Edoco; BurkeFilm.
 - c. ChemMasters; Spray-Film.
 - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Aquafilm.
 - e. Dayton Superior Corporation; Sure Film.
 - f. Euclid Chemical Company (The); Eucobar.
 - g. Kaufman Products, Inc.; Vapor Aid.
 - h. Lambert Corporation; Lambco Skin.
 - i. L&M Construction Chemicals, Inc.; E-Con.
 - j. MBT Protection and Repair, Div. of ChemRex; Confilm.
 - k. Meadows, W. R., Inc.; Sealtight Evapre.
 - l. Metalcrete Industries; Waterhold.
 - m. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
 - n. Sika Corporation, Inc.; SikaFilm.
 - o. Symons Corporation, a Dayton Superior Company; Finishing Aid.
 - p. Unitex; Pro-Film.
 - q. US Mix Products Company; US Spec Monofilm ER.
 - r. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
1. Products:
- a. Anti-Hydro International, Inc.; AH Curing Compound #2 DR WB.
 - b. Burke by Edoco; Aqua Resin Cure.
 - c. ChemMasters; Safe-Cure Clear.
 - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; W.B. Resin Cure.
 - e. Dayton Superior Corporation; Day Chem Rez Cure (J-11-W).
 - f. Euclid Chemical Company (The); Kurez DR VOX.
 - g. Kaufman Products, Inc.; Thinfilm 420.
 - h. Lambert Corporation; Aqua Kure-Clear.
 - i. L&M Construction Chemicals, Inc.; L&M Cure R.
 - j. Meadows, W. R., Inc.; 1100 Clear.
 - k. Nox-Crete Products Group, Kinsman Corporation; Resin Cure E.

- l. Symons Corporation, a Dayton Superior Company; Resi-Chem Clear Cure.
 - m. Tamms Industries, Inc.; Horncure WB 30.
 - n. Unitex; Hydro Cure 309.
 - o. US Mix Products Company; US Spec Maxcure Resin Clear.
 - p. Vexcon Chemicals, Inc.; Certi-Vex Enviocure 100.
- F. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, nondissipating.
 - 1. **Available Products:**
 - a. Anti-Hydro International, Inc.; AH Clear Cure WB.
 - b. Burke by Edoco; Spartan Cote WB II.
 - c. ChemMasters; Safe-Cure & Seal 20.
 - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Cure and Seal WB.
 - e. Dayton Superior Corporation; Safe Cure and Seal (J-18).
 - f. Euclid Chemical Company (The); Aqua Cure VOX.
 - g. Kaufman Products, Inc.; Cure & Seal 309 Emulsion.
 - h. Lambert Corporation; Glazecote Sealer-20.
 - i. L&M Construction Chemicals, Inc.; Dress & Seal WB.
 - j. Meadows, W. R., Inc.; Vocomp-20.
 - k. Metalcrete Industries; Metcure.
 - l. Nox-Crete Products Group, Kinsman Corporation; Cure & Seal 150E.
 - m. Symons Corporation, a Dayton Superior Company; Cure & Seal 18 Percent E.
 - n. Tamms Industries, Inc.; Clearseal WB 150.
 - o. Unitex; Hydro Seal.
 - p. US Mix Products Company; US Spec Hydrasheen 15 percent
 - q. Vexcon Chemicals, Inc.; Starseal 309.
- G. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, 18 to 25 percent solids, nondissipating, **certified by curing compound manufacturer to not interfere with bonding of floor covering.**
 - 1. **Available Products:**
 - a. Burke by Edoco; Spartan Cote WB II 20 Percent.
 - b. ChemMasters; Safe-Cure Clear.
 - c. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; High Seal.
 - d. Dayton Superior Corporation; Safe Cure and Seal (J-19).
 - e. Euclid Chemical Company (The); Diamond Clear VOX.
 - f. Kaufman Products, Inc.; SureCure Emulsion.
 - g. Lambert Corporation; Glazecote Sealer-20.
 - h. L&M Construction Chemicals, Inc.; Dress & Seal WB.
 - i. MBT Protection and Repair, Div. of ChemRex; MasterKure-N-Seal VOC.
 - j. Meadows, W. R., Inc.; Vocomp-20.
 - k. Metalcrete Industries; Metcure 0800.
 - l. Nox-Crete Products Group, Kinsman Corporation; Cure & Seal 200E.
 - m. Sonneborn, Div. of ChemRex; Kure-N-Seal.
 - n. Symons Corporation, a Dayton Superior Company; Cure & Seal 18 Percent E.

- o. Tamms Industries, Inc.; Clearseal WB STD.
 - p. Unitex; Hydro Seal 18.
 - q. US Mix Products Company; US Spec Radiance UV-25
 - r. Vexcon Chemicals, Inc.; Starseal 0800.
- H. Clear, Solvent-Borne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. **Available Products:**
 - a. Burke by Edoco; Cureseal 1315.
 - b. ChemMasters; Spray-Cure & Seal Plus.
 - c. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Sealcure 1315.
 - d. Dayton Superior Corporation; Day-Chem Cure and Seal (J-22UV).
 - e. Euclid Chemical Company (The); Super Diamond Clear.
 - f. Kaufman Products, Inc.; Sure Cure 25.
 - g. Lambert Corporation; UV Super Seal.
 - h. L&M Construction Chemicals, Inc.; Lumiseal Plus.
 - i. Meadows, W. R., Inc.; CS-309/30.
 - j. Metalcrete Industries; Seal N Kure 0.
 - k. Sonneborn, Div. of ChemRex; Kure-N-Seal 5.
 - l. Tamms Industries, Inc.; LusterSeal 300.
 - m. Unitex; Solvent Seal 1315.
 - n. US Mix Products Company; US Spec CS-25
 - o. Vexcon Chemicals, Inc.; Certi-Vex AC 1315
- I. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound: ASTM C 1315, Type 1, Class A.
 - 1. **Available Products:**
 - a. Burke by Edoco; Cureseal 1315 WB.
 - b. ChemMasters; Polyseal WB.
 - c. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Sealcure 1315 WB.
 - d. Euclid Chemical Company (The); Super Diamond Clear VOX.
 - e. Kaufman Products, Inc.; Sure Cure 25 Emulsion.
 - f. Lambert Corporation; UV Safe Seal.
 - g. L&M Construction Chemicals, Inc.; Lumiseal WB Plus.
 - h. Meadows, W. R., Inc.; Vocomp-30.
 - i. Metalcrete Industries; Metcure 30.
 - j. Symons Corporation, a Dayton Superior Company; Cure & Seal 31 Percent E.
 - k. Tamms Industries, Inc.; LusterSeal WB 300.
 - l. Unitex; Hydro Seal 25.
 - m. US Mix Products Company; US Spec Radiance UV-25.
 - n. Vexcon Chemicals, Inc.; Vexcon Starseal 1315.

2.10 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: **ASTM D 1751, asphalt-saturated cellulosic fiber.**
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, **epoxy resin with a Type A shore durometer hardness of 80** per ASTM D 2240.
- C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
 - 1. Types **I and II, non-load bearing**, for bonding hardened or freshly mixed concrete to hardened concrete.
- E. Reglets: Fabricate reglets of not less than 0.0217-inch- thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.
- F. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.11 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
 - 4. Compressive Strength: Not less than **4000 psi** at 28 days when tested according to ASTM C 109/C 109M.
- B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
 - 4. Compressive Strength: Not less than **4000 psi** at 28 days when tested according to ASTM C 109/C 109M.

2.12 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: **Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 40 percent.][Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:**
 - 1. Fly Ash: 25 percent.
 - 2. Combined Fly Ash and Pozzolan: 25 percent.
 - 3. Ground Granulated Blast-Furnace Slag: 50 percent.
 - 4. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to **0.06** percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use **plasticizing** admixture in concrete, as required, for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 - 3. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
 - 4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.

2.13 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings: Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: **4000 psi** at 28 days.
 - 2. Slump Limit: **4 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture**, plus or minus 1 inch.
 - 3. Air Content: **5-1/2** percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
 - 4. Air Content: **6** percent, plus or minus 1.5 percent at point of delivery for **1-inch** nominal maximum aggregate size.
- B. Foundation Walls: Proportion normal-weight concrete mixture as follows:
 - 1. Minimum Compressive Strength: **4000 psi** at 28 days.
 - 2. Slump Limit: **4 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture**, plus or minus 1 inch.

3. Air Content: **5-1/2** percent, plus or minus 1.5 percent at point of delivery for 1-1/2-inch nominal maximum aggregate size.
4. Air Content: **6** percent, plus or minus 1.5 percent at point of delivery for **1-inch** nominal maximum aggregate size.

C. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:

1. Minimum Compressive Strength: **4000 psi** at 28 days.
2. Minimum Cementitious Materials Content: **520 lb/cu. yd.**
3. Slump Limit: **4 inches**, plus or minus 1 inch.
4. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.

2.14 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.15 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M **and ASTM C 1116**, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
1. **Class A, 1/8 inch** for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
1. Install keyways, reglets, recesses, and the like, for easy removal.
 2. Do not use rust-stained steel form-facing material.

- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. **Do not chamfer** exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for **24** hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

- A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
 - 1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.
- C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 VAPOR RETARDERS

- A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
 - 1. Lap joints 6 inches and seal with manufacturer's recommended tape.
- B. Bituminous Vapor Retarders: Place, protect, and repair vapor retarders according to manufacturer's written instructions.
- C. Granular Course: Cover vapor retarder with [**granular fill**] [**fine-graded granular material**], moisten, and compact with mechanical equipment to elevation tolerances of plus 0 inch or minus 3/4 inch.
 - 1. Place and compact a 1/2-inch- thick layer of fine-graded granular material over granular fill.

3.6 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.7 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
 - 3. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
 - 4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 - 5. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least **one-fourth** of concrete thickness as follows:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
 - 1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.

3.8 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Architect.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.
 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 4. Slope surfaces uniformly to drains where required.
 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- G. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.9 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces **not exposed to public view**.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
 - 1. Apply to concrete surfaces **exposed to public view**.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
 - 1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
- D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.10 FINISHING FLOORS AND SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighen until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces **exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system**.
 - 2. Finish surfaces to the following tolerances, according to ASTM E 1155, for a randomly trafficked floor surface:
 - a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15.
 - b. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade.
 - c. Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs.

- d. Specified overall values of flatness, F(F) 45; and of levelness, F(L) 35; with minimum local values of flatness, F(F) 30; and of levelness, F(L) 24.
- 3. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-foot- long straightedge resting on 2 high spots and placed anywhere on the surface does not exceed **[1/4 inch] [3/16 inch] [1/8 inch]**
- C. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces **where ceramic or quarry tile is to be installed by either thickset or thin-set method**. While concrete is still plastic, slightly scarify surface with a fine broom.
 - 1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.
- D. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
 - 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.
 - 2. After broadcasting and tamping, apply float finish.
 - 3. After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake floor hardener manufacturer and apply immediately after final finishing.

3.11 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.
- D. Steel Pan Stairs: Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.12 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.

- B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
 - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
 - c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project..
 - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer **unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.**
 - 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial

application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.13 LIQUID FLOOR TREATMENTS

- A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.
 - 1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
 - 2. Do not apply to concrete that is less than **three** days' old.
 - 3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.
- B. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions.

3.14 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 - 1. Defer joint filling until concrete has aged at least **six** month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.15 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Architect. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 - 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent

- has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 2. After concrete has cured at least 14 days, correct high areas by grinding.
 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
 5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
 7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Architect's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Architect's approval.

3.16 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Owner will engage a **special inspector and a qualified testing and inspecting agency** to perform field tests and inspections and prepare test reports.
- B. Testing and Inspecting: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.
- C. Inspections:
 - 1. Steel reinforcement placement.
 - 2. Steel reinforcement welding.
 - 3. Headed bolts and studs.
 - 4. Verification of use of required design mixture.
 - 5. Concrete placement, including conveying and depositing.
 - 6. Curing procedures and maintenance of curing temperature.
 - 7. Verification of concrete strength before removal of shores and forms from beams and slabs.
- D. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 - 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
 - 2. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 - 3. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 - 4. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 - 5. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
 - 6. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
 - b. Cast and field cure **two** sets of two standard cylinder specimens for each composite sample.
 - 7. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.

- b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
- 8. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
- 9. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- 10. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- 11. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- 12. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
- 13. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- 14. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION 033000

SECTION 042000: UNIT MASONRY**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes unit masonry assemblies consisting of the following:
 - 1. Concrete masonry units (CMUs).
 - 2. Face brick.
- B. See Division 5 Section "Metal Fabrications" for furnishing steel lintels for unit masonry.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for each type and color of exposed masonry units and mortars.
- C. Material Certificates: For each type of product indicated. Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards.
- D. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1.3 QUALITY ASSURANCE

- A. Sample Panels: Build sample panels to verify selections made under sample submittals and to demonstrate aesthetic effects. If found satisfactory by Architect, panel may be incorporated into the work.
 - 1. Build sample panels for each type of exposed unit masonry construction in sizes approximately to verify that new masonry matches adjacent existing masonry to remain.

1.4 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

PART 2: PRODUCTS**2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.

2.2 COLORS, TEXTURES, AND PATTERNS

- A. Exposed Masonry Units: Match existing adjacent masonry units.

2.3 CONCRETE MASONRY UNITS (CMUs)

- A. Shapes: Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.
- B. Concrete Masonry Units: ASTM C 90.
 - 1. Match existing adjacent concrete masonry units.

2.4 BRICK

- A. General: Provide shapes indicated and as follows:
 - 1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
- B. Face Brick: ASTM C 216, Grade MW or SW, Type FBS.
 - 1. Match existing adjacent brick.

2.5 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Masonry Cement: Not permitted.
- D. Mortar Pigments: Iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortar.
 - 1. Available Products:

- a. Bayer Corporation, Industrial Chemicals Div.; Bayferrox Iron Oxide Pigments.
 - b. Davis Colors; True Tone Mortar Colors.
 - c. Solomon Grind-Chem Services, Inc.; SGS Mortar Colors.
- E. Aggregate for Mortar: ASTM C 144.
 - 1. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
 - 2. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.
- F. Aggregate for Grout: ASTM C 404.
- G. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494/C 494M, Type C, and recommended by manufacturer for use in masonry mortar of composition indicated.
 - 1. Available Products:
 - a. Addiment Incorporated; Mortar Kick.
 - b. Euclid Chemical Company (The); Accelguard 80.
 - c. Grace Construction Products, a unit of W. R. Grace & Co. – Conn.; Morset.
 - d. Sonneborn, Div. of ChemRex; Trimix-NCA.
- H. Water: Potable.

2.6 REINFORCEMENT

- A. Masonry Joint Reinforcement: ASTM A 951; mill galvanized, carbon-steel wire for interior walls and hot-dip galvanized, carbon-steel wire for exterior walls.
 - 1. Wire Size for Side Rods: W1.7 or 0.148-inch diameter.
 - 2. Wire Size for Cross Rods: W1.7 or 0.148-inch diameter.
 - 3. Wire Size for Veneer Ties: W1.7 or 0.148-inch diameter.
 - 4. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
 - 5. Single-Wythe Masonry: Either ladder or truss type with single pair of side rods.
 - 6. Multiwythe Masonry:
 - a. Adjustable (two-piece) type, with one side rod at each face shell of backing wythe and with ties that extend into facing wythe. Ties engage eyes or slots in reinforcement and extend at least halfway through facing wythe but with at least 5/8-inch cover on outside face.
 - 7. Veneers Anchored with Seismic Masonry-Veneer Anchors: Single 0.188-inch-diameter, hot-dip galvanized, carbon-steel continuous wire.

2.7 TIES AND ANCHORS

- A. Materials:
 - 1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153/A 153M, Class B-2 coating.
 - 2. Steel Sheet, Galvanized after Fabrication: ASTM A 1008/A 1008M, Commercial Steel, hot-dip galvanized after fabrication to comply with ASTM A 153/A 153M.
- B. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.
- C. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches wide.
 - 1. Wire: Fabricate from 1/4-inch- diameter, hot-dip galvanized steel wire.
- D. Adjustable Anchors for Connecting to Structure: Provide anchors that allow vertical or horizontal adjustment but resist tension and compression forces perpendicular to plane of wall.
- E. Adjustable Masonry-Veneer Anchors
 - 1. General: Provide anchors that allow vertical adjustment but resist tension and compression forces perpendicular to plane of wall, for attachment over sheathing to wood or metal studs, and as follows:
 - a. Structural Performance Characteristics: Capable of withstanding a 100-lbf load in both tension and compression without deforming or developing play in excess of 0.05 inch.
 - 2. Seismic Masonry-Veneer Anchors: Units consisting of a metal anchor section and a connector section designed to engage a continuous wire embedded in the veneer mortar joint.
 - a. Fabricate wire connector sections from 0.188-inch- diameter, hot-dip galvanized, carbon-steel wire.

2.8 EMBEDDED FLASHING MATERIALS

- A. Metal Flashing: Provide metal flashing, where flashing is exposed or partly exposed and where indicated, complying with Division 7 Section "Sheet Metal Flashing and Trim."
 - 1. Metal Drip Edges: Fabricate from stainless steel. Extend at least 3 inches into wall and 1/2 inch out from wall, with outer edge bent down 30 degrees and hemmed.
 - 2. Metal Flashing Terminations: Fabricate from stainless steel. Extend at least 3 inches into wall and out to exterior face of wall. At exterior face of wall, bend

metal back on itself for 3/4 inch and down into joint 3/8 inch to form a stop for retaining sealant backer rod.

- B. Flexible Flashing: For flashing not exposed to the exterior, use the following, unless otherwise indicated:
 - 1. Copper-Laminated Flashing: 7-oz./sq. ft. copper sheet bonded with asphalt between 2 layers of glass-fiber cloth.
 - a. Available Products:
 - 1) Advanced Building Products Inc.; Copper Fabric Flashing.
 - 2) AFCO Products Inc.; Copper Fabric.
 - 3) Hohmann & Barnard, Inc.; H & B C-Fab Flashing.
 - 4) Phoenix Building Products; Type FCC-Fabric Covered Copper.
 - 5) Polytite Manufacturing Corp.; Copper Fabric Flashing.
 - 6) Sandell Manufacturing Co., Inc.; Copper Fabric Flashing.
 - 7) York Manufacturing, Inc.; York Copper Fabric Flashing.
- C. Solder and Sealants for Sheet Metal Flashings: As specified in Division 7 Section "Sheet Metal Flashing and Trim."
- D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer.

2.9 BITUMINOUS DAMPPROOFING

- A. Cavity Dampproofing: Provide Cold-Applied, Emulsified-Asphalt Dampproofing for Fibered Brush and Spray application: ASTM D 1227, Type II, Class 1

2.10 MISCELLANEOUS MASONRY ACCESSORIES

- A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; formulated from neoprene.
- B. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

2.11 MASONRY CLEANERS

- A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains from new masonry without damaging masonry. Use product approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

2.12 MORTAR AND GROUT MIXES

- A. General: Do not use admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
 2. Limit cementitious materials in mortar for exterior and reinforced masonry to portland cement and lime.
 3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.
- B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification.
1. For masonry below grade or in contact with earth, use Type S.
 2. For reinforced masonry, use Type S.
 3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.
- C. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products].
1. Pigments shall not exceed 10 percent of portland cement by weight.
 2. Pigments shall not exceed 5 percent of masonry cement by weight.
- D. Grout for Unit Masonry: Comply with ASTM C 476.
1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 1.15.1 in ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
 2. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143/C 143M.

PART 3: EXECUTION

3.1 INSTALLATION, GENERAL

- A. Use full-size units without cutting if possible. If cutting is required, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- B. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

- C. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested per ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.
- D. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:
 - 1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
 - 2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.

3.2 LAYING MASONRY WALLS

- A. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry to match existing adjacent masonry; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- B. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- C. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.
- D. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.3 MORTAR BEDDING AND JOINTING

- A. Lay hollow brick and concrete masonry units as follows:
 - 1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
 - 2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
 - 3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
 - 4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.
- B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated.

3.4 CAVITY WALLS

- A. Bond wythes of cavity walls together using one of the following methods:

1. Individual Metal Ties: Provide ties as shown installed in horizontal joints, but not less than one metal tie for 2.67 sq. ft. of wall area spaced not to exceed 24 inches o.c. horizontally and 16 inches o.c. vertically. Stagger ties in alternate courses. Provide additional ties within 12 inches of openings and space not more than 36 inches apart around perimeter of openings. At intersecting and abutting walls, provide ties at no more than 24 inches o.c. vertically.
 2. Masonry Joint Reinforcement: Installed in horizontal mortar joints.
 - a. Use adjustable (two-piece) type reinforcement[with continuous horizontal wire in facing wythe attached to ties.
 - b. Where one wythe is of clay masonry and the other of concrete masonry, use adjustable (two-piece) type reinforcement with continuous horizontal wire in facing wythe attached to ties to allow for differential movement regardless of whether bed joints align.
 3. Masonry Veneer Anchors: Comply with requirements for anchoring masonry veneers.
- B. Keep cavities clean of mortar droppings and other materials during construction. Bevel beds away from cavity, to minimize mortar protrusions into cavity. Do not attempt to trowel or remove mortar fins protruding into cavity.
- C. Coat cavity face of backup wythe to comply with “Bituminous Dampproofing.”

3.5 MASONRY JOINT REINFORCEMENT

- A. General: Install in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.
- B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

3.6 ANCHORING MASONRY TO STRUCTURAL MEMBERS

- A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:
1. Provide an open space not less than 1/2 inch in width between masonry and structural member, unless otherwise indicated.
 2. Anchor masonry to structural members with anchors embedded in masonry joints and attached to structure.
 3. Space anchors as indicated, but not more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

3.7 ANCHORING MASONRY VENEERS

- A. Anchor masonry veneers to wall framing and masonry backup with seismic masonry-veneer anchors to comply with the following requirements:

1. Fasten seismic anchors through sheathing to wall framing and to concrete and masonry backup with metal fasteners of type indicated. Use two fasteners.
2. Embed tie sections, connector sections and continuous wire in masonry joints.
3. Locate anchor sections to allow maximum vertical differential movement of ties up and down.
4. Space anchors as indicated, but not more than 16 inches o.c. vertically and 24 inches o.c. horizontally with not less than 1 anchor for each 2.67 sq. ft. of wall area. Install additional anchors within 12 inches of openings and at intervals, not exceeding 36 inches, around perimeter.

3.8 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

- A. General: Install embedded flashing and weep holes in masonry at lintels, and other obstructions to downward flow of water in wall, and where indicated.
- B. Install flashing as follows, unless otherwise indicated:
 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing as recommended by flashing manufacturer.
 2. At lintels, extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.
 3. Install metal drip edges beneath flexible flashing at exterior face of wall. Stop flexible flashing 1/2 inch back from outside face of wall and adhere flexible flashing to top of metal drip edge.
- C. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:
 1. Use open head joints to form weep holes.
 2. Space weep holes 24 inches o.c., unless otherwise indicated.
 3. Cover cavity side of weep holes with plastic insect screening at cavities insulated with loose-fill insulation.
- D. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in Part 2 "Miscellaneous Masonry Accessories" Article.
- E. Install vents in head joints in exterior wythes at spacing indicated. Use open head joints to form vents.

3.9 REINFORCED UNIT MASONRY INSTALLATION

- A. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602.
- B. Grouting: Do not place grout until entire height of masonry to be grouted has attained enough strength to resist grout pressure.
 - 1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.

3.10 CLEANING

- A. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- B. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes.
 - 2. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 - 3. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

1. Structural steel.
2. Architecturally exposed structural steel.
3. Prefabricated building columns.
4. Grout.

- B. Related Sections include the following:

1. Division 01 Section "Quality Requirements" for independent testing agency procedures and administrative requirements.
2. Division 05 Section "Steel Decking" for field installation of shear connectors.
3. Division 05 Section "Metal Fabrications" for and other metal items not defined as structural steel.
4. for surface preparation and priming requirements.
5. Division 13 Section "Metal Building Systems" for structural steel.

1.3 DEFINITIONS

- A. Structural Steel: Elements of structural-steel frame, as classified by AISC's "Code of Standard Practice for Steel Buildings and Bridges," that support design loads.
- B. Architecturally Exposed Structural Steel: Structural steel designated as architecturally exposed structural steel in the Contract Documents.

1.4 PERFORMANCE REQUIREMENTS

- A. Connections: Provide details of simple shear connections required by the Contract Documents to be selected or completed by structural-steel fabricator to withstand ASD-service loads indicated and comply with other information and restrictions indicated.
1. Select and complete connections using schematic details indicated and AISC's "Manual of Steel Construction, Load and Resistance Factor Design," Volume 2, Part 9.
 2. Engineering Responsibility: Fabricator's responsibilities include using a qualified professional engineer to prepare structural analysis data for structural-steel connections.

B. Construction: Type FR, fully restrained.

C. Construction: Type 1, rigid frame.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. LEED Submittal:

1. Product Data for Credit MR 4.1: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
 - a. Include statement indicating costs for each product having recycled content.

C. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
2. Include embedment drawings.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.
5. For structural-steel connections indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

D. Welding certificates.

E. Qualification Data: For Installer fabricator and testing agency.

F. Mill Test Reports: Signed by manufacturers certifying that the following products comply with requirements:

1. Structural steel including chemical and physical properties.
2. Bolts, nuts, and washers including mechanical properties and chemical analysis.
3. Direct-tension indicators.
4. Tension-control, high-strength bolt-nut-washer assemblies.
5. Shear stud connectors.
6. Shop primers.
7. Nonshrink grout.

G. Source quality-control test reports.

1.6 QUALITY ASSURANCE

A. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement or SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."

- B. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel."
- C. Comply with applicable provisions of the following specifications and documents:
1. AISC's "Code of Standard Practice for Steel Buildings and Bridges."
 2. AISC's "Seismic Provisions for Structural Steel Buildings" and "Supplement No. 2."
 3. AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."
 4. AISC's "Specification for the Design of Steel Hollow Structural Sections."
 5. AISC's "Specification for Allowable Stress Design of Single-Angle Members."
 6. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- D. Mockups: Build mockups of architecturally exposed structural steel to set quality standards for fabrication and installation.
1. Coordinate finish painting requirements with Division 09 painting Sections.
 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from erosion and deterioration.
1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.
 2. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.8 COORDINATION

- A. Furnish anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

- A. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.
- B. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than the following:
 - 1. W-Shapes: 60 percent.
 - 2. Channels, Angles-Shapes: 60 percent.
 - 3. Plate and Bar: 25 percent.
 - 4. Cold-Formed Hollow Structural Sections: 25 percent.
 - 5. Steel Pipe: 25 percent.
 - 6. All Other Steel Materials: 25 percent.
- C. W-Shapes: ASTM A 529/A 529M, Grade 50 (345).
- D. Channels, Angles-Shapes: ASTM A 529/A 529M, Grade 50.
- E. Plate and Bar: ASTM A 529/A 529M, Grade 50.
- F. Corrosion-Resisting Structural Steel: ASTM A 588/A 588M, Grade 50.
- G. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.
- H. Corrosion-Resisting Cold-Formed Hollow Structural Sections: ASTM A 847, structural tubing.
- I. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.
 - 1. Weight Class: Standard.
 - 2. Finish: Black, except where indicated to be galvanized.
- J. Medium-Strength Steel Castings: ASTM A 27/A 27M, Grade 65-35, carbon steel.
- K. High-Strength Steel Castings: ASTM A 148/A 148M, Grade 80-50, carbon or alloy steel.
- L. Welding Electrodes: Comply with AWS requirements.

2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.
 - 1. Finish: Plain.
 - 2. Direct-Tension Indicators: ASTM F 959, Type 325 compressible-washer type.

- a. Finish: Plain.
- B. High-Strength Bolts, Nuts, and Washers: ASTM A 490, Type 1, heavy hex steel structural bolts or tension-control, bolt-nut-washer assemblies with splined ends; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers, plain.
 - 1. Direct-Tension Indicators: ASTM F 959, Type 490, compressible-washer type, plain.
- C. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F 1852, Type 1, round head steel structural bolts with splined ends; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.
 - 1. Finish: Plain.
- D. Shear Connectors: ASTM A 108, Grades 1015 through 1020, headed-stud type, cold-finished carbon steel; AWS D1.1, Type B.
- E. Unheaded Anchor Rods: ASTM A 307, Grade A.
 - 1. Configuration: Hooked.
 - 2. Nuts: ASTM A 563 heavy hex carbon steel.
 - 3. Plate Washers: ASTM A 36/A 36M carbon steel.
 - 4. Washers: ASTM F 436 hardened carbon steel.
 - 5. Finish: Plain.
- F. Headed Anchor Rods: ASTM A 307, Grade A, straight.
 - 1. Nuts: ASTM A 563 heavy hex carbon steel.
 - 2. Plate Washers: ASTM A 36/A 36M carbon steel.
 - 3. Washers: ASTM F 436 hardened carbon steel.
 - 4. Finish: Plain.
- G. Threaded Rods: ASTM A 307, Grade A.
 - 1. Nuts: ASTM A 563 heavy hex carbon steel.
 - 2. Washers: ASTM A 36/A 36M carbon steel.
 - 3. Finish: Plain.
- H. Turnbuckles: ASTM A 108, Grade 1035, cold-finished carbon steel.
- I. Eye Bolts and Nuts: ASTM A 108, Grade 1030, cold-finished carbon steel.
- J. Sleeve Nuts: ASTM A 108, Grade 1018, cold-finished carbon steel.

2.3 PRIMER

- A. Primer: SSPC-Paint 25, Type I, iron oxide, zinc oxide, raw linseed oil, and alkyd.
- B. Primer: SSPC-Paint 25 BCS, Type I, iron oxide, zinc oxide, raw linseed oil, and alkyd.

C. Primer: SSPC-Paint 23, latex primer.

D. Primer: Fabricator's standard lead- and chromate-free, nonasphaltic, rust-inhibiting primer.

2.4 GROUT

A. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404, Size No. 2. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.

B. Metallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, metallic aggregate grout, mixed with water to consistency suitable for application and a 30-minute working time.

C. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.5 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."

1. Camber structural-steel members where indicated.
2. Identify high-strength structural steel according to ASTM A 6/ A 6M and maintain markings until structural steel has been erected.
3. Mark and match-mark materials for field assembly.
4. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Architecturally Exposed Structural Steel: Comply with fabrication requirements, including tolerance limits, of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel identified as architecturally exposed structural steel.

1. Fabricate with exposed surfaces smooth, square, and free of surface blemishes including pitting, rust, scale, seam marks, roller marks, rolled trade names, and roughness.
2. Remove blemishes by filling or grinding or by welding and grinding, before cleaning, treating, and shop priming.

C. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.

D. Bolt Holes: Cut, drill, mechanically thermal cut, or punch standard bolt holes perpendicular to metal surfaces.

E. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

- F. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.
- G. Steel Wall-Opening Framing: Select true and straight members for fabricating steel wall-opening framing to be attached to structural steel. Straighten as required to provide uniform, square, and true members in completed wall framing.
- H. Welded Door Frames: Build up welded door frames attached to structural steel. Weld exposed joints continuously and grind smooth. Plug-weld fixed steel bar stops to frames. Secure removable stops to frames with countersunk, cross-recessed head machine screws, uniformly spaced not more than 10 inches o.c., unless otherwise indicated.
- I. Holes: Provide holes required for securing other work to structural steel and for passage of other work through steel framing members.
 - 1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
 - 2. Base-Plate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
 - 3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.6 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
 - 1. Joint Type: Slip critical.
- B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
 - 1. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
 - 2. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.
 - 3. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent weld show-through on exposed steel surfaces.
 - a. Grind butt welds flush.
 - b. Grind or fill exposed fillet welds to smooth profile. Dress exposed welds.

2.7 PREFABRICATED BUILDING COLUMNS

- A. General: Prefabricated building columns consisting of load-bearing structural-steel members encased in manufacturer's standard insulating concrete for fire protection and enclosed in an outer non-load-bearing steel shell.

- B. Column Configuration: Provide columns of sizes and shapes indicated. Fabricate connections to comply with details shown or as required to suit type of structure indicated.
- C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering prefabricated building columns that may be incorporated into the Work include, but are not limited to, the following:
- D. Manufacturers: Subject to compliance with requirements, provide prefabricated building columns by one of the following:
 - 1. Black Rock Column, Inc.
 - 2. Dean, George H. Inc.
 - 3. Fire-Trol Division; Dean Lally L.P.

2.8 SHOP PRIMING

- A. Shop prime steel surfaces except the following:
 - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 - 2. Surfaces to be field welded.
 - 3. Surfaces to be high-strength bolted with slip-critical connections.
 - 4. Surfaces to receive sprayed fire-resistive materials.
 - 5. Galvanized surfaces.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
 - 1. SSPC-SP 2, "Hand Tool Cleaning."
 - 2. SSPC-SP 3, "Power Tool Cleaning."
 - 3. SSPC-SP 5/NACE No. 1, "White Metal Blast Cleaning."
 - 4. SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 - 5. SSPC-SP 7/NACE No. 4, "Brush-Off Blast Cleaning."
 - 6. SSPC-SP 8, "Pickling."
 - 7. SSPC-SP 10/NACE No. 2, "Near-White Blast Cleaning."
 - 8. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."
 - 9. SSPC-SP 14/NACE No. 8, "Industrial Blast Cleaning."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
 - 2. Apply two coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.

- D. Painting: Apply a 1-coat, nonasphaltic primer complying with SSPC-PS Guide 7.00, "Painting System Guide 7.00: Guide for Selecting One-Coat Shop Painting Systems," to provide a dry film thickness of not less than 1.5 mils.

2.9 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/ A 123M.

1. Fill vent holes and grind smooth after galvanizing.
2. Galvanize lintels attached to structural-steel frame and located in exterior walls.

2.10 SOURCE QUALITY CONTROL

- A. Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.

1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

- B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

- C. Bolted Connections: Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

- D. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1 and the following inspection procedures, at testing agency's option:

1. Liquid Penetrant Inspection: ASTM E 165.
2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
3. Ultrasonic Inspection: ASTM E 164.
4. Radiographic Inspection: ASTM E 94.

- E. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1 for stud welding and as follows:

1. Bend tests will be performed if visual inspections reveal either a less-than- continuous 360-degree flash or welding repairs to any shear connector.
2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments, with steel erector present, for compliance with requirements.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.
 - 1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."
- B. Base and Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.
 - 1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
 - 2. Weld plate washers to top of base plate.
 - 3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate before packing with grout.
 - 4. Promptly pack grout solidly between bearing surfaces and base or bearing plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
- C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of structure.

2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- E. Splice members only where indicated.
- F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.
- G. Do not use thermal cutting during erection.
- H. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.
- I. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.

3.4 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
 1. Joint Type: Slip critical.
- B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.
 1. Comply with AISC's "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design" for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
 2. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
 3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.
 4. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent weld show-through on exposed steel surfaces.
 - a. Grind butt welds flush.
 - b. Grind or fill exposed fillet welds to smooth profile. Dress exposed welds.

3.5 PREFABRICATED BUILDING COLUMNS

- A. Install prefabricated building columns to comply with AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design," manufacturer's written recommendations, and requirements of testing and inspecting agency that apply to the fire-resistance rating indicated.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.
- B. Bolted Connections: Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- C. Welded Connections: Field welds will be visually inspected according to AWS D1.1.
 - 1. In addition to visual inspection, field welds will be tested according to AWS D1.1 and the following inspection procedures, at testing agency's option:
 - a. Liquid Penetrant Inspection: ASTM E 165.
 - b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
 - c. Ultrasonic Inspection: ASTM E 164.
 - d. Radiographic Inspection: ASTM E 94.
- D. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1 for stud welding and as follows:
 - 1. Perform bend tests if visual inspections reveal either a less-than- continuous 360-degree flash or welding repairs to any shear connector.
 - 2. Conduct tests on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1.
- E. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

3.7 REPAIRS AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Touchup Painting: After installation, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted joists and accessories, bearing plates, and abutting structural steel.
 - 1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.
 - 2. Apply a compatible primer of same type as shop primer used on adjacent surfaces.
- C. Touchup Painting: Cleaning and touchup painting are specified in Division 09 painting Sections.

END OF SECTION 051200

SECTION 054000 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

- 1. Exterior load-bearing wall framing.
- 2. Interior load-bearing wall framing.
- 3. Exterior non-load-bearing wall framing.
- 4. Floor joist framing.
- 5. Roof trusses.
- 6. Roof rafter framing.
- 7. Ceiling joist framing.

- B. Related Sections include the following:

- 1. Division 05 Section "Metal Fabrications" for masonry shelf angles and connections.
- 2. Division 09 Section "Non-Structural Metal Framing" for interior non-load-bearing, metal-stud framing and ceiling-suspension assemblies.
- 3. Division 09 Section "Gypsum Board Shaft Wall Assemblies" for interior non-load-bearing, metal-stud-framed, shaft-wall assemblies.

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide cold-formed metal framing capable of withstanding design loads within limits and under conditions indicated.

- 1. Design Loads: As follows:

- a. Dead Loads: Weights of materials and construction.
- b. Live Loads: 20 psf
- c. Roof Loads: 25 psf
- d. Snow Loads: 65 psf
- e. Wind Loads: 40 psf

- 2. Deflection Limits: Design framing systems to withstand design loads without deflections greater than the following:

- a. Exterior Load-Bearing Wall Framing: Horizontal deflection of 1/360 of the wall height.

- b. Interior Load-Bearing Wall Framing: Horizontal deflection of $1/360$ of the wall height under a horizontal load of 5 lbf/sq. ft. (239 Pa).
 - c. Exterior Non-Load-Bearing Framing: Horizontal deflection of $1/360$ $1/600$ $1/720$ Insert ratio of the wall height.
 - d. Floor Joist Framing: Vertical deflection of $1/480$ for live loads and $1/360$ for total loads of the span.
 - e. Roof Trusses: Vertical deflection of $1/360$ of the span.
 - f. Scissor Roof Trusses: Horizontal deflection of 1-1/4 inches (32 mm) at reactions.
 - g. Roof Rafter Framing: Horizontal deflection of $1/360$ of the horizontally projected span.
 - h. Ceiling Joist Framing: Vertical deflection of $1/360$ of the span.
- 3. Design framing systems to provide for movement of framing members without damage or overstressing, sheathing failure, connection failure, undue strain on fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.
- 4. Design framing system to maintain clearances at openings, to allow for construction tolerances, and to accommodate live load deflection of primary building structure as follows:
 - a. Upward and downward movement of 1/2 inch.
- B. Cold-Formed Steel Framing, General: Design according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions."
 - 1. Headers: Design according to AISI's "Standard for Cold-Formed Steel Framing - Header Design."
 - 2. Design exterior non-load-bearing wall framing to accommodate horizontal deflection without regard for contribution of sheathing materials.
 - 3. Roof Trusses: Design according to AISI's "Standard for Cold-Formed Steel Framing - Truss Design."

1.4 SUBMITTALS

- A. Product Data: For each type of cold-formed metal framing product and accessory indicated.
- B. LEED Submittal:
 - 1. Product Data for Credit MR 4.1 and Credit MR 4.2: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content.
 - a. Include statement indicating costs for each product having recycled content.
- C. Shop Drawings: Show layout, spacings, sizes, thicknesses, and types of cold-formed metal framing; fabrication; and fastening and anchorage details, including mechanical fasteners. Show reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.

1. For cold-formed metal framing indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- D. Welding certificates.
- E. Qualification Data: For testing agency.
- F. Product Test Reports: From a qualified testing agency, unless otherwise stated, indicating that each of the following complies with requirements, based on evaluation of comprehensive tests for current products:
 1. Steel sheet.
 2. Expansion anchors.
 3. Power-actuated anchors.
 4. Mechanical fasteners.
 5. Vertical deflection clips.
 6. Horizontal drift deflection clips
 7. Miscellaneous structural clips and accessories.
- G. Research/Evaluation Reports: For cold-formed metal framing.

1.5 QUALITY ASSURANCE

- A. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.
- B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold-formed metal framing that are similar to those indicated for this Project in material, design, and extent.
- C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated.
- D. Product Tests: Mill certificates or data from a qualified independent testing agency indicating steel sheet complies with requirements, including base-metal thickness, yield strength, tensile strength, total elongation, chemical requirements, and metallic-coating thickness.
- E. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code--Steel," and AWS D1.3, "Structural Welding Code--Sheet Steel."
- F. Fire-Test-Response Characteristics: Where indicated, provide cold-formed metal framing identical to that of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.

- G. AISI Specifications and Standards: Comply with AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members" and its "Standard for Cold-Formed Steel Framing - General Provisions."
 - 1. Comply with AISI's "Standard for Cold-Formed Steel Framing - Truss Design."
 - 2. Comply with AISI's "Standard for Cold-Formed Steel Framing - Header Design."
- H. Comply with AISI's "Standard for Cold-Formed Steel Framing - Prescriptive Method for One and Two Family Dwellings."
- I. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Store cold-formed metal framing, protect with a waterproof covering, and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering cold-formed metal framing that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide cold-formed metal framing by one of the following:
 - 1. Allied Studco.
 - 2. AllSteel Products, Inc.
 - 3. California Expanded Metal Products Company.
 - 4. Clark Steel Framing.
 - 5. Consolidated Fabricators Corp.; Building Products Division.
 - 6. Craco Metals Manufacturing, LLC.
 - 7. Custom Stud, Inc.
 - 8. Dale/Incor.
 - 9. Design Shapes in Steel.
 - 10. Dietrich Metal Framing; a Worthington Industries Company.
 - 11. Formetal Co. Inc. (The).
 - 12. Innovative Steel Systems.
 - 13. MarinoWare; a division of Ware Industries.
 - 14. Quail Run Building Materials, Inc.
 - 15. SCAFCO Corporation.

16. Southeastern Stud & Components, Inc.
17. Steel Construction Systems.
18. Steeler, Inc.
19. Super Stud Building Products, Inc.
20. United Metal Products, Inc.

2.2 MATERIALS

- A. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.
- B. Steel Sheet: ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of grade and coating weight as follows:
 1. Grade: As required by structural performance.
 2. Coating: G60, A60, AZ50, or GF30.
- C. Steel Sheet for drift Clips: ASTM A 653/A 653M, structural steel, zinc coated, of grade and coating as follows:
 1. Grade: As required by structural performance.
 2. Coating: G90.

2.3 LOAD-BEARING WALL FRAMING

- A. Steel Studs: Manufacturer's standard C-shaped steel studs, of web depths indicated, punched, with stiffened flanges, and as follows:
 1. Minimum Base-Metal Thickness: 0.0966 inch.
 2. Flange Width: 1-3/8 inches.
- B. Steel Track: Manufacturer's standard U-shaped steel track, of web depths indicated, unpunched, with straight flanges, and as follows:
 1. Minimum Base-Metal Thickness: Matching steel studs.
 2. Flange Width: 1-1/4 inches.
- C. Steel Box or Back-to-Back Headers: Manufacturer's standard C-shapes used to form header beams, of web depths indicated, punched, with stiffened flanges, and as follows:
 1. Minimum Base-Metal Thickness: 0.0966 inch.
 2. Flange Width: 1-3/8 inches.
- D. Steel Double-L Headers: Manufacturer's standard L-shapes used to form header beams, of web depths indicated, and as follows:
 1. Minimum Base-Metal Thickness: 0.0966 inch.
 2. Top Flange Width: 1-1/2 inches.

2.4 ROOF TRUSSES

- A. Roof Truss Members: Manufacturer's standard C-shaped steel sections, of web depths indicated, unpunched, with stiffened flanges.
1. Minimum Base-Metal Thickness: 0.0966 inch.
 2. Flange Width: 1-5/8 inches, minimum.

2.5 ROOF-RAFTER FRAMING

- A. Steel Rafters: Manufacturer's standard C-shaped steel sections, of web depths indicated, unpunched, with stiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: 0.0966 inch.
 2. Flange Width: 1-5/8 inches, minimum.
- B. Built-up Members: Built-up members of manufacturer's standard C-shaped steel section, with stiffened flanges, nested into a U-shaped steel section joist track, with unstiffened flanges; unpunched; of web depths indicated; and as follows:
1. Minimum Base-Metal Thickness: Matching steel rafters.
 2. Flange Width: 1-5/8 inches, minimum.

2.6 CEILING JOIST FRAMING

- A. Steel Ceiling Joists: Manufacturer's standard C-shaped steel sections, of web depths indicated, punched with enlarged service holes, with stiffened flanges, and as follows:
1. Minimum Base-Metal Thickness: 0.0966 inch.
 2. Flange Width: 1-5/8 inches, minimum.

2.7 FRAMING ACCESSORIES

- A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003/A 1003M, Structural Grade, Type H, metallic coated, of same grade and coating weight used for framing members.
- B. Provide accessories of manufacturer's standard thickness and configuration, unless otherwise indicated, as follows:
1. Supplementary framing.
 2. Bracing, bridging, and solid blocking.
 3. Web stiffeners.
 4. Anchor clips.
 5. End clips.
 6. Foundation clips.
 7. Gusset plates.
 8. Stud kickers, knee braces, and girts.

9. Joist hangers and end closures.
10. Hole reinforcing plates.
11. Backer plates.

2.8 ANCHORS, CLIPS, AND FASTENERS

- A. Steel Shapes and Clips: ASTM A 36/A 36M, zinc coated by hot-dip process according to ASTM A 123/A 123M.
- B. Anchor Bolts: ASTM F 1554, Grade 36, threaded carbon-steel hex-headed bolts and carbon-steel nuts; and flat, hardened-steel washers; zinc coated by hot-dip process according to ASTM A 153/A 153M, Class C.
- C. Expansion Anchors: Fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 5 times design load, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
- D. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with capability to sustain, without failure, a load equal to 10 times design load, as determined by testing per ASTM E 1190 conducted by a qualified independent testing agency.
- E. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping steel drill screws.
 1. Head Type: Low-profile head beneath sheathing, manufacturer's standard elsewhere.
- F. Welding Electrodes: Comply with AWS standards.

2.9 MISCELLANEOUS MATERIALS

- A. Galvanizing Repair Paint: SSPC-Paint 20 or DOD-P-21035.
- B. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- C. Nonmetallic, Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage-compensating agents, and plasticizing and water-reducing agents, complying with ASTM C 1107, with fluid consistency and 30-minute working time.
- D. Shims: Load bearing, high-density multimonomer plastic, nonleaching.
- E. Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to match width of bottom track or rim track members.

2.10 FABRICATION

- A. Fabricate cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
 - 1. Fabricate framing assemblies using jigs or templates.
 - 2. Cut framing members by sawing or shearing; do not torch cut.
 - 3. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting as standard with fabricator. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, with screw penetrating joined members by not less than three exposed screw threads.
 - 4. Fasten other materials to cold-formed metal framing by welding, bolting, or screw fastening, according to Shop Drawings.
- B. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.
- C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 - 1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
 - 2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out-of-square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting substrates and abutting structural framing for compliance with requirements for installation tolerances and other conditions affecting performance.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Before sprayed fire-resistive materials are applied, attach continuous angles, supplementary framing, or tracks to structural members indicated to receive sprayed fire-resistive materials.
- B. After applying sprayed fire-resistive materials, remove only as much of these materials as needed to complete installation of cold-formed framing without reducing thickness of fire-resistive materials below that are required to obtain fire-resistance rating indicated. Protect remaining fire-resistive materials from damage.

- C. Install load bearing shims or grout between the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations to ensure a uniform bearing surface on supporting concrete or masonry construction.
- D. Install sealer gaskets to isolate the underside of wall bottom track or rim track and the top of foundation wall or slab at stud or joist locations.

3.3 INSTALLATION, GENERAL

- A. Cold-formed metal framing may be shop or field fabricated for installation, or it may be field assembled.
- B. Install cold-formed metal framing according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions" and to manufacturer's written instructions unless more stringent requirements are indicated.
- C. Install shop- or field-fabricated, cold-formed framing and securely anchor to supporting structure.
 - 1. Screw, bolt, or weld wall panels at horizontal and vertical junctures to produce flush, even, true-to-line joints with maximum variation in plane and true position between fabricated panels not exceeding 1/16 inch.
- D. Install cold-formed metal framing and accessories plumb, square, and true to line, and with connections securely fastened.
 - 1. Cut framing members by sawing or shearing; do not torch cut.
 - 2. Fasten cold-formed metal framing members by welding, screw fastening, clinch fastening, or riveting. Wire tying of framing members is not permitted.
 - a. Comply with AWS D1.3 requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
 - b. Locate mechanical fasteners and install according to Shop Drawings, and complying with requirements for spacing, edge distances, and screw penetration.
- E. Install framing members in one-piece lengths unless splice connections are indicated for track or tension members.
- F. Install temporary bracing and supports to secure framing and support loads comparable in intensity to those for which structure was designed. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.
- G. Do not bridge building expansion and control joints with cold-formed metal framing. Independently frame both sides of joints.
- H. Install insulation, specified in Division 07 Section "Thermal Insulation," in built-up exterior framing members, such as headers, sills, boxed joists, and multiple studs at openings, that are inaccessible on completion of framing work.

- I. Fasten hole reinforcing plate over web penetrations that exceed size of manufacturer's standard punched openings.
- J. Erection Tolerances: Install cold-formed metal framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
 - 1. Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.4 LOAD-BEARING WALL INSTALLATION

- A. Install continuous top and bottom tracks sized to match studs. Align tracks accurately and securely anchor at corners and ends, and at spacings as follows:
 - 1. Anchor Spacing: 24 inches or as shown on Shop Drawings.
- B. Squarely seat studs against top and bottom tracks with gap not exceeding of 1/8 inch between the end of wall framing member and the web of track. Fasten both flanges of studs to top and bottom tracks. Space studs as follows:
 - 1. Stud Spacing: As indicated on shop drawings.
- C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar configurations.
- D. Align studs vertically where floor framing interrupts wall-framing continuity. Where studs cannot be aligned, continuously reinforce track to transfer loads.
- E. Align floor and roof framing over studs. Where framing cannot be aligned, continuously reinforce track to transfer loads.
- F. Anchor studs abutting structural columns or walls, including masonry walls, to supporting structure as indicated.
- G. Install headers over wall openings wider than stud spacing. Locate headers above openings as indicated. Fabricate headers of compound shapes indicated or required to transfer load to supporting studs, complete with clip-angle connectors, web stiffeners, or gusset plates.
 - 1. Frame wall openings with not less than a double stud at each jamb of frame as indicated on Shop Drawings. Fasten jamb members together to uniformly distribute loads.
 - 2. Install runner tracks and jack studs above and below wall openings. Anchor tracks to jamb studs with clip angles or by welding, and space jack studs same as full-height wall studs.
- H. Install supplementary framing, blocking, and bracing in stud framing indicated to support fixtures, equipment, services, casework, heavy trim, furnishings, and similar work requiring attachment to framing.
 - 1. If type of supplementary support is not indicated, comply with stud manufacturer's written recommendations and industry standards in each case, considering weight or load resulting from item supported.

- I. Install horizontal bridging in stud system, spaced as indicated on Shop Drawings. Fasten at each stud intersection.
 - 1. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs with a minimum of 2 screws into each flange of the clip angle for framing members up to 6 inches deep.
 - 2. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
 - 3. Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.
- J. Install steel sheet diagonal bracing straps to both stud flanges, terminate at and fasten to reinforced top and bottom tracks. Fasten clip-angle connectors to multiple studs at ends of bracing and anchor to structure.
- K. Install miscellaneous framing and connections, including supplementary framing, web stiffeners, clip angles, continuous angles, anchors, and fasteners, to provide a complete and stable wall-framing system.

3.5 EXTERIOR NON-LOAD-BEARING WALL INSTALLATION

- A. Install continuous tracks sized to match studs. Align tracks accurately and securely anchor to supporting structure as indicated.
- B. Fasten both flanges of studs to top and bottom track, unless otherwise indicated. Space studs as follows:
 - 1. Stud Spacing: As indicated on shop drawings.
- C. Set studs plumb, except as needed for diagonal bracing or required for nonplumb walls or warped surfaces and similar requirements.
- D. Isolate non-load-bearing steel framing from building structure to prevent transfer of vertical loads while providing lateral support.
 - 1. Install single-leg deflection tracks and anchor to building structure.
 - 2. Install double deep-leg deflection tracks and anchor outer track to building structure.
 - 3. Connect vertical deflection clips to bypassing studs and anchor to building structure.
 - 4. Connect drift clips to cold formed metal framing and anchor to building structure.
- E. Install horizontal bridging in wall studs, spaced in rows indicated on Shop Drawings but not more than 48 inches apart. Fasten at each stud intersection.
 - 1. Top Bridging for Single Deflection Track: Install row of horizontal bridging within 12 inches of single deflection track. Install a combination of flat, taut, steel sheet straps of width and thickness indicated and stud or stud-track solid blocking of width and thickness matching studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.

- a. Install solid blocking at centers indicated on Shop Drawings.
 - 2. Bridging: Cold-rolled steel channel, welded or mechanically fastened to webs of punched studs.
 - 3. Bridging: Combination of flat, taut, steel sheet straps of width and thickness indicated and stud-track solid blocking of width and thickness to match studs. Fasten flat straps to stud flanges and secure solid blocking to stud webs or flanges.
 - 4. Bridging: Proprietary bridging bars installed according to manufacturer's written instructions.
- F. Install miscellaneous framing and connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, fasteners, and stud girts, to provide a complete and stable wall-framing system.

3.6 TRUSS INSTALLATION

- A. Install, bridge, and brace trusses according to Shop Drawings and requirements in this Section.
- B. Truss Spacing: As indicated on shop drawings.
- C. Do not alter, cut, or remove framing members or connections of trusses.
- D. Erect trusses with plane of truss webs plumb and parallel to each other, align, and accurately position at spacings indicated.
- E. Erect trusses without damaging framing members or connections.
- F. Align webs of bottom chords and load-bearing studs or continuously reinforce track to transfer loads to structure. Anchor trusses securely at all bearing points.
- G. Install continuous bridging and permanently brace trusses as indicated on Shop Drawings and designed according to LGSEA's Technical Note 551e, "Design Guide for Permanent Bracing of Cold-Formed Steel Trusses."

3.7 FIELD QUALITY CONTROL

- A. Testing: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Field and shop welds will be subject to testing and inspecting.
- C. Testing agency will report test results promptly and in writing to Contractor and Architect.
- D. Remove and replace work where test results indicate that it does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.8 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed metal framing is without damage or deterioration at time of Substantial Completion.

END OF SECTION 054000

SECTION 055000: METAL FABRICATIONS**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes the following:
 - 1. Miscellaneous steel framing and supports.
 - 2. Loose steel lintels.
- B. See Division 5 Section "Pipe Railings" for metal pipe railings and guards.

1.2 SUBMITTALS

- A. Shop Drawings: Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
- B. Templates: For anchors and bolts.

PART 2: PRODUCTS**2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.
 - 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 - 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 METALS

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces without blemishes.
- B. Ferrous Metals:
 - 1. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
 - 2. Channels, Angles, M, S-Shapes: ASTM A 36/A 36M.
 - 3. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.

- C. Finish: Hot-dip zinc coating, ASTM A 153/A 153M, Class C.

2.3 FASTENERS

- A. General: Hot-dip zinc coated fasteners, at exterior walls and exterior use

2.4 MISCELLANEOUS MATERIALS

- A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI #79.
- B. Galvanizing Repair Paint: SSPC-Paint 20, high-zinc-dust-content paint for reglazing welds in steel.
- C. Non-shrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107.
- D. Concrete Materials and Properties: Comply with requirements in Division 3 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, ready-mix concrete with a minimum 28-day compressive strength of 3500 psi, unless otherwise indicated.

2.5 FABRICATION

- A. General: Preassemble items in the shop to greatest extent possible. Use connections that maintain structural value of joined pieces.
 - 1. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.
 - 2. Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove welding flux immediately. Finish exposed welds smooth and blended.
 - 3. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, not less than 24 inches o.c.
- B. Miscellaneous Framing and Supports: Provide steel framing and supports not specified in other Sections as needed to complete the Work. Fabricate units from steel shapes, plates, and bars of welded construction. Cut, drill, and tap units to receive hardware, hangers, and similar items.
- C. Loose Steel Lintels: Fabricate loose steel lintels from steel angles and shapes of size indicated for openings and recesses in masonry walls and partitions at locations indicated.
 - 1. Lintels in Exterior Walls: Hot-dip galvanizes.

2.6 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish metal fabrications after assembly.
- B. Steel and Iron Finishes:
 - 1. Hot-dip galvanize items as indicated to comply with ASTM A 123/A 123M or ASTM A 153/A 153M as applicable.
 - 2. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting," for shop painting.

PART 3: EXECUTION

3.1 INSTALLATION

- A. General: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, with edges and surfaces level, plumb, and true.
 - 1. Fit exposed connections accurately together. Weld connections that are not to be left as exposed joints but cannot be shop welded. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication.
 - 2. Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.
- B. Touch up surfaces and finishes after erection.
 - 1. Painted Surfaces: Clean field welds, bolted connections, and abraded areas and touch up paint with the same material as used for shop painting.
 - 2. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION

SECTION 055100 - METAL STAIRS**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Preassembled steel stairs with abrasive-coating-finished formed-metal treads. All tread finishes by Contractor.
 - 2. Industrial-type stairs with steel grating treads.
 - 3. Steel tube railings attached to metal stairs.
 - 4. Steel tube handrails attached to walls adjacent to metal stairs.
 - 5. Railing gates at the level of exit discharge.

- B. Related Sections:

- 1. Section 055213 "Pipe and Tube Railings" for pipe and tube railings not attached to metal stairs or to walls adjacent to metal stairs.
 - 2. Section 061000 "Rough Carpentry" for wood blocking for anchoring railings.

- C. Reference Standards:

- 1. American Disability Act (ADA)
 - a. ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1
 - 2. American Institute of Steel Construction
 - a. Manual of Steel Construction
 - b. Code of Standard Practice
 - 3. American Iron and Steel Institute (AISI):
 - a. AISI 121: Standard Definitions for Use in the Design of Steel Structures.
 - 4. American National Standards Institute (ANSI):

- a. ANSI A117.1: Accessible and Usable Buildings and Facilities Standards.
- 5. ASTM International formerly American Standards for Testing and Materials (ASTM):
 - a. ASTM 1008: Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardened.
 - b. ASTM A1011/A 1011M: Standard Specification for Steel, Carbon, Hot-Rolled Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
 - c. ASTM A 123: Standard Specification for Zinc (Hot-Dip Galvanized) coatings on Iron and Steel Products.
 - d. ASTM A 153/A 153M: Standard Specification for Zinc Coating (Hot-Dip Galvanized) on Iron and Steel Hardware.
 - e. ASTM A 283/A 283M: Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates.
 - f. ASTM A 36/A 36M: Standard Specification for Carbon Structural Steel.
 - g. ASTM A 47/A 47M: Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process.
 - h. ASTM A 513: Standard Specification for Electric-Resistance-Welded Carbon and Alloy Mechanical Tubing.
 - i. ASTM A 526/A 536M: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Commercial Quality.
 - j. ASTM A 53: Standard Specification for Pipe, Steel, Black and Hot Dipped, Zinc-Coated, Welded and Seamless.
 - k. ASTM A 6/A 6M: Standard specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling.

- l. ASTM A 780/A 780M: Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
 - m. ASTM A 786: Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates.
 - n. ASTM E 894: Standard Test Method for Anchorage of Permanent Metal Railing Systems and Rails for Buildings.
 - o. ASTM E935: Standard Test Method for Performance of Permanent Metal Railing Systems and Rails for Buildings.
- 6. American Welding Society (AWS):
 - a. AWS D1.1/D1.1M: Structural Welding Code - Steel.
 - b. AWS D1.3: Structural Welding Code - Sheet Steel.
- 7. International Code Council
 - a. ICC International Building Code: Check local code enforcement for which edition has been adopted.
- 8. Master Painters Institute(MPI):
 - a. MPI #20: Epoxy Zinc-Rich Primer
- 9. National Association of Architectural Metal Manufacturers (NAAMM):
 - a. AMP 500-06: Metal Finishes Manual
 - b. AMP 510-92: Metal Stair Manual
 - c. MBG 531-09: Metal Bar Grating Manual
- 10. New York City Building Code Reference Standard:
 - a. RS 6-1: Photoluminescent Exit Path Markings.

- b. RS 6-1A: Additional Standards as Required by Reference Standard RS 601 for Photoluminescent Exit Path Markings

11. Society for Protective Coatings (SSPC):

- a. SSPC-PC3: Power Tool Cleaning
- b. SSPC Paint 20: Zinc-Rich Coating
- c. SSPC Paint 25: Zinc Oxide, Alkyd, Linseed Oil Primer for Use Over Hand Cleaned Steel Type 1 and Type 2
- d. SSPC-SP 2: Hand Tool Cleaning
- e. SSPC-SP 3: Power Tool Cleaning
- f. SSPC-SP 6/Nace No. 3: Commercial Blast Cleaning

12. Miscellaneous:

- a. Local construction codes and guidelines enforced by the local code officials having jurisdiction over code enforcement.

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance of Stairs: Metal stairs shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.
 - 1. Uniform Load: 100 lbf/sq. ft. (4.79 kN/sq. m).
 - 2. Concentrated Load: 300 lbf (1.33 kN) applied on an area of 4 sq. in. (2580 sq. mm).
 - 3. Uniform and concentrated loads need not be assumed to act concurrently.
 - 4. Stair Framing: Capable of withstanding stresses resulting from railing loads in addition to loads specified above.
 - 5. Limit deflection of treads, platforms, and framing members to L/240 or 1/4 inch (6.4 mm), whichever is less.
- B. Structural Performance of Railings: Railings shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated.
 - 1. Handrails and Top Rails of Guards:
 - a. Uniform load of 50 lbf/ ft. (0.73 kN/m) applied in any direction.
 - b. Concentrated load of 200 lbf (0.89 kN) applied in any direction.

- c. Uniform and concentrated loads need not be assumed to act concurrently.
 - 2. Infill of Guards:
 - a. Concentrated load of 50 lbf (0.22 kN) applied horizontally on an area of 1 sq. ft. (0.093 sq. m).
 - b. Infill load and other loads need not be assumed to act concurrently.
 - C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
 - D. Seismic Performance: Metal stairs shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
 - 1. Component Importance Factor is 1.5.
- 1.4 ACTION SUBMITTALS
- A. Product Data: For metal stairs and the following:
 - 1. Grating treads.
 - 2. Paint products.
 - 3. Erection drawings (Hard/Electronic copies).
 - B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - C. Samples for Initial Selection: For products involving selection of color, texture, or design.
 - D. Samples for Verification: For the following products, in manufacturer's standard sizes:
 - 1. Grating treads.
 - E. Engineering calculations and stamped construction documents provided by a third party.
- 1.5 INFORMATIONAL SUBMITTALS
- A. Welding certificates.
 - B. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.
 - C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for stairs and railings.
 - 1. Test railings according ASTM E 894 and ASTM E 935.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall have produced the types of stair, platforms and railing systems specified in this section for not less than five (5) years.
- B. Installer Qualifications: Fabricator of products.
- C. NAAMM Stair Standard: Comply with "Recommended Voluntary Minimum Standards for Fixed Metal Stairs" in NAAMM AMP 510, "Metal Stairs Manual," for class of stair designated, unless more stringent requirements are indicated.
 - 1. Preassembled Stairs: Commercial class.
 - 2. Industrial-Type Stairs: Industrial class.
- D. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- E. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
 - 2. AWS D1.3, "Structural Welding Code - Sheet Steel."

1.7 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Contractor to coordinate, provide and install all anchors for metal stair erection. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- C. Contractor to coordinate locations of hanger rods and struts with other work so that they will not encroach on required stair width and will be within the fire-resistance-rated stair enclosure.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- C. Steel Tubing: ASTM A 513.
- D. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- E. Steel Bars for Grating Treads: ASTM A 36/A 36M or steel strip, ASTM A 1011/A 1011M or ASTM A 1018/A 1018M.
- F. Wire Rod for Grating Crossbars: ASTM A 510 (ASTM A 510M).
- G. Uncoated, Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, structural steel, Grade 30 (Grade 205), unless another grade is required by design loads.
- H. Galvanized-Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating, structural steel, Grade 33 (Grade 230), unless another grade is required by design loads.
- I. Expanded-Metal, Carbon Steel: ASTM F 1267, Type I (expanded), Class 1 (uncoated).
- J. Woven-Wire Mesh: Intermediate-crimp, square pattern, 2-inch (50-mm) woven-wire mesh, made from 0.135-inch (3.5-mm) nominal diameter wire complying with ASTM A 510 (ASTM A 510M).

2.3 FASTENERS

Note: All anchoring fasteners are provided and installed by the Contractor. The Manufacturer shall provide only product-related fasteners.

- A. General: Provide zinc-plated fasteners with coating complying with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 12 for exterior use, and Class Fe/Zn 5 where built into exterior walls. Select fasteners for type, grade, and class required.
- B. Post-Installed Anchors: Torque-controlled expansion 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 E 488, conducted by a qualified independent testing agency.
 - 1. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B 633 or ASTM F 1941 (ASTM F 1941M), Class Fe/Zn 5, unless otherwise indicated.

2. Material for Exterior Locations and Where Stainless Steel is Indicated: Alloy Group 1 (A1) stainless-steel bolts, ASTM F 593 (ASTM F 738M), and nuts, ASTM F 594 (ASTM F 836M).

2.4 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Low-Emitting Materials: Paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Shop Primers: Provide primers that comply with Section 099113 "Interior Painting."
- D. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
 1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- E. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

2.5 FABRICATION, GENERAL

- A. Stringers shall be cut and formed from a single piece of stock for the full, design length. Splicing shall not be permitted.
- B. Risers shall be solid and equally spaced to within 3/16" of any adjacent riser and within 3/8" of any two non-adjacent risers on the stair.
- C. All closed tubes that require hot dip galvanizing will include an appropriately sized drain hole.
- D. Provide complete stair assemblies, including metal framing, hangers, struts, railings, clips, brackets, bearing plates, and other components necessary to support and anchor stairs and platforms on supporting structure.
 1. Join components by welding unless otherwise indicated.
 2. Use connections that maintain structural value of joined pieces.
- E. Preassembled Stairs: Assemble stairs in shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Preassembled Stairs come either treads to stringers or rail to stringer with bolt in treads.

- F. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch (1 mm) unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- G. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- H. Form exposed work with accurate angles and surfaces and straight edges.
- I. Weld connections to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. Weld exposed corners and seams continuously unless otherwise indicated.
 - 5. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 3 welds: partially dressed weld with spatter removed.
- J. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use carriage bolts unless otherwise indicated. Locate joints where least conspicuous.
- K. Fabricate joints that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

2.6 STEEL-FRAMED STAIRS

- A. Manufacturers: Provide products by the manufacturer listed below:
 - 1. Orange County Iron Works LLC or approved equal.
 - a. Contact Information: Orange County Iron Works LLC
36 Maybrook Road
Montgomery, NY 12549
Phone: (845) 457-1077
Web: www.ocillc.com
- B. Stair Framing:
 - 1. Fabricate stringers of steel channels.
 - a. Provide closures for exposed ends of channel stringers.
 - 2. Construct platforms of steel channel headers and miscellaneous framing members as needed to comply with performance requirements.

3. Weld stringers to headers; weld framing members to stringers and headers
 4. Where masonry walls support metal stairs, provide temporary supporting struts designed for erecting steel stair components before installing masonry.
- C. Metal Bar-Grating Stairs: Form treads and platforms to configurations shown from metal bar grating; fabricate to comply with NAAMM MBG 531, "Metal Bar Grating Manual."
1. Fabricate treads and platforms from welded steel grating with 1-1/4-by-3/16-inch (32-by-5-mm) bearing bars at 15/16 inch (24 mm) o.c. and crossbars at 4 inches (100 mm) o.c.
 2. Fabricate treads and platforms from welded steel grating with openings in gratings no more than 3/4 inch (19 mm) in least dimension.
 3. Surface: Serrated.
 4. Finish: Painted.
 5. Fabricate grating treads with rolled-steel floor plate nosing and with steel angle or steel plate carrier at each end for stringer connections. Secure treads to stringers with bolts.
 6. Fabricate grating platforms with nosing matching that on grating treads. Provide toeplates at open-sided edges of grating platforms. Weld grating to platform framing.

2.7 STAIR RAILINGS

- A. Comply with applicable requirements in Section 055213 "Pipe and Tube Railings."
1. Fabricate
 2. Rails may be bent at corners, rail returns, and wall returns, instead of using prefabricated fittings.
 3. Connect posts to stair framing by direct welding unless otherwise indicated.
- B. Steel Tube Railings: Fabricate railings to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of tube, post spacings, and anchorage, but not less than that needed to withstand indicated loads.
1. Rails and Posts: 1-1/2-inch- (38-mm-) square top and bottom rails and 1-1/2-inch- (38-mm-) square posts.
 2. Picket Infill: 3/4-inch square pickets spaced less than 4 inches (100 mm) clear.
 3. Mesh Infill: Welded wire mesh welded into 1-by-1/2-by-1/8-inch (25-by-13-by-3-mm) steel channel frames. Orient wire mesh with wires horizontal and vertical.

- C. Welded Connections: Fabricate railings with welded connections. Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Finish welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Type 3 welds: partially dressed weld with spatter removed.
- D. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- E. Close exposed ends of railing members with prefabricated end fittings.
- F. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch (6 mm) or less.
- G. Cap handrail return if exposed.
- H. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges and miscellaneous fittings for interconnecting components and for attaching to other work. Furnish inserts and other anchorage devices for connecting to concrete or masonry work.
 - 1. Connect posts to stair framing by direct welding unless otherwise indicated.
 - 2. For galvanized railings, provide stainless steel fittings, brackets, fasteners, sleeves, and other ferrous-metal components.
 - 3. For nongalvanized railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves.

2.8 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal stairs after assembly.
- C. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153/A 153M for steel and iron hardware and with ASTM A 123/A 123M for other steel and iron products.
 - 1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
 - 2. Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

- D. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with the following.
 - 1. Interior Stairs: SSPC-SP 3, "Power Tool Cleaning."
- E. Apply shop primer to uncoated surfaces of metal stair components, except those with galvanized finishes and those to be embedded in concrete or masonry unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

PART 3 - EXECUTION

Note: All planning, coordination and execution regarding the erection of the stair/stairs to be performed by Project Contractor.

3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal stairs to in-place construction. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.
- C. Install metal stairs by welding stair framing to steel structure or to weld plates cast into concrete unless otherwise indicated.
- D. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- E. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- F. Field Welding: Comply with requirements for welding in "Fabrication, General" Article.
- G. Place and finish concrete fill for treads and platforms to comply with Section 033000 "Cast-in-Place Concrete."
 - 1. Install abrasive nosings with anchors fully embedded in concrete. Center nosings on tread width.

3.2 INSTALLING METAL STAIRS WITH GROUTED BASEPLATES

- A. Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of baseplates.
- B. Set steel stair baseplates on wedges, shims, or leveling nuts. After stairs have been positioned and aligned, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout.
 - 1. Use nonmetallic, nonshrink grout unless otherwise indicated.
 - 2. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.

3.3 INSTALLING RAILINGS

- A. Adjust railing systems before anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated or, if not indicated, as required by design loads. Plumb posts in each direction. Secure posts and rail ends to building construction as follows:
 - 1. Anchor posts to steel by welding directly to steel supporting members.
 - 2. Anchor handrail ends to concrete and masonry with steel round flanges welded to rail ends and anchored with postinstalled anchors and bolts.
- B. Attach handrails to wall with wall brackets. Use type of bracket with predrilled hole for exposed bolt anchorage. Provide bracket with 2-1/4-inch clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads. Secure wall brackets to building construction as required to comply with performance requirements.

3.4 ADJUSTING AND CLEANING

- A. Touchup 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 to comply with SSPC-PA 1 for touching up shop-painted surfaces.
 - 1. Apply by brush or spray to provide a minimum 2.0-mil (0.05-mm) dry film thickness.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in [Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."] [Section 099600 "High-Performance Coatings."]
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION 055100

SECTION 055213 – PIPE & TUBE RAILINGS**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes the following:

1. Steel pipe railings and guards.

1.2 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails:
 - a. Uniform load of 50 lbf/ ft. applied in any direction.
Concentrated load of 200 lbf applied in any direction.
 - b. Uniform and concentrated loads need not be assumed to act concurrently.

1.3 SUBMITTALS

- A. Product Data: Support bracket and paint products.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
1. For installed products indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
- C. Samples: For each exposed finish required.

PART 2 - PRODUCTS**2.1 METALS**

- A. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.
- B. Steel and Iron:
1. Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn).
 2. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.
 3. Plates, Shapes, and Bars: ASTM A 36/A 36M.
 4. Castings: Either gray or malleable iron, unless otherwise indicated.

- a. Gray Iron: ASTM A 48/A 48M, Class 30, unless another class is indicated or required by structural loads.
- b. Malleable Iron: ASTM A 47/A 47M.

