“PLEASE SEND AN ACKNOWLEDGEMENT THAT YOU HAVE PRINTED OUT THIS BID TO:

purchasing@quincyma.gov and swessling@wesslingarchitect.com

You will be notified on any addenda or change in dates/times.

If you have printed this bid out through the City of Quincy’s Website, it is your responsibility to check for addenda at www.quincyma.gov before you turn in your proposal. The City of Quincy will not be responsible for any bids received omitting any addenda acknowledgement.

Thank you
QUINCY DPW SERVICE GARAGE ROOF RENOVATION
SPECIFICATIONS

55 SEA STREET, QUINCY, MA 02169

Prepared for:
City of Quincy DPW
55 Sea Street
Quincy, MA 02169

Project #17101
Date: November 7, 2017
PROJECT MANUAL
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Document 001125  Certification of Bidder Regarding Equal Employment Opportunity
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Document 001134  Signature Authorization
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SPECIFICATIONS

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Section 011400  Work Restrictions
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INVITATION TO BID

CITY OF QUINCY, MASSACHUSETTS
PURCHASING DEPARTMENT
1305 HANCOCK ST., QUINCY, MA 02169

The City of Quincy invites sealed bids/proposals for:

PUBLIC BUILDINGS November 21, 2017 @ 11:00 a.m.

ROOF REPLACEMENT at Maintenance Garage at 55 Sea Street (DPW)

Detailed specifications are available on-line at the City of Quincy’s website, www.quincyma.gov and also available at the office of the Purchasing Agent, Quincy City Hall, 1305 Hancock Street, Quincy, Massachusetts, 02169, between the hours of 8:30 AM and 4:30 PM after November 7th, 2017.

A non-mandatory pre-bid walk thru will be held on November 14, 2017 at 10:00 a.m. at 55 Sea Street, Quincy, MA 02169. DCAMM is required in “Roofing”.

All questions regarding this bid should be directed to Kathryn R. Hobin, Purchasing Agent through email: purchasing@quincyma.gov Questions will be accepted until November 16, 2017 by 12:00 p.m.

Bids/Proposals must be in a sealed envelope. The outside of the sealed envelope is to be clearly marked "BID ENCLOSED" with time/date of bid call.

The successful bidder will be required to conform to the payment of Prevailing Wage Rates, as determined by the Commissioner of Labor & Industries under the provision of M.G.L. Chapter 149, Section 26 to 27D as amended.

Firm bid prices will be given first consideration. Bids/Proposals will be received at the office of the Purchasing Agent until the time and date stated above, at which time and date they will be publicly opened and read. Late Bids/Proposals, delivered by mail or in person, will be rejected.

If applicable, bids shall be in accordance with M.G.L. Chapter 30B, Chapter 149 as amended, and Chapter 30, Sections 39A, 39B and 39F-R.

The right is reserved to reject any or all bids or to accept any part of a bid or the one deemed best for the City and waive any informality in the bidding if it is in the best interest of the City to do so.

Thomas P. Koch, MAYOR
Kathryn R. Logan, PURCHASING AGENT
INVITATION TO BID

CITY OF QUINCY, MASSACHUSETTS
PURCHASING DEPARTMENT
1305 HANCOCK STREET, QUINCY, MA 02169

DETAILED SPECIFICATIONS AND REQUIREMENTS

ISSUE DATE: NOVEMBER 7, 2017
BID CALL: NOVEMBER 21 @ 11:00 A.M.
DEPARTMENT: BUILDING MAINTENANCE
ITEM: ROOF REPLACEMENT at Maintenance Garage at 55 Sea Street (DPW)

1. Certified check or 5% bid bond is required.
2. 100% Payment Bond and 100% Performance Bond is required.
3. The following forms, if contained in the bid documents, must be completed and signed:
   • Certificate of Non-Collusion
   • Tax Compliance Certificate
   • Certification Relating to Debarment and Suspension
   • Signature Authorization Form
   • Certification of General/Sub-bidders on Public Construction Projects Regarding Health and Safety and Non-Collusion and Debarment
   • DCAM Form, including Certificate of Eligibility and Update Statement.
   • Form for General Bid
4. Do not separate any sheets from this bid call.
5. All prices are to include delivery F.O.B. destination unless noted otherwise.
6. Wherever a manufacturer's name or model number is specified, it is to be clearly understood that the words “or approved equal” follow.
7. All vendors must acknowledge in writing receipt of any addenda.
8. The Purchasing Department shall accept questions in writing via facsimile up until 48 hours prior to the opening.
* TO THE EXTENT APPLICABLE THE FOLLOWING SECTIONS OF MASSACHUSETTS GENERAL LAWS ARE INCORPORATED HERIN BY REFERENCE:

M.G.L. CHAPTER 30B, CHAPER 30, SECTIONS 39A, 39B AND 39F-R AND M.G.L. CHAPTER 149, AS AMENDED.

In the event of any inconsistency between the bid, Information for Bidders, Bid Forms, Conditions or any other Contract Document or potential Contract Document and these statutes; or any other applicable statutes, by-laws or regulations existing on the date on which the bid is submitted, then the statute, by-laws or regulations shall govern. Such inconsistency shall not be grounds for invalidating this invitation to bid.

The successful bidder will be required to conform to the payment of Minimum Wage Rates, as determined by the Commissioner of Labor & Industries under the provision of M.G.L., Chap. 149, Sect. 26 to 27D as amended.

General bids will be considered only from bidders who present with their bid, CERTIFICATE OF ELIGIBILITY and QUALIFICATION UPDATE STATEMENT as prescribed by chapter 484 of the Acts of 1984.

Forms for the CONTRACTORS QUALIFICATIONS STATEMENT are included for the Division of Asset Management. (DCAM) (DCAM Certification in “ROOFING” is required.

LIABILITY, PROPERTY DAMAGE and WORKERS' COMPENSATION coverage is required of the successful bidder before any work can be started.

DATE:_________________ SPECS: ROOF REPLACEMENT at Maintenance Garage at 55 Sea Street(DPW)

BIDDER: ________________________________
ADDRESS: ________________________________
TELEPHONE: ____________________________

EMAIL: _______________________________
1. This document contains instructions to bidders for the project named above. This bidding document is not part of the Contract Documents, unless specifically referenced in the Contract.

2. To obtain bidding documents contact:

   The bidding documents are available through an online link provided by the City of Quincy Purchasing Department, Second Floor Quincy City Hall 1305 Hancock Street, Quincy, MA 02169. Interested vendors may request this link at purchasing@quincyma.gov.

   Contact:
   Name: Mrs. Kathryn Logan
   Firm: City of Quincy Purchasing Department Director
   Address: 1305 Hancock Street
   City, State, ZIP: Quincy, MA 02169
   Telephone: 617-376-1060
   FAX: 617-376-1074
   Email: klogan@quincyma.gov
   CC kimtrillcott@quincyma.gov

3. Deposits for Documents: A deposit is not required to obtain a copy of bidding documents. The documents are available as noted above.

4. Submission of Bids: All bids must be sealed and clearly labeled “AS DESCRIBED IN INVITATION TO BID” and hand delivery. Submit all bid documents and required forms before the time and date below.

Submit Bids to:

   Name: Mrs. Kathryn Logan
   Firm: City of Quincy Purchasing Department Director
   Address: 1305 Hancock Street
   City, State, ZIP: Quincy, MA 02169
   Telephone: 617-376-1060
   FAX: 617-376-1074

   Bid due: Date and Time of day: General Bids – November 21, 2017 @ 11:00 A.M.
5. A Bid Security is required – 5% bid bond.

6. A 100% Performance and Payment Bond is required.

7. Oral modifications to bids will not be considered. All blanks shall be filled in.

8. The City of Quincy reserves the right to reject or accept any or all bids or to enter into negotiations with any bidder. The Owner reserves the right to waive any alleged breach of technicality.

9. The Building Owner reserves the right to modify the Contract Documents and re-bid the project, if necessary, to meet the budgetary requirements.

10. Questions: Submit Request for Information questions in writing by e-mail only to the person named below, no later than 4:00 PM of the business day, as follows:

   General Contractors – November 17, 2017

   Name:    Stephen Wessling
   Firm:    Stephen J. Wessling Architects, Inc.
   Address: 1250 Hancock Street
   City, State, ZIP: Quincy, MA 02169
   Telephone: 617-773-8150
   FAX: 617-773-4902
   Email:    swessling@wesslingarchitects.com
   CC purchasing@quincyma.gov

   All RFI questions shall be on a form including the following information:
   1. Request for Information (RFI) number and date
   2. Company name, address, e-mail
   3. Project Name
   4. Subject
   5. Discipline
   6. Category
   7. Question
   8. Contact name, e-mail

11. A non-mandatory pre-bid walk thru will be held on November 14, 2017 at 10:00 A.M. at the site.

12. The contractor shall have limited use at the site for mobilization. Exact location and timing shall be coordinated with the City of Quincy.

13. The Contractor shall visit the site and carefully examine the areas affected and all conditions, which may affect proper execution of the work, including field dimensions. The Owner will provide additional access at their convenience. No claims for additional costs will be allowed because of lack of full knowledge of the existing conditions. Contractor’s proposal shall include all work necessary to complete the work as hereinafter specified.

14. It is in the interest of the Owner that General Contractors shall bid on identical specifications and
variations shall not be allowed without the consent of the Owner.

15. The Contractor shall include all charges for labor, materials, tools, staging, equipment, and supervision to complete, in a thoroughly workmanlike manner, all the work described hereafter. All work shall be according to code and approved by the proper authority.

16. The Contractor shall be responsible for obtaining all necessary permits required for the work. Such permits shall be obtained from the local or state authorities having jurisdiction over the work.

17. Where necessary, the Contractor shall take full and protective precautions to protect any and all property and structures in the vicinity of the work area from any damage whatsoever arising from the work. He shall, at his own expense, completely repair to the satisfaction of the Owner’s and all damages to such property and structures arising from his operations.

18. Materials having salvage value shall become the property of the Owner. All other materials and debris accumulated because of this operation shall be deposited in a designated dumpster on site. No hazardous materials shall be left on site or deposited in any container on site. The premises are to be left clean and neat.

19. Changes to the work order from these specifications, as written shall not be made by the Subcontractor except as provided in the General Conditions of the Contract. The Owner will not pay for any work done by the Contractor unless the Architect confirms the change or changes in writing prior to the execution of these changes. AIA Form G701 shall be used to show any additions or deductions to the contract proposal.

20. The Contractor and their sub-contractors shall each carry workmen’s compensation liability insurance for work under this proposal. Insurance limits shall be in accordance with the requirements noted herewith. It shall be the responsibility of the Contractor to purchase from and maintain in a company or companies lawfully authorized to do business in Massachusetts insurance for protection from claims under workmen’s compensation and other employee benefit acts which are applicable, claims for damages because of bodily injury, including death, and from claims for damages other than the work itself, to property which may arise out of or result from the Contractor’s operations under the contract, whether such operation be by the Contractor or by a sub-contractor or anyone directly or indirectly employed by any of them. The Contractor shall render an in effect insurance certificate to the Owner prior to starting work.

21. Contractor shall be prepared to sign Standard Form of Agreement between Owner and Contractor included herein. The Standard General Conditions of the Contract, Articles One through Fourteen inclusive, shall govern administration of the work. All documents shall be the latest edition.

22. The Building Owner reserves the right to reject any and all bids for the work, for any reason, and to waive any informalities in the bid procedure of bidding and to award the work to the bidder most suitable to the interest of the Owner.

23. Proposals shall be broken down to show a separate price for work by the trade division. Proposal shall also include total price for the complete work. In addition, proposals shall state the commencement and completion dates of the work. These dates shall be based on the estimate of working days excluding Saturdays, Sundays, and holidays.
24. Contractor’s invoices or requisitions shall be submitted using AIA Form G702 and G702A. All requisitions shall be notarized.