2.2 MISCELLANEOUS MATERIALS

- A. Wall Brackets: Provide "Style D" Round Saddle type wall brackets # 4581 as manufactured by Wagner, R & B, Inc.; a division of the Wagner Companies, Tel: 888-243-6914; Web: www.shopwagner.com ; or an equivalent as approved by the Architect. Bracket to provide minimum vertical clearance between underside of handrail and bracket arm of 1½".
- B. Fasteners: Provide concealed fasteners, unless unavoidable or standard for railings indicated.
 - 1. Steel Railings: Plated steel fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating.
- C. Anchors: Provide torque-controlled expansion anchors, fabricated from corrosion-resistant materials with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry and equal to four times the load imposed when installed in concrete, as determined by testing per ASTM E 488.
- D. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- E. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.
- F. Grout and Anchoring Cement: Factory-packaged, nonshrink, nonmetallic grout complying with ASTM C 1107; or water-resistant, nonshrink anchoring cement; recommended by manufacturer for exterior use.

2.3 FABRICATION

- A. General: Fabricate railings to comply with design, dimensions, and details indicated, but not less than that required to support structural loads.
- B. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
- C. Nonwelded Connections: Connect members with concealed mechanical fasteners and fittings.
- D. Form changes in direction by bending.
- E. Form curves by bending in jigs to produce uniform curvature; maintain cross section of member throughout bend without cracking or otherwise deforming exposed surfaces.
- F. Close exposed ends of railing members with prefabricated end fittings.
- G. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated.

- H. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work, unless otherwise indicated.

2.4 FINISHES

- A. Steel and Iron:
 - 1. Shop-Primed Steel Finish: Prepare to comply with SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning" and apply primer to comply with SSPC-PA 1.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Perform cutting, drilling, and fitting required for installing railings. Set railings accurately in location, alignment, and elevation.
 - 1. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 - 2. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- B. Anchor posts in concrete by inserting into core-drilled holes and grouting annular space.
- C. Anchor posts to metal surfaces with oval flanges.
- D. Attach handrails to wall with wall brackets.
 - 1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
 - 2. For wood stud partitions, use hanger or lag bolts set into wood backing between studs.
 - 3. For steel-framed partitions, fasten brackets with toggle bolts installed through flanges of steel framing or through concealed steel reinforcements.
- E. Adjusting and Cleaning:
 - 1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop painting.

END OF SECTION

SECTION 061000: ROUGH CARPENTRY**PART 1: GENERAL****1.1 SUMMARY**

This Section includes the following:

- A. Framing with dimension lumber
- B. Wood furring, grounds, nailers, and blocking
- C. Sheathing
- D. Subflooring
- E. Fasteners and metal framing anchors
- F. Roof curbs, cants, perimeter nailers, and blocking in roof.
- G. Built-up wood curbing and blocking to accommodate increased insulation height.

1.2 REFERENCES

- A. American Forest and Paper Association (AFPA)
Manual for Wood Frame Construction
- B. American National Standards Institute (ANSI)
A208.1 Mat-Formed Manufactured Panels
- C. Engineered Wood Association
Form E30 Engineered Wood Design/Construction Guide
- D. American Society of Mechanical Engineers (ASME)
B18.2.1 Square and Hex Bolts and Screws - Inch Series
B18.6.1 Wood Screws (Inch Series)
- E. American Society for Testing and Materials (ASTM)
A153 Specification for Zinc -Coating (Hot-Dip of Iron and Steel Hardware)
A307 Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength
A563 Specification for Carbon and Alloy Steel Nuts
A653 Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

- D245 Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber
- D2555 Test Method for Establishing Clear Wood Strength Values
- F. American Wood Preservers Association (AWPA)
 - C2 Lumber, Pressure Treatment
 - C9 Plywood, Pressure Treatment
 - C20 Structural Lumber, Fire-Retardant Pressure Treatment
 - C27 Plywood, Fire-Retardant Pressure Treatment
 - M4 Standard for the Care of Preservative-Treated Wood Products
- G. Federal Specification (FS)
 - FF-N-105B Nails, Brads, Staples and Spikes: Wire, Cut and Wrought
- H. International Conference of Building Officials (ICBO)
 - International Building Code (IBC) Chapter 23 Wood
- I. U.S. Department of Commerce, National Institute of Standards and Technology
 - PS 1 US Product Standard for Construction and Industrial Plywood
 - PS 2 Performance Standards for Wood-Based Structural-Use Panels
 - PS 20 American Softwood Lumber Standard (ASLS)

1.3 SUBMITTALS

- A. General: Submit the following in accordance with the conditions of Contract and Section 01330, "Submittal Procedures."
- B. Product Data: Submit manufacturer's product data for each distinct product specified
- C. Material certificates for dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use, and design values approved by American Lumber Standards Committee's (ALSC) Board of Review
- D. Wood treatment data as follows, including chemical treatment manufacturer's warranty and instructions for handling, storing, installing, and finishing treated materials:
 - 1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards
 - 2. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to Project site

3. For fire-retardant-treated wood products, include certification by treating plant that treated materials comply with specified standard and other requirements as well as data relative to bending strength, stiffness, and fastener-holding capacities of treated materials

1. 4 QUALITY ASSURANCE

- A. Single-Source Responsibility for Fire-Retardant-Treated Wood: Obtain each type of fire-retardant-treated wood product from one source and by single producer
- B. Testing Agency qualifications: An independent testing agency, acceptable to authorities having jurisdiction, with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548

1. 5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver wood products bundled or crated to provide adequate protection during transit and job storage, with required grade marks clearly identifiable. Inspect wood products for damage upon delivery. Remove and replace damaged materials
- B. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks, and under temporary coverings

For lumber and plywood pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation

- C. Protect sheet materials during handling to prevent breaking of corners and damage to surfaces

PART 2: PRODUCTS

2. 1 LUMBER, GENERAL

- A. Lumber Standards: Comply with PS 20-99, "American Softwood Lumber Standard," and with applicable grading rules of inspection agencies certified by ALSC's Board of Review. Lumber design values are to comply with ASTM D245 and ASTM D2555.
- B. Inspection Agencies: Inspection agencies and their grading rules include the following:
 1. Northeastern Lumber Manufacturers Association (NELMA)

 Standard Grading Rules
 2. National Lumber Grades Authority (NLGA) (Canadian)

 Standard Grading Rules
 3. Redwood Inspection Service (RIS)

 Standard Specifications for Grades of California Redwood Lumber
 4. Southern Pine Inspection Bureau (SPIB)

Standard Grading Rules for Southern Pine Lumber

5. West Coast Lumber Inspection Bureau (WCLIB)

No. 17 Standard Grading Rules for West Coast Lumber

6. Western Wood Products Association (WWPA) Western Lumber Grading Rules

- C. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill

For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece, or omit grade stamps and provide grade-compliance certificates issued by inspection agency

- D. Where nominal sizes are indicated, provide actual sizes required by PS 20-99 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber
1. Provide dressed lumber, surfaced four sides (S4S), unless otherwise indicated
 2. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal (38 mm actual) thickness or less, unless otherwise indicated

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. General: Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWPAC2 (lumber) and AWPAC9 (plywood). Mark each treated item with Quality Mark Requirements of inspection agency approved by ALSC's Board of Review

For exposed items indicated to receive stained finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes

- B. Pressure treats aboveground items with waterborne preservatives to minimum retention of 0.25 lb/cu. ft. (4.0 kg/cu. m.). After treatment, kiln-dry lumber and plywood to maximum moisture content of 19 and 15 percent, respectively. Treat indicated items and the following:
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing
 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete
 3. Wood framing members less than 18 inches (460 mm) above grade
 4. Wood floor plates installed over concrete slabs directly in contact with earth
- C. Pressure treats wood members in contact with ground or freshwater with waterborne preservatives to minimum retention of 0.40 lb/cu. ft. (6.4 kg/cu. m.)

- D. Complete fabrication of treated items before treatment, where possible. If cut after treatment, apply field treatment complying with AWWA M4 to cut surfaces. Inspect each piece of lumber or plywood after drying and discard damaged or defective

2.3 DIMENSION LUMBER

- A. Exposed Framing: Refers to dimension lumber which is not concealed by other work, and is indicated to receive stained, painted, or natural finish

Provide material hand-selected from lumber of species and grade indicated for type of use, for uniformity of appearance, and freedom from characteristics that would impair finish appearance

- B. For light framing (2" to 4" thick, 2" to 4" wide), provide the following grade and species:

Southern Yellow Pine Select Structural No. 2 Grade

For structural light framing (2" to 4" thick, 2" to 4" wide), provide the following grade and species:

Southern Yellow Pine Fb (minimum extreme fiber stress in bending); 1200 psi
Select Structural E (minimum modulus of elasticity); 1,600,000psi
No. 2 Grade

2.4 BOARDS

- A. Moisture content: 19 Percent maximum, "S-Dry"

2.5 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, cant strips, bucks, nailers, blocking, furring, grounds, stripping, and similar members
- B. Fabricate miscellaneous lumber from dimension lumber of sizes indicated, and into shapes shown on Contract documents
- C. Moisture Content: 19 percent maximum for lumber items not specified to receive wood preservative treatment
- D. Grade and Species: For dimension lumber sizes, provide No. 3 or Standard grade lumber per ALSC's NGRs of any species. For board-size lumber, provide No. 3 Common or Standard grade per WPA of any species
- E. For furring for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling

2.6 SHEATHING MATERIALS

- A. General: Comply with and factory mark each panel according to ANSI A208.1. Provide thickness indicated on Contract documents

- C. Plywood Subflooring: CDX (2) 1/2" layers glued and screwed
- D. Telephone and Electrical Panel Boards: APA C-D, Plugged interior plywood with exterior glue, in thickness indicated or, if not otherwise indicated, not less than 1/2" thick
- E. Wall Sheathing: As indicated in Division 6 section
- F. Roof Sheathing: 1/2" CDX Plywood

2.7 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified

Where rough carpentry work is exposed to weather, in ground contact, or in areas of high relative humidity, provide fasteners with hot-dip, zinc-coating per ASTM A153

- B. Nails, Wire, Brads, and Staples: ASTM F1667
- C. Wood Screws: ASME B18.6.1
- D. Lag Bolts: ASME B18.2.1
- E. Bolts: Steel bolts complying with ASTM A307, Grade A with ASTM A563 hex nuts and, where indicated, flat washers

2.8 METAL FRAMING ANCHORS

- A. General: Provide galvanized steel framing anchors of structural capacity, type, and size indicated, with allowable design loads as published by manufacturer, which meet or exceed those indicated
- B. Galvanized Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653, G60 coating designation; structural, commercial, or lock-forming quality, as standard with manufacturer for type of anchor indicated

PART 3: EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of rough carpentry and that are too small to use with minimum number of joints or optimum joint arrangement
- B. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted
- C. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction
- D. Apply field treatment complying with AWPA M4 to cut surfaces of preservative-treated lumber and plywood

- E. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with IBC Table 2304.9.1 Fastening Schedule
- F. Use finishing nails for exposed work, unless otherwise indicated. Countersink nail heads and fill holes with wood filler

3.2 WOOD GROUNDS, NAILERS, BLOCKING, AND SLEEPERS

- A. Install wood grounds, nailers, blocking, and sleepers where shown, and where required for screening or attaching other work. Form to shapes shown and cut as required for true line and level of attached work. Coordinate locations with other work involved
- B. Attach to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement
- C. Install permanent grounds of dressed, preservative-treated, key-beveled lumber not less than 1-1/2 inches (38.1 mm) wide, and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required

3.3 WOOD FURRING

- A. Install plumb and level with closure strips at edges and openings. Shim with wood as required for tolerance of finish work
- B. Firestop furred spaces of walls at each floor level, and at ceiling with wood blocking or noncombustible materials, accurately fitted to close furred spaces

3.4 WOOD FRAMING, GENERAL

- A. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated
- B. Install framing members of size and at spacing indicated
- C. Do not splice structural members between supports
- D. Firestop concealed spaces of wood-framed walls and partitions at each floor level and at ceiling line of top story. Where firestopping is not inherent in framing system used, provide closely fitted wood blocks of 2-inch nominal (38 mm actual) thickness lumber of same width as framing members
- E. Arrange studs so that wide face of stud is perpendicular to direction of wall or partition and narrow face is parallel
 - 1. Provide single bottom plate and double top plates using members of 2-inch nominal (38 mm actual) thickness whose widths equal that of studs; except single top plate may be used for non-load-bearing partitions. Nail or anchor plates to supporting construction, unless otherwise indicated.
 - 2. For exterior walls, provide 2 by 6-inch nominal (38 by 140 mm actual) size wood studs spaced 24 inches (610 mm) o.c., except where otherwise indicated or required

3. For interior partitions and walls, provide 2 by 4-inch nominal (38 by 89 mm actual) size wood studs spaced 16 inches (406 mm) o.c., except where otherwise indicated or required
- F. Construct corners and intersections with three (3) or more studs. Provide miscellaneous blocking and framing as shown, and as required to support facing materials, fixtures, specialty items, and trim

Provide continuous horizontal blocking at midheight of single-story partitions over 96 inches (2.4 m) high and multistory partitions, using members of 2-inch nominal (38 mm actual) thickness and of same width as wall or partitions
- G. Frame openings with multiple studs and headers. Provide nailed header members of thickness equal to width of studs. Set headers on edge and support on jamb studs
 1. For non-load-bearing partitions, provide double-jamb studs with headers not less than 4-inch nominal (89 mm actual) depth for openings 36 inches (914 mm) and less in width, and not less than 6-inch nominal (140 mm actual) depth for wider openings
 2. For load-bearing walls, provide double-jamb studs for openings 72 inches (1.8 m) and less in width, and triple-jamb studs for wider openings. Provide headers of depth shown as indicated on Contract documents
- H. Provide bracing in exterior walls and at interior load-bearing walls (that are not more than 25 feet (7.6 m) from other parallel braced walls) at each end and at not more than 25 feet (7.6 m) apart, to comply with IBC Section 2308.9.3 "Bracing" and IBC Table 2308.9.3(I)

3.5 FLOOR JOIST FRAMING

- A. General: Install floor joists with crown edge up and support ends of each member with not less than 1-1/2 inches (38.1 mm) of bearing on wood or metal, or 3 inches (76 mm) on masonry. Attach floor joists as follows:
 1. Where supported on wood members, by toe nailing or by using metal framing anchors
 2. Where framed into wood supporting members, by using wood ledgers as shown or, if not shown, by using metal joist hangers
- B. Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds 48 inches (1.2 m).
- C. Do not notch in middle third of joists; limit notches to 1/6 depth of joist, 1/3 at ends. Do not bore holes larger than 1/3 depth of joist; do not locate closer than 2 inches (51 mm) from top or bottom
- D. Provide solid blocking of 2-inch nominal (38 mm actual) thickness by depth of joist at ends of joists unless nailed to header or band
- E. Lap members framing from opposite sides of beams, girders, or partitions not less than 4 inches (102 mm) or securely tie opposing members together. Provide solid blocking of 2-inch nominal (38 mm actual) thickness by depth of joist over supports
- F. Under jamb studs at openings, provide solid blocking between joists

- G. Under non-load-bearing partitions, provide double joists separated by solid blocking equal to depth of studs above
- H. Provide triple joists separated as above, under partitions receiving ceramic tile and similar heavy finishes or fixtures
- I. Provide bridging of type indicated below, at intervals of 96 inches (2.4 m) o.c., between joists
 - 1. Form diagonal wood bridging from bevel cut 1 by 3-inch nominal (19 by 64 mm actual) size lumber, double-crossed and nailed both ends to joists
 - 2. Install steel bridging to comply with manufacturer's written instructions

3.6 RAFTER AND CEILING JOIST FRAMING

- A. Ceiling Joists: Install ceiling joists with crown edge up and complying with requirements specified above for floor joists. Face nail to ends of parallel rafters
- B. Rafters: Notch to fit exterior wall plates and toe nail or use metal framing anchors. Use double rafters to form headers and trimmers at openings in roof framing, if any, and support with metal hangers. Where rafters abut at ridge, place directly opposite each other and nail to ridge member or use metal ridge hangers
- C. Provide collar beams (ties) as shown or, if not shown, provide 1 by 6-inch nominal (19 by 140 mm actual) size boards between every third pair of rafters, but not more than 48 inches (1219 mm) o.c. Locate below ridge member, at third point of rafter span. Cut ends to fit roof slope and nail to rafters.
- D. Rafter Ties: Tie straps shall be provided from each roof framing member to exterior studs, posts or other supporting members below the roof. Opposing rafters at ridges shall be aligned and connected with straps

3.7 STAIR FRAMING

- A. Provide stair framing members of size, space, and configuration indicated or, if not otherwise indicated, to comply with the following requirements:
 - 1. Stringer Size: 2 by 12-inch nominal (38 by 286 mm actual) size minimum.
 - 2. Notching: Notch stringers to receive treads, risers, and supports; leave at least 3-1/2 inches (89 mm) of effective depth
 - 3. Stringer Spacing: At least three (3) stringers for each 36-inch (914 mm) clear width of stair
- B. Provide stair framing that does not exceed the following variations between treads and risers within each flight:
 - 1. Adjacent Treads and Risers: 3/16 inch (4.76 mm)
 - 2. Between Largest and Smallest Treads and Risers: 3/8 inch (9.53 mm)

END OF SECTION

SECTION 061600: WALL SHEATHING**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes the following:
 - 1. Wall sheathing
 - 2. Sheathing joint-and-penetration treatment
 - 3. Flexible flashing at openings in sheathing
 - 4. Roof Sheathing

1.2 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Stack panels flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings

PART 2: PRODUCTS**2.1 WALL SHEATHING**

- 1. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M. Type and Thickness: Type X, 1/2 inch thick

2.2 ROOF SHEATHING

- A. Plywood Roof Sheathing: See Division 6 Section "Rough Carpentry"

2.3 FASTENERS

- A. General: Provide fasteners of size and type indicated
 - 1. For wall and roof sheathing panels, provide fasteners with corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117

2.4 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS

- A. Sealant for Glass-Mat Gypsum Sheathing Board: Silicone emulsion sealant complying with ASTM C 834, and recommended by tape and sheathing manufacturers
- B. Sheathing Tape for Glass-Mat Gypsum Sheathing Board: Self-adhering glass-fiber tape, of type recommended by sheathing and tape manufacturers

2.5 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Self-adhesive, rubberized-asphalt compound, bonded to a high-density, polyethylene film to produce an overall thickness of not less than **0.025 inch**

PART 3: EXECUTION

3.1 INSTALLATION, GENERAL

- A. Securely attach to substrate by fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."
- B. Coordinate sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that exclude exterior moisture
- C. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements

3.2 GYPSUM SHEATHING INSTALLATION

- A. Comply with GA-253 and with manufacturer's written instructions
 - 1. Fasten gypsum sheathing to cold-formed metal framing with screws
 - 2. Install boards with a 3/8-inch gap where non-load-bearing construction abuts structural elements. Install boards with a 1/4-inch gap where they abut masonry or similar materials

3.3 SHEATHING JOINT-AND-PENETRATION TREATMENT

- A. Seal sheathing joints according to sheathing manufacturer's written instructions. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing board joints, and apply and trowel silicone emulsion sealant to embed tape in sealant. Apply sealant to exposed fasteners. Seal other penetrations and openings

3.4 FLEXIBLE FLASHING INSTALLATION

- A. Apply flexible flashing where indicated to comply with manufacturers written instructions.
 - 1. Lap seams and junctures with other materials at least 4 inches, except that at flashing flanges of other construction, laps need not exceed flange width
 - 2. After flashing has been applied, roll surfaces with a hard rubber or metal roller

END OF SECTION

SECTION 061601: ROOF SHEATHING**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes
 - 1. Roof sheathing with integral roof underlayment.

1.2 REFERENCES

- A. ASTM International (ASTM): www.astm.org
 - 1. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
 - 2. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials
 - 3. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings
 - 4. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials
 - 5. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies
- B. US Department of Commerce (DOC): <http://gsi.nist.gov/global/index.cfm/L1-5/I2-44/A-355>
 - 1. DOC PS 2 - Performance Standard for Wood-Based Structural Panels
- C. International Code Council (ICC): www.iccsafe.org
 - 1. ICC IBC - International Building Code
 - 2. ICC IRC - International Residential Code for One- and Two-Family Dwellings
- D. ICC Evaluation Service, Inc. (ICC-ES): www.icc-es.org
 - 1. AC38 – Acceptance Criteria for Weather Resistive Barriers
 - 2. ICC-ES AC116 - Acceptance Criteria for Nails and Spikes
 - 3. ICC-ES AC148 - Acceptance Criteria For Flexible Flashing Materials
 - 4. ICC-ES AC201 - Acceptance Criteria for Staples
 - 5. ICC-ES AC266 - Acceptance Criteria for Wood Structural Panel Roof Sheathing Factory-Laminated with an Alternate Roof Underlayment
 - 6. ICC-ES AC310 - Acceptance Criteria for Water-Resistive Membranes Factory-bonded to Wood-based Structural Sheathing, Used as Water-Resistive Barriers
 - 7. ICC-ES ESR-1539 - Power Driven Staples and Nails for Use in Engineered and Non-Engineered Connections
 - 8. ICC-ES NER-272 - Power Driven Staples and Nails for Use in All Types of Building Construction

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of sheathing product specified.

1.4 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: From ICC-ES, for wood sheathing and seam tape.
- B. Product Certifications: From manufacturer, indicating that sheathing products comply with ICC-ES AC266 and ICC-ES AC310.

1.5 CLOSEOUT SUBMITTALS

- A. Warranty: Executed copy of manufacturer special warranties.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide wood products from manufacturer certified by SFI, FSC, or comparable sustainable forestry program acceptable to Architect.
- B. Provide wall sheathing products meeting requirements for water-resistive barrier in accordance with ICC-ES AC310.
- C. Provide roof sheathing products meeting requirements for roof underlayments in accordance with ICC-ES AC266.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's written instructions for protection of sheathing products from weather prior to installation.

1.8 WARRANTY

- A. Special Manufacturer's Warranty: Manufacturer's standard form in which sheathing manufacturer agrees to repair or replace sheathing products that demonstrate deterioration or failure under normal use due to manufacturing defects within warranty period specified, when installed according to manufacturer's instructions.
 - 1. Warranty Period for Sheathing Products: [30] years following date of Substantial Completion.
 - 2. Warranty Conditions: Special warranties exclude deterioration or failure due to structural movement resulting in stresses on sheathing products exceeding manufacturer's written specifications, or due to air or moisture infiltration resulting from cladding failure or mechanical damage.

PART 2 - PRODUCTS**2.1 MANUFACTURERS**

- A. Basis-of-Design Product: Provide sheathing products manufactured by Huber Engineered Woods LLC, Charlotte NC; Phone: (800) 933-9220; Website: www.zipsystem.com; www.huberwood.com or approved equal.

2.2 PERFORMANCE REQUIREMENTS

- A. Fire-Test-Response Characteristics:
 - 1. Exterior Fire-Test Exposure: ASTM E108, Class A, when covered with approved Class A coverings.
 - 2. Fire-Resistance Ratings: Where indicated, provide assemblies tested for fire resistance per ASTM E119.
- B. Weather Exposure: Manufacturer warranty applies for maximum allowable exposure period of 180 days.

2.3 WOOD PANEL PRODUCTS

- A. Oriented Strand Board: DOC PS 2, made with binder containing no added urea formaldehyde.

2.4 ROOF SHEATHING WITH INTEGRAL ROOF UNDERLAYMENT

- A. Oriented-Strand-Board Roof Sheathing: Exposure 1 sheathing with factory-laminated water-resistive barrier facer with printed fastener location symbols.
 - 1. Basis-of-Design Product: Provide **Huber Engineered Woods LLC; ZIP System Sheathing**.
 - 2. Span Rating, Panel Grade and Performance Category: Not less than 40/20; Structural 1; 5/8 Performance Category
 - 3. Edge Profile: Self-spacing
 - 4. Exterior Surface Facer: Medium-density, phenolic-impregnated kraft paper overlay in accordance with ICC AC266.
 - a. Provide fastener spacing symbols on facer for **16-inch (406 mm)** and **24-inch (610 mm)** on center spacing.
- B. **Panel Edge Clips:** Provide panel edge clips approved for application in accordance with code approvals and panel manufacturer's written instructions.

2.5 FASTENERS

- A. Fasteners, General: Size and type complying with manufacturer's written instructions for Project conditions and requirements of authorities having jurisdiction.
 - 1. Corrosion Resistance: **[Hot-dip zinc coating, ASTM A153/A153M] [or] [Type 304 stainless steel]**.

- B. Nails, Brads, and Staples: ICC AC116 and ICC AC201.
- C. Power-Driven Fasteners: ICC-ES-1539 or NER-272.
- D. Wood Screws: ASME B18.6.1.

2.6 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIAL

- A. Self-Adhering Seam and Flashing Tape: Pressure-sensitive, self-adhering, cold-applied, seam tape consisting of polyolefin film with acrylic adhesive, meeting ICC-ES AC148, and tested as part of an assembly meeting performance requirements.
 - 1. Basis-of-Design Product: Provide **Huber Engineered Woods; ZIP System Tape**.
 - 2. Thickness: **0.012 inch (0.3 mm)**.
- B. Liquid-Applied Flashing Membrane: Gun-grade, cold-applied, silyl-terminated polyether (STPE) liquid flashing membrane compatible with sheathing/weather barrier and self-adhering seam and flashing tape, and tested as part of an assembly meeting performance requirements. Follow manufacturer's recommendation for integration with ZIP System Tape.
 - 1. Basis-of-Design Product: Provide **Huber Engineered Woods; ZIP System Liquid Flash**.
 - 2. Hardness, Shore A, ASTM C 661: 40 to 45.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine framing spacing and alignment to determine if work is ready to receive sheathing. Proceed with sheathing work once conditions meet requirements.

3.2 SHEATHING INSTALLATION

- A. Install sheathing panels in accordance with manufacturer's written instructions, requirements of applicable Evaluation Reports, and requirements of authorities having jurisdiction.
- B. Do not bridge expansion joints; allow joint spacing equal to spacing of structural supports.
- C. Install panels with laminated facer to exterior. Stagger end joints of adjacent panel runs. Support all panel edges.
 - 1. Space square-edged panels 0.125 inch (3 mm).
 - 2. Butt edges of self-spacing edge panels.
- D. **Roof Sheathing Panel Clips:** Where required under code approvals based upon panel thickness and support spacing, provide panel clips located at each unsupported panel butt joint centered between supports.
- E. Attach sheathing panels securely to substrate with manufacturer-approved fasteners in compliance with the following:

1. ICC-ES ESR-1539 or ICC-NES NER-272 for power-driven fasteners.
 2. IBC: Table 2304.9.1 Fastening Schedule.
- F. Apply ZIP System Tape at all panel seams, penetrations, and facer defects or cracks to form continuous weathertight surface. Apply tape according to manufacturer's written instructions and requirements of ICC-ES applicable to tape application.
- G. Apply liquid-applied flashing membrane at penetrations, gaps, and cracks to form continuous weathertight surface. Apply liquid membrane according to manufacturer's written instructions. Follow manufacturer's recommendation for integration with ZIP System Tape.

END OF SECTION 066100

SECTION 072100: THERMAL INSULATION**PART 1: GENERAL****1.1 SUMMARY**

- A. The following section includes
 - 1. Cavity Wall and Masonry Cell Insulation
 - 2. Perimeter insulation under slabs-on-grade.
 - 3. Perimeter wall insulation (supporting backfill).
 - 4. Cavity-wall insulation.
 - 5. Concealed building insulation.

1.2 REFERENCES

- A. American Society of Testing and Materials (ASTM)
 - 1. C549 Specification for Perlite Loose Fill Insulation
 - 2. C665 Specification for Mineral Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing E84 Test Method for Surface Burning Characteristics of Building Materials
 - 3. E119 Test Method for Fire Tests of Building Construction and Materials
 - 4. E136 Test Method for Behavior of Material in A Vertical Tube Furnace At 750 Degrees C
- B. California South Coast Air Quality Management District (AQMD) Rule 1168: Adhesive and Sealant Applications (www.aqmd.gov/rules/html/r1168.html)
- C. Underwriter's Laboratories, Inc. (UL)
- D. Fire Resistance Directory

1.3 DEFINITIONS

- A. Thermal Resistivity (r-value): Temperature difference in degrees F (degrees C) between the two (2) surfaces of a material exactly one (1) inch (25 mm) thick, required to make one (1) BTU of energy flow through one (1) square foot (0.1 square meter) of the material in one (1) hour

1.4 SUBMITTALS

- A. General: Submit the following in accordance with conditions of Contract
- B. Manufacturer's Certifications: Submit manufacturer's representative certification that the proposed products comply with specified requirements, and are compatible with each other and substrates for the intended applications
- C. Product Data Sheet: Submit manufacturer's catalog data and application instructions for each material proposed for use

- D. Recycle Content: Submit manufacturer's documentation of recycled content for glass fiber insulation
- E. Material Safety Data Sheets (MSDS): Submit MSDS for each adhesive product

1.5 QUALITY ASSURANCE

- A. Single-Source Responsibility for Insulation Products: Obtain each type of building insulation from a single source with resources to provide products complying with requirements without delaying progress of the work
- B. Installer Qualifications: Engage an experienced installer, with not less than two (2) years experience and certification by the manufacturer as an approved installer, who has completed building insulation applications similar in material, design and extent to that indicated for projects that have resulted in construction with a record of successful in-service performance
- C. Fire-Test-Response Characteristics: Provide insulation and related materials with fire-test-response characteristics indicated on Contract documents, or specified elsewhere in this Section; to be 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 E84
 - 2. Fire-Resistance Ratings: ASTM E119
 - 3. Combustion Characteristics: ASTM E136

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in manufacturer's original unopened packaging fully labeled and intact until time of use. Store materials off ground and under cover to prevent damage or contamination to materials by water, foreign matter or other causes. Promptly remove from site any materials which show evidence of damage and immediately make all replacements necessary

1.7 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of insulation under the following conditions: When ambient and substrate temperature conditions are outside the limits permitted by insulation manufacturer. When insulation is or is likely to become wet due to rain, frost, condensation or other causes

PART 2: PRODUCTS

2.1 MANUFACTURERS

Manufacturers: Subject to compliance with requirements, products by manufacturers that may be incorporated in the work include, but are not limited to the following. However, it is the Contractor's responsibility to provide only products compatible with the adjacent materials in the assembly

A. Glass-Fiber Blanket/Batt Insulation:

1. CertainTeed Corp
2. Knauf Fiberglass GmbH
3. Owens-Corning Fiberglass Corporation
4. Johns, Manville

B. Loose-Fill Insulation:

1. Producer members of Perlite Institute, Inc
2. Thermo-Rock West, Inc
3. Persolite Products, Inc

C. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
2. Available Manufacturers: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, one of the manufacturers specified.

2.2 FRAME WALL AND CEILING INSULATION

A. Faced Glass Fiber Blanket/Batt Insulation

B. Kraft-Faced: Provide thermal insulation produced by combining glass fibers with thermosetting resins to comply with ASTM C665, Type II, Class C (blankets with a nonreflective vapor-retarder membrane covering one principal face and not rated for flame propagation resistance - for use in nonexposed applications only)

C. Recycled Content: Maximum 25 percent. Comply with ASTM D535

2.3 CAVITY WALL AND MASONRY-CELL INSULATION

Perlite Loose-Fill Insulation: Provide expanded perlite to comply with ASTM C549, Type II (surface treated for water repellency and limited moisture absorption) or IV (surface treated for water repellency and limited moisture absorption), r-values of 3.3 - 2.8 for densities of 4.1 - 7.4 pcf at 75 degrees F (24 degrees C)

2.4 FOAM-PLASTIC BOARD INSULATION

- A. Extruded-Polystyrene Board Insulation: ASTM C 578, Type VII, 2.20 lb/cu. ft., with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively:
 - 1. Available Manufacturers:
 - a. Dow Chemical Company.
 - b. Owens Corning.

2.5 AUXILIARY INSULATING MATERIALS

- A. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation securely to substrates indicated without damaging insulation and substrates.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Verify that conditions comply with requirements of Contract documents
- B. Verify that related work to be performed before installation of insulation within indicated spaces has been completed
- C. Verify that substrates are in satisfactory condition to receive insulation
 - 1. Masonry substrates: Verify that masonry materials have dried sufficiently and have attained optimum moisture content
- D. Do not proceed with installation of insulation until all unsatisfactory conditions have been corrected

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulations or vapor retarders, including removal of projections that might puncture vapor retarders, or interfere with insulation attachment
- B. Close off openings in cavities receiving poured-in-place insulation to prevent the escape of insulation. Provide screens where openings must be maintained for drainage or ventilation

3.3 INSTALLATION, GENERAL

- A. Comply with insulation manufacturer's instructions applicable to products and application indicated. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with installation of insulation

- B. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement
- C. Do not install insulation which is damaged, wet, soiled, or which has been covered at any time with ice or snow
- D. Locate vapor retarders on the warm side of assembly, unless indicated otherwise on Contract documents or manufacturer's data sheets
- E. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice, rain, and snow.

3.4 INSTALLATION OF FRAME WALL AND CEILING INSULATION

- A. Install per manufacturer's recommendations and installation sequence. Provide permanent placement and support of insulation
- B. Use blanket widths and lengths that fill cavities formed by framing members. Where more than one (1) length is required to fill cavity, provide lengths that will produce snug fit at ends
- C. Cut installation neatly as required to fit tightly around obstructions
- D. Place insulation with facing oriented toward warm side of construction, unless otherwise indicated. Tape seals all penetrations in facing with manufacturer recommended tape
- E. Fasten insulation continuously tight against framing members to completely fill all spaces. Do not install on top or within 4 inches (102 mm) of recessed light fixtures
- F. Seal tight all joints and gaps, with tape to ensure airtight installation. Install in a manner to prevent sagging
- G. Any insulation that does not fill the cavity width shall have support in the form of metal clips or wire bracing

3.5 INSTALLATION OF CAVITY WALL AND MASONRY CELL INSULATION

- A. Seal holes and openings in cavities as necessary to prevent loss of insulation during construction
- B. Install suitable screens inside cavities to maintain openings at drainage or ventilation openings
- C. Remove any obstructions which might interfere with free flow of insulation to intended spaces during pouring. Completely fill indicated cavities and spaces. Leave no gaps or voids

- D. During placement, do not allow insulation to fall a distance greater than one story, or 20 feet (6 m), whichever is less
- E. Rod insulation frequently during installation to eliminate formation of air pockets

3.6 INSTALLATION OF PERIMETER AND UNDER-SLAB INSULATION

- A. On vertical surfaces, set insulation units in adhesive applied according to manufacturer's written instructions. Use adhesive recommended by insulation manufacturer. If not otherwise indicated, extend insulation a minimum of 24 inches below exterior grade line.
- B. On horizontal surfaces, loosely lay insulation units according to manufacturer's written instructions. Stagger end joints and tightly abut insulation units.

3.7 INSTALLATION OF CAVITY-WALL INSULATION

- B. On units of foam-plastic board insulation, install pads of adhesive spaced approximately 24 inches o.c. both ways on inside face, and as recommended by manufacturer. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions. Press units firmly against inside substrates indicated.

3.8 INSTALLATION OF GENERAL BUILDING INSULATION

- A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- B. Seal joints between foam-plastic insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.
- C. Install board insulation on concrete substrates by adhesively attached, spindle-type insulation anchors as follows:
 - 1. Fasten insulation anchors to concrete substrates with insulation anchor adhesive according to anchor manufacturer's written instructions. Space anchors according to insulation manufacturer's written instructions for insulation type, thickness, and application indicated.
 - 2. After adhesive has dried, install board insulation by pressing insulation into position over spindles and securing it tightly in place with insulation-retaining washers, taking care not to compress insulation below indicated thickness.
 - 3. Where insulation will not be covered by other building materials, apply capped washers to tips of spindles.

3.9 PROTECTION

- A. General: Protect installed insulation and vapor retarder from damage due to harmful weather exposures and from construction damage. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation

3.10 CLEANING

- A. Remove all excess materials from the job site and leave the areas insulated ready for other trades
- B. Prevent disposal of insulation scraps by reuse in ceiling and wall areas or other locations out of view
- C. Remove all unusable excess materials from the job site and leave the areas insulated ready for other trades

END OF SECTION

SECTION 073113: ASPHALT SHINGLES**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 the following:
 - 1. Asphalt shingles
 - 2. Felt underlayment
 - 3. Self-adhering sheet underlayment
 - 4. Ridge vents
- B. Related Sections include the following:
 - 1. Division 6 Section "Rough Carpentry" for roof deck wood structural panels.
 - 2. Division 7 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings and counterflashings not part of this Section.
 - 3. Division 7 Section "Roof Accessories" for ridge vents.

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Manufacturer's Literature for Initial Selection: For each type of asphalt shingle, ridge and hip cap shingle, ridge vent and exposed valley lining indicated.
 - 1. Include similar literature of trim and accessories involving color selection.
- C. Qualification Data: For Installer, including certificate signed by asphalt shingle manufacturer stating that Installer is approved, authorized, or licensed to install roofing system indicated.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency or by manufacturer and witnessed by a qualified testing agency, for asphalt shingles.
- E. Research/Evaluation Reports: For asphalt shingles.

- F. Maintenance Data: For asphalt shingles to include in maintenance manuals.
- G. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's warranty.
 - 1. Installer must have a minimum of three (3) years experience installing the roof system specified.
 - 2. Job Site Superintendent must have a minimum of 5 years experience in roofing.
- B. Source Limitations: Obtain ridge and hip cap shingles, ridge vents felt underlayment and self-adhering sheet underlayment through one source from a single asphalt shingle manufacturer.
- C. Fire-Test-Response Characteristics: Provide asphalt shingle and related roofing materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method 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. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.
- D. Preinstallation Conference: Conduct conference at Project site. Comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to roofing system including, but not limited to, the following:
 - 1. Meet with Owner, Architect, Owner, roofing Installer, roofing, deck Installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.
 - 6. Review base flashings, special roofing details, roof drainage, roof penetrations and condition of other construction that will affect roofing system.
 - 7. Review governing regulations and requirements for insurance and certificates if applicable.
 - 8. Review temporary protection requirements for roofing system during and after installation.
 - 9. Review roof observation and repair procedures after roofing installation.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.
 - 1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.7 PROJECT CONDITIONS

Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt shingle roofing to be performed according to manufacturer's written instructions and warranty requirements. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials within specified warranty period. Materials failures include manufacturing defects and failure of asphalt shingles to self-seal after a reasonable time.
 - 1. Material Warranty Period: 30 years from date of Substantial Completion, nonprorated.
 - 2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to 70 mph (33 m/s) for 10 years from date of Substantial Completion.
 - 3. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor 10 years from date of Substantial Completion.
 - 4. Workmanship Warranty Period: 5 years from date of Substantial Completion.
- B. Installers Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering Work of this Section, including all components of roofing system for the following warranty period:
 - 1. The liability of the Surety Company under the installer warranty provisions of this contract is limited to correcting defective workmanship and materials for a period of two years from the substantial completion date of the project. Any warranty beyond the first two years is an agreement between the owner and the contractor and falls outside the performance bond obligation.
 - 2. Warranty Period: Five (5) years from date of Substantial Completion.

1.9 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Asphalt Shingles: 100 sq. ft (9.3 sq. m) of each type, in unbroken bundles.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 2. Products: Subject to compliance with requirements, provide one of the products specified.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing. Basis of Design - Timberline HD Shingle as produced by GAF Materials Corp. or a comparable product by one of the following:
 1. Products:
 - a. GAF Materials Corporation; Timberline 30
 - b. Atlas Roofing Corporation; Pinnacle 35
 - c. CertainTeed Corporation; Landmark 30
 - d. Owens Corning; Oakridge Pro 30
 - e. TAMKO Roofing Products, Inc.; Heritage 30
 2. Strip Size: Manufacturer's standard.
 3. Algae Resistance: Granules treated to resist algae discoloration.
 4. Color and Blends: As selected by Architect from manufacturer's full range.
- B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

2.3 UNDERLAYMENT MATERIALS

- A. Felts: No. 30 roofing felt, ASTM D 226 or ASTM D 4869, Type II, asphalt-saturated organic felts, nonperforated.
- B. Self-Adhering Sheet Underlayment, Granular Surfaced: ASTM D 1970, minimum of 55-mil- (1.4-mm-) thick sheet; glass-fiber-mat-reinforced, SBS-modified asphalt; mineral-granule surfaced; with release paper backing; cold applied.
 1. Products:
 - a. GAF Materials Corporation; Weather Watch.
 - b. Atlas Roofing Corporation; StormMaster DG.
 - c. CertainTeed Corporation; WinterGuard.
 - d. Henry Company; Eaveguard.
 - e. Owens Corning; WeatherLock G.

2.4 RIDGE VENTS

- A. Rigid Ridge Vent: Manufacturer's standard rigid section high-density polypropylene or other UV-stabilized plastic ridge vent; for use under ridge shingles.
 - 1. Products:
 - a. GAF Materials Corporation; Cobra Rigid Vent II.
 - b. Air Vent Inc., a CertainTeed Company; ShingleVent II.
 - c. Cor-A-Vent, Inc.; V-Series.
 - d. Lomanco, Inc.; OR-4.
 - e. Owens Corning; VentSure Ridge Vent.

2.5 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.
- B. Roofing Nails: ASTM F 1667; aluminum, stainless-steel, copper, or hot-dip galvanized steel wire shingle nails, minimum 0.120-inch- (3-mm-) diameter, shank, sharp-pointed, with a minimum 3/8-inch- (9.5-mm-) diameter flat head and of sufficient length to penetrate 3/4 inch (19 mm) into solid wood decking or extend at least 1/8 inch (3 mm) through OSB or plywood sheathing.
 - 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- C. Felt Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized steel wire with low profile capped heads or disc caps, 1-inch (25-mm) minimum diameter.

2.6 METAL FLASHING AND TRIM

- A. Sheet Metal Flashing and Trim: Comply with requirements in Division 7 Section "Sheet Metal Flashing and Trim."
 - 1. Sheet Metal: Coil-coated G90 (galvanized) steel.
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item.
 - 1. Apron Flashings: Fabricate with lower flange a minimum of 5 inches (125 mm) over and 4 inches (100 mm) beyond each side of downslope asphalt shingles and 6 inches (150 mm) up the vertical surface.
 - 2. Step Flashings: Fabricate with a headlap of 2 inches (50 mm) and a minimum extension of 4 inches (100 mm) over the underlying asphalt shingle and up the vertical surface.
 - 3. Cricket or Backer Flashings: Fabricate with concealed flange extending a minimum 24 inches (600 mm) beneath upslope asphalt shingles and [6 inches (150 mm)] beyond each side of chimney or skylight and 6 inches (150 mm) above the roof plane.

4. Open Valley Flashings: Fabricate in lengths not exceeding 10 feet (3 m) with 1-inch- (25-mm-) high inverted-V profile at center of valley and equal flange widths of 12 inches (300 mm).
 5. Drip Edges: Fabricate in lengths not exceeding 10 feet (3 m) with 2-inch (50-mm) roof deck flange and 1-1/2-inch (38-mm) fascia flange with 3/8-inch (9.6-mm) drip at lower edge.
- C. Vent Pipe Flashings: ASTM B 749, Type L51121, at least 1/16 inch (1.6 mm) thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof and extending at least 4 inches (100 mm) from pipe onto roof.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.
 3. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. Single-Layer Felt Underlayment: Install single layer of felt underlayment on roof deck perpendicular to roof slope in parallel courses. Lap sides a minimum of 2 inches (50 mm) over underlying course. Lap ends a minimum of 4 inches (100 mm). Stagger end laps between succeeding courses at least 72 inches (1830 mm). Fasten with roofing nails.
1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering sheet underlayment not less than 3 inches (75 mm) in direction to shed water. Lap ends of felt not less than 6 inches (150 mm) over self-adhering sheet underlayment.
- B. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated on Drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches (89 mm). Lap ends not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Roll laps with roller. Cover underlayment within seven days.
1. Eaves: Extend from edges of eaves 36 inches (914 mm) beyond interior face of exterior wall.

2. Rakes: Extend from edges of rake 36 inches (914 mm) beyond interior face of exterior wall.
 3. Valleys: Extend from lowest to highest point 18 inches (450 mm).
 4. Hips: Extend 18 inches (450 mm) on each side.
 5. Ridges: Extend 36 inches (914 mm) on each side without obstructing continuous ridge vent slot.
 6. Sidewalls: Extend beyond sidewall 18 inches (450 mm) and return vertically against sidewall not less than 4 inches (100 mm).
 7. Roof Slope Transitions: Extend 18 inches (450 mm) on each roof slope.
- C. Metal-Flashed Open Valley Underlayment: Install two layers of 36-inch- (914-mm-) wide felt underlayment centered in valley. Stagger end laps between layers at least 72 inches (1830 mm). Lap ends of each layer at least 12 inches (300 mm) in direction to shed water, and seal with asphalt roofing cement. Fasten each layer to roof deck with roofing nails.
1. Lap roof deck felt underlayment over first layer of valley felt underlayment at least 6 inches (150 mm).

3.3 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Division 7 Section "Sheet Metal Flashing and Trim."
1. Install metal flashings in accordance with asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.
- C. Step Flashings: Install with a headlap of 2 inches (50 mm) and extend over the underlying asphalt shingle and up the vertical surface. Fasten to roof deck only.
- D. Cricket or Backer Flashings: Install against the roof-penetrating element extending concealed flange beneath upslope asphalt shingles and beyond each side.
- E. Open Valley Flashings: Install centrally in valleys, lapping ends at least 8 inches (200 mm) in direction to shed water. Fasten upper end of each length to roof deck beneath overlap.
1. Secure hemmed flange edges into metal cleats spaced 12 inches (300 mm) apart and fastened to roof deck.
- F. Rake Drip Edges: Install rake drip edge flashings over underlayment and fasten to roof deck.
- G. Eave Drip Edges: Install eave drip edge flashings below underlayment and fasten to roof sheathing.
- H. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.4 ASPHALT SHINGLE INSTALLATION

- A. Install asphalt shingles according to manufacturer's written instructions and recommendations in asphalt shingle NRCA's "The NRCA Roofing and Waterproofing Manual."
- B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip at least 7 inches (175 mm) wide with self-sealing strip face up at roof edge.
 - 1. Do not extend asphalt shingles over fascia at eaves and rakes, unless prescribed by manufacturer's application guide.
 - 2. Install starter strip along rake edge.
- C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- D. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- E. Install asphalt shingles by single-strip column or racking method, maintaining uniform exposure. Install full length first course followed by cut second course, repeating alternating pattern in succeeding courses.
- F. Fasten asphalt shingle strips with a minimum of four roofing nails located according to manufacturer's written instructions.
 - 1. Where roof slope exceeds 12:12, seal asphalt shingles with asphalt roofing cement spots after fastening with additional roofing nails located according to manufacturer's written instructions.
 - 2. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.
 - 3. Do not install shingles when ambient temperatures are below manufacturer's recommended application temperature.
- G. Open Valleys: Cut and fit asphalt shingles at open valleys, trimming upper concealed corners of shingle strips. Maintain uniform width of exposed open valley from highest to lowest point.
 - 1. Do not nail asphalt shingles to metal open valley flashings.
- H. Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.
- I. Ridge and Hip Cap Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.
 - 1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

END OF SECTION

SECTION 074600- FIBER CEMENT FASCIA**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. Fiber cement fascia, moulding and accessories.

1.2 SUBMITTALS

- A. Submit under provisions of Section 01300.
- 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 methods.
- C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.3 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.5 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.

1.6 WARRANTY

- A. Product Warranty: Limited product warranty against manufacturing defects.
 - 1. HardieTrim for 10 years.
- B. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: James Hardie Building Products, Inc; 26300 La Alameda, Suite 250, Mission Viejo, CA 92691. ASD. Toll Free Residential: (888) J-HARDIE. Toll Free Commercial: (866) 274-3464. Tel: (949) 348-1800. Fax: (949) 367-0185. Email: info@JamesHardie.com. Web - Residential: <http://www.jameshardie.com>. Web - Commercial: <http://www.jameshardiecommercial.com>. Or approved equal.

2.2 FASCIA

- A. Trim: Hardietrim Fascia and Moulding as manufactured by James Hardie Building Products, Inc.

2.3 FASTENERS

- A. Wood Framing Fasteners:
 - 1. Wood framing: 4d common corrosion resistant nails.
 - 2. Wood framing: 6d common corrosion resistant nails.
 - 3. Wood framing: 0.089 inch (2.2 mm) shank by 0.221 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
 - 4. Wood framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
 - 5. Wood framing: 0.091 inch (2.3 mm) shank by 0.221 inch (5.6 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
 - 6. Wood framing: 0.091 inch (2.3 mm) shank by 0.225 inch (5.7 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
 - 7. Wood framing: 0.121 inch (3 mm) shank by 0.371 inch (9.4 mm) head by 1-1/4 inches (32 mm) corrosion resistant roofing nails.
 - 8. Wood framing: 1-1/4 inches (32 mm) corrosion resistant roofing nails.
 - 9. Wood framing: 1-1/2 inches (38 mm) corrosion resistant roofing nails.
- B. Metal Framing:

1. Metal framing: 1-1/4 inches (32 mm) No. 8-18 by 0.375 inch (9.5 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
2. Metal framing: 1-5/8 inches (41 mm) No. 8-18 by 0.323 inch (8.2 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
3. Metal framing: 1 inch (25 mm) No. 8-18 by 0.323 inch (8.2 mm) head self-drilling, corrosion resistant ribbed buglehead screws.
4. Metal framing: 1 inch (25 mm) No. 8-18 by 0.311 inch (7.9 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
5. Metal framing: 1.5 inch (38mm) [AGS-100] .100 inches by 25 inches (2540 mm by 635 mm) ET&F Pin or equivalent pneumatic fastener.
6. Concrete Walls: Erica Stud Nail, ET&F ASM No.-144-125, 0.14 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 2 inches (51 mm) corrosion resistant nail.

2.4 FINISHES

- A. Factory Finish Color for Trim, Soffit and Siding Colors: Match Existing.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Nominal 2 inch by 4 inch (51 mm by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
 1. Install water-resistive barriers and claddings to dry surfaces.
 2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
 3. Protect siding from other trades.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION - HARDIETRIM FASCIA AND MOULDING

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.

- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.
- D. Install Hardietrim fascia over structural subfascia.
- E. Fasten through overlapping boards. Do not nail between lap joints.
- F. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten Hardietrim boards to Hardietrim boards.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 074600

SECTION 075323: ETHYLENE – PROPYLENE – DIENE – MONOMER (EPDM) ROOFING**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes Fully Adhered EPDM membrane roofing system complete with roof insulation, vapor retarder, and flashing.
- B. The project consists of installing Carlisle's Sure-Seal (black) Fully-Adhered Roofing System or approved equal as outlined below:
 - 1. Apply the Fully-Adhered EPDM Roofing System in conjunction with cover board after tear off of the existing roofing for verification of suitable substrate as specified in this specification. Vapor retarder and fire rated gypsum cover board are to mechanically fasten to the roof deck and the EPDM membrane is to be fully adhered to the cover board with Adhesive.
 - 2. System is to be complete including vapor retarder, insulation, flashing, and accessories as required.
- C. The completed roofing system must have a "Class A" fire rating on any slope.
- D. The completed roofing system must be provided with a manufacturer's all inclusive 20 year warranty with no dollar limit.

1.2 WORK SPECIFIED ELSEWHERE

- A. Removal of existing system: Section 01732 - Selective Demolition
- B. Preparation for Reroofing: Section 07591 - Preparation for Reroofing
- C. Metal Flashing and Trim: Section 07620 - Sheet Metal Flashing and Trim

1.3 SUBMITTALS

- A. Product Data: For each product indicated. Each product must be approved in writing by the membrane manufacturer as acceptable for the "Class A" fire rating and their warranty, prior to submittal.
- B. Fire Rating Certification: Membrane manufacturer to provide certification by a testing laboratory, acceptable to the State of NY Education Department, that the proposed roofing system provides a "Class A" fire rating with no limit as to the slope.
- C. Shop Drawings: Include plans, layout, elevations, sections, details, walkway layout, and attachments to other Work. Shop drawings must be approved in writing by roofing membrane manufacturer as acceptable for their warranty, prior to submittal.
- D. Samples: For each product included in membrane roofing system.

- E. Sample of the manufacturer's Membrane System Warranty.
- F. Maintenance data.
- G. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's warranty.
- B. Source Limitations: Obtain components for membrane roofing system from same manufacturer as roofing membrane or as approved in writing by the membrane manufacturer as acceptable for the "Class A" fire rating and the manufacturer's warranty.
- C. Fire-Test-Response Characteristics: Provide membrane roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
- D. Preinstallation Conference: Conduct conference at Project site. A representative of the roofing membrane manufacturer shall be in attendance and shall review warranty requirements.

1.5 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.6 WARRANTY

- A. Special Warranty: Carlisle SynTec "Golden Seal Total System Warranty", without monetary limitation, in which manufacturer agrees to repair or replace components of the complete membrane roofing system, including vapor retarder, roof insulation, flashing, accessories, etc., that fail in materials or workmanship within specified warranty period or an equivalent warranty by the Firestone Building Products Company, if a Firestone assembly is used. Failure includes roof leaks.
 - 1. Warranty Period: 20 years from date of Substantial Completion.
 - 2. Extended Wind Speed: Provide Carlisle SynTec "Extended Wind Speed" endorsement for wind peak gusts of 90 mph.

PART 2: PRODUCTS**2.1 EPDM ROOFING MEMBRANE**

- A. Basis of Design: Carlisle's Sure-Seal EPDM (black) Fully-Adhered Roofing System as manufactured by Carlisle SynTec Incorporated system. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1. Carlisle SynTec Incorporated.
 - 2. Firestone Building Products Company.
 - 3. Johns Manville.
- B. EPDM Roofing Membrane: ASTM D 4637, Type I, nonreinforced, flexible sheet made from EPDM, and as follows:
 - 1. Thickness: 60 mils, nominal.
 - 2. Exposed Face Color: Black.

2.2 AUXILIARY MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 - 1. Sheet Flashing: 60-mil- thick EPDM, partially cured or cured, according to application.
 - 2. Bonding Adhesive: Manufacturer's standard bonding adhesive.
 - 3. Seaming Material: Sure-Seal EP-95 Splicing Cement and Sure-Seal SecurTAPE and HP-Primer.
 - 4. Cleaning Solvent: Sure-Seal Splice Cleaner.
 - 5. Internal Seam Sealant: Sure-Seal In-Seam Sealant (used with adhesive splices only)
 - 6. External Seam Sealant: Sure-Seal Lap Sealant.
 - 7. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.
 - 8. Miscellaneous Accessories: Provide lap sealant, water cutoff mastic, metal termination bars, metal battens, pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories as recommended by the membrane manufacturer.

2.3 ROOF INSULATION

- A. Faced Glass Fiber Blanket/Batt Insulation
- B. Kraft-Faced: Provide thermal insulation produced by combining glass fibers with thermosetting resins to comply with ASTM C665, Type II, Class C (blankets with a nonreflective vapor-retarder membrane covering one principal face and not rated for flame propagation resistance - for use in nonexposed applications only).
- C. Recycled Content: Maximum 25 percent. Comply with ASTM D535

- D. Provide written certification from the roofing membrane manufacturer that the roof insulation is acceptable for inclusion in roofing system.
- E. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope as indicated.
- F. Fabricate to slopes required.

2.4 INSULATION ACCESSORIES

- A. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FMG 4470, designed for fastening substrate panels to roof deck.
- B. Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 5/8 inch thick and is acceptable to the roofing the membrane manufacturer for the warranty.
 - 1. Product: Subject to compliance with requirements, provided "Dens-Deck" manufactured by Georgia-Pacific Corporation or equal.

2.5 VAPOR RETARDER

- A. Polyethylene Vapor Retarder: ASTM D 4397, 6 mils (0.15 mm) thick, minimum, with maximum permeance rating of 0.13 perm.
 - 1. Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.
 - 2. Adhesive: Manufacturer's standard lap adhesive, FMG approved for vapor-retarder application.

PART 3: EXECUTION

3.1 DAILY SEAL

- A. When the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.

3.2 VAPOR-RETARDER INSTALLATION

- A. Loosely lay polyethylene-film vapor retarder in a single layer over area to receive vapor retarder, side and end lapping each sheet a minimum of 2 inches and 6 inches, respectively.
 - 1. Seal side and end laps with tape.

3.3 FULLY ADHERERD ROOFING MEMBRANE INSTALLATION

- A. Install roofing membrane over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
- B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
- C. Accurately align roofing membranes and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Adhesively and mechanically fasten roofing membrane securely at terminations and perimeter of roofing.
- D. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement, and firmly roll side and end laps of overlapping roofing membranes according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of roofing membrane terminations.
- E. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape, and firmly roll side and end laps of overlapping roofing membranes according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of roofing membrane terminations.
- F. Repair tears, voids, and lapped seams in roofing that does not meet requirements.

3.4 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.5 FIELD QUALITY CONTROL

- A. Pre-installation inspection: After completion of the removal of existing roofing and insulation, the roof deck shall be inspected and approved by a representative of the membrane manufacturer as acceptable for their warranty.

- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.
- C. Repair or remove and replace components of membrane roofing system where test results or inspections indicate that they do not comply with specified requirements.

3.6 CLEAN UP

- A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.
- B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

END OF SECTION

SECTION 076200: SHEET METAL FLASHING AND TRIM**PART 1: GENERAL****1.1 SUMMARY**

A. This Section includes the following:

1. Formed wall flashing and trim.
2. Manufactured reglets and counter-flashing
3. Formed roof drainage sheet metal fabrications.
4. Formed steep slope roof sheet metal fabrications.
5. Formed wall sheet metal fabrications.
6. Fascias, Roof Edges, and scuppers
7. Roof flashing, vent caps, and counterflashings over base flashings at roof mounted mechanical equipment and vent stacks

1.2 SUBMITTALS

- A. Product Data: For each product indicated. Indicating performance and physical characteristics of rolled products and accessories proposed for use.
- B. Shop Drawings: Show installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.
1. Include details for forming, joining, supporting, and securing sheet metal flashing and trim, including pattern of seams, termination points, fixed points, expansion joints, expansion-joint covers, edge conditions, special conditions, and connections to adjoining work.
 2. Indicate each type and configuration of flashing and trim work in profile including jointing pattern and details, fastening methods and frequency, locations of expansion and control joints, thickness of materials and finishes.
- C. Samples: For each exposed product and for each finish specified.
- D. Color Charts: Manufacturer's standard pre-finished product charts showing actual physical coating.
- E. Maintenance data and manufacturer's Instructions: Printed manufacturer's installation instructions.

- F. Provide 6" sized sample of metal flashing illustrating typical seam, external corner, internal corner, edge flashing, material, and finish.
- G. Warranty: Sample of special warranty. Two copies of watertightness warranty, and finish coating warranty on pre-finished products.

1.3 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- B. Mockups: Build mockups to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Build mockup of typical coping at top of EIFS wall, flashing at bottom of EIFS connection to brick wall and roof eave, including fascia and fascia trim, each approximately 48 inches long, including supporting construction cleats, seams, attachments and accessories.
 - 2. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- C. Preinstallation Conference: Conduct conference at Project site.
- D. Installer Qualifications: Company specializing in sheet metal flashing work with three years minimum experience in similar sized installations.

1.4 FIELD SAMPLES

- A. Provide one section of each profile, installed in place, including at least one joint. Leave sample in place as standard of workmanship for all remaining work.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Stack pre-formed material to prevent twisting, bending, and abrasions, and to provide ventilation.
- B. Prevent contact with materials which may cause discoloration or staining.

1.6 WARRANTY

- A. Special Warranty on Finishes: manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within 20 years from date of Substantial completion.

PART 2: PRODUCTS**2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 - 2. Lead-Coated Copper: ASTM B 101, cold rolled copper sheet, weight as shown on drawings or if not shown, not less than 20.0 oz/s.f. plus 1.0 oz/s.f. of hot dipped lead deposited on each face (total weight of 22.0 oz. /s.f.). Revere "Freedom Gray" Z-T Alloy coated copper, as manufactured by Revere Copper and Brass, Inc., Rome, NY, is approved as an equal.
 - 3. Lead Sheet: ASTM B 749, Type L51121, copper-bearing lead sheet, with a minimum thickness of 0.0625 inch, except not less than 0.0937 inch, where burning is involved.

2.2 SHEET METALS

- A. Aluminum Sheet: ASTM B 209, Alloy 3003, 3004, 3105, or 5005, Temper suitable for forming and structural performance required, but not less than H14, finished as follows:
 - 1. High-Performance Organic Finish: Three-coat, thermocured system containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2604.
 - a. Colors: As selected by Architect from manufacturer's full range (different colors may be selected for different applications).

2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
- B. Felt Underlayment: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, non-perforated.

- C. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
 - 1. Exposed Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating.
 - 2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
 - 3. Blind Fasteners: High-strength aluminum or stainless-steel rivets.
- D. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, non sag, nontoxic, nonstaining tape.
- E. Elastomeric Sealant: ASTM C 920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant, and polyisobutylene plasticized, heavy bodied for hooked-type expansion joints with limited movement.
- G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound.
- H. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat.

2.4 REGLETS/ COUNTERFLASHING

- A. Reglets: Units of type, material and profile indicated, formed to provide secure interlocking of separate reglet and counter-flashing pieces, and compatible with flashing indicated.
 - 1. Manufacturer: Fry Reglet Corporation or approved equal.
 - 2. Material: Aluminum, 0.024 inch (0.61 mm) thick

2.5 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricates items where practicable. Obtain field measurements for accurate fit before shop fabrication.
- B. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 - 1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.

- C. Sealed Joints: Form non-expansion, but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.
- D. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.
- E. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.
- F. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal, and in thickness not less than that of metal being secured.
- G. Fabricate exposed trim, gravel stops, fasciae, and copings from lead coated copper sheet.
- H. Form sections true to shape, accurate in size, square, free from distortion and defects, to profiles indicated in accordance with SMACNA Architectural Sheet Metal Manual.
- I. Fabricate cleats and starter strips of same material as sheet, interlockable with sheet.
- J. Form pieces in longest practical lengths.
- K. Hem exposed flashings on underside 1/2 inch; miter and seam corners.
- L. Form materials which are typically concealed from view by the public with lap seams. On exposed seams, use butt- seam/back-up plate type unless noted or detailed otherwise.
- M. Solder and seal metal joints except those indicated or required to be expansive type joints. After soldering, remove flux. Wipe and wash solder joints clean.
- N. Fabricate corners from one piece with minimum 18 inch long legs; solder for rigidity; seal with sealant
- O. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.
- P. Fabricate flashings to allow toe to extend minimum 2 inches over wall surfaces.
- Q. Fabricate as much as possible in shop with machinery to eliminate as much hand tooling on the job as possible. Shop fabricates to allow for adjustments in the field for proper anchoring and joining.

2.6 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate

expansion joints, expansion-joint covers, gutter bead reinforcing bars, and gutter accessories from same metal gutters.

1. Accessories: Continuous removable leaf screen with sheet metal frame and hardware cloth screen.
- B. Built-in Gutters: Fabricate to cross section indicated, with riveted and soldered joints, complete with end pieces, outlet tubes, and other special accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Fabricate expansion joints and accessories from same metal as gutters unless otherwise indicated.
 1. Accessories: Continuous removable leaf screen with sheet metal frame and hardware cloth screen.
 2. Fabricate from the following materials:
 - a. Stainless Steel: 0.016 inch (0.40 mm) thick.
- C. Downspouts: Fabricate downspouts as indicated complete with mitered elbows. Furnish with metal hangers from same material as downspouts, and anchors.
 1. Fabricate from the following materials:
 - a. Aluminum-Zinc Alloy-Coated Steel: 0.022 inch (0.56 mm) thick

2.7 LOW-SLOPE ROOF SHEET METAL FABRICATION

- A. Base Flashing: Fabricate from the following material:
 1. Aluminum: 0.040 inch thick.
- B. Counter-flashing and Flashing Receivers: Fabricate from the following material:
 1. Aluminum: 0.0320 inch thick.
- C. Roof-Edge Flashing (Gravel Stop) and Fascia Cap: Fabricate in minimum 95-inch- (2400-mm-) long but not exceeding 10-foot- (3-m-) long, sections. Furnish with 6-inch-(150-mm-) wide. Joint cover plates. Fabricate from the following materials:
 1. Aluminum-Zinc Alloy-Coated Steel: 0.02 inch (0.71 mm) thick.
- D. Copings: Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 10-foot- (3-m-) long sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, seal and solder or weld watertight. Fabricate from the following materials:
 1. Aluminum-Zinc Alloy-Coated Steel: 0.02 inch (0.71 mm) thick.
- E. Roof-Penetration Flashing: Fabricate from the following materials:

1. Aluminum-Zinc Alloy-Coated Steel: 0.02 inch (0.71 mm) thick.

2.8 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS:

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:

1. Aluminum 0.040" thick.

- B. Valley Flashing: Fabricate from the following materials:

1. Aluminum 0.040" thick.

- C. Drip Edges: Fabricate from the following materials:

1. Aluminum 0.040" thick.

- D. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials.

1. Aluminum 0.040" thick.

2.9 WALL SHEET METAL FABRICATIONS

- A. Opening Flashing in Frame Construction: Fabricate head, sill, and similar flashings to extend 4 inches beyond wall openings. Form head and sill flashing with 2-inch- high end dams. Fabricate from the following material:

1. Aluminum: 0.0320 inch thick.

- B. Wall Expansion- Joint Cover: Fabricate from the following materials:

1. Aluminum

2.10 ACCESSORIES

- A. Fasteners

1. Nails: Copper or brass for fastening copper, lead coated copper, and terne coated steel; AISI Series 300 for stainless and galvanized steel; aluminum for aluminum sheets. Use annular ring shank type, No. 12 gage or larger to suit application, of sufficient length to penetrate backing material at least 7/8 inch.
2. Screws and Bolts: Copper or brass for fastening copper, lead coated copper and terne coated steel; AISI Series 300 for stainless and galvanized steel; and aluminum for aluminum sheets; of sufficient size and length to sustain imposed stresses.

- B. Solder Materials

1. Flux: Type as recommended by sheet material manufacturer; not detrimental to base material. Use resin type flux for terne metal.

- 2. Solder: ASTM B 32 type, 50% tin/50% lead for plain copper, galvanized steel and terne metal. Use 60% tin/40% lead for stainless steel and lead copper.
- C. Underlayment: ASTM D 266, 30 lb/100 s.f. weights felt containing no additives corrosive to sheet metals. Rosin sized building paper.
- D. Slip Sheet: Rosin sized building paper.
- E. Protective Back Paint: Bituminous.
- F. Sealants: Silicone, non-sagging, building sealant as specified in Section 07900.
- G. Reglets: Type SM Spring-lok flashing reglet as made by Fry Reglet, Norcross, GA.
- H. Plastic Cement: FS SS-C-153, Bituminous plastic cement.

2.11 FINISHES

- A. Aluminum, factory painted to match existing color.
- B. Lead Coated Copper & Lead: Natural finish.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces and conditions are ready to receive work of this section. Notify Architect of any existing conditions which will adversely affect execution. Beginning of execution will constitute acceptance of existing conditions.
- B. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.
- C. Verify membrane termination and base flashings are in place, sealed, and secure.

3.2 PREPARATION

- A. Field measure site conditions prior to fabricating work.
- B. Install starter and edge strips, and cleats before starting installation.
- C. Install surface mounted reglets true to lines and levels. Seal top of reglets with sealant.

- D. Install one layer of underlayment prior to installing copings and parapet caps.

3.3 INSTALLATION

- A. Install using skilled workmen in accordance with manufacturer's printed instruction and recommendations.
- B. Conform to drawing details included in manuals published by SMACNA.
- C. Insert flashings into reglets to form tight fit. Secure in place with wedges at maximum 12 inches on center. Seal flashings into reglets with sealant.
- D. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Architect.
- E. Lap seam flashings and other work not normally exposed to view. Use butt joint with drive cleat joint method for all exposed flashings, coping caps, and guards. Seal all joints.
- F. Apply plastic cement compound between metal flashings and felt flashings.
- G. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- H. Seal metal joints watertight.
- I. Provide electrolytic separation between dissimilar metals with protective back paint.
- J. On soldered metal joints, make watertight for full metal surface contact. After soldering, wash metal clean with neutralizing solution and rinse with water.
- K. Install expansion joints at frequency as recommended in SMACNA Architectural Sheet Metal Manual. Do not fasten seams such that movement is restricted. Coordinate expansion joint locations with joints in adjacent materials.

3.4 FIELD QUALITY CONTROL

- A. Install surfaces flat such that from normal viewing distances, no waviness or oil canning is visible.

3.5 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Torch cutting of sheet metal flashing and trim is not permitted.

- B. Metal Protection:

Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.

3.6 ROOF FLASHING INSTALLATION

- A. General: install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNAS's "Architectural Sheet Metal Manual" Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual" and as indicated. Interlock bottom edge of roof edge flashing with continuous cleat anchored to substrate at staggered 3-inch (75mm) centers.
- C. Copings: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual" and as indicated.
 1. Interlock exterior bottom edge of coping with continuous cleat anchored to substrate at 16-inch (400mm) centers.
 2. Anchor interior leg of coping with washers and screw fasteners through slotted holes at 24-inch (600-mm) centers.
- D. Pipe or Post Counter-flashing: Install counter-flashing umbrella with closed-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches (100 mm) over base flashing. Install stainless-steel draw band and tighten.
- E. Counter-flashing: Coordinate installation of counter-flashing with installation of base flashing. Insert counter-flashing in reglets or receivers and fit tightly to base flashing. Extend counter-flashing 4 inches (100 mm) and bed with sealant.

- F. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with sealant and clamp flashing to pipes that penetrate roof.

3.7 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean off excess sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.

3.8 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers
 - 1. Install sealant tape where indicated.
- B. Openings Flashing in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend 4 inches beyond wall openings.
 - 1. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.

3.9 ROOF DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof drainage items or produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- B. Hanging Gutters: Join sections with riveted and soldered joints or with lapped joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored gutter brackets or straps spaced not more than 36 inches (900 mm) apart. Provide end closures and seal water
 - 1. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet (15.24m) apart. Install expansion-joint caps.
 - 2. Install continuous gutter screens on gutters with noncorrosive fasteners, removable for cleaning gutters.

- C. Join sections with riveted and soldered or lapped joints sealed with sealants. Provide for thermal expansion. Slope to downspouts. Provide end closures and seal watertight with sealant.
 - 1. Install felt underlayment layer in built-in gutter rough and extend to drip edge at eaves and under felt underlayment on roof sheathing. Lap sides a minimum of 2 inches (50 mm) over underlying course. Lap ends a minimum of 4 inches (100 mm). Stagger end laps between succeeding courses at least 72 inches (1830 mm) Fasten with roofing nails. Install slip sheet over felt underlayment.
 - 2. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet (15.24 m) apart. Install expansion-joint caps.
- D. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches (1500 mm) o.c. in between.
- E. Splash Pans: Install where downspouts discharge on low-slope roofs. Set in adhesive material compatible with the roofing.
- F. Scupper Boxes: Anchor securely to call below gutter discharge as indicated on drawing.
- G. Expansion-Joint Covers: install expansion-joint covers at locations and of configuration indicated. Lap joints a minimum of 4 inches (100 mm) in direction of water flow.

END OF SECTION

SECTION 077123: GUTTERS AND DOWNSPOUTS**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
 1. Pre-finished galvanized steel gutters and downspouts.
 2. Finish must conform to the "Metal Construction Association Certified Premium Painted™" Standard.

1.3 REFERENCES

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2006a.
- B. Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) - Architectural Sheet Metal Manual (ASMM); 2003.

1.4 DESIGN REQUIREMENTS

- A. Conform to SMACNA Architectural Sheet Metal Manual for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

1.5 SUBMITTALS

- A. See Section 013000 for submittal procedures.
- B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations and installation details.

PART 2: PRODUCTS**2.1 GUTTERS AND DOWNSPOUTS**

- A. Basis-of-Design Product: By ATAS International, Inc., ATAS Headquarters, Allentown, Pennsylvania 18106; PH: 800-468-1441; FX: 610-395-9342; EM: info@atas.com. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 1. MBCI
 2. Interlock Roofing Ltd.
 3. Englert Inc, Perth Amboy, NJ
 4. ATAS International, Inc.

- B. Material: Galvalume-Plus(R): Bethlehem Steel Corporation cold-rolled steel sheet to which corrosion-resistant aluminum-zinc alloy coating, chromate pretreatment, and 70 Percent Kynar 500 (R) Coating (PermaColor 2000) acrylic coating is factory-applied.
 - 1. Color: To be selected from manufacturer's standard color palette to match metal roofing system.

2.2 COMPONENTS

- A. Gutters: K-style profile.
- B. Downspouts: Rectangular Profile.
- C. Anchors and Supports: Profiled to suit gutters and downspouts.
 - 1. Gutter Supports: Brackets.
 - 2. Downspout Supports: Brackets.
- D. Fasteners: Galvanized steel, with soft neoprene washers.

2.3 ACCESSORIES

- A. Splash Pads: Precast concrete type, size and profiles indicated; minimum 3000 psi at 28 days, with minimum 5 percent air entrainment.

2.4 FABRICATION

- A. Form gutter and downspouts of profiles and size indicated.
- B. Fabricate with required connection pieces.
- C. Form sections square true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance.
- D. Hem exposed edges of metal
- E. Fabricate gutter and downspout accessories; seal watertight.