25. The Bidder is advised that the Owner, as a “not for profit public agency”, and is not required to pay the Massachusetts Sales Tax on materials to be purchased and built into the work. Contractor proposal and invoices for the project shall reflect this requirement.

26. Contractor shall furnish to the Owner when requested and before or with his invoice or requisition, Release of Lien form similar to AIA Document G706A.

27. DCAMM Certification in each category Sub Trade and General Contractors is required.

END OF SECTION 00 11 17
TAX COMPLIANCE CERTIFICATE

MASS. GENERAL LAWS, CH. 62C, S: 49A(b)

I hereby certify that I have complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding of child support.

Signed under the pains and penalties of perjury.

(1) Individual Contractor

(Contractor’s Name and Signature)

Social Security Number

(2) Corporation, Association or Partnership

(Contractor’s Name)

Federal Tax ID Number, or Social Security Number

By:

(Authorized Signature)

Note to Contractor: Please sign at (1) or (2), whichever applies.
CHAPTER 62C. ADMINISTRATIVE PROVISIONS RELATIVE TO STATE TAXATION
Chapter 62C: Section 49A Certification of compliance with tax laws as prerequisite to obtaining license or governmental contract

Section 49A. (a) Any person applying to any department, board, commission, division, authority, district or other agency of the commonwealth or any subdivision of the commonwealth, including a city, town or district, for a right or license to conduct a profession, trade or business, or for the renewal of such right or license, shall certify upon such application, under penalties of perjury, that he has complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support. Such right or license shall not be issued or renewed unless such certification is made.

(b) No contract or other agreement for the purposes of providing goods, services or real estate space to any of the foregoing agencies shall be entered into, renewed or extended with any person unless such person certifies in writing, under penalties of perjury, that he had complied with all laws of the commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

(c) Any such agency, which has been notified by the commissioner pursuant to section forty-seven A that a person who holds a license or certificate of authority issued by such agency or who has agreed to furnish goods, services or real estate space to such agency has neglected or refused to file any returns or to pay any tax required under this chapter and that such person has not filed in good faith a pending application for abatement of such tax or a pending petition before the appellate tax board contesting such tax or has been penalized pursuant to section 9 of chapter 62E for failure to comply with the provisions under said chapter 62E relating to reporting of employees and contractors, or has been penalized pursuant to paragraph (3) of subsection (f) of section 12 of chapter 119A for failure to comply with the provisions under said chapter 119A relating to withholding and remitting child support, shall refuse to reissue, renew or extend such license, certificate of authority, contract or agreement until the agency receives a certificate issued by the commissioner that the person is in good standing with respect to any and all returns due and taxes payable to the commissioner as of the date of issuance of said certificate, including all returns and taxes referenced in the initial notification or, if the licensee has been penalized for failure to comply with the provisions relating to reporting of employees and contractors under chapter 62E or withholding and remitting child support under chapter 119A, a certificate issued by the commissioner that the licensee is in compliance with said provisions.

(d) Any person who owns or leases a motor vehicle or trailer that is required to be registered in the commonwealth under chapter 90 and improperly registers the motor vehicle or trailer in another state or misrepresents the place of garaging of the motor vehicle or trailer in another city or town, shall be considered in violation of laws of the commonwealth relating to taxes under chapter 60A, chapter 64H or chapter 64I. The right, license or contract provided for in subsections (a) and (b) shall not be issued or renewed until the person or business entity has paid all taxes due at the time of application for such right, license or contract.

(e) Any person who, for the purpose of evading payment of a tax pursuant to chapters 59 to 64J, inclusive, willfully makes and subscribes any return, form, statement or other document pursuant to subsection (a), (b) or (d) that contains or is verified by a written declaration that is made under the penalties of perjury, and that contains information that he does not believe to be true and correct as to every matter material to his compliance with all laws of the commonwealth relating to taxes, shall be subject to section 73.
CERTIFICATE OF NON – COLLUSION

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union committee, club, or other organization, entity, or group of individuals.

(Name of person signing bid or proposal)
(Please print)

(Signature required)

(Name of business)
**CONTRACTOR'S CERTIFICATION**

A Contractor will not be eligible for award of a contract unless he has submitted the following certification, which is deemed a part of the resulting contract.

__________________________________________ certifies that:

1. it intends to use the following listed construction trades in the work under the contract:

   ____________________________________________

2. will comply with the minority manpower ratio and specific affirmative action steps contained herein; and

3. will obtain from each of its subcontractors and submit to the contracting administering agency prior to the award of any subcontract under this contract the subcontractor certification required by these bid conditions.

____________________________________________
Contractor's Signature/Authorized Representative

**B. SUBCONTRACTOR'S CERTIFICATION**

Prior to the award of any subcontract, regardless of tier, the prospective subcontractor must execute and submit to the Prime Contractor the following certification, which will be deemed a part of the resulting subcontract.

__________________________________________ certifies that:

1. it tends to use the following listed construction trades in work under the subcontract:

   ____________________________________________ ; and

2. will comply with the minority manpower ratio and specific affirmative action steps contained herein.

____________________________________________
Subcontractor's Signature

In order to ensure that said subcontractor's certification becomes a part of all subcontracts under the general contract, no subcontract shall be executed until an authorized representative of the state/municipal agency (or agencies) administering this project has determined, in writing, that said certification has been incorporated in such subcontract, regardless of tier. Any subcontract executed without such written approval may be deemed invalid.
CERTIFICATION OF GENERAL BIDDERS ON PUBLIC CONSTRUCTION PROJECTS

I. CERTIFICATION REGARDING HEALTH AND SAFETY

The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work; that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least ten hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and that he will comply fully with all laws and regulations application to awards made subject to section 44A.

II. CERTIFICATION REGARDING NON-COLLUSION AND DEBARMENT

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word “person” shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

Date: __________________

__________________________________________
Name of General Bidder

By _______________________________________
Signature

__________________________________________
Print name and title

__________________________________________
Business Address

__________________________________________
Street Address City and State
CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY

This certification is required pursuant to Executive Order 112A6 (30 R.R. 123 1935). The implementing rules and regulations, provide that any bidder or prospective contractor, or any of their proposed subcontractors, shall state as an initial part of the bid or negotiations of the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity cause: and, if so, whether it has filed all compliance reports due under applicable instructions.

Where the certification indicates that the bidder has not filed a compliance report due under applicable instructions, such bidder shall be required to submit a compliance report within seven (7) calendar days after bid opening. No contract shall be awarded unless such report is submitted.

CERTIFICATION BY BIDDER

NAMES AND ADDRESS OF BIDDER (Include Zip Code):

1. Bidder has participated in a previous contract or subcontract subject to the Equal Opportunity Clause.
   
   Yes            No

2. Compliance reports were required to be filed in connection with such contract or subcontract.
   
   Yes            No

3. Bidder has filed all compliance reports due under applicable instructions, including SF-100.
   
   Yes            No

4. Have you ever been or are you being considered for sanction due to violation of the Executive of 112A6, as amended?
   
   Yes            No

Name and Title of Signatory (Please Type)

Signature: _________________________________  Date:
REQUIREMENTS FOR MINORITY/WOMEN BUSINESS ENTERPRISE

I. In this contract, the percentage of business activity to be performed by Minority/Women Business Enterprise(s) shall not be less than the following percentages of the total contract price, or the percentage submitted by the contractor in the Schedule of Participation, whichever is greater.

   Minority Contractors  **10**%          Women Contractors  **5**% 

II. DEFINITIONS

For the purpose of these provisions, the following terms are defined as follows:

A. **Agency:** The City of Quincy.

B. **Bidder:** Any individual, partnership, joint venture, corporation, or firm submitting a price, directly or through an authorized representative, for the purpose of performing construction related activities under a contract.

C. **Certificate of Work Start-Up:** A letter to be signed by a principal contractor prior to performance of work by Minority and Women Business Enterprises under a Contract (See attached form EEO-390).

D. **Compliance Unit:** A subdivision of the Agency's Affirmative Action Office designated to ensure compliance under these provisions.

E. **Contract Compliance Officer:** The person(s) designated by the Agency to assist and make recommendations with respect to compliance with the provisions of this document.

F. **Contractors:** Any business that contracts or subcontracts for construction, demolition, renovation, survey, or maintenance work in the various classifications customarily used in work and that is acting in this capacity under the subject contract.

G. **Construction Related Services:** Those services performed at the work site ancillary to, and/or in support of, the construction work, such as hauling, trucking, equipment operation, surveying or other technical services, etc. For the purposes hereof, and delivery of materials (e.g. pre-cast concrete elements) to the site by a supplier.
who has manufactured those goods, or substantially altered them before re-sale shall be considered as "construction related services".

**Construction Work:** The activities at the work site, or labor and use of materials in the performance of constructing, reconstructing, erecting, demolishing, altering, installing, disassembling, excavating, etc., all or part of the work required by the Contract Documents.

**H. Equipment Rental Firm:** A firm that owns equipment and assumes actual and contractual responsibility for renting said equipment to perform a useful function of the work of the contract consistent with normal industry practice.

**I. Grantee:** An agency, person or political subdivision which has been awarded or received financial assistance by the Trust or the Agency.

**K. Joint Venture:** An agreement between SOMWBA certified M/WBE and a non-minority or non-woman, controlled enterprise.

1. A pairing of companies will be considered a MBE or WBE joint venture if the SOMWBA certified M/WBE, which is part of the relationship has more than 51% of the profits that are derived from that project.

2. A joint venture between a certified M/WBE, subcontractor and a non-M/WBE subcontractor, in which the M/WBE for that proportion joint venture's contract equal to the M/WBE participation in the joint venture.

3. Whenever a general bid is filed by a joint venture with a certified M/WBE participant in the joint venture that does not exercise more than 51% control over management and profits, that joint venture shall be entitled to credit as a M/WBE for that portion of the joint venture's contract equal to the M/WBE participation in the joint venture Minority. As deemed by SOMWBA.

**L. Letter of Intent:** Certified document signed by the principal(s) of the Minority or Women Business Enterprise with respect to the work to be performed under the contract.

**M. Local Government Unit:** A City, Town, or municipal district which applies for a loan or grant from a State or Federal Agency.
N. **Material Supplier:** A vendor certified by SOMWBA as a M/WBE in sales to supply industry from an established place of business or source of supply, and that vendor.

1. Manufacturers goods from raw materials, or substantially utilizes them in the work, or substantially alters them before resale, entitling the general contractor to M/WBE credit for 100% of the purchase order.

2. Provides and maintains a storage facility for materials utilized in the work, entitling the general contractor to M/WBE credit for 100% of the purchase order.

O. **M/WBE Quarterly Activity Report:** A letter to be signed by a principal contractor with respect to certain work performed by Minority and Women Business Enterprises under a Contract (See Attached From EEO-290).

P. **Minority and Women Business Enterprise (M/WBE):** Any business concern certified by SOMWBA as a bona fide M/WBE. A bona fide M/WBE is a business whose minority group or women ownership interests are real, which have at least 51% ownership and control over management and operations.

Q. **Percent of Total Price:** Is the percentage to be paid to the M/WBE, work they perform, as compared to the total bid price.

R. **SOMWBA:** The State Office of Minority and Women Business Assistance.

S. **Total Contract Price:** The total amount of compensation to be paid for all materials, work or services rendered in the performance of the contract.

**III. REQUIREMENTS FOR CONTRACT AWARD**

A. As part of the contract bid documents, the contractor shall submit a schedule with accompanying letters of intent on the appropriate forms (see forms EEO-190 and EEO 191). The letter of intent shall include, among other things, a reasonable description of the work the M/WBE is proposing to perform and the prices the M/WBE proposes to charge for the work.