2.5 FACTORY FINISHING

- A. Fluoropolymer Coating: High Performance Organic Finish, AAMA 2604; multiple coats, thermally cured fluoropolymer finish system; color as scheduled.

PART 3: EXECUTION

3.1 INSTALLATION

- A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.
- B. Sheet Metal: Join lengths with formed seams sealed watertight. Flash and seal gutters to

downspouts and accessories.

- C. Slope gutters 1/16 inch per foot to downspouts.
- D. Set splash pans under down spouts or connect downspouts to stormwater system as indicated on drawings.

END OF SECTION 077123

SECTION 078413: PENETRATION FIRESTOPPING**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes through-penetration firestop systems for penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items.

1.2 PERFORMANCE REQUIREMENTS

- A. General: For penetrations through fire-resistance-rated constructions, including both empty openings and openings containing penetrating items, 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 construction penetrated.
- B. Rated Systems: Provide through-penetration firestop systems with the following ratings determined per ASTM E 814:
 - 1. F-Rated Systems: Provide through-penetration firestop systems with F-ratings indicated, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated.
- C. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage, provides products that, after curing, do not deteriorate when exposed to these conditions both during and after construction.
 - 1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
 - 2. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.
- D. For through-penetration firestop systems exposed to view, provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

1.3 SUBMITTALS

- A. Schedule: Submit a schedule of through-penetrations, indicating type and rating of wall/partition, size of penetration, type of penetration and proposed type of fire-stop with UL rating, specific product and manufacturer.
- B. Product Data: For each type of product proposed.

- C. Shop Drawings: For each through-penetration firestop system, submit documentation, including illustrations, from a qualified testing and inspecting agency, showing each type of construction condition penetrated, relationships to adjoining construction, and type of penetrating item.
- D. Qualification Data: For Installer.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: A firm that has been approved by FMG according to FMG 4991, "Approval of Firestop Contractors."
- B. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in Part 1 "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 testing standard referenced in "Part 1 Performance Requirements" Article. Provide rated systems bearing classification marking of qualified testing and inspecting agency.
- C. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.
- D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until each installation has been examined by building inspector, if required by authorities having jurisdiction.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the through-penetration firestop systems indicated for each application that are produced by one of the following manufacturers:
 - 1. Hilti, Inc.
 - 2. Specified Technologies Inc.
 - 3. 3M; Fire Protection Products Division.
 - 4. Tremco; Sealant/Weatherproofing Division.
 - 5. USG Corporation.

2.2 FIRESTOPPING

- 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 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 Part 1 "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by qualified testing and inspecting agency for firestop systems indicated.

PART 3: EXECUTION

3.1 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

- A. Fire Resistance Rating: All Through-Penetration Firestops shall be rated "2-hour fire-resistance."
- B. General: Install through-penetration firestop systems to comply with Part 1 "Performance Requirements" Article and with firestop system manufacturer's written installation instructions and published drawings for products and applications indicated.
- C. 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 and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.
- D. 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 achieving 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.

END OF SECTION

SECTION 079200: JOINT SEALANTS**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes joint sealants for the following applications, including those specified by reference to this Section:
 - 1. Elastomeric sealant for both exterior and interior general building applications.
 - 2. Elastomeric sealant for use in food service and storage areas, including walk-in cooler.
 - 3. Elastomeric sealant for use in toilet rooms.
 - 4. Solvent release sealant for use as setting bed for exterior door saddles.
 - 5. Latex joint sealant for use only with nonmoving interior joints
 - 6. Acoustical sealant for use only with interior gypsum board partitions and ceiling...
- B. See Division 7 Section "Through-Penetration Firestop Systems" for sealants at fire-rated construction.

1.2 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- C. Compatibility and adhesion test reports.
- D. Product certificates.

1.4 QUALITY ASSURANCE

- A. Preconstruction Compatibility and Adhesion Testing: Submit samples of materials that will contact or affect joint sealants to joint-sealant manufacturers for testing according to manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
- B. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to Project joint substrates according to the method in ASTM C 1193 that is appropriate for the types of Project joints.

1.5 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees 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.
 - 1. Warranty Period: Ten years from date of Substantial Completion.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.3 ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Where elastomeric sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints within food service or food storage areas, including the walk-in cooler, provide products that comply with 21 CFR 177.2600.
- D. Single-Component Neutral-Curing Silicone Sealant **for both interior and exterior general building use, except food service areas:**
 - 1. Products: Dow Corning Corporation; 795, Silicon Building Sealant, or an equivalent product by GE Silicones or Pecora Corporation.

2. Type and Grade: S (single component) and NS (nonsag).
 3. Class: 50.
 4. Use Related to Exposure: NT (nontraffic).
 5. Uses Related to Joint Substrates: M, G, A, and, as applicable to joint substrates indicated, O.
 6. Stain-Test-Response Characteristics: Nonstaining to porous substrates per ASTM C 1248.
- E. Single-Component Neutral-Curing Silicone Sealant **for use in food service areas and all cooler applications:**
1. Products: Dow Corning 748, Noncorrosive Sealant, or an equivalent product by GE Silicones or Pecora Corporation.
 2. Accepted by the FDA and NSF for use in contact with food.
 3. Type and Grade: S (single component) and NS (nonsag).
- F. Single-Component Mildew-Resistant Acid-Curing Silicone Sealant **for use in toilet rooms and janitorial closets.**
1. Products: Dow Corning Corporation, 786 Mildew Resistant; or an equivalent by GE Silicones Sanitary SCS1700; or Tremco, Tremsil 200.
 2. Type and Grade: S (single component) and NS (nonsag).
 3. Class: 25.
 4. Use Related to Exposure: NT (nontraffic).
 5. Uses Related to Joint Substrates: G, A, and, as applicable to joint substrates indicated, O.

2.4 SOLVENT-RELEASE JOINT SEALANTS

- A. Butyl-Rubber-Based Solvent-Release Joint Sealant **for use as setting bed at exterior door saddles:** Comply with ASTM C 1085.
1. Products:
 - a. Bostik Findley; Bostik 300.
 - b. Fuller, H. B. Company; SC-0296.
 - c. Pecora Corporation; BC-158.
 - d. Polymeric Systems Inc.; PSI-301.
 - e. Sonneborn, Division of ChemRex Inc.; Sonneborn Multi-Purpose Sealant.
 - f. Tremco; Tremco Butyl Sealant.

2.5 LATEX JOINT SEALANTS LATEX JOINT SEALANTS

- A. Latex Sealant **for use in interior non-moving joints only:** Comply with ASTM C 834, Type P, Grade NF.
- B. Products:
1. Bostik Findley; Chem-Calk 600.
 2. Pecora Corporation; AC-20+.

3. Schnee-Morehead, Inc.; SM 8200.
4. Sonneborn, Division of ChemRex Inc.; Sonolac.
5. Tremco; Tremflex 834.

2.6 ACOUSTICAL JOINT SEALANTS

- A. Acoustical Sealant for Exposed and Concealed Joints **for use in conjunction with interior drywall partitions and ceilings only.**: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following:
 1. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 2. Products:
 - a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
 - b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.

2.7 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.
- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.8 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or

harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3: EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants.
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant.
 - a. Clean 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 sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air.
 - 2. Remove laitance and form-release agents from concrete.
 - a. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants.
- B. Joint Priming: Prime joint substrates based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- B. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C 919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.

- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- G. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

END OF SECTION

SECTION 081100: STEEL DOORS AND FRAMES**PART 1: GENERAL****1.1 SECTION INCLUDES**

- A. Flush Steel Doors
- B. Steel frames

1.2 REFERENCES

- A. ANSI/NFPA 80 - Standard for Fire Doors and Windows.
- B. ANSI/DHI A 115.IG - Installation Guide for Doors and Hardware.
- C. ANSI/BHMA A 156 - Specifications for Hardware Preparations in Standard Steel Doors and Frames.
- D. ANSI/BHMA A156.7 - Hinge Template Dimensions.
- E. ANSI A 250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcing.
- F. ANSI/SDI A 250.8 - SDI-100 Recommended Specifications for Standard Steel Doors and Frames.
- G. ANSI A 250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
- H. ANSI A 250.11 - Recommended Erection Instructions for Steel Frames.
- I. ASTM A 366/A 366M - Standard Specification for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality.
- J. ASTM A 653/A 653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- K. ASTM A 924 - Specification for General Requirements for Steel Sheet, Metallic Coated by the Hot Dip Process.
- L. ASTM A 1008/1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable.
- M. ASTM E 90 - Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
- N. ASTM E 152 - Standard Methods of Fire Tests of Door Assemblies.
- O. ASTM E 413 - Classification for Rating Sound Insulation.

- P. SDI-111 - Recommended Standard Details for Steel Doors & Frames.
- Q. NAAMM/HHMA-820 TN01 - Grouting Hollow Metal Frames
- R. NAAMM/HHMA-820 TN03 - Guidelines for Glazing of Hollow Metal Transom, Sidelight and Windows
- S. NAAMM/HMMA-840 - Guide Specification for Installation and Storage of Hollow Metal Doors and Frames.
- T. ANSI/UL 10C - Standard for Safety for Positive Pressure Fire Tests of Door Assemblies.
- U. NFPA 252 - Standard Method of Fire Tests of Door Assemblies.
- V. Federal Emergency Management Agency (FEMA) 361 Guidelines
- W. ANSI/UL 10B - Fire Tests of Door Assemblies.
- X. ANSI/UL 10C - Positive Pressure Fire Tests of Door Assemblies.
- Y. ANSI/UL 1784 - Air Leakage Tests of Door Assemblies
- Z. UL - Building Materials Directory; Underwriters Laboratories Inc.
- AA. WH - Certification Listings; Warnock Hersey International Inc.
- BB. Miami - Dade County test protocols PA 201, PA 202 and PA 203.
- CC. Florida Building Code test protocols TAS 201, TAS 202 and TAS 203.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's standard details and catalog data indicating compliance with referenced standards, and manufacturer's installation instructions.
- C. Certificates:
 - 1. Manufacturer's certification that products comply with referenced standards.
 - 2. Evidence of manufacturer's membership in the Steel Door Institute.
- D. Shop Drawings: Door, frame, and hardware schedule in accordance with SDI 111D. Show types, quantities, dimensions, specified performance, and design criteria, materials and similar data for each opening required.
 - 1. Indicate frame configuration, anchor types and spacing, location of cutouts for hardware, reinforcement, to ensure doors and frames are properly prepared and coordinated to receive hardware.
 - 2. Indicate door elevations, internal reinforcement, closure method, and cutouts for glass lights and louvers.
- E. Samples: 18 by 24 inches (150 by 150 mm) cut away sample door with provisions for lockset, hinge and corner section of frame.

1.4 QUALITY ASSURANCE

- A. Supplier: A direct account of the manufacturer who has on permanent staff, an Architectural Hardware Consultant (AHC), a Certified Door Consultant (CDC) or an Architectural Openings Consultant (AOC), who will be available to consult with the Architect and Contractor regarding matters affecting the door and frame openings.
- B. Fire Rated Doors and Frames: Underwriters' Laboratories and Warnock Hersey, labeled fire doors and frames:
 - 1. Label fire doors and frames in accordance with Underwriters Laboratories standard UL10C, UL1784, and Positive Pressure Fire Tests of Door Assemblies.
 - 2. Construct and install doors and frames to comply with current issue of ANSI/NFPA 80.
 - 3. Manufacture Underwriters' Laboratories labeled doors and frames under the UL factory inspection program and in strict compliance to UL procedures, and provide the degree of fire protection, heat transmission and panic loading capability indicated by the opening class.
 - 4. Manufacture Intertek Testing Services / Warnock Hersey labeled doors and frames under the ITS/WH factory inspection program and in strict compliance to ITS/WH procedures, and provide the degree of fire protection capability indicated by the opening class.
 - 5. Affix a physical label or approved marking to each fire door or fire door frame, at an authorized facility as evidence of compliance with procedures of the labeling agency. Label embossment is not permitted.
 - 6. Conform to applicable codes for fire ratings. It is the intent of this specification that hardware and its application comply or exceed the standards for labeled openings. In case of conflict between types required for fire protection, furnish type required by NFPA and UL.
 - 7. Fire door assemblies in exit enclosures and exit passageways; maximum transmitted temperature end point rating of not more than 250 degrees F (121 degrees C) above ambient at the end of 30 minutes of the standard fire test exposure.
- C. Manufacturer Qualifications: Member of the Steel Door Institute.
- D. Installer: Minimum five years documented experience installing products specified this Section.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Handle, store and protect products in accordance with the manufacturers printed instructions and ANSI/SDI A250.10 and NAAMM/HMMA 840.
- B. Store doors vertically in a dry area, under a proper vented cover. Place on 4 inch (102 mm) high wood sills to prevent rust or damage. Provide 1/4-inch (6 mm) space between doors to promote air circulation.
- C. Store frames in an upright position with heads uppermost under cover. Place on 4 inch (102 mm) high wood sills to prevent rust and damage. Store assembled frames five units maximum in a stack with 2 inch (51 mm) space between frames to promote air circulation.

- D. Do not use non-vented plastic or canvas shelters to prevent rust or damage.
- E. Should wrappers become wet, remove immediately.

1.6 COORDINATION

- A. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal cutouts and reinforcement for door hardware, electric devices and recessed items.
- B. Coordinate Work with frame opening construction, door and hardware installation.
- C. Sequence installation to accommodate required door hardware.
- D. Verify field dimensions for factory assembled frames prior to fabrication.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. Ceco Door Products; an ASSA ABLOY Group Company
- B. Pioneer Industries, Inc
- C. Steelcraft; an Ingersoll-Rand Company

NOTE: Provide all steel doors and frames from a single manufacturer.

2.2 DOORS

- A. General: Construct exterior/interior doors to the following designs and gages:
 - 1. Interior Doors: Cold-rolled steel, ASTM A 1008/A 1008M:
 - a. Thickness: 1 3/4"
 - 1) 18 gage (1 mm).
 - 2. Include galvanized components and internal reinforcements.
 - 3. Prime Finish Doors: Clean, phosphatize and factory prime painted doors indicated on Door Schedule as HM.
 - 4. Hardware Reinforcements:
 - a. Hinge reinforcements for full mortise hinges: minimum 7 gage (4.7 mm).
 - b. Lock reinforcements: minimum 16 gage (1.3 mm).
 - c. Closer reinforcements: minimum 14 gage (1.7 mm) steel, 20-inch (508 mm) long.
 - d. Galvanized doors: include galvanized hardware reinforcements.
 - e. Projection welded hinge and lock reinforcements to the edge of the door.
 - f. Provide adequate reinforcements for other hardware as required.
- B. Full Flush Doors:
 - 1. Acceptable Product: Steelcraft L Series.
 - a. Performance:
 - 1) Physical performance: 5 million cycles per ANSI A250.4.
 - 2) Sound attenuation (gasketed):
 - a) Honeycomb core, 35 STC.

- b) Polystyrene core, 25 STC.
 - 3) Thermal performance (gasketed), ASTM C1363.
 - a) Honeycomb core, 0.653 U-factor.
 - b) Polystyrene core, 0.48 U-factor.
 - c) Polyurethane core, 0.498 U-factor.
 - 4) Thermal performance (gasketed), ASTM C236.
 - a) Honeycomb core, 0.363 U-factor.
 - b) Polystyrene core, 0.263 U-factor.
 - c) Polyurethane core, 0.09 U-factor.
- 2. Door Thickness: 1-3/4 inches (45 mm).
- 3. Door faces reinforced and sound deadened as follows:
 - a. Honeycomb Core: Reinforced, stiffened, sound deadened and insulated with impregnated Kraft honeycomb core completely filling the inside of the doors and laminated to inside faces of both panels using contact adhesive applied to both panels and honeycomb core.
- 4. Bevel hinge and lock door edges 1/8 inch (3 mm) in 2 inches (50 mm). Square edges on hinge and/or lock stiles are not acceptable.
- 5. Reinforce top and bottom of doors with galvanized 14 gage (1.7 mm), welded to both panels.
- 6. Fire Rating: Supply door units bearing Labels for fire ratings indicated in Door Schedule for the locations indicated.

2.3 DOOR FRAMES

- A. General: Construct exterior/interior metal door frames to the following designs and gages.
 - 1. Interior Frames in Masonry: Zinc-Iron Alloy-Coated galvanized steel, ASTM A 653, Class A60, galvanized steel.
 - a. Thickness: 2"
 - 1) 16 gage (1.3 mm).
- B. Flush Steel Frames:
 - 1. Performance:
 - a. Physical performance: 5 million cycles per ANSI A250.4
 - 2. Construction: Three-piece knock-down frames; mitered joints, with locking tab at each head and jamb intersection.
 - 3. Profile:
 - a. 2 inches (51 mm) face dimension with 5/8 inch (16 mm) high stop, and types and throat dimensions indicated on the Door Schedule.
 - 4. Provide following reinforcement and accessories:
 - a. Hinge Preparation for 4-1/2 inches (114 mm) high, standard weight, or heavy weight, full mortise hinges; with plaster guard.
 - b. Hinge Preparation for 5 inch (127 mm) high, universal standard weight, or heavy weight, full mortise hinges; with plaster guard.
 - c. Strike preparation (single doors) for 4-7/8 inch (123 mm) universal strike; with plaster guard.
 - d. Silencers. Prepare frames to receive inserted type door silencers, 3 per strike jamb on single doors, and 2 per head for pair of doors. Stick-on silencers are not permitted.
 - 5. Fire Rating: Supply frame units bearing Labels for fire ratings indicated in Door

Schedule for the locations indicated.

6. Finish: Factory prime finish.

2.4 ACCESSORIES

- A. Anchors: Manufacturer's standard framing anchors, specified in manufacturer's printed installation instructions for project conditions.
- B. Astragals for pairs of doors: Manufacturer's standard for labeled and non-labeled openings.
- C. Door Bottom:
 1. Characteristics: Electrometric, continuous strip, screw-attached to recessed bottom door channel for concealed installation; double-sealing; acceptable for fire-rated doors up to 3 hour rating.
- D. Plaster Guards: Same material as door frame, minimum 24 gage (0.6 mm) minimum; provide for all strike boxes.
- E. Silencers: Resilient rubber, Inserted type, three per strike jamb for single openings and two per head for paired openings. Stick-on silencers shall not be permitted except on hollow metal framing systems.

2.5 FABRICATION

- A. Steel Frames:
 1. Three-piece knock-down frames: Head and jamb intersecting corners die-cut, mitered at 45 degrees, with locking tabs for rigid connection when assembled.

2.6 FINISHES

- A. Chemical Treatment: Treat steel surfaces to promote paint adhesion.
- B. Factory Prime Finish: Meet requirements of ANSI A 250.10.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Verify that project conditions are acceptable before beginning installation of frames.
 1. Verify that completed openings to receive knock-down wrap-around frames are of correct size and thickness.
 2. Verify that completed concrete or masonry openings to receive butt type frames are of correct size.
- B. Do not begin installation until conditions have been properly prepared.
- C. Correct unacceptable conditions before pre-ceding with installation.

3.2 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's printed installation instructions

and with Steel Door Institute's recommended erection instructions for steel frames ANSI A250.11 and NAAMM/HMMA 840.

- B. Fire Doors and Frames: Install in accordance with ANSI/NFPA 80.
- C. Remove temporary steel spreaders prior to installation of frames.
- D. Set frames accurately in position; plumb, align and brace until permanent anchors are set. After wall construction is complete, remove temporary wood spreaders.
 - 1. Field splice only at approved locations indicated on the shop drawings.
 - 2. Weld, grind, and finish as required to conceal evidence of splicing on exposed faces.
- E. Provide full height 3/8 inch (9.5 mm) to 1-1/2 inch (38 mm) thick strip of polystyrene foam blocking at frames requiring grouting where continuous hinges are specified. Apply the strip to the back of the frame, where the hinge is to be installed, to facilitate field drilling or tapping.
- F. Glaze and seal exterior transom, sidelight and window frames in accordance with HMMA-820 TN03.
- G. Apply hardware in accordance with hardware manufacturers' instructions and Section 08710 of these Specifications. Install hardware with only factory-provided fasteners. Install silencers. Adjust door installation to provide uniform clearance at head and jambs, to achieve maximum operational effectiveness and appearance.

3.3 ADJUST AND CLEAN

- A. Adjust doors for proper operation, free from binding or other defects.
- B. Clean and restore soiled surfaces. Remove scraps and debris and leave site in a clean condition.
- C. Prime Coat Touch-Up: Immediately after erection, sand smooth rusted or damaged areas of prime coat, and apply touch-up of compatible air-drying primer.

3.4 PROTECTION

- A. Protect installed products and finished surfaces from damage during construction.

END OF SECTION 081100

SECTION 08120- STILE AND RAIL DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Monumental aluminum stile and rail doors.
- B. Aluminum Storefront Systems

1.2 RELATED SECTIONS

- A. Section 07920- Joint Sealant.
- B. Section 08710- Door Hardware.
- C. Section 08720- Weatherstripping & Seals.

1.3 REFERENCES

- A. ASTM B 209 - Aluminum and Aluminum-Alloy Sheet and Plate.
- B. ASTM B 221 - Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- C. ASTM D 6670-01 - Standard Practice for Full-Scale Chamber Determination of Volatile Organic Emissions from Indoor Materials/Products.
- D. ASTM E 84 - Surface Burning Characteristics of Building Materials.
- E. ASTM E 283 - Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- F. ASTM E 330 - Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
- G. ASTM E 331 - Test Method for Water Penetration of Exterior Windows, Curtain Walls and Doors by Uniform Static Air Pressure Difference.
- H. ASTM E 1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Storm Shutters Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide door assemblies that have been designed and fabricated to comply with specified performance requirements, as demonstrated by testing manufacturer's corresponding standard systems.

- B. Air Infiltration: For a single door, test specimen shall be tested in accordance with ASTM E 283 at a pressure differential of 6.24 psf. The maximum air leakage rate of the door shall not exceed 0.01 cfm per square foot of door area.
- C. Air Infiltration: Storefront System shall be tested in accordance with ASTM E 283 at a pressure differential of 1.57 psf. The maximum air leakage rate shall not exceed 0.3 cfm/ ft² of fenestration area.
- D. Thermal Resistance: Storefront System performance, 0.45 Maximum U-Value.
- E. Thermal Resistance: Door Performance, 0.80 Maximum U-Value.
- F. Uniform Structural Load: For a single door, test specimen shall be tested in accordance with ASTM E 330. Plus or minus 67.5 pounds per square foot.
- G. Water Resistance: For a single door, test specimen shall be tested in accordance with ASTM E 331 at a pressure differential of 3.75 psf. No leakage.
- H. Large Missile Impact: Single impact. Pass.
- I. Indoor air quality testing per ASTM D 6670-01: GREENGUARD Environmental Institute Certified including GREENGUARD for Children and Schools Certification.

1.5 SUBMITTALS

- A. Comply with Section 01330- Submittal Procedures.
- B. Product Data: Submit manufacturer's product data, including description of materials, components, fabrication, finishes, and installation.
- C. Shop Drawings: Submit manufacturer's shop drawings, including elevations, sections, and details, indicating dimensions, tolerances, materials, fabrication, doors, panels, framing, hardware schedule, glazing, and finish.
- D. Samples:
 - 1. Doors: Submit manufacturer's sample of doors showing stiles, rails, framing, hardware, glazing, and finish.
 - 2. Color: Owner to select from manufacturer's full range.
- E. Manufacturer's Project References: Submit list of successfully completed projects including project name and location, name of architect, and type and quantity of doors manufactured.
- F. Maintenance Manual: Submit manufacturer's maintenance and cleaning instructions for doors, including maintenance and operating instructions for hardware.
- G. Warranty: Submit manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 - 1. Continuously engaged in manufacturing of doors of similar type to that specified.
 - 2. Door and frame components from same manufacturer.
 - 3. Evidence of a compliant documented quality management system.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying opening door mark and manufacturer.
- B. Storage: Store materials in clean, dry area indoors in accordance with manufacturer's instructions.
- C. Handling: Protect materials and finish from damage during handling and installation.

1.8 WARRANTY

- A. Warrant doors, frames, and factory hardware against failure in materials and workmanship, including excessive deflection, faulty operation, defects in hardware installation, and deterioration of finish or construction in excess of normal weathering.
- B. Warranty Period: Ten years starting on date of shipment.
- C. Hardware Attachment Warranty: Door Manufacture shall install all hardware (except closers) and warrant attachment for a period of ten years.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Basis of Design: **SL-15 wide stile monumental aluminum stile and rail doors by Special-Lite, Inc.**, PO Box 6, Decatur, Michigan 49045. Toll Free (800) 821-6531. Phone (269) 423-7068. Fax (800) 423-7610. Web Site www.special-lite.com. E-Mail info@special-lite.com. Subject to compliance with the requirements, provide the above named product or a comparable product by one of the following:
 - a. Kawneer
 - b. Old Castle Architectural Products
 - c. Special-Lite Inc.

2.2 MONUMENTAL STILE AND RAIL DOORS

- A. Door Opening Size: As indicated on the Drawings.
- B. Door Thickness: 1-3/4 inches.

- C. Stiles and Rails:
 - 1. Material: Aluminum extrusions made from prime-equivalent billet that is produced from 100% reprocessed 6063-T5 alloy recovered from industrial processes, 0.125-inch minimum wall thickness, 1-piece.
 - 2. Stile Width: 4-1/2 inches.
 - 3. Rail Width:
 - a. Top: 6-1/2 inches.
 - b. Bottom: 10 inches.
- D. Corners:
 - 1. True mortise and tenon joints.
 - 2. Full-width 3/8-inch diameter galvanized steel tie rods secured with locking hex nuts.
- E. Welding of Joints: Not permitted.

2.3 ALUMINUM-FRAMED STOREFRONT SYSTEMS

- A. Basis of Design Product: SL-260FG aluminum-framed storefront system as manufactured by Special-Lite, Inc, PO Box 6, Decatur, MI 49045 (PH: 800-821-6531). Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1. Kawneer Corporation
 - 2. Old Castle Architectural Products
 - 3. Special-Lite, Inc.
- B. Framing:
 - 1. Size: 2 inches by 6 inches framing size with 1" glass insulating units.
 - 2. Material: Aluminum extrusions made from prime-equivalent billet that is produced from 100% reprocessed 6063-T6 alloy recovered from industrial processes.
 - 3. Jambs, Mullions, Sills, Horizontal Intermediates, and Headers: 0.125-inch wall thickness.
 - 4. Lock Jambs, Hinge Jambs, and Door Headers: 0.125-inch wall thickness.

2.4 MATERIALS

- A. Aluminum Members:
 - 1. Aluminum extrusions made from prime-equivalent billet that is produced from 100% reprocessed 6063-T5 alloy recovered from industrial processes: ASTM B 221.
 - 2. Sheet and Plate: ASTM B 209.
 - 3. Wall Thickness: 0.125 inch.
 - 4. Alloy and Temper: As required by manufacturer for strength, corrosion resistance, application of required finish, and control of color.
- B. Fasteners:
 - 1. Material: Aluminum, 18-8 stainless steel, or other noncorrosive metal.
 - 2. Compatibility: Compatible with items to be fastened.
 - 3. Exposed Fasteners: Oval Phillips head screws with finish matching items to be fastened.
- C. Framing System: Refer to Section 08410 Aluminum Framed Storefront.

2.5 FABRICATION

- A. Sizes and Profiles: Required sizes for door and frame units and profile requirements shall be as indicated on the Drawings.
- B. Coordination of Fabrication: Field measure before fabrication and show recorded measurements on shop drawings.
- C. Assembly:
 - 1. Complete cutting, fitting, forming, drilling, and grinding of metal before assembly.
 - 2. Remove burrs from cut edges.
- D. Welding: Welding of doors or frames is not acceptable.
- E. Fit:
 - 1. Maintain continuity of line and accurate relation of planes and angles.
 - 2. Secure attachments and support at mechanical joints with hairline fit at contacting members.

2.6 HARDWARE

- A. Premachine doors in accordance with templates from specified hardware manufacturers and hardware schedule.
- B. Factory install hardware.
- C. Integral Adjustable Dual Brush Door Bottom, SL-301 supplied and installed by Door Manufacturer.
- D. Hardware Schedule: As specified in Section 08710 and as indicated on the Drawings.
 - 1. Hinges: See Spec section 08710
 - 2. Locking Hardware: See Spec section 08710
 - 3. Flush Bolts and Surface Bolts: See Spec section 08710
 - 4. Door Pulls: See Spec section 08710.
 - 5. Push Bars: See Spec section 08710.
 - 6. Concealed adjustable bottom brush. Install door manufacturer's multidirectional adjustable bottom with double nylon brush weatherstripping. Door bottom must be concealed and adjust to accommodate irregular tapered floor conditions.
- E. Finish: Clear.

2.7 GLAZING

- A. Factory Safety Glazing with a permanent SGCC Certification Label: 1-inch glass insulating units
- B. Design glazing system for replacement of glass. Manufacturer's standard flush glazing system of recessed channels and captive glazing gaskets or applied stops as indicated on the Drawings.

- C. Allow for thermal expansion on exterior units.
- D. Performance Requirements:
 - i. Maximum U-Value: 0.8
 - ii. Maximum SHGC: 0.4

2.8 ALUMINUM FINISHES

- A. Anodized Finish: Class I finish, 0.7 mils thick.

1. Clear 215 R1, AA-M10C12C22A41.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive doors. Notify Architect of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Ensure openings to receive frames are plumb, level, square, and in tolerance.

3.3 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions.
- B. Install doors plumb, level, square, true to line, and without warp or rack.
- C. Anchor frames securely in place.
- D. Separate aluminum from other metal surfaces with bituminous coatings or other means approved by Architect.
- E. Set thresholds in bed of mastic and backseal.
- F. Install exterior doors to be weathertight in closed position.
- G. Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
- H. Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Services: Manufacturer's representative shall provide technical assistance and guidance for installation of doors.

3.5 ADJUSTING

- A. Adjust doors, hinges, and locksets for smooth operation without binding.

3.6 CLEANING

- A. Clean doors promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that would damage finish.

3.7 PROTECTION

- A. Protect installed doors to ensure that, except for normal weathering, doors will be without damage or deterioration at time of substantial completion.

END OF SECTION 081200

SECTION 083610: STEEL SECTIONAL OVERHEAD DOORS**PART 1 - GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Electrically operated steel sectional overhead doors.
 - 2. Operating hardware, controls, and supports.
- B. Related Sections:
 - 1. Division 1: Administrative, procedural, and temporary work requirements.
 - 2. Section 099113 - Painting: Field painting of doors.
 - 3. Division 26: Connection to power supply and control devices.

1.2 REFERENCES

- A. ASTM International (ASTM) A653/A653M-03 - Standard Specification for Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

1.3 SYSTEM DESCRIPTION

- A. Design doors to withstand:
 - 1. Positive and negative design wind loads in accordance with minimum applicable Building Code requirements.
 - 2. Cycle life of 10,000 cycles.
- B. Operation: Electric.Track and Operating Hardware: Standard lift type.

1.4 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
 - 2. Product Data: Provide information on component construction, anchorage method, and hardware.
- B. Closeout Submittals:
 - 1. Operation and Maintenance Data.

1.5 WARRANTIES

- A. Provide manufacturer's one year warranty against defects in materials and workmanship.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Contract Documents are based on Model 3285 by C.H.I. Overhead Doors or approved equal.
- B. Substitutions: Under provisions of Section 012500.

2.2 MATERIALS

- A. Galvanized Steel Sheet:
 - 1. ASTM A653/A653M, Structural Quality, G60 coating class.
- B. Glazing: Clear, insulated, tempered glass.

2.3 COMPONENTS

- A. Door Sections:
 - 1. Type: Micro-grooved sandwich style.
 - 2. Material: Galvanized steel.
 - 3. Gage: 20 gage exterior skin with 27 gage interior skin, polyurethane core sections
 - 4. Thickness: Nominally 2 inches.
 - 5. Rails: Tongue-and-groove.
 - 6. End caps: Wrap-around box style, 20 gage galvanized steel, full height of section.
 - 7. Insulation: CFC-free polystyrene
 - 8. Vision lites:
 - a. Match Existing size and profile, set with silicone sealant and screws.
 - b. Pattern: Match Existing
 - 9. Exhaust ports: Aluminum, with hinged cover.
- B. Tracks:
 - 1. 3 inches wide, roll-formed 13 gage galvanized steel, with galvanized steel mounting brackets.
 - 2. Lower track sections adjustable for weathertight fit.
 - 3. Horizontal tracks reinforced with minimum 13 gage galvanized steel angle according to door weight and size.
- C. Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel, with floating hardened steel bearing rollers, located at top and bottom of each panel, each side.
- D. Spring Counterbalance:
 - 1. Oil tempered torsion springs mounted on cross-header shaft supported by galvanized steel ball bearing end plates and center carrier brackets as required.
 - 2. Counterbalance transferred to doors via aircraft quality braided steel lift cables.
- E. Bottom Weatherstripping: Vinyl weatherseal, full width of door.
- F. Head and Jamb Weatherstripping: Flexible one piece vinyl extrusions.
- G. Lock: Inside slide type, adjustable keeper, spring activated.

- H. Electric Operator:
 - 1. Power supply: 220 VAC, [single
 - 2. Sufficient power to operate door at average speed of 12 inches per second.
 - 3. Disconnect for chain hoist operation in case of power failure.
 - 4. Control station: 24 VDC; push button station marked OPEN, CLOSE, and STOP.
 - 5. Operator shall have smart wifi/ remote access capability.
- I. Safety Device: Photoelectric sensor; detect obstruction and reverse door without requiring door to contact obstruction.
- J. Finish:
 - 1. Exterior panel surfaces: Baked-on enamel primer and polyester finish coat, match existing door color.
 - 2. Interior panel surfaces: Baked-on polyester primer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install door assembly in accordance with manufacturer's instructions.
- B. Anchor to adjacent construction without distortion or stress.
- C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.
- D. Fit and align door assembly including hardware, level and plumb, to provide smooth operation.
- E. Position head and jamb weatherstripping to contact door sections when closed; secure in position.
- F. Make wiring connections between power supply and operator and between operator and controls.

3.2 ADJUSTING

- A. Adjust to operate smoothly throughout full operating range.

END OF SECTION 083610

SECTION 085200: WOOD WINDOWS**PART 1: GENERAL****1.1 SUMMARY**

- A. Section Includes:
 - 1. Replacement Windows
 - 2. Glazing.
 - 3. Accessories.

1.2 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide products/systems that have been manufactured, fabricated, and installed to the following performance criteria:
 - 1. Comply with ANSI/AAMA/NWWDA 101/I.S.2.
 - 2. Performance Class: CW
 - 3. Performance Grade: PG-70
 - 4. U-Factor (NFRC 100): .28
 - 5. Solar Heat Gain Coefficient (SHGC) (NFRC 200) : .43
 - 6. Outdoor-Indoor Transmission Class (OITC) (ASTM E90) : 22
 - 7. Sound Transmission Class (STC) (ASTM E90) : 26

1.3 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation guides.
- C. Shop Drawings: Provide drawings indicating direction of operable parts, typical jamb, head and sill conditions, and special mullion reinforcement details.
- D. Color Samples: Submit selection and verification samples, including the following:
 - 1. Hardware: Submit Sample indicating typical finish on hardware.
 - 2. Cladding: Submit color samples of exterior cladding.
- E. Quality Assurance/Control Submittals: Submit the following:
 - 1. Performance Data: Provide manufacturer's published performance data for specified products.
- F. Contract Closeout Submittals: Submit the following:
 - 1. Warranty documents specified herein.
 - 2. Owner's Manual: Bound manual clearly identified with project name, location, and completion date. Identify type and size of units installed. Provide recommendations for periodic inspections, care, and maintenance. Identify common causes of damage with instructions for temporary repair.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.
- B. Certifications:
 - 1. Insulating Glass Units: Provide insulating glass units permanently marked with certification label of Insulating Glass Certification Council (IGCC) indicating compliance with ASTM E2190.
 - 2. Insulating Glass Units: Provide insulating glass units permanently marked with certification label of Insulating Glass Manufacturers Association of Canada (IGMAC) indicating compliance with CAN/CGSB or ASTM E2190.
- C. Windborne-Debris Resistance: Provide glazed units capable of resisting impact from windborne debris, based on pass/fail criteria as determined from testing glazed units per ASTM E1886 and ASTM E1996.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with Division 01 Product Requirements Section.
- B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Delivery: Deliver materials in manufacturer's original unopened, undamaged containers with identification labels intact.
- D. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- E. Store materials and accessories off ground, under cover, and protected from weather and construction activities.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify actual dimension of openings by field measurement before fabrication. Record measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.
- B. Install units in strict accordance with manufacturer's safety and weather recommendations.

1.7 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project Warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard limited warranty document. Manufacturer's limited warranty is in addition to, and not a limitation of, other rights Owner may have under contract documents.

PART 2: PRODUCTS**1.8 MANUFACTURER**

- A. Provide products from the following manufacturer or equal:
 - 1. Andersen Windows, Inc.
 - 2. Marvin
 - 3. Weathershield
 - 4. Jeldwen

1.9 MANUFACTURED UNITS

- A. Proprietary Product/Systems: Wood windows, including the following:
 - 1. Andersen® 400 Series Casement/Fixed Windows.

1.10 MATERIALS

- A. Frame and Sash: Fabricated from wood species approved in WDMA Industry Standard I.S.2.
- B. Vinyl Cladding: Rigid vinyl (PVC) complying with requirements of ASTM D4216, in the following color:
 - 1. Color: White.
- C. Weather-stripping:
 - 1. Venting Sash: Weather-stripped with the following material:
 - a. Tubular flexible vinyl.
 - b. Flexible EPDM foam.
 - 2. Stationary Casement/Awning Sash: Weather-stripped with foamed PVC gaskets or tubular flexible vinyl.
- D. Interior Stops:
 - 1. Unfinished pine.

1.11 GLAZING

- A. General: Insulating glass units certified through the Insulating Glass Certification Council as conforming to the requirements of IGCC. Provide dual sealed units consisting of polyisobutylene primary seal and silicone secondary seal. Provide metal spacers with bent or soldered corners.
- B. General: Insulating glass units certified through ASTM E2190. Provide dual sealed units consisting of polyisobutylene primary seal and silicone secondary seal. Provide metal spacer with bent or soldered corners.
- C. High-Performance™ Low-E4™ Glass Argon Blend Filled Insulating Glass Units:
 - 1. Glass – Operating Units: Insulating glass units consisting of an outboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3 and an inboard lite of clear, heat strengthened glass conforming to ASTM C1048, Type 1, Class 1, q3, Kind HS.
 - 2. Glass - Fixed Units: Insulating glass units consisting of an outboard and inboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3.

3. Magnetron sputtering vapor deposition (MSVD) TiO₂ coating applied to the No. 1 surface.
 4. High-Performance™ Low-E4™ Coating: Magnetron sputtering vapor deposition (MSVD) Low-E coating applied to the No. 2 surface.
 5. Filling: Fill space between glass lites with argon gas blend.
 6. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 4.
- D. High-Performance™ Low-E4™ Sun Glass, Low SHGC, Argon Blend Filled Insulating Glass Units:
1. Glass - Fixed Units: Insulating glass units consisting of an outboard and inboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3.
 2. Magnetron sputtering vapor deposition (MSVD) TiO₂ coating applied to the No. 1 surface.
 3. Filling: Fill space between glass lites with argon gas blend.
 4. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 4.
- E. Monolithic Impact Glass:
1. Glass: Impact-resistant glass consisting of two (2) lites of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3, Kind LA, laminated with 0.090 inch (2.3 mm) polyvinyl butyral interlayer in the following color:
 2. Color: Clear.
- F. Insulating Impact Resistant Glass:
1. Glass: Insulating glass units consisting of an outboard lite of clear annealed glass conforming to ASTM C1036, Type 1, Class 1, q3 and a laminated inboard lite of cleared annealed glass conforming to ASTM C1036, Type 1, Class 1, q3, Kind LA, laminate with a 0.090 inch (2.29 mm) SentryGlas® Plus interlayer.
 2. Magnetron sputtering vapor deposition (MSVD) TiO₂ coating applied to the No. 1 surface.
 3. High-Performance™ Low-E4™ Coating: Magnetron sputtering vapor deposition (MSVD) Low-E coating applied to the No. 2 surface.
 4. Filling: Fill space between glass lites with argon gas blend.
 5. Protective removable polyolefin film applied to glass surfaces No. 1 and No. 4.

1.12 HARDWARE

- A. Venting Casement Hardware:
1. Hardened steel operator arm stamped with a gear ring. Set arm gear between nylon bushing and nylon spacer. Encase drive shaft and worm gear assemblies in zinc die cast base and removable polycarbonate cover.
 - a. Maximum Clear Opening Dimensions in Full Open Position:
 - 1) Units with Split Arm Operator:
 - a) C Series: 14-7/16 inch (367 mm).
 - 2) Units with Straight Arm Operator:
 - a) C Series; 18-5/16 inch (465 mm).
 2. Hinges: Stainless steel and heavy gauge steel arms. Stainless steel reinforcing insert in low friction shoe for rectangle units. 2-knuckle stainless steel butt hinges for shaped units. Apply hinges to venting sash indicated on Drawings.
 3. Operator Handle and Covers:

- a. Folding Handle: Zinc die cast handle with powder coated painted finish and polycarbonate operator cover with integral color in the following style and finish.
 - 1) Style: Traditional.
 - 2) Color: Stone.
4. Limited Ventilation Control Adapters: Stainless steel limited ventilation control adapters designed to limit casement opening and projection. Adapters to work with the existing hinge hardware.
5. Operator Stud Cover: Baked enamel finishes matching operator handle finish. Provide operator stud cover where operator handle is removed for controlled access.

1.13 JOINING SYSTEMS

- A. Wood Non-Reinforced Joining:
 1. Non-reinforced join with wood spacer.
 2. Gusset Plates: Galvanized metal gusset plates.
- B. Aluminum Reinforced Joining.
 1. Reinforcing: Extruded aluminum profile of 6061-T6 aluminum with pre-drilled holes.
 2. End Plate: 0.080 inch (2.03 mm) 6061 T-5 stamped aluminum end plate with yellow chromate conversion coating and 1/2 inch (12.7 mm) stud that engages into aluminum profile.
- C. Steel Reinforced Joining:
 1. Reinforcing: Provide 4 inch by 3/16 inch (100 mm by 4.8 mm) thick hot rolled steel plate conforming to ASTM A36 with zinc plating and yellow chromate conversion coat. Pre drill holes for attachment to window frames and end brackets.
 2. End Brackets: Predrilled steel end brackets that attach to each end of steel reinforcement member for attachment to rough opening.
- D. LVL Reinforced Joining: 1-way.
 1. Reinforcing: 4-9/16 inch (116 mm).
 2. Reinforcing: 6-9/16 inch (167 mm).
 - a. Engineered laminated veneer lumber, 3/4 inch (19 mm) thick, with extruded aluminum end cap.
 - b. End Brackets: 18 gages (1.3 mm) galvanized preformed metal gusset plates.
 3. Jamb Clips: Stainless steel jamb clips.
- E. LVL Reinforced Joining: 2-way:
 1. Reinforcing: 6-9/16 inch (167 mm).
 - a. Engineered laminated veneer lumber 3/4 inch (19 mm) thick with extruded aluminum end cap.
 - b. End Brackets: 14 gage (2.3 mm) galvanized end brackets with zinc dichromate finish.
 - c. Intersection Brackets: 14 gage (2.3 mm) galvanized brackets with zinc dichromate finish.
 2. Jamb clips: Stainless steel jamb clips.

- F. Fasteners: Corrosion resistant screws and bolts as provided by window manufacturer for fastening reinforcement members to wood frame and fastening end brackets to reinforcement members. Other fasteners provided by window installer.
- G. Provide silicone sealant recommended by window manufacturer.
- H. Provide vinyl trim strips as recommended by window manufacturer for each joining method used.
 - 1. Color: Match window unit exterior color.
- I. Provide Head Flashing: 6 inch (152 mm) long sheet vinyl.
 - 1. Color: Match window unit exterior color.
- J. Jamb clips: Stainless steel.
- K. Inside Mull Casing: Provide mull casings in the following species.
 - 1. Casing Species: Pine.

1.14 ACCESSORIES

- A. Insect Screens: Provide venting sash with an insect screen, including attachment hardware.
 - 1. Frames: 0.024 inch (0.61 mm) rolled aluminum frame with chromate conversion coating. Provide matching corner locks and latch retainers.
 - a. Insect Screen Cloth: 18 by 16 aluminum mesh, gunmetal finish.
 - b. Frame Finish: High-bake polyester finish in the following color:
 - 1) Frame Finish: Stone.
 - c. Interior Finish: Pine veneer.
 - 2. Insect Screen Cloth: 25 by 25 micro fine stainless steel wire with a polyester non-reflective coating.
- B. Exterior Trim and Casing: Where indicated on Drawings, provide 3/4 inch (19 mm) vinyl sheathed plywood conforming to NIST Voluntary Product Standards PS1 and rigid vinyl channels.
 - 1. Color: Match window framing.
 - 2. Andersen® Vinyl Trim Board: 0.043 inch (1.09 mm) thick vinyl with lightly textured surface laminated with adhesive to 3/4 inch (19.1 mm) thick plywood.
 - a. Trim Channels: Rigid vinyl extrusions supplied by window manufacturer for use on same product line.
 - 3. Vinyl Laminated Board: 0.045 inch (1.14 mm) thick vinyl with smooth surface laminated with adhesive to 1/2 inch (13 mm) thick plywood.
 - a. Trim Channels: Rigid vinyl extrusions supplied by window manufacturer for use on same product line.
 - 4. Support Mullion Trim: 2 inch (51 mm) wide wood filler and vinyl trim strip. Color to match window unit exterior color.
- C. Extension Jambs: Wood members machined from clear material or veneered finger joined clear material approved in WDMA Industry Standard I.S.4. Pre-drill extension jambs for application.

1.15 FABRICATION

- A. Preservative Treatment: Treat wood frame members after machining with a water repellent preservative in accordance with WDMA I.S.4.
- B. Vinyl Cladding:
 - 1. Sash Members: Completely encase sash members with seamless, 0.047 inch (1.19 mm) thick, rigid vinyl extrusions. Heat-weld corners.
 - 2. Frame Units: Clad frame units with preformed rigid vinyl to provide joint-free cover. Provide integral flanges of 0.040 inch (1.02 mm) vinyl. Bond sheathing to wood frame with vinyl-to-wood adhesive.
- C. Glazing: Factory glaze with high quality glazing sealant and snap-in rigid vinyl glazing bead.
- D. Factory-apply weather-stripping.
- E. Glazing Impact Resistant Units: Factory glaze with high performance glazing sealant as primary seal and removable interior wood stops. Backfill between glass edge and frame with high performance sealant. Apply high performance glazing sealant as secondary seal at glass opening perimeter.
 - 1. Color of Secondary Sealant: Match window unit.

PART 3: EXECUTION**1.16 MANUFACTURER'S INSTRUCTIONS**

- A. Comply with the instructions and recommendations of the window manufacturer.

1.17 EXAMINATION

- A. Site Verification of Conditions: Verify that site conditions are acceptable for installation of units, including the following:
 - 1. Concrete surfaces are dry and free of excess mortar, rocks, sand, and other construction debris.
 - 2. Masonry openings are square and dimensions are correct.
 - 3. Rough openings are square and dimensions are correct.
 - 4. Sill plates are level.
 - 5. Wood frame walls are dry, clean, sound, and well nailed or glued, free of voids and without offsets at joints.
 - 6. Nail heads are driven flush with surfaces in openings and within 3 inches (75 mm) of rough opening.
- B. Do not proceed with installation of units until unacceptable conditions are corrected.

1.18 INSTALLATION

- A. General:
 - 1. Remove unit components, parts, accessories, and installation guides from carton.
 - 2. Inspect unit components and verify that components are not damaged and that parts are included before disposing of carton.

3. Shop-assemble multiple units before installation in accordance with manufacturer's installation guide.
 4. Field-assemble multiple units before installation in accordance with manufacturer's installation guide.
- B. Interface With Other Work:
1. Perform installation in accordance with Manufacturer's instructions.
 2. Install unit's level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
 3. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.
 4. Install insulation in shim space around unit perimeter to maintain continuity of building insulation. Do not overfill.
 5. Hold back exterior siding or other finish materials from edge of unit to allow for expansion and contraction and installation of proper joint sealant with backing materials. Seal perimeter of unit after exterior finish is applied per requirements of Division 07 "Joint Sealants" Section.
 6. Finish interior units per requirements specified in related sections. Refer to, and comply with, additional requirements in manufacturer's installation guides.
 7. Install optional hardware and unit accessories after cleaning.
- C. Site Tolerances:
1. Adjust operation, insect screens, hardware, and accessories for a tight fit at contact points and weather-stripping for smooth operation and weather tight closure.

1.19 CLEANING

- A. Clean units using cleaning material and methods specifically recommended by window manufacturer.
- B. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Avoid damaging protective coatings and finishes.
- D. Protect unit surfaces from masonry cleaning solution that could damage insulation glass panels or hardware.
- E. Remove debris from work site and properly dispose of debris.

1.20 PROTECTION

- A. Protect installed work from damage due to subsequent construction activity on the site.

END OF SECTION

SECTION 087100 – DOOR HARDWARE**PART 1 GENERAL****1.1 SECTION INCLUDES**

- A. This section includes door hardware for the following:
 - 1. Swinging doors.
- B. Door hardware includes, but is not necessarily limited to, the following:
 - 1. Hinges.
 - 2. Cylindrical Locksets.
 - 3. Keying.
 - 4. Mechanical Locks and Latching Devices.
 - 5. Lock and Latch Strikes.
 - 6. Exit Devices.
 - 7. Surface Door Closers.

1.2 RELATED SECTIONS

- A. Section 08120- Stile and Rail Doors
- B. Section 08200-FRP Doors and Aluminum Frames

1.3 REFERENCES

- A. Comply with the version year adopted by the Authority Having Jurisdiction:
 - 1. ANSI A117.1 - American National Standard for Accessible and Useable Buildings and Facilities.
 - 2. ANSI/BHMA A156.1, "Butts and Hinges" (copyrighted by BHMA, ANSI approved).
 - 3. ANSI/BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches.
 - 4. ANSI/BHMA A156.3 - American National Standard for Exit Devices.
 - 5. ANSI/BHMA A156.4 - American National Standard for Door Controls - Closers.
 - 6. ANSI/BHMA A156.5 - American National Standard for Auxiliary Locks and Associated Products.
 - 7. ANSI/BHMA A156.6, "Architectural Door Trim" (copyrighted by BHMA, ANSI approved).
 - 8. ANSI/BHMA A156.7, "Template Hinge Dimensions" (copyrighted by BHMA, ANSI approved).
 - 9. ANSI/BHMA A156.8, "Door Controls - Overhead Holders" (copyrighted by BHMA, ANSI approved).
 - 10. ANSI/BHMA A156.13 - American National Standard for Mortise Locks and Latches Series 1000.
 - 11. ANSI/BHMA A156.15 - Life Safety Closer/Holder/Release Devices.
 - 12. ANSI/BHMA A156.16 - Auxiliary Hardware.

13. ANSI/BHMA A156.18 - Materials and Finishes.
14. ANSI A156.19 - American National Standard for Power Assist and Low Energy Power Operated Doors.
15. ANSI A156.23 - American National Standard for Electromagnetic Locks
16. ANSI A156.24 - American National Standard for Delayed Egress Locks
17. ANSI A156.25 - American National Standard for Electrified Locking Devices
18. ANSI A156.28 - American National Standard for Keying Systems
19. ANSI A156.29 - American National Standard for Exit Locks and Alarms, Exit Locks with Exit Alarms and Alarms for Exit Devices
20. ANSI A156.31 - American National Standard for Electric Strikes and Frame Mounted Actuators
21. ANSI/UL 10C - Standard for Safety for Positive Pressure Fire Tests of Door Assemblies.

A. PERFORMANCE REQUIREMENTS

- B. Accessibility Requirements: Comply with requirements of Local building code, and Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.

- B. Product Data: Manufacturer's catalog cuts on each product to be used.

- C. Shop Drawings: Indicate locations and mounting heights of each type of hardware, schedules, and connection requirements.

D. Schedule:

1. Submit schedule indicating each type of hardware for each door.
2. List manufacturer's name with each manufacturer's hardware number together with finishes in US standards.
3. Show door number/location, handing, door and frame material, manufacture and catalog numbers, all finishes and keying information. Explain fully all abbreviations.

E. Shop Drawings:

1. Indicate locations and mounting heights of each type of hardware.
2. Supply templates to door and frame manufacturer(s) to enable proper and accurate sizing and locations of cut-outs for hardware.
3. Detail any conditions requiring custom extended lip strikes, or any other special or custom conditions.
4. Wiring diagrams including point to point and riser diagrams, function statements and system descriptions for all electrical hardware

F. Verification Samples: For each finish product specified.

1. Submit one sample of each type of typical hardware required illustrating style, color, and finish.

2. Approved samples may be incorporated into Work.

G. Closeout Submittals:

1. Project Record Documents: Schedule showing actual locations of installed cylinders and their master key code.
2. Parts lists and maintenance instructions including data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.
3. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A manufacturer with a minimum of ten years experience manufacturing door hardware.
- B. Supplier Qualifications: A supplier with a minimum of two years demonstrated experience in the sale and distribution of builders' hardware for commercial projects and who has successfully completed at least three projects of similar complexity to the project specified.
- C. Hardware Supplier Personnel: Employ Architectural Hardware Consultant (AHC) or equally qualified person to supervise and prepare all schedules, details, and services required for the project.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up and shelving for door hardware delivered to Project site. Do not store electronic access control hardware, software or accessories at Project site without prior authorization.
- B. Package hardware items individually with necessary fasteners and installation templates when necessary; label and identify each package with door opening code to match hardware schedule. Include basic installation instructions with each item or package.
- C. Store products in manufacturer's unopened packaging until ready for installation.
- D. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
- E. Store materials in a dry, warm, ventilated weathertight location.
- F. Deliver, as applicable, permanent keys, cylinders, cores, access control credentials, software and related accessories directly to Owner via registered mail, by hand or overnight package service as directed by the Owner.

1.7 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.

1.8 WARRANTY

- A. General Warranty: Reference Division 01, General Requirements. Special warranties specified in this article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under the requirements of the Construction Documents.
- B. Warranty Period: Written warranty, executed by manufacturer(s), agreeing to repair or replace components of standard and electrified door hardware that fails in materials or workmanship within specified warranty period after final acceptance by the Owner. Failures include, but are not limited to, the following:
 - 1. Structural failures including excessive deflection, cracking, or breakage.
 - 2. Faulty operation of the hardware.
 - 3. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 4. Electrical component defects and failures within the systems operation.
- C. Special Warranty Periods. Provide factory warranty against defects in material and workmanship as follows:
 - 1. Overhead Surface Closers, Grade 1: 25 Year Warranty.
 - 2. Cylindrical locks, Grade 1: 10 Year Warranty.
 - 3. Standard and Interchangeable Cylinders: 5 Year Warranty.
 - 4. Electrical components: 2 Year Warranty.
 - 5. Exit hardware: 5 Year Warranty.
 - 6. Door hinges 10 Year Warranty.

1.9 MAINTENANCE MATERIALS

- A. Maintenance Tools and Instructions: Provide a complete set of special wrenches, tools, and maintenance instructions applicable to each different or special hardware component for the Owner's continued adjustment, maintenance, and removal and replacement of door hardware.
- B. Continued Service: Beginning at Substantial Completion, and running concurrent with the specified warranty period, provide continuous twelve (12) months full maintenance including repair and replacement of worn or defective components, lubrication, cleaning, and adjusting as required for proper door opening operation. Provide parts and supplies as used in the manufacture and installation of original products.

1.10 COORDINATION

- A. Templates: Obtain and distribute to the parties involved templates for doors, frames, and other work specified to be factory prepared for installing standard

and electrified hardware. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing hardware to comply with indicated requirements.

- B. Door Hardware and Electrical Connections (if applicable): Coordinate the layout and installation of scheduled electrified door hardware and related access control equipment with required connections to source power junction boxes, low voltage power supplies, detection and monitoring hardware, and fire and detection alarm systems.
- C. Door and Frame Preparation: Related Division 08 Section doors and frames are to be prepared, reinforced and pre-wired (if applicable) to receive the installation of the specified electrified, monitoring, signaling and access control system hardware without additional in-field modifications.
- D. Coordinate work with other directly affected components involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 HINGES

- A. Basis of Design Product: PemkoHinge Continuous Geared Hinges: Full Surface Hinges: Center Pivot as manufactured by Pemko Manufacturing, PO Box 3780, 4226 Transport Street, Ventura, CA 93003; Telephone: (800) 283-9988, (805) 642-2600; Fax: (805) 642-4109; E-mail: pemkosales@pemko.com; website: www.pemko.com. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1. Bommer Industries.
 - 2. McKinney Products.
 - 3. Commercial Door Systems.
 - 4. Markar Architectural Products.
 - 5. Stanley.
- B. Requirements:
 - 1. Material: Extruded tempered aluminum.
 - 2. Material Standard: 6063 T6 aluminum alloy.
 - 3. Finish: Clear anodized.
 - 4. Type: Full mortise.
 - 5. Number: Furnish one continuous hinge for each door leaf.
 - 6. Configuration: Three interlocking extrusions in pinless assembly, installed to full height of door frame.
 - 7. Hinge Options: Center pivot.

8. Strength: **Standard Duty** (doors up to 240 lbs) unless otherwise noted as **Heavy Duty** (doors up to 540 lbs).
9. Widths: Sufficient to clear trim projection when door swings 180 degrees.
10. ADA/ ANSI compliant.

2.3 CYLINDERS

- A. Basis of Design Manufacturer: Cylinders compatible to the Owner's existing system as manufactured by SARGENT Manufacturing Company, 100 Sargent Drive, P.O. Box 9725, New Haven, CT 06536-0915; PH: (800) 727-5477; FX: (888) 863-5054; EM: webmaster@sargentlock.com; Website: www.sargentlock.com. Subject to compliance with requirements, provide the named product or a comparable product subject the Architect's review as a substitution in accordance with the requirements of Division 01. Approval of requests is at the discretion of the Architect.
- B. General: Cylinder manufacturer shall have a minimum of ten (10) years experience designing secured master key systems and have on record a published security keying system policy.
- C. Source Limitations: Obtain each type of keyed cylinder and keys from the same source manufacturer as the locksets and exit devices unless otherwise indicated.
- D. Cylinders:
 1. Mortise Type: Threaded cylinders with rings and straight- or clover type cam.
 2. Rim Type: Cylinders with back plate, flat-type vertical or horizontal tailpiece, and raised trim ring.
 3. Bored-Lock Type: Cylinders with tailpieces to suit locks.
 4. Mortise and rim cylinder collars to be solid and recessed to allow the cylinder face to be flush and be free spinning with matching finishes.

2.4 KEYING

- A. Keying System: Each type of lock and cylinders to be factory keyed. Owner to provide to define keying system requirements and as follows:
 1. Provide new master key or grand master key locks to Owner's existing system.
 2. Nickel silver. Stamp keys with "DO NOT DUPLICATE".
 3. Each key and key blank is engraved with a unique serial number at the factory. Serial numbers are never repeated, allowing identification and tracking of each key.
- B. Key Quantity. Supply keys in the following minimum quantities:
 1. Master keys: Four (4).
 2. Construction Control Keys: Two (2).
 3. Permanent Control Keys: Ten (10).

- C. Construction Keying: Provide construction master keyed cylinders or temporary keyed construction cores where specified. Provide construction master keys in quantity required by project Owner.
- D. Key Registration List: Provide keying transcript list to Owner in the proper format for importing into key control software.

2.5 MECHANICAL LOCKS AND LATCHING DEVICES

A. Basis of Design Product:

- i. **Standard Duty: 10 Line Cylindrical Lock** as manufactured by SARGENT Manufacturing Company, 100 Sargent Drive, P.O. Box 9725, New Haven, CT 06536-0915; PH: (800) 727-5477; FX: (888) 863-5054; EM: webmaster@sargentlock.com; Website: www.sargentlock.com. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1. Corbin Russwin Hardware- CL3300 Series.
 - 2. Yatch Locks and Hardware- 5400LN Series.
 - 3. Sargent Manufacturing Company.
- ii. **Heavy Duty: 11 Line Lever Lock** as manufactured by SARGENT Manufacturing Company, 100 Sargent Drive, P.O. Box 9725, New Haven, CT 06536-0915; PH: (800) 727-5477; FX: (888) 863-5054; EM: webmaster@sargentlock.com; Website: www.sargentlock.com. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:
 - 1. Corbin Russwin Hardware- CL3300 Series.
 - 2. Yatch Locks and Hardware- 5400LN Series.
 - 3. Sargent Manufacturing Company.

B. Requirements:

- 1. Lever Type: Locksets to incorporate a free-wheeling lever design with a lifetime warranty against lever sag and spring breakage on all locking functions.
- 2. Grade 1 (Heavy Duty).
- 3. ANSI/BHMA A156.2, Series 4000, Grade 1 certified.
- 4. Lock Chassis: Fabricated of heavy gauge steel, zinc dichromate plated, with through-bolted application.
- 5. Furnish with solid cast levers, standard 2-3/4" backset, and 1/2" (3/4" at rated paired openings) throw brass or stainless steel latchbolt.
- 6. Locks are to be non-handed and fully field reversible.

2.6 LOCK AND LATCH STRIKES

- A. Strikes: Provide manufacturer's standard strike with strike box for each latch or lock bolt, with curved lip extended to protect frame, finished to match door hardware set, unless otherwise indicated, and as follows:
 - 1. Flat-Lip Strikes: For locks with three piece antifriction latchbolts, as

recommended by manufacturer.

2. Extra-Long-Lip Strikes: For locks used on frames with applied wood casing trim.
3. Aluminum-Frame Strike Box: Provide manufacturer's special strike box fabricated for aluminum framing.

B. Standards. Comply with the following:

1. Strikes for Mortise Locks and Latches: BHMA A156.13.
2. Strikes for Bored Locks and Latches: BHMA A156.2.
3. Strikes for Auxiliary Deadlocks: BHMA A156.5.
4. Dustproof Strikes: BHMA A156.16.

2.7 EXIT DEVICES

- A. Basis of Design Product: 80 Series **Heavy Duty** Exit Device as manufactured by SARGENT Manufacturing Company, 100 Sargent Drive, P.O. Box 9725, New Haven, CT 06536-0915; PH: (800) 727-5477; FX: (888) 863-5054; EM: webmaster@sargentlock.com; Website: www.sargentlock.com. Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Corbin Russwin Hardware- ED4000/ ED5000 Series
2. Yatch Locks and Hardware- 7000 Series.
3. Sargent Manufacturing Company.

B. Requirements:

1. ANSI/BHMA A156.3, Grade 1 certified.
2. Mounting rails to be formed from smooth stainless steel no less than 0.072" thick, with push rails a minimum 0.062" thickness. Painted or aluminum metal rails are not acceptable.
3. Exit device latch to be investment cast stainless steel, Pullman type, with deadlock feature.

2.8 SURFACE DOOR CLOSERS

- A. Basis of Design Product: Benchmark 4040XP Series Closer as manufactured by LCN Closers, 121 W. Railroad Ave., P.O. Box 100, Princeton, IL 61356 (Tel: 877-671-7011). Subject to compliance with the requirements, provide the named product or a comparable product by one of the following:

1. LCN Closers
2. Sargent Manufacturing Company
3. Stanley Precision

B. Requirements:

1. ANSI/BHMA A156.4 Grade 1.
2. UL 10C Positive Pressure.
3. ADA Compliant.

4. Door closer cylinders shall be of high strength cast iron construction to provide low wear operating capabilities of internal parts throughout the life of the installation.
5. Bearing type shall be full compliment.
6. Closers shall be adjustable and be non-handed.
7. Main speed and latch speed regulation valves are to be staked.
8. Closers are to have the option of Delayed Action.
9. Provide closers with regular arm, parallel arm or top jamb mount as required to keep corridors clear and for proper installation. Arms are to be provided extra duty, hold open, stop and spring cushion as specified.
10. All closers mounted on exterior openings are to be furnished with LCN's special rust inhibiting process (SRI) or approved equal.
11. Closers are to be provided with a standard or custom powder coat finish.
12. Closers shall not have pressure relief valves.
13. Supply all drop plates, shoe supports, blade stops, templates, etc. to properly install closers according to manufacturer's recommendations. In replacement installations closers shall utilize the "Quick Fix Kit" to cover existing holes.
14. Provide adjustable units complying with ANSI A117.1 provisions for door opening force and delayed action closing.
15. Hydraulic Fluid: All mechanical closers shall utilize temperature stable fluid capable of withstanding temperature ranges of 120 degrees F. to -30 degrees F. without requiring seasonal adjustment of closer speed to properly close the door.
16. Closers shall have a minimum 10 year warranty.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine scheduled openings, with installer present, for compliance with requirements for installation tolerances, labeled fire door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Notify Architect of any discrepancies or conflicts between the door schedule, door types, drawings and scheduled hardware. Proceed only after such discrepancies or conflicts have been resolved in writing.
- C. Do not begin installation until substrates have been properly prepared.
- D. Verify doors and frames are ready to receive door hardware and dimensions are as indicated on shop drawings.
- E. Verify electric power is available to power operated devices and is of correct characteristics (if applicable).

3.2 INSTALLATION

- A. Install in accordance with manufacturer's written instructions and according to the specifications.
- B. Mounting Heights: Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer. Verify hardware locations conform to ADA/ ANSI A117.1 requirements and all other governing regulations.
- C. Install with fasteners provided by hardware item manufacturer.
- D. Storage: Provide a secure lock up for hardware delivered to the project site but not yet installed. Control the handling and installation of hardware items so that the completion of the work will not be delayed by hardware losses before and after installation.

3.3 ADJUSTING

- A. Adjust and check each operating item of door hardware and each door to ensure smooth, proper operation and function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation as needed and to comply with applicable referenced accessibility requirements.

3.4 CLEANING AND PROTECTION

- A. Protect all hardware stored on construction site in a covered dry place. Protect exposed hardware installed on all doors during the construction phase. Install any and all hardware at the latest possible time frame.
- B. Clean and adjust surfaces soiled by door hardware installation.
- C. Clean operating items as necessary to restore proper finish and provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Owner occupancy.

3.5 DEMONSTRATION

- A. Instruct Owner's maintenance personnel to adjust, operate, and maintain mechanical and any electromechanical door hardware.

END OF SECTION 087100

SECTION 087200: WEATHER-STRIPPING & SEALS (THRESHOLDS)**PART 1 : GENERAL****1.01 SUMMARY**

- A. Section Includes: Commercial Thresholds
- B. Related Sections:
 - 1. Division 8 Section(s): Steel Doors
 - 2. Aluminum frames entrance and storefront

1.02 REFERENCES

- A. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):
 - 1. ANSI/BHMA A156.18: Materials and Finishes.
 - 2. ANSI/BHMA A156.21 Thresholds.
- B. Underwriters Laboratories, Inc. (UL):
 - 1. UL 10B Fire Tests of Door Assemblies.
 - 2. UL 10C Fire Tests of Door Assemblies.
 - 3. UL 410 Slip Resistance for Floor Surface Materials.
- C. Federal Government:
 - 1. U.S. Architectural & Transportation Barriers Compliance Board. Americans with Disabilities Act (ADA), Accessibility Guidelines for Buildings and Facilities (ADAAG), 1992.
 - 2. Federal Standard FED-STD-795-1988 (Revised 1989) Uniform Federal Accessibility Standards.
 - 3. Federal Specification P-F-430C Finish, Floor, Water Emulsion (for Use On Light Colored Floors).
- D. International Code Council (ICC):
 - 1. UBC 7-2 Fire Test of Door Assemblies (Positive Pressure).
 - 2. International Building Code (IBC) Code 2000 (Positive Pressure).
 - 3. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities.
- E. British Standards (BS):
 - 1. BS 476 Fire Tests on Building Materials and Structures.
- F. State Standards:
 - 1. California Title 24, Part 2.

1.03 SYSTEM DESCRIPTION

- A. Design Requirements: Provide threshold and seal products which have been manufactured, fabricated and installed to meet the following design criteria:
 - 1. Performance obtained from test procedures ICC/ANSI A117.1.

2. Compliant with UL 410.
3. Compliant with ADA standards.

1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit manufacturer's product data and installation instructions.
- C. Shop Drawings: Provide drawings indicating required component locations, interface with adjacent materials, installation, anchorage, fastening and similar information.
- D. Samples: Submit one each of manufacturer's standard selection samples.
- E. Quality Assurance/Control Submittals: Submit the following:
 1. Test Reports: Upon request, submit fire test reports from recognized testing laboratory.
 2. Certificates: Submit manufacturer's certificate that products meet or exceed specified requirements.
- F. Closeout Submittals: Submit the following:
 1. Warranty documents specified herein.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Utilize an installer having demonstrated experience on projects of similar size and complexity.

1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirement Section.
- B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
- D.

PART 2 PART 2: PRODUCTS

2.01 THRESHOLDS

- A. Proprietary Products/Systems: Thresholds, including the following:
 1. Saddle Thresholds:
 - a. Material: Extruded tempered aluminum 6063-T6.
 - b. Finish (ANSI/BHMA 156.18): Mill finish aluminum.

PART 3 : EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with the instructions and recommendations of the threshold manufacturer.

3.02 EXAMINATION

- A. Site Verification of Conditions:
 - 1. Verify that site conditions are acceptable for installation of thresholds.
 - a. Examine doors and frames for compliance with requirements for door and frame manufacturer's installation tolerances, labeled fire door assembly construction, wall and floor construction and other conditions affecting performance.
 - 2. Do not proceed with installation of thresholds until unacceptable conditions are corrected.

3.03 INSTALLATION

- A. Mounting Location: Comply with drawings and approved shop drawings.
- B. Adjust and reinforce attachment substrates as necessary for proper installation and operation.
- C. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- D. Rubber Ramps: Install using "Liquid Nails" per manufacturer's installation instructions.

3.04 ADJUSTING

- A. Perform adjustments required to ensure that thresholds function in compliance with manufacturer's performance criteria prior to acceptance by Owner.

3.05 CLEANING

- A. Remove any protective films and clean components as necessary following manufacturer's recommended procedures.

3.06 PROTECTION

- A. Protect installed work from damage due to subsequent construction activity on the site.

END OF SECTION 087200

SECTION 088100 – GLAZING**PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes aluminum framed storefront glazing.

1.2 RELATED SECTIONS

- A. Section 08410- Aluminum Framed Storefront.

1.3 DEFINITIONS

- A. Interspace: Space between lites of an insulating-glass unit that contains dehydrated air or a specified gas.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Glass Design: Glass thickness designations indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites in the thickness designations indicated for various size openings, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:
 - 1. Glass Thicknesses: Select minimum glass thicknesses to comply with ASTM E 1300, according to the following requirements:
 - a. Design Wind Loads: Determine design wind loads applicable to Project from basic wind speed indicated in miles per hour at 33 feet above grade, according to ASCE 7, "Minimum Design Loads for Buildings and Other Structures": Section 6.5, "Method 2-Analytical Procedure," based on mean roof heights above grade indicated on Drawings.
 - b. Minimum Glass Thickness for Exterior Lites: Not less than 6.0 mm.
- C. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to procedures indicated below:
 1. For insulating-glass units, properties are based on units of thickness indicated for overall unit and for each lite 6.0 mm thick and a nominal 1/2-inch- wide interspace.
 2. Center-of-Glass Values: Based on using LBL-44789 WINDOW 5.0 computer program for the following methodologies:
 - a. U-Factors: NFRC 100 expressed as Btu/ sq. ft. x h x deg F.
 - b. Solar Heat Gain Coefficient: NFRC 200.
 - c. Solar Optical Properties: NFRC 300.

1.5 SUBMITTALS

- A. Product Data: For each Balance type, glass product, and glazing material indicated.
- B. Samples:
 1. 18-inch- square minimum, of assembled insulating glass unit.
 2. Glazing sealant and tapes.
- C. Glazing Schedule: Use same designations indicated on Drawings.
- D. Preconstruction Adhesion and Compatibility Test Report: From glazing sealant manufacturer.

1.6 QUALITY ASSURANCE

- A. Preconstruction Adhesion and Compatibility Testing: Submit to elastomeric glazing sealant manufacturers, for testing according to ASTM C 1087, samples of each glazing material type, tape sealant, gasket, glazing accessory, and glass-framing member that will contact or affect elastomeric glazing sealants:
- B. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated. Refer to these publications for glazing terms not otherwise defined in this Section or in referenced standards.
 1. GANA Publications: GANA's "Glazing Manual."
 2. IGMA Publication for Insulating Glass: SIGMA TM-3000, "Glazing Guidelines for Sealed Insulating Glass Units."
- C. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of the Insulating Glass Certification Council or Associated Laboratories, Inc.

1.7 WARRANTY

- A. Manufacturer's Special Warranty for Coated-Glass Products: Manufacturer's standard form, made out to Owner and signed by coated-glass manufacturer agreeing to replace coated-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
 - 1. Warranty Period: 10 years from date of Substantial Completion.
- B. Manufacturer's Special Warranty on Insulating Glass: Manufacturer's standard form, made out to Owner and signed by insulating-glass manufacturer agreeing to replace insulating-glass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.
 - 3. Product: Subject to compliance with requirements, provide product specified.
 - 4. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 - 5. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 GLASS PRODUCTS

- A. Insulating-Glass Units, General: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774 for Class CBA units and with requirements specified in this Article and in Part 2 "Insulating-Glass Units" Article.
 - 1. Available Products:
 - a. PPG: Solarban 60 Low-E glass with Argon
 - b. Viracon: Low-E (VE) Insulating Glass with Argon: VE1-2M
 - c. Viracon: Low-E (VE) Insulating Glass with Argon: VE1-85
 - 2. Factory Safety Glazing with a permanent SGCC Certification Label:
 - 3. Overall Unit Thickness and Thickness of Each Lite: 1 inch.

- a. Note: Dimensions indicated for insulating-glass units are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit's edge.
 - b. Overall thickness to match thickness of existing units to be replaced. Each lite to have a thickness as determined by design wind load with a minimum thickness of 6.0 mm.
4. Sealing System: Dual seal.
5. Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements:
 - a. Spacer Material: Aluminum with black or dark bronze, color anodic finish
Aluminum with powdered metal paint finish in color selected by Architect .
 - b. Corner Construction: Manufacturer's standard corner construction.
6. Performance Requirements:
 - a. Visible Light Transmittance: 70% percent minimum.
 - b. Winter Nighttime U-Factor: 0.27 maximum.
 - c. Summer U-Factor: 0.25 maximum
 - d. Solar Heat Gain Coefficient: 0.4 maximum.
 - e. Low-E Coating: Pyrolytic or sputtered on second or third surface.

2.3 GLAZING GASKETS

- A. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:
 1. Neoprene, ASTM C 864.
 2. EPDM, ASTM C 864.
 3. Silicone, ASTM C 1115.
 4. Thermoplastic polyolefin rubber, ASTM C 1115.
 5. Any material indicated above.
- B. Soft Compression Gaskets: Extruded or molded, closed-cell, integral-skinned gaskets of material indicated below; complying with ASTM C 509, Type II, black; and of profile and hardness required to maintain watertight seal:
 1. Neoprene.
 2. EPDM.
 3. Silicone.
 4. Thermoplastic polyolefin rubber.
 5. Any material indicated above.

2.4 GLAZING SEALANTS

- A. General: Provide products of type indicated, complying with the following requirements:
 1. Compatibility: Select glazing sealants that are compatible with one another and with other materials they will contact, including glass products, seals of insulating-glass units,

- and glazing channel substrates, under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
2. Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range to match color of aluminum sash.
- B. Elastomeric Glazing Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
1. Single-Component Neutral- and Basic-Curing Silicone Glazing Sealants :
 - a. Available Products (**verify compatibility of applied sealants with sealants used in fabrication of insulating glass units**):
 - 1) Dow Corning 795
 - 2) Dow Corning 999-A
 - 3) GE Silicones; SilPruf NB SCS9000.
 - 4) GE Silicones; UltraPruf II SCS2900.
 - 5) Pecora Corporation; 895.
 - 6) Tremco; Spectrem 2.
 - b. Type and Grade: S (single component) and NS (nonsag).
 - c. Class: 50.
 - d. Use Related to Exposure: NT (nontraffic).
 - e. Uses Related to Glazing Substrates: M, G, A, and, as applicable to glazing substrates indicated, O.
 - f. Applications: wet glazing

2.5 GLAZING TAPES

- A. Back-Bedding Mastic Glazing Tapes: Preformed, butyl-based elastomeric tape with a solids content of 100 percent; nonstaining and nonmigrating in contact with nonporous surfaces; with or without spacer rod as recommended in writing by tape and glass manufacturers for application indicated; packaged on rolls with a release paper backing; and complying with ASTM C 1281 and AAMA 800 for products indicated below:
1. AAMA 807.3 tape, for glazing applications in which tape is not subject to continuous pressure.
- B. Expanded Cellular Glazing Tapes: Closed-cell, PVC foam tapes; factory coated with adhesive on both surfaces; packaged on rolls with release liner protecting adhesive; and complying with AAMA 800 for the following types:
1. Type 1, for glazing applications in which tape acts as the primary sealant.

2. Type 2, for glazing applications in which tape is used in combination with a full bead of liquid sealant.

2.6 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore, Type A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions with a Shore, Type A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).

PART 3 - EXECUTION

3.1 GLAZING

- A. General: Comply with combined written instructions of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are indicated, including those in referenced glazing publications.
 1. Glazing channel dimensions, as indicated on Drawings, provide necessary bite on glass, minimum edge and face clearances, and adequate sealant thicknesses, with reasonable tolerances. Adjust as required by Project conditions during installation.
 2. Protect glass edges from damage during handling and installation. Remove damaged glass from Project site and legally dispose of off Project site. Damaged glass is glass with edge damage or other imperfections that, when installed, could weaken glass and impair performance and appearance.
 3. Apply primers to joint surfaces where required for adhesion of sealants, as determined by preconstruction sealant-substrate testing.
 4. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
 5. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
 6. Provide spacers for glass lites where length plus width is larger than 50 inches.
 7. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.

- B. Tape Glazing: Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
1. Cover vertical framing joints by applying tapes to heads and sills first and then to jambs. Cover horizontal framing joints by applying tapes to jambs and then to heads and sills.
 2. Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant approved by tape manufacturer.
 3. Apply heel bead of elastomeric sealant, where required.
 4. Center glass lites in openings on setting blocks and press firmly against tape by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings.
 5. Apply cap bead of elastomeric sealant over exposed edge of tape.
- C. Gasket Glazing (Dry): Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
1. Insert soft compression gasket between glass and frame or fixed stop so it is securely in place with joints miter cut and bonded together at corners.
 2. Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work toward centers of openings. Compress gaskets to produce a weathertight seal without developing bending stresses in glass. Seal gasket joints with sealant recommended by gasket manufacturer.
 3. Install gaskets so they protrude past face of glazing stops.
- D. Sealant Glazing (Wet): Install continuous spacers, or spacers combined with cylindrical sealant backing, between glass lites and glazing stops to maintain glass face clearances and to prevent sealant from extruding into glass channel and blocking weep systems until sealants cure. Secure spacers or spacers and backings in place and in position to control depth of installed sealant relative to edge clearance for optimum sealant performance.
1. Force sealants into glazing channels to eliminate voids and to ensure complete wetting or bond of sealant to glass and channel surfaces.
 2. Tool exposed surfaces of sealants to provide a substantial wash away from glass.

3.2 CLEANING AND PROTECTION

- A. Protect exterior glass from damage. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove substances immediately as recommended by glass manufacturer.

- B. Remove and replace glass that is broken, chipped, cracked, or abraded or that is damaged from natural causes, accidents, and vandalism, during construction period.

END OF SECTION 088100

SECTION 092216: NON-STRUCTURAL METAL FRAMING**PART 1: GENERAL****1.1 SECTION INCLUDES**

- A. Interior wall framing systems.
- B. Interior ceiling suspension systems.

1.2 REFERENCES

- A. ASTM A641 - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
- B. ASTM C645 - Specification for Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board.
- C. ASTM C754 - Specification for Installation of Framing Members to Receive Screw Attached Gypsum Wallboard, Backing Board, or Water Resistant Backing Board.
- D. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
- E. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials
- G. ASTM E90 - Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions.
- H. ASTM E413 - Classification for Rating Sound Insulation.
- I. ASTM E119 - Specification for Fire Tests of Building Construction and Materials.
- J. GA-600 - Fire Resistance Design Manual.
- K. AISI – American Iron and Steel Institute Standard for Cold Formed Steel Framing, Code of Standard Practice (AISI COSP)

1.3 DESIGN REQUIREMENTS

- A. Provide non-load bearing steel stud partitions with deflections conforming to L/360 at 15 PSF for veneer plaster walls and L/240 at 5 PSF typical for gypsum board walls.
- B. Fire-Resistive Rating: Where indicated on Drawings, provide materials and construction that are identical to those assemblies whose fire resistance rating has been determined per ASTM E119 by a testing and inspecting organization acceptable to authorities having jurisdiction.

Non-Structural Metal Framing

1. Meet or exceed fire resistance requirements outlined under provisions of the GA-600 Fire Resistance Design Manual for wall and ceiling assemblies.
 2. Meet or exceed flame/fuel/smoke requirements of ASTM E84 surface burning characteristics for finish materials.
- C. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Shop Drawings: Indicate details associated with fireproofing and acoustical seals, opening locations and details, and opening termination details.
- C. Product Data: Provide manufacturer's data on metal framing.
- D. Provide manufacturers written installation instructions.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this Section with minimum 5 years documented experience.
- B. Installer Qualifications: Installer experienced in performing work of this Section who has specialized in installation of work similar to that required for the Project.
- C. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, and manufacturer's installation instructions.
- D. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. Construct areas designated by Architect.
 2. Do not proceed with remaining work until material, details and workmanship are approved by Architect.
 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store materials protected from exposure to rain, snow or other harmful weather conditions, at temperature and humidity conditions per AISI COSP section F3.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 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.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. Approved Manufacturers: Marino\WAR, Dietrich Building Systems or Cemco Steel

2.2 NON-LOAD-BEARING STEEL FRAMING, GENERAL

- A. Framing Members - General: Comply with ASTM C754 for conditions indicated.
1. Steel Sheet Components: Comply with ASTM C645 requirements for metal, unless otherwise indicated.
 2. Protective Coating: ASTM A653/A653M, G40 (Z120), hot-dip galvanized.
 3. Protective Coating: ASTM A653/A653M, G60 (Z180), hot-dip galvanized.
 4. Protective Coating: manufacturer's standard corrosion-resistant zinc coating, unless otherwise indicated.

2.3 SUSPENSION SYSTEM COMPONENTS

- A. Tie Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.0625 inch (1.59 mm) diameter wire, or double strand of 0.0475 inch (1.21 mm) diameter wire.
- B. Hanger Attachments to Concrete:
1. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining, without failure, a load equal to 5 times that imposed by construction as determined by testing according to ASTM E488.
 - a. Type: Cast-in-place anchor, designed for attachment to concrete forms.
 - b. Type: Post installed, chemical anchor.
 - c. Type: Post installed, expansion anchor.
 2. Powder-Actuated Fasteners: Suitable for application indicated, fabricated from corrosion-resistant materials with clips or other devices for attaching hangers of type indicated, and capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by testing according to ASTM E1190.
- C. Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.162 inch (4.12 mm) diameter.
- D. Flat Hangers: Steel sheet, 1 by 3/16 inch (25.4 by 4.76 mm) by length indicated.
- E. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.0538 inch (1.37 mm) and minimum 1/2 inch (12.7 mm) wide flanges.
1. Depth: As indicated on Drawings.
- F. Furring Channels:
1. Cold-Rolled Channels: 0.0538 inch (1.37 mm) bare-steel thickness, with minimum 1/2-inch (12.7 mm) wide flanges, 3/4 inch (19.1 mm) deep.
 2. Steel Studs: ASTM C645.
 - a. Minimum Base-Metal Thickness: As indicated on Drawings.
 - b. Depth: As indicated on Drawings.

3. Furring Channels: 1-1/2 inches (38 mm) deep.
 - a. Minimum Base Metal Thickness: As indicated on Drawings.
 4. Resilient Furring Channels: 1/2-inch (12.7 mm) deep members designed to reduce sound transmission.
 - a. Configuration: Asymmetrical or hat shaped.
- G. Grid Suspension System for Ceilings: ASTM C645, direct-hung system composed of main beams and cross-furring members that interlock.

2.4 STEEL FRAMING FOR FRAMED ASSEMBLIES

- A. Steel Studs and Runners: ASTM C645.
1. Minimum Base-Metal Thickness: As indicated on Drawings.
 2. Web Size: 1-5/8 inches (42 mm).
 3. Web Size: 3-5/8 inches (92 mm).
 4. Web Size: 6 inches (152 mm).
- B. Slip-Type Head Joints: Where indicated, provide the following:
1. Single Long-Leg Runner System: ASTM C645 top runner with 2 inch (50.8 mm) deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
 2. Double-Runner System: ASTM C645 top runners, inside runner with 2 inch (50.8 mm) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
 3. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs
- C. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
1. Minimum Base-Metal Thickness: As indicated on Drawings.
- D. Cold-Rolled Channel Bridging: 0.0538 inch (1.37 mm) bare-steel thickness, with minimum 1/2 inch (12.7 mm) wide flanges.
1. Depth: As indicated on Drawings.
- E. Hat-Shaped, Rigid Furring Channels: ASTM C645.
1. Minimum Base Metal Thickness: As indicated on Drawings.
 2. Depth: As indicated on Drawings.
- F. Resilient Furring Channels: 1/2 inch (12.7 mm) deep, steel sheet members designed to reduce sound transmission.
1. Configuration: Asymmetrical or hat shaped.
- G. Cold-Rolled Furring Channels: 0.0538 inch (1.37 mm) bare-steel thickness, with minimum 1/2 inch (12.7 mm) wide flanges.
1. Depth: As indicated on Drawings.
- H. Z-Shaped Furring: With slotted or non-slotted web, face flange of 1-1/4 inches

(31.8 mm), wall attachment flange of 3/4 inch (19 mm), minimum bare-metal thickness of 0.0179 inch (0.4547 mm), and depth required to fit insulation thickness indicated.

- I. CT Studs: Cold-formed galvanized steel C-studs, ASTM C 645. 40 KSI steel.
 - 1. Minimum Base Metal Thickness: 18 gauge, 0.0428 inch (1.087 mm).
 - 2. Fasteners: 25-gauge framing - Type S screws. For 20-gauge framing - Type S-12 screws.
- J. Tabbed Track and Jamb Track: Cold-formed galvanized steel track, ASTM C 645. 40 KSI steel.
 - 1. Minimum Base Metal Thickness: 18 gauge, 0.0428 inch (1.087 mm).
 - 2. Fasteners: 25-gauge framing - Type S screws. For 20-gauge framing - Type S-12 screws.
- K. H Stud and C Runner: Cold-formed galvanized steel, ASTM C645.
 - 1. Minimum Base Metal Thickness: 25 gauge, 0.0179 inch (0.4547 mm).
 - 2. Web Size: 2 inches (51 mm).
 - 3. Fasteners: 25-gauge framing - Type S screws. For 20-gauge framing - Type S-12 screws.

2.5 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards.
 - 1. Fasteners for Metal Framing: Type, material, size, corrosion resistance, and holding power required to fasten steel members to substrates.
- B. Isolation Strip at Exterior Walls: Provide the following:
 - 1. Asphalt-Saturated Organic Felt: ASTM D226, Type I (No. 15 asphalt felt), non-perforated.
 - 2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch (3.2 mm) thick, in width to suit steel stud size.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Examine substrates to which metal framed construction attaches or abuts. Verify pre-set hollow metal frames, cast-in anchors, and structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of wall framing.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 FASTENING

- A. Ceiling Anchorage: Coordinate installation of ceiling suspension with installation of overhead structural systems to ensure that insert anchorage provisions have been installed to receive ceiling anchors in a manner that will develop their full strength and at spacing required to support ceiling.
 - 1. Provide concrete inserts and steel deck devices to other trades for installation well in advance of time needed for coordination with other construction.

3.3 ERECTION

- A. Metal Framing - General:
 - 1. Install steel framing to comply with ASTM C754 and with ASTM C840 requirements applicable to framing installation.
 - a. Conventional Drywall Framing: Materials as specified in Part 2 of this Section.
 - b. Framing: Materials as specified in Part 2 of this Section.
 - 2. Install supplementary framing, blocking, bracing at termination in Work, and support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated on Drawings and with "Gypsum Construction Handbook" published by United States Gypsum Company.
 - 3. Isolate steel framing from building structure to prevent transfer of loading imposed by structural movement, at locations indicated below to comply with details indicated on Drawings:
 - a. Where edges of suspended ceilings abut building structure horizontally at ceiling perimeters or penetrations of structural elements.
 - b. Where partitions and wall framing abuts overhead structure.
 - c. Provide slip type joint as detailed to attain lateral support and avoid axial loading.
 - 4. 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.
- B. Metal Framing - Walls and Partitions:
 - 1. Install runners (track) at floors, ceilings, and structural walls and columns where gypsum board stud system abuts other construction.
 - a. Where studs are installed directly against exterior walls, install asphalt felt strips between studs and wall.
 - 2. Metal Stud Spacing: Maximum 16 inches (406 mm) on center, unless noted otherwise. For applications that exceed the laterally unsupported height limitations, provide engineered studs per Section 05400 - Cold Formed Metal Framing. Use gage and depth of stud required to meet maximum deflection requirements.
 - 3. Installation Tolerances: Install each steel framing and furring member so that fastening surfaces do not vary more than 1/8 inch (3 mm) from plane of faces of adjacent framing.
 - 4. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.

5. Install steel studs in sizes and spacing indicated on Drawings, but not less than that required by referenced steel framing installation standards.
 6. Install steel studs so that flanges point in the same direction and gypsum boards can be installed in the direction opposite to that of the flanges.
 7. Frame door openings to comply with details indicated on Drawings, with GA-219, and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames. Install runner track section (for cripple studs) at head and secure to jamb studs.
 8. Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above.
 9. Frame openings other than door openings to comply with details indicated on Drawings, or if none is indicated, in same manner as required for door openings; and install framing below sills of openings to match framing required above door heads.
 10. Blocking: Bolt or screw steel channels to metal studs. Install concealed wood blocking for support of plumbing fixtures, toilet partitions, wall cabinets, toilet accessories, hardware, and other related items that require backing for support under provisions of Section 06100.
 11. Install vapor retarder on interior of framing members of exterior walls and soffits or interior face of masonry wall construction as shown on Drawings, and to comply with the following requirements:
 - a. Extend vapor retarder to extremities of exterior insulated walls, and to cover miscellaneous voids in insulated substrates, including those that have been stuffed with loose thermal insulation.
 - b. Seal vertical joints in vapor retarders over framing by lapping vapor retarders not less than 2 wall studs. Fasten vapor retarders to framing at top, end, and bottom edges, at perimeter of wall openings, and at lap joints.
 - c. Seal joints in vapor retarders caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with cloth or aluminized tape which bonds permanently to vapor retarder.
 - d. Repair tears and punctures in vapor retarder immediately before concealment by application of gypsum board or other construction.
 - e. Use fire-resistive type vapor retarder in locations where vapor retarder is not covered with gypsum board. Attach as per manufacturer's written instructions.
 - f. Use non-resistive type vapor retarder where vapor retarder is covered with gypsum board.
- C. Metal Framing - Suspended and Furred Ceilings:
1. Secure hangers to structural support by connecting directly to structure where possible, otherwise connect to cast-in concrete inserts or other anchorage devices or fasteners as indicated on Drawings.
 - a. Do not attach hangers to metal deck tabs.
 - b. Do not attach hangers to metal roof deck
 - c. Do not attach hangers to underside of concrete slabs with power-actuated fasteners.
 2. Install metal ceiling framing per ASTM C754, and space main runners at 4 feet (1219 mm) on center maximum.

Non-Structural Metal Framing

3. Do not connect or suspend steel framing from ducts, pipes, or conduit.
4. Keep hangers and braces 2 inches (51 mm) clear of ducts, pipes, or conduits.
5. Sway-brace suspended steel framing with hangers used for support.
6. Comply with local governing code requirements where applicable.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 092500: GYPSUM BOARD**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes the following:

1. Interior gypsum board.
2. Tile backing panels.

1.2 SUBMITTALS

- A. Product Data: Manufacturer's Specs and installation instructions for each type of product indicated.

1.3 QUALITY ASSURANCE

- A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.
- B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

PART 2: PRODUCTS**2.1 INTERIOR GYPSUM BOARD**

- A. General: Complying with ASTM C 36/C 36M or ASTM C 1396/C 1396M, as applicable to type of gypsum board indicated and whichever is more stringent.
1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- a. American Gypsum Co.
 - b. BPB America Inc.
 - c. G-P Gypsum.
 - d. Lafarge North America Inc.
 - e. National Gypsum Company.
 - f. PABCO Gypsum.
 - g. Temple.
 - h. USG Corporation.
- B. **First Floor** - Type X:

1. Thickness: 5/8 inch.
2. Long Edges: Tapered.

C. **Ground Floor** - Fiberglass-mat faced, mold and moisture resistant interior gypsum board:

1. Thickness: 5/8 inch.
2. Long Edges: Tapered.

2.2 TILE BACKING PANELS

A. Cementitious Backer Units: ANSI A108.1.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Custom Building Products; Wonderboard.
 - b. Fin Pan, Inc.; Util-A-Crete Concrete Backer Board.
 - c. USG Corporation; DUROCK Cement Board.
2. Thickness: 5/8 inch.

2.3 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. **Do not use** U-Bead: J-shaped; exposed short flange does not receive joint compound.
 - d. Expansion (control) joint.

2.4 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. First Floor - Interior Gypsum Wallboard: Paper.
2. Ground Floor - Fiberglass-mat faced, mold and moisture resistant interior gypsum board: As recommended by panel manufacturer
3. Tile Backing Panels: As recommended by panel manufacturer.

C. Joint Compound for Interior Gypsum Wallboard: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.

2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.
 - a. Use setting-type compound for installing paper-faced metal trim accessories.
 3. Fill Coat: For second coat, use drying-type, all-purpose compound.
 4. Finish Coat: For third coat, use drying-type, all-purpose compound.
- D. Joint Compound for Tile Backing Panels:
1. Cementitious Backer Units: As recommended by backer unit manufacturer.

2.5 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.
- B. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.
1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch thick.
 2. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
- C. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
- D. Acoustical Sealant: As specified in Division 7 Section "Joint Sealants."
- E. Thermal Insulation: As specified in Division 7 Section "Building Insulation."

PART 2: EXECUTION

3.1 APPLYING AND FINISHING PANELS, GENERAL

- A. Comply with ASTM C 840.
- B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
- C. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- wide spaces at these locations, and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

3.2 APPLYING INTERIOR GYPSUM BOARD

- A. Install interior gypsum board in the following locations:
 - 1. Type X: First floor vertical surfaces, unless otherwise indicated.
 - 2. Fiberglass-mat faced, mold and moisture resistant interior gypsum board: Ground floor vertical surfaces, unless otherwise indicated.

3.3 APPLYING TILE BACKING PANELS

- A. Cementitious Backer Units: ANSI A108.1, at locations indicated to receive tile.
- B. Areas Not Subject to Wetting: Install regular-type gypsum wallboard panels to produce a flat surface except at locations indicated to receive water-resistant panels.
- C. Where tile backing panels abut other types of panels in same plane, shim surfaces to produce a uniform plane across panel surfaces.

3.4 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.
- B. Control Joints: Install control joints according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Interior Trim: Install in the following locations:
 - 1. Cornerbead: Use at outside corners.
 - 2. LC-Bead: Use at exposed panel edges.

3.5 FINISHING GYPSUM BOARD

- A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- B. Prefill open joints, rounded or beveled edges, and damaged surface areas.
- C. Apply joint tape over gypsum board joints, except those with trim having flanges not intended for tape.
- D. Gypsum Board Finish Levels: Finish panels to levels indicated below:
 - 1. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
 - 2. Level 2: Panels that are substrate for tile.
 - 3. Level 4: At panel surfaces that will be exposed to view, unless otherwise indicated.
 - a. Primer and its application to surfaces are specified in Division 9 Section - Painting.
- E. Cementitious Backer Units: Finish according to manufacturer's written instructions.

3.6 PROTECTION

- A. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- B. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 093013: CERAMIC TILING**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 the following:
 - 1. Ceramic floor tile.
 - 2. Ceramic wall tile.
 - 3. Stone thresholds installed as part of tile installations.
 - 4. Metal edge strips installed as part of tile installations.

1.3 DEFINITIONS

- A. Module Size: Actual tile size (minor facial dimension as measured per ASTM C 499) plus joint width indicated.
- B. Facial Dimension: Actual tile size (minor facial dimension as measured per ASTM C 499).
- C. Facial Dimension: Nominal tile size as defined in ANSI A137.1.

1.4 PERFORMANCE REQUIREMENTS

- A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the following values as determined by testing identical products per ASTM C 1028:
 - 1. Level Surfaces: Minimum 0.6.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.
- C. Samples for Initial Selection: For each type of tile and grout indicated. Include Samples of accessories involving color selection.

D. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required.
2. Assembled samples with grouted joints for each type and composition of tile and for each color and finish required, at least 12 inches (300 mm) square and mounted on rigid panel. Use grout of type and in color or colors approved for completed work.
3. Full-size units of each type of trim and accessory for each color and finish required.
4. Stone thresholds in 6-inch (150-mm) lengths.
5. Metal edge strips in 6-inch (150-mm) lengths.

E. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile manufacturer and Installer.

F. Product Certificates: For each type of product, signed by product manufacturer.

G. Qualification Data: For Installer.

H. Material Test Reports: For each tile-setting and -grouting product.

1.6 QUALITY ASSURANCE

A. Source Limitations for Tile: Obtain all tile of same type and color or finish from one source or producer.

1. Obtain tile from same production run and of consistent quality in appearance and physical properties for each contiguous area.

B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

C. Source Limitations for Other Products: Obtain each of the following products specified in this Section through one source from a single manufacturer for each product:

1. Stone thresholds.
2. Joint sealants.
3. Metal edge strips.

D. Mockups: Build mockups to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution.

1. Build mockup of floor tile installation.
2. Build mockup of wall tile installation.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.
- B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.
- C. Handle tile that has temporary protective coating on exposed surfaces to prevent coated surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.8 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install tile until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

1.9 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed, for each type, composition, color, pattern, and size indicated.

PART 2: PRODUCTS**2.1 MANUFACTURERS**

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.
 - 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.
 - 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.
 - 5. Basis-of-Design Product: The design for each tile type is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 PRODUCTS, GENERAL

- A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.
 - 1. Provide tile complying with Standard grade requirements, unless otherwise indicated.
 - 2. For facial dimensions of tile, comply with requirements relating to tile sizes specified in Part 1 "Definitions" Article.
- B. ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.
- C. Colors, Textures, and Patterns: Where manufacturer's standard products are indicated for tile, grout, and other products requiring selection of colors, surface textures, patterns, and other appearance characteristics, provide specific products or materials complying with the following requirements:
 - 1. As indicated by manufacturer's designations.
- D. Factory Blending: For tile exhibiting color variations within ranges selected during Sample submittals, blend tile in factory and package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.
- E. Factory-Applied Temporary Protective Coating: Where indicated under tile type, protect exposed surfaces of tile against adherence of mortar and grout by precoating with continuous film of petroleum paraffin wax, applied hot. Do not coat unexposed tile surfaces.

2.3 TILE PRODUCTS

- A. Available Manufacturers:
 - 1. American Marazzi Tile, Inc.
 - 2. American Olean; Div. of Dal-Tile International Corp.
 - 3. Buchtal Corporation USA.
 - 4. Cerim-Floor Gres Ceramiche.
 - 5. Crossville Ceramics Company, L.P.
 - 6. Daltile; Div. of Dal-Tile International Inc.
 - 7. Florida Tile Industries, Inc.
 - 8. GranitiFiandre.
 - 9. Interceramic.
 - 10. KPT, Inc.
 - 11. Laufen USA.
 - 12. Lone Star Ceramics Company.
 - 13. Metropolitan Ceramics.
 - 14. Monarch Tile, Inc.
 - 15. Porcelanite, Inc.
 - 16. Quarry Tile Company.
 - 17. Seneca Tiles, Inc.
 - 18. Summitville Tiles, Inc.
 - 19. United States Ceramic Tile Company.

B. Ceramic Floor Tile: Square-edged flat tile as follows:

1. Basis of Design Product: Pozzalo Series Ceramic Floor Tile as manufactured by American Olean.
2. Wearing Surface: Nonabrasive
3. Facial Dimensions: 12 by 12 inches
4. Thickness: 5/16 inch
5. Finish: Mat, clear glaze.
6. Color: Sail White P291.

C. Ceramic Wall Tile: Flat tile as follows:

1. Basis of Design Product: Bright Series Ceramic Wall Tile as manufactured by American Olean.
2. Module Size: 6 by 6 inches
3. Thickness: 5/16 inch
4. Finish: Bright, clear
5. Color: Gloss Black (2) 0049 and other assorted colors as specified on Architect's Construction Documents.

2.4 THRESHOLDS

A. General: Fabricate to sizes and profiles indicated or required to provide transition between adjacent floor finishes.

1. Bevel edges at 1:2 slope, aligning lower edge of bevel with adjacent floor finish. Limit height of bevel to 1/2 inch (12.7 mm) or less, and finish bevel to match face of threshold.

B. Granite Thresholds: ASTM C 615, with honed finish.

1. Description: Uniform, fine-grained, gray stone without veining.

2.5 SETTING AND GROUTING MATERIALS

A. Available Manufacturers:

1. Atlas Minerals & Chemicals, Inc.
2. Boiardi Products Corporation.
3. Bonsal, W. R., Company.
4. Bostik.
5. C-Cure.
6. Custom Building Products.
7. DAP, Inc.
8. Jamo Inc.
9. LATICRETE International Inc.
10. MAPEI Corporation.
11. Southern Grouts & Mortars, Inc.
12. Summitville Tiles, Inc.
13. TEC Specialty Products Inc.

- B. Latex-Portland Cement Mortar (Thin Set): ANSI A118.4, consisting of the following:
 - 1. Prepackaged dry-mortar mix containing dry, redispersible, ethylene vinyl acetate additive to which only water must be added at Project site.
 - 2. Prepackaged dry-mortar mix combined with acrylic resin liquid-latex additive.
 - a. For wall applications, provide nonsagging mortar that complies with Paragraph F-4.6.1 in addition to the other requirements in ANSI A118.4.
- C. Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement and white or colored aggregate as required to produce color indicated.

2.6 ELASTOMERIC SEALANTS

- A. General: Provide manufacturer's standard chemically curing, elastomeric sealants of base polymer and characteristics indicated that comply with applicable requirements in Division 7 Section "Joint Sealants."
 - 1. Use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed joints, unless otherwise indicated.
- C. One-Part, Mildew-Resistant Silicone Sealant: ASTM C 920; Type S; Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.
 - 1. Available Products:
 - a. Dow Corning Corporation; Dow Corning 786.
 - b. GE Silicones; Sanitary 1700.
 - c. Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.
 - d. Tremco, Inc.; Tremsil 600 White.
- D. Multipart, Pourable Urethane Sealant for Use T: ASTM C 920; Type M; Grade P; Class 25; Uses T, M, A, and, as applicable to joint substrates indicated, O.
 - 1. Available Products:
 - a. Bostik; Chem-Calk 550.
 - b. Mameco International, Inc.; Vulkem 245.
 - c. Pecora Corporation; NR-200 Urexpan.
 - d. Tremco, Inc.; THC-900.
- E. Chemical-Resistant Sealants: For chemical-resistant floors, provide chemical-resistant elastomeric sealant of type recommended and produced by chemical-resistant mortar and grout manufacturer for type of application indicated, with proven service record and compatibility

with tile and other setting materials, and with chemical resistance equivalent to mortar/grout. Include primer and backer rod recommended by manufacturer.

2.7 MISCELLANEOUS MATERIALS

- A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.
- B. Metal Edge Strips: Angle or L-shape, height to match tile and setting-bed thickness, metallic or combination of metal and PVC or neoprene base, designed specifically for flooring applications, stainless steel; ASTM A 666, 300 Series exposed-edge material.
- C. Temporary Protective Coating: Either product indicated below that is formulated to protect exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.
 - 1. Petroleum paraffin wax fully refined and odorless, containing at least 0.5 percent oil with a melting point of 120 to 140 deg F (49 to 60 deg C) per ASTM D 87.
 - 2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.
- D. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.
- E. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints that does not change color or appearance of grout.
 - 1. Available Products:
 - a. Bonsal, W. R., Company; Grout Sealer.
 - b. Bostik; CeramaSeal Grout Sealer.
 - c. C-Cure; Penetrating Sealer 978.
 - d. Custom Building Products; Grout and Tile Sealer.
 - e. Jamo Inc.; Matte Finish Sealer.
 - f. MAPEI Corporation; KER Silicone Spray Sealer for Cementitious Tile Grout.
 - g. Southern Grouts & Mortars, Inc.; Silicone Grout Sealer.
 - h. Summitville Tiles, Inc.; SL-15, Invisible Seal Penetrating Grout and Tile Sealer.
 - i. TEC Specialty Products Inc.; TA-256 Penetrating Silicone Grout Sealer.

2.8 MIXING MORTARS AND GROUT

- A. Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.
- B. Add materials, water, and additives in accurate proportions.

- C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.
 - 1. Verify that substrates for setting tile are firm; dry; clean; free of oil, waxy films, and curing compounds; and within flatness tolerances required by referenced ANSI A108 Series of tile installation standards for installations indicated.
 - 2. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed before installing tile.
 - 3. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove coatings, including curing compounds and other substances that contain soap, wax, oil, or silicone, that are incompatible with tile-setting materials.
- B. Provide concrete substrates for tile floors installed with thin-set mortar that comply with flatness tolerances specified in referenced ANSI A108 Series of tile installation standards.
 - 1. Fill cracks, holes, and depressions with trowelable leveling and patching compound according to tile-setting material manufacturer's written instructions. Use product specifically recommended by tile-setting material manufacturer.
 - 2. Remove protrusions, bumps, and ridges by sanding or grinding.
- C. Blending: For tile exhibiting color variations within ranges selected during Sample submittals, verify that tile has been factory blended and packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either returns to manufacturer or blend tiles at Project site before installing.
- D. Field-Applied Temporary Protective Coating: Where indicated under tile type or needed to prevent grout from staining or adhering to exposed tile surfaces, precoat them with continuous film of temporary protective coating, taking care not to coat unexposed tile surfaces.

3.3 INSTALLATION, GENERAL

- A. ANSI Tile Installation Standards: Comply with parts of ANSI A108 Series "Specifications for Installation of Ceramic Tile" that apply to types of setting and grouting materials and to methods indicated in ceramic tile installation schedules.
- B. TCA Installation Guidelines: TCA's "Handbook for Ceramic Tile Installation." Comply with TCA installation methods indicated in ceramic tile installation schedules.
- C. Extend tile work into recesses and under or behind equipment and fixtures to form complete covering without interruptions, unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.
- D. Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish, or built-in items for straight aligned joints. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.
- E. Jointing Pattern: Lay tile in grid pattern, unless otherwise indicated. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Lay out tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise indicated.
- F. Lay out tile wainscots to next full tile beyond dimensions indicated.
- G. Expansion Joints: Locate expansion joints and other sealant-filled joints, including control, contraction, and isolation joints, where indicated during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.
 - 1. Locate joints in tile surfaces directly above joints in concrete substrates.
 - 2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."
- H. Grout tile to comply with requirements of the following tile installation standards:
 - 1. For ceramic tile grouts (sand-portland cement; dry-set, commercial portland cement; and latex-portland cement grouts), comply with ANSI A108.10.
 - 2. For chemical-resistant epoxy grouts, comply with ANSI A108.6.
 - 3. For chemical-resistant furan grouts, comply with ANSI A108.8.

3.4 FLOOR TILE INSTALLATION

- A. General: Install tile to comply with requirements in the Floor Tile Installation Schedule, including those referencing TCA installation methods and ANSI A108 Series of tile installation standards.
 - 1. For installations indicated below, follow procedures in ANSI A108 Series tile installation standards for providing 95 percent mortar coverage.
 - a. Tile floors in wet areas.

- B. Joint Widths: Install tile on floors with $\frac{1}{4}$ " joint widths.
- C. Stone Thresholds: Install stone thresholds at locations indicated; set in same type of setting bed as abutting field tile, unless otherwise indicated.
 - 1. Set thresholds in latex-portland cement mortar for locations where mortar bed would otherwise be exposed above adjacent nontile floor finish.
- D. Metal Edge Strips: Install at locations indicated or where exposed edge of tile flooring meets carpet, wood, or other flooring that finishes flush with top of tile.
- E. Grout Sealer: Apply grout sealer to cementitious grout joints according to grout-sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer that has gotten on tile faces by wiping with soft cloth.

3.5 WALL TILE INSTALLATION

- A. Install types of tile designated for wall installations to comply with requirements in the Wall Tile Installation Schedule, including those referencing TCA installation methods and ANSI setting-bed standards.
- B. Install metal lath and scratch coat for walls to comply with ANSI A108.1A, Section 4.1.
- C. Joint Widths: Install tile on walls with $\frac{1}{4}$ " joint widths.

3.6 CLEANING AND PROTECTING

- A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are free of foreign matter.
 - 1. Remove portland cement grout residue from tile as soon as possible.
 - 2. Clean grout smears and hazes from tile according to tile and grout manufacturer's written instructions, but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.
 - 3. Remove temporary protective coating by method recommended by coating manufacturer that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent it from clogging drains.
- B. When recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with kraft paper or other heavy covering during construction period to prevent staining, damage, and wear.
- C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is completed.
- D. Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

3.7 FLOOR TILE INSTALLATION SCHEDULE

- A. Tile Installation [**FTI**-<#>]: Interior floor installation on concrete; thin-set mortar; TCA F113 and ANSI A108.5.
 - 1. Tile Type: Ceramic Tile.
 - 2. Thin-Set Mortar: Portland cement mortar.
 - 3. Grout: Portland cement grout.

3.8 WALL TILE INSTALLATION SCHEDULE

- A. Tile Installation: Interior wall installation over masonry; cement mortar bed (thickset); TCA W201 and ANSI A108.1A.
 - 1. Tile Type: Ceramic Tile.
 - 2. Bond Coat Mortar for Wet-Set Method: Portland cement mortar.
 - 3. Thin-Set Mortar: Portland cement mortar.
 - 4. Grout: Portland cement grout.

END OF SECTION

SECTION 095113: ACOUSTICAL PANEL CEILINGS**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes acoustical panels and exposed suspension systems for ceilings.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For components with factory-applied color finishes.
- C. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.
 - 1. Acoustical Panel: Set of 6-inch- square Samples of each type, color, pattern, and texture.
 - 2. Exposed Suspension System Members, Moldings, and Trim: Set of 12-inch- long Samples of each type, finish, and color.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each acoustical panel ceiling.
- E. Maintenance Data: For finishes to include in maintenance manuals.

1.3 QUALITY ASSURANCE

- A. Source Limitations:
 - 1. Acoustical Ceiling Panel: Obtain each type through one source from a single manufacturer.
 - 2. Suspension System: Obtain each type through one source from a single manufacturer.
- B. Fire-Test-Response Characteristics: Provide acoustical panel ceilings that comply with the following requirements:
 - 1. Fire-Resistance Characteristics: Where indicated, provide acoustical panel ceilings identical to those of assemblies tested for fire resistance per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - 2. Surface-Burning Characteristics: Provide acoustical panels with the following surface-burning characteristics complying with ASTM E 1264 for Class A materials as determined by testing identical products per ASTM E 84:
- C. Seismic Standard: Provide acoustical panel ceilings designed and installed to withstand the effects of earthquake motions according to the following:
 - 1. Standard for Ceiling Suspension Systems Requiring Seismic Restraint: Comply with ASTM E 580.

2. CISCA's Recommendations for Acoustical Ceilings: Comply with CISCA's "Recommendations for Direct-Hung Acoustical Tile and Lay-in Panel Ceilings--Seismic Zones 0-2."

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver acoustical panels, suspension system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.
- B. Before installing acoustical panels, permit them to reach room temperature and stabilized moisture content.
- C. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

1.5 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.6 COORDINATION

- A. Coordinate layout and installation of acoustical panels and suspension system with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system, and partition assemblies.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.
 2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the manufacturers specified.

2.2 ACOUSTICAL PANELS, GENERAL

- A. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectance's, unless otherwise indicated.
- B. Acoustical Panel Colors and Patterns: Match appearance characteristics of existing adjacent panels.

2.3 MINERAL-BASE ACOUSTICAL PANELS FOR ACOUSTICAL PANEL CEILING

- A. Classification: Provide panels complying with ASTM E 1264 for type, form, and pattern as follows:
 - 1. Type and Form: Type III, mineral base with painted finish; Form: Match existing.
 - 2. Pattern: Match existing
- B. Color: Match existing panels.
- C. Edge Detail: Match existing.
- D. Thickness: Match existing.
- E. Size: 24 by 24 inches.

2.4 METAL SUSPENSION SYSTEMS

- A. Metal Suspension System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635.
- B. Finishes and Colors, General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Provide manufacturer's standard factory-applied finish for type of system indicated.
 - 1. Match size, face, finish and color of existing system
- C. Attachment Devices: Size for five times the design load indicated in ASTM C 635, Table 1, "Direct Hung," unless otherwise indicated.
- D. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
 - 1. Zinc-Coated Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 - 2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch- diameter wire.
- E. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.
- F. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panel's in-place.
- G. Hold-Down Clips: Where indicated, provide manufacturer's standard hold-down clips spaced 24 inches o.c. on all cross tees.

2.5 METAL EDGE MOLDINGS AND TRIM

- A. Roll-Formed Sheet-Metal Edge Moldings and Trim: Type and profile to match existing; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension system runners.

2.6 ACOUSTICAL SEALANT

- A. Available Products:
 - 1. Acoustical Sealant for Exposed and Concealed Joints:
 - a. Pecora Corp; AC-20 FTR Acoustical and Insulation Sealant.
 - b. United States Gypsum Co.; SHEETROCK Acoustical Sealant.

PART 3: EXECUTION**3.1 EXAMINATION**

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION, GENERAL

- A. General: Install acoustical panel ceilings to comply with ASTM C 636 and seismic requirements indicated, per manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required and, if permitted with fire-resistance-rated ceilings, to miss obstructions; offset resulting horizontal forces by bracing, counters playing, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacing that interfere with location of hangers at spacing required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and

- hangers to support ceiling loads within performance limits established by referenced standards and publications.
4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 5. Space hangers not more than 48 inches o.c. along each member supported directly from hangers, unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
- C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or post installed anchors.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
 2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
 3. Do not use exposed fasteners, including pop rivets, on moldings and trim.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- F. Install acoustical panels with undamaged edges and fit accurately into suspension system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
1. Arrange directionally patterned acoustical panels as follows:
 - a. Install panels with pattern running in one direction parallel to long axis of space.
 2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension system runners and moldings.

3.4 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

SECTION 096513: RESILIENT BASE AND ACCESSORIES**PART 1: GENERAL****1.1 SUMMARY**

A. This Section includes the following:

1. Wall base
2. Stair accessories
3. Molding accessories

1.2 SUBMITTALS

- A. Product Data: For each product indicated.
- B. Samples: For each type of product indicated, in manufacturer's standard-size Samples but not less than 12 inches long, of each resilient product color, texture, and pattern required.

1.3 PROJECT CONDITIONS

- A. Maintain temperatures within range recommended by manufacturer, but not less than 70 deg F or more than 95 deg F, in spaces to receive floor tile during the following time periods:
1. 48 hours before installation.
 2. During installation.
 3. 48 hours after installation.
- B. After post-installation period, maintain temperatures within range recommended by manufacturer, but not less than 55 deg F or more than 95 deg F.
- C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2: PRODUCTS**2.1 COLORS AND PATTERNS**

- A. Colors and Patterns: As selected from manufacturer's full range.

2.2 RESILIENT WALL BASE

- A. Wall Base: ASTM F 1861.
1. AFCO-USA, American Floor Products Company, Inc.
 2. Armstrong World Industries, Inc.
 3. Azrock Commercial Flooring, DOMCO.
 4. Burke Mercer Flooring Products.
 5. Endura.

6. Johnsonite.
7. Marley Flexco (USA), Inc.
8. Mondo Rubber International, Inc.
9. Musson, R. C. Rubber Co.
10. Nora Rubber Flooring, Freudenberg Building Systems, Inc.
11. Pirelli Rubber Flooring.
12. Roppe Corporation.

- B. Type (Material Requirement): TP (rubber, thermoplastic).
- C. Group (Manufacturing Method): I (solid).
- D. Style: Cove (with top-set toe).
- E. Minimum Thickness: 0.125 inch.
- F. Height: Match height of existing wall base.
- G. Lengths: Coils in manufacturer's standard length.
- H. Outside Corners: Job formed or pre-molded.
- I. Inside Corners: Job formed or pre-molded.
- J. Surface: Smooth.

2.3 RESILIENT STAIR ACCESSORIES

- A. Basis of Design Product: Provide Johnsonite; "Safe-T-First" Photoluminescent Rubber Stair Treads as manufactured by Johnsonite, division of Duramax, Inc., Chagrin Falls, Ohio; Tel: 800-899-8916; Web: www.Johnsonite.com .
- B. Style: Visually-Impaired Roundel Round Raised Disk Pattern (PVIRH-RD) Rubber Stair Treads.
- C. Material: Rubber, Composition A.
- D. Surface Design: Type 2 design (designed).
1. Type 2 Design: Raised-disk pattern with abrasive strip.
 2. Abrasive Strips: 2" wide photoluminescent tape insert.
- E. Nosing Style: Square, adjustable to cover angles between 60 and 90 degrees.
- F. Nosing Height: 2 inches.
- G. Thickness: .210" to .113" tapered 12¼" tread depth
- H. Size: Lengths and depths to fit each stair tread in one piece.
- I. Risers: Smooth, flat, toeless, height and length to cover risers; produced by same manufacturer as treads and recommended by manufacturer for installation with treads.

1. Thickness: 0.125 inch.

J. Fire-Test-Response Characteristics:

1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm per ASTM E 648.

2.4 RESILIENT MOLDING ACCESSORY

A. Description: Reducer strip for resilient floor covering.

1. Burke Mercer Flooring Products.
2. Johnsonite.
3. Marley Flexco (USA), Inc.
4. Roppe Corporation.
5. Stoler Industries.

B. Material: Rubber.

C. Profile and Dimensions: To match thickness of resilient flooring material with profile similar to Johnsonite Reducer "RRS-XX-C".

2.5 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic cement based formulation provided or approved by resilient product manufacturers for applications indicated.

B. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

C. Stair-Tread-Nose Filler: Two-part epoxy compound recommended by resilient tread manufacturer to fill nosing substrates that do not conform to tread contours.

PART 3: EXECUTION

3.1 PREPARATION

A. Prepare substrates according to manufacturer's written recommendations to ensure adhesion of resilient products.

B. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

C. Use trowelable leveling and patching compound to fill cracks, holes, and depressions in substrates.

D. Move resilient products and installation materials into spaces where they will be installed at least 48 hours in advance of installation.

1. Do not install resilient products until they are the same temperature as the space where they are to be installed.
- E. Sweep and vacuum clean substrates to be covered by resilient products immediately before installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, and dust. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 RESILIENT WALL BASE INSTALLATION

- A. Apply wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
- B. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
- C. Conform to manufacturer's written installation recommendations.
- D. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
- E. Do not stretch wall base during installation.
- F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of wall base with manufacturer's recommended adhesive filler material.
- G. Premolded Corners: Install pre-molded corners before installing straight pieces.
- H. Job-Formed Corners:
 1. Outside Corners: Use straight pieces of maximum lengths possible. Form without producing discoloration (whitening) at bends. Shave back of base at points where bends occur and remove strips perpendicular to length of base that are only deep enough to produce a snug fit without removing more than half the wall base thickness.
 2. Inside Corners: Use straight pieces of maximum lengths possible. Form by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce a snug fit to substrate.

3.3 RESILIENT ACCESSORY INSTALLATION

- A. Resilient Stair Accessories:
 1. Conform to manufacturer's written installation recommendations.
 2. Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
 3. Tightly adhere to substrates throughout length of each piece.
 4. Cut riser height to fit flush with underside of tread nosing lip above.
 5. For treads installed as separate, equal-length units, install to produce a flush joint between units.

- B. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor coverings that would otherwise be exposed.

3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after completing resilient product installation:
 - 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Sweep and vacuum surfaces thoroughly.
 - 3. Damp-mop surfaces to remove marks and soil.
 - a. Do not wash surfaces until after time period recommended by manufacturer.
- B. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.

END OF SECTION

SECTION 096813: TILE CARPETING

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 modular, tufted carpet tile.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include manufacturer's written data on physical characteristics, durability, and fade resistance. Include installation recommendations for each type of substrate.
- B. Shop Drawings: Show the following:
 - 1. Columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required in carpet tiles.
 - 2. Existing flooring materials to be removed.
 - 3. Existing flooring materials to remain.
 - 4. Carpet tile type, color, and dye lot.
 - 5. Type of subfloor.
 - 6. Type of installation.
 - 7. Pattern of installation.
 - 8. Pattern type, location, and direction.
 - 9. Pile direction.
 - 10. Type, color, and location of insets and borders.
 - 11. Type, color, and location of edge, transition, and other accessory strips.
 - 12. Transition details to other flooring materials.

- C. Samples: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
1. Carpet Tile: Full-size Sample.
 2. Exposed Edge, Transition, and other Accessory Stripping: 12-inch- (300-mm-) long Samples.
- D. Qualification Data: For Installer.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency.
- F. Maintenance Data: For carpet tiles to include in maintenance manuals. Include the following:
1. Methods for maintaining carpet tile, including cleaning and stain-removal products and procedures and manufacturer's recommended maintenance schedule.
 2. Precautions for cleaning materials and methods that could be detrimental to carpet tile.
- G. Warranty: Special warranty specified in this Section.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An experienced installer who is certified by the Floor Covering Installation Board or who can demonstrate compliance with its certification program requirements.
- B. Fire-Test-Response Characteristics: Provide products with the critical radiant flux classification indicated in Part 2, as determined by testing identical products per ASTM E 648 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.
- C. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."
- D. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to carpet tile installation including, but not limited to, the following:
1. Review delivery, storage, and handling procedures.
 2. Review ambient conditions and ventilation procedures.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Comply with CRI 104, Section 5, "Storage and Handling."

1.6 PROJECT CONDITIONS

- A. Comply with CRI 104, Section 7.2, "Site Conditions; Temperature and Humidity" and Section 7.12, "Ventilation."
- B. Environmental Limitations: Do not install carpet tiles until wet work in spaces is complete and dry, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- C. Where demountable partitions or other items are indicated for installation on top of carpet tiles, install carpet tiles before installing these items.

1.7 WARRANTY

- A. Special Warranty for Carpet Tiles: Manufacturer's standard form in which manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.
1. Warranty does not include deterioration or failure of carpet tile due to unusual traffic, failure of substrate, vandalism, or abuse.
 2. Failures include, but are not limited to, more than 10 percent loss of face fiber, edge raveling, snags, and runs, loss of tuft bind strength, dimensional stability, excess static discharge, and delamination.
 3. Warranties:
 - a. Lifetime Limited Modular Warranty
 - b. Lifetime Limited Colorfastness to Light
 - c. 10 Year Limited Colorfastness to Atmospheric Contaminants.
 - d. 10 Year Stain Warranty.
 - e. Lifetime Static.

1.8 EXTRA MATERIALS

- A. Furnish extra materials described below, before installation begins, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Carpet Tile: Full-size units equal to 5 percent of amount installed for each type indicated, but not less than 10 sq. yd. (8.3 sq. m).

PART 2: PRODUCTS

2.1 CARPET TILE

A. Basis of Design Product: **Eurotile Collection, by Kraus** Carpet Mills Limited, 65 Northfield Drive West, Waterloo, Ontario, Canada N2L 0A8 (Tel: 519.884.2310). Subject to compliance with requirements, provide the named product or a comparable product by one of the following:

1. Kraus Carpet Mills Limited.
2. Interface FLOR.
3. Shaw Tile.

1. Fiber Content: BCF Poly Polypropylene
2. Pile Characteristic: Level Loop
3. Density: 5,800.
4. Stitches: 12.2 stitches per inch
5. Gauge: 1/10 gage in ends per inch (39.37 rows per 10 cm).
6. Primary Backing/Backcoating: Non woven synthetic.
7. Secondary Backing: Manufacturer's standard material.
8. Size: 19.7" x 19.7" (50cm x 50cm).
9. Applied Soil-Resistance Treatment: Manufacturer's standard material.
10. Antimicrobial Treatment: Manufacturer's standard material.
11. Performance Characteristics: As follows:
 - i. Colorfastness to Light: L5
 - ii. Electrostatic Propensity: Less than 3.0 kV per AATCC 134.
 - iii. Flammability: ASTM E648 Class 1 (Glue Down).
 - iv. Smoke Density: ASTM E662 Less than 450.

12. Series & Color:

- i. 7041 Danube**
- ii. 7043 Rhone**

2.2 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, hydraulic-cement based formulation provided or recommended by carpet tile manufacturer.

B. Adhesives: Water-resistant, mildew-resistant, non-staining, pressure-sensitive type to suit products and subfloor conditions indicated, that complies with flammability requirements for installed

carpet tile and is recommended by carpet tile manufacturer for releasable installation.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other conditions affecting carpet tile performance. Examine carpet tile for type, color, pattern, and potential defects.
- B. For wood subfloors, verify the following:
 - 1. Underlayment over subfloor complies with requirements specified in Division 6 Section
 - 2. "Rough Carpentry."
 - 3. Underlayment surface is free of irregularities and substances that may interfere with adhesive bond or show through surface.
- C. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
 - 1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond.
 - 2. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by carpet tile manufacturer.
 - 3. Subfloor finishes comply with requirements specified in Division 3 Section "Cast-in-Place Concrete" for slabs receiving carpet tile.
 - 4. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with CRI 104, Section 6.2, "Site Conditions; Floor Preparation," and with carpet tile manufacturer's written installation instructions for preparing substrates indicated to receive carpet tile installation.
- B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch (3 mm) wide or wider and protrusions more than 1/32 inch (0.8 mm), unless more stringent requirements are required by manufacturer's written instructions.
- C. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.
- D. Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use

mechanical methods recommended in writing by carpet tile manufacturer.

3.3 INSTALLATION

- A. General: Comply with CRI 104, Section 14, "Carpet Modules," and with carpet tile manufacturer's written installation instructions.
- B. Installation Method: [As recommended in writing by carpet tile manufacturer].
- C. Maintain dye lot integrity. Does not mix dye lots in same area.
- D. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.
- E. Extend carpet tile into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use nonpermanent, non-staining marking device.
- G. Install pattern parallel to walls and borders.

3.4 CLEANING AND PROTECTION

- A. Perform the following operations immediately after installing carpet tile:
 - 1. Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet tile manufacturer.
 - 2. Remove yarns that protrude from carpet tile surface.
 - 3. Vacuum carpet tile using commercial machine with face-beater element.
- B. Protect installed carpet tile to comply with CRI 104, Section 16, and "Protection of Indoor Installations".
- C. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION

SECTION 099113: PAINTING**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes surface preparation and the application of paint systems on the following:
1. Exterior Substrates:
 - a. Steel.
 - b. Galvanized metal.
 - c. Aluminum (not anodized or otherwise coated).
 - d. Wood.
 - e. Exterior gypsum board.
 2. Interior Substrates:
 - a. Concrete.
 - b. Concrete masonry units (CMU).
 - c. Steel.
 - d. Galvanized metal.
 - e. Aluminum (not anodized or otherwise coated).
 - f. Wood.
 - g. Gypsum board.
 - h. Cotton or canvas insulation covering.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples: For each finish and for each color and texture required.
- C. Product List: Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.

1.3 QUALITY ASSURANCE

- A. MPI (Master Painters Institute) Standards:
1. All materials, preparation and workmanship shall conform to requirements of the latest edition of the Architectural Painting Specification Manual by the Master Painters Institute (**MPI**) (hereafter referred to as the **MPI** Painting Manual) as issued by the local **MPI** Accredited Quality Assurance Association having jurisdiction. Web site for MPI Painting Manual: www.paintinfo.com .
 2. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List." Web site for MPI list: www.paintinfo.com/mpi/approved/index.htm
 3. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

- B. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 - a. Architect will designate items or areas required.
 - 2. Final approval of color selections will be based on benchmark samples.
 - a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

PART 2: PRODUCTS

2.1 PAINT, GENERAL

- A. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. Colors: As selected by Architect from manufacturer's full range.

2.2 WOOD FILLERS

- A. Wood Filler Paste: MPI #91.

2.3 BLOCK FILLERS

- A. Interior/Exterior Latex Block Filler: MPI #4.

2.4 PRIMERS/SEALERS

- A. Alkali-Resistant Primer: MPI #3.
- B. Bonding Primer (Solvent Based): MPI #69.
- C. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint system indicated.

2.5 METAL PRIMERS

- A. Alkyd Anticorrosive Metal Primer: MPI #79.
- B. Cementitious Galvanized-Metal Primer: MPI #26.

- C. Quick-Drying Primer for Aluminum: MPI #95.
- D. Waterborne Galvanized-Metal Primer: MPI #134.

2.6 WOOD PRIMERS

- A. Exterior Alkyd Wood Primer: MPI #5.
- B. Interior Latex-Based Wood Primer: MPI #39.

2.7 EXTERIOR LATEX PAINTS

- A. Exterior Latex (Semi-gloss): MPI #11 (Gloss Level 5).
- B. Exterior Latex (Gloss): MPI #119 (Gloss Level 6, except minimum gloss of 65 units at 60 deg).

2.8 EXTERIOR ALKYD PAINTS

- A. Exterior Alkyd Enamel (Gloss): MPI #9 (Gloss Level 6).

2.9 INTERIOR LATEX PAINTS

- A. Institutional Low-Odor/VOC Latex (Eggshell): MPI #145 (Gloss Level 3).
- B. High-Performance Architectural Latex (Semi-gloss): MPI #141 (Gloss Level 5).

2.10 INTERIOR EPOXY PAINTS

- A. Epoxy, cold-cured, gloss, MPI #77

2.11 FLOOR COATINGS

- A. Exterior/Interior Alkyd Floor Enamel (Gloss): MPI #27 (Gloss Level 6).

2.12 STAINS

- A. Interior Wood Stain (Semitransparent): MPI #90.

2.13 POLYURETHANE FINISHES

- A. Moisture-Cured Clear Polyurethane (Gloss): MPI #31.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
 2. Masonry (Clay and CMU): 12 percent.
 3. Wood: 15 percent.
 4. Plaster: 12 percent.
 5. Gypsum Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.2 PREPARATION AND APPLICATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulates.
1. Remove incompatible primers and re-prime substrate with compatible primers as required to produce paint systems indicated.
- C. Apply wood filler paste to open-grain woods, as defined in "MPI Architectural Painting Specification Manual," to produce smooth, glasslike finish.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Mechanical and Electrical Work: Paint items exposed in equipment rooms and occupied spaces including, but not limited to, the following:
1. Mechanical Work:
 - a. Un-insulated metal piping.
 - b. Un-insulated plastic piping.
 - c. Pipe hangers and supports.
 - d. Tanks that do not have factory-applied final finishes.
 - e. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
 - f. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - g. Mechanical equipment that is indicated to have a factory-primed finish for field painting.

2. Electrical Work:

- a. Switchgear.
 - b. Panelboards.
 - c. Electrical equipment that is indicated to have a factory-primed finish for field painting.
- F. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- G. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.3 EXTERIOR PAINTING SCHEDULE

- A. Paint systems in this Article are based on "MPI Architectural Painting Specification Manual".
- B. CMU Substrates:
 - 1. Latex Over Alkali-Resistant Primer System: MPI EXT 4.2L.
 - a. Prime Coat: Alkali-resistant primer.
 - b. Intermediate Coat: Exterior latex matching topcoat.
 - c. Topcoat: Exterior latex (semi-gloss).
- C. Steel Substrates:
 - 1. Alkyd System: MPI EXT 5.1D.
 - a. Prime Coat: Alkyd anticorrosive metal primer.
 - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - c. Topcoat: Exterior alkyd enamel (gloss).
- D. Galvanized-Metal Substrates:
 - 1. Alkyd System: MPI EXT 5.3B.
 - a. Prime Coat: Cementitious galvanized-metal primer.
 - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - c. Topcoat: Exterior alkyd enamel (gloss).
- E. Aluminum Substrates:
 - 1. Alkyd System: MPI EXT 5.4F.
 - a. Prime Coat: Quick-drying primer for aluminum.
 - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - c. Topcoat: Exterior alkyd enamel (gloss).
- F. Wood Substrates: Including dressed lumber, architectural woodwork, panels, fascia, soffits, and doors.
 - 1. Alkyd System: MPI EXT 6.3B.

- a. Prime Coat: Exterior alkyd wood primer.
- b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
- c. Topcoat: Exterior alkyd enamel (gloss).

G. Exterior Gypsum Board Substrates:

1. Latex System: MPI EXT 9.2A.

- a. Prime Coat: Exterior latex matching topcoat.
- b. Intermediate Coat: Exterior latex matching topcoat.
- c. Topcoat: Exterior latex (semi-gloss).

3.4 INTERIOR PAINTING SCHEDULE

A. Paint systems in this Article are based on "MPI Architectural Painting Specification Manual".

B. Concrete Substrates, Non-traffic Surfaces:

1. High-Performance Architectural Latex System: MPI INT 3.1C.

- a. Prime Coat: Interior latex primer/sealer.
- b. Intermediate Coat: High-performance architectural latex matching topcoat.
- c. Topcoat: High-performance architectural latex (semi-gloss).

C. Concrete Substrates, Traffic Surfaces:

1. Alkyd Floor Enamel System: MPI INT 3.2B.

- a. Prime Coat: Exterior/interior alkyd floor enamel (gloss).
- b. Intermediate Coat: Exterior/interior alkyd floor enamel (gloss).
- c. Topcoat: Exterior/interior alkyd floor enamel (gloss).

D. CMU Substrates:

1. Epoxy (tile-like) Finish: MPI INT 4.2F Epoxy Coating System:

- a. Prime Coat: Interior/exterior latex blocks filler, MPI #4.
- b. Intermediate Coat: Epoxy, cold-cured, gloss, MPI #77.
- c. Topcoat: Epoxy, cold-cured, gloss, MPI #77.

2. High-Performance Architectural Latex System: MPI INT 4.2D.

- a. Prime Coat: Interior/exterior latex blocks filler.
- b. Intermediate Coat: High-performance architectural latex matching topcoat.
- c. Topcoat: High-performance architectural latex (semi-gloss).

E. Steel Substrates:

1. High-Performance Architectural Latex System: MPI INT 5.1R.

- a. Prime Coat: Alkyd anticorrosive metal primer.
- b. Intermediate Coat: High-performance architectural latex matching topcoat.

- c. Topcoat: High-performance architectural latex (semi-gloss).
- F. Galvanized-Metal Substrates:
 - 1. High-Performance Architectural Latex System: MPI INT 5.3M.
 - a. Prime Coat: Waterborne galvanized-metal primer.
 - b. Intermediate Coat: High-performance architectural latex matching topcoat.
 - c. Topcoat: High-performance architectural latex (semi-gloss).
- G. Aluminum (Not Anodized or Otherwise Coated) Substrates:
 - 1. High-Performance Architectural Latex System: MPI INT 5.4F.
 - a. Prime Coat: Quick-drying primer for aluminum.
 - b. Intermediate Coat: High-performance architectural latex matching topcoat.
 - c. Topcoat: High-performance architectural latex (semi-gloss).
- H. Dressed Lumber and Wood Panel Substrates – **Transparent Finish**: Including architectural woodwork and doors.
 - 1. Moisture-Cured Clear Polyurethane over Stain System: MPI INT 6.2N.
 - a. Stain Coat: Interior wood stain (semitransparent).
 - b. Three Finish Coats: Moisture-cured clear polyurethane (gloss).
- I. Dressed Lumber and Wood Panel Substrates – **Opaque Finish**: Including architectural woodwork and doors.
 - 1. High-Performance Architectural Latex System: MPI INT 6.3A.
 - a. Prime Coat: Interior latex-based wood primer.
 - b. Intermediate Coat: High-performance architectural latex matching topcoat.
 - c. Topcoat: High-performance architectural latex (semi-gloss).
- J. Gypsum Board Substrates:
 - 1. Institutional Low-Odor/VOC Latex System: MPI INT 9.2M.
 - a. Prime Coat: Interior latex primer/sealer.
 - b. Intermediate Coat: Institutional low-odor/VOC interior latex matching topcoat.
 - c. Topcoat: Institutional low-odor/VOC interior latex (eggshell).
- K. Cotton or Canvas Insulation-Covering Substrates: Including pipe and duct coverings.
 - 1. Latex System: MPI INT 10.1A.
 - a. Prime Coat: Interior latex primer/sealer.
 - b. Topcoat: Institutional low-odor/VOC interior latex (eggshell).

END OF SECTION

SECTION 101426 – POST & PANEL / PYLON SIGNAGE**PART 1: GENERAL****1.1 GENERAL REQUIREMENTS**

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the work of this section as shown on the drawings and specified herein, including, but not limited to, the following:
 - 1. Placement, relocation, and/or resetting of traffic signs as indicated on the plans.
 - 2. The replacement of traffic signs damaged or impacted during construction.
 - 3. The provision, maintenance and removal of temporary traffic signs as required or as directed by the Owner.

1.2 SUBMITTALS

- A. Shop Drawings: Show shop drawings, not necessarily to scale, but sufficient enough in detail to show color, wording, lettering size and style, overall sign size, construction details and installation details for each type of sign.

PART 2: PRODUCTS**2.1 TRAFFIC SIGNS**

- A. Construction Materials: Comply with requirements of NYS DOT Section 645.
- B. Posts: Galvanized steel.

PART 3: EXECUTION**3.1 INSTALLATION**

- A. Erect signs in their designated locations, as indicated and in accordance with the approved shop drawings and the applicable requirements of NYS DOT Section 645.
- B. Protect surfaces and finishes from abrasion and other damage during handling and installation.
- C. Replace damaged or faulty signs.

END OF SECTION

SECTION 102113: TOILET COMPARTMENTS**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. Paper Towel, toilet paper & soap dispensers will be provided and installed by the contractor.

1.2 SUMMARY

- A. This Section includes solid-polymer units as follows:
 - 1. Toilet Enclosures: Overhead braced.
 - 2. Vanity Screens: Post Supported and Wall hung.
- B. Related Sections include the following:
 - 1. Division 10 "Toilet and Bath Accessories" for toilet tissue dispensers, grab bars, purse shelves, and similar accessories.

1.3 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Initial Selection: For each type of unit indicated.
- D. Samples for Verification: Of each type of color and finish required for units, prepared on 6-inch- square Samples of same thickness and material indicated for Work. Color to match existing.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls, columns, ceilings, and other construction contiguous with toilet compartments by field measurements before fabrication and indicate measurements on Shop Drawings.

PART 2: PRODUCTS**2.1 SOLID-POLYMER UNITS**

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Accurate Partitions Corporation.
 2. Ampco.
 3. Bradley Corporation; Mills Partitions.
 4. Capitol Partitions, Inc.
 5. Comtec Industries.
 6. General Partitions Mfg. Corp.
 7. Global Steel Products Corp.
 8. Metpar Corp.
 9. Santana Products, Inc.
 10. Sanymetal; a Crane Plumbing Company.
 11. Weis-Robart Partitions, Inc.
- B. Vanity Screen Panel, Construction: Solid, high-density polyethylene (HDPE) or polypropylene (PP) panel material, not less than 1 inch thick, seamless, with eased edges, and with homogenous color and pattern throughout thickness of material.
1. Color and Pattern: One color and pattern in each room to match existing partition system color and pattern.
- C. Pilaster Construction: Match construction of existing pilasters in compartment system to be modified.
1. Color and Pattern: One color and pattern in each room to match existing partition system color and pattern.
- D. Pilaster Shoes and Sleeves (Caps): Manufacturer's standard design; stainless steel.
- E. Brackets (Fittings):
1. Full-Height (Continuous) Type: Manufacturer's standard design; extruded aluminum or stainless steel.
- F. Heat-Sink Strip: Manufacturer's standard continuous, extruded-aluminum strip fastened to exposed bottom edges of solid-polymer components to prevent burning.

2.2 ACCESSORIES

- A. Hardware and Accessories: Manufacturer's standard design, heavy-duty operating hardware and accessories.

1. Material: Chrome-plated, solid brass, clear anodized aluminum, or Stainless steel
- B. Overhead Bracing: Manufacturer's standard continuous, extruded-aluminum head rail with anti-grip profile and in manufacturer's standard finish.
- C. Support Posts for Vanity Screens: Manufacturer's standard aluminum post with floor shoe for anchoring to floor construction.
- D. Anchorages and Fasteners: Manufacturer's standard exposed fasteners of stainless steel or chrome-plated steel or brass, finished to match hardware, with theft-resistant-type heads. Provide sex-type bolts for through-bolt applications. For concealed anchors, use hot-dip galvanized or other rust-resistant, protective-coated steel.

2.3 FABRICATION

- A. Overhead-Braced Units: Provide manufacturer's standard corrosion-resistant supports, leveling mechanism, fasteners, and anchors at pilasters to suit floor conditions. Make provisions for setting and securing continuous head rail at top of each pilaster. Provide shoes at pilasters to conceal supports and leveling mechanism.
- B. Match existing hardware to extent possible.

PART 3: EXECUTION

3.1 INSTALLATION

- A. General: Comply with manufacturer's written installation instructions. Install unit's rigid, straight, level, and plumb. Secure units in position with manufacturer's recommended anchoring devices.
 1. Maximum Clearances:
 - a. Pilasters and Panels: 1/2 inch.
 - b. Panels and Walls: 1 inch.
 2. Continuous Wall Brackets: Secure panels to walls and to pilasters with a continuous bracket not more than one inch from the top and bottom of the panel.
 - a. Locate wall brackets so holes for wall anchors occur in masonry or tile joints.
 - b. Align brackets at pilasters with brackets at walls.
- B. Readjustment of Existing Toilet Compartments: Carefully disassemble and protect components to be reused in new configuration. Reassemble in new configuration. Provide new pilasters, accessories, fasteners and other accessories as required for a complete installation in the new configuration.

- C. Overhead-Braced Units: Secure pilasters to floor and level, plumb, and tighten. Secure continuous head rail to each pilaster with not less than two fasteners. Hang doors to align tops of doors with tops of panels and adjust so tops of doors are parallel with overhead brace when doors are in closed position.
- D. Wall-Hung and Post Supported Vanity Screens: Attach with anchoring devices to suit supporting structure. Set units level and plumb and to resist lateral impact.

END OF SECTION

SECTION 102800: TOILET, BATH, & LAUNDRY ACCESSORIES**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes the following:
 - 1. Soap Dispensers
 - 2. Grab Bars
 - 3. Paper Towel Dispensers
 - 4. Toilet Paper Dispensers
 - 5. Mirrors

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Schedule:
 - 1. Identify locations using room designations indicated on Drawings.

PART 2: PRODUCTS**2.1 SOAP DISPENSERS**

- A. Soap Dispensers:
 - 1. Existing **soap dispensers** shall be removed carefully by the Contractor to avoid damaged and stored for reuse. Should the Contractor discover any existing damages they shall be reported to the Construction Manager and the Owner will furnish new **soap dispensers** to match existing surface mounted soap dispensers from installation by Contractor. Should the Contractor damage any existing **soap dispensers** during removal, the Contractor shall be responsible for replacing the existing **soap dispenser** in kind.
 - 2. Fasteners to be as recommended by manufacturer for concealed installation appropriate for substrate

2.2 GRAB BARS

- A. Grabs Bars:
 - 1. Existing **grab bars** shall be removed carefully by the Contractor to avoid damaged and stored for reuse. Should the Contractor discover any existing damages they shall be reported to the Construction Manager and the Owner will

furnish new **grab bars** to match existing surface mounted soap dispensers from installation by Contractor. Should the Contractor damage any existing **grab bars** during removal, the Contractor shall be responsible for replacing the existing **grab bar** in kind.

2. Stainless Steel Type: Provide grab bars with wall thickness not less than 0.050 inch (18 gage) and as follows:
3. Mounting: Concealed, manufacturer's standard flanges and anchorages, adequate to support a 250 lb (113 kg) load applied in any direction for a period of five minutes.
4. Clearance: 1-1/2 inches (38 mm) clearance between wall surface and inside face of bar.
5. Gripping Surfaces: Smooth, satin finish.
6. Heavy-Duty Size: Outside diameter of 1-1/2 inches (38 mm)

2.3 PAPER TOWEL DISPENSERS

A. Paper Towel Dispensers:

1. Existing **paper towel dispensers** shall be removed carefully by the Contractor to avoid damaged and stored for reuse. Should the Contractor discover any existing damages they shall be reported to the Construction Manager and the Owner will furnish new **paper towel dispensers** to match existing surface mounted soap dispensers from installation by Contractor. Should the Contractor damage any existing **paper towel dispensers** during removal, the Contractor shall be responsible for replacing the existing **paper towel dispenser** in kind.
2. Fasteners to be as recommended by manufacturer for concealed installation appropriate for substrate.

2.4 TOILET PAPER DISPENSERS

A. Toilet Paper Dispensers:

1. Existing **toilet paper dispensers** shall be removed carefully by the Contractor to avoid damaged and stored for reuse. Should the Contractor discover any existing damages they shall be reported to the Construction Manager and the Owner will furnish new **toilet paper dispensers** to match existing surface mounted soap dispensers from installation by Contractor. Should the Contractor damage any existing **toilet paper dispensers** during removal, the Contractor shall be responsible for replacing the existing **toilet paper dispenser** in kind.
2. Fasteners to be as recommended by manufacturer for concealed installation appropriate for substrate.

2.5 MIRRORS

A. Mirrors:

1. Existing **mirrors** shall be removed and disposed of by the Contractor.

2. New **mirrors** shall be provided by the Contractor as indicated on drawings.
3. Fasteners to be as recommended by manufacturer for concealed installation appropriate for substrate.