A letter of intent shall be jointly signed by the M/WBE and the primary contractor who proposes to use them in the performance of the Contract. The schedule shall list the
M/WBEs with whom the contractor intends to subcontract and state the total price to be paid to each M/WBE as taken from each letter for intent submitted under this subsection.

B. As part of the bid proposal, the bidder shall submit a **Schedule of Participation** on the form attached and shall list those M/WBEs the contractor intends to use in fulfilling the contract obligations, the nature of the work to be performed by each M/WBE subcontractor and the total price they are to be paid.

1. A listing of bona fide service such as a professional, technical, consultant or managerial services, assistance in the procurement of essential personnel, facilities, equipment, materials, or supplies required for performance of the Contract and reasonable fees or commissions charged.

2. A listing of haulers, truckers, or delivery services, not the contractors, including reasonable fees for delivery of said materials or supplies to be included on the project.

C. As part of the contract bid documents, the contractor shall submit the SOMWBA "Minority and Women Certification" as prepared by each M/WBE.

**IV. REQUIREMENTS FOR MODIFICATION OR WAIVERS**

The bidder shall make every possible effort to meet the minimum requirements of M/WBE participation. If the percentage goals of M/WBE participation submitted by the bidder on its Schedule of Participation (EEO-190) does not meet the minimum requirements, the bid may be rejected and/or found not to be eligible for award of the contract, unless the bidder is granted a waiver pursuant to this section.

In the event that a bidder is unable to meet the minimum M/WBE percentage goals, the bidder may submit a Request for Waiver (EEO-490). The Agency in conjunction with the project manager, Affirmative Action and Compliance Unit, will make an assessment of the bidder's application for a waiver.

Within five (5) working days following the bid opening, the bidder must submit by registered mail to the Agency detailed information as specified below to establish that they have made a good faith effort to comply with the percentage goals specified in EEO-190. In addition, the bidder must show that such efforts were undertaken will in advance of the time set for the opening of the bids to allow adequate response. If the information and documentation demonstrates that despite such efforts the bidder was/is unable to meet the M/WBE participation requirements, a waiver request may be submitted which provides the following:

A. A detailed record of the effort made to contract and negotiates with minority and/or
women businesses, including:

1. Names, addresses and telephone numbers of all such companies contacted;

2. Copies of written notice(s) which were sent to M/WBE potential subcontractors, prior to bid opening;

3. A detailed statement as to why each subcontractor contacted (I) was not willing to do the job or (ii) was not qualified to perform the work as solicited; and

4. In the case(s) where a negotiated price could not be reached, the bidder should detail what efforts were made to reach an agreement on a competitive price;

5. Copies of advertisement, dated not less than ten days prior to bid opening date, as appearing in general publications, trade oriented publications, and applicable minority/women-focuses media detailing the opportunities for participation.

B. The Agency may require the bidder to produce such additional information as it deems appropriate.

C. No later than fifteen (15) days after submission of all required information and documentation, a decision as to whether a waiver will be granted will be made in writing to the bidder. If the waiver request is denied, the facts upon which a denial is based will be set forth in writing. A bidder, who is dissatisfied with the decision, may appeal that decision.

D. If it is determined that one or more of the M/WBE contractors submitted by the bidder on form EEO-190 is not SOMWBA certified, the bidder shall have ten (10) working days, following notification to either find a certified M/WBE to perform work equal to or greater than that of the uncertified contractor or to submit a required for waiver pursuant to this section.

V. M/WBE PARTICIPATION

A. Reporting Requirements

1. The contractor is required to submit Quarterly M/WBE Activity Report within ten (10) days following the reporting period. These reports shall include all minority and women businesses performing work on the project during the reporting period (See Attached Form EEO-290). For auditing and accounting purposes, the General Contractor periodically may be required to submit copies of canceled checks verifying that payment have been made to the M/WBE as listed on the
2. The contractor is required to submit a completed **Certificate of Work Start-Up** by Minority and Women Business Enterprise within ten (10) days of work start-up for each M/WBE identified in the "Schedule of Participation of MBEs and WBEs or working on the contract activity. The form must be signed by both the contractor and the M/WBE prior to submittal to the Agency. (See attached Form EEO-390).

3. The contractor shall not perform any work designated for the named M/WBE on the Schedule submitted under Part I hereof, with its own organization or subcontractor(s) or any other contractor, without the prior written approval of the Agency.

4. During the life of the contract, the contractor's fulfillment of the percentage requirements in Part I shall be determined with reference to the contract price as follows:

   a. If the price in the contract executed exceeds the base bid price (e.g. because an alternate was selected or because unit prices were used in awarding the contract), the contractor shall submit for approval by the agency a revised Schedule of Participation by MBEs and WBEs satisfying the percentage requirements and such other information concerning additional M/WBE participation as may be requested by the Agency.

   b. If the contract price increases after execution due to change orders or other adjustments, the Agency may require the contractor to subcontract additional work to or to purchase additional goods and services from MBEs and WBEs up to the percentages stated in Part I.

VI. **COMPLIANCE**

A. If the Schedule or any of the Letters of Intent are materially incomplete, the Local Government Unit may rescind its vote of award; treat the bid informal as to substance and reject the bid. If the bid is incomplete in any other respect than the Schedule, the Local government Unit, with the approval of the Agency may waive the informalities upon satisfactory completion of the required information by the Contractor and the M/WBE, as applicable.

B. If the Local Government Unit finds that the percentage of M/WBE participation submitted by the contractor on its Schedule does not meet the requirements in Part I, it may rescind its vote of award and find such contractor not to be eligible for award of the contract.
C. The contractor shall not perform with its own organization, or subcontract to any other primary or subcontractor any works designated for the names M/WBEs on the schedule submitted by the prime contractor under Part III without the approval of the Agency.

D. A contractor's compliance with the percentage requirements in Part I shall continue to be determined by reference to the required percentage of the total contract price as stated in Section I, even though the total of actual contract payments may be greater or less than the bid price.

E. If the general contractor, for reasons beyond its control, cannot comply with Part III, in accordance with the Schedule submitted under Part III, section B, the contractor must submit to the Compliance Unit as soon as they are aware of the deficiency, the reason for its inability to comply.

Proposed revisions to the Schedule stating how the contractor intends to meet its obligations under these conditions must be submitted within ten (10) working days of notification.

F. Any change or substitution of the officers or stockholders in an M/WBE organization that reduces the ownership or control to fewer than 51% by minority person(s)/Women or less than the requisite percentage shall be grounds for immediate rescission of the M/WBE status. Contractor's compliance with this special provision obligation will be considered terminated immediately upon notification that the M/WBE designation has been rescinded, and the Contractor shall proceed by notifying SOMWBA and the Compliance Unit as stated above in subsection (C).

G. If an M/WBE listed by the general bidder in its Schedule of M/WBE contractors fails to obtain a performance or payment bond requested by the general bidder, said failure shall not entitle the bidder to avoid the requirements of Part III (A). After a general bidder has been awarded to contract, he shall not change the M/WBE listed in its Schedule at the time of award or make any other such substitution without the written approval of the Agency.

H. The contractor and the M/WBEs shall comply with all reporting requirements of the Compliance Unit to demonstrate ongoing compliance with the Schedule of Participation and the Letters of Intent.

VII. EQUAL EMPLOYMENT OPPORTUNITY FOR THE HANDICAPPED

The contractor shall comply with the provisions of the Executive Order No. 143 entitled "Equal Employment Opportunity for the Handicapped" which is herein incorporated by reference and made a part of this contract. In connection with the performance of work under this contract, the contractor, sub-contractors and suppliers of goods and services must give written notice of their
commitments under this Article to any Labor Union, association or brotherhood with which they have a collective bargaining contract or other agreement. A copy of such notice must be furnished to the Grantee at the time of signing of the contract.

VIII SANCTIONS

A. If the contractor does not comply with the terms of these Special Provision, the Awarding Authority may (1) suspend any payment for the work that should have been performed by a M/WBE pursuant to the schedule, or (2) require specific conformance of the contractor's obligations by requiring the contractor to subcontract with a M/WBE for any contract or specialty item at the contract price established for that item in the proposal submitted by the Contractor.

B. To the extent that the contractor has not complied with the terms of these Special Provisions, the Awarding Authority may retain in connection with Estimates and Payments an amount determined by multiplying the bid price of this contract by the percentage in Section I, less the amounts paid to M/WBEs for work performed under the contract and any payments already suspended under VIII A.

C. In addition or as an alternative, to the remedies under VIII-A and B, the Awarding Authority may suspend, terminate or cancel this contract, in whole or in part, or may call upon the contractor's surety to perform all terms and conditions in the contract, unless the contractor is able to demonstrate his compliance with the terms of these Special Provision, and further deny to the contractor, the right to participate in any future contracts awarded by the Awarding Authority for a period of up to three years.

D. In any proceeding involving the imposition of sanctions by the Awarding Authority, no sanctions shall be imposed if the Awarding Authority finds that the contractor has taken every possible measure to comply with these Special Provisions or that some other justifiable reason exists for waiving these Special Provisions in whole or in part.

E. The contract shall provide such information as is necessary in the judgement of the Awarding Authority to ascertain its compliance with the terms of these Special Provisions.

IX. HEARINGS AND APPEALS

A. No sanctions under Section VIII shall be imposed by the Awarding Authority except in an adjudicatory proceeding under Chapter 30A of the Mass. General Laws.

B. A contractor shall have the right to request suspension of any sanctions imposed under
Section VIII upon demonstrating that he is in compliance with these Special Provisions.

<table>
<thead>
<tr>
<th>ITEM I - Minority Business Enterprise Participation in the Works</th>
<th>Name and Address of MBE</th>
<th>Nature of Participation</th>
<th>Dollar Value of Participation</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Total MBE Commitment:</td>
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<tr>
<td>Percentage MBE Participation (Total Commitment) (Total Bid Price)</td>
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<tr>
<td>ITEM II - Women's Business Enterprise Participation in the Works</td>
<td>Name and Address of WBE</td>
<td>Nature of Participation</td>
<td>Dollar Value of Participation</td>
</tr>
<tr>
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</tbody>
</table>
Total WBE Commitment: ________________________________
Percentage WBE Participation (Total Commitment) (Total Bid Price) = ________________________________

The bidder agrees to furnish implementation reports as required by the Awarding Authority to indicate the M/WBE which it has used or intends to use. Breach of this commitment constitutes a breach of contract.

Name of General Bidder: ____________________________________________________________.
Date: _______________________________ By: _______________________________ (Signature)
Note: Participation of a minority-owned or women-owned enterprise may be counted in only one category; the same participation cannot be used in computing the percentage of the Minority Participation and again of Women Participation.

THIS FORM MUST BE SUBMITTED WITH THE BID. EEO-190

LETTER OF INTENT - MINORITY BUSINESS ENTERPRISE

This form is to be completed by the MBE and must be submitted by the General Contractor as part of the bid proposal. A separate form must be completed for each MBE and WBE involved in the project.

TO: ___________________________________________ (Name of Bidder)
FROM: ___________________________________________ (Name of MBE)

☐ I/We intend to perform work in connection with the above project as:

[ ] an individual [ ] a partnership
[ ] a corporation [ ] a joint venture with ____________________________
[ ] other (explain): ____________________________

☐ It is understood that if you are awarded the contract, you intend to enter into an agreement to perform the activity described below for the prices indicated.

**MBE Participation**

<table>
<thead>
<tr>
<th>Description of Activity</th>
<th>Project Date</th>
<th>Commencement</th>
<th>$ Amount</th>
<th>% of Bid Price</th>
</tr>
</thead>
</table>

00 11 26 -10
The undersigned certify that they will enter into a formal agreement upon execution of the contract for the above referenced project.