PART 3: EXECUTION

3.1 INSTALLATION

- A. Install accessories according to manufacturers' written instructions, using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.
- B. Soap Dispensers:
 1. Contractor to install new and relocated soap dispensers in locations indicated on drawings.
 2. Install soap dispensers in accordance with manufacturer's written recommendations with concealed fasteners appropriate for substrate.
- C. Grab Bars:
 1. Contractor to install new grab bars in locations indicated on drawings.
 2. Install grab bars in accordance with manufacturer's written recommendations with concealed fasteners appropriate for substrate.
- D. Paper Towel Dispensers:
 1. Contractor to install new and relocated paper towel dispensers in locations indicated on drawings.
 2. Install paper towel dispensers in accordance with manufacturer's written recommendations with concealed fasteners appropriate for substrate.
- E. Toilet Paper Dispensers:
 1. Contractor to install new and relocated toilet paper dispensers in locations indicated on drawings.
 2. Install toilet paper dispensers in accordance with manufacturer's written recommendations with concealed fasteners appropriate for substrate.
- F. Mirrors:
 1. Contractor to install new mirrors in locations indicated on drawings.
 2. Install new mirrors in accordance with manufacturer's written recommendations with concealed fasteners appropriate for substrate.

END OF SECTION

SECTION 104416: FIRE EXTINGUISHERS

PART 1: GENERAL

1.1 WORK INCLUDED

- A. Fire Extinguishers
- B. Cabinets
- C. Accessories

1.2 REFERENCES

- A. NFPA 10 - Portable Fire Extinguishers
- B. ADA Accessibility Guidelines
- C. UBC Standard 7-5 (ASTM E-814-83) - Fire-rated cabinet option for combustible and non-combustible walls

1.3 QUALITY ASSURANCE

- A. Conform to NFPA 10 requirements for portable fire extinguishers.
- B. Provide fire extinguishers. Cabinets and accessories are by single manufacturer.

1.4 SUBMITTALS

- A. Submit product data in compliance with Section 01 33 00.

PART 2: PRODUCTS

2.1 FIRE EXTINGUISHER CABINETS

- A. Where indicated on drawings, provide fire extinguisher cabinet with full clear acrylic door. Door and trim to be fabricated from aluminum. Special painted surfaces, color anodized aluminum, and graphics as indicated.
- B. Provide cabinets with fire-rated option, if applicable.

2.2 ACCESSORIES

- A. Fire Blankets and Cabinets
- B. Vigilante Cabinet Alarm

C. Extinguisher Brackets

PART 3: EXECUTION

3.1 INSPECTION

A. Verify that rough openings for cabinets are correctly sized and located.

3.2 INSTALLATION

A. Install the items of this Section in strict accordance with the original design, approved shop drawings, and requirements of agencies having jurisdiction, as approved by the Architect, anchoring all components firmly into position.

END OF SECTION

SECTION 105113: METAL LOCKERS**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Divisions 1 Specifications, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - i. Single Tier

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of locker and bench.
- B. Shop Drawings: Show lockers in detail, method of installation, fillers, trim, base and accessories. Include locker numbering sequence information.
- C. Samples for verification: Submit one full-size locker sample for evaluation. Adherence to the specification is required. Locker submitted must meet specification regardless of manufacturer's standard product. Submit manufacturer's technical data and installation instructions for metal locker units.
- D. Maintenance Data: For adjusting, repairing, and replacing locker doors and latching mechanisms to include in maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

- A. Uniformity and Single Manufacturer Requirements: Provide each type of metal locker as produced by a single manufacturer, including necessary mounting accessories, fittings, and fastenings.
- B. Installers Qualifications: Lockers to be installed by an experienced agent of the manufacturer.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Packing and Shipping: Do not deliver metal lockers until building is enclosed and ready for locker installation.
- B. Storage and Protection: Protect materials from damage during delivery, handling, storage, and installation.

1.6 WARRANTY

- A. Locker manufacturer shall warrant the locker for the lifetime use of the original purchaser from date of shipment. Warranty shall include all defects in material and workmanship, excluding finish, vandalism and improper installation.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements of the Contract Documents, acceptable manufacturers are as follows:
- B. DeBourgh Manufacturing Company or equal.

2.2 FABRICATION

- A. Locker Construction
 - 1. Lockers to be welded at seams and joints with exposed welds sanded smooth.
 - 2. No bolts, screws or rivets to be used in assembly of locker units.
 - 3. Ship lockers set-up, ready to be anchored in place in accordance with manufacturer's instructions.
- B. Body of Lockers
 - 1. Sides and Intermediate Partitions: Constructed of 1-inch by 1-inch by 1/8-inch steel angle iron frame with 3/4 inch, 13 gauges, bond sheared, flattened expanded metal welded to steel angle frames. Formed sheet steel locker frames are not acceptable.
 - 2. Exposed End Panels: Constructed of 1 inch by 1 inch by 1/8 inch steel angle iron frame with 16 gauge sheet steel welded to steel angle frame.
 - 3. Backs: Solid sheet of 18 gauge cold rolled sheet steel welded to frames of sides and intermediate partitions.
 - 4. Shelves and Tier Dividers: Constructed of 16 gauge cold rolled sheet steel welded to side and intermediate partition construction. Shelves provided in lockers 60-inches and taller, located to provide a minimum of 12 inches clearance.
- C. Doors
 - 1. 1 inch by 1 inch by 1/8 inch angle iron frame with inserts of (available only when used with Sentry I latching):
 - 2. 3/4 inch, 13 gauge bonds sheared expanded metal permitting 73% ventilation. An additional 13 gauge steel handle panel with 16 gauge cold rolled steel back panel will be securely welded to the center span of the door. All horizontal mesh edges shall be concealed with an additional steel formation welded to the door.
 - 3. Diamond perforated – permitting 37% ventilation.
 - 4. Secur-N-Vent – three-dimensional vertical vents formed on fronts and backs of door permitting a minimum of 21% ventilation.
 - 5. Louvered – traditional six louvers at top and bottom of door allowing 7% ventilation.
 - 6. 14 gauge formed doors constructed of single piece cold rolled steel with double bends on vertical sides and a single bend on horizontal sides (available with the above ventilation styles excluding mesh).
- D. Latching
 - 1. Sentry II Recessed Gravity Latch:
 - 2. Door containing stainless steel cup recessed into formed door (doors 18 inches and higher).
 - 3. 12 gauge steel finger lift mechanism.
 - 4. Spring activated nylon slide latch enclosed in steel latch channel allows closing of door while padlock or built-in lock is in position.
 - 5. Rubber bumpers riveted to door stops for silent operation.

- E. Hinges:
 - 1. Hinges to be 3 inch, five knuckles, 14 gauge heavy-duty fast pin welded to both door and frame.
 - 2. Locker doors 42 inches high or less shall have 2 hinges.
 - 3. Doors over 42 inches shall have 3 hinges.
- F. Slope Tops:
 - 1. Provide 18 gauge all welded slope top with 25 degree pitch, attached at factory
 - 2. with concealed fasteners. Slope top to be in addition to standard 16 gauge flat top.
- G. Closed Bases:
 - 1. 4" high, 14 gauges welded steel base enclosed on all four sides securely welded to locker bottom.
- H. Legs:
 - 1. 6", 14 gauge gusset style legs securely welded to locker bottom.
- I. Reinforced Bottom:
 - 1. Provide 16 gauge spacer channel welded to locker bottom from front to back for a more secure installation (when closed bases are not used).
- J. Filler Panels: Manufacturer's standard fabricated from 18 gauge solid steel finished to match lockers. Provide slip joint fillers angle formed to receive filler panel.
- K. Finish:
 - 1. Complete locker unit to be thoroughly cleaned, phosphatized and sealed.
 - 2. Finish being baked pure TGIC polyester powder coat with a minimum 2-3 mil thickness.
 - 3. Color of lockers shall be chosen from manufacturer's 47 standard colors.

2.3 LOCKER ACCESSORIES

- A. Interior Equipment: Furnish each locker with the following items, unless otherwise indicated:
 - 1. Hooks:
 - a. Hooks to be heavy-duty forged steel with ball ends and zinc plated.
 - b. Provide two single wall hooks and one double ceiling hook in each locker opening 20 inches or taller.

2.4 BENCHES

- A. Bench tops to be made of butcher block, maple hardwood 1-1/4 inches thick and 9-1/2 inches wide. Apply double coat of satin-gloss sealer for protection.
- B. Pedestals:
 - 1. Heavy Duty Pedestals: Heavy duty cast iron bell shaped base with a diameter of 7-3/4 inches threaded for 1-1/2 inch pipe. The pedestal is secured to the floor with a 1/2 inch by 5-1/2 inch concealed concrete anchor. Overall pedestal height is 16 inches. Misty Gray powder coat is standard, with optional standard color choice available.
 - 2. Standard Duty Pedestal: 1-5/16 inch steel tubing welded to a 7-3/4 inch diameter base and top flange. All parts are finished with zinc plating. Overall pedestal height is 16-1/4 inches.
 - 3. Moveable Pedestal: Gold anodized aluminum channel 1/8 inches thick by 3 inches wide. The trapezoidal shape measures 13-3/4 inches at the base. Overall pedestal height is 16 inches. To guard against skidding and scratching, a nonabrasive rubber pad is attached to the bottom of each leg.

PART 3: EXECUTION

3.1 INSTALLATION

A. Wall Installation

1. Securely anchor every locker to wall and/or floor before use. Installation hardware to be determined based upon wall/floor construction.
2. Tie adjacent locker units by bolting at four points, two at top and two at bottom, using ¼ inch cadmium plated bolts.

3.2 ADJUSTING

- #### **A. General Requirements:** Upon completion of installation, inspect lockers and adjust for proper door and locking mechanism operation.

3.3 CLEANING

A. General Requirements:

1. Clean interior and exposed exterior surfaces, removing debris, dust, dirt and foreign substances on exposed surfaces.
2. Touch up scratches and abrasions to match original finish.
3. Polish stainless steel and non-ferrous metal surfaces.
4. Replace locker units that cannot be restored to factory-finished appearance.
5. Use only materials and procedures recommended by locker manufacturer.

END OF SECTION

SECTION 114000 – FOODSERVICE EQUIPMENT

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section shall conform to the requirements of the Contract Documents including drawings and general provisions of the Contract, General and Supplementary Conditions and Division 01 Specification Sections.

1.2 BIDS

- A. Kitchen Equipment Contractor (KEC) is a primer-contractor and is to provide and install all items listed in this section and as detailed on food service drawings.
- B. Any denotation to specific trade responsibility (ie: Kitchen Equipment Contractor (KEC), Electrical Contractor (EC), Plumbing Contractor (PC), etc.) mentioned shall fall under the scope of the General Contractor (GC). The GC is responsible to hire all necessary sub-contractors.
- C. General Contractor (GC) shall make all final electrical, plumbing and exhaust connections. The Kitchen Equipment Contractor (KEC) shall perform initial startup and testing of equipment.
- D. Substitutions: When a product or material is specified by name and or model number, as noted in these specifications, such specifications establishes the standard type and quality considered most satisfactory for the particular purpose in the building. The bid proposal therefore should be based thereon, so that all bidders bid under the same conditions. Another product or material of the same type that meets the requirements may be submitted for consideration as a substitute only under the following conditions:
 - 1. Requests for substitution must be submitted in writing at least ten (10) days before the date set for the receipt of bids for review and approval by the design professional. If the substitution is found to be equivalent, all bidders will be notified prior to the receipt of bids.
 - 2. In providing substitution requests, the bidder must prove equivalence of the substitution and furnish detailed specifications and catalog cuts or drawings. Failure to identify exceptions or deviations from equipment specified must be interpreted to indicate that the product offered complies with the specification in every respect.
- E. Owner, Architect and Food Service Consultant reserves right to waive any informality, or reject any or all bids and any parts thereof, or to accept that bid as a whole or part that in his judgment is for the best interest of Owner. All bids to have on Contractor's letterhead itemized cost of each item of equipment, otherwise bid will be rejected.
- F. Contract documents convey a method of construction for custom fabrication; however this may or may not be the appropriate method based on selected fabricators industry knowledge and standards. It will be the responsibility of the selected fabricator to interpret and apply appropriate methods of construction for full functionality of custom fabrication.

1.3 WORK INCLUDED

- A. KEC shall coordinate with other trades or sub-contractors in order that whole installation may result in the highest grade possible.
- B. KEC shall provide and install only such valves, traps, faucets, shut-offs, reducing pressure valves, relief valves and other specialty items required within equipment and as hereinafter specified.
- C. KEC shall make all necessary cut-outs and knock-outs where required on equipment to accommodate electrical receptacles, switches or other electrical outlets and equipment, together with such cut-outs as required for passage of gas or plumbing piping, etc.
- D. KEC shall stack and remove rubbish waste material, crating, etc., resulting from work and keep the premises clean at all times. Upon completion of the installation, thoroughly and finally clean all equipment ready for use.

1.4 POWER AVAILABLE

- A. Electric Voltage: 120/208/480 volt, 60 cycle, 1 & 3 ph.
- B. Water Pressure: Typical Food Service Equipment range 25 to 90 PSI, if required, pressure reducing valves provided by Plumbing Contractor.
- C. Water Temperature(s):
 - 1. 110°-120° Fahrenheit max at hand washing sinks, work sinks and preparation sinks.
 - 2. 120°-140° Fahrenheit max at 3-compartment pot sink, dishwashers and hose reel assembly.
 - 3. 110°-120° Fahrenheit max at cooking equipment with faucet assembly.
- D. Gas Pressure: Typical Food Service Equipment range 5" W.C. to 10" W.C., if required, a gas pressure reducing valve at main feed, prior to equipment connection, to be provided by Plumbing Contractor.

1.5 GENERAL CHARACTERISTICS OF EQUIPMENT

- A. Electrically Operated
 - 1. Electrically operated equipment to be listed by Underwriters Labs., Inc.
 - 2. Motors: Up to and including 3/4 horsepower, shall be 120/60/1.
 - 3. Motors: Over 3/4 horsepower, 208/60/3, unless otherwise indicated.
 - 4. Ranges, food warmers, etc., over 2.0 kW, 208/60/1 or 208/60/3, unless otherwise indicated.
 - 5. Electrically heated equipment, etc., 2.0 kW and under, 120/60/1.
 - 6. 1 ph. electrical plug-in units with 3 wire cords; 3 wire cap.
 - 7. 3 ph. electrical plug-in units with 4 wire cords; 4 wire cap.
 - 8. Motor driven equipment: equipped with starting switch.
 - 9. Motors: equipped with overload protection.
 - 10. Wiring on fixtures, including operating switches and pilots, furnished by Kitchen Equipment Contractor.

- B. Submit in writing to Architect and Food Service Consultant for approval, schedule showing proposed electrical characteristics of each piece of equipment and disconnect means provided.
- C. Punch holes for, and install hood and walk-in cooler/freezer lights and concealed conduits. The interconnection of same, including control switch, wiring, inter-wiring between sections, etc., by Electrical Contractor.

1.6 WORK EXCLUDED FROM THIS DIVISION

- A. The following work is to be performed by other trades or sub-contractors and is not the responsibility of the Kitchen Equipment Contractor. The GC is responsible to hire all necessary sub-contractors.
 - 1. Electrical Contractor
 - a. Make connections to all food service equipment as shown.
 - b. Furnish disconnect switches.
 - c. Interconnecting of all exhaust hood lights, switches, control packages, interfaces, etc. including inter-wiring between sections of exhaust hoods.
 - d. Interconnecting of control switches as required on equipment shown, and all other components which come as part of any equipment shown on plan.
 - e. Interconnecting of any equipment, including, but not limited to, walk-in coolers/freezers monitoring, exhaust hood monitoring and/ or fire protection monitoring with building management systems.
 - f. Review all manufacturer approved installation methods/ diagrams and comply for proper installation of equipment being furnished.
 - 2. Plumbing Contractor
 - a. Make hot and cold water, waste and gas connections to all kitchen equipment shown, furnishing all necessary shut-offs, traps, backflow preventers, vacuum breakers, grease traps, drain line runs, etc.
 - b. Install all faucets, pot fillers, filters and pressure regulators as furnished by Kitchen Equipment Contractor.
 - c. Interconnecting of any and all other components that come as part of any other equipment shown.
 - d. Provide floor drains and floor sinks where shown and indirect piping to floor drains and floor sinks as indicated on drawings.
 - e. Review all manufacturer approved installation methods/ diagrams and comply for proper installation of equipment being furnished.
 - 3. Ventilation Contractor
 - a. Furnish size, shape and location of vent collars for exhaust hood and make connections to these collars.
 - 4. General Contractor
 - a. Provide and/or coordinate all work to the floors, walls and ceilings of the space.
 - b. Provide wall blocking where required and as indicated on food service drawings.

1.7 SUB-CONTRACTORS TO KITCHEN EQUIPMENT CONTRACTOR

- A. Fire Protection Contractor for the wet chemical protection system within exhaust hood systems only and Refrigeration Contractor for the remote refrigeration packages for walk-in coolers/freezers, rack systems, etc. are typical sub-contractors to the Kitchen Equipment Contractor.
- B. KEC to provide the name and addresses of all sub-contractors furnished to Architect/Owner and Food Service Consultant at time of submitting shop drawings. Selection of sub-contractors must be approved by them; and if in their judgment any fail to prosecute work in strict accordance with drawings and contract, after due notice from Owner or his agent, shall discharge same, but this in no way releases Kitchen Equipment Contractor from his obligations and responsibility under the contract.
- C. Every sub-contractor bound by terms and provisions of the contract so far as applicable to his work. Nothing contained herein shall create any contractual relations between any sub-contractor and Owner.
- D. Kitchen Equipment Contractor fully responsible to Owner for acts and omissions of his/ her sub-contractors.

1.8 SHOP DRAWINGS, ETC.

- A. Immediately upon award of Contract and within 4 weeks, submit to Architect/Owner and Food Service Consultant, drawings for approval. Submit 1/4" scale rough-in drawings showing locations of plumbing and electrical connections with all requirements indicated at point of connection; use of a legend or numbered connection plan will be cause for drawing rejection. Prior to fabrication, submit to Architect for approval 1/2" scale shop drawings showing plan, elevations and isometric views covering all items of work. Drawings to show dimensions and details of construction, installation and relations to adjoining and related work where same requires cutting or close fitting. Show reinforcement, anchorage, etc., required for complete installation. After correction and approval of above, submit sets for record, then afterwards as many additional copies as required by client.
- B. Submit in same manner as above, drawings showing masonry bases, depressed floors, positions of walls, requirements for ceiling hangers, wall blocking, and any other special conditions necessary for complete and correct correlation of various trades for satisfactory installation of all equipment shown on drawings.
- C. Manufacturer's names, cuts, descriptive data, analysis of tests, rated capacities and other information necessary for approval of standard manufactured articles and equipment furnished to Architect/Owner and Food Service Consultant for approval before ordering or purchasing. This submission made in same manner as above. All cuts marked with item number, mechanical characteristics, accessories furnished and bound in folders.

1.9 GENERAL

- A. No machine or equipment acceptable from any manufacturer not having had equipment of approximately the same type and design as that specified operating successfully for at least 5

years. Machines installed for test purposes shall not come within the category of successful commercial operation.

- B. Architect/Owner and/or Food Service Consultant privileged to inspect material and fabrication at Kitchen Equipment Contractor's or its sub-contractors factory at any time.
- C. Before proceeding with shop work, Kitchen Equipment Contractor to verify all measurements at premises. Where required dimensions are not immediately obtainable and delay in waiting for these dimensions would cause work to be seriously delayed, the matter shall be referred to Architect for a decision. In obtaining measurements, Kitchen Equipment Contractor shall consider work requirements of other trades and equipment designed and fabricated to provide necessary clearance for surrounding and adjoining work.
- D. Kitchen Equipment Contractor responsible for making any and all necessary adjustments to complete his work in a workmanlike manner, as approved by Architect/Owner.
- E. Dimensions as indicated on drawings and specifications are approximate, and are to be adjusted if and where necessary to suit job conditions and field measurements.
- F. Tops of tables, shelves, tops and exterior panels of cabinets, counters, doors, drainboards, etc., to be constructed of a single sheet of metal. Where size of equipment requires more than 1 sheet of metal, sheets butt joined with joints continuously welded full length. No joints less than 18" from an edge or end of a piece of equipment. In addition, all joints shall have battens or stiffeners welded to jointed material, ground smooth and polished.
- G. Appliances of rigid construction free from objectionable vibration and quiet in operation.
- H. Electrical heating elements shall conform to latest standards of National Electrical Manufacturer's Association and Underwriters Labs., Inc., where applicable standards have been set up by such agencies.
- I. Motors of ample power to operate machines for which designated under full load operating conditions without exceeding nameplate ratings. Horsepower requirements on driven equipment determined by manufacturer, based on normal operation of maximum capacity.
- J. Motors drip-proof, splash-proof or totally enclosed type, having two-hour duty cycle and ball bearings (except small timing motors which may have sleeve bearings). All motors shall have windings impregnated to resist moisture. Motors located where adjacent to deposits of dust, lint, etc., totally enclosed type.
- K. It is the responsibility of the Kitchen Equipment Contractor to supply and mount all electrical outlets, switches, controls, etc. within table/counter back splashes, aprons, panels, etc. and to provide stainless steel cover plates as required. Furthermore, it is the responsibility of the Electrical Contractor, in coordination with the Kitchen Equipment Contractor, to make final interconnections within table/counter interior to junction boxes, outlets, switches, controls, etc. for equipment indicated.

1.10 STAINLESS STEEL (S.S.)

- A. Where S.S. is specified, it shall be Type 304, nickel bearing iron alloy, containing approximately 17.0% to 19% chromium, 8% to 10% nickel, not more than 0.2% carbon, and not more than 2.0% of other alloying elements; designed being austenitic (non-magnetic).
- B. S.S. free from scale with all surfaces polished to a high commercial finish. All welding and exposed welds hereinafter specified, must be ground down and polished smooth to a #4 finish so that no evidence of welding will appear. Unexposed welds on underside of counter or tables ground smooth and treated with an acid solution to remove weld discoloration and oxidization and to arrest corrosion.
- C. Undersides of all counters, work tables, sinks, drain boards, etc., after fabrication, to have one (1) heavy coat of sound deadening material applied as allowed by local codes.
- D. Gauges for sheet iron and sheet metal, U.S. Standard.
- E. Rivets, welds, bolts, screws, nuts and washers to be steel except where brass or S.S. is fastened, in which case they shall be brass or S.S., respectively. Where dissimilar metals are fastened, welds, bolts, rivets, screws, nuts and washers, highest grade metal. Spacing and extent of welds, rivets, bolts and screws such as to insure suitable fastening and prevent bulging of metals fastened.

1.11 SANITATION

- A. All custom built equipment constructed in accordance with standard No. 2, 4 & 7 of National Sanitation Foundation Testing Laboratory, manufactured by a company approved by N.S.F. and carry their stamp of approval. Kitchen Equipment Contractor must have "Registered" numbered seal of N.S.F. approval.

1.12 OPERATING INSTRUCTIONS

- A. Kitchen Equipment Contractor shall leave all items of equipment in good, operating condition and furnish the services of a "qualified" competent manufacturer's representative to instruct Owner's employees in proper use and care of equipment. Representative on call for as long a period as is necessary to assure Owner that such instruction is thoroughly understood.
- B. Kitchen Equipment Contractor shall be responsible for scheduling of equipment demonstrations and/or training and shall provide a detailed list of expected dates, times and manufacturer's representative to be present (in attendance) for each piece of equipment.
- C. Kitchen Equipment Contractor or his qualified manufacturer's representative, thereafter, shall make all necessary calls during warranty period.

1.13 SAMPLES

- A. After Award of Contract, when requested, Kitchen Equipment Contractor shall supply Architect with samples of fabricated equipment, such as corner of table with a rolled or inverted "V"

edge, corner of dish table, overshef, drawer assembly, table leg with foot and gusset, or as specifically requested.

1.14 GUARANTEE

- A.
- B. Kitchen Equipment Contractor shall guarantee, as part of the bid and/or contract, workmanship, material and equipment for a period of 1 year from date of equipment final install and project turnover to Owner, and shall remedy any defect due to faulty workmanship or materials which may appear within guarantee period.
- C. Manufacturer's operation and maintenance manuals on equipment, etc., turned over to the Owner in duplicate, bound in a folder and marked accordingly.

1.15 EQUIPMENT CONSTRUCTION AND STANDARDS

- A. Where initials S.S. are used, they refer to "stainless steel;" C.P. refers to "chrome plated;" N.I.C. refers to "not in contract;" G.I. refers to "galvanized iron;" F.D. refers to "floor drain", and F.S. refers to "floor sink."

1.16 WASTES AND OVERFLOWS

- A. Sinks to have the following waste and overflow assemblies:
 - 1. For 1-1/2" NPT: Fisher model 74043 or approved alternate. Lever handle waste outlet with overflow assembly, 3-1/2" sink opening, self-centering stainless steel face flange with flat strainer, 12 gpm max flow rate, stainless steel lever handle with ball, overflow head with stainless steel faceplate and chrome plated cast red brass drain body.
 - 2. For 2" NPT: Fisher model 74043 or approved alternate. Lever handle waste outlet with overflow assembly, 3-1/2" sink opening, self-centering stainless steel face flange with flat strainer, 12 gpm max flow rate, stainless steel lever handle with ball, overflow head with stainless steel faceplate and chrome plated cast red brass drain body.

1.17 WATER INLET LOCATION

- A. Located in all cases above the positive water level to prevent siphoning of liquid into water system. Wherever conditions require water inlet below such level, a suitable type of vacuum breaker shall be placed on fixture and form part of same to prevent such siphoning.
- B. All faucets furnished by Kitchen Equipment Contractor as specified. Traps furnished by Plumbing Contractor.

1.18 PITCH AND DRAINAGE

- A. Wherever a fixture is used with waste or drain outlet, surface shall have distinct pitch towards outlet. Drainboards and tables that contain or adjoin sinks shall have a definite pitch towards sinks. Where necessary, surfaces creased and grooved to give a definite pitch.

1.19 SINKS

- A. #14 gauge S.S. interior corners rounded to 1" radius horizontally and vertically, forming a cove in bottom. All joints butt edged. Sink sizes given, inside measurements.
- B. Bottom of each compartment creased to center and fitted with a rotary drain as described in section 1.16, hereinbefore specified. Waste lever not to protrude beyond body of sink. Sinks to have overflows installed by Kitchen Equipment Contractor.
- C. Overflow to consist of 1-1/2" chrome plated brass strainer plate, fitted in back of each compartment at proper level directly connected to waste outlet with 1-1/2" chrome plated brass pipe.
- D. Back of sink extended integrally approximately 12" above working level, back 2-1/4" on 45° angle towards rear and then flanged down 1" and punched to accommodate faucets.
- E. Front and both ends, unless otherwise specified and shown, finished on top edge, 3" above working level, with 1-1/2" diameter, 180° welded integral roll. Exterior corners rounded to a 2-1/2" radius, all integrally welded.
- F. Sinks and drainboards finished on front and back edges only and left with straight edge on ends, so that drainboards may be welded thereto, forming integral units with top edge of rolled rim curbing formed on one horizontal plane across front to unit though surfaces of drainboards pitched to sinks.
- G. Multiple compartment sinks divided with double wall #14 gauge S.S. partitions, all corners rounded same as corners in sinks, continuously welded in place.
- H. Back, bottom and front of one continuous piece with no overlapping joints or open spaces between compartments.

1.20 SINK BOWL BUILT INTO TABLE TOP

- A. Sink constructed integral with table top #14 gauge S.S. having all interior corners coved vertically and horizontally forming a cove in bottom. To have overflow, lever waste outlet, etc..., as hereinbefore specified for sinks in spec section 1.19.
- B. All joints butt edged and welded, ground and polished, so that no evidence of welding will appear. All sink sizes inside measurements. Table top where shown, punched to receive deck type combination faucets, provided by Kitchen Equipment Contractor.

1.21 FAUCET AND BASKET DRAIN ASSEMBLY

- A. Sinks to have the following faucet assemblies:
 - 1. 3-Compartment Sink, Potwash:
 - a. 1 ea. Fisher model 74306 or approved alternate. Pre-Rinse assembly with 1.3 gpm flow rate or less, splash/ wall mount, 8" centers, add-on faucet 12" stainless steel tubular swing spout with 4" wrist blade handles, 36" flexible gooseneck hose with

spray head, stainless steel spring with wall bracket, compression valves, 1/2" NPT female inlets, ADA compliant, NO LEAD and NSF approved. Deck mount assembly model 75485.

- b. 1 ea. Fisher model 60798 or approved alternate. Faucet with 2.2 gpm flow rate or less, splash/ wall mount with 4" wrist blade handles, 8" centers, 12" stainless steel tubular swing spout, compression valves, 1/2" NPT female inlets, ADA compliant, NO LEAD and NSF approved. Deck mount assembly model 57665.
2. 2-Compartment Sink, Preparation:
 - a. 1 ea. Fisher model 57665 or approved alternate. Faucet with 2.2 gpm flow rate or less, deck mount with 4" wrist blade handles, 8" centers, 12" stainless steel tubular swing spout, compression valves, 1/2" NPT female inlets, ADA compliant, NO LEAD and NSF approved. Splash/ wall mount assembly model 60798.
3. Work Sink (Built-in, Welded-In):
 - a. 1 ea. Fisher model 57665 or approved alternate. Faucet with 2.2 gpm flow rate or less, deck mount with 4" wrist blade handles, 8" centers, 12" stainless steel tubular swing spout, compression valves, 1/2" NPT female inlets, ADA compliant, NO LEAD and NSF approved. Splash/ wall mount assembly model 60798.
4. Hand Sink:
 - a. 1 ea. Fisher model 58696 or approved alternate. Faucet with 2.2 gpm flow rate or less, deck mount with 4" wrist blade handles, 4" centers, 6" stainless steel swivel gooseneck spout, compression valves, 1/2" NPT female inlets, ADA compliant, NO LEAD and NSF approved. Splash/ wall mount assembly model 62650.
- B. All plumbing fixtures shall be certified CSA, ASME A112.18.1/CSA B125.1, AB1953/HSC 116875, Vermont Bill S152, NSF/ANSI 61 sec 9, annex F and G, NSF/ANSI 372 low lead content, ASTM F2324.

1.22 DRAINBOARDS

- A. #14 gauge S.S. full width of sink carried up approximately 12" at back and where adjacent to wall and finished same as heretofore described for back of sink, and having 3" high curbing at front and ends not adjacent to walls and finished with integral 1-1/2" diameter 180° roll, unless otherwise specified.
- B. Drainboards continuously welded to sinks.
- C. Drainboards 30" long or less shall have 1-1/2" #16 gauge S.S. tubular braces secured at underside near front and welded to S.S. gusset at leg anchor. All others to have legs and cross bracing with full length and width undershelf as specified for tables.

1.23 TABLES WITH S.S. TOPS

- A. Tops of #14 gauge S.S. 1 piece construction with all edges turned down into 2" integral 180° roll with all corners rounded to 2" radius forming a bullnosed corner. Corner welded and polished smooth.

- B. Table tops thoroughly cross braced with 4" x 1" S.S. channel stiffeners #14 gauge welded to underside. All cross braces spaced not over 24" on center.
- C. Table tops adjoining walls or adjacent equipment carried up approximately 6" and returned 1", down 1" at top and ends. Intersections of table top and raised edge coved to 1" radius. Where backsplash is exposed, it shall have finished S.S. back.
- D. It is the responsibility of the K.E.C. to supply and mount all electrical outlets, switches, controls, etc. within table/counter back splashes, aprons, panels, etc. and to provide S.S. cover plates as required. Furthermore, it is the responsibility of the Electrical Contractor, in coordination with the Kitchen Equipment Contractor, to make final interconnections within table/counter interior to junction boxes, outlets, switches, controls, etc. for equipment indicated, if required.

1.24 LEGS AND CROSSRAILS

- A. 1-5/8" O.D. #14 gauge S.S. tubular-type with S.S. bullet shaped feet having minimum vertical adjustment of 1-1/2" without showing threading or adjusting bolts. Feet fully enclosed on bottom. Adjustment of feet by means of a threaded shank attached to foot and screwed into a properly secured threaded member inside of leg. Construction of leg such that it shall fit over shank of foot so no liquid or other material can work their way into legs or foot.
- B. Tops of legs attached to enclosed conical gussets of heavy gauge S.S. Gussets welded to #14 gauge S.S. 4" x 1" channels to underside on which they appear. Crossrails 1-1/2" O.D. #14 gauge S.S. coped and welded to legs approximately 10" A.F.F. or as specified.

1.25 OVERSHELF - TABLE TYPE

- A. #16 gauge polished S.S. with all edges turned down and finished in a 1-1/2" diameter 180° roll - corners bullnosed, welded 1 piece construction.
- B. Shelves supported by 1" O.D. #14 gauge S.S. tubular uprights, tapered at top and flared at bottom, secured to table top with concealed inner tie rods, bolts and nuts. Uprights spaced approximately 42" on center not to interfere with table top proper. When uprights are located in other areas in addition to each end of table then they shall be cantilevered.

1.26 OVERSHELF - WALL TYPE

- A. #16 gauge polished S.S. with back edge turned up 2", remaining ends turned down in 1-1/2" diameter 180° roll with corners bullnosed welded, ground and polished.
- B. Shelves supported by #12 gauge S.S. cantilever brackets. Shelf spaced 1" from walls when in place and secured to same with C.P. toggle bolts. Undersides secured to brackets with concealed welded studs, nuts and washers. Brackets spaced approximately 42" on center.

1.27 UNDERSHELVES

- A. #16 gauge polished S.S. full length and width of table with all edges turned down into 2" wide channel. In way of table legs, shelf notched to fit contour of legs and fitted to same in neat, workmanlike manner to eliminate unsanitary crevices, fully welded, ground and polished.
- B. Undershelves reinforced on underside with welded 4" x 1" longitudinal channels of #14 gauge S.S. where applicable. All signs of welding on shelf surface removed.

1.28 DRAWERS

- A. Of #18 gauge S.S. all interior corners coved to a 1" radius both vertically and horizontally. All welds ground and polished to a uniform finish.
- B. Front of #14 gauge polished S.S. and will extend on both sides of drawer body to conceal slides, corners welded, ground and polished. Space between drawer front and body fully enclosed at bottom, back and both sides by means of a #20 gauge S.S. filler, spot welded to drawer front and body, to provide a fully sealed, vermin-proof enclosure. Drawer front provided with a 5" C.H.G. # P46-1010 S.S. pull handle fastened in place by means of a concealed screws.
- C. Drawer slides of #14 gauge S.S. fitted with 4 case hardened ball bearing rollers. Track attached to drawer is to have upper edge channel shaped to fit contour of roller rim to provide a positive drawer guide and prevent jarring. This drawer track firmly spot-welded to body. Outer track provided with auto stops to lock without the use of tools.
- D. Where specified, drawer provided with removable synthetic carving board. Carving board is to slide into enclosure under drawer made of #14 gauge S.S. and extending across underside of carving board, with both sides turned up and welded to slide assembly. The 2 sides provided with #14 gauge S.S. angles with stops at rear fastened in place 1/8" above top surface of carving board to provide guide and storage compartment when carving board is not in use. Carving board is to measure approximately 21" x 21" x 1" thick.
- E. Tool drawer 20" x 20" x 5" deep, bread drawer 20" x 20" x 10" deep. All drawers to have 4 pin paracentric keyed-alike built-in locks same as sliding and hinged doors. C.P. where exposed.

1.29 NOT USED

1.30 EXHAUST HOOD

- A. Exhaust Hood material, construction, etc. to be in conformance with IMC section 507.
- B. Dimensions approximately as shown on contract drawings and mounted at 80" A.F.F. to underside of hood. Final dimensions to be determined in field by Kitchen Equipment Contractor.
- C. Proper anchorages, etc..., installed in ceiling joists, slab, etc..., by Kitchen Equipment Contractor prior to final finish of ceiling.

- D. Body of #18 gauge stainless steel front, back and sides; straight as indicated on contract drawings. All joints to be flush welded. Where field joints occur, provide a pair of transverse frames, butted together and securely fastened following contour of hood structure.
- E. Bottom rim of hood attached to channel of #14 gauge STAINLESS STEEL with mitered welded corners and butted field joints. Cross section inside of channel to measure approximately 2-1/2" horizontally, flanged upward tightly against interior lining of hood.
- F. Above dishwashing machine, kettles and steamers or non-grease producing equipment, hood provided with sloped baffle at back arranged at 45° angle of #18 gauge stainless steel. Baffles to have sliding dampers of #16 gauge stainless steel mounted in #14 gauge stainless steel channel tracks. Each damper to have stainless steel handle fastened with concealed bolts.
- G. Above ranges, ovens, fryers, griddles, etc. or grease producing equipment, hood provided with built-in filters at back extending full length and arranged at an angle of 45° easily removable without use of tools. Filters to be approximately 20" x 20" x 2" thick, of STAINLESS STEEL and expanded metal construction or as further indicated on contract drawings. Filters set into #14 gauge STAINLESS STEEL filter frame, bottom of which is integrally installed with back of hood and grease gutter for easy cleaning. Quantity and size of openings in plenum chamber as indicated in contract documents.
- H. Hood(s) provided with STAINLESS STEEL hanger brackets, welded to top of hood, spaced not more than 36" on center.
- I. Section of hood below ceiling or soffit, enclosed with vertical facing of #18 gauge STAINLESS STEEL. Panels not to exceed 36" in width, easily removable where required, provided with recessed finger grip or similar. Where panels meet at vertical joints flanged inward 1" to form a hairline joint. Channel extended 2" beyond perimeter of hood and provided with concealed full length angle member of 2" x 2" x 3/16" G.I. with clips for bolting to hanger angles, spaced approximately 36" on center. Hanger angles attached to 2" x 2" x 3/16" angle frame fastened to ceiling slab. Panels held in place at ceiling with 2" x 2" x 1/8" STAINLESS STEEL angle trim all around.
- J. Hood(s) provided with recessed or flush vapor-proof LED light fixtures, approximately 12" X 12" style or 48" strip style, pre-mounted by manufacturer. Light fixture with bulb(s), as provided by specified exhaust hood manufacturer, refer to Part 2 Products. All wiring and interconnections by Electrical Contractor.
- K. All exhaust hood controls, switches, etc... to be mounted @ 48" AFF. This is to be the maximum height allowed.
- L. All wiring and interconnections for controls, switches, fans, solenoid, shunt trips, etc... by Electrical Contractor. This includes any requirements to and from remote panels, switches and control packages.
- M. Must be tested and comply with the most current codes (or per local jurisdiction) UL-710, International Mechanical Code (IMC), and NFPA 96.

1.31 NOT USED

1.32 FIRE PROTECTION SYSTEM

- A. The system shall be a pre-engineered cartridge-operated type R-102 system utilizing Liquid Ansul agent, with a Fixed Nozzle distribution network. It shall be furnished and installed in compliance with UL Standard 1254, UL Standard 300, NFPA 96-2008 and any prevailing statutes or codes including automatic shut-down of all cooking appliances per code section 44 of NFPA 17A-27-2002.
- B. System to provide connection to building Fire Alarm System per NFPA 17A; Section 3-2.1.5.
- C. Fire protection remote pull stations mounted @ 48" AFF, located 10 ft. minimum to 20 ft. maximum from exhaust hood(s).
- D. The extinguishing agent shall be a specifically formulated aqueous solution of organic salts contained in a S.S. tank with 3 gallons minimum capacity, and able to withstand test pressure of 330 PSI. A welded S.S. bracket shall be provided for mounting the tank.
- E. The regulator releases mechanism shall be capable of providing sufficient expellant gas to discharge enough agent to meet the minimum nozzle discharge requirements. The mechanism shall have a visual indicator of "fired" condition. This mechanism shall be capable of being operated by fusible link detection, remote manual release and local manual release. The mechanism should be housed in a S.S. enclosure with cover containing identifications thereon.
- F. Each discharge nozzle to be listed with UL approval for placement and size. Each nozzle shall have a rubber blow-off cap to keep the nozzle tip orifice free of cooking grease build-up. All exposed piping to be chrome plated finish, and there shall be no exposed threads.
- G. Kitchen Equipment Contractor to furnish mechanical (electrical) gas valve, up to 3" in size and coordinate the install/provisions to shut-off all fuel supplies to all cooking appliances beneath Type I exhaust hood upon activation of system. If electrical gas valve is to be utilized, Kitchen Equipment Contractor to furnish reset relay push button.

It is the responsibility of the Plumbing Contractor to install, coordinate and make any provisions necessary for complete operation of gas valve.

It is the responsibility of the Electrical Contractor to furnish and install electrical wiring, relays, etc... and make any provisions necessary for complete operation of gas valve. In addition, Electrical Contractor to furnish and install automatic equipment necessary to shut-off all electric beneath Type I exhaust hood upon activation of system.

- H. Kitchen Equipment Contractor to furnish and install a Class K Fire Extinguisher, dedicated to each room where a Type I exhaust hood is installed.
- I. Upon completion of installation, the installer to perform a wet chemical test or at the time of the test, the authority having jurisdiction may allow the Contractor to use flushing concentrate and water solution. However, whichever is permitted, it must be in compliance with Code. This test shall activate the entire system, except the agent supply tank, which will be substituted by the test tank of like pressure and size. Following a satisfactory test, the original tank shall be

replaced. The system shall then be certified to be in working order and all authorities shall be so advised in writing. Provide Owner with copies of all satisfaction/acceptance tests.

- J. The system to be furnished and installed by a factory distributor in accordance with the manufacturer's instructions. This shall include mounting of the system units, manual releases, nozzles, actuating devices, and the running of all pipe and control tubing applicable to the R-102 system. If and when requested, submittal drawings concerning the fire system shall have affixed the seal and signature of a licensed engineer for the State in which they are to be installed. A 1-year service contract and maintenance program to be provided.
- K. Kitchen Equipment Contractor is required to submit a copy of the hood suppression system shop drawing to the local authority having jurisdiction for approval, as well as submission to the Architect. In addition, shop drawings when submitted, must be signed and sealed by an engineer licensed to practice in the State where the system is to be installed.

1.33 DISH TABLES - SOILED AND CLEAN

- A. #14 gauge polished S.S. with exposed edges finished in 3" high curbing with a 1-1/2" diameter, 180° rolled trim at top, corners bullnosed, welded. Where adjacent to wall, top carried up 12" integrally at top and ends. All joints in top welded and free of buckles and weld marks. When applicable, where top (also raised back), adjoins dishwashing machine, same flanged down 1" into machine and secured water tight, backsplash in this area brought forward diagonally to machine to form a baffle. Tops thoroughly cross braced with 4" x 1" channel stiffeners of #14 gauge S.S. and welded to underside. Cross bracing approximately 24" on center, running front to back. All corners in top rounded to 1" radius, vertically and horizontally.

1.34 NOT USED

1.35 NOT USED

1.36 NOT USED

1.37 NOT USED

1.38 NOT USED

1.39 SERVING COUNTER

- A. Of size and shape as shown. Top of #14 gauge polished S.S. rolled down in a 2" diameter 180° roll on all exposed edges with corners bullnosed, welded. Top secured to counter base by means of concealed S.S. studs, nuts and washers. Angle frame under top sheathed with sound deadening material.
- B. Base constructed with interior framing of 1-1/2" x 1 1/2" x 1/8" galvanized steel angle with all joints welded.

- C. Angle framework concealed on the interior with #18 gauge polished S.S. sheathing. Exterior facing of base cabinet and ends to have sheathing of Plastic Laminate paneling laminated to 3/4" thick solid core, exterior grade marine plywood, panel length not to exceed 36". Color and style of paneling selected by Architect. Each panel of length as indicated, full height of counter and splined hairline joints. Panels and trim secured to interior framing by means of concealed welded studs, nuts and washers. Or constructed of alternate materials as detailed on drawings.
- D. Interior of all available space provided with bottom and intermediate shelf of #16 gauge S.S. turned up approximately 2" at rear and ends, and down 1-1/2", and in 1/2" channel shape at front.
- E. Mounted on masonry base, height as indicated on drawings or 6" high 14 gauge S.S. legs with S.S. removable toe base, where indicated. All openings in top flanged downward approximately 1" around their entire perimeter. Top cut out for and provided with equipment as hereafter specified.
- F. It is the responsibility of the K.E.C. to supply and mount all electrical outlets, switches, controls, etc. within table/counter back splashes, aprons, panels, etc. and to provide S.S. cover plates as required. Furthermore, it is the responsibility of the Electrical Contractor, in coordination with the Kitchen Equipment Contractor, to make final interconnections within serving counter interior to junction boxes, outlets, switches, controls, etc. for equipment indicated, if required.

1.40 NOT USED

1.41 HOT FOOD SECTION

- A. Top #14 gauge polished S.S. integral and continuous with counter and top, provided with 12" x 20" openings as shown.
- B. Each opening to have #14 gauge S.S. well measuring approximately 6-1/2" deep. Where top is flanged down into well, fitted with a breaker strip on 4 sides of opening. When and where food wells are used with drains, all drains are to be interpipied with 1-1/2" C.P. or S.S. piping by Kitchen Equipment Contractor, and extended to common point near floor drain for Plumbing Contractor to make indirect waste connections. Kitchen Equipment Contractor to furnish and install C.P. or S.S. shut-off valve extending for easy access.
- C. Each well heated as hereinafter specified, dry-moist type electric heater with individual thermostatic control and pilot light. Thermostat dials and pilot lights attached on attendant's side recessed into a panel installed inside of plate shelf areas or apron mounted as shown. All electric food wells connected to a common heavy toggle switch. Wiring concealed.
- D. Food wells to have bottom of housing fitted with sectional removable #16 gauge G.I. bottoms for access to wiring and elements. Counter base under hot food section to be lined with #18 gauge S.S.
- E. Each hot food section provided with the following #20 gauge Polar Ware Classic Anti-Jam inserts and covers: two S12104 pans with two 1/2 size lift-off covers and provide one dome-

type 12" x 20" lift-off cover for each opening; two S12106 pans, three S12066 pans, four S20124 pans; four S12102 pans, four S20122 pans.

1.42 NOT USED

1.43 NOT USED

1.44 NOT USED

1.45 NOT USED

1.46 NOT USED

1.47 COUNTER AND CABINETS WITH SEMI-ENCLOSED BASE

- A. Top of #14 gauge polished S.S. finished 1/2" above working level with 2" diameter 180° roll, bullnosed corners on all exposed sides. Where adjacent to wall, top carried up approximately 6" (or as specified hereinafter and shown) and returned 1" at top and ends towards wall with corners welded forming a continuous unit. Top fastened to cabinet by means of welded and concealed studs.
- B. Cabinet below top to have #18 gauge S.S. enclosure. Front stiles of cabinet channel shaped. This channel fully enclosed inside of cabinet. Top reinforced by means of horizontal framework of S.S. 1-1/2" x 1-1/2" x 1/8" angle with cross braces not more than 18" on center. Framework of all welded construction and intermediate shelves in cabinet of #16 gauge S.S. turned up on all sides to eliminate crevices at shelf surface. Front edge of shelf channel shaped. Shelf surface reinforced by means of #16 gauge S.S. channel stiffeners spaced on not more than 24" on center. Mounted on 6" S.S. adjustable legs, or as hereinbefore shown and specified.

1.48 NOT USED

1.49 DOORS

- A. Whether sliding or hinged type, not less than 1/2" thick overall, double paneled having 3/8" sound-deadening material between #16 gauge S.S. front and #18 gauge S.S. back, reinforced between panels by wide channels, running height of door and made of same material. Panels jointed with continuous welding. Doors and vent openings to have back panel boxed around vent opening and welded to front panel. Doors dust proof and entire front face without seams or joints.
- B. Sliding doors mounted on ball bearing type rollers, sliding in dust proof #14 gauge S.S. tracks overhead, fastened so as to eliminate vibration and jarring when doors are rolled. Doors fitted with limit stops. Bottom guide of #14 gauge S.S. for doors, open and flat, lining up with lower shelf of cabinet - slots so arranged that crumbs or dirt accumulating in the cabinet will drop to

the floor when cabinet is cleaned. Recessed handles solid material, not stamped, of S.S. welded to front panel. Finger grips of ample depth to comfortably pull the door. Doors provided with keyed-alike S.S. faced cylinder locks, built-in flush.

- C. Hinged type doors flush fitting, unless otherwise specified, resting tightly against rabbetted frame. Hinged doors provided with Klein Model #Y-48 (or approved equal) keyed-alike S.S. faced cylinder locks with Model #12230-SM (or approved equal) handles. In case of pair of doors, each individually controlled as outlined and is to close against rubber bumpers.
- D. Outer edges smooth, free from burrs, projections and fins. Excess welded metal removed by precision grinding and polishing.

1.50 REFRIGERATORS AND REFRIGERATION UNITS

- A. Reach-in refrigerators, freezers, and refrigerated units, as shown unless otherwise specified, furnished by Kitchen Equipment Contractor. They shall meet all requirements as set forth for individual item number and complete with self-contained or remote compressors and motors. Cooling coils blower type, unless otherwise called for, provided with initial charge of approved CFC free refrigerant. Plumbing Contractor responsible for extending refrigerator drain line, where required, to spill into adjacent floor drain in approved manner. Extended drain line not less than 3/4" I.D. and C.P. or S.S. tubing.
- B. All refrigerated equipment, refrigerators and freezers, whether walk-in or reach-in, started and adjusted to maintain required temperatures, charged with approved refrigerant as required.
- C. All reach-in refrigerators, freezers, hot food warmers, etc., to have keyed-alike locks. Kitchen Equipment Contractor must request this at time of placing order to avoid correction at a later date at Kitchen Equipment Contractor's expense.
- D. Kitchen Equipment Contractor to provide 1 year's free service for all types of refrigerators and refrigeration equipment. Service to include all compressors, unit coolers, controls, etc., to include adjustments and repairs, irrespective of cause, whether mechanical, operational or manufacturing at no additional cost to Owner. Additionally, five (5) year warranty provided on all compressors, parts only or replacement.

1.51 NOT USED

1.52 MILLWORK EQUIPMENT

- A. General Description: Woodwork to be minimum 3/4" marine grade plywood throughout. Woodwork counters shall be constructed to support the full weight of operating appliances without any deflection of the counter top. Where cut-outs are required in counter tops, appropriate framing needs to be provided around the cut-out to fully support the top in level position.

All miter joints shall be tight with no gaps or open spaces. Filling of miter joints with crack filler prior to finishing is not acceptable. Loose joints shall be hairline, flat, in single plane,

with no exposed screws, nails or other fasteners. All dimensions, reveals and joints shall be held exact.

All fixtures shall be assembled in single and complete units as the dimensions will permit shipment to and installation at the building. Large pieces requiring sections construction shall have their parts accurately fitted and aligned with each other, and provided with ample screws, glue and bolt blocks, tongues, grooves and splines, dowels, mortises and tenons, screws, bolts or suitable means of concealed fastening, as required to render the work of substantial, rigid and permanently secured in proper position.

Sufficient additional material shall be allowed to permit accurate scribing to walls, floors and related work, and due allowance made wherever possible for such shrinkage as may develop after installation. Single and sectional units shall be provided with adequate cleating, blocking, crating and other forms of protection as required to prevent damage, soiling and deterioration during transit, delivery, storage and handling.

Framing and blocking members shall be assembled with bolted and screwed connection and should be secured to the structural backing with cinch, expansion screws or toggle bolts, as required; spaced and installed to ensure ample strength and rigidity. Rails and stiles shall be mortised and tenoned, work neatly mitered and membered, all butt joints made flush and smooth, and all permanent joints made up with water resistant glue. All fixtures shall be assembled without face screws or nails, except where it may be necessary to attach trim items. All face screws or nails that are necessary shall be countersunk and plastic wood or wood plugs used to cover head and the plug neatly touched up. The heads of all screws used in any assembly shall be countersunk below the surface.

- B. Joints: Mortise and tenon, spline, dowel and/or pin block and glue work to avoid use of nails wherever practical. Make butt joints with an approved device of prevention of separation of members. Blind nail and conceal.
- C. Plastic Laminate (HDPL): Plastic laminate shall be bonded to all exposed surfaces with contact cement fast bond #30, as manufactured by 3-M Products Company, or equal, to minimum 3/4" fir faced plywood applied under high pressure. Reject plastic laminate or plastic backing shall be used to prevent warping, unless otherwise specified. All edges shall be carefully sanded to smooth finish, removing burns, nicks and cut marks.
 - 1. Plastic laminate joints shall be finished without wavy and unsightly joints. Joints need not be mitered except if specified. Hand sand edges to a slight chamfer.
- D. Doors, Hinged: Hinged doors shall be fabricated of 3/4" thick plywood with plywood full perimeter edging with plastic laminate on face and self-edging on exposed sides. Door hinges, pulls and catches shall be supplied and installed as detailed. All doors to have minimum of 3 concealed, heavy duty, European hinges per section.
 - 1. Provide S.S. channel trim on the perimeter of the door to guard plastic laminate from chipping.
- E. Doors, Sliding: Sliding doors shall be fabricated of solid core plywood with hardwood edges and constructed similar to hinged doors. Doors shall be mounted on E-Z Glides track. Doors shall be removable without the use of tools. Rubber stops shall be provided concealed in end stile or mullion.

- F. Doors, Tambour Sliding: Tambour sliding doors shall be fabricated of individual hardwood slats, 3/8" by 3/4" round on 2 edges and glued to 20 ounce duck canvas or reject elastic vinyl plastic or equal and shall be provided with hardwood end stile with integral door pull. Track shall be lined with laminated plastic or equally smooth surface and guides at top and bottom shall be fabricated hardwood. Provide lock-pin for sliding doors.
- G. Access Panels/Louver Panels:
1. Access Panels: Shall be fabricated of 3/4" thick marine grade plywood and shall be fabricated to be removable for access. Each access panel shall be provided with 2 magnetic catches at top and (2) 3/16" positioning pins at bottom (unless otherwise specified or detailed on drawings).
 2. Louvered Panels: Are required in woodwork at all locations where proper ventilation is necessary for the efficient performance and operation (exhaust and/or supply) of the food service equipment compressor.
Types (when specified):
 - a. Louvered panel spaced to conceal equipment yet provide adequate ventilation.
 - b. Kitchen Equipment Contractor to coordinate size, quantity and location of louvered opening for sufficient ventilation of food service equipment. Refer to drawing details for cut-outs and spacing.
 3. Unless otherwise directed, panels shall be powder coated to match laminate selection.
- H. Louvered Doors: Must have concealed hardware to resemble access panels. Doors to have nylon roller friction type heavy duty catch and heavy duty concealed S.S. adjustable hinge.
1. Plastic laminate fronts: provide kiln dried pine shutter type slats. Wood to be free of knots with smooth grain, epoxy painted to match laminate selection. No raw wood surfaces will be acceptable. Paint or laminate as needed between slats.
 2. Slats to be fixed, positioned to conceal equipment from sight.
 3. Provide black color screening/mesh on rear of door with protective edges to prevent tearing.
- I. Drawers: Drawers shall have dovetail construction, well glued and blocked. Fronts shall be not less than 3/4" thick marine grade plywood. Sides and back shall be 1/2" thick fabricated of Birch, Maple or Sycamore except where extension slides are used, in which case the side shall be 5/8" thick. Bottom shall be milled into fronts and sides. Drawers shall be provided with suitable stops. Provide pulls as detailed or specified.
1. The inside surfaces of all drawers shall receive one coat of Penetrating Primer and one coat of glass lacquer.
- J. Painted Finishes: Painted finishes shall have exposed surfaces free from defects and blemishes that would show after being finished, regardless of grade specific. All surfaces specified to receive paint or enamel finish shall receive one crosscoat of lacquer type undercoat. The undercoat shall be of appreciable different color than that of the finish coat, and of proper ground color with relation to the finish coat. After the undercoat has been thoroughly dried, surfaces shall be sanded smooth and two coats of enamel shall be applied. Back painting shall be provided for all cabinet and woodwork prior to installation.
- K. Interior and Wall Shelves: Cabinet interiors and wall shelves shall be laminated as specified under Section C, Plastic Laminate.
- L. Granite Tops:

1. Size, shape and installed where shown on drawings. These are fabricated items and are to be constructed as per manufacturer's requirements and as further detailed on contract drawings.
2. Color and finish shall be selected by the Architect, and physical properties shall confirm to manufacturer's standard specifications for foodservice application. The material shall be homogenous; and not of a composite construction.
3. Granite shall be 3/4" thick with 1-1/4" face for counter tops unless otherwise specified.
4. Angle frame under top sheathed with sound deadening material.
5. General installed to conform to manufacturers standard details in order to maintain product warranty, i.e. cut outs for drop-in equipment.

M. Solid Surface:

1. Size, shape and installed where shown on drawings. These are fabricated items and are to be constructed as per manufacturer's requirements and as further detailed on contract drawings.
2. Color and finish shall be selected by the Architect, and physical properties shall confirm to manufacturer's standard specifications for foodservice application. The material shall be homogenous; and not of a composite construction.
3. Solid Surface to be minimum 1/2" thick silicone mounted to 3/4" thick grade plywood if required as per manufacturer's recommendations.
4. Top secured to counter construction by means of concealed S.S. studs, nuts and washers.
5. Angle frame under top sheathed with sound deadening material.
6. General installed to conform to manufacturers standard details in order to maintain product warranty, i.e. cut outs for drop-in equipment.

PART 2 - PRODUCTS

ITEM #1 REACH-IN FREEZER – QTY. AS PER PLAN & SCHEDULE

Utility Model F-50-SS-2S-N. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-20P
- Verify door hinging
- Exterior Finish: Stainless Steel
- Interior Finish: Stainless Steel
- 1 ea. Self-contained refrigeration
- 1 ea. Shallow depth design
- 1 ea. Narrow width design
- 2 ea. Full doors with locks
- 3 ea. Stainless steel shelves per compartment, top/bottom section
- 1 ea. Thermal expansion valve
- 1 ea. Receiver tank with service valves
- 1 ea. Sight glass
- 1 ea. Filter drier
- 1 ea. Low pressure cutout
- 1 ea. Digital temperature control system
- 1 ea. Three year parts warranty
- 1 ea. Three year labor warranty

- Mounted on heavy duty casters, front two with brakes

Or as manufactured by Traulsen or Victory.

ITEM #2 SPARE NUMBER

ITEM #3 SPARE NUMBER

ITEM #4 DRYING RACK, PORTABLE – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model QDR-2436E-GL. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- 4 ea. 24" x 36" Shelves with removable, vented inserts
- 4 ea. 74" High uprights
- 2 ea. Tray drying rack, full shelf
- 1 ea. Drop-in tray drying rack, full shelf
- 1 ea. 24" x 36" Bottom shelf with removable, solid inserts
- Mounted on heavy duty casters, front two with brakes

Or as manufactured by Focus or Metro.

ITEM #5 3-COMPARTMENT, POTWASH – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model SDTPL-96-14/3. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Counter Top Material: Stainless Steel, 14 Gauge
- 1 ea. Table end connection to Item #9, Warewasher
- 3 ea. Built-in work sinks, 20" L x 16" W x 14" D
- 3 ea. Waste valve with lever
- 3 ea. Tail piece
- 3 ea. Waste overflow
- 1 ea. Stainless steel pre-rinse assembly with 12" swing spout add-on faucet and wrist action handles, 1/2" connections
- Flanged feet bolted to floor

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #6 S.S. RACK GUIDE, REMOV. – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model Custom. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- 1 ea. Removable rack guide to fit over sink, Stainless Steel, 12 Gauge

- 1 ea. Integral bracket, undercounter, to hold when not in use

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #7 SPARE NUMBER

ITEM #8 STORAGE SYSTEM, WALL MNTD. – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model WAL-STOR. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Mounting Height: 50" above finished floor
- 2 ea. Wall grid/mat, WM1848-E, stacked
- 1 ea. Wall uprights, vertical, PR45VU-E
- 2 ea. Shelf, 1448-E
- 2 ea. Shelf Brackets, PR14B-E
- 1 ea. Grid Shelf, 1436WGS-E
- 2 ea. Baskets, WB-E
- 12 ea. Utility Hooks, UH-E
- 1 ea. Epoxy coated finish, entire wall system
- Wall backing by General Contractor

Or as manufactured by Focus or Metro.

ITEM #9 WAREWASHER, DOOR TYPE, VENTLESS – QTY. AS PER PLAN & SCHEDULE

Hobart Model AM15VLT-2. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 208/3, Hardwired
- 1 ea. Single point electrical connection
- 1 ea. Straight-thru design application
- 1 ea. Pressure regulator
- 3 ea. Peg racks
- 3 ea. Combination racks
- 3 ea. Vollrath Traex sheet pan racks, TR23
- 1 ea. Built-in hot water booster, 70° rise
- 1 ea. Detergent/rinse aid pumps
- 1 ea. Drain tempering kit
- 1 ea. Water hammer arrestor kit
- 1 ea. Ventless exhaust type
- 1 ea. Tall chamber
- Flanged feet bolted to floor

Or as manufactured by Champion or Meiko.

ITEM #10 CLEAN DISH TABLE – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model CDTR-60-14/3. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Counter Top Material: Stainless Steel, 14 Gauge
- Stainless steel tubular crossrails, side / rear

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #11 TRASH RECEPTACLE, SLIM JIM – QTY. AS PER PLAN & SCHEDULE

Rubbermaid Model 1971258. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- 1 ea. 16 Gallon capacity
- 1 ea. Portable dolly

Or approved equal.

ITEM #12 HAND SINK, WALL MOUNT – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model HSAN-10-F-LRS. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- 1 ea. Soap dispenser, wall mounted
- 1 ea. Towel dispenser, wall mounted
- 1 ea. Left and right splash guards
- Wall backing by General Contractor

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #13 WORK TABLE – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model T3096SEB-BS. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Counter Top Material: Stainless Steel, 14 Gauge
- 2 ea. Work drawer assembly with removable cutting board
- Stainless steel undershelf, removable
- Stainless steel legs, 6" adjustable

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #14 SPARE NUMBER

ITEM #15 WORK DRAWER(S), BUILT-IN – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model 502943. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Included as part of Item #13, Work Table
- Stainless steel integrated handles, horizontal orientation
- 1 ea. Self-closing drawer
- 1 ea. Drawer safety stop
- 1 ea. Stainless steel pan insert, full size removable

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #16 FOOD CUTTER/ CHOPPER – QTY. AS PER PLAN & SCHEDULE

Robot Coupe Model R2N. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- 1 ea. Disc Package, SP5DISC

Or as manufactured by Piper Products or Electrolux.

ITEM #17 CAN OPENER, ELECTRIC – QTY. AS PER PLAN & SCHEDULE

Edlund Model 270C. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P

Or approved equal.

ITEM #18 OVERSHELF, TABLE MNTD. – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model OS1296-16/3. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Mounting height: 56" above finished floor
- Posts support bracket thru counter top, welded to frame

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #19 STAND, EQUIPMENT – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model MMT3030S. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- 1 ea. Pan rack slide base, 3" on center

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #20 SLICER, FOOD – QTY. AS PER PLAN & SCHEDULE

Berkel Model X13AE-PLUS. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- 1 ea. Automatic type
- 1 ea. Lift device

Or as manufactured by Hobart or Globe.

ITEM #21 SPARE NUMBER

ITEM #22 STAND, EQUIPMENT – QTY. AS PER PLAN & SCHEDULE

Existing to be reused. Unit to be installed where shown on drawings. This is an existing item and is to be handled as described in General Specifications. Provided with all features, options and accessories, per quantity required, as indicated:

- No additional features, options or accessories required

ITEM #23 MIXER, COUNTER – QTY. AS PER PLAN & SCHEDULE

Existing to be reused. Hobart Model HL200. Unit to be installed where shown on drawings. This is an existing item and is to be handled as described in General Specifications. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- All utility requirements to be verified by K.E.C.

ITEM #24 WORK TABLE – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model T3096SEB-BS. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Counter Top Material: Stainless Steel, 14 Gauge
- 1 ea. Work drawer assembly with removable cutting board
- Stainless steel undershelf, removable
- Stainless steel legs, 6" adjustable

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #25 WORK SINK, WELDED-IN – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model FDI-14-16-9.5-2. Size, shape and installed where shown on drawing. This is a fabricated item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Included as part of Item #24, Work Table
- 1 ea. Built-in work sinks, 16" L x 14" W x 9.5" D
- 2 ea. Waste valve with lever
- 2 ea. Tail piece
- 2 ea. Waste overflow
- 1 ea. Stainless steel faucet with 12" swing spout and wrist action handles, 1/2" connections

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #26 WORK DRAWER(S), BUILT-IN – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model 502943. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Included as part of Item #24, Work Table
- Stainless steel integrated handles, horizontal orientation
- 1 ea. Self-closing drawer
- 1 ea. Drawer safety stop
- 1 ea. Stainless steel pan insert, full size removable

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #27 OVERSHELF, TABLE MNTD. – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model OS1296-16/3. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Mounting height: 56" above finished floor
- Posts support bracket thru counter top, welded to frame

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #28 SPARE NUMBER**ITEM #29 STORAGE SHELVING – QTY. AS PER PLAN & SCHEDULE**

Eagle Group/Metal Masters Model QPF-1842E-GL. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Shelving to be sized to fit
- 4 ea. 18" x 42" Shelves with removable, vented inserts
- 4 ea. 74" High uprights
- Mounted on heavy-duty casters, front two with brakes

Or as manufactured by Focus or Metro.

ITEM #30 WORK STATION, MODULAR – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model MD2436. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- 1 ea. Stainless steel finish, entire wall
- 1 ea. Stainless keyboard drawer
- 2 ea. Book holder, BH-1
- 3 ea. Plastic bin holder, PBH
- 2 ea. Hanging file holder, HFH
- 1 ea. Wire basket, WB
- 1 ea. Stainless steel drawer, 500772

Or as manufactured by Focus or Metro.

ITEM #31 HAND SINK, WALL MOUNT – QTY. AS PER PLAN & SCHEDULE

Eagle Group/Metal Masters Model HSAN-10-F-LRS. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- 1 ea. Soap dispenser, wall mounted
- 1 ea. Towel dispenser, wall mounted
- 1 ea. Left and right splash guards
- Wall backing by General Contractor

Or as manufactured by Aero Mfg. or IMC/ Teddy.

ITEM #32 EXHAUST HOOD, CONTROL PANEL – QTY. AS PER PLAN & SCHEDULE

Captive Aire Model Custom. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Included as part of Item #40, Exhaust Hood

Or as manufactured by Caddy or Accurex.

ITEM #33 FIRE PROTECTION SYSTEM – QTY. AS PER PLAN & SCHEDULE

Captive Aire Model UL-300 (R-102). Unit to be installed where shown on drawing in strict accordance to that described in General Specifications. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, Hardwired
- Provide connection to building Fire Alarm System
- 1 ea. Mechanical Gas valve, up to 3", size to be verified
 - Provide add/ alternate for electric gas valve
- 1 ea. Reset Relay Push Button
 - Only required with use of electric gas valve
- For the protection of equipment beneath Exhaust Hood, Item #40

Or as manufactured by Caddy or Accurex.

ITEM #34 CABINET, MOBILE, WARM/ HOLD – QTY. AS PER PLAN & SCHEDULE

Existing to be reused. Vulcan Model VBP15. Unit to be installed where shown on drawings. This is an existing item and is to be handled as described in General Specifications. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- All utility requirements to be verified by K.E.C.

ITEM #35 SPARE NUMBER

ITEM #36 STEAMER, ATMOSPHERIC, CONNECTED – QTY. AS PER PLAN & SCHEDULE

Accutemp Model N61201E060 SGL. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- Gas: 1/2" Rear Connection, 60 MBtuh
- Verify door hinging
- 1 ea. Manifold gas line for double unit
- 1 ea. Pressure regulator
- 1 ea. 48" Quick disconnect with flexible hose
- 1 ea. Restraint cable
- 1 ea. Stainless steel stand with casters
- No filtration required

Or as manufactured by Cleveland or Groen.

ITEM #37 RANGE, RESTAURANT, ELECTRIC – QTY. AS PER PLAN & SCHEDULE

Existing to be reused. Unit to be installed where shown on drawings. This is an existing item and is to be handled as described in General Specifications. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 208/1, Hardwired
- All utility requirements to be verified by K.E.C.

ITEM #38 OVEN, CONVECTION, GAS – QTY. AS PER PLAN & SCHEDULE

Moffat Model G32D5-2C. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: (2)120/1, NEMA 5-15P
- Gas: 1/2" Rear Connection, 66 MBtuh
- 1 ea. Manifold gas line for double unit
- 1 ea. Pressure regulator
- 2 ea. Core temperature probe kit
- 2 ea. Extra oven racks
- 1 ea. 48" Quick disconnect with flexible hose
- 1 ea. Restraint cable
- Mounted on heavy duty adjustable casters, front two with brakes

Or approved equal.

ITEM #39 S.S. WALL PANEL(S) – QTY. AS PER PLAN & SCHEDULE

Captive Aire Model Custom. Size, shape and installed where shown on drawing. This is a fabricated item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Stainless steel panels, evenly sized, 20 Gauge
- Installed from top of coved base to underside of hood, entire length
- Hairline joints sealed with S.S. trim strips
- Secured to wall with heat resistant mastic

It is the responsibility of the Kitchen Equipment Contractor to coordinate and make all appropriate cut-outs in paneling based on utility requirements in this location and apply appropriate stainless steel trim strips, caps, gussets, etc...

Or as manufactured by Caddy or Accurex.

ITEM #40 EXHAUST HOOD, TYPE I – QTY. AS PER PLAN & SCHEDULE

Captive Aire Model Custom. Size, shape and installed where shown on drawing. This is a fabricated item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Construction: 100% 304 stainless steel
- Filters: Stainless steel captrate solo with hook
- Insulation: Integral air / insulation barriers at perimeter and top, 0" clearance to combustibles
- Structural front panel, insulated

- Wall / Island canopy hood, length / size as per contract documents
- 1 ea. Front perforated supply plenum (PSP) with built-in 3" back standoff
- Insulation for PSP housing, as required
- 4 ea. LED lights with bulbs
- Stainless steel field wrap, approximately 18" high on all exposed sides
- Adjustable exhaust air volume control damper
- 1 ea. Exhaust Fan, EF-1 (installed by General Contractor):
 - Refer to Contract Drawings
- 1 ea. Supply Fan, MUA-1 (installed by General Contractor):
 - Refer to Contract Drawings
- Hood Control Panel Package:
 - EMSplus11 modulating energy management system with smart controls
 - Built-in VFDs
 - Duct Temperature Sensors in all risers
 - Room Temperature Sensor
 - Configurable through Touch Screen Interface
 - EMS Duct Thermostat
 - INVERTER DUTY THREE PHASE MOTORS REQUIRED

Or as manufactured by Caddy or Accurex.

ITEM #41 REFRIGERATOR, REACH-IN – QTY. AS PER PLAN & SCHEDULE

Existing to be reused. Turbo Air Model MSR-49NM. Unit to be installed where shown on drawings. This is an existing item and is to be handled as described in General Specifications. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- All utility requirements to be verified by K.E.C.

ITEM #42 SPARE NUMBER

ITEM #43 REFRIGERATOR, REACH-IN – QTY. AS PER PLAN & SCHEDULE

Existing to be reused. Turbo Air Model MSR-49NM. Unit to be installed where shown on drawings. This is an existing item and is to be handled as described in General Specifications. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- All utility requirements to be verified by K.E.C.

ITEM #44 FIRE EXTINGUISHER, WALL MTND. – QTY. AS PER PLAN & SCHEDULE

Captive Aire Model K-CLASS. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- 1 ea. Wet chemical type, Ansulex low pH agent
- 1 ea. 2.5 Gallon tank

- 1 ea. Wall bracket
- 1 ea. Rechargeable
- Wall backing by General Contractor

Or as manufactured by Caddy or Accurex.

ITEM #45 REFRIGERATED, SELF-SERVICE CASE – QTY. AS PER PLAN & SCHEDULE

Structural Concepts Model NR3647RSSV. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 208/1, NEMA 6-20P
- Exterior Panel Finish: Stainless steel
- Exterior Finish: Stainless steel
- Interior Finish: Stainless steel
- 1 ea. Free standing style application
- 1 ea. Self-contained refrigeration:
 - Rear access, Breeze™ with Energy Wise
- 1 ea. Rear loading access doors, clear glass
- 1 ea. Rear door lock
- 1 ea. Interior LED lighting per shelf
- 1 ea. Retractable night curtain, locking
- 1 ea. Glass end panels
- 1 ea. Rear vented panel, stainless steel

Or as manufactured by Federal Industries or RPI.

ITEM #46 SERVING COUNTER – QTY. AS PER PLAN & SCHEDULE

LTI Model Custom. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Counter Components: Outlets/Junction boxes for drop-in or built-in equipment mounted in counter by K.E.C., wired by E.C.
- Counter Construction: 1" Stainless steel square tubing fully welded with integral chase wall
- Counter Top Material: Stainless Steel, 14 Gauge
- Front Panels: WilsonArt, Premium Collection, as selected by Architect
- End Panels: WilsonArt, Premium Collection, as selected by Architect
- Working Side:
 - Stainless steel interior/exterior
 - Counter/Door to be flush frame design
 - Stainless steel integrated handles, horizontal orientation
 - Cylinder locks, keyed alike, as required
 - Intermediate stainless steel solid shelves, adjustable
 - Stainless steel apron to mount switches, controls, etc.
- Counter Heights: 32" Counter Top

- Counter Base: Stainless steel legs, 6" adjustable with 16 GA removable kick plate, tapered cove

Or as manufactured by Aero Mfg. or Eagle Group/Metal Masters.

ITEM #47 DROP-IN, HOT WELLS – QTY. AS PER PLAN & SCHEDULE

LTI Model TW-DW-4. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 208/1, Hardwired
- 1 ea. Wet or dry application
- 1 ea. Controls remote mounted in apron
- 1 ea. Flange style, hugged edge
- 1 ea. Manifolder drain lines to gate/shut-off valve
- Adaptor bars to hold combination of 1/1, 1/2, 1/3 and 1/6 sized pans

Or as manufactured by Delfield or Piper Products.

ITEM #48 FOOD PROTECTOR(S), ADJUSTABLE – QTY. AS PER PLAN & SCHEDULE

Hudson Model PCA-P. Size, shape and installed where shown on drawing. This is a fabricated item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, Hardwired
- Gearless adjustment brackets
- LED Strip lights mounted to posts, concealed wiring
- LED Light mounting clips for extended lengths, as required
- 1" Tubular stainless steel posts
- Anchored below to counter frame for rigidity
- Stainless steel sleeve post extends thru counter top
- 3/8" Tempered glass, horizontal/vertical surfaces

Or as manufactured by Piper Products or Premier.

ITEM #49 SPARE NUMBER

ITEM #50 DROP-IN, COLD WELL – QTY. AS PER PLAN & SCHEDULE

LTI Model DI-2037TA-H. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- Verify compressor air flow orientation
- 1 ea. Self-contained refrigeration
- 1 ea. Controls remote mounted in apron
- 1 ea. Flange style, hugged edge

- 1 ea. Flush food pan presentation
- 1 ea. Manifoldded drain lines to gate/shut-off valve
- 1 ea. Removable false bottom
- Adaptor bars to hold combination of 1/1, 1/2, 1/3 and 1/6 sized pans

Or as manufactured by Delfield or Piper Products.

ITEM #51 FOOD PROTECTOR(S), ADJUSTABLE – QTY. AS PER PLAN & SCHEDULE

Hudson Model PCA-P. Size, shape and installed where shown on drawing. This is a fabricated item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, Hardwired
- Gearless adjustment brackets
- LED Strip lights mounted to posts, concealed wiring
- LED Light mounting clips for extended lengths, as required
- 1" Tubular stainless steel posts
- Anchored below to counter frame for rigidity
- Stainless steel sleeve post extends thru counter top
- 3/8" Tempered glass, horizontal/vertical surfaces

Or as manufactured by Piper Products or Premier.

ITEM #52 DROP-IN, ICE CREAM DISPENSER – QTY. AS PER PLAN & SCHEDULE

LTI Model DI-2222-IC. Unit to be installed where shown on drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Electrical: 120/1, NEMA 5-15P
- 1 ea. Self-contained refrigeration
- 1 ea. Easy lift, see-thru lid
- 1 ea. Ventilation louvers for base
- 2 ea. Coated baskets

Or as manufactured by Delfield or Piper Products.

ITEM #53 CONDIMENT COUNTER, PORTABLE – QTY. AS PER PLAN & SCHEDULE

LTI Model Custom. Size, shape and installed where shown on drawing. This is a fabricated Item and is to be constructed as described in General Specifications and as further detailed on contract drawings. Provided with all features, options and accessories, per quantity required, as indicated:

- Counter Construction: 1" Stainless steel square tubing fully welded
- Counter Top Material: Stainless Steel, 14 Gauge
- Tray Slide: Solid, 4-ribbed style
- Plate/Tray Shelf:

- Front Panels: WilsonArt, Premium Collection, as selected by Architect
- End Panels: WilsonArt, Premium Collection, as selected by Architect
- Cabinet Base:
 - Millwork door panels, (3) concealed hinges per door
 - Routed finger pull with magnetic touch latch
 - Stainless steel wire handles
 - Cylinder locks, keyed alike, as required
 - Stainless steel interior finish with adjustable shelves
- Counter Heights: 32" Counter Top
- Counter Base: Mounted on heavy duty casters, front two with brakes

Or as manufactured by Aero Mfg. or Eagle Group/Metal Masters.

PART 3 - EXECUTION

3.1 GENERAL RELATED CONDITIONS

- A. In each item of equipment hereinafter specified under the "Equipment Schedule," these specifications shall only identify each respective item by name and number, as well as list various component parts provided for same.
- B. Therefore, it shall be intended that these respective items and their component parts shall be of material (mounted where applicable) constructed and furnished in strict accordance to that described in the general specifications for these items and integrally constructed where applicable.
- C. It shall also be intended that where buy-out (pre-fabricated) items are specified, same shall be definitely furnished with all the accessories as normally furnished by manufacturer for these items. Also in strict accordance with current manufacturer's engineering data sheet for each respective item.

3.2 SPECIAL NOTES

- A. It shall be the responsibility of Kitchen Equipment Contractor to keep up to date with progress made in field on installation of all necessary roughing to adequately and properly operate and accommodate all equipment furnished by Kitchen Equipment Contractor and as shown on drawings, to make as many visits to the job site as is necessary to check and assure that all roughing is being properly installed to accommodate this equipment. Include this service in bid.
- B. Kitchen Equipment Contractor to cooperate with all trades so that the end results of his work will be a satisfactory, approved and accepted installation. Written reports of each visit shall be sent promptly to the Architect and the Food Service Consultant.

3.3 COORDINATION

- A. Procedure of construction is of paramount importance in executions of this project. Kitchen Equipment Contractor to carry on his work so that no delay in his operations or those of any other contractors occurs at any time.

- B. Kitchen Equipment Contractor to verify with Architect as to opening date of the food service area, and schedule his fabrication and purchasing of equipment so that all will be in readiness, installed, connected, tested, demonstrated, etc., in ample time prior to the scheduled opening date.

3.4 DELIVERY AND INSTALLATION

- A. Shall mean and intend that Kitchen Equipment Contractor shall deliver and assemble all equipment of contract in 1 piece in required locations in building, ready for water, waste, gas, electric and ventilating connections required by other contractors. Any pieces of equipment may be delivered sectionally, but all working surfaces butt-welded, ground and polished on premises so that upon completion, such item of equipment will have true, smooth, even and continuous surfaces. Butt joining and filling with solder not permitted. Kitchen Equipment Contractor must verify door sizes, delivery platform, elevator size, etc., effecting delivery to food service areas for all items of equipment.

3.5 RESERVATIONS AND CONDITIONS

- A. It is the intent of this specification to complete the installation of all equipment covered herein in all phases ready for operation. Contractor shall carefully examine the plans and specifications for building construction contracts and determine therefrom the extent of his operations in all respects. All labor and materials not included in building construction contracts necessary to accomplish this intent are hereby included in this contract.
- B. Kitchen Equipment Contractor shall attend job meetings when required for purpose of coordinating his work with other trades.
- C. All equipment shall be received at the building fully protected. It will be the responsibility of the Kitchen Equipment Contractor to protect the equipment until completely installed and accepted.

3.6 EXISTING EQUIPMENT (RELOCATED AND/OR REINSTALLED)

- A. Prior to submission of bid for equipment listed in Schedule of Equipment, Kitchen Equipment Contractor shall visit the existing facilities and associated areas to survey all existing equipment intended to be reused (or not used) to determine the extent of his/her work.
- B. Kitchen Equipment Contractor responsible for verifying all reusable equipment's sizing, utility and mechanical requirements, prior to release of any custom fabrication or equipment associated with it. Additionally, all makes, models, etc...of said equipment to be verified by the Kitchen Equipment Contractor.
- C. Bid shall include the cost of dismantling and moving, all reusable equipment to a temporary storage location designated by the Owner. In the event that the Owner cannot provide temporary storage, the Kitchen Equipment Contractor shall move all reusable existing equipment to his/her storage facility. When the facility is ready to receive equipment, the Kitchen Equipment Contractor shall deliver and set in place all new equipment, as well as all reusable existing equipment.

- D. Kitchen Equipment Contractor shall submit separate price for the removal from the premises all old, not reused kitchen equipment as identified by Owner and/or contract documents. Disposal of all such equipment shall be at the discretion of Kitchen Equipment Contractor, but shall be removed from the premises immediately when available. If price is not acceptable, the equipment shall remain the property of Owner.
- E. When new areas are completed, Kitchen Equipment Contractor shall locate all new and reusable existing equipment in their respective locations, assemble and set in place, as shown on drawings, left ready for necessary final connections by respective trades. Conditions listed in the specifications under "Delivery and Installation" shall apply to all reusable existing equipment.
- F. Rough-in drawings and all other necessary drawings and information covering the proper installation of all reusable existing equipment shall be submitted by Kitchen Equipment Contractor.
- G. All necessary plumbing, electrical, mechanical, etc...disconnections associated with reusable equipment shall be completed by the respective trades.

END OF SECTION 114000-36

SECTION 114001: FOODSERVICE EQUIPMENT- WALK-IN COOLERS**PART 1: GENERAL****1.1 SUMMARY**

- A. This Section includes:
 - 1. Walk-In Cooler
- B. See Division 3 Section "Cast-in-Place Concrete" for the following:
 - 1. Equipment bases.

1.2 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For fabricated equipment. Include plans, elevations, sections, roughing-in dimensions, fabrication details, utility service requirements, and attachments to other work.
- C. Coordination Drawings: For foodservice facilities.
 - 1. Indicate locations of foodservice equipment and connections to utilities.
 - 2. Key equipment using same designations as indicated on Drawings.
 - 3. Include plans and elevations; clearance requirements for equipment access and maintenance; details of support for equipment; and utility service characteristics.
- D. Samples: For each exposed finish.
- E. Operation and maintenance data.
- F. Product Schedule: For each foodservice equipment item, include the following:
 - 1. Designation indicated on Drawings.
 - 2. Manufacturer's name and model number.
 - 3. List of factory-authorized service agencies including their addresses and telephone numbers.
- G. Special warranty specified in this Section.

1.3 QUALITY ASSURANCE

- A. NSF Standards: Provide equipment that bears NSF Certification Mark or UL Classification Mark certifying compliance with applicable NSF/ANSI standards.

- B. UL Certification: Provide electric equipment and components that are evaluated by UL for fire, electric shock, and casualty hazards according to applicable safety standards and that are UL certified for compliance and labeled for intended use.
- C. Regulatory Requirements: Install equipment to comply with the following:
 - 1. ASHRAE 15, "Safety Code for Mechanical Refrigeration."
 - 2. NFPA 70, "National Electrical Code."
- D. Pre-installation Conference: Conduct conference at Project site.

1.4 PROJECT CONDITIONS

- A. Field Measurements: Indicate measurements on Coordination Drawings.
- B. Coordinate foodservice equipment layout and installation with other work, including lighting fixtures, HVAC equipment, and utility service connections.

1.5 WARRANTY

- A. Refrigeration Compressor Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace compressors that fail in materials or workmanship within specified warranty period.
 - 1. Failure includes, but is not limited to, inability to maintain set temperature.
 - 2. Minimum Warranty Periods, years from date of Substantial Completion:
 - a. Panels: Ten (10) years.
 - b. Compressor: Five (5) years.
 - c. Service/Workmanship Warranty, including all field brazed joints: Two (2) years.
 - d. Manufacturer's Warranty on all other components: Two (2) years.

PART 2: PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 - 2. Products: Subject to compliance with requirements, provide one of the products specified.
 - 3. Basis-of-Design Product: The design for foodservice equipment item is based on the product named. Subject to compliance with requirements, provide either the named product or a comparable product by one of the other manufacturers specified.

2.2 FABRICATED EQUIPMENT

A. Materials:

1. Stainless Steel: ASTM A 666, with No. 4 finish (directional satin finish) on exposed surfaces.
2. Galvanized Steel: ASTM A 653/A 653M, G90 coating designation; commercial-quality, cold-rolled steel that is zinc coated by the hot-dip process and chemically treated.

2.3 FOODSERVICE EQUIPMENT

A. Walk-In Cooler:

1. Basis-of-Design Product: "Tafco" 8'-6" height, unit capacity as per plan, complete, including refrigeration unit and compressor, as manufactured by TMP Manufacturing Company, Inc. 1395 Industrial Park Road, Clearfield, PA; Tel: 800-233-1954; www.tafcowalkins.com ; or a comparable product by one of the following:
 - a. American Panel Corporation, Ocala, FL.
 - b. Bush Refrigeration,
 - c. U.S. Cooler, Quincy, IL.
2. Description: Prefabricated of modular design and construction.
 - a. Panel Fabrication: Foamed-in-place urethane insulation sandwiched between interior and exterior metal "skin" which has been die-formed and gauged for uniformity in size. Edges of panels shall be foamed-in-place tongue and groove with locking facilities foamed-in-place at time of fabrication. 8'-6" height with floor.
 - b. Floor Construction: Floor panels fabricated similarly to other panels, designed to withstand uniformly distributed loads of 700 lbs per square foot. Floor will be recessed.
 - c. Insulation: Each panel shall be filled with rigid "Foamed-In-Place" urethane having a thermal conductivity (K factor) of .133 BTU/hr./ft squared per degrees Fahrenheit/inch and an overall coefficient of heat transfer (U factor) of not more than .03. "R" factor shall be 31 or greater. Insulation shall have a 97% closed cell structure. Overall thickness shall be 4". Fire hazard classification according to ASTM E-84 (UL 723) is a flame spread rating of 25" or less and certified with UL label. Factory Mutual approved and listed.
 - d. Exterior and Interior Wall Panel and Interior Ceiling Panel Finish: Stainless steel, 20 gauge, and type 304, #3 finishes.
 - e. Exterior Ceiling and Exterior Floor Panel Finish: 26 gauge Galvalume steel.
 - f. Interior Floor Finish: .100 treads plate aluminum.
 - g. Panel Locking Assemblies: Assembly of walk-in shall be accomplished by Posi-Locs. Posi-Locs shall be foamed-in-place and activated by a hex wrench provided by the manufacturer. Access ports to locking devices shall be covered by snap caps. Access ports shall be on interior to allow assembly of walk-in from the inside.

- h. Section Gaskets: NSF listed gaskets shall be foamed-in-place to the male side of all panels, on both interior and exterior. Gaskets shall be impervious to stains, greases, oils, mildew, etc.
- i. Entrance door and door panel: Each walk-in shall be fitted with one standard 34" x 78" swing-type entrance door. The door shall be flush type, finished in and out to match the wall in which located. Doors and door section shall be listed by Underwriters Laboratories and equipped with the following:
 - 1) Door shall be equipped with magnetic gasket, Posi-Seal door closure and latch. Hardware has provisions for locking and a safety release which prevents entrapment of personnel within the box.
 - 2) Door shall be self-closing with two strap-types, cam-lift hinges.
 - 3) Door jamb shall be made of Fiberglass Reinforced Plastic. An isolated, low wattage heater strip covered by magnetically attracting stainless steel shall be fitted onto this jamb (freezer only). This strip shall provide perfect sealing of magnetic gasket and prevent frost and condensation build-up.
 - 4) Each entrance door section shall be provided with an incandescent type vapor-proof light, pilot light switch and conduit between switch box and outlet box. Concealed wiring shall be standard on each entrance door section.
 - 5) A threshold with non-skid striping shall be provided with each door section.
 - 6) A 2" dial thermometer shall be included with each door section to indicate inside temperature.
- 3. NSF: All walk-ins shall be fabricated to comply with National Sanitation Foundation No. 7. The NSF label shall be affixed to the interior door pan. All interior corners, including floor shall be coved.
- 4. Air Vent: Tri-Action air vent shall be provided to equalize pressure between the interior and exterior, caused by sudden temperature changes due to door openings and evaporator defrosting. The vent shall be heated to prevent moisture and/or frost accumulation.
- 5. Installation Instructions: A complete set of installation instructions shall be included with the walk-in. These instructions shall cover the erection and assembly of the walk-in, and the installation of refrigeration systems. A floor plan print shall be included.
- 6. Refrigeration Equipment: Type "PR" refrigeration unit with compressor as recommended by cooler manufacturer for use with their cooler. Condensing units shall be fully hermetic or semi-hermetic type. Refrigerant shall be R-22 or R-404A unless otherwise specified. Condenser shall be air-cooled or optional water-cooled. Condensing units shall be factory assembled and UL or ETL listed. Evaporators shall be forced air type. Air discharge shall be parallel to the walk-in ceiling. Fan motors, guards multi-fin and tube-type coil, shall be housed in heavy gauge aluminum. Unit shall have drain pan with suitable drain pipe fitting. Freezer evaporators shall have and automatic electric defrost system including heater, time clock, fan delay control, and heated drain pan. Defrost shall be time initiated and temperature terminated with built-in fail-safe control. All evaporators shall be UL listed. All systems include pump down cycle to provide additional protection against unwanted refrigerant flow. Coordinate electrical requirements with available electrical service and as shown on electrical drawings.
- 7. Refrigeration Accessories:
 - a. Low Ambient Kit: For air-cooled condensing units installed outdoors, include crankcase heater, head pressure control, and rainproof housing.

- b. Drain Lines: Installing contractor shall provide suitable drain lines from all evaporators. Drains shall be trapped outside the walk-in. Freezer drains shall be copper tubing and shall be heated and insulated to prevent freeze-up. All plumbing to be in accordance with local codes. Provide Drain line heater kits from manufacturer.
 - c. Condensate Evaporator: Required if job site does not have a floor drain near the walk-in. An electric condensate evaporator shall be provided for wall mounting on exterior of the walk-in. 115-60-1 AC continuous service voltage required.
 - d. Insulated Evaporator: Top-mounted coil system to be used to provide more useable storage space. Coil to be positioned above interior of ceiling.
8. Options and Accessories: Provide the following:
- a. Three door hinges.
 - b. Digital Thermometer.
 - c. Sweep Gaskets.
 - d. FRP Door Jamb.
 - e. Crown Molding.
 - f. Kick plates.
 - g. Heated Air Vents.
 - h. Air Shield
 - i. Not less than two interior architectural light fixtures.
 - j. Cooler Shelving:
 - 1) 8 - 24" W, 36" L, Stainless-Steel Shelves with #3 finish and antimicrobial protection.
 - 2) 4 - 24" W, 42" L, Stainless-Steel Shelves with #3 finish and antimicrobial protection.
 - 3) 16 - 24" W, 48" L, Stainless-Steel Shelves with #3 finish and antimicrobial protection.
 - 4) 28 - 74" H stainless steel posts with #3 finish and antimicrobial protection.
 - 5) Verify sizes for proper fit.
9. Electrical Service: Coordinate electrical requirements with electrical service available and as shown on electrical drawings. All interior wiring to be "liquidtight" fittings and sealed to prevent water migration. The use of Romex, BX, MC Cable, etc. is prohibited. All inter-wiring to be done by Kitchen Equipment Contractor. .

2.4 MISCELLANEOUS MATERIALS

- A. Installation Accessories, General: NSF certified for end-use application indicated.
 - B. Elastomeric Joint Sealant: ASTM C 920; Type S (single component), Grade NS (nonsag), Class 25, Use NT (nontraffic) related to exposure, and Use M, G, A, or O as applicable to joint substrates indicated.
1. Public Health and Safety Requirements:
- a. Sealant is certified for compliance with NSF standards for end-use application indicated.

- b. Washed and cured sealant complies with the FDA's regulations for use in areas that come in contact with food.
2. Cylindrical Sealant Backing: ASTM C 1330, Type C, closed-cell polyethylene, in diameter larger than joint width.

PART 3: EXECUTION

3.1 INSTALLATION

- A. Install foodservice equipment level and plumb, according to manufacturer's written instructions.
 1. Connect equipment to utilities.
 2. Provide cutouts in equipment, neatly formed, where required to run service lines through equipment to make final connections.
- B. Complete equipment assembly where field assembly is required.
 1. Provide closed butt and contact joints that do not require filler.
 2. Grind field welds on stainless-steel equipment smooth, and polish to match adjacent finish.
- C. Install equipment with access and maintenance clearances that comply with manufacturer's written installation instructions and requirements of authorities having jurisdiction.
- D. Install Panels and floor on concrete slab within recess and set in a bed of sealant.
- E. Install closure-trim strips and similar items requiring fasteners in a bed of sealant.
- F. Install joint sealant in joints between equipment and abutting surfaces with continuous joint backing, unless otherwise indicated. Produce airtight, watertight, vermin-proof, sanitary joints.

3.2 CLEANING AND PROTECTING

- A. After completing installation of equipment, repair damaged finishes.
- B. Clean and adjust equipment as required to produce ready-for-use condition.
- C. Protect equipment from damage during remainder of the construction period.

3.3 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain walk-in cooler.

END OF SECTION

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220500 GENERAL DESCRIPTION AND SCOPE - PLUMBING (P)

1.0 GENERAL DESCRIPTION

These plans and specifications cover furnishing all labor, materials, transportation and equipment to provide a complete and operative plumbing system for the conversion of the existing Peekskill Firehouse to a commercial kitchen incubator.

2.0 SCOPE

These plans and specifications include but are not limited to the following:

1. Relocate and upgrade the existing water service.
2. Water supply piping, hot and cold, including piping insulation.
3. Fixtures including supply and drainage fittings.
4. Sanitary drainage, waste and vent piping.
5. Storm drains piping, roof drains, including pipe insulation.
6. Grease-laden sanitary drainage, waste, truck gray water connection, and vent piping.
7. New building grease-laden sewer from building to grease interceptor and sampling station, then to municipal system.
8. Temporary water supply system.
9. Excavation, backfill, cutting and patching.
10. Removal of existing systems.
11. Condensate drains from new HVAC unit.
12. New natural gas-fired water heater.
13. Natural gas piping additions and removals.
14. Testing and rendering operative of all new systems.
15. Meeting of all codes and ordinances.

16. Coordination with utility company, meeting inspection requirements and payments of all fees.

220505 GENERAL CONDITIONS - PLUMBING (P)

1.0 GOVERNING CONDITIONS

General Conditions of the Plumbing Contract shall be in accordance with:

1. “Standard General Conditions of the Construction Contract per AIA 201” - latest edition.
2. “Instructions to Bidders - AIA” - latest edition.
3. Special conditions of the contract as included in general construction documents.

2.0 DRAWINGS

Plumbing installation shown in drawings and on supplementary drawings supplied.

3.0 SHOP DRAWINGS AND APPROVALS

Furnish shop drawings for approval, six copies on all major items of equipment. Items requiring shop drawings are:

All equipment shown on drawing legend and schedule.

The materials, workmanship, design and arrangement of all work installed under the contract shall be subject to the approval of the engineer.

If material or equipment is installed before it is approved, the contractor shall be liable for the removal and replacement at no extra charge to the owner if, in the opinion of the engineer, the material or equipment does not meet the intent of the drawings and specifications.

The words “or approved equal” shall be understood to follow the name of all manufacturers stated herein and on the drawing legend and schedule, unless otherwise stated.

4.0 WORKMANSHIP

Provide neat mechanical appearance. Provide minor alterations to accomplish. Conceal all piping in all finished areas.

With submission of bid, the contractor shall give written notice to the engineer of any materials, apparatus, or omissions believed to be in violation of laws, ordinances, rules or regulations of authorities having jurisdiction. In the absence of such written notice, it is mutually agreed that the contractor shall include the cost of providing all systems in accordance with applicable regulations without extra compensation.

5.0 MATERIALS

Provide the best-accepted industry standard equipment and materials. Entire installation shall conform to principles and practices of National Plumbing Code and shall meet New York State Plumbing Code requirements.

Substitutions of equipment or materials other than those indicated on the drawings may be made only upon written approval from the engineer. The contractor shall submit their substitution for approval before releasing order for fabrication and/or shipment. Engineer reserves the right to disapprove such substitutions provided, in their opinion, the item offered is not equal to the item specified.

Where such approved deviation requires a different quantity and arrangement of ductwork, piping, wiring, conduit and equipment from that specified or indicated on the drawings, subject to approval of the engineer, the contractor shall provide any such ductwork, piping, structural supports, insulation, controllers, motors, starters, electrical wiring and conduit, and any other additional equipment required by the system, at no additional cost to the owner.

6.0 GUARANTEE

Contractor shall guarantee all workmanship, materials and performance for a period of one year from the date of the certificate of completion and acceptance of their work. The contractor shall promptly correct, without cost to the owner, such defects upon notice from the owner to do so.

7.0 CODES, PERMITS, INSPECTIONS

Comply with plumbing code requirements of the municipality in which located, NYS Building Code and National Plumbing Code. Materials per code hereinbefore mentioned. Furnish permit and certificate of final inspection from municipality. Contractor shall pay all fees and inspections and same shall be included in the contract amount.

8.0 EXCAVATION AND BACKFILL

Provided by plumbing contractor for all plumbing requirements, including service water piping, natural gas piping and sewer.

9.0 ROOF PENETRATIONS

All roof penetrations and expansion joints with proper anchors and guides shall be provided by the contractor where necessary, and/or when shown on drawings. Anchors and guides shall be complete with counter flashings.

Plumbing contractor shall do all cutting, fitting and patching necessary as a part of their contract to provide for their piping equipment unless otherwise stated.

Contractor shall layout all plumbing facilities in advance of the GC pouring or laying walls for all

chases, sleeves, etc. The GC shall be responsible for locations of same.

10.0 TESTS

Labor, material, instruments and power required for testing shall be furnished by this contractor.

Tests shall be performed in the presence and to the satisfaction of the engineer and such other parties as may have legal jurisdiction.

Pressure tests shall be applied to piping only before connection of equipment. In no case shall piping, equipment or accessories be subject to pressure exceeding their rating.

All defective work shall be promptly repaired or replaced and the tests shall be repeated until the particular system and component parts thereof receive the approval of the engineer.

Any damages resulting from tests shall be repaired, and damaged materials replaced, all to the satisfaction of the engineer.

The duration of tests shall be as determined by all authorities having jurisdiction, but in no case less than the time prescribed in the specification.

Equipment and systems which normally operate during certain seasons of the year shall be tested during the appropriate season. Tests shall be performed on individual equipment, system and

their controls. Whenever the equipment or system under test is interrelated with and depends upon the operation of other equipment, systems and their controls, for proper operation, functioning and performance, the latter shall be operated simultaneously with the equipment of system tested.

No piping in any location shall be closed up, furred in or covered before testing.

The entire drainage and vent system shall have all openings plugged to permit the entire system to be filled with water to the upper level of the highest vent stack above the roof. When a portion of the system is being tested, a vertical stack ten feet above the highest horizontal line to be tested may be installed and that portion of the system filled with water. The water shall remain in the system for a four-hour period minimum, without any lowering of the water level at the overflow.

After setting of fixtures and/or equipment, the entire waste and vent system shall be subjected to a smoke test as follows: Fill all trap seals with water. Introduce into the system through a suitable opening, a thick penetrating smoke which is produced in openings above roof, close the vent openings and continue introducing smoke until a pressure of one inch of water has been built up. Maintain pressure for fifteen minutes minimum before starting inspection. Smoke shall not be visible from any joint, fixture connections and/or fixture.

11.0 JOB CONDITIONS

Contractor shall inform themselves of all job conditions, entrance clearances, etc. for their

equipment and material. They shall so consider in their estimates. No extras shall be allowed in their failure to do so.

12.0 SLOPES

All horizontal soil, waste, or storm piping of 3-inch diameter or less shall be run in a uniform grade at not less than $\frac{1}{4}$ " per foot unless otherwise indicated. All horizontal soil waste, or storm piping larger than 3 inches in diameter shall be run in a uniform ratio at not less than $\frac{1}{8}$ " per foot. All vent piping shall be so graded as to free itself quickly of any condensation.

13.0 PIPING - GENERAL

Pipe Expansion - All pipe connections shall be installed to allow for freedom of movement of the piping during expansion and contraction without springing. Swing joints, expansion loops and expansion joints with proper anchors and guides shall be provided by the contractor where necessary, and/or when shown on drawings. Anchors and guides shall be subject to approval of the engineer.

Bases and Supports - The contractor shall provide all bases and supports not part of the building structure, of required size, type and strength as approved by the engineer, for all equipment and materials furnished by them.

All equipment, bases and supports shall be adequately anchored to the building structure to prevent shifting of position under operating conditions.

Sleeves, Inserts and Anchor Bolts - The contractor shall provide and will be held responsible for the location of, and maintaining in proper position all sleeves, inserts and anchor bolts required for their work. In the event that failure to do so requires cutting and patching of finished work, it shall be done at the contractor's expense.

Escutcheons - Contractor shall provide escutcheons on pipes wherever they pass through the floors, ceilings, walls or partitions.

Escutcheons for pipes passing through outside walls shall be solid, cast brass, flat type secured to pipe with a setscrew.

Escutcheons for pipes passing through floors shall be split-hinged, case brass type designed to fit pipe on one end and cover sleeve projecting through floor on the other end.

Escutcheons for pipes through interior walls, partitions and ceiling shall be split hinged, cast brass, chromium plated type.

14.0 PAINTING

The contractor shall paint all unpainted, non-insulated, non-galvanized ferrous metal surfaces of pipes, equipment, fixtures, hangers, supports and accessories as follows:

Exposed - One prime coat of gray lead and oil paint. Gas piping shall be yellow instead of gray.

Concealed - One coat of black asphaltum paint.

Underground - Two coats of black asphaltum paint.

Uncoated or otherwise unfinished canvas jackets or insulation shall be painted with one coat of glue sizing as soon as possible after installation.

15.0 CLEANING PIPING

This contractor shall thoroughly clean all piping, ducts, and equipment of all foreign substances inside and out before being placed in operation.

If any part of the system should be stopped by any foreign matter after being placed in operation, the system shall be disconnected, cleaned and reconnected wherever necessary to locate and remove obstructions. Any work damaged in the course of the removal of obstruction shall be repaired or replaced when the system is reconnected at no additional cost to the owner.

During the course of construction all ducts and pipes shall be capped in an approved manner to insure adequate protection against the entrance of foreign substances.

16.0 ACCESS DOORS AND PANELS

Furnish and install flush type access doors or panel with metal frame for all valves or apparatus located in chases, walls or floors. Finish shall be prime coated.

17.0 SLEEVES AND INSERTS

This contractor shall be held responsible for the location of and maintaining in proper position, sleeves, inserts and anchor bolts supplied and/or set in place by them. In the event that failure to do so requires cutting and patching of finished work, it shall be done at this contractor's expense by the concrete and/or masonry contractor.

All pipes passing through floors, walls or partitions shall be provided with sleeves having an internal diameter of 1" larger than the outside diameter of the pipe or insulation on covered lines.

Sleeves passing through lightproof or soundproof walls, floors and partitions and through firewalls shall be made tight using approved caulking materials.

Sleeves through floors and all other walls shall be Schedule 40, black steel pipe, set flush with finished wall or ceiling surfaces, but extending 1/2" above finished floors.

Sleeves through outside walls shall be Schedule 40 black steel pipe with 150 lb. black steel slip-on welding flange welded at the center of the sleeve and shall be painted with one coat of bitumastic paint inside and outside. The space between sleeve and pipe shall be packed with

oakum to within 2" of each face of the wall. The remaining space shall be packed and made water tight with a waterproof compound.

Sleeves through masonry floors or interior masonry walls shall be Schedule 40 black steel pipe, set flush with finished wall or floor surfaces.

Sleeves through interior partitions shall be 22-gauge galvanized sheet steel, set flush with finished surfaces of the partitions.

Inserts shall be individual or strip type of pressed steel construction with accommodation for removable nuts and threaded rods up to $\frac{3}{4}$ " diameter, permitting lateral adjustment. Individual inserts shall have an opening at the top to allow reinforcing rods up to $\frac{1}{2}$ " diameter to be passed through the insert body. Strip inserts shall have attached rods with hooked ends to allow fastening to reinforcing rods.

220510 SUPPLEMENTAL GENERAL CONDITIONS (P)

1.0 CONTRACTUAL RELATIONSHIP WITH OWNER

Upon award of this contract, the contractor shall save harmless the owner and their agents from any or all causes of action arising out of the contractor's negligence.

2.0 O.S.H.A.

All work on this project shall be accomplished in accordance with Federal Statutes such as the Occupational Safety and Health Act (1970).

3.0 OTHER GENERAL CONDITIONS

3.1 Intent - It is the intent of these plans and specifications to provide alterations and/or new construction as indicated on the drawings and in the specifications to provide complete, new systems in every respect, capable of operating as designed. It is not intended that every fitting, minor detail or feature be shown on drawings.

The contractor shall be responsible for any detail necessary for completion of these systems in accordance with good practice.

Installation shall be executed so as to contribute to efficiency of operation, minimum maintenance, accessibility and sightliness. The installation shall conform and accommodate itself to the building structure, its equipment and its usage. No piping or equipment shall be installed in such a manner as to interfere with the operation of any doors or windows.

Requirements specified herein shall govern applicable portions of mechanical and electrical sections whether so stated herein or not.

3.2 Regulations and Certificates - All work shall be done in strict accordance with rules and regulations of local and state authorities having jurisdiction over such work, utility companies operating where apparatus is being installed, National Fire Protection Association, IEEE and insurance companies. Where discrepancies occur between above regulations and these plans and specifications, requirements of the regulations shall take precedence, except that these specifications shall be minimum requirements and that no changes shall be made without approval of the engineer.

Complete approval of all above mentioned authorities shall be secured and their certificates of approval shall be delivered to the owner before final acceptance. Any and all drawings or documents required (in addition to contract drawings) shall be furnished in order to secure above-mentioned approvals.

3.3 Drawings and Measurements - Contract drawings for mechanical and electrical work are

in part diagrammatic, intended to cover the general design and extent of the systems and indicate general arrangement of equipment, ducts, conduits, piping and approximate sizes and locations of equipment and outlets.

Drawings are not intended to be scaled for roughing-in measurements nor to serve as shop drawings. Where drawings are required for these purposes or have to be made from field measurements, they shall be prepared by the various trades and coordinated by the contractor.

Where job conditions require reasonable changes from indicated locations and arrangements, such changes shall be made without cost to the owner.

Exact locations of all grilles, registers, plumbing fixtures, electrical fixtures, panelboards, etc., shall be governed by plans, elevations and details.

- 3.4 Record Drawings - During the course of construction the respective contractor shall keep a careful record (in drawing form) of all deviations from the work as shown on the contract drawings on the installation of pipes, ducts, electric outlets, equipment, invert elevations, etc. These drawings shall be delivered to the engineer before the final certificate of payment is issued.
- 3.5 Accessibility - Locate all equipment which must be serviced, operated or maintained, in fully accessible position. Equipment shall include but not be limited to valves, traps, cleanouts, motors, controllers, drain points, etc. Furnish access doors where required. Minor deviations from the drawings may be made to allow for better accessibility, but changes of magnitude or which involve extra cost shall not be made without approval.
- 3.6 Access Doors and Panels - Furnish flush type door or panel with metal frame for all dampers, valves, cleanouts or apparatus located in chases, walls or floors. Finish shall be prime coat.
- 3.7 Quiet Operation - All equipment shall operate under all conditions of load without any sound or vibration which is objectionable to the opinion of the engineer. In case of moving machinery, sound or vibration noticeable outside of room in which it is installed or annoyingly noticeable inside its own room will be considered objectionable. Sound or vibration conditions considered objectionable by the engineer shall be corrected in approved manner by the contractor at the latter's expense.
- 3.8 Covering of Work - No pipe fittings or other work of any kind shall be covered up or hidden from view before it has been examined or approved by the engineer or other authority having jurisdiction. Any unfaithful or imperfect work or material which may be discovered shall be removed and corrected immediately before being condemned, and other work and materials shall be furnished which shall be satisfactory to the engineer.
- 3.9 Waterproofing - Where any work pierces waterproofing, the installation shall be as approved by the engineer. Contractor shall furnish all necessary sleeves, caulking and

flashing as required to make the openings absolutely watertight.

- 3.10 Excavation and Backfill - All excavation and backfill shall be by the contractor who is furnishing and installing the respective equipment. Cleanup, resurface and resod all disturbed areas.
- 3.11 Site Conditions - Prior to bid submission, this contractor shall familiarize themselves with the site and understand all the conditions under which they will be obligated to operate in performing their part of the contract. No allowance will be subsequently made in this connection to this contract or for any errors through omission or negligence on their part.

4.0 FIRESTOPPING

All penetrations through fire and smoke rated walls, floors, and ceilings shall be thoroughly sealed with 3M Brand Fire Barrier CP25WB latex based caulk, or approved equal. Install in accordance with manufacturer's instructions.

5.0 EQUIPMENT RETURNS

As part of this contract, contractors shall ensure that suppliers of any and all equipment supplied for this project agree to accept the return of any equipment on this project that is in undamaged condition and has not been put into service with a maximum restocking fee of 25%, up until the date of certified substantial completion of the project.

6.0 COORDINATION OF TRADES

It is understood that coordination between all of the trades on this project is the responsibility of the construction manager (if any), the general contractor (if any) and the trades themselves. This coordination will include meetings and discussions as needed among the parties noted above, and preparation of coordination drawings as needed. The cost of this coordination work shall be included in the contractors' bids. It is not the responsibility of the engineer to perform this coordination. No extra charges will be paid to any contractor that is due to additional work being performed due to lack of coordination between the trades.

7.0 BUILDING SERVICES SHUTDOWNS

All building services shutdowns, including electric, gas, water, and telephone utilities, and HVAC, sprinkler, and plumbing systems in existing buildings, for the purpose of performing cutovers and tie-ins of new systems, shall be strictly coordinated with the appropriate utility companies and the building owner. For work in existing buildings, it will be required to perform this work outside of normal building operation hours and the cost for this is to be included in the bids.

221116 WATER SUPPLY SYSTEM (P)

1.0 SERVICE

Furnish and install relocated water service as shown on drawings. Underground services shall be Type K copper piping complete with curb cocks, corporation taps and all appurtenances as required by local water department per building address. Furnish and install electric heat tape on water service including all wiring insulation, etc. to keep same from freezing, when piping is located in unheated spaces.

2.0 WATER HEATER

Furnish and install water heater as shown on plans. All water connections to heater by plumbing contractor. Electrical power connections by electrical contractor. Water heater system shall be provided with shutoff valves, pressure and temperature relief valves per ASME specifications. Locate as shown.

3.0 PIPING AND SUPPLY

All piping supply shall be Type "L" copper above grade inside of building. Use Type "K" for all other supply piping. No Type "M" shall be permitted. All fittings shall be wrought copper. Clean all areas to be connected using fine sand cloth. Solder using paste type non-corrosive flux of petrolatum base. Joints shall be soldered within an hour of flux applications. All copper shall be tempered type and shall not be bent. Furnish proper mechanical support before soldering. All solder for Type "L" shall be 95-05 or approved equal. Type "K" underground copper shall be silver soldered.

All fixtures shall be provided with separate valves. Furnish and install at accessible locations at all fixtures.

Furnish and install non-freeze hose bibbs at locations shown.

4.0 HANGERS

Furnish and install pipe hangers in accordance with the following spacing schedule:

<u>Size Pipe</u>	<u>Ctr to Ctr Spacing</u>
$\leq \frac{1}{2}"$	6'
$\frac{3}{4}"$ to $\leq 1"$	8'
$1\text{-}\frac{1}{4}"$ to $\leq 2"$	10'
$2\text{-}\frac{1}{2}"$ to $\leq 5"$	12'

5.0 AIR CHAMBERS

Furnish and install full size air chambers as follows:

<u>Locations</u>	<u>Height</u>
Top of all main risers	2'-0"
Each fixture	1'-0"

The above applies to all hot and cold pipes and fixtures.

6.0 PIPING INSULATION

All domestic cold, hot water supply, and recirculation piping shall be insulated with Certain Teed 500-degree Snap-on Heavy Density Pipe insulation, or approved equal. The insulation shall have an average thermal resistance of at least 4.0 (square foot) (degrees F)/BTUH per inch of thickness on a flat surface at a mean temperature of 75 degrees F.

Application - Insulation shall be applied over clean dry pipe with all joints butted firmly together.

Do not install insulation when air temperature is lower than 35 degrees or higher than 120 degrees. Do not leave adhesive strip exposed to air. Adhere self-sealing lap immediately after removing paper backing.

Fittings and valves shall be insulated and fitted with Manville Zeston PVC pipe fitting covers and Hi-Lo Temp Insulation Inserts, or approved equal. Insulation thickness shall be as per New York State Energy Code.

All piping insulation shall comply with New York State Energy Code Requirements.

INSULATION SCHEDULE (DOMESTIC WATER PIPING 140° AND BELOW)			
RUNOUTS	≤ 1-¼"	1-½" TO ≥ 4"	≥ 5"
Cold Water	½"	1"	1"
Hot Water	1"	1-½"	1-½"
Hot Water Recirc	1"	1-½"	1-½"

All piping shall be marked with pipe identification by Seton, or similar.

7.0 STERILIZATION OF WATER PIPING

Water piping shall be sterilized by introducing into the system a solution of liquid chlorine or sodium chlorine. Chlorine content of solution shall not be less than 50 ppm. Solution shall remain the system not less than eight hours during which time all faucets, valves, etc., shall be opened and

closed not less than three times each, at intervals of not less than 30 minutes.

At conclusion of eight-hour period, flush sterilizing solution from system. Re-flush as many times as may be required with fresh water until residual chlorine content in any part does not exceed 0.05 ppm.

8.0 VALVES

The entire plumbing system shall be provided with valves so located that they can be operated, replaced and repaired and afford complete control of the water to each group of fixtures, each riser and wherever else required.

Each fixture shall have supply stops. Exposed supply stops shall be polished chrome finish.

All valves shall be 150 lb. type that can be repacked under pressure when wide open. Where possible, one make of valve shall be used throughout (NIBCO, Jenkins, Crane or Walworth).

Provide 125# sweat globe valves for drains and blow-offs.

Valves $\frac{3}{4}$ " and smaller shall be ball or globe valves, larger size shall be solid wedge type gate valves. Valves two inch and smaller shall be all bronze with screwed or sweat type ends. Valves $2\frac{1}{2}$ " and larger shall be iron body bronze-mounted gate valves with screwed or flanged ends.

9.0 PRESSURE REDUCING VALVES AND BACKFLOW PREVENTORS

Furnish and install pressure reducing valves and/or backflow preventors as shown on drawings and as required by local municipality.

10.0 TEMPORARY WATER SUPPLY

Plumbing contractor shall furnish and install piping for temporary water supply to building from existing supply to building for the use of all trades.

221316 DRAINAGE, WASTE, AND VENT SYSTEM (P)

1.0 DRAINAGE, WASTE AND VENT

All piping above grade shall be Type DWV copper or no-hub cast iron down to 6" above grade. All piping below this point, in slab and below grade shall be service weight cast iron. All copper piping connections shall be soldered using standards hereinbefore described. All cast iron piping shall be no-hub above grade bell and spigot type below grade and shall have neoprene insert joints.

All lines shall be sloped $\frac{1}{8}$ " per foot minimum. All horizontal changes of direction shall be $\frac{1}{8}$ bend (45 degree maximum). Vertical changes shall be "TY".

2.0 SEWERAGE

Provide and install new extra heavy cast iron pipe building sewer from building to connection at system as directed by engineer. Provide house trap only if required by local code. Piping shall slope minimum of $\frac{1}{8}$ " per foot with cleanouts located as outlined below. Bell end of pipe to be placed uphill.

Provide 6" of crushed stone on top of undisturbed or properly compacted soil at bottom of excavation. Then provide 4" minimum of clean sand on sides of pipe followed by 12" of select fill, then complete with clean fill. Restore excavation area to original condition. Plumbing contractor shall coordinate and cooperate with, and meet all requirements of, the local municipal sewer department or jurisdiction.

3.0 CLEANOUTS

All cleanouts shall be closed gas tight by heavy cast bronze screw type plugs with raised hex heads. Plugs shall be full size up to and including 4".

All cleanouts in finished floors shall have a heavy cast bronze plug with straight thread and tapered shroud that seals against caulk lead seat in body, coated cast-iron extension body with cut off serrations and polished brass access cover and frame with integral lugs for adjustment to level of finished floor. (Zurn, Smith, Wade)

Wall cleanouts shall be covered with 6" nickel bronze cover set flush with finished wall and held in place by means of integral anchoring lugs. (Zurn, Smith, Wade)

All cleanouts in finished floors to be covered with linoleum or other applied composition flooring materials shall have recessed inlay type nickel cover.

Soil, waste and storm drains shall be provided with cleanouts at the base of each stack, at every change or direction greater than 45 degrees and at least every 50 feet (maximum) on all horizontal runs.

221323 - SANITARY WASTE INTERCEPTORS (P)

1.0 RELATED DOCUMENTS

- 1.1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2.0 SUMMARY

- A. Section Includes:
 - 1. Grease interceptors.

3.0 DEFINITIONS

- FRP: Fiberglass-reinforced plastic.
- PP: Polypropylene plastic.

4.0 SUBMITTALS

- A. Product Data: For each type of interceptor indicated. Include materials of fabrication, dimensions, rated capacities, retention capacities, operating characteristics, size and location of each pipe connection, furnished specialties, and accessories.
- B. Shop Drawings: For each type and size of precast-concrete interceptor indicated.
 - 1. Include materials of construction, dimensions, rated capacities, retention capacities, location and size of each pipe connection, furnished specialties, and accessories.
- C. Coordination Drawings: Interceptors, drawn to scale, on which the following items are shown and coordinated with each other, based on input from Installers of the items involved:
 - 1. Interceptors.
 - 2. Piping connections. Include size, location, and elevation of each.
 - 3. Interface with underground structures and utility services.

5.0 PROJECT CONDITIONS

- A. Interruption of Existing Sewer Services: Do not interrupt services to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary sewer services according to requirements indicated:
 - 1. Notify Owner no fewer than seven days in advance of proposed interruption of service.
 - 2. Do not proceed with interruption of sewer services without Owner's written permission.

6.0 GREASE INTERCEPTORS (INCLUDING SAMPLING STATIONS)

- A. Grease Interceptors: Precast concrete complying with ASTM C 913.
 - 1. Include rubber-gasketed joints, vent connections, manholes, compartments or baffles, and piping or openings to retain grease and to permit wastewater flow.
 - 2. Structural Design Loads:
 - a. Light-Traffic Load: Comply with ASTM C 890, A-8 (ASSHTO HS10-44).

- b. Medium-Traffic Load: Comply with ASTM C 890, A-12 (ASSHTO HS15-44).
 - c. Heavy-Traffic Load: Comply with ASTM C 890, A-16 (ASSHTO HS20-44).
 - d. Walkway Load: Comply with ASTM C 890, A-03.
 - 3. Resilient Pipe Connectors: ASTM C 923 (ASTM C 923M), cast or fitted into interceptor walls, for each pipe connection.
 - 4. Steps: Individual FRP steps, FRP ladder, or ASTM A 615/A 615M, deformed, 1/2-inch (13-mm) steel reinforcing rods encased in ASTM D 4101, PP, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch (300- to 400-mm) intervals. Omit steps if total depth from floor of interceptor to finished grade is less than 60 inches (1500 mm).
 - 5. Grade Rings: Reinforced-concrete rings, 6- to 9-inch (150- to 225-mm) total thickness, to match diameter of manhole frame and cover.
 - 6. Manhole Frames and Covers: Ferrous; 24-inch (610-mm) ID by 7- to 9-inch (175- to 225-mm) riser with 4-inch- (100-mm-) minimum width flange and 26-inch- (660-mm-) diameter cover.
 - a. Ductile Iron: ASTM A 536, Grade 60-40-18, unless otherwise indicated.
 - b. Gray Iron: ASTM A 48, Class 35, unless otherwise indicated.
 - c. Include indented top design with lettering cast into cover, using wording equivalent to "GREASE INTERCEPTOR".
- B. Capacities and Characteristics:
 - 1. Refer to drawings for specific characteristics.

7.0 EARTHWORK

- A. Excavating, trenching, and backfilling are specified elsewhere in the specifications and on the contract drawings.

8.0 INSTALLATION

- A. Install precast-concrete interceptors according to ASTM C 891. Set level and plumb.
- B. Install manhole risers from top of underground concrete interceptors to manholes and gratings at finished grade.
- C. Set tops of manhole frames and covers flush with finished surface in pavements. Set tops 3 inches (75 mm) above finish surface elsewhere, unless otherwise indicated.
- D. Set tops of grating frames and grates flush with finished surface.
- E. Set metal and plastic interceptors level and plumb.
- F. Set tops of metal interceptor covers flush with finished surface in pavements. Set tops 3 inches (75 mm) above finish surface elsewhere, unless otherwise indicated.

9.0 CONNECTIONS

- A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Make piping connections between interceptors and piping systems.

10.0 IDENTIFICATION

- A. Arrange for installation of green warning tapes directly over piping and at outside edges of underground interceptors.
 - 1. Use warning tapes or detectable warning tape over ferrous piping.
 - 2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

221319 FLOOR DRAINS AND ROOF DRAINS (P)

1.0 FLOOR DRAINS

Provide and install floor drains in mechanical rooms and others as shown on plans. Provide extra heavy cast iron drain and vent pipes to floor drain trap. All areas served by floor drains shall have hose bibb or similar permanent water source made available by this contractor.

Floor drains shall have cast iron body with bottom outlet and nickel bronze strainer sized as shown on plans. Drains shall be manufactured by Zurn or approved equal.

Install floor drains as shown on drawing with bottom outlet caulk connection. Provide with trap and internal backwater valve with bronze valves and seat. Provide strainer as shown on plan.

2.0 ROOF DRAINS

Furnish and install roof drains of type, size and catalog number shown. All piping shall run horizontally in minimum of 5'-0" before connection of vertical leader. Insulate all above ground piping within building.

3.0 PIPING INSTALLATION

Provide underground drain piping as shown on plot plan to dry well as shown on plot plan and drawing. Provide interior horizontal and vertical piping for roof drains. All piping shall be similar in quality, type and installation to sanitary waste and vent piping.

4.0 PIPING INSULATION

Provide 1" insulation for all roof drain piping including body of roof drains and storm pipe of horizontal and vertical runs (including elbows) of interior down spout piping in all areas.

224000 FIXTURES AND INSTALLATION (P)

1.0 SCHEDULES OF EQUIPMENT CONNECTIONS

Furnish and install all fixture connections as indicated on the drawings. If not indicated on the drawings, furnish and install all fixture connections as follows:

	SUPPLIES H C		DRAIN	VENT	TRAP CONNECTION
LAVATORIES	¾"	¾"	1-½"	1-¼"	1-¼"
SINKS	¾"	¾"	2"	1-½"	1-½"
MOP SINKS	¾"	¾"	3"	1-½"	3"
URINALS	—	¾"	2"	1-½"	—
WATER CLOSETS (FLUSH VALVE)	—	1"	4"	3"	—
WATER CLOSETS (FLUSH TANKS)	—	¾"	4"	3"	—
FLOOR DRAINS	—	—	3"	1-½"	3"
WATER COOLERS	—	¾"	1-½"	1-¼"	1-¼"
SHOWERS	¾"	¾"	2"	1-½"	2"
HOSE BIB	—	¾"	—	—	—

All supply piping shall be hard drawn type "L" copper only. All sanitary and vent piping shall be type DWV Copper or service weight, no hub cast-iron above grade and Bell & Spigot service weight cast iron below grade.

2.0 SCHEDULE OF EQUIPMENT

Shown on drawings.

3.0 FIXTURE INSTALLATION

Fixture trim, faucets, stop valves, escutcheons and waste pipe exposed to view in finished areas

shall be brass with polished chromium plating over nickel finish, guaranteed not to strip or peel.

Faucet locations shall be uniform with the cold-water faucet on the right side of the fixture and hot water on the left.

This contractor shall be responsible for providing these portions of the fixture trim which are not supplied with the fixture, but are required for the complete installation. All fixtures shall be carefully checked to determine the portion which must be provided to complete the installation.

All fixtures shall be provided with separate stop valves for hot and cold water so that each fixture may be separately controlled without effecting any other fixture.

Provide a capped air chamber 18" long with one size larger than the branch on each hot and cold-water riser to each fixture.

4.0 HOSE BIBBS

Furnish and install non-freeze hose bibbs outside at locations shown. Provide hose bibbs inside at locations shown.

5.0 CARRIERS

Furnish and install fixture carriers on all lavatories. See legend and schedule for type and size.

6.0 EQUIPMENT BY OTHERS

All fixtures, equipment or apparatus furnished by others or indicated on the drawings as N.I.C. (Not in Plumbing Contract) will be furnished complete with faucets, strainers and tail pieces. This contractor shall provide all traps, supply risers, etc. required and shall also provide a valve or stop in each individual supply riser to each piece of equipment, fixture or apparatus. All final connections and all indirect waste piping shall be under this section of the specifications.

Where not supplied with the equipment, fixtures or apparatus, this contractor shall furnish all necessary valves, gauges, piping, traps, etc. required to provide a complete installation complying with all applicable codes and regulations.

Before installation of any drains, sleeves or piping, this contractor shall coordinate their work with the equipment supplier and shall make any changes in the location of the drains, piping, etc., as shown on the plans that may be required by the type of equipment being installed. Any changes resulting from the failure of this contractor to coordinate their work before installation shall be made at no expense to the owner.

Where fixtures or equipment are not installed at completion of the contract, all services shall be plugged or capped ready for installations.

Where final connections are noted as being N.I.C., this contractor shall provide valved, capped

connections terminating not more than 5'-0" from piping or equipment to be serviced.

7.0 FIXTURE INSTALLATION HEIGHTS

Refer to drawings for fixture installation heights.

225000 NATURAL GAS PIPING AND INSTALLATION (P)

1.0 DESCRIPTION

This contractor shall furnish and install labor, materials, equipment and transportation to extend gas piping from utility meter to new equipment as shown on drawings.

2.0 EQUIPMENT AND INSTALLATION

All piping shall be ASTM A53, Schedule 40 black steel piping with malleable iron fittings certified for gas piping use. Provide shut off valve and drip leg for all equipment connections. All piping 3" and smaller shall have threaded connections. All piping larger than 3" shall have welded connections.

Piping to be routed to be concealed above ceilings or as otherwise directed. Route clear of obstructions. Piping shall run parallel and perpendicular to building lines.

3.0 STANDARDS

All piping materials furnished and methods of installation shall be strictly in accordance with National Fuel Gas Code, NFPA Rule #54. All welding shall be in accordance with API 1104.

Entire gas piping, controls, burner fuel installation, appurtenances shall be furnished and installed in accordance with NFPA which is hereby made a part of these plans and specifications as though reprinted herein. NFPA Code may be read at office of Engineer.

4.0 TESTS

Gas piping shall be thoroughly tested and certified by contractor to have been tested in accordance with NFPA. Contractor must provide certification in writing upon completion before final payment.

Entire installation shall be leak-tested by contractor.

Gas piping shall be tested with compressed air at a test pressure of not less than 100 PSI and this pressure held for at least one hour with no loss in pressure.

Paint all gas and other piping in this contract in accordance with US government color code standards.

The owner reserves the right to non-destructively test (i.e. ultrasonic or radiographic) any welds, at the owner's expense, for conformance to API 1104. All welders shall be certified by an agency acceptable to the local authority having jurisdiction. Any welds found not to be in accordance with API 1104 shall be replaced or redone at the contractor's expense.

5.0 APPROVALS

Entire gas piping installation shall be inspected and approved by gas servicing utility company.

**DIVISION 23 - HEATING, VENTILATING & AIR CONDITIONING SYSTEMS
SPECIFICATIONS (HVAC)**

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 - 2.0 Scope

- 230505 General Conditions - HVAC (HVAC)
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- 4.0 Electrical Wiring Standards
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- 232113 Hydronic Heating Systems and Equipment (HVAC)
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- 232113.33 Geothermal Well Field System (HVAC)
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237413		Air Handling and Cooling Systems & Equipment (HVAC)
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230500 GENERAL DESCRIPTION AND SCOPE - HVAC (HVAC)

1.0 GENERAL DESCRIPTION

These plans and specifications cover furnishing and installing all equipment, materials, transportation and labor to provide complete and operative heating, ventilating and air-conditioning systems for the renovation and conversion of the Peekskill Firehouse to a commercial kitchen incubator.

Included also are specific detailed instructions as may be later issued by the engineer.

2.0 SCOPE

The entire installation shall consist of but not be limited to furnishing and installation of the following:

Complete ventilating system.

Dampers, diffusers and louvers.

Breeching from gas-fired water heater.

Electrical connections.

Thermostats, zone valves and wiring for control systems including furnishing control devices.

Ventilation exhaust fans and ductwork.

Painting.

Cutting, patching, painting and boxing in of piping, wiring and components.

Testing and rendering operative of all new systems.

Meeting of all codes and ordinances.

Coordination with utility company, meeting inspection requirements and payments of all fees.

230505 GENERAL CONDITIONS - HVAC (HVAC)

1.0 GOVERNING CONDITIONS

Governing Conditions of the Heating, Ventilating and Air-Conditioning Contract shall be in accordance with all provisions of the Bid Documents, Contract Documents, Specifications and Supplementary General Conditions, including "Standard General Conditions of the Construction Contract" (NSPE/ACED-56465, latest edition) and/or "General Conditions of the Contract for Construction" (AIA Document A201, latest edition).

Supplementary General Conditions may be provided for all mechanical work and are contained in the General Construction Documents. This contractor should read and understand these conditions.

2.0 DRAWINGS, SPECIFICATIONS, BID DOCUMENTS

System layout and details shown on drawings - HVAC series. Scale as noted. Do not scale drawings. Refer to architectural drawings for actual dimensions. Follow drawings as far as practical and supplement by actual field conditions.

All work within this Section shall be subject to all provisions of the bidding documents, contract documents, specifications and all Supplementary General Conditions thereto.

Provide all labor, materials, equipment, apparatus, tools, services, appliances, plant, permanent and temporary facilities required in performing all operations necessary for the complete installation of heating, ventilating and air conditioning facilities as called for within this Section of the specifications and drawings.

Provisions within this Section of the specifications are complementary to all other Sections of the specifications, to the drawings, and to the site and job conditioning.

It is the intention that these specifications, and drawings accompanying same, shall provide for the furnishing and installing of the heating, ventilating and air-conditioning systems complete as specified and shown. Any work shown on the drawings and not particularly described in the specifications or vice versa, or any work changes which may be evidently necessary to complete the installation shall be furnished by this contractor.

3.0 SHOP DRAWINGS AND APPROVALS

Furnish shop drawings for all major items of equipment. Items requiring shop drawings:

Air-conditioning components

Ductwork - new and alterations to existing

Diffusers and grilles

Temperature Control system

Pumps

Exhaust Fans

Submit six copies of shop drawings for approval and cuts of all equipment and appliances prior to start any work. No items of equipment will be permitted on the site until this approval has been given. HVAC contractor shall allow ample time for checking and processing and shall assume responsibility for delays incurred due to rejected items.

4.0 WORKMANSHIP

Provide neat, mechanical appearance. Provide minor alterations to suit job conditions to accomplish. Special attention shall be given to headroom requirements where ducts and piping are exposed.

5.0 MATERIALS

Provide best-accepted industry standard equipment as per manufacturer and catalog numbers shown. Piping materials shall meet ASME test codes. Cooling equipment ratings should be per ARI standards. All equipment shall be new and corrosion protected.

6.0 GUARANTEE

Contractor shall guarantee all workmanship, materials and correct operation for a period of one year and shall repair promptly any leaks or breakdowns during that period. Where specific items have greater manufacturer's guarantee period, this guarantee is in addition to manufacturer's liability. Guarantee shall be in writing to the Owner. All air conditioning compressors shall be guaranteed for five years. The contractor shall promptly correct any defects upon notice from the owner to do so, without cost to the owner.

7.0 CODES, PERMITS AND INSPECTIONS

Comply with all building code requirements of New York State Building Code, National Electrical Code, NFPA, and all applicable Federal, State and Municipal laws, ordinances and regulations. This contractor shall apply for and obtain all required permits and inspections and pay all fees.

8.0 DUCTS AND HANGERS

Provide all duct work for the various heating and ventilating systems complete in every respect and ready to operate.

Material shall be galvanized sheet, ASTM A-653 / A653M. All galvanized steel ducts shall be of gauges shown on drawings and as follows:

Round	Rectangular Greatest Dimension	Gauge
0" - 8	0" - 12"	26
9" - 12"	13" - 30"	24

Over 12" Over 30" 22

All rectangular ducts shall be crossbroken.

Methods of construction and metal gauges shall be as set forth in SMACNA guide (latest edition). All ducts shall be straight and smooth on the inside and neatly finished joints. Slip joints shall be used in the direction of the airflow.

All duct joints shall be sealed using liquid duct sealant and wrap joints with duct tape.

Ducts shall be securely supported in approved manner, and so constructed and installed as to be free from vibration, "panting" or "oil canning" under all operating conditions, especially on startup and shutting down.

Horizontal ducts shall be suspended by galvanized bond iron hangers on 3" centers from joints, angle irons or floor slabs. Each hanger band shall run completely across bottom of duct and be supported at each floor level by approved angle iron supports.

Where space permits, duct elbows shall have a centerline radius 1-1/2 times the dimensions of the duct in the plane of the bend. Where space does not permit, the minimum radius of 1.25 may be used without concentric splitters or square elbows with turning vanes similar to Tuttle and Bailey "Ducturns" or approved equal. When concentric splitters are used, the radius of the bends shall be carefully located for low loss elbows.

All branch ducts and outlets not equipped with adjustable louvered registers or volume control devices shall be equipped with volume dampers. (Accessible).

Approved access doors shall be located on ducts and housing for cleaning and maintenance of ducts, dampers, damper operators and equipment not otherwise accessible.

All ducts 36"-45" wide shall be reinforced by 1" x 1" x 1/8" angles on 4'-0" on centers.

Ductwork shall present neat workmanlike appearance, straight and plumb or level as location requires. Set openings symmetrically across walls, located to comply with architectural details.

Provide fire dampers where shown and/or required. Construct in accordance with NBFU Bulletin No. 90 (latest edition).

Provide double thick 14 oz cotton canvas connections wherever ductwork adjoins air-moving equipment. Minimum 4" separation.

The inside of all ductwork where visible through openings shall be painted with two prime coats of flat black paint.

9.0 INSULATION

- 9.1 All supply and return air ductwork shall be externally insulated with minimum R-6 (installed value) fiberglass insulation when located inside the building envelope in unconditioned spaces and R-8 (installed value) when located outside the building envelope. Insulation shall have reinforced foil Kraft facing and be adhered to ducts by 4" strips of bonding adhesive on 8" centers. All joints shall butt together and be sealed with 2" flaps. Materials shall be Owens-Corning RFK-75 or approved equal.
- 9.2 Acoustic duct liner shall be 1" thick fiberglass board with fire-resistant resin coating. Liner shall be adhered by cementing with mechanical fasteners. Materials shall be Owens-Corning Duct Liner Board or approved equal. Insulation shall be applied where directed and shown on drawings.
- 9.3 Vibration Isolation: All motorized equipment shall be insulated with approved vibration eliminator.
- 9.4 All piping to be insulated in accordance with the New York State Energy Conservation Construction Code, latest edition.

10.0 OPENINGS, CHASES, CUTTING AND PATCHING, CLEANUP

General Contractor shall provide all openings, chases, and recesses necessary for this work. HVAC Contractor shall be responsible for furnishing all necessary information to General Contractor, such as locations and sizes, in ample time prior to installation of their work.

Furnish the GC with sleeves, inserts, etc. ahead of the general construction work so that they may be installed by them. Supervise the placing of these items.

In no case may floor or walls that are waterproofed be cut for admission of any equipment nor any structural member be pierced without written permission of the (architect, engineer, owner). All cutting and patching of existing or installed construction shall be by HVAC contractor.

HVAC contractor shall do all cutting and patching of their work which may be required to make various parts come together properly and fit it to receive or be received by work of other contractors as shown or reasonably implied by the contract drawings and specifications for completed work; and, they shall make good after them as the architect may direct.

Any additional costs caused by defective or ill-timed work by the HVAC contractor shall be borne by them.

HVAC contractor shall not endanger any work by cutting, excavating or otherwise altering the work and shall not cut or alter the work of any other contractor save with written permission of the architect.

HVAC contractor shall at all times keep all areas void of packing, rubbish, etc., and shall clean up project as soon as completed.

11.0 ACCESSIBILITY

HVAC contractor shall fully inform themselves regarding any and all peculiarities and limitations of the space available for the installation of all work and materials furnished and installed under the contract. Due care shall be exercised so that all parts of their work are made quickly and easily accessible. All concealed equipment, valves, controls, etc., provided with access doors of sufficient size and as approved by architect.

12.0 SUPPORTS

All concrete foundations for heating, ventilating and air conditioning apparatus shall be installed by this contractor. Furnish all necessary templates, anchor bolts, plates, tubes, washers, double nuts, etc., required for setting.

This contractor shall guarantee that the work as installed by them will not result in the transmission of objectionable noise or vibration to any occupied parts of the building; and, they shall take full responsibility for any necessary modifications of their equipment, or of the foundations and supports for the same necessary to secure this result.

13.0 TEMPORARY HEAT

This contractor shall furnish and install all temporary heating equipment and shall fuel and maintain same during course of project. They shall render it operative and maintain a minimum working temperature throughout the building of 55 degrees F. This contractor shall read and thoroughly understand this Section and their participation in the requirement of temporary heating.

This contractor shall NOT use permanent heating equipment for temporary heat until same is accepted by owner.

14.0 PROTECTION OF APPARATUS

All pipe and duct openings shall be protected by temporary covers to exclude entrance of debris or other foreign matter during construction. All equipment shall be properly protected from damage during the course of building construction.

15.0 ACCESS DOORS AND PANELS

Furnish and install flush type access doors or panels with metal frame to permit access to control dampers, valves, devices, fire dampers, etc. Furnish insulated duct access panels for access to devices within ducts.

16.0 MECHANICAL IDENTIFICATION

All piping and equipment shall be labeled with industry standard labels and stamps.

230510 SUPPLEMENTAL GENERAL CONDITIONS (HVAC)

1.0 CONTRACTUAL RELATIONSHIP WITH OWNER

Upon award of this contract, the contractor shall save harmless the owner and their agents from any or all causes of action arising out of the contractor's negligence.

2.0 O.S.H.A.

All work on this project shall be accomplished in accordance with Federal Statutes such as the Occupational Safety and Health Act (1970).

3.0 OTHER GENERAL CONDITIONS

3.1 Intent - It is the intent of these plans and specifications to provide alterations and/or new construction as indicated on the drawings and in the specifications to provide complete new systems in every respect, capable of operating as designed. It is not intended that every fitting, minor detail or feature be shown on drawings.

The contractor shall be responsible for any detail necessary for completion of these systems in accordance with good practice.

Installation shall be executed so as to contribute to efficiency of operation, minimum maintenance, accessibility and sightliness. The installation shall conform and accommodate itself to the building structure, its equipment and its usage. No piping or equipment shall be installed in such a manner as to interfere with the operation of any doors or windows.

Requirements specified herein shall govern applicable portions of mechanical and electrical sections whether so stated herein or not.

3.2 Regulations and Certificates - All work shall be done in strict accordance with rules and regulations of local and state authorities having jurisdiction over such work, utility companies operating where apparatus is being installed, National Fire Protection Association, IEEE and insurance companies. Where discrepancies occur between above regulations and these plans and specifications, requirements of the regulations shall take precedence, except that these specifications shall be minimum requirements and that no changes shall be made without approval of the engineer.

Complete approval of all above mentioned authorities shall be secured and their certificates of approval shall be delivered to the owner before final acceptance. Any and all drawings or documents required (in addition to contract drawings) shall be furnished in order to secure above-mentioned approvals.

3.3 Drawings and Measurements - Contract drawings for mechanical and electrical work are in part diagrammatic, intended to cover the general design and extent of the systems and

indicate general arrangement of equipment, ducts, conduits, piping and approximate sizes and locations of equipment and outlets.

Drawings are not intended to be scaled for roughing-in measurements nor to serve as shop drawings. Where drawings are required for these purposes or have to be made from field measurements, they shall be prepared by the various trades and coordinated by the contractor.

Where job conditions require reasonable changes from indicated locations and arrangements, such changes shall be made without cost to the owner.

Exact locations of all grilles, registers, plumbing fixtures, electrical fixtures, panelboards, etc., shall be governed by plans, elevations and details.

- 3.4 Record Drawings - During the course of construction the respective contractor shall keep a careful record (in drawing form) of all deviations from the work as shown on the contract drawings on the installation of pipes, ducts, electric outlets, equipment, invert elevations, etc. These drawings shall be delivered to the engineer before the final certificate of payment is issued.
- 3.5 Accessibility - Locate all equipment which must be serviced, operated or maintained, in fully accessible position. Equipment shall include but not be limited to valves, traps, cleanouts, motors, controllers, drain points, etc. Furnish access doors where required. Minor deviations from the drawings may be made to allow for better accessibility, but changes of magnitude or which involve extra cost shall not be made without approval.
- 3.6 Access Doors and Panels - Furnish flush type door or panel with metal frame for all dampers, valves, cleanouts or apparatus located in chases, walls or floors. Finish shall be prime coat.
- 3.7 Quiet Operation - All equipment shall operate under all conditions of load without any sound or vibration which is objectionable to the opinion of the engineer. In case of moving machinery, sound or vibration noticeable outside of room in which it is installed or annoyingly noticeable inside its own room will be considered objectionable. Sound or vibration conditions considered objectionable by the engineer shall be corrected in approved manner by the contractor at the latter's expense.
- 3.8 Covering of Work - No pipe fittings or other work of any kind shall be covered up or hidden from view before it has been examined or approved by the engineer or other authority having jurisdiction. Any unfaithful or imperfect work or material which may be discovered shall be removed and corrected immediately before being condemned, and other work and materials shall be furnished which shall be satisfactory to the engineer.
- 3.9 Waterproofing - Where any work pierces waterproofing, the installation shall be as approved by the engineer. Contractor shall furnish all necessary sleeves, caulking and flashing as required to make the openings absolutely watertight.

3.10 Excavation and Backfill - All excavation and backfill shall be by the contractor who is furnishing and installing the respective equipment. Cleanup, resurface and resod all disturbed areas.

3.11 Site Conditions - Prior to bid submission, this contractor shall familiarize themselves with the site and understand all the conditions under which they will be obligated to operate in performing their part of the contract. No allowance will be subsequently made in this connection to this contract or for any errors through omission or negligence on their part.

4.0 FIRESTOPPING

All penetrations through fire and smoke rated walls, floors, and ceilings shall be thoroughly sealed with 3M Brand Fire Barrier CP25WB latex based caulk, or approved equal. Install in accordance with manufacturer's instructions.

5.0 EQUIPMENT RETURNS

As part of this contract, contractors shall ensure that suppliers of any and all equipment supplied for this project agree to accept the return of any equipment on this project that is in undamaged condition and has not been put into service with a maximum restocking fee of 25%, up until the date of certified substantial completion of the project.

6.0 COORDINATION OF TRADES

It is understood that coordination between all of the trades on this project is the responsibility of the construction manager (if any), the general contractor (if any) and the trades themselves. This coordination will include meetings and discussions as needed among the parties noted above, and preparation of coordination drawings as needed. The cost of this coordination work shall be included in the contractors' bids. It is not the responsibility of the engineer to perform this coordination. No extra charges will be paid to any contractor that is due to additional work being performed due to lack of coordination between the trades.

7.0 BUILDING SERVICES SHUTDOWNS

All building services shutdowns, including electric, gas, water, and telephone utilities, and HVAC, sprinkler, and plumbing systems in existing buildings, for the purpose of performing cutovers and tie-ins of new systems, shall be strictly coordinated with the appropriate utility companies and the building owner. For work in existing buildings, it will be required to perform this work outside of normal building operation hours and the cost for this is to be included in the bids.

230593 SYSTEM TESTING, ADJUSTMENT AND OPERATION (HVAC)

1.0 TESTING

Render all equipment operative. Check system for proper operation. Run all equipment long enough to dry out and test all controls for proper operation and operation of all safety controls.

2.0 ADJUSTMENT AND BALANCING

Operate all equipment on cooling cycles and balance volume dampers on all ducts and registers to effect comfort and proper cfm. All testing and balancing shall be performed by a Certified HVAC Testing and Balancing Contractor at responsibility of HVAC Contractor.

HVAC Contractor to provide Certified HVAC Test and Balance Report for Engineer's review and approval. HVAC Test and Balance must meet the satisfaction of the Engineer. Approved Test and Balance Report shall be provided to Code Enforcement Agent upon request.

3.0 OPERATING INSTRUCTIONS

Furnish, frame and post all operating instructions for all HVAC/Plumbing equipment on project.

4.0 CONTRACT CLOSE OUT

4.1 In the presence of the owner, engineer or architect; demonstrating operation of systems and that all specifications have been met to the satisfaction of all parties.

4.2 Provide required spare parts, devices and appurtenances.

4.3 Provide 2 copies of O & M manuals, shop drawings and catalog cuts, bound in 3 ring binder or similar.

4.4 Demonstrate to building maintenance personnel correct preventive maintenance and scheduled maintenance services.

4.5 Provide warranties to owner, including points of contact for warranty work for system installation and manufacturers equipment installed.

Final payment will not be released until contract closeout is complete.

**230900 ELECTRICAL CONNECTIONS TO HVAC AND PLUMBING EQUIPMENT
(HVAC) (P)**

1.0 DESCRIPTION

The electrical contractor shall furnish all power wiring to and including disconnect switches and equipment. Wire complete and render operative. All wiring per National Electrical Code (latest edition), state and local codes.