**BIDDER**

(Authorized Signature)    DATE

ADDRESS:______________________________

PHONE: ( ) ____________________________

**MBE**

(Authorized Signature)    DATE

ADDRESS:______________________________

PHONE: ( ) ____________________________

****Copy of SOMWBA Certification Letter Must Be Attached and Submitted with Bid.****

**LETTER OF INTENT – WOMEN’S BUSINESS ENTERPRISE**

This form is to be completed by the WBE and must be submitted by the General Contractor as part of the bid proposal. A separate form must be completed for each MBE and WBE involved in the project.

**Project Title:** __________________________ **Project Location:**

**TO:** ____________________________

(Name of Bidder)

**FROM:** ____________________________

(Name of WBE )

☐ I/We intend to perform work in connection with the above project as:

[ ] an individual  [ ] a partnership

[ ] a corporation  [ ] a joint venture with ________________________.

[ ] other (explain):__________________________.

☐ It is understood that if you are awarded the contract, you intend to enter into an agreement to perform the activity described below for the prices indicated.

**WBE Participation**

<table>
<thead>
<tr>
<th>Description of Activity</th>
<th>Project Date</th>
<th>Commencement</th>
<th>$ Amount</th>
<th>% of Bid Price</th>
</tr>
</thead>
</table>

00 11 26 -11
The undersigned certify that they will enter into a formal agreement upon execution of the contract for the above referenced project.

<table>
<thead>
<tr>
<th>BIDDER</th>
<th>WBE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Authorized Signature) DATE</td>
<td>(Authorized Signature) DATE</td>
</tr>
</tbody>
</table>

ADDRESS: ______________________

ADDRESS: ______________________

PHONE: ( ) ______________________

PHONE: ( ) ______________________

****Copy of SOMWBA Certification Letter Must Be Attached and Submitted with Bid.

REQUEST FOR WAIVER
MINORITY AND WOMEN BUSINESS ENTERPRISE PARTICIPATION

Upon exhausting all known sources and making every possible effort to meet the minimum requirements for MBE/WBE participation, the Contractor may seek relief from these requirements by filing this form (completed) NO LATER THAN FIVE (5) WORKING DAYS following the bid opening. Failure to comply with this process shall be cause to reject the bidder, thereby rendering the contractor not eligible for award of the contract.

General Information

Project Title: ______________________

Project location: ______________________

Bid Opening (time/date): ______________________

Location: ______________________

Bidder: ______________________

Mailing Address: ______________________

Contact Person: ______________________

Telephone Number: ( ) ______________________ Ext. ______________________

Minimum Requirements

00 11 26 -12
The contractor must show that good faith efforts were undertaken to comply with the percentage goals as specified. The bidder seeking relief must show that such efforts were taken appropriately in advance of the time set for opening bid proposals to allow adequate time for response(s) by submitting the following:

A. A detailed record of the effort made to contact and negotiate with minority and/or woman owned businesses, including:
   1. Names, addresses and telephone numbers of all such operations contacted:
   2. copies of written notice(s) which were sent to MBE/WBE potential subcontractors prior to bid opening;
   3. copies of advertisements prior to bid opening as appearing in general publications, trade-oriented publications, and applicable minority/women focus media detailing the opportunities for participation;
   4. a detailed statement as to why each subcontractor contacted (i) was not willing to do the job or (ii) was not qualified to perform the work as solicited; and
   5. in the case(s) where a negotiated price could not be reached, the bidder should detail what efforts were made to reach an agreement on a competitive price.

B. The Agency may require the contractor to produce such additional information as it deems appropriate and may obtain whatever other information it deems necessary to reach a conclusion from any source.

C. No later than fifteen (15) days after receipt of all necessary information and documentation, a decision will be made in writing to the bidder. If the waiver request is denied, the facts upon which a denial is based will be set forth. A contractor who is dissatisfied with the decision may then appeal that decision to the EOEA.

Special Note:

If it is determined that one or more of the MBE/WBE contractors, as submitted by the contractor on form EEO-190, is not SOMWBA certified by the Local Government Unit in accordance with the provision of Executive Order 237, the bidder shall have ten (10) working days, following notification to either find a certified MBE/WBE contractor to perform work equal to or greater than that of the uncertified contractor or submit a waiver request.

CERTIFICATION

The undersigned herewith certifies that the above information and appropriate attachments are true and accurate to the best of my ability and that I have been authorized to act on behalf of the bidder in this matter.

______________________________  ___________________________
(Authorized Signature)          (DATE)

EEO-490

00 11 26 -13
CERTIFICATE OF WORK START-UP
BY MINORITY/WOMEN BUSINESS ENTERPRISE

This form is to be submitted to the Project Administrator and the MBE Compliance Coordinator within ten (10) days after commencing work by the MBE or WBE. A separate form must be filed for each MBE/WBE involved in the project. Be sure to indicate whether this form is being filed in accordance with the original or a revised schedule of participation.

Contract # __________________________ Date: ______________________, 20 _____.

Contract Title: ___________________________ Project Location: ____________.

General Contractor: ___________________________.

Subcontractor: ___________________________.

(Please indicate [ ] MBE or [ ] WBE)

DESCRIPTION OF MBE/WBE WORK (LETTER OF INTENT)

Description of Activity and Total Participation*

MBE/WBE Work to Commence on _________________ MBE/WBE Amount: $ _____________.

[ ] Original Schedule OR [ ] Revised Schedule, dated ___________________________.

If the work start up date or description of activity are different from that listed on the Letter of Intent or Contract, please explain: (if more space is needed continue on back of sheet).

I hereby certify that all work listed in the Contract/Letter of Intent (or approved changes thereto as explained above) will/have commence(d) on

________________________, 20 _____ and that the above amount of these services is the true amount.

<table>
<thead>
<tr>
<th>General Contractor</th>
<th>Sub-Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Authorized Original Signature) Date</td>
<td>(Authorized Original Signature) Date</td>
</tr>
<tr>
<td>Title: ___________________________</td>
<td>Title: ___________________________</td>
</tr>
<tr>
<td>Address: ___________________________</td>
<td>Address: ___________________________</td>
</tr>
<tr>
<td>Tel.#:(_____) ___________________________</td>
<td>Tel.#:(_____) ___________________________</td>
</tr>
</tbody>
</table>

INDICATE STATUS [ ] MBE OR [ ] WBE

*Attach a copy of the Letter of Intent.
QUARTERLY MBE/WBE ACTIVITY REPORT

REPORTING PERIOD

Contract Title: __________________________________________ Project Location: __________________________________________

General Contractor: __________________________________________

Contact Person: __________________________________________ Tel.#:(____)

Subcontractor: __________________________________________ (Please indicated [ ] MBE or [ ] WBE)

Contact Person: __________________________________________ Tel.#:(____)

Compliance Manager (City/Town project location):

Address: __________________________________________ Tel.#: (____)

CONTRACT BILLING THIS QUARTER

Amount Billed by General Contractor during Quarter: $______________________________.

Amount Billed by [ ] MBE or [ ] WBE during Quarter: $______________________________.

CONTRACT BILLING TO DATE

Total Amount Billed by General Contractor to Date: $______________________________.

Total Amount Billed by the [ ] MBE or [ ] WBE to Date $______________________________.

PAYMENT INFORMATION

Total payments made to [ ] MBE or [ ] WBE during Quarter $______________________________.

Total payments made to [ ] MBE or [ ] WBE to Date $______________________________.

Discuss any problems, adjustments or major milestones encountered during the reporting period (if more space is needed, use the back of the sheet):

CITY/TOWN COMPLIANCE MANAGER GENERAL CONTRACTOR

(Date) (Authorized Original Signature) (Date) (Authorized Original Signature)

Tel.# (____) Tel.(____)

Separate form must be filed for each MBE and WBE involved in the project. Submit copies of canceled checks to the MBE/WBE with this report.
MINORITY BUSINESS ENTERPRISE/WOMEN'S BUSINESS ENTERPRISE
CONTRACT COMPLETION VERIFICATION

Within thirty (30) days of submission by the General Contractor of the Final Pay Estimate, verification of all MBE/WBE participation in the Contract must be submitted to the City.

This form must be completed (Original Signatures only) and forwarded to the City’s Contract Compliance Officer (DPW Administrative Assistant), 55 Sea Street, Quincy, MA 02169.

********************************************************************************************

OWNER

<table>
<thead>
<tr>
<th>Name of Owner</th>
<th>Contract Name/Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Authorized Representative Name)</td>
<td>(Title)</td>
</tr>
</tbody>
</table>

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GENERAL CONTRACTOR

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Telephone Number</th>
<th>Contract Name/Number</th>
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</thead>
<tbody>
<tr>
<td>Street Address</td>
<td>Contract Acceptance Date</td>
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</tr>
<tr>
<td>City/Town</td>
<td>Zip Code</td>
<td>Contract Bid Amount</td>
</tr>
</tbody>
</table>

********************************************************************************************

(Circle One)  MBE  WBE  SUBCONTRACTOR

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Subcontract Amount</th>
<th>1st Payment Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Address</td>
<td>Total Received</td>
<td>Last Payment Date</td>
</tr>
<tr>
<td>City/Town</td>
<td>Zip Code</td>
<td>Telephone Number</td>
</tr>
</tbody>
</table>

********************************************************************************************

Signature - Title

Use separate copies of this form for each MBE/WBE contractor.
RIGHT-TO-KNOW LAW

A bidder will not be eligible for award of this contract under this invitation for bids unless such bidder has submitted as part of its bid the following certification which will be deemed a part of the resulting contract.

CERTIFICATION

The Bidder hereby certifies that, if awarded this contract, he will fully comply with the Massachusetts Right-To-Know Law, c.470 of the Acts of 1983, (the Act). In addition, he shall:

1. obtain a Material Safety Data Sheet (MSDS), for all substances or mixtures of which appear on the Massachusetts Substance List that he or any of his subcontractors brings to or uses on the work site and will keep a copy of the MSDS on the work site of this contract;

2. label each container of a substance or mixture of substances on the Massachusetts Substance List, as required, in section 7 of the Act;

3. provide the same training and non-technical instruction that he is required to provide under section 15 of the Act to all Quincy personnel. Training shall include instructing on the nature and effects of any substance or mixture of substances listed on the Massachusetts Substance List which the Bidder or any of his subcontractors brings to or uses on the worksite.

4. provide to Quincy DPW employees on the work site the same protective equipment that the bidder or any of his subcontractors provides to his employees.

____________________________________
Signature of Authorized Representative of Bidder

Bidder's Name: ____________________________________

Bidder's Address: ____________________________________
CERTIFICATION
NON-SEGREGATED FACILITIES

The Bidder certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under this control, where segregated facilities are maintained. The Bidder certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments and that he will not permit his employees to perform their services at any location under his control where segregated facilities are maintained. The Bidder agrees that a breach of this certification will be a violation of the Equal Opportunity clause in any contract resulting from acceptance of this bid. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms, and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion or national origin, because of habit, local custom or otherwise. The Bidder agrees that (except where he has obtained identical certification from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding $10,000.00 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in his file.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. ss.1001.

Date: ______________________, 20___

(Name of Bidder)

Official Address (including Zip Code)

By: ________________________________

(Title)

00 11 29 -1
AFFIDAVIT REGARDING PRIOR LABOR DISPUTES

The Bidder must execute and complete the following statements as to whether it has been the subject of, or otherwise been involved in, any labor dispute during the past five (5) years. If the Bidder has been the subject of, or otherwise been involved in any labor dispute during this period, the bidder must also provide a detailed description of each labor dispute, including the name and location of the project worked on, the nature of the dispute was resolved. For these purposes, "labor disputes" shall include picketing or any other activity which disrupted or delayed the work.