The electrical portion of the project shall consist of but not be limited to:

1. Extension of power circuits at 120/208 or 120/240 volts from existing panels to water heater, circulators, etc.
2. Extension of 120/208 or 120/240 volt circuits to controls transformers.
3. Furnish and install overcurrent devices and disconnect switches.
4. Connection of units and rendering except in boiler rooms.

All wiring shall be concealed except in boiler rooms.

2.0 CONTROL WIRING

Responsibility to provide control wiring by respective (HVAC or plumbing) contractors who shall hire licensed electrician to install same. All control wiring shall be per standards of National Electrical Code and local requirements.

Control wiring shall consist of but not be limited to:

1. Thermostat wiring, sail switches, temperature sensors, etc.
2. Low voltage wiring to circulator relay.
3. Wiring of aquastats, pressure switches, flow switches, etc.
4. Control transformer installations.

All control wiring shall be concealed, except in boiler rooms.

Assist electrical contractor in testing power wiring including all motors for phase rotation and starter function. Check all heating elements.

Respective contractors shall be responsible for correct wiring of their equipment and shall provide magnetic starters and thermal protection as required.

Connect and test all control wiring for function and accurate control. Check all safety and limit switches. Contractor shall not operate any equipment above thermal on pressure ratings for tests.

Provide electrical operating instructions as required.

Respective contractor indicated above refers to the contractor responsible for providing said equipment under this contract which requires control.

3.0 MOTOR STARTERS AND CONTROLLERS

Starters shall be provided by respective contractor (HVAC or plumbing) for all motors provided by respective contractor. Starters shall be as follows, unless provided as a part of packaged equipment or noted otherwise elsewhere. All starters shall be standard NEMA sizes and be UL-listed. Starters for indoor locations shall have NEMA 1 enclosure. Starters for outdoor locations shall have NEMA 3R enclosure. Where motors will operate at a different temperature than the starters serving them provide ambient compensated overload relays. Furnish overload heaters sized for the nameplate running amperes of the motor protected.

For all three-phase motors furnish a magnetic combination starter with fusible disconnect switch, Hand-Off-Auto switch and red "run" pilot light on cover, integral 120V secondary control transformer with dual primary fusing and a fuse in the hot secondary leg, one normally open auxiliary contact and a NEMA class 20 three-phase overload relay. For starters with external control voltages furnish an auxiliary contact on the disconnect switch to disconnect the external voltage source when the disconnect switch is off.

Three-phase two-speed motors shall be provided with a combination magnetic starter as specified herein with the following exceptions: provide a High-Off-Low-Auto cover switch in lieu of a Hand- Off-Auto cover switch, high and low speed contractors must be electrically and mechanically interlocked to prevent simultaneous pull in and provide a low-speed compelling relay and a deceleration relay factory wired in starter enclosure.

For all single-phase motors one half horsepower and larger, furnish a single-phase magnetic combination starter with non-fusible disconnect switch and red run pilot light on its cover, integral 120V secondary control transformer with dual primary fusing and a fuse in the hot secondary leg, one normally open auxiliary contact and a NEMA class 20 overload relay. If primary voltage is 120V an integral control transformer is not required, however starter control voltage shall be taken from the primary voltage and fused for the ampacity of the control conductors. For all single-phase motors under one-half horsepower, electrical contractor shall furnish a manual thermal starter with overload protection, stainless steel cover plate and run pilot light. Fuses shall be provided with starters.

For equipment operated for smoke and fire control and egress, or other life safety equipment provide a Hand-Auto cover switch in lieu of a Hand-Off-Auto cover switch. The disconnect switch for life safety equipment should be left padlocked in the "on" position. For equipment which must never be run continuously due to safety considerations (for example air compressors,

fuel pumps) provide an Off-Auto cover switch in lieu of a Hand-Off-Auto switch.

All safety devices shall be wired so that they stop the motor with the Hand-Auto switch in the Hand as well as the Auto position. This will normally mean breaking the common wire from the Hand-Off-Auto switch to the starter's holding coil through the safety devices.

The contractor will protect starters from the weather at all times before they are installed. The cover will be kept closed at all times during construction on all starters except when someone is working within the enclosure. All starters will be located indoors unless indicated otherwise elsewhere.

No excess capacity is provided on control transformers. Do not run control motors from starter control transformers. Control power capacity required for the automatic controls shall be provided by the control subcontractor.

4.0 ELECTRICAL WIRING STANDARDS

All electrical work required to be furnished and installed under this section of the specifications shall be in complete accord with materials and methods of installation of the National Electrical Code.

All heating units shall be complete with disconnect switch and fuse protection.

Furnish and set all motors, dampers, thermostats, heating unit control relays, and appurtenances.

All power wiring shall be THHN copper conductors in EMT.

All low voltage wiring shall be #18 TW run as follows:

1. Unfinished Areas - exposed in EMT.
2. Finished Areas - Concealed.

230993 AUTOMATIC TEMPERATURE CONTROL SYSTEM (HVAC)

1.0 DESCRIPTION

Furnish and install a complete electric-electronic temperature control system as described herein and shown on drawings of control equipment as furnished by Honeywell, Inc. or approved equal.

Controls shall be installed by HVAC contractor utilizing qualified electrician under direct supervision of trained representative of the control manufacturer who shall also furnish completely engineered control wiring diagrams, written description of system operation, make all final adjustments and calibrations, guarantee all equipment and render free service for a period of one year from date of acceptance by the engineer.

Entire installation shall be furnished and installed by HVAC contractor and all wiring for control system shall be furnished and installed by HVAC contractor.

2.0 EQUIPMENT AND OPERATION

Automatic dampers furnished by control manufacturer shall be opposed bladed where they throttle airflow and parallel bladed where their operation is full open-full closed. All damper motors shall have oil-immersed gear trains. All dampers exposed to outside air shall have neoprene edges for tight shutoff.

3.0 CONTROL FUNCTIONS

Basic control functions are hereinafter described in an abridged form. This contractor shall provide the entire control systems complete and operative based on this abridged description and the information shown on drawings.

Multi-zone Unit - Provide controls as indicated on the drawings and as recommended by the manufacturer.

DOAS System - refer to the drawings for specific control sequences.

When thermostat is indexed to cooling, upon rise in space temperature, contacts shall close and operate air handler and compressor condenser unit.

Provide all safety controls as required and recommended by manufacturer.

233300 LOUVERS AND FIRE DAMPERS (HVAC)

1.0 DESCRIPTION

Furnish and install all ventilation louvers and fire dampers as shown on plans and herein described.

2.0 INSTALLATION

Louvers - Provide outside air intake and combustion air louvers. Fabricate louvers from 0.081" thick extruded aluminum with blades welded or screwed into frames. Frames shall be welded and shall have ½" mesh 16 ga. aluminum bird screen. Louvers shall be recessed, flanged, removable as noted on drawings. Anchor securely into openings. Louvers shall be Penn Ventilator, Vent Products, Titus, Carnes, Ruskin, Air Control Products or Krueger. No other manufacturers are approved.

Fire Dampers - Provide fire dampers at penetrations of fire rated walls, floors and ceilings, at ducts, registers, grilles or louvers as indicated on drawings or otherwise required by local codes and state fire authorities. Fire damper installation shall conform to details shown in SMACNA Fire Damper Guide and as required by local codes. Each fire damper shall have access panel for maintenance and inspection. Locate access panels not more than 6" from fire damper they serve. Construct dampers to conform to UL and NFPA requirements and bear UL label. Dampers shall be approved by State Fire Authorities where required.

Leave six fusible links of each rating type used on project with building engineer.

233423 VENTILATION - EXHAUST FANS AND SYSTEMS (HVAC)

1.0 DESCRIPTION

This contractor shall furnish and install complete and operative, several exhaust fans and exhaust systems consisting of fans, housings, curbs, frames, ductwork, grilles, louvers, insulation, electrical controls and appurtenances to render the systems completely operative as per drawings and specifications.

2.0 EQUIPMENT AND INSTALLATION

This contractor shall furnish and install exhaust fans in various locations shown, including but not limited to: all toilet rooms, shops, offices and other locations shown. See plans for technical data on various exhaust system components in the several areas shown.

Some fans shown shall be roof mounted. This contractor shall furnish and install entire fan system complete and operative including fan, housing, motor operated louver curb and exhaust grille.

Wall mounted fans shall be furnished and installed complete and back draft damper, gasketing and flashing for watertightness.

Exhaust fans and relief vents - Ventilator housing shall be aluminum construction completely weatherproofed and hinged, aluminum mesh ½" bird screen angle frame stiffeners.

Centrifugal wheels shall be backwardly inclined and non-overloading type. All two-speed motors shall be two winding.

Provide UL approved non-fused disconnects for all fans, mounted in housing.

Provide back draft dampers and operators on all fans.

Roof and wall exhausters shall be Penn Ventilator Co., or approved equal.

Provide 12" high all aluminum curb, prefabricated, with built-in canting all around and 1" insulation board. Furnish sound curbs as shown. Insulate curbing, for sound attenuation as directed on plans.

Furnish all starters, controllers and control system as part of this contract.

Provide vents in locations, sizes and capacities as shown on plans and drawings. Vents shall be Penn Ventilator, Co. or equal.

All fans shall be equipped with insect and bird screens.

All exhaust fans and systems shall be controlled as shown on plans.

Operation - Manual control except as herein described.

Ventilating housing shall be aluminum construction completely weather tight with aluminum mesh 1/2" bird screen.

233813 KITCHEN EXHAUST FANS AND HOODS (HVAC)

1.0 DESCRIPTION

Furnish and install all kitchen ventilation and exhaust fans shown on plans and herein described.

2.0 INSTALLATION

Fans shall be located as shown. Furnish and install entire fan system complete and operative including fan, housing, kitchen hood, lights and controls.

All fans shall be quiet operation.

Entire installation shall be in accordance with NFPA 96. Manufacturer shall be Gaylord, Kees or approved equal.

Material shall be brushed stainless steel for exposed installations. Ductwork not exposed may be carbon steel.

3.0 FIRE SUPPRESSION

Install pre-manufactured kitchen hood extinguishing system, as described or shown on accompany drawings. System shall be mfg. by Ansul, Pike or approved equal.

4.0 ELECTRICAL INSTALLATION

Provide an install all on/off and remote control switches. Hire electrical contractor to perform work required to be performed by a licensed electrician.

237413 AIR HANDLING AND COOLING SYSTEMS & EQUIPMENT (HVAC)

1.0 DESCRIPTION

Heating, ventilating and air conditioning systems for this project shall consist of various electrically fueled systems as hereinbefore described in the General Description, detailed on plans hereinafter described.

2.0 EQUIPMENT

Furnish and install equipment as shown on drawings. All component package units shall be factory-assembled, completed and tested.

Cooling Equipment - Compressor condenser units shall be as hereinafter described and as further described on plans.

Condenser Coil - Coil to be constructed of ripple-edged aluminum fins machine flat fitted to seamless copper tubes for maximum strength and contact area. Each joint silver soldered. Pressure leak tested at 450 to 500 psi. Horizontal coil mounting permits self-cleaning from rain and also provides quick and easy access for cleaning by other means when required. Removal of fan assembly and air grille allows complete access to both sides of the coil.

Condenser Air Movement - The condenser air compartment contains only the necessary components for air moving. This permits straight through and upward discharge of air resulting in minimum restriction and extremely quiet operation. Direct drive fan is equipped with a totally enclosed and moisture proof motor. Heavy gauge galvanized steel fan guard is furnished as standard. Fan, motor and guard are attached together in one complete assembly and resiliently mounted in the unit. Slot mounting allows quick, easy removal and replacement of the entire fan assembly for service.

Compressor - Resiliently mounted and in addition the entire running gear assembly is spring mounted within the sealed can. 1-1/2 thru 3-ton compressors have internal overload protection and internal automatic resetting high-pressure relief. 3-1/2, 4 and 5-ton compressors have external high-pressure control, external overload and protection and crankcase heaters. All compressors shall carry full five-year warranty.

Motor and Fan Assembly - Shall be mounted on a one-piece galvanized steel motor board which shall be easily removable for maintenance without breaking pipe connections or rewiring. Fans shall be aluminum double inlet, forward curved and centrifugal type, direct connected to a two-speed PSC motor with built in automatic reset overload protection.

Control Box - Shall be complete factory prewired with plug-in connections for heating section and cooling chassis, and with adequately sized junction box for wiring of external power supply and temperature controls.

Sheathed Electric Heating Coil - Shall consist of electric resistance wires encased in copper plated finned steel sheath.

3.0 SUPPLY AND RETURN AIR

Furnish and install a complete ducted system to required space. Entire duct system shall have net inside dimensions as shown on plans. All ducts shall be externally insulated as shown and described herein.

4.0 GRILLES, REGISTERS, DIFFUSERS

See drawings for sizes, manufacturer, catalog numbers.

Provide and connect with ductwork in an approved manner all registers and grilles and diffusers shown on drawings. The exact locations of all registers and grilles shall be obtained from the architectural drawings. The right is reserved to vary the location of any register, grille or diffuser to a reasonable extent without extra cost to the owner.

5.0 FILTERS

This contractor shall furnish and install proper filters on all package air-conditioning units and air-handling units. Filters shall be left in units at all times during installation. The filters shall be changed to new filters in each unit upon completion of project upon acceptance by owner and approval of engineer.

6.0 INSULATION

This contractor shall provide all insulation for thermal and acoustical purposes on all ducts and equipment as follows or as indicated on drawings. Insulation shall be Knauf, Owens Corning or approved equal. All dimensions are net internal measurements.

All work shall be performed in strict accordance with the best practices of the trade, recommendations of the manufacturer and the intent of this specification. All supplies and return air ducts, including all branches, risers, take offs, etc., insulated with minimum R-6 (installed value) when located inside the building envelope in unconditioned spaces and R-8 (installed value) when located outside the building envelope. Insulation shall be fiberglass with foil kraft facing.

Insulated ductwork as follows-

1. Provide insulation with vapor barrier jackets.
2. Finish with tape and vapor barrier jacket.
3. Continue insulation through walls, sleeves, hangers, and other duct penetrations.
4. Insulate entire system including fittings, joints, flanges, fire dampers, flexible connections, and expansion joints.

Ductwork Exposed in Mechanical Equipment Rooms or Finished Spaces- Finish with canvas jacket sized for finish painting.

Exterior ducting (excluding kitchen exhaust) - Provide insulation with vapor barrier jacket. Cover with caulked aluminum jacket with seams located on bottom side of horizontal duct section.

External Duct Insulation Application -

1. Secure insulation with vapor barrier with wires and seal jacket joints with vapor barrier adhesive or tape to match jacket.
2. Secure insulation without vapor barrier with staples, tape, or wires.
3. Install without sag on underside of ductwork. Use adhesive or mechanical fasteners where necessary to prevent sagging. Lift ductwork off trapeze hangers and insert spacers.
4. Seal vapor barrier penetrations by mechanical fasteners with vapor barrier adhesive.
5. Stop and point insulation around access doors and damper operators to allow operation without disturbing wrapping.

Duct Line Application (where indicated on drawings)

1. Adhere insulation with adhesive for 100 percent coverage.
2. Secure insulation with mechanical liner fasteners. Refer to SMACNA Standards for spacing.
3. Seal and smooth joints. Seal and cost transverse joints.
4. Seal liner surface penetrations with adhesive.
5. Duct dimensions indicated are net inside dimensions required for airflow. Increase duct size to allow for insulation thickness.

239000 SEQUENCE OF CONTRACT WORK (HVAC, P)

1.0 DESCRIPTION

This project work shall be subject to strict coordination of all trades to permit completely normal operations of this facility throughout the construction of the new addition and the reconstruction of the existing facility.

Sequencing shall consist of the following or variations thereof:

1. Removals and alterations in the existing building.
2. Install new systems as indicated.
3. Render systems operative.

2.0 CONTRACTOR WORK PHASING

This contractor shall phase all work to meet the foregoing conditions of the project work. Said phasing shall require, but not be limited to the following:

1. Temporary relocation of all mechanical and electrical components to permit construction of additions (i.e. HVAC & Electrical).
2. Installation of new electric, telephone and communication services and rendering same operative to new and existing systems.
3. Installation of new HVAC systems.
4. Installation of new plumbing facilities and interconnections.
5. Rendering operative of new and keeping existing area in operation.
6. Alterations and all new work in existing building.
7. Removal of specified services and equipment in existing building.

DIVISION 26 - ELECTRICAL SPECIFICATIONS

- 260100 Scope & General Description (E)
 - 1.0 General Description
 - 2.0 Scope

- 260500 General Conditions (E)
 - 1.0 Governing Conditions
 - 2.0 Supplementary General Conditions
 - 3.0 Drawings
 - 4.0 Submission of Bid
 - 5.0 Investigation of Conditions
 - 6.0 Contractual Relationship with Owner
 - 7.0 National Electrical Code
 - 8.0 Safety
 - 9.0 Field Measurements
 - 10.0 Excavation and Backfill
 - 11.0 Temporary Power and Lighting Service
 - 12.0 Existing Systems and Equipment
 - 13.0 Tests and Energizing
 - 14.0 Prevailing Wage Rates
 - 15.0 Other General Conditions

- 264000 Service Entrance (E)
 - 1.0 Location and Description
 - 2.0 Feeders
 - 3.0 Main Switchgear and Fuses
 - 4.0 Grounding
 - 5.0 Provision for Future Circuits
 - 6.0 Temporary Service During Construction

- 264200 Panels and Appurtenances (E)
 - 1.0 Description of System
 - 2.0 Description of Panels
 - 3.0 Wiring Method
 - 4.0 Fuses
 - 5.0 Dry Type Transformers

- 264400 Individual Equipment Circuits (E)
 - 1.0 Description and Location
 - 2.0 Wiring Method
 - 3.0 Mechanical Equipment

- 264600 General Purpose Branch Circuits (E)
 - 1.0 Description

- 2.0 Wiring Method
- 3.0 Control of Circuits
- 4.0 Wiring Devices
- 5.0 Connections
- 6.0 Plates

- 265000 Lighting and Equipment (E)
 - 1.0 Description and Guarantee
 - 2.0 Lighting Fixture Schedule
 - 3.0 Installation of Lighting Fixtures
 - 4.0 Outdoor Lighting

- 265200 Emergency Lighting System (E)
 - 1.0 Description
 - 2.0 Battery/Charger
 - 3.0 Fixtures, Wiring and Installation

- 266000 Electrical Connections to HVAC and Plumbing Equipment (E)
 - 1.0 General
 - 2.0 Overcurrent Protection and Disconnect Switches
 - 3.0 Thermal Protection

- 267200 Fire Alarm System (E)
 - 1.0 Description of System
 - 2.0 Wiring
 - 3.0 Drawings
 - 4.0 Equipment
 - 5.0 Mounting, Instructions and Checkout

- 267400 Telephone Systems (E)
 - 1.0 Description of System
 - 2.0 Wiring Method
 - 3.0 Relationship with Telephone Company

- 269000 Cutovers and Removals (E)
 - 1.0 Cutover
 - 2.0 Removals

- 269200 Completion of Work (E)
 - 1.0 Testing
 - 2.0 Acceptance
 - 3.0 Miscellaneous
 - 4.0 Close Out

- 269400 Sequence of Contract Work (E)
 - 1.0 Description

**FELLENZER ENGINEERING, LLP
22 MULBERRY STREET
MIDDLETOWN, NY 10940**

**PEEKSKILL FDC & PEEKSKILL IDA
PEEKSKILL FIREHOUSE KITCHEN INCUBATOR
FE PROJECT NO. 23-369**

2.0 Contractor Work Phasing

260100 SCOPE & GENERAL DESCRIPTION (E)

1.0 GENERAL DESCRIPTION

These specifications cover furnishing all labor and materials to provide a complete and operative electrical system for the renovation of the Peekskill Firehouse into a commercial kitchen incubator.

2.0 SCOPE

The systems described in these plans and specifications include but are not limited to the following:

Primary conduit from utility company terminal pole to PMT. Conduit and cable by utility company and installed by electrical contractor.

Arrangements with utility company, including payment for all charges and fees.

Secondary service to metering and main service entrance.

Metering facilities for utility company metering.

Main service entrance equipment.

Branch feeder circuits.

7. Branch panels.
8. Connections of feeder from new service to existing service.
9. Emergency power system.
10. Lighting fixtures.
11. Kitchen equipment wiring.
12. Telecom system and outlets. Service conduit and facilities.
13. General purpose circuits.
14. Individual equipment circuits.
15. Cutovers and removals of existing unused systems.

260500 GENERAL CONDITIONS (E)

1.0 GOVERNING CONDITIONS

General conditions of the electrical contract shall be in accordance with the "General Conditions of the Contract for the Construction of Buildings" NSPE/ACEC-CS 156465 (latest edition) with the latest addenda and revisions.

2.0 SUPPLEMENTARY GENERAL CONDITIONS

Supplementary general conditions may be provided for all mechanical and electrical work and are contained in the General Construction documents. This contractor should read and understand same.

3.0 DRAWINGS

Work on this project as described in these specifications is shown on drawings of sheets appropriately titled and plot plan.

4.0 SUBMISSION OF BID

Contractor shall submit bid as directed to the owner's agent at the time specified. The bid shall contain a statement of the work to be performed and the total construction. The contractor shall state that this work is to be performed in accordance with all applicable plans and specifications.

5.0 INVESTIGATION OF CONDITIONS

The electrical contractor shall visit the site of the work and familiarize themselves with all available information concerning the nature of local conditions bearing on transportation, handling and storage of materials. The electrical contractor shall make his own estimate of the facilities needed and difficulties attending the execution of the contract, including local conditions, availability of labor, uncertainties of weather, transportation and other conditions bearing on transportation, handling and storage of materials.

6.0 CONTRACTUAL RELATIONSHIP WITH OWNER

Upon award of this contract, the contractor shall save harmless the owner and his agents from any and all causes of action arising out of this contract.

7.0 NATIONAL ELECTRICAL CODE

Entire installation shall be made in accordance with the latest edition of National Electrical Code. Contractor shall cooperate with NEC inspector on the installation.

8.0 SAFETY

This electrical contractor shall perform all work in accordance with Rule #23 of the New York State Standards of the Labor Board and shall take special precaution during the construction to avoid any exposed live parts. When working on live equipment, the contractor shall give other trades adequate warning and provide adequate protection and warning for others. All open trenches shall be barricaded at all times and safety lighted at night.

9.0 FIELD MEASUREMENTS

The electrical contractor shall verify in the field, all measurements necessary for his work and shall assume responsibility for their accuracy.

10.0 EXCAVATION AND BACKFILL

All excavation and backfill for electrical work shall be performed by this contractor.

11.0 TEMPORARY POWER AND LIGHTING SERVICE

This contractor shall install, maintain and remove temporary electrical service for lighting and power for construction purposes. If during the course of this project it is necessary to interrupt electric lighting or power service, this contractor shall provide temporary power and lighting as required and directed. Existing lighting and power may be interrupted only upon written consent of the owner, after 48 hours notice.

12.0 EXISTING SYSTEMS AND EQUIPMENT

Portions of existing services, cables, conduits, panels or equipment may be reused and/or altered. See drawings for details.

13.0 TESTS AND ENERGIZING

After the electrical installation is complete, this contractor shall test all circuits, busses and equipment and verify to ensure that they are free from grounds and short circuits before energizing. All 600-volt cable shall be tested using megohmmeter. Cables of higher voltage rating shall be tested using a D.C. high potential tester. Equipment shall be energized only after said tests have been conducted and test results evaluated.

14.0 PREVAILING WAGE RATES

Provisions of the New York State Labor Law require payment of "Prevailing Wage Rates" in certain public projects. Where applicable, these will be made a part of this contract.

15.0 OTHER GENERAL CONDITIONS

15.1 Intent - It is the intent of these plans and specifications to provide alterations and/or new construction as indicated on the drawings and in the specifications to provide complete systems in every respect, capable of operating as designed. It is not intended that every

- fitting, minor detail or feature be shown on drawings. The contractor shall be responsible for any detail necessary for completion of these systems in accordance with good practice. Installation shall be executed so as to contribute to efficiency of operation, minimum maintenance, accessibility and sightliness. The installation shall conform and accommodate itself to the building structure, its equipment and its usage. No piping or equipment shall be installed in such a manner as to interfere with the operation of any doors or windows. Requirements specified herein shall govern applicable portion of mechanical and electrical sections whether so stated herein or not.
- 15.2 Regulations and Certificates - All work shall be done in strict accordance with rules and regulations of local and state authorities having jurisdiction over such work, utility companies operating where apparatus is being installed, National Fire Protection Association, IEEE and insurance companies. Where discrepancies occur between above regulations and these plans and specifications, requirements of the regulations shall take precedence, except that these specifications shall be minimum requirements and that no changes shall be made without approval of the engineer. Complete approval of all above mentioned authorities shall be secured and their certificates of approval shall be delivered to the owner before final acceptance. Any and all drawings or documents required (in addition to contract drawings) shall be furnished in order to secure above-mentioned approvals.
- 15.3 Drawings and Measurements - Contract drawings for mechanical and electrical work are in part diagrammatic, intended to cover the general design and extent of the systems and indicate general arrangement of equipment, ducts, conduits, piping and approximate sizes and locations of equipment and outlets. Drawings are not intended to be scaled for roughing-in measurements nor to serve as shop drawings. Where drawings are required for these purposes or have to be made from field measurements, they shall be prepared by the various trades and coordinated by the contractor. Where job conditions require reasonable changes from indicated locations and arrangements, such changes shall be made without cost to the owner. Exact locations of all grilles, registers, plumbing fixtures, electrical fixtures, panelboards, etc., shall be governed by plans, elevations and details.
- 15.4 Record Drawings - During the course of construction the respective contractor shall keep a careful record (in drawing form) of all deviations from the work as shown on the contract drawings on the installation of pipes, ducts, electric outlets, equipment, invert elevations, etc. These drawings shall be delivered to the engineer before the final certificate of payment is issued.
- 15.5 Accessibility - Locate all equipment which must be serviced, operated or maintained, in fully accessible position. Equipment shall include but not be limited to valves, traps, cleanouts, motors, controllers, drain points, etc. Furnish access doors where required. Minor deviations from the drawings may be made to allow for better accessibility, but changes of magnitude or which involve extra cost shall not be made without approval.
- 15.6 Access Doors and Panels - Furnish flush type door or panel with metal frame for all junction boxes or apparatus located in chases, walls or floors. Finish shall be prime coat.

- 15.7 Quiet Operation - All work shall operate under all conditions of load without any sound or vibration which is objectionable in the opinion of the engineer. In case of moving machinery, sound or vibration noticeable outside of room in which it is installed or annoyingly noticeable inside its own room will be considered objectionable by the engineer shall be corrected in approved manner by the contractor at the latter's expense.
- 15.8 Covering of Work - No pipe fittings or other work of any kind shall be covered up or hidden from view before it has been examined or approved by the engineer or other authority having jurisdiction. Any unfaithful or imperfect work or material which may be discovered shall be removed and corrected immediately before being condemned, and other work and materials shall be furnished which shall be satisfactory to the engineer.
- 15.9 Guarantee - The electrical contractor shall guarantee all workmanship, materials, performance for a period of one year from the date of the certificate of completion and acceptance of his work. The contractors shall promptly correct any defects upon notice from the owner to do so, without cost to the owner.
- 15.10 Waterproofing - Where any work pierces waterproofing, the installation shall be as approved by the engineer. The electrical contractor shall furnish all necessary sleeves, caulking and flashing as required to make the openings absolutely watertight.
- 15.11 Excavation and Backfill - All excavation and backfill shall be by the contractor who is furnishing and installing the respective equipment. Cleanup, resurface and resod all disturbed areas.
- 15.12 Fire Stopping - All penetrations through fire and smoke rated walls, floors and ceilings shall be thoroughly sealed with 3M brand Fire Barrier CP25WB latex based caulk, or approved equal. Install in accordance with manufacturer's instructions.
- 15.13 Equipment Returns - As part of this contract, contractors shall ensure that suppliers of any and all equipment supplied for this project agree to accept the return of any equipment on this project that is in undamaged condition and has not been put into service with a maximum restocking fee of 25%, up until the date of certified substantial completion of the project.
- 15.14 Coordination of Trades - It is understood that coordination between all of the trades on this project is the responsibility of the construction manager (if any), the general contractor (if any) and the trades themselves. This coordination will include meetings and discussions as needed among the parties noted above, and preparation of coordination drawings as needed. The cost of this coordination work shall be included in the contractors' bids. It is not the responsibility of the engineer to perform this coordination. No extra charges will be paid to any contractor that is due to additional work being performed due to lack of coordination between the trades.

- 15.15 Building Services Shutdowns - All building services shutdowns, including electric, gas, water, and telephone utilities, and HVAC, sprinkler, and plumbing systems in existing buildings, for the purpose of performing cutovers and tie-ins of new systems, shall be strictly coordinated with the appropriate utility companies and the building owner. For work in existing buildings, it will be required to perform this work outside of normal building operation hours and the cost for this is to be included in the bids.

260800 CODES, PERMITS AND INSPECTIONS (E)

1.0 APPLICABLE CODES

The entire installation shall conform to the rules and regulations of the following parties having jurisdiction:

- A. National Electrical Code of the National Fire Protection Association, latest edition.
- B. State Codes, Local Electrical Codes and other regulations of municipality.
- C. "Specifications for Electrical Installations" issued by supplying electric utility company.
- D. Telephone company standards.

2.0 PERMITS

Contractor shall obtain all permits required by local utility company ordinances. Contractor shall cooperate with utility companies on electric and telephone installations. Contractor shall obtain approval of all utilities on service entrances.

3.0 CERTIFICATE OF INSPECTION

Upon completion, the electrical contractor shall furnish a certificate of final inspection to the owner from the New York Board of Fire Underwriters covering all electrical installations in these plans and specifications in his contract. The cost of said inspection shall be borne by the contractor and shall be included in the contract amount.

4.0 ELECTRIC UTILITY COMPANY STANDARDS

Entire installation shall conform to all rules and regulations for service as issued by the utility company. Pad mount transformer installation shall conform to the supplying utility company standards and specifications provided by utility company.

5.0 LAWS, ORDINANCES AND FEES

This contractor shall give all necessary notices, obtain all permits, and pay all taxes, fees and other documents and obtain all necessary approvals of all local, County, New York and/or State of New York Departments, having jurisdiction; obtain all required Certificates of Inspection for his work and deliver same to the engineer before request for acceptance and final payment for the work. This contractor shall include in the work, without extra cost to the owner, any labor, materials, services, apparatus, drawings (in addition to contract drawings and documents) which are necessary in order to comply with all applicable laws, ordinances, rules and regulations whether or not shown on drawings and/or specified. With submission of bid, the electrical contractors shall give written notice to the engineer of any materials or equipment believed inadequate or unsuitable in violation of laws, ordinances, rules or regulations of authorities having jurisdiction and any

necessary items of work omitted. In the absence of such written notice, it is mutually agreed that this contractor has included the cost of all required items in his proposal, and that they will be responsible for the approved satisfactory functioning of the entire system without extra compensation.

6.0 O.S.H.A.

All work on this project shall be accomplished in accordance with Federal statutes such as the Occupational Safety and Health Act (1970).

261000 MATERIALS, WORKMANSHIP AND GUARANTEE (E)

1.0 MATERIALS STANDARDS

All materials shall be new and comply with the best accepted industry standards and shall bear the Underwriters' Laboratories (UL) seal of approval. All material shall be of such quality and dimensions specified and shall be manufactured in accordance with American Standards Association, National Electrical Manufacturers Association, I.E.E.E., and Underwriter's Laboratories. In any conflict, the engineer shall be sole judge of whether or not these conditions are met or whether the "or equal" clause is met. All conductors on entire project shall be copper. Abbreviations in the plans and specifications may be used as follows:

EMT - "Electro Metallic Tubing" - Thin wall conduit.

GIC - "Galvanized Iron Conduit" - Heavy wall conduit.

PVC - "Polyvinyl Chloride" - Schedule 40 or 80 conduit as specified.

Samples - Contractor may be required to submit sample of all materials used to the engineer. Materials may be rejected any time during project if installed without presenting samples, if found to be not equal to the quality specified in its category. The engineer shall be the sole judge of this matter.

2.0 APPEARANCE OF WORK

All work shall be executed to present a neat mechanical appearance and leave the installation in proper operating order.

3.0 GUARANTEE

The contractor shall replace any work or material which develops defects from ordinary wear and tear within one year of the date of the final certificate of approval. Replacement shall be made without cost to the owner.

4.0 LAYOUT, CUTTING AND PATCHING

The electrical contractor shall layout all conduits, box locations, etc., in advance of pouring concrete or installation of walls. Any cutting or patching required because of the contractor's neglect to properly lay out the work shall be performed at the expense of the contractor and shall be approved by the engineer to assure a workmanlike job. Contractor shall verify all dimensions shown on plans and shall be responsible for dimensions and conduit sizes to assure adequate sizing where larger conduits are installed to provide for more than one circuit per conduit. Contractor shall cooperate with other contractors on locations of facilities where conflicts of location arise.

5.0 SHOP DRAWINGS AND SAMPLES

Before ordering material shipped to the job, submit to engineer six copies of shop drawings for review giving all details, dimensions, etc., of the following equipment:

Natural gas generator

Electrical contractor shall also furnish samples of wire, cable, plug receptacles, light switches, disconnect switches and other small parts as requested by the engineer.

6.0 RIGID STEEL CONDUIT AND EMT

All rigid steel conduit shall be full weight standard i.p.s. galvanized or Sheradized threaded conduit equal to National Electric Products Company "Sheraduct" or approved equal, and no conduit smaller than 3/4" in size shall be used on any part of the installation. Rigid steel conduit shall be used in floor slab and on all main feeders to light panels, power panels, etc. All conduits, where located in outside walls, underground or underfloors, shall have joints redlead. Conduits buried underground, chased in roof planking or in slab on grade shall be painted with two coats of asphaltum paint. Conduits shall be continuous from outlet to outlet, and from outlets to cabinets, junction or pull boxes and shall enter and be secured to all boxes in such a manner that each system shall be electrically continuous from service to all outlets. Terminals of all conduits shall be furnished with double locknuts and bushings. Changes in direction of conduit where concealed shall be made by means of standard radius bend, and where exposed by means of Crouse-Hinds or equal galvanized or sheradized threaded condulets. Armored cable shall be used only for short connections to fractional horsepower utility motors. Electrical metallic tubing may be permitted on exposed ceiling work and for concealed branch circuit wiring where not installed in slab construction.

7.0 JUNCTION AND PULL BOXES

Junction or pull boxes shall be furnished and installed under this section of the specifications where indicated on the drawings, wherever else such a box may be deemed necessary to facilitate the pulling or splicing of wires or cables. All such boxes must be accessible and shall be built only from approved detail working drawings. Conduits shall enter these boxes through tight fitting clearance holes. Covers for the boxes shall be designed for quick removal. Where junction boxes are required for splicing box for special recessed fixtures, consult the engineer before installing and determine exact location of each box. Each feeder passing through a pull box shall be tagged with tag of fireproof material, or designated in another approved manner. Generally, junction boxes and pull box shall not be exposed in finished spaces. Where necessary, reroute conduits or make other arrangements to meet approval of engineer.

263213 ENGINE GENERATORS (E)

1.0 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

2.0 SUMMARY

- A. This Section includes packaged engine-generator sets for emergency power supply with the following features:
 - A. Natural gas engine.
 - B. Unit-mounted cooling system.
 - C. Unit-mounted control and monitoring.
 - D. Performance requirements for sensitive loads.
 - E. Load banks.
 - F. Outdoor enclosure.
- B. Related Sections include the following:
 - 1. Division 26 Section "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine-generator sets.

3.0 DEFINITIONS

- A. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.

4.0 SUBMITTALS

- A. Product Data: For each type of packaged engine generator indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. In addition, include the following:
 - 1. Thermal damage curve for generator.
 - 2. Time-current characteristic curves for generator protective device.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 1. Dimensioned outline plan and elevation drawings of engine-generator set and other components specified.
 - 2. Design Calculations: Signed and sealed by a qualified professional engineer. Calculate requirements for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
 - 3. Vibration Isolation Base Details: Signed and sealed by a qualified professional engineer. Detail fabrication, including anchorages and attachments to structure and to supported equipment. Include base weights.
 - 4. Wiring Diagrams: Power, signal, and control wiring.
- C. Manufacturer Seismic Qualification Certification: Submit certification that engine-generator set, batteries, battery racks, accessories, and components will withstand seismic

- forces defined in Division 26 Section "Vibration and Seismic Controls for Electrical Systems." Include the following:
1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
 - a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."
 - b. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."
 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- D. Qualification Data: For installer, manufacturer, and testing agency.
- E. Source quality-control test reports.
1. Certified summary of prototype-unit test report.
 2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
 3. Certified Summary of Performance Tests: Certify compliance with specified requirement to meet performance criteria for sensitive loads.
 4. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
 5. Report of sound generation.
 6. Report of exhaust emissions showing compliance with applicable regulations.
 7. Certified Torsional Vibration Compatibility: Comply with NFPA 110.
- F. Field quality-control test reports.
- G. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals. In addition to items specified in Division 01 Section "Operation and Maintenance Data," include the following:
1. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
- H. Warranty: Special warranty specified in this Section.

5.0 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
1. Maintenance Proximity: Not more than four hours' normal travel time from Installer's place of business to Project site.
 2. Engineering Responsibility: Preparation of data for vibration isolators and seismic restraints of engine skid mounts, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies similar to those indicated for this Project.

- B. Manufacturer Qualifications: A qualified manufacturer. Maintain, within 200 miles (321 km) of Project site, a service center capable of providing training, parts, and emergency maintenance repairs.
- C. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL), and that is acceptable to authorities having jurisdiction.
 - 1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
- D. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.
- E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- F. Comply with ASME B15.1.
- G. Comply with NFPA 37.
- H. Comply with NFPA 70.
- I. Comply with NFPA 99.
- J. Comply with NFPA 110 requirements for Level 2 emergency power supply system.
- K. Comply with UL 2200.
- L. Engine Exhaust Emissions: Comply with applicable state and local government requirements.
- M. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at adjacent property boundaries due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.

6.0 PROJECT CONDITIONS

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:
- B. Notify Owner no fewer than two days in advance of proposed interruption of electrical service.
- C. Do not proceed with interruption of electrical service without Owner's written permission.
- D. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
 - 1. Ambient Temperature: Minus 15 to plus 40 deg C.
 - 2. Relative Humidity: 0 to 95 percent.
 - 3. Altitude: Sea level to 1000 feet (300 m).

7.0 COORDINATION

- A. Coordinate size and location of concrete bases for package engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified on the drawings.

8.0 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: 5 years from date of Substantial Completion.

9.0 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Beginning at Substantial Completion, provide 12 months' full maintenance by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

10.0 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Fuses/breakers: One for every 10 of each type and rating, but no fewer than one of each.
 - 2. Indicator Lamps: Two for every six of each type used, but no fewer than two of each.
 - 3. Filters: One set each of lubricating oil, fuel, and combustion-air filters.

11.0 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Caterpillar; Engine Div.
 - 2. Generac Power Systems, Inc.
 - 3. Kohler Co.; Generator Division.
 - 4. Magnetek, Inc.
 - 5. Onan/Cummins Power Generation; Industrial Business Group.
 - 6. Spectrum Detroit Diesel.

12.0 ENGINE-GENERATOR SET

- A. Factory-assembled and -tested, engine-generator set.
 - 1. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.
 - 2. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.
- B. Capacities and Characteristics:

1. Power Output Ratings: Nominal ratings as indicated.
 2. Output Connections: Three-phase, four wire.
 3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.
- C. Generator-Set Performance:
1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage from no load to full load.
 2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
 3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.
 4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
 5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
 6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
 7. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 250 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
 8. Start Time: Comply with NFPA 110, Type 10, system requirements.
- D. Generator-Set Performance for Sensitive Loads:
1. Oversizing generator compared with the rated power output of the engine is permissible to meet specified performance.
 - a. Nameplate Data for Oversized Generator: Show ratings required by the Contract Documents rather than ratings that would normally be applied to generator size installed.
 2. Steady-State Voltage Operational Bandwidth: 1 percent of rated output voltage from no load to full load.
 3. Transient Voltage Performance: Not more than 10 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within 0.5 second.
 4. Steady-State Frequency Operational Bandwidth: Plus or minus 0.25 percent of rated frequency from no load to full load.
 5. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
 6. Transient Frequency Performance: Less than 2-Hz variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within three seconds.

7. Output Waveform: At no load, harmonic content measured line to neutral shall not exceed 2 percent total with no slot ripple. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
8. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 300 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to winding insulation or other generator system components.
9. Excitation System: Performance shall be unaffected by voltage distortion caused by nonlinear load.
 - a. Provide permanent magnet excitation for power source to voltage regulator.
10. Start Time: Comply with NFPA 110, Type 10, system requirements.

13.0 ENGINE

- A. Fuel: Natural gas.
- B. Rated Engine Speed: 1800 rpm.
- C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm (11.4 m/s).
- D. Lubrication System: The following items are mounted on engine or skid:
 1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
 2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
 3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- E. Engine Fuel System:
 1. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.
 2. Natural Gas System:
 - a. Carburetor.
 - b. Gas Regulator.
 - c. Fuel-Shutoff Solenoid Valve.
 - d. Flexible Fuel Connector.
- F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.
- G. Governor: Adjustable isochronous, with speed sensing.
- H. Cooling System: Closed loop, liquid cooled, with remote radiator and integral engine-driven coolant pump.
 1. Configuration: Vertical or horizontal air discharge.
 2. Radiator Core Tubes: Aluminum.
 3. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
 4. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.
 5. Fan: Driven by multiple belts from engine shaft or totally enclosed electric motor with sealed bearings.

6. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
7. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
- I. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.
 1. Minimum sound attenuation of 25 dB at 500 Hz.
 2. Sound level measured at a distance of 10 feet (3 m) from exhaust discharge after installation is complete shall be 85 dBA or less.
- J. Air-Intake Filter: Standard-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.
- K. Starting System: 12- or 24-V electric, with negative ground.
 1. Components: Sized so they will not be damaged during a full engine-cranking cycle with ambient temperature at maximum specified in Part 1 "Project Conditions" Article.
 2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
 3. Cranking Cycle: As required by NFPA 110 for system level specified.
 4. Battery: Adequate capacity within ambient temperature range specified in Part 1 "Project Conditions" Article to provide specified cranking cycle at least twice to three times without recharging.
 5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
 6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient temperature within range specified in Part 1 "Project Conditions" Article. Include accessories required to support and fasten batteries in place.
 7. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating.
 8. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. Unit shall comply with UL 1236 and include the following features:
 - a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
 - b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg C to plus 60 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.
 - c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.

- d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
- e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
- f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

14.0 CONTROL AND MONITORING

- A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.
- B. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts generator set. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.
- C. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration.
- D. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 2 system, and the following:
 - 1. AC voltmeter.
 - 2. AC ammeter.
 - 3. AC frequency meter.
 - 4. DC voltmeter (alternator battery charging).
 - 5. Engine-coolant temperature gage.
 - 6. Engine lubricating-oil pressure gage.
 - 7. Running-time meter.
 - 8. Ammeter-voltmeter, phase-selector switch(es).
 - 9. Generator-voltage adjusting rheostat.
 - 10. Fuel tank derangement alarm.
 - 11. Fuel tank high-level shutdown of fuel supply alarm.
 - 12. Generator overload.
- E. Indicating and Protective Devices and Controls:
 - 1. AC voltmeter.
 - 2. AC ammeter.
 - 3. AC frequency meter.
 - 4. DC voltmeter (alternator battery charging).

5. Engine-coolant temperature gage.
 6. Engine lubricating-oil pressure gage.
 7. Running-time meter.
 8. Ammeter-voltmeter, phase-selector switch(es).
 9. Generator-voltage adjusting rheostat.
 10. Start-stop switch.
 11. Overspeed shutdown device.
 12. Coolant high-temperature shutdown device.
 13. Coolant low-level shutdown device.
 14. Oil low-pressure shutdown device.
 15. Fuel tank derangement alarm.
 16. Fuel tank high-level shutdown of fuel supply alarm.
 17. Generator overload.
- F. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.
- G. Common Remote Audible Alarm: Signal the occurrence of any events listed below without differentiating between event types. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset.
1. Engine high-temperature shutdown.
 2. Lube-oil, low-pressure shutdown.
 3. Overspeed shutdown.
 4. Remote emergency-stop shutdown.
 5. Engine high-temperature prealarm.
 6. Lube-oil, low-pressure prealarm.
 7. Fuel tank, low-fuel level.
 8. Low coolant level.
- H. Remote Alarm Annunciator: Comply with NFPA 99. An LED labeled with proper alarm conditions shall identify each alarm event and a common audible signal shall sound for each alarm condition. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are surface- or flush-mounting type to suit mounting conditions indicated.
- I. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

15.0 GENERATOR OVERCURRENT AND FAULT PROTECTION

- A. Generator Circuit Breaker: Molded-case, thermal-magnetic type; 100 percent rated; complying with NEMA AB 1 and UL 489.
1. Tripping Characteristic: Designed specifically for generator protection.
 2. Trip Rating: Matched to generator rating.
 3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
 4. Mounting: Adjacent to or integrated with control and monitoring panel.
- B. Generator Disconnect Switch: Molded-case type, 100 percent rated.
1. Rating: Matched to generator output rating.

2. Shunt Trip: Connected to trip switch when signaled by generator protector or by other protective devices.
- C. Generator Protector: Microprocessor-based unit shall continuously monitor current level in each phase of generator output, integrate generator heating effect over time, and predict when thermal damage of alternator will occur. When signaled by generator protector or other generator-set protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from load circuits. Protector shall perform the following functions:
 1. Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other generator-set malfunction alarms.
 2. Under single or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds.
 3. As overcurrent heating effect on the generator approaches the thermal damage point of the unit, protector switches the excitation system off, opens the generator disconnect device, and shuts down the generator set.
 4. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.
- D. Ground-Fault Indication: Comply with NFPA 70, "Emergency System" signals for ground-fault. Integrate ground-fault alarm indication with other generator-set alarm indications.

16.0 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H or Class F.
- D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required.
- E. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.
- F. Enclosure: Dripproof.
- G. Instrument Transformers: Mounted within generator enclosure.
- H. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified.
 1. Adjusting rheostat on control and monitoring panel shall provide plus or minus 5 percent adjustment of output-voltage operating band.
- I. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.
- J. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- K. Subtransient Reactance: 12 percent, maximum.

17.0 LOAD BANK

- A. Description: Permanent, outdoor, weatherproof, remote-controlled, forced-air-cooled, resistive and reactive unit capable of providing a balanced 3-phase, delta-connected load

- to generator set at 100 percent rated-system capacity, at 80 percent power factor, lagging. Unit may be composed of separate resistive and reactive load banks controlled by a common control panel. Unit shall be capable of selective control of load in 25 percent steps and with minimum step changes of approximately 5 and 10 percent available.
- B. Resistive Load Elements: Corrosion-resistant chromium alloy with ceramic and steel supports. Elements shall be double insulated and designed for repetitive on-off cycling. Elements shall be mounted in removable aluminized-steel heater cases.
 - C. Reactive Load Elements: Epoxy-encapsulated reactor coils.
 - D. Load-Bank Heat Dissipation: Integral fan with totally enclosed motor shall provide uniform cooling airflow through load elements. Airflow and coil operating current shall be such that, at maximum load, with ambient temperature at the upper end of specified range, load-bank elements operate at not more than 50 percent of maximum continuous temperature rating of resistance elements.
 - E. Load Element Switching: Remote-controlled contactors switch groups of load elements. Contactor coils are rated 120 V. Contactors shall be located in a separate NEMA 250, Type 3R enclosure within load-bank enclosure, accessible from exterior through hinged doors with tumbler locks.
 - F. Contactor Enclosures: Heated by thermostatically controlled strip heaters to prevent condensation.
 - G. Load-Bank Enclosures: NEMA 250, Type 3R, complying with NEMA ICS 6. Louvers at cooling-air intake and discharge openings shall prevent entry of rain and snow. Openings for airflow shall be screened with 1/2-inch- (13-mm-) square, galvanized-steel mesh. Reactive load bank shall include automatic shutters at air intake and discharge.
 - H. Protective Devices: Power input circuits to load banks shall be fused, and fuses shall be selected to coordinate with generator circuit breaker. Fuse blocks shall be located in contactor enclosure. Cooling airflow and overtemperature sensors shall automatically shut down and lock out load bank until manually reset. Safety interlocks on access panels and doors shall disconnect load power, control, and heater circuits. Fan motor shall be separately protected by overload and short-circuit devices. Short-circuit devices shall be noninterchangeable fuses with 200,000-A interrupting capacity.
 - I. Remote-Control Panel: Separate from load bank in NEMA 250, Type 1 enclosure with a control power switch and pilot light, and switches controlling groups of load elements.
 - J. Control Sequence: Control panel may be preset for adjustable single-step loading of generator during automatic exercising.

18.0 OUTDOOR GENERATOR-SET ENCLOSURE

- A. Description: Vandal-resistant, weatherproof steel housing, wind resistant up to 100 mph (160 km/h). Multiple panels shall be lockable and provide adequate access to components requiring maintenance. Panels shall be removable by one person without tools. Instruments and control shall be mounted within enclosure.
- B. Description: Prefabricated or preengineered walk-in enclosure with the following features:
 - 1. Construction: Galvanized-steel, metal-clad, integral structural-steel-framed building erected on concrete foundation.
 - 2. Structural Design and Anchorage: Comply with ASCE 7 for wind loads.
 - 3. Space Heater: Thermostatically controlled and sized to prevent condensation.

4. Louvers: Equipped with bird screen and filter arranged to permit air circulation when engine is not running while excluding exterior dust, birds, and rodents.
5. Hinged Doors: With padlocking provisions.
6. Ventilation: Louvers equipped with bird screen and filter arranged to permit air circulation while excluding exterior dust, birds, and rodents.
7. Thermal Insulation: Manufacturer's standard materials and thickness selected in coordination with space heater to maintain winter interior temperature within operating limits required by engine-generator-set components.
8. Muffler Location: Within enclosure.
- C. Engine Cooling Airflow through Enclosure: Maintain temperature rise of system components within required limits when unit operates at 110 percent of rated load for 2 hours with ambient temperature at top of range specified in system service conditions.
 1. Louvers: Fixed-engine, cooling-air inlet and discharge. Storm-proof and drainable louvers prevent entry of rain and snow.
 2. Automatic Dampers: At engine cooling-air inlet and discharge. Dampers shall be closed to reduce enclosure heat loss in cold weather when unit is not operating.
- D. Interior Lights with Switch: Factory-wired, vaporproof-type fixtures within housing; arranged to illuminate controls and accessible interior. Arrange for external electrical connection.
 1. AC lighting system and connection point for operation when remote source is available.
 2. DC lighting system for operation when remote source and generator are both unavailable.
- E. Convenience Outlets: Factory wired, GFCI. Arrange for external electrical connection.

19.0 VIBRATION ISOLATION DEVICES

- A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.
 1. Material: Standard neoprene.
 2. Durometer Rating: 30.
 3. Number of Layers: One.
- B. Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic restraint.
 1. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to wind loads or if weight is removed; factory-drilled baseplate bonded to 1/4-inch-(6-mm-) thick, elastomeric isolator pad attached to baseplate underside; and adjustable equipment mounting and leveling bolt that acts as blocking during installation.
 2. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load.
 3. Minimum Additional Travel: 50 percent of required deflection at rated load.
 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.

20.0 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

21.0 EXAMINATION

- A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.
- B. Examine roughing-in of piping systems and electrical connections. Verify actual locations of connections before packaged engine-generator installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

22.0 INSTALLATION

- A. Comply with packaged engine-generator manufacturers' written installation and alignment instructions and with NFPA 110.
- B. Install packaged engine generator to provide access, without removing connections or accessories, for periodic maintenance.
- C. Install packaged engine generator with elastomeric isolator pads having a minimum deflection of 1 inch (25 mm) on 4-inch- (100-mm-) high concrete base. Secure sets to anchor bolts installed in concrete bases.
- D. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

23.0 CONNECTIONS

- A. Piping installation requirements are specified in Division 22 and 23 Sections. Drawings indicate general arrangement of piping and specialties.
- B. Connect fuel adjacent to packaged engine generator to allow service and maintenance.
- C. Connect fuel piping to engines with a gate valve and union and flexible connector.
 - 1. Natural-gas piping, valves, and specialties for gas distribution are specified in Division 22.
- D. Ground equipment and connect wiring according to Division 26.

24.0 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections. Report results in writing.
- C. Perform tests and inspections and prepare test reports.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:

1. Perform tests recommended by manufacturer and each electrical test and visual and mechanical inspection for "AC Generators and for Emergency Systems" specified in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, single-step full-load pickup test.
 3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
 - a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
 - b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
 - c. Verify acceptance of charge for each element of the battery after discharge.
 - d. Verify that measurements are within manufacturer's specifications.
 4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
 5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.
 6. Exhaust-System Back-Pressure Test: Use a manometer with a scale exceeding 40-inch wg (120 kPa). Connect to exhaust line close to engine exhaust manifold. Verify that back pressure at full-rated load is within manufacturer's written allowable limits for the engine.
 7. Exhaust Emissions Test: Comply with applicable government test criteria.
 8. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step-load increases and decreases, and verify that performance is as specified.
 9. Harmonic-Content Tests: Measure harmonic content of output voltage under 25 percent and at 100 percent of rated linear load. Verify that harmonic content is within specified limits.
 10. Noise Level Tests: Measure A-weighted level of noise emanating from generator-set installation, including engine exhaust and cooling-air intake and discharge, at four on the property line, and compare measured levels with required values.
- E. Coordinate tests with tests for transfer switches and run them concurrently.
- F. Test instruments shall have been calibrated within the last 12 months, traceable to standards of NIST, and adequate for making positive observation of test results. Make calibration records available for examination on request.
- G. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
- H. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
- I. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- J. Remove and replace malfunctioning units and retest as specified above.

- K. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.
- L. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.
- M. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each power wiring termination and each bus connection. Remove all access panels so terminations and connections are accessible to portable scanner.
 - 1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan 11 months after date of Substantial Completion.
 - 2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
 - 3. Record of Infrared Scanning: Prepare a certified report that identifies terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

25.0 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain packaged engine generators. Refer to Division 01 Section "Demonstration and Training."

264000 SERVICE ENTRANCE (E)

1.0 LOCATION AND DESCRIPTION

This contractor shall furnish and install complete and operative service entrance as shown on plans.

2.0 FEEDERS

Furnish and install 120/208V three phase service. Entire installation shall be furnished and installed in accordance with rules of electric service of local utility company. This contractor shall obtain approval of the utility company on the installation.

3.0 MAIN SWITCHGEAR AND FUSES

Furnish and install service entrance switchboards as herein specified and shown on associated electrical drawings. The switchboards shall meet Underwriters' Laboratories (UL) enclosure requirements. The entire switchboard is to be Square 'D' Bus-Stack construction. System shall operate at Enclosure Construction - The switchboard framework shall be fabricated on die-formed steel base or base assembly consisting of formed steel and commercial channel welded or bolted together to rigidly support the entire shipping unit for moving on rollers and floor mounting. The framework is to be formed code gauge steel, rigidly welded and together to support all cover plates, bussing and component devices during shipment and installation. Each switchboard section shall have an open bottom and individual removal top plate for installation and termination of conduit. Top and bottom conduit area is to be clearly shown and dimensioned on the shop drawings. The wireway front covers are to be hinged to permit access to the branch switch load side terminals without removing the covers. All front plates used for mounting meters, selector switches or other front mounted devices shall be hinged with all wiring installed and laced with flexibility at the hinged side. All closure plates shall be screw removable and small enough for easy handling by one man. The paint finish shall be gray enamel over a rust inhibiting phosphate primer.

Bolted Pressure Switches - The main switches shall be fusible of the bolted contact type with ratings as shown on the associated drawings. The switches shall be dead-front type with fuse-door interlock and provisions for padlocking in the open position with at least three padlocks. The bolted contacts are to firmly bolt the movable blades to both the top and bottom stationary contacts. The switch shall be capable of opening and closing into a fault of six times current rating in accordance with UL requirements to insure safety on emergency operation.

Fusible Switches - The fusible switches shall be quick-make, quick-break and suitable for use on the service as described for the sizes as shown on the associated drawings. The units shall be listed and approved applicable, shall be dual horsepower rated for both standard one-time or dual element fuses. The fusible switches shall be group mounted in panel type construction. Each switch is to be enclosed in a separate steel enclosure. The enclosure will employ a hinged cover for access to the fuses which will be interlocked with the operating handle to prevent opening the cover when the switch is in the ON position. This interlock shall be constructed so that it can be released with a standard electrician's tool for testing fuses without interrupting service. The units shall have

padlocking provisions in the OFF position and the operating handle position shall give positive switch position indication (i.e. Horizontal OFF, diagonal ON). Switches shall pass industry standard 12+ withstandability tests and fuse race tests as described elsewhere in these specifications. All switchboards shall be UL approved and shall be labeled and approved for service entrance use. All fuses shall be current limiting, 200,000 amp interrupting rating and shall be approved type as manufactured by Bussman Co., St. Louis, Missouri.

4.0 GROUNDING

Furnish and install neutral and frame grounds as shown on plans and herein described and as per National Electrical Code. Provide 5/8" x 8'-0" copperweld ground rod for service entrance ground. All ground clamps shall be UL approved. Electrical contractor shall measure all ground resistances and shall provide additional groundings of system as required to provide a maximum resistance of one half-ohm system ground.

5.0 PROVISION FOR FUTURE CIRCUITS

Main switchgear shall be provided with space for installation of a minimum of equivalent of the number of overcurrent protection units shown on plans.

6.0 TEMPORARY SERVICE DURING CONSTRUCTION

Electrical contractor shall install, maintain and remove temporary electrical service for lighting and power during construction consisting of but no limited to the following:

Extension lines of sufficient capacity to provide power for saws, drills, hammers and other construction tools as requested by trades.

Power for using fuel fired temporary heating equipment.

Power shall be provided to each space in building as requested by various contractors.

Temporary lighting system consisting of "festoon" incandescent lighting with guards to provide approximately 5 foot-candles average illumination on the work surfaces.

Furnish all labor needed to keep this temporary system energized during the entire standard period of daily working for all trades plus 15 minutes before and 15 minutes after the working period.

Temporary lighting at all construction shanties and trailers shall be operative at all times. Provide each with a connection at 120 volts - 20A capacity.

Provide for safety lighting of corridors and stairs.

Each section of temporary light or power facilities shall remain as long as needed or until replaced by permanent facilities. Permanent facilities may be utilized as they are installed. Contractor shall accept full responsibility for their use.

Remove temporary facilities upon cutover to permanent facilities.

264400 INDIVIDUAL EQUIPMENT CIRCUITS (E)

1.0 DESCRIPTION AND LOCATION

Install all individual equipment circuits as shown on drawings.

2.0 WIRING METHOD

Install all individual equipment circuits with Type THHN copper conductors in conduit. Type MC (BX) insulated copper conductors may be utilized for drop whips from junction box to device, unless otherwise noted. Connect and test. Furnish and install all wiring and furnish and install disconnect switches on equipment furnished and installed by others.

3.0 MECHANICAL EQUIPMENT

Electrical contractor shall furnish and install all power wiring, disconnect switches and connections as required to all mechanical equipment spaces to fans, air handlers, etc., as shown on drawings. Electrical control systems of all HVAC and plumbing equipment shall be furnished by respective contractors. Respective contractors shall hire, as necessary, licensed electricians to perform control work requiring same. Motor starting shall be furnished by respective contractors for installation by Electrical Contractor.

264600 GENERAL PURPOSE BRANCH CIRCUITS (E)

1.0 DESCRIPTION

Install general-purpose branch circuits as shown on one-line diagrams on plan.

2.0 WIRING METHOD

All general purpose branch circuits shall be installed as shown on drawings. Conductor and conduit sizes are shown on drawings. No wire size smaller than #12 AWG copper shall be used. No conduit smaller than 3/4" shall be used. All boxes shall be 4" square or larger and minimum depth of 1-1/2". All conduits and boxes shall be concealed in all areas except mechanical rooms, pipe tunnel and storage areas. Metallic armored cable may be used at locations shown on drawings and for whips to branch devices. All circuits installed in floor slab shall be rigid galvanized iron conduit. All conduits installed in or below any concrete shall be rigid galvanized iron conduit and coated with "Bitumastic". All junction boxes shall be sized as shown on drawings or as per N.E.C. requirements. Provide swing cover or screw as shown or dictated by usage. All junction boxes shall be code grade steel galvanized. All junction boxes shall be accessible. Electrical contractor is required to provide and install access doors or panels for same unless otherwise noted. It is noted that the hereinbefore-described wiring method is applicable to various other signal systems as well as general purpose circuits as herein described.

Location of Outlets - Locate outlets as shown on drawing. Contractor shall cooperate with other trades in conflict of locations. Except as otherwise specified on drawings, centerline height of outlets above floorline shall be as follows:

Bracket Outlets	6'-6"
Wall Switches	4'-0"
Clock Outlets	7'-0"
Convenience Outlets	3'-8"
(Counters)	
Convenience Outlets	1'-6"

See plans for locations of other lighting and power outlets.

3.0 CONTROL OF CIRCUITS

Circuit control shall be provided as shown on drawings. Where no switches are shown on the drawings, the breaker switch in panel shall be used as the switching means, and shall be of the switching duty type.

4.0 WIRING DEVICES

Shall be as listed in legend and schedule described on drawings.

5.0 CONNECTIONS

All connections shall be made using Buchanan Compression Type connectors or equal, using nylon or P.V.C. insulators.

6.0 PLATES

All switches, receptacles and wiring device plates shall be chrome/brushed stainless steel as desired by Owner. Furnish and install same as directed. Chrome in baths and toilets, stainless steel in all other areas. All plates shall be 0.40 thick.

265000 LIGHTING AND EQUIPMENT (E)

1.0 DESCRIPTION AND GUARANTEE

Contractor shall furnish and install all lighting equipment as shown on the drawings and as contained in these specifications. All material shall be NEMA standard manufactured and shall be Underwriters Laboratories approved and shall bear that seal of approval. Contractor shall furnish and install all lamps of types and sizes as described on plans in the schedule of electrical equipment to the maximum size permitted by the fixture design. Equipment shall be tested and rendered operative by the contractor.

2.0 LIGHTING FIXTURE SCHEDULE

The contractor shall furnish and install the lighting fixtures complete for each and every light outlet in the type, quality and size of fixture indicated on plans and as described in the schedule. It shall be the responsibility of the contractor to check the plans with the schedule for completeness, as this schedule is made up for the purpose of indicating the general type, quality and size of fixtures that will be required. The use of catalog numbers describing a fixture does not necessarily include all the required accessories that may be required for a complete installation. The use of a vendor's name and catalog is for convenience in specifying the quality, style, size, finish and general type of fixture required and does not intentionally exclude similar equipment available from other manufacturers. This contractor shall include all fixtures, wiring, hanging, uncrating, connecting up, and making ready to operate. All fixture wire for fixtures shall be not less than #16 gauge, but larger if capacity of fixture requires it. All splices shall be pressure type connectors as hereinbefore described. Contractor shall include the cost of furnishing and installing all lamps for all fixtures under this contract throughout. All lamps for all fixtures shall be furnished in type specified. All tubes for all fluorescent fixtures shall be furnished by General Electric, Westinghouse, Sylvania or approved equal of color as later selected and type called for under each fixture type. The engineer reserves the privilege of having samples specified lighting fixtures mounted in place in operating condition for evaluation prior to final approval. In the event any fixture type is rejected for aesthetic or other reasons, the contractor shall procure and install other suitable fixtures as directed until a satisfactory approval is granted. Any difference in cost of fixtures thus approved shall be mutually agreed upon before installation, but all work involved in sample installations and final approval by the engineer shall be at no additional expense to the owner.

3.0 INSTALLATION OF LIGHTING FIXTURES

Fixtures shall be completely wired in accordance with the latest requirements of the National Electrical Code. All pendant type fixtures in the same room shall be installed at a uniform height from the floor and hang plumb. Fixtures shall be rigidly mounted in fixture stud in outlet box. Malleable iron hickies or extension pieces shall be provided where required. Each lighting fixture unit shall be installed in a manner approved by the manufacturer using a fastening method approved to sustain three times the weight of each unit. Use only stems, fittings and appurtenances provided by same fixture manufacturer. All suspended units where used with suspended ceiling shall be suspended from a structural portion of building and shall not be dependent upon ceiling for support. Contractor shall furnish and install all miscellaneous materials required to install

lighting fixtures. Provide and install suitable cover plates or canopy for fixture outlet box where the fixture does not provide a suitable cover. Fixtures located on exterior of building shall be installed with cadmium-plated brass screws. Electrical contractor shall confer with the general contractor to locate and install pendant-ceiling fixtures and install supports for any ceiling fixtures which require special provision for their support. Installation of all lighting fixtures shall be done by experienced mechanics. Lighting fixtures shall not be installed until finished coat of paint has been applied to ceilings and walls and allowed to dry thoroughly. Lighting fixtures in the equipment rooms shall not be installed until all piping and ductwork is in place. Lighting fixtures layout shown on plans is typical layout for bid purposes but must be modified by the contractor to provide adequate lighting of the equipment space according to final construction conditions. Any relocation of fixtures due to duct or piping interference shall be as directed by Architect, at the expense of the contractor and not billed to the owner.

4.0 OUTDOOR LIGHTING

Furnish and install outdoor lighting equipment as shown in detail on drawing. Ground all light poles. Furnish and install underground cable and conduit to concrete lighting fixture foundations as shown. Conduit to parking lot fixture may be schedule 80 pvc. Contractor shall install separate ground wire for all parking lot lighting. All poles shall be aluminum, style as indicated by representative catalog numbers. Furnish and install time switches on outdoor lighting circuits, as shown. Locate time switches as shown. Provide only time switch or time and photocell type operated at 120/208 volts using regulating type ballasts. Provide outdoor lighting on building perimeter as shown.

265200 EMERGENCY LIGHTING SYSTEM (E)

1.0 DESCRIPTION

The contractor shall furnish and install emergency lighting system as shown on plans and as follows; 12-volt emergency lighting units featuring lead calcium or nickel cadmium type batteries allowing up to 9 years without maintenance.

2.0 BATTERY/CHARGER

Batteries shall carry a minimum 9-year pro-rata guarantee. The charger shall constantly maintain battery at full charge during normal operation. Upon interruption of normal AC power, the transfer circuit shall automatically switch the DC load to battery providing emergency lighting. When normal power is restored, the load shall switch off and charger recharge battery to its initial state for next emergency. Charger and controls in units shall be fully automatic solid state of modified constant potential type designed to recharge in 12 hours of maximum load AC-0.7 amps in high rate. Charge rate pilot light shall indicate both AC input and state of charge. Test switch shall check transfer function and DC lamps. Cabinet construction shall be of 18 gauge CRS with baked-on bronze hammertone finish. Shall mount directly to wall by means of two keyhole slots.

3.0 FIXTURES, WIRING AND INSTALLATION

Equipment shall be as shown on plans. Construction shall be high-impact, heat resistant Lexan with fully adjustable swivel for remote mounting or unit equipment mounting. Units shall be supplied for conduit connection as standard knockouts for concealed entry. DC load fusing in compliance with UL 294 shall be supplied as standard, where required. Charger shall also be supplied with brownout sensitive circuit to connect load to battery when AC input falls to 35% of supply voltage.

266000 ELECTRICAL CONNECTIONS TO HVAC AND PLUMBING EQUIPMENT (E)

1.0 GENERAL

This contractor shall do all power wiring required for plumbing, ventilating and heating motors and pumps including mounting of switches and starters, as well as wiring of same. Electrical contractor shall furnish one manual thermal starter with all motors less than ½ HP; magnetic across-the-line starters will be furnished by respective contractors on unitary equipment.

Respective contractors refers to the contractor providing the equipment which requires control and power connections.

2.0 OVERCURRENT PROTECTION AND DISCONNECT SWITCHES

The contractor shall furnish and install overcurrent protection and disconnecting means as required by NEC for all motors. Motor driven equipment specified under plumbing and HVAC sections may be factory wired complete with controller motor disconnects; therefore, this contractor should check equipment purchased under these sections to avoid duplication of protective and disconnecting means. This contractor shall connect, ready for operation, motors and control apparatus specified under other sections unless specifically mentioned as being connected under such section. Each motor shall be provided with an enclosed safety switch having quick-make and quick-break contacts. The disconnecting switch shall open all ungrounded conductors simultaneously and shall have a rating equal to, or in excess of the motor control. Where manual control is called for in addition to automatic control, provide HAND-OFF-AUTO control. Each motor protective device shall be calibrated or selected for its rated capacity. NOTE: Heating and other contractors shall furnish, FOB, premises, the electrical magnetic switches for installation and connection by electrical contractor as indicated on the plans. Where more than one motor is wired to a single circuit, each motor shall be provided with a thermal protective switch.

3.0 THERMAL PROTECTION

Starters with thermal protection for motors will in general be furnished under the other sections of the specifications. Thermal elements are specified in these sections to protect all motors at 100% of the nameplate readings. Where the protection does not comply with the specifications the equipment supplier will be notified to have the thermal elements changed.

267200 FIRE ALARM SYSTEM (E)

1.0 DESCRIPTION OF SYSTEM

Furnish and install a completely supervised detection and fire alarm system, as manufactured by Simplex, Edwards, Fire Lite, or equal. The system shall contain battery back-up power to operate the system in case of power outage. The battery unit shall be provided with battery charger with a trickle charge feature. The system shall conform to the following National Fire Protection Association Bulletins:

1. NFPA-70 National Electrical Code, latest edition.
2. NFPA-101 Life Safety Code.
3. NFPA-72 latest edition.
4. All work to be performed by qualified personnel of the contractor experienced in such work.

2.0 WIRING

Electrical service for equipment shall be connected to the supply side of the service disconnect. Minimum wire size shall be as recommended by equipment manufacturer. (No wire smaller than 18-gauge will be approved). Use UL listed wire only. All wiring shall be concealed in walls or in conduit where exposed at the ceiling.

3.0 DRAWINGS

See drawings for equipment location. Drawings are schematic. Exact locations to be approved by architect in field before installation.

4.0 EQUIPMENT

The system components shall be as indicated on plans.

- 4.1 Strobes and horn strobes shall be ADA compliant and shall be installed to comply with same.
- 4.2 Pull stations shall be dual action type.
- 4.3 Smoke detectors shall be photoelectric.
- 4.4 Duct smoke detectors shall be ionization type with full-length sampling tube.
- 4.5 Fan shutdown shall be provided on all air handling systems greater than 2000 cfm.

- 4.6 The annunciator panel shall be located at the main entrance visible to the exterior, where possible.

5.0 MOUNTING, INSTRUCTIONS AND CHECKOUT

- 5.1 Securely mount all devices.
- 5.2 Provide instructions and maintenance manual for entire system.
- 5.3 Complete systems shall be tested and operation shall be demonstrated before final acceptance. Provide separate circuit from panel shown to battery charger unit. All wiring shall be permanently connected to unit.

Entire system shall be installed with separate wiring from other system of the building.

267400 TELECOMMUNICATION SYSTEMS (E)

1.0 DESCRIPTION OF SYSTEM

This Electrical Contractor shall furnish and install a system of raceways for use of supplying Telecommunication Company and private owner or tenant hired telecommunication systems installers in order to provide facilities for the installation of a complete and operative telecommunication system.

2.0 WIRING METHOD

Methods shall consist of but not be limited to:

1. Telecommunication terminator board (T.T.B.) in telecommunication entrance closed, painted 2 coats AIA grey.
2. 1-20A dedicated duplex receptacle mounted to lower left corner of TTB.
3. Ground conductor at telecommunication service entrance.
4. Pull line or telecommunication wires as directed in each telecommunication outlet location as shown on plan.
5. Removal of existing telecommunication lines as indicated on the plans.

3.0 RELATIONSHIP WITH TELEPHONE COMPANY

This electrical contractor shall perform to the following:

- 3.1 Communicate with franchised telecommunication company and conform to all requirements for telecommunication service installation.
- 3.2 Cooperate with owner's interconnect telecommunication company in use of specified conduit system selected by owner.
- 3.3 Cooperate with all telecommunication installers on location of conduits, boxes and fitting up of systems and final details such as plates, etc.

269000 CUTOVERS AND REMOVALS (E)

1.0 CUTOVER

Contractor shall arrange to cutover from existing to new equipment to minimize outage to equipment in service. Contractor shall advise the owner as to proposed time of cutover.

2.0 REMOVALS

The contractor shall remove existing electrical feeds upon completion of cutover.

269200 COMPLETION OF WORK (E)

1.0 TESTING

Completed installation shall be tested. Cable shall be tested with ohmmeter for grounds, opens, insulation resistance. Cable insulation resistance shall be in the megohm range in the category required by I.P.C.E.A. for the cable.

2.0 ACCEPTANCE

In the presence of engineer and owner, demonstrate operation of systems and that all specifications have been met to the satisfaction of the owner.

3.0 MISCELLANEOUS

Provide all miscellaneous spare parts, devices and appurtenances as required. Install and test.