I ________________________________, being first duly sworn, do hereby depose/state:

(Name)

1. I make each of the following statements with full authorization to bind

______________________________ to each of the representations made below.

(Name of Bidder)

2. ________________________________ has/has not been involved in a labor dispute

(Name of Bidder)

as described above, within the past five (5) years.

3. (Complete only if bidder has been involved in dispute).

The dispute(s) occurred on the following project(s). (Use separate sheet if necessary)

<table>
<thead>
<tr>
<th>Name and Location of Project</th>
<th>Date Dispute Began</th>
<th>Date Concluded</th>
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<tbody>
<tr>
<td>a.</td>
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<tr>
<td>b.</td>
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</tbody>
</table>

Attach separate sheet and give full description of the nature of each dispute and an explanation of how it was resolved. (Please give a full description below, for each such dispute).

Signed under the penalty of perjury this _____ day of ________________, 20____.

BY: __________________________________________

on behalf of: ________________________________

(company name)
CERTIFICATION

Internal Accounting

The Contractor certifies that it has internal accounting controls, as required by Chapter 30, Section 39R and that the Contractor will:

1. maintain accurate and detailed accounts for a six (6) year period after the final payment;
2. file regular statements of management concerning internal auditing controls;
3. file an annual audited financial statement; and
4. submit a statement from an independent certified public accountant that such CPA has examined management's internal auditing controls and expresses an opinion as to their consistency with management's statements in (2) above, and whether such statements are reasonable with respect to transactions and assets that are substantial in relation to designer's financial statements. General Laws, Chapter 7, Section 301 (e).

Signed under the pains and penalties of perjury:

______________________________
Name of Company

______________________________
Authorized Signature

Note: This form is to be completed only when the contract exceeds $100,000 and is for the purchase of materials or for the construction, renovation, etc. of public works or public buildings.
(To be typed onto letterhead of the Certified Public Accountant)

City of Quincy
City Solicitor's Office
1305 Hancock Street
Quincy, MA  02169

Attn:        Jim Timmins
            City Solicitor

RE:            Project Name

Dear Mr. Timmins;

Please be advised that I have reviewed the statement on internal accounting controls prepared by/for
__________________________ (Name of company), in connection with the above
captioned project. This statement is required under Massachusetts General Laws, Chapter 30, Section 39R. In our opinion,
representations of management are consistent with our evaluation of the system of internal accounting controls. In addition, we
believe that they are reasonable with respect to transactions and assets in amounts which would be material when measured in
relation to the firm's financial statements.

Yours sincerely,

__________________________
Certified Public Accountant

Note:  This form is to be completed only when the contract exceeds $100,000. and is for the purchase of
materials or for the construction, renovation, etc. of public works or public buildings.
BID BOND

Note: This form may be substituted with standardized form issued by insurance/bonding agent.

KNOW ALL MEN BY THESE PRESENT, that we, the undersigned,
__________________________________________ as Principal and
__________________________________________ as Surety, are hereby held and firmly bound unto
__________________________________________ as OWNER in the penal sum of
__________________________________________, for the payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed this ______ day of ________________, 20 ______

The Condition of the above obligation is such that whereas the Principal has submitted to:
__________________________________________ a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing for the:

NOW, THEREFORE,

(A) If said BID shall be rejected, or

(B) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor, or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID,

then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall in no way be impaired or affected by any extension of the time within which the OWNER may accept such BID, and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these present to be signed by their proper officers the day and year first set forth above.

__________________________________________ (L.S.)
Principal

__________________________________________
Surety

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department’s most current list (Cir. 570, as amended) and be authorized to transact business in the state where the project is located.
SIGNATURE AUTHORIZATION

At a duly authorized meeting of the Board of Directors of the

__________________________________________________________
(NAME OF CORPORATION)

held on ______________________, at which all the Directors were present or waived notice, it was

(DATE)

VOTED, that:

__________________________________ ____________________________________
(NAME) (OFFICER)

of this company, be and he/she hereby is authorized to execute Contracts and Bonds in the name and behalf of said

Company, and affix its Corporate Seal thereto, and such execution of any Contract or obligation in this

Company’s name on its behalf by such _______________________ under seal of the Company, shall be valid

(OFFICER)

and binding upon this Company. It was further voted that the City of Quincy may rely on such authorization of

future Contracts until notified to the contrary.

A true copy,

ATTEST: ______________________________
(CLERK’S SIGNATURE)

PLACE OF BUSINESS: ______________________________

DATE OF THIS CONTRACT: ______________________________

I hereby certify that I am the Clerk of the:

__________________________________ ____________________________________
(COMPANY) (NAME)

duly elected _________________________ of said Company, and that the above VOTE has not been

(TITLE)

amended or rescinded and remains in full force and effect as of the date of this Contract.

_____________________________ CORPORATE SEAL
CERTIFICATION RELATING TO DEBARMENT AND SUSPENSION

The undersigned contractor certifies to the City of Quincy that neither it nor its principals, officers or any affiliated entities has been debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction in accordance with the requirements of OMB Circular A-87 and with Executive Order 12549, “Debarment and Suspension.”

Furthermore, the contractor certifies that it shall not make any subcontract or permit any subcontract to be made with any party which is debarred or suspended or is otherwise excluded in accordance with said OMB Circular and with Executive Order 12549.

This certification shall be for the benefit of the City of Quincy and its successors and/or assigns and is binding upon the contractor, its successors and assigned.

Executed under seal this ____ clay of __________________

________________________________________
Contractor Signature
By it’s duly authorized agent,

________________________________________
Contract Number_____
(Authorized Signature)
KNOW ALL MEN BY THESE PRESENT: that

__________________________________________
(Name of Contractor)

__________________________________________
(Address of Contractor)

a __________________________________________, hereinafter called Principal, and
(corporation, partnership, individual)

__________________________________________
(Name of Surety)

__________________________________________
(Address of Surety)

hereinafter called Surety, are held and firmly bound unto ____________________________.

__________________________________________
(Name of Owner)

__________________________________________
(Address of Owner)

hereinafter called OWNER, in the penal sum of: $ ____________________________.

__________________________________________

Dollars

in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these present.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the ___ day of ________ 20__, a copy of which is hereto attached and made a part hereof for the construction of:

__________________________________________

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof, and any extensions thereof which may be granted by the City, with or without notice to the Surety and during the one year guarantee period, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the City from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the City all outlay and expense which the City may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

00 11 38 -1
Note: This form may be substituted with standard form issued by bonding agency.

PROVIDED FURTHER, that said surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the WORK or to the SPECIFICATIONS.

PROVIDED FURTHER that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, one of which shall be deemed an original, this the ___ day of ______ 20___.

ATTEST

Principal’s Secretary

[SEAL]

BY: ________________________________

______________________________
(Address)

(Witness as to Principal)

______________________________
(Address)

(Surety)

ATTEST:

______________________________
(Surety Secretary)

[SEAL]

BY: ________________________________

______________________________
(Address)

(Witness to Surety)

______________________________
(Address)

(Associate-In-Fact)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department’s most current list (Circular 570 as amended) and be authorized to transact business in the State of projects’ location.
CERTIFICATE OF INSURANCE

This is to certify that the ___________________________ (Company) has issued the policies listed below, that these policies are written in accordance with the Company's standard policies and endorsements, except as indicated below or as noted in the attachments herewith, which policies and endorsements will be made available to ENGINEER and OWNER UPON request, that they provide coverage and limits of liability shown with respect to the insurance indicated that they are in force on this date, that all deductible amounts are indicated below, and that this Certificate is furnish in accordance with and for the purpose of satisfying the requirements of OWNER and ENGINEER in connection with the award and performance of a contract or agreement between ________________________________________________

______________________________________________

1. Name of Insured
2. Address of Insured
3. Location and Description of Work

Project Contract No.

<table>
<thead>
<tr>
<th>Coverage and Limits of Liability</th>
<th>Bodily Injury</th>
<th>Property Damage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy</td>
<td>Each</td>
<td>Each</td>
</tr>
<tr>
<td>Number</td>
<td>Date</td>
<td>Occurrence</td>
</tr>
<tr>
<td>A. Owner’s Protective Liability</td>
<td>$1,000,000.</td>
<td>$1,000,000.</td>
</tr>
<tr>
<td>B. Comprehensive General Liability</td>
<td>$1,000,000.</td>
<td>$1,000,000.</td>
</tr>
<tr>
<td>Including:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Operations Premises</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Contractor’s Protective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Contractual as Below</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Products/Completed Operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Personal Injury</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Property Damage Ins.under policies A & B above includes Cover. for Explosion/Collapse/Underground Prop. Damage.

<table>
<thead>
<tr>
<th>Coverage and Limits of Liability</th>
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<tr>
<td>Number</td>
<td>Date</td>
<td>Occurrence</td>
</tr>
<tr>
<td>C. Auto Liability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Including:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Owner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Hired</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Non-owned</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Person Accident</td>
<td>$1,000,000.00</td>
<td>$1,000,000.00</td>
</tr>
</tbody>
</table>
| D. Workmen’s Compensation       | Compensation | Statutory State’s Coverage B Limits $1,000,000, if applicable

<table>
<thead>
<tr>
<th>Coverage and Limits of Liability</th>
<th>Bodily Injury</th>
<th>Property Damage</th>
</tr>
</thead>
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<td>Each</td>
</tr>
<tr>
<td>Number</td>
<td>Date</td>
<td>Occurrence</td>
</tr>
</tbody>
</table>
| E. Builder’s Risk Insurance - All Risk Completed Value form | As called for in Contract or Agreement

CONTRACTUAL LIABILITY

CONTRACTOR shall at all times indemnify and save harmless OWNER, ENGINEER and their respective officers, agents and employees on account of any and all claims, damages, losses, litigation, expenses, counsel fees and compensation arising out of injuries (including death) sustained by or alleged to have been sustained by the owners, agents and employees of said OWNER or ENGINEER or of CONTRACTOR, his subcontractors, or material men, and from injuries (including death sustained by or alleged to have been sustained by the public, any or all persons on or near the Work, or by any other person or property, real or personal (including property of said OWNER or ENGINEER caused in whole or in part by the acts, omissions, or neglect of CONTRACTOR including but not limited to any neglect in safeguarding the work or through the use of unacceptable materials in contracting the Work by CONTRACTOR, any subcontractor, material man, or anyone directly or indirectly employed by them or any of them while engaged in the performance of the contract, including the entire elapsed time from the date ordered to start work or the actual start, whichever occurs first, until completion of the one year correction period, as certified by OWNER or ENGINEER.

Policies A, B, C & D shall remain in effect during the one year correction period.

Such insurer as is herein certified applies to all operations of the insured in connection with, and necessary and incidental to, the work herein described at the locations stated.

It is hereby understood and agreed that the above policies will not be restricted, suspended, materially changed, nor canceled without 15 days advance notice by registered mail to OWNER and ENGINEER.

Authorized Representative Signature

Address

00 11 39 -1
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT: that

__________________________________________________________.

(Name of Contractor)

__________________________________________________________.

(Address of Contractor)

a _______________________________________________, hereinafter called Principal, and
(corporation, partnership, individual)

__________________________________________________________.

(Name of Surety)

__________________________________________________________.

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto ___________________________________________.

__________________________________________________________.

(Name of Owner)

__________________________________________________________.

(Address of Owner)

hereinafter called OWNER, in the penal sum of: $ _____________________________________________.

__________________________________________________________.

(Dollars)

in lawful money of the United States, for the payment of which sum will and truly to be made, we bind ourselves, successors, and assigns, jointly and severally, firmly by these present.