4.0 CLOSE OUT

4.1 Contractor shall provide 2 copies of all O&M manuals, warranty and catalog cut data in a 3 ring binder, neatly arranged, to the owner prior to application of final payment. Binder shall be acceptable to owner and engineer prior to approval of final payment.

4.2 Demonstrate to building maintenance personnel correct preventive and schedule maintenance services.

4.3 Provide warranty to owner, including points of contact for warranty work for system installation and manufacturers equipment installed.

Final payment will not be released until contract closeout is complete.

269400 SEQUENCE OF CONTRACT WORK (E)

1.0 DESCRIPTION

This project work shall be subject to strict coordination of all trades to permit completely normal operations of this facility throughout the construction of the new addition and the reconstruction of the existing facility. Sequencing shall consist of the following or variations thereof:

1. Remove existing equipment and connections as indicated.
2. Install new systems as equipment as indicated.
3. Provide service cut-overs from existing to new.

2.0 CONTRACTOR WORK PHASING

This contractor shall phase all work to meet the foregoing conditions of the project work. Said phasing shall require, but not be limited to the following:

1. Temporary relocation of all mechanical and electrical components to permit construction (i.e. HVAC & Electrical).
2. Installation of new electric, telephone and communication services and rendering same operative to new and existing systems.
3. Installation of new heating system.
4. Installation of new plumbing facilities and interconnections.
5. Rendering operative of new work and keeping existing area in operation.
6. Alterations and all new work in existing building.
7. Removal of specified services and equipments in existing building.

SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

1. Preparing subgrades for slabs-on-grade walks pavements lawns and grasses and exterior plants.
2. Excavating and backfilling for buildings and structures.
3. Drainage course for slabs-on-grade.
4. Subbase course for concrete walks pavements.
5. Subbase and base course for asphalt paving.
6. Subsurface drainage backfill for walls and trenches.
7. Excavating and backfilling for utility trenches.
8. Excavating and backfilling trenches for buried mechanical and electrical utilities and pits for buried utility structures.

- B. Related Sections include the following:

1. Division 03 Section "Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
2. Division 31 Section "Site Clearing" for temporary erosion and sedimentation control measures, site stripping, grubbing, stripping[**and stockpiling**] topsoil, and removal of above- and below-grade improvements and utilities.
3. Division 31 Section "Dewatering" for lowering and disposing of ground water during construction.
4. Division 31 Section "Excavation Support and Protection" for shoring, bracing, and sheet piling of excavations.
5. Division 32 Section "Turf and Grasses" for finish grading, including preparing and placing topsoil and planting soil for lawns.

1.3 UNIT PRICES

1.4 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 2. Final Backfill: Backfill placed over initial backfill to fill a trench.

- B. Base Course: Course placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Drainage Course: Course supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
- F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
 - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Architect. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 - 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
 - 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Owner. Unauthorized excavation, as well as remedial work directed by Architect, shall be without additional compensation.
- G. Fill: Soil materials used to raise existing grades.
- H. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
 - 1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- wide, maximum, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,090 lbf and stick-crowd force of not less than 18,650 lbf; measured according to SAE J-1179.
 - 2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 210-hp flywheel power and developing a minimum of 48,510-lbf breakout force with a general-purpose bare bucket; measured according to SAE J-732.
- I. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material 3/4 cu. yd. or more in volume that exceed a standard penetration resistance of 100 blows/2 inches when tested by an independent geotechnical testing agency, according to ASTM D 1586.
- J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- K. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or course placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.

- L. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- M. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.5 SUBMITTALS

- A. Product Data: For the following:
 - 1. Each type of plastic warning tape.
 - 2. Geotextile.
 - 3. Controlled low-strength material, including design mixture.
- B. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated:
 - 1. Classification according to ASTM D 2487 of each on-site and borrow soil material proposed for fill and backfill.
 - 2. Laboratory compaction curve according to ASTM D 698 ASTM D 1557 for each on-site and borrow soil material proposed for fill and backfill.

1.6 QUALITY ASSURANCE

1.7 PROJECT CONDITIONS

- A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Architect and then only after arranging to provide temporary utility services according to requirements indicated.
 - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Architect's written permission.
 - 3. Contact utility-locator service for area where Project is located before excavating.
- B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Soils: ASTM D 2487 Soil Classification Groups GW, GP, GM, SW, SP, and SM, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 8 percent passing a No. 200 sieve.
- H. Drainage Course: Narrowly graded mixture of [**washed**] crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.
- I. Filter Material: Narrowly graded mixture of natural or crushed gravel, or crushed stone and natural sand; ASTM D 448; coarse-aggregate grading Size 67; with 100 percent passing a 1-inch sieve and 0 to 5 percent passing a No. 4 sieve.
- J. Sand: ASTM C 33; fine aggregate, natural, or manufactured sand.
- K. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
- B. Detectable Warning Tape: Acid- and alkali-resistant polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.

5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31 Section "Site Clearing."
- C. Protect and maintain erosion and sedimentation controls, which are specified in Division 31 Section "Site Clearing," during earthwork operations.
- D. Provide protective insulating materials to protect subgrades and foundation soils against freezing temperatures or frost.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.
 2. Install a dewatering system to keep subgrades dry and convey ground water away from excavations. Maintain until dewatering is no longer required.

3.3 EXPLOSIVES

- A. Explosives: Do not use explosives.

3.4 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

2. Remove rock to lines and grades indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 24 inches outside of concrete forms other than at footings.
 - b. 12 inches outside of concrete forms at footings.
 - c. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - d. Outside dimensions of concrete walls indicated to be cast against rock without forms or exterior waterproofing treatments.
 - e. 6 inches beneath bottom of concrete slabs on grade.
 - f. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe or 42 inches wide.

3.5 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
 1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
 2. Pile Foundations: Stop excavations 6 to 12 inches above bottom of pile cap before piles are placed. After piles have been driven, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.
 3. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

3.7 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit, unless otherwise indicated.
 1. Clearance: 12 inches each side of pipe or conduit.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of

pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches in nominal diameter and flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe circumference. Fill depressions with tamped sand backfill.
 3. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.
- D. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe elevation to allow for bedding course. Hand excavate for bell of pipe.
1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

3.8 SUBGRADE INSPECTION

- A. Notify Architect when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Proof-roll subgrade below the building slabs and pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
 2. Proof-roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
 3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Architect, without additional compensation.

3.9 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Architect.

1. Fill unauthorized excavations under other construction or utility pipe as directed by Architect.

3.10 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.11 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
 2. Surveying locations of underground utilities for Record Documents.
 3. Testing and inspecting underground utilities.
 4. Removing concrete formwork.
 5. Removing trash and debris.
 6. Removing temporary shoring and bracing, and sheeting.
 7. Installing permanent or temporary horizontal bracing on horizontally supported walls.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.12 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill trenches excavated under footings and within 18 inches of bottom of footings with satisfactory soil; fill with concrete to elevation of bottom of footings.
- D. Provide 4-inch- thick, concrete-base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase.
- E. Place and compact initial backfill of subbase material, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the utility pipe or conduit.
 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

- F. Controlled Low-Strength Material: Place initial backfill of controlled low-strength material to a height of 12 inches over the utility pipe or conduit.
- G. Backfill voids with satisfactory soil while installing and removing shoring and bracing.
- H. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- I. Controlled Low-Strength Material: Place final backfill of controlled low-strength material to final subgrade elevation.
- J. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.13 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use satisfactory soil material.
 - 2. Under walks and pavements, use satisfactory soil material.
 - 3. Under steps and ramps, use engineered fill.
 - 4. Under building slabs, use engineered fill.
 - 5. Under footings and foundations, use engineered fill.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.14 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
 - 1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
 - 2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
 - 3. Under lawn or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
 - 4. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent.

3.16 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 1 inch.
 - 2. Walks: Plus or minus 1 inch.
 - 3. Pavements: Plus or minus 1/2 inch.
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10-foot straightedge.

3.17 SUBSURFACE DRAINAGE

- A. Subdrainage Pipe: Specified in Division 33 Section "Subdrainage."
- B. Subsurface Drain: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a 6-inch course of filter material on subsurface drainage geotextile to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches of filter material, placed in compacted layers 6 inches thick, and wrap in subsurface drainage geotextile, overlapping sides and ends at least 6 inches.
 - 1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 698.
- C. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade, in compacted layers 6 inches thick. Overlay drainage backfill with 1 layer of subsurface drainage geotextile, overlapping sides and ends at least 6 inches.

1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 698.
2. Place and compact impervious fill over drainage backfill in 6-inch- thick compacted layers to final subgrade.

3.18 SUBBASE AND BASE COURSES

- A. Place subbase and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase and base course under pavements and walks as follows:
 1. Install separation geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
 2. Place base course material over subbase course under hot-mix asphalt pavement.
 3. Shape subbase and base course to required crown elevations and cross-slope grades.
 4. Place subbase and base course 6 inches or less in compacted thickness in a single layer.
 5. Place subbase and base course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 6. Compact subbase and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.
- C. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase and base layer to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.19 DRAINAGE COURSE

- A. Place drainage course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place and compact drainage course under cast-in-place concrete slabs-on-grade as follows:
 1. Install subdrainage geotextile on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.
 2. Place drainage course 6 inches or less in compacted thickness in a single layer.
 3. Place drainage course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 4. Compact each layer of drainage course to required cross sections and thicknesses to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

3.20 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality-control testing.

- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work comply with requirements.
- C. Footing Subgrade: At footing subgrades, at least one test of each soil stratum will be performed to verify design bearing capacities. Subsequent verification and approval of other footing subgrades may be based on a visual comparison of subgrade with tested subgrade when approved by Architect.
- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
 - 1. Paved and Building Slab Areas: At subgrade and at each compacted fill and backfill layer, at least 1 test for every 500 sq. feet or less of paved area or building slab, but in no case fewer than 3 tests.
 - 2. Foundation Wall Backfill: At each compacted backfill layer, at least 1 test for each 100 feet or less of wall length, but no fewer than 2 tests.
 - 3. Trench Backfill: At each compacted initial and final backfill layer, at least 1 test for each 150 feet or less of trench length, but no fewer than 2 tests.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil to depth required; recompact and retest until specified compaction is obtained.

3.21 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Architect; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

- B. Disposal: Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Architect.
 - 1. Remove waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off Owner's property.

END OF SECTION 312000

SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Cold milling of existing hot-mix asphalt pavement.
2. Hot-mix asphalt patching.
3. Hot-mix asphalt paving.
4. Hot-mix asphalt paving overlay.
5. Asphalt surface treatments.
6. Pavement-marking paint.
7. Traffic-calming devices.
8. Imprinted asphalt.

- B. Related Sections:

1. Division 31 Section "Earth Moving" for aggregate subbase and base courses and for aggregate pavement shoulders.
2. Division 32 Section "Concrete Paving Joint Sealants" for joint sealants and fillers at paving terminations.

1.3 DEFINITION

- A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.
 1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
 2. Job-Mix Designs: For each job mix proposed for the Work.
- B. Qualification Data: For qualified manufacturer and Installer.
- C. Material Certificates: For each paving material, from manufacturer.
- D. Material Test Reports: For each paving material.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of state in which Project is located.
- B. Installer Qualifications: Imprinted-asphalt manufacturer's authorized installer who is trained and approved for installation of imprinted asphalt required for this Project.
- C. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.
- D. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
 - a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
 - b. Review condition of subgrade and preparatory work.
 - c. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
 - d. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.
- B. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
 - 1. Prime Coat: Minimum surface temperature of 60 deg F.
 - 2. Tack Coat: Minimum surface temperature of 60 deg F.
 - 3. Slurry Coat: Comply with weather limitations in ASTM D 3910.
 - 4. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
 - 5. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.
- B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for oil-based materials or 55 deg F for water-based materials, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 AGGREGATES

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.
- B. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.
- C. Fine Aggregate: ASTM D 1073 or AASHTO M 29, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.
 - 1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.
- D. Mineral Filler: ASTM D 242 or AASHTO M 17, rock or slag dust, hydraulic cement, or other inert material.

2.2 ASPHALT MATERIALS

- A. Asphalt Binder: AASHTO M 320 or AASHTO MP 1a,.
- B. Asphalt Cement: ASTM D 3381 for viscosity-graded material or ASTM D 946 for penetration-graded material.
- C. Tack Coat: ASTM D 977 or AASHTO M 140 emulsified asphalt, or ASTM D 2397 or AASHTO M 208 cationic emulsified asphalt, slow setting, diluted in water, of suitable grade and consistency for application.
- D. Water: Potable.
- E. Undersealing Asphalt: ASTM D 3141, pumping consistency.

2.3 AUXILIARY MATERIALS

- A. Pavement-Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, complying with AASHTO M 248, Type N; colors complying with FS TT-P-1952.
 - 1. Color: White or Blue.
- B. Pavement-Marking Paint: MPI #32 Alkyd Traffic Marking Paint.
 - 1. Color: White or Blue.
- C. Pavement-Marking Paint: Latex, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952, Type II, with drying time of less than three minutes.

1. Color: White or Blue.
- D. Pavement-Marking Paint: MPI #97 Latex Traffic Marking Paint.
 1. Color: White or Blue.
- E. Glass Beads: AASHTO M 247, Type 1.
- F. Wheel Stops: Precast, air-entrained concrete, 2500-psi minimum compressive strength, 4-1/2 inches high by 9 inches wide by 72 inches long. Provide chamfered corners, drainage slots on underside, and holes for anchoring to substrate.
 1. Dowels: Galvanized steel, 3/4-inch diameter, 10-inch minimum length.

2.4 MIXES

- A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes approved by authorities having jurisdiction; designed according to procedures in AI MS-2, "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types"; and complying with the following requirements:
 1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to begin paving.
- B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 1. Completely proof-roll subgrade in one direction, repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph.
 2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
 3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.
- C. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 COLD MILLING

- A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.
 1. Mill to a depth of 2 inches.
 2. Mill to a uniform finished surface free of excessive gouges, grooves, and ridges.

3. Control rate of milling to prevent tearing of existing asphalt course.
4. Repair or replace curbs, manholes, and other construction damaged during cold milling.
5. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
6. Transport milled hot-mix asphalt to asphalt recycling facility.
7. Keep milled pavement surface free of loose material and dust.

3.3 PATCHING

- A. Hot-Mix Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.
- B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseat concrete pieces firmly.
 1. Pump hot undersealing asphalt under rocking slab until slab is stabilized or, if necessary, crack slab into pieces and roll to reseat pieces firmly.
 2. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.
- C. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.05 to 0.15 gal./sq. yd..
 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- D. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.
- E. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

3.4 REPAIRS

- A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.
 1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.
- B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch.
 1. Clean cracks and joints in existing hot-mix asphalt pavement.

2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.
3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch wide. Fill flush with surface of existing pavement and remove excess.

3.5 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
- B. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd..
 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.6 HOT-MIX ASPHALT PLACING

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
 1. Place hot-mix asphalt base course in 2 lifts of 1.5" and thicknesses indicated.
 2. Place hot-mix asphalt surface course in single lift of 1.5".
 3. Spread mix at minimum temperature of 250 deg F.
 4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
 5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
 1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.7 JOINTS

- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
 1. Clean contact surfaces and apply tack coat to joints.
 2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.

3. Offset transverse joints, in successive courses, a minimum of 24 inches.
4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.8 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
 1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
 1. Average Density: 96 percent of reference laboratory density according to ASTM D 6927 or AASHTO T 245, but not less than 94 percent nor greater than 100 percent.
 2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.9 ASPHALT CURBS

- A. Construct hot-mix asphalt curbs over compacted pavement surfaces. Apply a light tack coat unless pavement surface is still tacky and free from dust. Spread mix at minimum temperature of 250 deg F.
 - 1. Asphalt Mix: Same as pavement surface-course mix.
- B. Place hot-mix asphalt to curb cross section indicated or, if not indicated, to local standard shapes, by machine or by hand in wood or metal forms. Tamp hand-placed materials and screed to smooth finish. Remove forms after hot-mix asphalt has cooled.

3.10 INSTALLATION TOLERANCES

- A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
 - 1. Base Course: Plus or minus 1/2 inch.
 - 2. Surface Course: Plus 1/4 inch, no minus.
- B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
 - 1. Base Course: 1/4 inch.
 - 2. Surface Course: 1/8 inch.
 - 3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
- C. Traffic-Calming Devices: Compact and form asphalt to produce the contour indicated and within a tolerance of plus or minus 1/8 inch of height indicated above pavement surface.

3.11 SURFACE TREATMENTS

- A. Fog Seals: Apply fog seal at a rate of 0.10 to 0.15 gal./sq. yd. to existing asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.
- B. Slurry Seals: Apply slurry coat in a uniform thickness according to ASTM D 3910 and allow to cure.
 - 1. Roll slurry seal to remove ridges and provide a uniform, smooth surface.

3.12 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Allow paving to age for 30 days before starting pavement marking.

- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.
 - 1. Broadcast glass beads uniformly into wet pavement markings at a rate of 6 lb/gal..

3.13 WHEEL STOPS

- A. Securely attach wheel stops to pavement with not less than two galvanized-steel dowels embedded at one-quarter to one-third points. Securely install dowels into pavement and bond to wheel stop. Recess head of dowel beneath top of wheel stop.

3.14 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979 or AASHTO T 168.
 - 1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
 - 2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
 - a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than 3 cores taken.
 - b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.
- E. Replace and compact hot-mix asphalt where core tests were taken.
- F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.15 DISPOSAL

- A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow milled materials to accumulate on-site.

END OF SECTION 321216

SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes exterior cement concrete pavement for the following:
 - 1. Curbs.
 - 2. Walkways.
- B. Related Sections include the following:
 - 1. Division 03 Section "Cast-in-Place Concrete" for general building applications of concrete.
 - 2. Division 31 Section "Earth Moving" for subgrade preparation, grading, and subbase course.
 - 3. Division 32 Section "Decorative Concrete Paving" for surface-imprinted, stamped finished concrete pavement.
 - 4. Division 32 Section "Concrete Paving Joint Sealants" for joint sealants of joints in concrete pavement and at isolation joints of concrete pavement with adjacent construction.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixtures: For each concrete pavement mixture. Include alternate mixture designs when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Qualification Data: For testing agency.
- D. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:

1. Aggregates. Include service record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
- E. Material Certificates: Signed by manufacturers certifying that each of the following materials complies with requirements:
1. Cementitious materials.
 2. Steel reinforcement and reinforcement accessories.
 3. Fiber reinforcement.
 4. Admixtures.
 5. Curing compounds.
 6. Applied finish materials.
 7. Bonding agent or epoxy adhesive.
 8. Joint fillers.
- F. Field quality-control test reports.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products who complies with ASTM C 94/C 94M requirements for production facilities and equipment.
1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- B. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
- C. ACI Publications: Comply with ACI 301, "Specification for Structural Concrete," unless modified by requirements in the Contract Documents.
- D. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
1. Before submitting design mixtures, review concrete pavement mixture design and examine procedures for ensuring quality of concrete materials and concrete pavement construction practices. Require representatives, including the following, of each entity directly concerned with concrete pavement, to attend conference:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete producer.
 - d. Concrete pavement subcontractor.

1.6 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 2. Products: Subject to compliance with requirements, provide one of the products specified.
 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
1. Use flexible or curved forms for curves with a radius 100 feet or less.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.3 STEEL REINFORCEMENT

- A. Plain-Steel Welded Wire Reinforcement: ASTM A 185, fabricated from as-drawn steel wire into flat sheets.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
- C. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60. Cut bars true to length with ends square and free of burrs.
- D. Tie Bars: ASTM A 615/A 615M, Grade 60, deformed.
- E. Hook Bolts: ASTM A 307, Grade A, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.
- F. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete, and as follows:

1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.
- G. Epoxy Repair Coating: Liquid two-part epoxy repair coating, compatible with epoxy coating on reinforcement.
- H. Zinc Repair Material: ASTM A 780.

2.4 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source throughout the Project:
1. Portland Cement: ASTM C 150, Type I, gray. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class F.
- B. Normal-Weight Aggregates: ASTM C 33, Class 4S coarse aggregate, uniformly graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar pavement applications and service conditions using similar aggregates and cementitious materials.
1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

2.5 FIBER REINFORCEMENT - Optional

- A. Synthetic Fiber: Monofilament or fibrillated polypropylene fibers engineered and designed for use in concrete pavement, complying with ASTM C 1116, Type III, 1/2 to 1-1/2 inches long.
1. Products:

a. Monofilament Fibers:

- 1) Axim Concrete Technologies; Fibrasol IIP.
- 2) Euclid Chemical Company (The); Fiberstrand 100.
- 3) FORTA Corporation; Forta Mono.
- 4) Grace, W. R. & Co.--Conn.; Grace MicroFiber.
- 5) Metalcrete Industries; Polystrand 1000.
- 6) SI Concrete Systems; Fibermix Stealth.

b. Fibrillated Fibers:

- 1) Axim Concrete Technologies; Fibrasol F.
- 2) FORTA Corporation; Forta.
- 3) Euclid Chemical Company (The); Fiberstrand F.
- 4) Grace, W. R. & Co.--Conn.; Grace Fibers.
- 5) SI Concrete Systems; Fibermesh.

2.6 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular film forming; manufactured for application to fresh concrete.

1. Products:

- a. Axim Concrete Technologies; Cimfilm.
- b. Burke by Edeco; BurkeFilm.
- c. ChemMasters; Spray-Film.
- d. Conspec Marketing & Manufacturing Co., Inc.; Aquafilm.
- e. Dayton Superior Corporation; Sure Film.
- f. Euclid Chemical Company (The); Eucobar.
- g. Kaufman Products, Inc.; Vapor Aid.
- h. Lambert Corporation; Lambco Skin.
- i. L&M Construction Chemicals, Inc.; E-Con.
- j. MBT Protection and Repair, ChemRex Inc.; Confilm.
- k. Meadows, W. R., Inc.; Sealtight Evapre.
- l. Metalcrete Industries; Waterhold.
- m. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
- n. Sika Corporation, Inc.; SikaFilm.
- o. Symons Corporation; Finishing Aid.
- p. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.

- E. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

1. Products:

- a. Anti-Hydro International, Inc.; AH Curing Compound #2 DR WB.
- b. Burke by Edoko; Aqua Resin Cure.
- c. ChemMasters; Safe-Cure Clear.
- d. Conspec Marketing & Manufacturing Co., Inc.; W.B. Resin Cure.
- e. Dayton Superior Corporation; Day Chem Rez Cure (J-11-W).
- f. Euclid Chemical Company (The); Kurez DR VOX.
- g. Kaufman Products, Inc.; Thinfilm 420.
- h. Lambert Corporation; Aqua Kure-Clear.
- i. L&M Construction Chemicals, Inc.; L&M Cure R.
- j. Meadows, W. R., Inc.; 1100 Clear.
- k. Nox-Crete Products Group, Kinsman Corporation; Resin Cure E.
- l. Symons Corporation; Resi-Chem Clear.
- m. Tamms Industries Inc.; Horncure WB 30.
- n. Unitex; Hydro Cure 309.
- o. Vexcon Chemicals, Inc.; Certi-Vex Enviocure 100.

F. White Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B.

1. Products:

- a. Anti-Hydro International, Inc.; AH Curing Compound #2 WP WB.
- b. Burke by Edoco; Resin Emulsion White.
- c. ChemMasters; Safe-Cure 2000.
- d. Conspec Marketing & Manufacturing Co., Inc.; W.B. Resin Cure.
- e. Dayton Superior Corporation; Day-Chem White Pigmented Cure (J-10-W).
- f. Euclid Chemical Company (The); Kurez VOX White Pigmented.
- g. Kaufman Products, Inc.; Thinfilm 450.
- h. Lambert Corporation; Aqua Kure-White.
- i. L&M Construction Chemicals, Inc.; L&M Cure R-2.
- j. Meadows, W. R., Inc.; 1200-White.
- k. Symons Corporation; Resi-Chem White.
- l. Tamms Industries, Inc.; Horncure 200-W.
- m. Unitex; Hydro White.
- n. Vexcon Chemicals, Inc.; Certi-Vex Enviocure White 100.

2.7 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

1. Manufacturers:

- a. Bayer Corporation.
- b. ChemMasters.
- c. Conspec Marketing & Manufacturing Co., Inc.
- d. Davis Colors.
- e. Elementis Pigments, Inc.
- f. Hoover Color Corporation.
- g. Lambert Corporation.

- h. Scofield, L. M. Company.
 - i. Solomon Colors.
 - 2. Color: As indicated by manufacturer's designation.
- B. Chemical Surface Retarder: Water-soluble, liquid-set retarder with color dye, for horizontal concrete surface application, capable of temporarily delaying final hardening of concrete to a depth of 1/8 to 1/4 inch.
 - 1. Products:
 - a. Burke by Edeco; True Etch Surface Retarder.
 - b. ChemMasters; Exposee.
 - c. Conspec Marketing & Manufacturing Co., Inc.; Delay S.
 - d. Euclid Chemical Company (The); Surface Retarder S.
 - e. Kaufman Products, Inc.; Expose.
 - f. Metalcrete Industries; Surfard.
 - g. Nox-Crete Products Group, Kinsman Corporation; Crete-Nox TA.
 - h. Scofield, L. M. Company; Lithotex.
 - i. Sika Corporation, Inc.; Rugasol-S.
 - j. Vexcon Chemicals, Inc.; Certi-Vex Envioset.

2.8 WHEEL STOPS

- A. Wheel Stops: Precast, air-entrained concrete, 2500-psi minimum compressive strength, 4-1/2 inches high by 9 inches wide by 72 inches long. Provide chamfered corners and drainage slots on underside and holes for anchoring to substrate.
 - 1. Dowels: Galvanized steel, 3/4-inch diameter, 10-inch minimum length.

2.9 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes or field experience.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed concrete mixture designs for the trial batch method.
- B. Proportion mixtures to provide normal-weight concrete with the following properties:
 - 1. Compressive Strength (28 Days): 3000 psi.
 - 2. Maximum Water-Cementitious Materials Ratio at Point of Placement: 0.45.
 - 3. Slump Limit: 4 inches, plus or minus 1 inch.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
 - 1. Air Content: 5-1/2 percent plus or minus 1.5 percent for 1-1/2-inch nominal maximum aggregate size.

2. Air Content: 6 percent plus or minus 1.5 percent for 1-inch nominal maximum aggregate size.
 3. Air Content: 6 percent plus or minus 1.5 percent for 3/4-inch nominal maximum aggregate size
- D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing admixture in concrete, as required, for placement and workability.
 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
- F. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals. as follows:
1. Fly Ash or Pozzolan: 25 percent.
 2. Ground Granulated Blast-Furnace Slag: 50 percent.
 3. Combined Fly Ash or Pozzolan, and Ground Granulated Blast-Furnace Slag: 50 percent, with fly ash or pozzolan not exceeding 25 percent.
- G. Synthetic Fiber: Uniformly disperse in concrete mix at manufacturer's recommended rate, but not less than 1.0 lb/cu. yd..

2.10 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116. Furnish batch certificates for each batch discharged and used in the Work.
1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.
- B. Project-Site Mixing: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Mix concrete materials in appropriate drum-type batch machine mixer.
1. For concrete mixes of 1 cu. yd. or smaller, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after ingredients are in mixer, before any part of batch is released.
 2. For concrete mixes larger than 1 cu. yd., increase mixing time by 15 seconds for each additional 1 cu. yd..
 3. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mixture type, mixing time, quantity, and amount of water added.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proceed with concrete pavement operations only after nonconforming conditions have been corrected and subgrade is ready to receive pavement.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.5 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.
 - 1. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

- B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour unless pavement terminates at isolation joints.
 - 1. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
 - 1. Locate expansion joints at intervals of 50 feet, unless otherwise indicated.
 - 2. Extend joint fillers full width and depth of joint.
 - 3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 - 4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 - 5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 - 6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows to match jointing of existing adjacent concrete pavement:
 - 1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 3/8-inch radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
 - 2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
 - 3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.
- E. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to a 3/8-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces.

3.6 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast in. Notify other trades to permit installation of their work.
- B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site.
- F. Do not add water to fresh concrete after testing.
- G. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- H. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
 - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- I. Place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed.
- J. Screed pavement surfaces with a straightedge and strike off.
- K. Commence initial floating using bull floats or darbies to impart an open textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- L. Curbs: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not approved, remove and replace with formed concrete.
- M. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
 - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 - 2. Do not use frozen materials or materials containing ice or snow.
 - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mix designs.
- N. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.7 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating float-finished concrete surface 1/16 to 1/8 inch deep with a stiff-bristled broom, perpendicular to line of traffic.

3.8 SPECIAL FINISHES

3.9 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 1. Moist Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.

- c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.10 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: 1/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface: Gap below 10-foot- long, unlevelled straightedge not to exceed 1/4 inch.
4. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch.
5. Vertical Alignment of Tie Bars and Dowels: 1/4 inch.
6. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch.
7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches.
8. Joint Spacing: 3 inches.
9. Contraction Joint Depth: Plus 1/4 inch, no minus.
10. Joint Width: Plus 1/8 inch, no minus.

3.11 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 1. Testing Frequency: Obtain at least 1 composite sample for each 100 cu. yd. or fraction thereof of each concrete mix placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mix. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mix.

4. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test 1 specimen at 7 days and 2 specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from 2 specimens obtained from same composite sample and tested at 28 days.
- C. Strength of each concrete mix will be satisfactory if average of any 3 consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
- G. Remove and replace concrete pavement where test results indicate that it does not comply with specified requirements.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.12 REPAIRS AND PROTECTION

- A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
- B. Drill test cores, where directed by Architect, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.
- C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 321373 - CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Expansion and contraction joints within cement concrete pavement.
 - 2. Joints between cement concrete and asphalt pavement.
- B. Related Sections include the following:
 - 1. Division 07 Section "Joint Sealants" for sealing nontraffic and traffic joints in locations not specified in this Section.
 - 2. Division 32 Section "Asphalt Paving" for constructing joints between concrete and asphalt pavement.
 - 3. Division 32 Section "Concrete Paving" for constructing joints in concrete pavement.

1.3 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
- C. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for sealants.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.

- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 for testing indicated, as documented according to ASTM E 548.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in original unopened containers or bundles with labels indicating manufacturer, product name and designation, color, expiration date, pot life, curing time, and mixing instructions for multicomponent materials.
- B. Store and handle materials to comply with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 - 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
 - 2. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 - 3. When joint substrates are wet or covered with frost.
 - 4. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 5. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products listed in other Part 2 articles.
- B. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.

2.2 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As indicated by manufacturer's designations.

2.3 COLD-APPLIED JOINT SEALANTS

- A. Multicomponent Jet-Fuel-Resistant Sealant for Concrete: Pourable, chemically curing elastomeric formulation complying with the following requirements for formulation and with ASTM C 920 for type, grade, class, and uses indicated:
 - 1. Urethane Formulation: Type M; Grade P; Class 12-1/2; Uses T, M, and, as applicable to joint substrates indicated, O.
 - a. Products:
 - 1) Pecora Corporation; Urexpam NR-300.
 - 2) Approved equal.
 - 2. Coal-Tar-Modified Polymer Formulation: Type M; Grade P; Class 25; Uses T and, as applicable to joint substrates indicated, O.
 - a. Products:
 - 1) Meadows, W. R., Inc.; Sealtight Gardox.
 - 3. Bitumen-Modified Urethane Formulation: Type M; Grade P; Class 25; Uses T, M, and, as applicable to joint substrates indicated, O.
 - a. Products:
 - 1) Tremco Sealant/Waterproofing Division; Vulkem 202.
- B. Type NS Silicone Sealant for Concrete: Single-component, low-modulus, neutral-curing, nonsag silicone sealant complying with ASTM D 5893 for Type NS.
 - 1. Products:
 - a. Crafcro Inc.; RoadSaver Silicone.
 - b. Dow Corning Corporation; 888.

2.4 JOINT-SEALANT BACKER MATERIALS

- A. General: Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.
- B. Round Backer Rods for Cold- and Hot-Applied Sealants: ASTM D 5249, Type 1, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.
- C. Backer Strips for Cold- and Hot-Applied Sealants: ASTM D 5249; Type 2; of thickness and width required to control sealant depth, prevent bottom-side adhesion of sealant, and fill remainder of joint opening under sealant.
- D. Round Backer Rods for Cold-Applied Sealants: ASTM D 5249, Type 3, of diameter and density required to control sealant depth and prevent bottom-side adhesion of sealant.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install backer materials of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of backer materials.
 - 2. Do not stretch, twist, puncture, or tear backer materials.
 - 3. Remove absorbent backer materials that have become wet before sealant application and replace them with dry materials.
- D. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses provided for each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealants from surfaces adjacent to joint.
 2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.
- F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions, unless otherwise indicated.
- G. Provide recessed joint configuration for silicone sealants of recess depth and at locations indicated.

3.4 CLEANING

- A. Clean off excess sealants or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations with repaired areas are indistinguishable from the original work.

END OF SECTION 321373

SECTION 321723: PAVEMENT MARKINGS**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes painted markings applied to asphalt pavement.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include technical data and tested physical and performance properties.
- B. Shop Drawings: For pavement markings.
 - 1. Indicate pavement markings, colors, lane separations, defined parking spaces, and dimensions to adjacent work.
 - 2. Indicate, with international symbol of accessibility, spaces allocated for people with disabilities.
- C. Samples: For each exposed product and for each color and texture specified; on rigid backing, 8 inches square.

1.4 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of the NYSDOT for pavement-marking work.
 - 1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.5 FIELD CONDITIONS

- A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for alkyd materials, 55 deg F for water-based materials, and not exceeding 95 deg F.

PART 2: PRODUCTS**2.1 MATERIALS**

- A. Paint: DOT Section 640-2, yellow or white as indicated, or if not indicated as directed. Glass Beads shall be applied to all road striping, crosswalk striping, and directional arrow markings, within NYSDOT right-of-way.
- B. Rapid Dry Paint: Aexcel Corp., www.aexcelcorp.com, 12W-D310 White, 12Y-D330 Yellow; Sherwin-Williams, www.swpavementmarkings.com, TM5126 White, TM5127 Yellow; Franklin Paint Company, Inc., www.franklinpaint.com, 2040 White, 2041 Yellow.

PART 3: EXECUTION**3.1 EXAMINATION**

- A. Verify that pavement is dry and in suitable condition to begin pavement marking according to manufacturer's written instructions.
- B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Engineer/Architect.
- B. Allow paving to age for a minimum of 30 days before starting pavement marking.
- C. Sweep and clean surface to eliminate loose material and dust.
- D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.
 - 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to pavement. Mask an extended area beyond edges of each stencil to prevent paint application beyond the stencil. Apply paint so that it cannot run beneath the stencil.
 - 2. Broadcast glass beads uniformly into wet markings at a rate of 6 lb/gal, for all pavement markings within NYSDOT right-of-way.

3.3 PROTECTING AND CLEANING

- A. Protect pavement markings from damage and wear during remainder of construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 321723

SECTION 321726: TACTILE WARNING SURFACING**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Detectable warning unit pavers.
- B. Related Requirements:
 - 1. Section 321313 "Concrete Paving" for concrete walkways serving as substrates for tactile warning surfacing.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Initial Selection: For each type of exposed finish requiring color selection.
- C. Samples for Verification: For each type of tactile warning surface, in manufacturer's standard sizes unless otherwise indicated, showing edge condition, truncated-dome pattern, texture, color, and cross section; with fasteners and anchors.

1.4 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For tactile warning surfacing, to include in maintenance manuals.

1.5 PROJECT CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- B. Weather Limitations for Mortar and Grout:
 - 1. Cold-Weather Requirements: Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

2. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602. Provide artificial shade and windbreaks, and use cooled materials as required. Do not apply mortar to substrates with temperatures of 100 deg F and higher.
 - a. When ambient temperature exceeds 100 deg F, or when wind velocity exceeds 8 mph and ambient temperature exceeds 90 deg F, set unit pavers within 1 minute of spreading setting-bed mortar.

1.6 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of tactile warning surfaces that fail in materials or workmanship within specified warranty period.

PART 2: PRODUCTS

2.1 TACTILE WARNING SURFACING, GENERAL

- A. Accessibility Requirements: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines for Buildings and Facilities for tactile warning surfaces.
 1. For tactile warning surfaces composed of multiple units, provide units that when installed provide consistent side-to-side and end-to-end dome spacing that complies with requirements.
- B. Source Limitations: Obtain each type of tactile warning surfacing, anchor, and fastener from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.2 DETECTABLE WARNING UNIT PAVERS

- A. Detectable Warning Concrete Unit Pavers: Solid paving units, made from normal-weight concrete with a compressive strength of not less than 5000 psi, water absorption of not more than 5 percent according to ASTM C 140, and no breakage and not more than 1 percent mass loss when tested for freeze-thaw resistance according to ASTM C 67, with accessible detectable warning truncated domes on exposed surface of units.
- B. Basis-of-Design Product: Model ADA-3 Detectable Warning Pavers, as manufactured by Wausau Tile Co.
 1. Thickness: Standard, 2 inches - 2-3/4 inches.
 2. Face Size: 12 or 24 inches square.
 3. Dome Spacing and Configuration: 1.67-inch spacing.
 4. Color: As selected by Architect from manufacturer's full range.

- C. Products shown are for basis of design. Manufacturers of equivalent products should be submitted and approved in accordance with Section 01 63 00 - Product Substitution Procedures. Subject to requirements, submit the specified product or an equal by a following manufacturer:
 - 1. Access Products Inc.
 - 2. Detectile Corporation
 - 3. Masons Supply Co.
- D. Setting Bed: Comply with requirements in Section 321400 "Unit Paving."
- E. Aggregate Setting Bed:
 - 1. Graded Aggregate for Base: Sound, crushed stone or gravel complying with ASTM D 448 for Size No. 8.
 - 2. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33/C 33M for fine aggregate.
 - 3. Sand for Joints: Fine, sharp, washed, natural sand or crushed stone with 100 percent passing No. 16 sieve and no more than 10 percent passing No. 200 sieve.
- F. Mortar Setting Bed:
 - 1. Portland Cement: ASTM C 150/C 150M, Type I or Type II.
 - 2. Sand: ASTM C 33/C 33M.
 - 3. Latex Additive: Manufacturer's standard water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed portland cement and aggregate mortar bed, and not containing a retarder.
 - 4. Thinset Mortar: Latex-modified portland cement mortar complying with ANSI A118.4.
 - 5. Water: Potable.

2.3 ACCESSORIES

- A. Fasteners and Anchors: Manufacturer's standard as required for secure anchorage of tactile warning surfaces, noncorrosive and compatible with each material joined, and complying with the following:
 - 1. Furnish stainless-steel fasteners for exterior use.
 - 2. Fastener Heads: For nonstructural connections, use flathead or oval countersunk screws and bolts with tamper-resistant heads, colored to match paver.
- B. Adhesive: As recommended by manufacturer for adhering tactile warning surfacing unit to pavement.
- C. Sealant: As recommended by manufacturer for sealing perimeter of tactile warning surfacing unit.

PART 3: EXECUTION**3.1 EXAMINATION**

- A. Verify that pavement is in suitable condition to begin installation according to manufacturer's written instructions. Verify that installation of tactile warning surfacing will comply with accessibility requirements upon completion.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF TACTILE WARNING SURFACING

- A. General: Prepare substrate and install tactile warning surfacing according to manufacturer's written instructions unless otherwise indicated.
- B. Place tactile warning surfacing units in dimensions and orientation indicated. Comply with location requirements of AASHTO MP 12.

3.3 INSTALLATION OF DETECTABLE WARNING UNIT PAVERS

- A. Unit Paver Installation, General:
 - 1. Setting-Bed and Unit Paver Installation: Comply with installation requirements in Section 321400 "Unit Paving."
 - 2. Mix unit pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.
 - 3. Cut unit pavers with motor-driven masonry saw equipment to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible.
 - 4. Tolerances: Do not exceed 1/4 inch in 10 feet from level, or indicated slope, for finished surface of paving.
- B. Aggregate Setting-Bed Applications:
 - 1. Place aggregate base, compact by tamping with plate vibrator, and screed to depth indicated.
 - 2. Place leveling course and screed to a thickness of 1 to 1-1/2 inches, taking care that moisture content remains constant and density is loose and uniform until unit pavers are set and compacted.
 - 3. Treat leveling course with herbicide to inhibit growth of grass and weeds.
 - 4. Set unit pavers with a minimum joint width of 1/16 inch and a maximum of 1/8 inch, being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines.
 - 5. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a 3500- to 5000-lbf compaction force at 80 to 90 Hz.

6. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling.

C. Mortar Setting-Bed Applications:

1. Saturate concrete subbase with clean water several hours before placing setting bed. Remove surface water about one hour before placing setting bed.
2. Apply mortar-bed bond coat over surface of concrete subbase about 15 minutes before placing mortar bed. Limit area of bond coat to avoid its drying out before placing setting bed. Do not exceed 1/16-inch thickness for bond coat.
3. Apply mortar bed over bond coat; spread and screed mortar bed to uniform thickness at subgrade elevations required for accurate setting of pavers to finished grades indicated.
4. Mix and place only that amount of mortar bed that can be covered with pavers before initial set. Before placing pavers, cut back, bevel edge, and remove and discard setting-bed material that has reached initial set.
5. Place pavers before initial set of cement occurs. Immediately before placing pavers on mortar bed, apply uniform 1/16-inch thick bond coat to mortar bed or to back of each paver with a flat trowel.
6. Tamp or beat pavers with a wooden block or rubber mallet to obtain full contact with setting bed and to bring finished surfaces within indicated tolerances. Set each paver in a single operation before initial set of mortar; do not return to areas already set or disturb pavers for purposes of realigning finished surfaces or adjusting joints.
7. Spaced Joint Widths: Provide 3/8-inch nominal joint width with variations not exceeding plus or minus 1/16 inch.
8. Grouted Joints: Grout paver joints complying with ANSI A108.10. Grout joints as soon as possible after initial set of setting bed.
 - a. Force grout into joints, taking care not to smear grout on adjoining surfaces.
 - b. Tool exposed joints slightly concave when thumbprint hard.
 - c. Cure grout by maintaining in a damp condition for seven days unless otherwise recommended by grout or liquid-latex manufacturer.
9. Remove excess grout from exposed paver surfaces; wash and scrub clean.
10. Protect installation from traffic until grout has set.

3.4 CLEANING AND PROTECTION

- A. Remove and replace tactile warning surfacing that is broken or damaged or does not comply with requirements in this Section. Remove in complete sections from joint to joint unless otherwise approved by Architect. Replace using tactile warning surfacing installation methods acceptable to Architect.
- B. Protect tactile warning surfacing from damage and maintain free of stains, discoloration, dirt, and other foreign material.

END OF SECTION 321726

SECTION 02752 - CURBS**PART 1: GENERAL****1.1 GENERAL REQUIREMENTS**

A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the work of this section as shown on the drawings and specified herein, including, but not limited to, the following:

1. Installation of concrete vertical/mountable curbing.
2. Installation of stone, precast, block, or granite vertical/mountable curbing with concrete foundations.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 – General Requirements, apply to this Section.

B. New York State Department of Transportation Standard Specifications, 2008 as currently amended.

C. Except as shown or specified otherwise, the Work of this Section shall conform to the requirements of Specifications for Structural Concrete for Buildings ACI 301-05 of the American Concrete Institute.

1.3 DEFINITIONS (Amendments to ACI 301, Chapter 1):

A. Exposed Construction: Exposed to view.

B. Architectural Concrete: Concrete which is exposed to view as an interior or exterior surface in the completed structure.

1.4 SUBMITTALS

A. Submittals Package: Submit product data for design mix(es) and materials for concrete specified below at the same time as a package.

B. Shop Drawings: Placing drawings for bar reinforcement.

C. Product Data:

1. Concrete design mix(es) with name and location of batching plant.
2. Portland Cement: Brand and manufacturer's name.
3. Fly Ash: Name and location of source, and NYS DOT test numbers.
4. Air-entraining Admixture: Brand and manufacturer's name.
5. Water-reducing Admixture: Brand and manufacturer's name.

6. Aggregates: Name and location of source, and NYS DOT test numbers.
7. Lightweight Coarse Aggregate: Brand and manufacturer's name
8. Chemical Curing and Anti-Spalling Compound: Brand and manufacturer's name, and application instructions.
9. Bonding Agent (Adhesive): Brand and manufacturer's name, and preparation and application instructions.
10. Expansion Joint Filler: Brand and manufacturer's name.
11. Emery Aggregate: Brand and manufacturer's name, and application instructions.

D. Quality Control Submittals:

1. Certificates: Affidavit required under Quality Assurance Article.

1.5 QUALITY ASSURANCE

A. Concrete batching plant shall be currently approved as a concrete supplier by the New York State Department of Transportation.

B. Fly ash supplier shall be currently approved as a fly ash supplier by the New York State Department of Transportation.

C. Certifications: Affidavit by the bar reinforcement manufacturer certifying that bar material meets the contract requirements.

D. Source Quality Control: the Owner's Representative reserves the right to inspect and approve the following items, at his own discretion, either with his own forces or with a designated inspection agency:

1. Batching and mixing facilities and equipment.
2. Sources of materials.

1.6 FIELD CONDITIONS

A. Weather limitations: The provisions of NYSDOT Section 502-3.01 shall apply.

1.7 STORAGE

A. Store materials so as to insure the preservation of their quality and fitness for the Work. Materials, even though accepted prior to storage, are subject to inspection and shall meet the requirements of the Contract before their use in the Work.

1.8 RELATED WORK SPECIFIED ELSEWHERE

A. Earth Moving: Section 02300.

PART 2: PRODUCTS

2.1 MATERIALS (Amendments to ACI 301, Chapter 2):

A. Water-reducing Admixture: ASTM C 494, Type A, and on the New York State Department of Transportation's current "Approved List".

B. Fly Ash: ASTM C 618, including Table 1A (except for footnote A), Class F except that loss on ignition shall not exceed 4.0 percent.

C. Chemical Curing and Anti-Spalling Compound: ASTM C-309, Type 1D, Class B, with a minimum 18 percent total solids content. No thinning of material allowed.

1. SureCure Emulsion, Kaufman Products, Inc. 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.

2. Cure & Seal by Symons Corp., 200 East Touhy Ave., PO Box 5018, Des Plaines, IL 60017-5018, (847) 298-3200.

3. "Kure N Seal W" by Sonneborn Building Products, Chemrex, Inc., 889 Valley Park Dr., Shakopee, MN 55379, (800) 433-9517.

4. Day-Chem Cure & Seal 26 percent (J-22) by Dayton Superior Corp., 721 Richard St., Miamisburg, OH 45342, (800) 745-3700.

5. Acrylseal HS by Master Builders, Inc., 23700 Chagrin Blvd., Cleveland, OH 44122, (800) 628-9990.

D. Type 1 Expansion Joint Filler: Preformed, resilient, non-extruding cork units; ASTM D 1752, Type II.

E. Chamfer Strips: Wood, metal, PVC or rubber; one inch chamfer.

F. Epoxy Bonding Agent (Adhesive): 100 percent solids epoxy-resin-base bonding compound, complying with ASTM C 881, Types I, II, IV and V, Grade 2 (horizontal areas) or Grade 3 (overhead/vertical areas), and Class B (40-60 degrees Fahrenheit) or Class C (60 degree Fahrenheit and above).

1. SurePoxy HM Series by Kaufman Products, Inc., 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.

2. Sikadur Hi-Mod 32 by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071, (800) 933-7452.

3. Epogrip by Sonneborn-Chemrex, 889 Valley Park Drive, Shakopee, MN 55379, (800) 433-9517.

G. Stone Curb: The requirements of NYSDOT Section 714-01 shall apply with the exception of all references to "bluestone", which are disallowed. Belgian block shall also comply with the requirements of ASTM C 615.

2.2 PROPORTIONING (Amendments to ACI 301, Chapter 3):

A. Compressive Strength: Minimum 4000 psi, unless shown or specified otherwise.

1. Minimum 4000 psi

B. Weight: Normal:

C. Durability: Concrete shall be air-entrained. Design air content shall be 6 percent by volume, with an allowable tolerance of plus or minus 1.5 percent for total air content. Entrained air shall be provided by use of an approved air-entraining admixture. Air-entrained cement shall not be used.

D. Slump:

1. 4000 psi Normal Weight Concrete: Between 2 inches and 3 inches.

E. Admixtures: Do not use admixtures in concrete unless specified or approved in writing by the owner's representative.

F. Selection of Proportions: Concrete proportions shall be established on the basis of previous field experience or laboratory trial batches, unless otherwise approved in writing by the owner's representative. Proportion mix with a minimum cement content of 611 pounds per cubic yard for 4000 psi concrete.

1. Optional Material: Fly ash may be substituted for (Portland) cement in normal weight concrete up to a maximum of 15 percent by weight of the required minimum (Portland) cement. If fly ash is incorporated in a concrete design mix, make necessary adjustments to the design mix to compensate for the use of fly ash as a partial replacement for (Portland) cement.

a. Adjustments shall include the required increase in air-entraining admixture to provide the specified air content.

b. Lower early strength of the concrete shall be considered in deciding when to remove formwork.

2.3 REINFORCEMENT (Amendments to ACI 301, Chapter 5):

A. Bar Reinforcement: ASTM A 615, Grade 60, deformed steel bars.

B. Fabric Reinforcement: ASTM A 185, welded wire fabric, fabricated into flat sheets unless otherwise indicated.

C. Bar Supports: Galvanized steel or AISI Type 430 stainless steel, and without plastic tips.

D. Tie Wire: Black annealed wire, 16-1/2 gage or heavier.

2.4 JOINTS AND EMBEDDED ITEMS (Amendments to ACI 301, Chapter 6):

A. Obtain bond at construction joints by the use of bonding agent (adhesive) or the use of cement grout.

2.5 PRODUCTION (Amendments to ACI 301, Chapter 7):

A. Provide ready-mixed concrete, either central-mixed or truck-mixed.

2.6 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces. Use flexible or curved forms for curves of a radius 100 feet or less.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

PART 3: EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Do not use items of aluminum for mixing, chuting, conveying, forming or finishing concrete, except magnesium alloy tools may be used for finishing.

B. Keep excavations free of water. Do not deposit concrete in water.

C. Hardened concrete, reinforcement, forms, and earth which will be in contact with fresh concrete shall be free from frost at the time of concrete placement.

D. Prior to placement of concrete, remove all hardened concrete spillage and foreign materials from the space to be occupied by the concrete.

3.2 FORMWORK (Amendments to ACI 301, Chapter 4):

A. Chamfer all exposed external corners of concrete.

3.3 PLACING REINFORCEMENT (Amendments to ACI 301, Chapter 5):

A. At the time concrete is placed, reinforcement shall be free of mud, oil, loose rust, loose mill scale, and other materials or coatings that may adversely affect or reduce the bond.

3.4 PLACING CONCRETE (Amendments to ACI 301, Chapter 8):

A. Operation of truck mixers and agitators and discharge limitations shall conform to the requirements of ASTM C 94.

B. Do not allow concrete to free fall more than 4 feet.

C. Protect concrete from exposure to salts for sixty (60) days.

3.5 FINISHING FORMED SURFACES (Amendments to ACI 301, Chapter 10):

A. Finish Schedule: Except where indicated otherwise on the Drawings, provide the finishes below:

1. Rough Form Finish for concrete surfaces not exposed to view.
2. Smooth Form Finish for vertical concrete surfaces exposed to view.
3. Broom Finish for horizontal surfaces exposed to view.

B. Finishing, General: Provide monolithic finishes on concrete without the addition of mortar or other filler material. Finish surfaces in true planes, true to line, with particular care taken during screeding to maintain an excess of concrete in front of the screed so as to prevent low spots. Screed and darby concrete to true planes while plastic and before free water rises to the surface. Do not perform finishing operations during the time free water (bleeding) is on the surface.

3.6 JOINTS

A. General: Construct construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated. When joining existing pavement, place transverse joints to align with previously placed joints, unless otherwise indicated.

B. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.

1. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of pavement strips, unless otherwise indicated.

C. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

D. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 20 feet, unless otherwise indicated.
2. Extend joint fillers full width and depth of joint.
3. Terminate joint filler less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.

6. Protect top edge of joint filler during concrete placement with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

E. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-half of the concrete thickness, as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with groover tool to the following radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces. Radius shall be $\frac{1}{4}$ inch.

2. Sawn Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut $\frac{1}{8}$ -inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.

F. Edging: Tool edges of pavement, curbs, and joints in concrete after initial floating with an edging tool to the following radius. Repeat tooling of edges after applying surface finishes. Eliminate tool marks on concrete surfaces. Radius shall be $\frac{1}{4}$ inch.

3.7 CURING AND PROTECTION (Amendments to ACI 301, Chapter 12):

A. Maintain concrete surfaces in a moist condition for at least 7 days after placing, except where otherwise indicated. Do not use curing compound.

1. For surfaces of exterior concrete, apply chemical curing and anti-spalling compound in accordance with the recommendations of the manufacturer.

3.8 FIELD QUALITY CONTROL (Amendments to ACI 301, Chapter 16):

A. Make available to the Owner's Representative whatever test samples are required to make tests. Furnish shipping boxes for compression test cylinders. Provide field cure box as required.

3.9 TOLLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation: $\frac{1}{4}$ inch.
2. Thickness: Plus $\frac{3}{8}$ inch, minus $\frac{1}{4}$ inch
3. Surface: Gap below 10 foot long, unleveled straightedge not to exceed $\frac{1}{4}$ inch.
4. Joint Spacing: 3 inches.
5. Contraction Joint Depth: Plus $\frac{1}{4}$ inch, no minus.
6. Joint Width: Plus $\frac{1}{8}$ inch, no minus.

3.10 REPAIRS AND PROTECTION

A. Remove and replace concrete that is broken, damaged, or defective, or does not meet requirements in this Section. Reasons for rejection of concrete include the following:

1. Staining or discoloration of curb.
2. Curb is out of horizontal alignment more than 0.20'.
3. Curb is out of vertical alignment more than 0.10'.
4. Expansion joints are not perpendicular to roadway.
5. Joints and surfaces are improperly finished.
6. Expansion joints protrude from curb.
7. Cracks, chips, or other damage occur in construction or maintenance period.
8. Settlement of curb.
9. Improper vibration of concrete.
10. Vandalism during initial setup of concrete.
11. Inspection of formwork not asked for by Contractor prior to pouring of curb, sidewalk or driveways.

B. Drill test cores where directed by the Owner's Representative when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with portland cement concrete bonded to pavement with epoxy adhesive.

C. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement. When construction traffic is permitted, maintain pavement as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 327520

SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Seeding.
2. Hydroseeding.
3. Erosion-control material(s).

- B. Related Sections:

1. Division 31 Section "Site Clearing" for topsoil stripping and stockpiling.
2. Division 31 Section "Earth Moving" for excavation, filling and backfilling, and rough grading.

1.3 DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. This includes insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. It also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.
- E. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- F. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

- G. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- H. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- I. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to this Project.
- B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- C. Qualification Data: For qualified landscape Installer.
- D. Product Certificates: For soil amendments and fertilizers, from manufacturer.

1.5 QUALITY ASSURANCE

- A. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.
 - 1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
 - 2. The soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Architect. A minimum of three representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.
 - 3. Report suitability of tested soil for turf growth.
 - a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such

problem materials are present, provide additional recommendations for corrective action.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.
- B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.
- C. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.7 PROJECT CONDITIONS

- A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of Substantial Completion.
 - 1. Spring Planting: .
 - 2. Fall Planting: .
- B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

1.8 MAINTENANCE SERVICE

- A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:
 - 1. Seeded Turf: 60 days from date of Substantial Completion.
 - a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

PART 2 - PRODUCTS

2.1 SEED

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
- B. Seed Species: State-certified seed of grass species as follows:
 - 1. Full Sun: Bermudagrass (*Cynodon dactylon*).
 - 2. Full Sun: Kentucky bluegrass (*Poa pratensis*), a minimum of three cultivars.
- C. Grass Seed Mix: Proprietary seed mix as follows:
 - 1. Products: Subject to compliance with requirements, provide the following available products that may be incorporated into the Work.

2.2 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 - 1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
 - 2. Class: O, with a minimum of 95 percent passing through No. 8 sieve and a minimum of 55 percent passing through No. 60 sieve.
- B. Perlite: Horticultural perlite, soil amendment grade.
- C. Agricultural Gypsum: Minimum 90 percent calcium sulfate, finely ground with 90 percent passing through No. 50 sieve.
- D. Sand: Clean, washed, natural or manufactured, and free of toxic materials.
- E. Diatomaceous Earth: Calcined, 90 percent silica, with approximately 140 percent water absorption capacity by weight.

2.3 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 - 1. Organic Matter Content: 50 to 60 percent of dry weight.
 - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

- B. Sphagnum Peat: Partially decomposed sphagnum peat moss, finely divided or of granular texture, with a pH range of 3.4 to 4.8.
- C. Muck Peat: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent.
- D. Wood Derivatives: Decomposed, nitrogen-treated sawdust, ground bark, or wood waste; of uniform texture and free of chips, stones, sticks, soil, or toxic materials.
 - 1. In lieu of decomposed wood derivatives, mix partially decomposed wood derivatives with ammonium nitrate at a minimum rate of 0.15 lb/cu. ft. of loose sawdust or ground bark, or with ammonium sulfate at a minimum rate of 0.25 lb/cu. ft. of loose sawdust or ground bark.
- E. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.4 FERTILIZERS

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 1 percent nitrogen and 10 percent phosphoric acid.
- B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:
 - 1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
 - 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.5 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Sphagnum Peat Mulch: Partially decomposed sphagnum peat moss, finely divided or of granular texture, and with a pH range of 3.4 to 4.8.
- C. Muck Peat Mulch: Partially decomposed moss peat, native peat, or reed-sedge peat, finely divided or of granular texture, with a pH range of 6 to 7.5, and having a water-absorbing capacity of 1100 to 2000 percent.
- D. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 2 to 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.
 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.
- E. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.
- F. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.
- G. Asphalt Emulsion: ASTM D 977, Grade SS-1; nontoxic and free of plant-growth or germination inhibitors.

2.6 EROSION-CONTROL MATERIALS

- A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long.
- B. Erosion-Control Fiber Mesh: Biodegradable burlap or spun-coir mesh, a minimum of 0.92 lb/sq. yd., with 50 to 65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches long.
- C. Erosion-Control Mats: Cellular, non-biodegradable slope-stabilization mats designed to isolate and contain small areas of soil over steeply sloped surface, of 6-inch nominal mat thickness. Include manufacturer's recommended anchorage system for slope conditions.
1. Products: Subject to compliance with requirements, provide the following available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Invisible Structures, Inc.; Slopetame 2.
 - b. Presto Products Company, a business of Alcoa; Geoweb.
 - c. Tenax Corporation - USA; Tenweb.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.

3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.
1. Protect adjacent and adjoining areas from hydroseeding and hydromulching overspray.
 2. Protect grade stakes set by others until directed to remove them.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches 8 inches Insert depth. Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
1. Thoroughly blend planting soil off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil.
 - a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - b. Mix lime with dry soil before mixing fertilizer – if necessary.
 2. Spread planting soil to a depth of 4 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Spread approximately 1/2 the thickness of planting soil over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil.
 - b. Reduce elevation of planting soil to allow for soil thickness of sod.
- C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the immediate future.
- D. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

- E. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

- A. Prepare area as specified in "Turf Area Preparation" Article.
- B. For erosion-control mats, install planting soil in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.
- C. Fill cells of erosion-control mat with planting soil and compact before planting.
- D. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.
- E. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5 SEEDING

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
 - 2. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.
- B. Sow seed at a total rate of 3 to 4 lb/1000 sq. ft..
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes exceeding 1:4 with erosion-control blankets and 1:6 with erosion-control fiber mesh installed and stapled according to manufacturer's written instructions.
- E. Protect seeded areas with erosion-control mats where shown on Drawings; install and anchor according to manufacturer's written instructions.
- F. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.

3.6 HYDROSEEDING

- A. Hydroseeding: Mix specified seed, fertilizer, and fiber mulch in water, using equipment specifically designed for hydroseed application. Continue mixing until uniformly blended into homogeneous slurry suitable for hydraulic application.

1. Mix slurry with fiber-mulch manufacturer's recommended tackifier.
2. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply slurry at a rate so that mulch component is deposited at not less than 1500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate.
3. Apply slurry uniformly to all areas to be seeded in a two-step process. Apply first slurry coat at a rate so that mulch component is deposited at not less than 500-lb/acre dry weight, and seed component is deposited at not less than the specified seed-sowing rate. Apply slurry cover coat of fiber mulch (hydromulching) at a rate of 1000 lb/acre.

3.7 TURF MAINTENANCE

- A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
 3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.
- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.

3.8 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Owner:
 1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
 2. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
 3. Satisfactory Plugged Turf: At end of maintenance period, the required number of plugs has been established as well-rooted, viable patches of grass, and areas between plugs are free of weeds and other undesirable vegetation.

4. Satisfactory Sprigged Turf: At end of maintenance period, the required number of sprigs has been established as well-rooted, viable plants, and areas between sprigs are free of weeds and other undesirable vegetation.
- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.9 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.
- C. Remove nondegradable erosion-control measures after grass establishment period.

END OF SECTION 329200

SECTION 329300: PLANTS**PART 1: GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Plants.
 - 2. Tree stabilization.
 - 3. Landscape edgings.
- B. Related Requirements:
 - 1. Section 329113 "Soil Preparation" for planting soil material.
 - 2. Section 329200 "Turf and Grasses" for turf (lawn) planting and hydroseeding.

1.3 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Balled and Burlapped Stock: Plants dug with firm, natural balls of earth in which they were grown, with ball size not less than sizes indicated; wrapped with burlap, tied, rigidly supported, and drum laced with twine with the root flare visible at the surface of the ball as recommended by ANSI Z60.1.
- C. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- D. Finish Grade: Elevation of finished surface of planting soil.
- E. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant. Some sources classify herbicides separately from pesticides.
- F. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

- G. Planting Area: Areas to be planted.
- H. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth. See Section 329113 "Soil Preparation" for planting soils.
- I. Plant; Plants; Plant Material: These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- J. Root Flare: Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- K. Stem Girdling Roots: Roots that encircle the stems (trunks) of trees below the soil surface.
- L. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 COORDINATION

- A. Coordination with Turf Areas (Lawns): Plant trees, shrubs, and other plants after finish grades are established and before planting turf areas unless otherwise indicated.
 - 1. When planting trees, shrubs, and other plants after planting turf areas, protect turf areas, and promptly repair damage caused by planting operations.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Plant Materials: Include quantities, sizes, quality, and sources for plant materials.
 - 2. Pesticides and Herbicides: Include product label and manufacturer's application instructions specific to the Project.
- B. Samples for Verification: For each of the following:
 - 1. Organic Mulch: 1-pint volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and organic makeup.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.

- B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
 - 1. Manufacturer's certified analysis of standard products.
- C. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of plants during a calendar year. Submit before start of required maintenance periods.
- D. Warranty: Sample of special warranty.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful establishment of plants.
 - 1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
 - 2. Experience: Three years' experience in landscape installation in addition to requirements in Section 014000 "Quality Requirements."
 - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 4. Pesticide Applicator: State licensed, commercial.
- B. Measurements: Measure according to ANSI Z60.1. Do not prune to obtain required sizes.
 - 1. Trees and Shrubs: Measure with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.
 - 2. Other Plants: Measure with stems, petioles, and foliage in their normal position.
- C. Plant Material Observation: Landscape Architect retains right to observe trees and shrubs for size and condition of balls and root systems, pests, disease symptoms, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws if applicable.
- B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 3. Accompany each delivery of bulk materials with appropriate certificates.
- C. Do not prune trees and shrubs before delivery. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of plants during shipping and delivery. Do not drop plants during delivery and handling.
- D. Handle planting stock by root ball.
- E. Deliver plants after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after delivery, set plants and trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.
1. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 2. Do not remove container-grown stock from containers before time of planting.
 3. Water root systems of plants stored on-site deeply and thoroughly with a fine-mist spray. Water as often as necessary to maintain root systems in a moist, but not overly-wet condition.

1.9 FIELD CONDITIONS

- A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, and dimensions of plantings and construction contiguous with new plantings by field measurements before proceeding with planting work.
- B. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.
1. Spring Planting: March 15th to June 15th.
 2. Fall Planting: August 15th to October 15th.
- C. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

1.10 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace plantings and accessories that fail in materials, workmanship, or growth within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth, except for defects resulting from abuse, lack of adequate maintenance, or neglect by Owner, or incidents that are beyond Contractor's control.
 - b. Structural failures including plantings falling or blowing over.
 - c. Faulty performance of tree stabilization.
 - 2. Warranty Periods from Date of Planting Completion:
 - a. Trees, Shrubs, Vines, and Ornamental Grasses: 12 months.
 - b. Ground Covers, Perennials, and Other Plants: 12 months.
 - 3. Include the following remedial actions as a minimum:
 - a. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.
 - b. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
 - c. A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.
 - d. Provide extended warranty for period equal to original warranty period, for replaced plant material.

1.11 MAINTENANCE SERVICE

- A. Initial Maintenance Service for Plant Material: Provide maintenance by skilled employees of landscape Installer. Begin maintenance immediately after plants are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.
 - 1. Maintenance Period: 60 days from date of planting completion.

PART 2: PRODUCTS**2.1 PLANT MATERIAL**

- A. General: Furnish nursery-grown plants true to genus, species, variety, cultivar, stem form, shearing, and other features indicated in Plant List, Plant Schedule, or Plant Legend indicated on Drawings and complying with ANSI Z60.1; and with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock,

densely foliated when in leaf and free of disease, pests, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

1. Trees with damaged, crooked, or multiple leaders; tight vertical branches where bark is squeezed between two branches or between branch and trunk ("included bark"); crossing trunks; cut-off limbs more than 3/4 inch in diameter; or with stem girdling roots are unacceptable.
 2. Collected Stock: Do not use plants harvested from the wild, from native stands, from an established landscape planting, or not grown in a nursery unless otherwise indicated.
- B. Provide plants of sizes, grades, and ball or container sizes complying with ANSI Z60.1 for types and form of plants required. Plants of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.
- C. Root-Ball Depth: Furnish trees and shrubs with root balls measured from top of root ball, which begins at root flare according to ANSI Z60.1. Root flare shall be visible before planting.
- D. Labeling: Label each plant of each variety, size, and caliper with a securely attached, waterproof tag bearing legible designation of common name and full scientific name, including genus and species. Include nomenclature for hybrid, variety, or cultivar, if applicable for the plant.
- E. If formal arrangements or consecutive order of plants is indicated on Drawings, select stock for uniform height and spread, and number the labels to assure symmetry in planting.
- F. Annuals: Provide healthy, disease-free plants of species and variety shown or listed, with well-established root systems reaching to sides of the container to maintain a firm ball, but not with excessive root growth encircling the container. Provide only plants that are acclimated to outdoor conditions before delivery and that are in bud but not yet in bloom.

2.2 FERTILIZERS

- A. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.
- B. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:
1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.
- C. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.3 MULCHES

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 1. Type: Shredded hardwood.
 2. Size Range: 3 inches maximum, 1/2 inch minimum.
 3. Color: Natural.

2.4 PESTICIDES

- A. General: Pesticide registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.
- B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.
- C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

2.5 TREE-STABILIZATION MATERIALS

- A. Stakes and Guys:
 1. Upright and Guy Stakes: Rough-sawn, sound, cedar, free of knots, holes, cross grain, and other defects, 3-inch diameter by length indicated, pointed at one end.
 2. Flexible Ties: As shown on the Drawings.
 3. Guys and Tie Wires: As shown on the Drawings.

2.6 LANDSCAPE EDGINGS

- A. Steel Edging: Standard commercial-steel edging, fabricated in sections of standard lengths, with loops stamped from or welded to face of sections to receive stakes.
 1. Acceptable Manufacturers:
 - a. General Landscape Edging by Joseph T. Ryerson & Son Co. Inc., Chicago, IL.
 - b. Sure-loc Steel Landscaping Edging by Sure-Loc Corporation, Holland, MI.
 2. Edging Size: 1/4 inch thick by 5 inches deep.
 3. Stakes: Manufacturer's standard 12 inches tapered steel.

4. Accessories: Standard tapered ends, corners, and splicers.
5. Finish: Manufacturer's standard green-black painted finish on steel edging and anchoring stakes.

2.7 MISCELLANEOUS PRODUCTS

- A. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.
- B. Burlap: Non-synthetic, biodegradable.

PART 3: EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive plants, with Installer present, for compliance with requirements and conditions affecting installation and performance of the Work.
 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 2. Verify that plants and vehicles loaded with plants can travel to planting locations with adequate overhead clearance.
 3. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 4. Uniformly moisten excessively dry soil that is not workable or which is dusty.
- B. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Landscape Architect's acceptance of layout before excavating or planting. Make minor adjustments as required.

- C. Lay out plants at locations directed by Landscape Architect. Stake locations of individual trees and shrubs and outline areas for multiple plantings.
- D. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks (before wrapping), branches, stems, twigs, and foliage to protect during digging, handling, and transportation.
 - 1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.
- E. Wrap trees and shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

3.3 PLANTING AREA ESTABLISHMENT

- A. Perform topsoil spreading operations only during dry weather.
- B. Loosen subgrade of planting areas to a minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 - 1. Spread planting soil to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Spread approximately one-half the thickness of planting soil over loosened subgrade. Mix thoroughly into top 2 inches of subgrade. Spread remainder of planting soil.
- C. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- D. Before planting, obtain Landscape Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 EXCAVATION FOR TREES AND SHRUBS

- A. Planting Pits and Trenches: Excavate planting pits as indicated on the Drawings.
 - 1. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 - 2. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 - 3. Maintain supervision of excavations during working hours.
 - 4. Keep excavations covered or otherwise protected after working hours.
- B. Subsoil and topsoil removed from excavations may not be used as planting soil.

- C. Obstructions: Notify Landscape Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.
- D. Drainage: Notify Landscape Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.
- E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.5 TREE, SHRUB, AND VINE PLANTING

- A. Before planting, verify that root flare is visible at top of root ball according to ANSI Z60.1. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- B. Remove stem girdling roots and kinked roots. Remove injured roots by cutting cleanly; do not break.
- C. Set balled and burlapped stock plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
 - 1. Use planting soil for backfill.
 - 2. After placing some backfill around root ball to stabilize plant, carefully cut and remove burlap, rope, and wire baskets from tops of root balls and from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
 - 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 4. Continue backfilling process. Water again after placing and tamping final layer of soil.
- D. Set container-grown stock plumb and in center of planting pit or trench with root flare 1 inch above adjacent finish grades.
 - 1. Use planting soil for backfill.
 - 2. Carefully remove root ball from container without damaging root ball or plant.
 - 3. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 - 4. Continue backfilling process. Water again after placing and tamping final layer of soil.
- E. When planting on slopes, set the plant so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.6 TREE AND SHRUB PRUNING

- A. Prune, thin, and shape trees and shrubs according to standard professional horticultural and arboricultural practices. Unless otherwise indicated by Landscape Architect, do not cut tree leaders; remove only injured, dying, or dead branches from trees and shrubs; and prune to retain natural character.
- B. Do not apply pruning paint to wounds.

3.7 TREE STABILIZATION

- A. Install trunk stabilization as follows unless otherwise indicated:
 - 1. Upright Staking and Tying: Stake trees of 2- through 5-inch caliper. Stake trees of less than 2-inch caliper only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least 18 inches below bottom of backfilled excavation and to extend at least 72 inches above grade. Set vertical stakes and space to avoid penetrating root balls or root masses.
 - 2. Use two stakes for trees up to 12 feet high and 2-1/2 inches or less in caliper; three stakes for trees less than 14 feet high and up to 4 inches in caliper. Space stakes equally around trees.
 - 3. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.
 - 4. Support trees with two strands of tie wire, connected to the brass grommets of tree-tie webbing at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

3.8 GROUND COVER AND PLANT PLANTING

- A. Set out and space ground cover and plants other than trees and shrubs as indicated in even rows with triangular spacing.
- B. Use planting soil for backfill.
- C. Dig holes large enough to allow spreading of roots.
- D. For rooted cutting plants supplied in flats, plant each in a manner that will minimally disturb the root system but to a depth not less than two nodes.
- E. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.
- F. Protect plants from hot sun and wind; remove protection if plants show evidence of recovery from transplanting shock.

3.9 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.
 - 1. Trees and Tree-like Shrubs in Turf Areas: Apply organic mulch ring of 3-inch average thickness, with 36-inch radius around trunks or stems. Do not place mulch within 3 inches of trunks or stems.
 - 2. Organic Mulch in Planting Areas: Apply 3-inch average thickness of organic mulch over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

3.10 EDGING INSTALLATION

- A. Steel Edging: Per manufacturer's recommendations.

3.11 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
- B. Fill in, as necessary, soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
- C. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices when possible to minimize use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.

3.12 PESTICIDE APPLICATION

- A. Apply pesticides and other chemical products and biological control agents according to authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.
- B. Pre-Emergent Herbicides (Selective and Nonselective): Apply to tree, shrub, and ground-cover areas according to manufacturer's written recommendations. Do not apply to seeded areas.
- C. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.13 CLEANING AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- C. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site.

3.14 DISPOSAL

- A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off Owner's property.

END OF SECTION 329399