THE CONDITION OF THIS OBLIGATION is such that whereas, the Principal entered into a certain contract with the Owner, dated the _____ day of _________ 20____, a copy of which is hereto attached and made a part hereof for the construction of:

__________________________________________________________.

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and all insurance premiums on said WORK, and for all labor, performed in such WORK whether by SUBCONTRACTOR or otherwise, then this obligation shall be void, otherwise to remain in full force and effect.
PROVIDED FURTHER, that said surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the WORK to be performed thereunder or the SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the WORK or to the SPECIFICATIONS.

PROVIDED FURTHER that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts, one of which shall be deemed an original, this the ___ day of ______ 20__.

ATTEST

__________________________________________  ____________________________________________
Principal's Secretary                                Principal
[SEAL]                                            BY__________________________________________

__________________________________________  ____________________________________________
(Address)                                         (Address)

__________________________________________
(Witness as to Principal)

__________________________________________
(Address)

__________________________________________
(Surety)

ATTEST:

__________________________________________
(Surety Secretary)

[SEAL]

__________________________________________  BY:__________________________________________
(Witness to Surety)                             (Attorney-In-Fact)

__________________________________________  ____________________________________________
(Address)                                       (Address)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is Partnership, all partners should execute bond.

IMPORTANT: Surety companies executing bonds must appear on the Treasury Department’s most current list.
Note: This form may be substituted with standard form issued by bonding agency.

(Circular 570 as amended) and be authorized to transact business in the State of projects’ location.
INDEMNITY AGREEMENT

In consideration of the award of Contract No. ________________________ by the City of Quincy, hereinafter referred to as INDEMNITEE, to the CONTRACTOR/BIDDER:

__________________________________________________________.

hereinafter referred to as INDEMNITOR, and for other good and valuable consideration, said INDEMNITOR agrees to hold INDEMNITEE, City of Quincy, and its various department and employees harmless from any and all liability, loss or damage that INDEMNITEE may suffer as the result of claims, demands, costs, including attorneys fees, or judgement or other actions against it by reason of any and all work done by or on behalf of the INDEMNITOR in connection with the above-referenced contract.

INDEMNITOR,

__________________________________________________________.

By Duly Authorized Agent

Date: ______________________________.
CITY OF QUINCY
NOTICE OF AWARD

TO: ______________________________________
_______________________________________
_______________________________________

PROJECT TITLE: _______________________________

The City has considered the bid submitted by you for the above-described work in response to its Invitation to Bid. You are hereby notified that your bid has been accepted, provided you furnish the City with the required Certificates, Contractor's Performance and Payment Bonds and Certificate of Insurance within ten (10) days of receipt of this notice to execute the agreement. In case of failure to execute said agreement or to furnish said bonds and documents as stipulated in the bid documents within ten (10) days from the date of receipt of this notice, the City will be entitled to consider all your rights arising out of the City's acceptance of your bid as abandoned and as a forfeiture of your bid bond. The City will also be entitled to such other rights as may be granted by law. You are requested to return to the City’s Purchasing Department, 1305 Hancock Street, Quincy, Massachusetts 02169 an acknowledged copy of the Notice of Award with the required Performance and Payment bonds and a copy of your Certificate of Liability Insurance.

Dated the _____ day of __________________________.

BY: ________________________________________
   — Kathryn R Hobin
   Chief Procurement Officer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by:

______________________________________________
(Company Name)

Signature: ___________________________ Date: ___________________________
Print Name: ___________________________ Title: ___________________________
SECTION 003000 – BID FORM

PART 1 - GENERAL

1.1 Submit bids in compliance with Document 001000 – Instructions to Bidders. Fill in all blanks. The Owner, reserves the right to reject incomplete bid forms.

1.2 All sub-contractors for the roofing work shall from the pre-approved/restricted sub-contractor list provided in the Request for Proposal.

1.3 This Bidding Document is not part of the Contract Documents, unless specifically referenced in the Owner/Contractor Agreement.

1.4 PROJECT NAME: Quincy DPW Service Garage Roof Renovation

A. SEALED BIDS RETURNED BY: NOVEMBER 21, 2017 @ 11:00 AM

1.5 The underside proposes to furnish all labor and materials required for construction of the above, described project in accordance with the Contract Documents including drawings and specifications prepared by Stephen J. Wessling Architects, Inc. dated November 7, 2017.

Name and Address ofBidder: ______________________________

______________________________

______________________________

1.6 BASE BID

A. The Bidder: The Contractor proposes to perform all of the Work required by the Contract Documents for the Base Bid for the amount as follows (Please be advised the city of Quincy will waive all permit fees):

1. Base Bid: (Fill in amount in words and numbers)

$ ______________

2. Receipt of Addendum No.________ acknowledged by:_________________________
B. BONDS

1. If the Bidder is required to furnish a Performance Bond and Payment Bond (AIA A312) for the entire value of the Base Bid Work, add the following Performance Bond and Payment Bond amount to the Base Bid (or Alternate No. 1) amount of: (Fill in amount in words and numbers)

$____________________

C. PROJECT TIMELINE/RAIN DAYS

1. The Bidder proposes the following start and substantial completion for the project (Fill in):
   1) Proposed Starting Date: __________________________ November __, 2017
   2) Proposed Number of Work Days: __________________________
   3) Substantial Completion Date: __________________________ December __, 2017

2. The Bidder shall include fifteen (5) total Rain Days for the project duration. Make-up days shall be on Saturdays.

D. By submitting this Bid Form, the Bidder certifies that he/she has visited the project site, is aware of existing conditions which affect the work, reviewed on-line facility events schedule and have reviewed the Contract Documents, including the following Addenda: (List Addenda received)

E. BID QUALIFICATIONS

1. Submit and attach all bid qualifications and reasons for qualifications with this Bid Form in space provided below. Include impact of bid qualifications on time, cost, or quality. Bid qualifications may include: Cash flow requirements, assumptions for access to the work, assumptions for staging the work, assumptions for protecting existing and abutting work, proposed modifications to General Conditions, proposed modifications to drawings and specifications.

2. Contractor shall submit with the bid a sequencing plan for the roof replacement project. This sequencing plan will be closely reviewed for conformance with the Contract Documents and facility requirements. Contractors

F. Signed and sealed (Fill in name, position with company, bidder’s signature, date and legal business name and address):

Name/Position: __________________________
Signature/Date: __________________________
Business Name/Address: __________________________
G. Bidder’s Project Manager to be assigned to the Project (Fill in name): 

H. Bidder’s Superintendent to be assigned to the Project (Fill in name): 

I. Bidder’s/Sub-Contractor Roofing Forman to be assigned to the Project (Fill in name): 

---

PART 2 - ALTERNATES

2.1 SCHEDULE OF ALTERNATES

None

---

PART 3 - UNIT PRICES

2.2 SCHEDULE OF UNIT PRICING

A. Unit Price No. 1: Structural Metal Deck Repair (Horizontal): Scrape, prime and coat existing rusted metal deck areas - new deck coating to be RD Coatings USA RD-Monograft System or equal (Base Bid shall include 100 sf).

1. ADD: $__________ Dollars /per sq. ft.       DEDUCT: $__________ Dollars /per sq. ft.

   a. Base Bid Quantity to include:  **100 sq ft.**

B. Unit-Price No. 2: Roof Drain Assembly Replacement: Remove existing drain bowl assembly, including strainers, clamping rings, inserts and associated components. Install new drain bowl assembly, strainer, extensions, clamping ring and all associated components, including all plumbing leader connections.

1. ADD: $__________ Dollars /per unit.       DEDUCT: $__________ Dollars /per unit.

   a. Unit of Measurement: One complete drain unit assembly.
   b. Base Bid Quantity to include:  **N/A**

C. Unit-Price No. 3: Wet Roofing Material Replacement: Remove and dispose of existing wet roofing materials that are encountered beyond the wet areas identified for removal on the demolition roof plan. Install new polyisocyanurate infill insulation to match new roof height.
1. ADD: $____________ Dollars /per sq. ft.       DEDUCT: $____________ Dollars /per sq. ft.

   a. Unit of Measurement: Square foot of repair area.
   b. Base Bid Quantity to include: 100 sq ft.

BIDDER'S SIGNATURE: _____________________________________________

COMPANY: _______________________________________________________

ADDRESS: _______________________________________________________

PHONE: _________________________________________________________

EMAIL #: ________________________________________________________

END OF SECTION 003000
DOCUMENT 004322 - UNIT PRICES FORM

1.1  BID INFORMATION

A. Bidder: ____________________________________________________.

B. Project Name: Quincy DPW Service Garage Roof Renovation

C. Project Location: 55 Sea Street, Quincy, MA 02169

D. Owner: City of Quincy Department of Public Works: 55 Sea Street, Quincy, MA 02169.


F. Architect Project Number: 17101.

1.2  BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

B. The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work and for adjustment of the quantity given in the Unit-Price Allowance for the actual measurement of individual items of the Work.

C. If the unit price does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

1.3  UNIT PRICES

A. Unit Price No. 1: Structural Metal Deck Repair (Horizontal): Scrape, prime and coat existing rusted metal deck areas - new deck coating to be RD Coatings USA RD-Monograff System or equal (Base Bid shall include 100 sf).

1. ADD: $____________ Dollars /per sq. ft.          DEDUCT: $_____________ Dollars /per sq. ft.

   a. Base Bid Quantity to include: 100 sq ft.

B. Unit-Price No. 2: Rood Drain Assembly Replacement: Remove existing drain bowl assembly, including strainers, clamping rings, inserts and associated components. Install new drain bowl assembly, strainer, extensions, clamping ring and all associated components, including all plumbing leader connections.

1. ADD: $____________ Dollars /per unit.          DEDUCT: $_____________ Dollars /per unit.
a. Unit of Measurement: One complete drain unit assembly.
b. Base Bid Quantity to include: N/A

C. Unit-Price No. 3: Wet Roofing Material Replacement: Remove and dispose of existing wet roofing materials that are encountered beyond the wet areas identified for removal on the demolition roof plan. Install new polyisocyanurate infill insulation to match new roof height.

1. ADD: $_________ Dollars /per sq. ft. DEDUCT: $_________ Dollars /per sq. ft.

a. Unit of Measurement: Square foot of repair area.
b. Base Bid Quantity to include: 100 sq ft.

1.4 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this ____ day of ____________, 2017.

B. Submitted By:______________________________ (Insert name of bidding firm or corporation).

C. Authorized Signature:______________________________ (Handwritten signature).

D. Signed By:______________________________ (Type or print name).

E. Title:______________________________ (Owner/Partner/President/Vice President).

END OF DOCUMENT 004322
DOCUMENT 009500 – LIST OF DRAWINGS

The following drawings are part of this document, dated Tuesday November 7, 2017:

A-000 COVER SHEET
A-001 GENERAL REFERENCE & NOTES
AD-101 DEMOLITION ROOF PLAN
AD-501 DEMOLITION ROOF DETAILS
A-101 NEW CONSTRUCTION ROOF PLAN
A-501 TYPICAL ROOF DETAILS
A-502 NEW CONSTRUCTION ROOF DETAILS

END OF SECTION 009500
SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Work by Owner.
4. Work under separate contracts.
5. Future work.
6. Purchase contracts.
7. Owner-furnished products.
8. Contractor-furnished, Owner-installed products.
10. Coordination with occupants.
11. Work restrictions.

B. Related Section:

1. Division 01 Section "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

A. Project Identification: DPW Service Garage ROOF RENOVATION
1. Project Location: 55 Sea St – Quincy, MA 02169

B. Owner: City Of Quincy
1. 1305 Hancock Street – Quincy, MA 02169

C. Architect:
1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of the Project is defined by the Contract Documents and consists of the following:

The Base Bid scope of work includes the selective removal and replacement of wet roof areas and the EPDM roof repair overlays; and the installation of a new EPDM roof assembly over the properly prepared existing to remain roof as indicated on the construction drawings and in project specifications. Removal work includes removal of all gravel surfacing from the existing Built-up roofing. All surfaces of roof decks shall be prepared and cleaned to accept new specified roof system. Contractor is fully responsible for verifying all existing conditions. Deteriorated sections of metal roof decks shall be repaired as specified in Unit Pricing Work. Reference base bid quantity with Add/Deduct quantities (as verified in field during construction). New roofing systems and associated building systems include EPDM roofing system and all associated components and roof accessories.

SELECTIVE DEMOLITION SCOPE:

1. REMOVE ALL EXISTING GRAVEL SURFACING FROM THE B.U.R. ROOF SURFACE.

2. REMOVE ALL WET ROOF AREAS BACK TO DRY SOUND MATERIALS DOWN TO THE EXISTING METAL ROOF DECK. REPAIR ANY DETERIORATED METAL DECK AS REQUIRED – REFER TO UNIT PRICING.

3. REMOVE EXISTING EPDM ROOF REPAIR OVERLAY AND ASSOCIATED METAL FLASHINGS DOWN TO THE EXISTING METAL DECK AND BACK TO DRY, SOUND EXISTING ROOF MATERIALS.

4. REMOVE EXISTING DRAIN STRainers AND CLAMPING RINGS.

5. REMOVE ABANDONED FASTENERS, PITCH POCKETS, UNITS, CURBS AND ALL ASSOCIATED FLASHINGS AND MEMBRANES WHERE INDICATED ON THE DRAWINGS.

6. REMOVE EXISTING SKYLIGHTS AND CURBS AND PREPARE AREA FOR NEW METAL DECK INFILL AND ROOFTOP FAN/VENT CURBS.

7. REMOVE EXISTING GUTTER EDGES ON THE UPPER ROOF AREA.

8. REMOVE EXISTING ROOF HATCH AND CURB SYSTEM AND PREPARE AREA TO ACCEPT NEW WORK.

9. MAKE SAFE AND REMOVE/RELOCATE WIRE TO ALLOW FOR NEW WORK

NEW ROOF WORK:

1. REPAIR EXISTING DETERIORATED METAL DECK AS REQUIRED – REFER TO UNIT PRICES.

2. INSTALL NEW STRUCTURAL STEEL AND EMTAL DECK WHERE SKYLIGHTS HAD BEEN REMOVED AND NEW MECHANICAL UNIT CURBS ARE TO BE INSTALLED.
3. FURNISH AND INSTALL NEW WOOD BLOCKING AND FLASHINGS AT OWNER SUPPLIED ROOF TOP FAN/VENTS. CONTRACTOR TO COORDINATE INSTALLATION OF OWNER FURNISHED ROOFTOP MECHANICAL FAN/VENT UNITS AND CURBS AS REQUIRED TO MAKE A COMPLETE SYSTEM. CONTRACTOR TO INSTALL FAN/VENT CURBS AND FLASHINGS WHERE SHOWN ON THE DRAWINGS. REFER TO THE ROOF PLAN AND STRUCTURAL DRAWINGS FOR MORE INFORMATION.

4. CONTRACTOR TO PROVIDE TO THE OWNER FIVE (5) BUSINESS DAYS NOTICE PRIOR TO SUBSTANTIAL COMPLETION FOR THE OWNER TO INSTALL THE NEW ROOFTOP FANS.

5. INFILL AREAS WHERE WET ROOF MATERIALS WERE REMOVED, WITH POLYISOCYANURATE INSULATION.

6. INSTALL NEW EPDM ROOF SYSTEM WITH 1-1/2” THICK POLYISOCYANURATE INSULATION TO MATCH NEW WOOD BLOCKING HEIGHT. MECHANICALLY ATTACHED INSULATION AND FULLY ADHERE THE NEW EPDM ROOF.

7. FURNISH AND INSTALL NEW CAST IRON DRAIN CLAMPING RINGS, EXTENSIONS AND STRAINERS. INSTALL NEW LEAD AND OAKUM JOINTS AT EACH DRAIN, TYPICAL

8. EXISTING VENT PIPE - FURNISH AND INSTALL NEW FLASHING

9. FURNISH AND INSTALL NEW FLASHING AT EXISTING VENTS AND MECHANICAL UNIT CURBS AND STACKS

10. FURNISH AND INSTALL NEW ROOF HATCH AND CURB

11. REINSTALL WIRES AS REQUIRED. COORDINATE WITH OWNER TO DETERMINE IF WIRES ARE ABANDONED

12. FURNISH AND INSTALL NEW PLYWOOD, SHEET METAL AND MEMBRANE FLASHING AT VERTICAL RISING WALL AND CHIMNEY.

B. Type of Contract

1. Project will be constructed under a single prime contract (See Section 005000 – Agreement Form).

1.5 WORK UNDER SEPARATE CONTRACTS

A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.
B. Concurrent Work: Owner’s separate contract for the following construction operations at Project site. Those operations will be conducted simultaneously with work under this Contract.

C. Subsequent Work: Owner will award separate contract for the following additional work to be performed at site following Substantial Completion. Completion of that work will depend on successful completion of preparatory work under this Contract.

1.6 FUTURE WORK

A. The Contract Documents include requirements that will allow Owner to carry out future work following completion of this Project; provide for the following future work:

1.7 ACCESS TO SITE

A. General: Contractor shall have owner selected use of Project site for construction operations during construction period. Contractor's use of Project site is limited to Owner's right to perform work, operate the school and related business.

B. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

C. Use of Site: Limit use of Project site to work in areas indicated. Do not disturb portions of Project site beyond areas to be designated by the city.

1. Limits: Confine construction operations to the smallest area possible so as to minimize the disruption of any school activities that take place.

2. Driveways, Walkways and Entrances: Keep driveways parking garage entrances, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, students, teachers, facility personnel, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

   a. Schedule deliveries to minimize use of driveways and entrances by construction operations. Contractor to coordinate and receive owner approval for all deliveries.

   b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

D. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.8 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.

2. Notify the Owner not less than 72 hours in advance of activities that will affect Owner's operations.

B. Partial Owner Occupancy: Owner will occupy the premises during entire construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

C. Owner Limited Occupancy of Completed Areas of Construction: Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.

1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to Owner acceptance of the completed Work.

2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.

3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.

4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.

1.9 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, except as otherwise indicated.

1. Weekend Hours: Dependant on Owner’s Approval

2. Early Morning Hours: Dependant on Owner’s Approval
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 providing temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than two days in advance of proposed utility interruptions.
2. Obtain Owner's written permission before proceeding with utility interruptions.

D. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Architect and Owner not less than two days in advance of proposed disruptive operations.
2. Obtain Owner's written permission before proceeding with disruptive operations.

E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor air intakes.

F. Controlled Substances: Use of tobacco products and other controlled substances within the existing building or on the Project site is not permitted.

G. Employee Identification: Owner will provide identification tags for Contractor personnel working on the Project site. Require personnel to utilize identification tags at all times.

H. Employee Screening: Comply with Owner's requirements regarding drug and background screening of Contractor personnel working on the Project site.

1. Maintain list of approved screened personnel with Owner's Representative.

1.10 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on the Drawings are described in detail in the Specifications. One or more of the following are used on the Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

1.11 MISCELLANEOUS PROVISIONS

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000
SECTION 011400 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 USE OF PREMISES

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.

1. Limits: Confine construction operations to the requirements of the building’s owner.
2. Cities Occupancy: Allow for the students, teachers, public facility personnel, management personnel, visitors, delivery services, and vehicles, use and occupancy of.
3. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, Manager, Maintenance Personnel, and emergency vehicles at all times. Do not use these areas for storage of materials.
   a. Schedule deliveries to minimize use of driveways and entrances.
   b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
   c. Keep all means of egress clear of all obstructions at all times.

B. Use of Existing Building: Maintain existing building in a weather tight condition throughout construction period. Sections of the building shall be open to the Owner, Students, Employees, and Public. Contractor shall coordinate access with the Owner. Repair damage caused by construction operations. Protect building and its occupants during construction period. Provide water and weather tight seals at the end of each workday and prior to any inclement weather.

1.3 OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy site and existing building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

B. Contractor shall comply with all Owner’s Rules and Regulations as specified. Reference contract for additional information.

PRODUCTS and EXECUTION (Not Used) END OF SECTION 011400
SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Section includes administrative and procedural requirements for unit prices.
   B. Related Sections:
      1. Division 01 Section "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
      2. Division 01 Section "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS
   A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as and a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES
   A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.
   B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
   C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
   D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

A. Unit Price No. 1: Structural Metal Deck Repair (Horizontal): Scrape, prime and coat existing rusted metal deck areas - new deck coating to be RD Coatings USA RD-Monograff System or equal (Base Bid shall include 100 sf).

1. ADD: $____________ Dollars /per sq. ft.   DEDUCT: $____________ Dollars /per sq. ft.
   a. Unit of Measurement: Square foot of repair area.
   b. Base Bid Quantity to include: 100 sq ft.

B. Unit Price No. 2: Roof Drain Assembly Replacement: Remove existing drain bowl assembly, including strainers, clamping rings, inserts and associated components. Install new drain bowl assembly, strainer, extensions, clamping ring and all associated components, including all plumbing leader connections.

1. ADD: $____________ Dollars /per unit.   DEDUCT: $____________ Dollars /per unit.
   a. Unit of Measurement: One complete drain unit assembly.
   b. Base Bid Quantity to include: N/A.

C. Unit Price No. 3: Wet Roofing Material Replacement: Remove and dispose of existing wet roofing materials that are encountered beyond the wet areas identified for removal on the demolition roof plan. Install new polyisocyanurate infill insulation to match new roof height.

1. ADD: $____________ Dollars /per sq. ft.   DEDUCT: $____________ Dollars /per sq. ft.
   a. Unit of Measurement: Square foot of repair area.
   b. Base Bid Quantity to include: 100 sq ft.

END OF SECTION 012200
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.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for substitutions.

B. Related Sections:

1. Division 01 Section "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
2. Divisions 02 through 49 Sections for specific requirements and limitations 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 CSI Form 13.1A.
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 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, where applicable or requested.

f. Certificates and qualification data, where applicable or requested.

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.


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 seven days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.


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

A. 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.

1. 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:
   a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
   b. Substitution request is fully documented and properly submitted.
   c. Requested substitution will not adversely affect Contractor's construction schedule.
   d. Requested substitution has received necessary approvals of authorities having jurisdiction.
   e. Requested substitution is compatible with other portions of the Work.
   f. Requested substitution has been coordinated with other portions of the Work.
   g. Requested substitution provides specified warranty.
   h. 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.

B. Substitutions for Convenience: Not allowed, unless otherwise indicated.

C. Substitutions for Convenience: Architect will consider requests for substitution if received within 60 days after the Notice to Proceed. Requests received after that time may be considered or rejected at discretion of Architect.

1. 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:
   a. 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.
b. Requested substitution does not require extensive revisions to the Contract Documents.
c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
d. Substitution request is fully documented and properly submitted.
e. Requested substitution will not adversely affect Contractor's construction schedule.
f. Requested substitution has received necessary approvals of authorities having jurisdiction.
g. Requested substitution is compatible with other portions of the Work.
h. Requested substitution has been coordinated with other portions of the Work.
i. Requested substitution provides specified warranty.
j. 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 Used)

END OF SECTION 012500
SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
   A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
   A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
   B. Related Sections:
      1. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.3 MINOR CHANGES IN THE WORK
   A. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.4 PROPOSAL REQUESTS
   A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
      1. Proposal Requests issued by Architect are not instructions either to stop work in progress or to execute the proposed change.
      2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
         a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
         b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
         c. Include costs of labor and supervision directly attributable to the change.
         d. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and
finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

e. Quotation Form: Use forms acceptable to Architect.

B. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change to Architect.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.

3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

4. Include costs of labor and supervision directly attributable to the change.

5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

6. Comply with requirements in Division 01 Section "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.


1.5 ADMINISTRATIVE CHANGE ORDERS

A. Allowance Adjustment: Refer to Division 01 Section "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.

B. Unit Price Adjustment: Refer to Division 01 Section "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit price work.

1.6 CHANGE ORDER PROCEDURES


1.7 CONSTRUCTION CHANGE DIRECTIVE

1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600
SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections:

1. Division 01 Section "Unit Prices" for administrative requirements governing the use of unit prices.
2. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
3. Division 01 Section "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.
4. Division 01 Section "Submittal Procedures" for administrative requirements governing the preparation and submittal of the submittal schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.

1. Correlate line items in the schedule of values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with continuation sheets.
b. Submittal schedule.
PAYMENT PROCEDURES

Wessling Architects City of Quincy DPW November 7, 2017
Quincy, MA Service Garage Roof Renovation Project # 17101
55 Sea Street, Quincy, MA

1. Identification: Include the following Project identification on the schedule of values:
   a. Project name and location.
   b. Name of Architect.
   c. Architect’s project number.
   d. Contractor’s name and address.
   e. Date of submittal.

2. Arrange schedule of values consistent with format of AIA Document G703.
3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
   a. Related Specification Section or Division.
   b. Description of the Work.
   c. Name of subcontractor.
   d. Name of manufacturer or fabricator.
   e. Name of supplier.
   f. Change Orders (numbers) that affect value.
   g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
      1) Labor.
      2) Materials.
      3) Equipment.

4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of five percent of Contract Sum.

5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
6. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not installed.
PAYMENT PROCEDURES

Wessling Architects
City of Quincy DPW
Quincy, MA
Service Garage Roof Renovation
55 Sea Street, Quincy, MA
November 7, 2017

Project # 17101

PAYMENT PROCEDURES

a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.

7. Provide separate line items in the schedule of values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

8. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate owner payments or deposits, if any, and balance to be paid by Contractor.

9. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.

10. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Progress payments shall be submitted to Architect by the 15th day of the month. The period covered by each Application for Payment is one month, ending on the last day of the month.

1. Submit draft copy of Application for Payment seven days prior to due date for review by Architect.

D. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

E. Application for Payment Forms: Use forms provided by Owner for Applications for Payment. Sample copies are included in the Project Manual.

F. Application for Payment Forms: Use forms acceptable to Architect and Owner for Applications for Payment. Submit forms for approval with initial submittal of schedule of values.
G. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

H. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:
   a. Materials previously stored and included in previous Applications for Payment.
   b. Work completed for this Application utilizing previously stored materials.
   c. Additional materials stored with this Application.
   d. Total materials remaining stored, including materials with this Application.

I. Transmittal: Submit five signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

J. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
K. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

L. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
5. Products list (preliminary if not final).
6. Schedule of unit prices.
7. Submittal schedule (preliminary if not final).
8. List of Contractor's staff assignments.
12. Initial progress report.
14. Certificates of insurance and insurance policies.
15. Performance and payment bonds.
16. Data needed to acquire Owner's insurance.

M. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
N. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900
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.

1.2 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General project coordination procedures.
2. Administrative and supervisory personnel.
3. Coordination drawings.
4. Requests for Information (RFIs).
5. Project Web site.
6. Project meetings.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

C. Related Sections:

1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

A. RFI: Request from Owner, Architect, or Contractor seeking information from each other during construction.

1.4 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction 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 to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. 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 performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

C. 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.

D. 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.
8. Startup and adjustment of systems.
9. Project closeout activities.

E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.
1.5 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings in accordance with requirements in individual Sections, where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

   a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.

   b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.

   c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.

   d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.

   e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.

   f. Indicate required installation sequences.

   g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

1.6 KEY PERSONNEL

A. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel 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, office, and cellular telephone numbers and email addresses. 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. Keep list current at all times.

1.7 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.
2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:

1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number and detail references, as appropriate.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's solution(s) impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
   a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.


D. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.

1. The following RFIs will be returned without action:
   a. Requests for approval of submittals.
   b. Requests for approval of substitutions.
   c. Requests for coordination information already indicated in the Contract Documents.
   d. Requests for adjustments in the Contract Time or the Contract Sum.
   e. Requests for interpretation of Architect's actions on submittals.
   f. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use CSI Log Form 13.2B. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect.
4. RFI number including RFIs that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.
8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

1.8 PROJECT MEETINGS

A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.

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: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Conduct the conference to review responsibilities and personnel assignments.
2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect progress, including the following:

   a. Tentative construction schedule.
b. Phasing.
c. Critical work sequencing and long-lead items.
d. Designation of key personnel and their duties.
e. Lines of communications.
f. Procedures for processing field decisions and Change Orders.
g. Procedures for RFI's.
h. Procedures for testing and inspecting.
i. Procedures for processing Applications for Payment.
j. Distribution of the Contract Documents.
k. Submittal procedures.
l. Sustainable design requirements.
m. Preparation of record documents.
n. Use of the premises and existing buildings.
o. Work restrictions.
p. Working hours.
q. Owner's occupancy requirements.
r. Responsibility for temporary facilities and controls.
s. Procedures for moisture and mold control.
t. Procedures for disruptions and shutdowns.
u. Construction waste management and recycling.
v. Parking availability.
w. Office, work, and storage areas.
x. Equipment deliveries and priorities.
y. First aid.
z. Security.
aa. Progress cleaning.

4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Preinstallation Conferences: 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 of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

b. Options.
c. Related RFI's.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Review of mockups.
i. Possible conflicts.
j. Compatibility problems.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written recommendations.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.

4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.

5. 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.

D. Project Closeout Conference: Schedule and conduct a Project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.

2. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

a. Preparation of record documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Submittal of written warranties.
d. Requirements for preparing sustainable design documentation.
e. Requirements for preparing operations and maintenance data.
f. Requirements for demonstration and training.
g. Preparation of Contractor's punch list.
h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
i. Submittal procedures.
j. Coordination of separate contracts.
k. Owner's partial occupancy requirements.
l. Installation of Owner's furniture, fixtures, and equipment.
m. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: Conduct progress meetings at weekly intervals.

1. Coordinate dates of meetings with preparation of payment requests.
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 meeting 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.
      1) Review schedule for next period.
   b. Review present and future needs of each entity 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) Progress cleaning.
      10) Quality and work standards.
      11) Status of correction of deficient items.
      12) Field observations.
      13) Status of RFI's.
      14) Status of proposal requests.
      15) Pending changes.
      16) Status of Change Orders.
      17) Pending claims and disputes.
      18) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
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.

F. Coordination Meetings: Conduct Project coordination meetings at weekly 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 meetings 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.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100
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.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Sections:

1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
3. Division 01 Section "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect’s responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect’s responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as informational submittals.

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
2. Initial Submittal: Submit concurrently with start-up construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

   a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

   a. Scheduled date for first submittal.
   b. Specification Section number and title.
   c. Submittal category: Action, informational.
   d. Name of subcontractor.
   e. Description of the Work covered.
   f. Scheduled date for Architect's final release or approval.
   g. Scheduled dates for purchasing.
   h. Scheduled dates for installation.
   i. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.

      a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
      c. Contractor shall execute a data licensing agreement in the form of AIA Document C106, Digital Data Licensing Agreement.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
1. Coordinate each submittal with fabrication, purchasing, delivery, other submittals, and related activities that require sequential activity.
2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

   a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

   1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
   2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
   3. Resubmittal Review: Allow 15 days for review of each resubmittal.
   4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 21 days for initial review of each submittal.

D. Identification and Information: Place a permanent label or title block on each paper copy submittal item for identification.

   1. Indicate name of firm or entity that prepared each submittal on label or title block.
   2. Provide a space approximately 6 by 8 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 for processing and recording action taken:

      a. Project name.
      b. Date.
      c. Name of Architect.
      d. Name of Construction Manager.
      e. Name of Contractor.
      f. Name of subcontractor.
      g. Name of supplier.
      h. Name of manufacturer.
      i. Submittal number or other unique identifier, including revision identifier.

      1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
j. Number and title of appropriate Specification Section.
k. Drawing number and detail references, as appropriate.
l. Location(s) where product is to be installed, as appropriate.
m. Other necessary identification.

E. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.
2. Name file with submittal number or other unique identifier, including revision identifier.
   a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., LNHS-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., LNHS-061000.01.A).
3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
4. Include the following information on an inserted cover sheet:
   a. Project name.
b. Date.
c. Name and address of Architect.
d. Name of Construction Manager.
e. Name of Contractor.
f. Name of firm or entity that prepared submittal.
g. Name of subcontractor.
h. Name of supplier.
i. Name of manufacturer.
j. Number and title of appropriate Specification Section.
k. Drawing number and detail references, as appropriate.
l. Location(s) where product is to be installed, as appropriate.
m. Related physical samples submitted directly.
n. Other necessary identification.

5. Include the following information as keywords in the electronic file metadata:
   a. Project name.
b. Number and title of appropriate Specification Section.
c. Manufacturer name.
d. Product name.

F. Options: Identify options requiring selection by the Architect.

G. Deviations: Identify deviations from the Contract Documents on submittals.

H. Additional Paper Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.

I. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.

1. Transmittal Form: Use AIA Document G810 or CSI Form 12.1A.
2. Transmittal Form: Provide locations on form for the following information:
   a. Project name.
   b. Date.
   c. Destination (To:).
   d. Source (From:).
   e. Names of subcontractor, manufacturer, and supplier.
   f. Category and type of submittal.
   g. Submittal purpose and description.
   h. Specification Section number and title.
   i. Indication of full or partial submittal.
   j. Drawing number and detail references, as appropriate.
   k. Transmittal number.
   l. Submittal and transmittal distribution record.
   m. Remarks.
   n. Signature of transmitter.

3. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.

J. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

L. Use for Construction: Use only final submittals that are marked with approval notation from Architect's action stamp.
PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Submit electronic submittals via email as PDF electronic files.

2. Action Submittals: Submit three paper copies of each submittal, unless otherwise indicated. Architect will return two copies.

3. Informational Submittals: Submit two paper copies of each submittal, unless otherwise indicated. Architect will not return copies.

4. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

5. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
   a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
   b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

6. Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.

2. Mark each copy of each submittal to show which products and options are applicable.

3. Include the following information, as applicable:
   a. Manufacturer's catalog cuts.
   b. Manufacturer's product specifications.
   c. Standard color charts.
   d. Statement of compliance with specified referenced standards.
   e. Testing by recognized testing agency.
   f. Application of testing agency labels and seals.
   g. Notation of coordination requirements.
   h. Availability and delivery time information.
4. For equipment, include the following in addition to the above, as applicable:
   a. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.
6. Submit Product Data in the following format:
   a. PDF electronic file.
   b. Three paper copies of Product Data, unless otherwise indicated. Architect will return two copies.

C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Identification of products.
   b. Schedules.
   c. Compliance with specified standards.
   d. Notation of coordination requirements.
   e. Notation of dimensions established by field measurement.
   f. Relationship and attachment to adjoining construction clearly indicated.
   g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
3. Submit Shop Drawings in the following format:
   a. PDF electronic file.
   b. Two opaque (bond) copies of each submittal. Architect will return one copy.
   c. Three opaque copies of each submittal. Architect will retain two copies; remainder will be returned.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of applicable Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.

a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

a. Number of Samples: Submit three sets of Samples. Architect will retain two Sample sets; remainder will be returned.

1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product indicated in the Contract Documents.
2. Manufacturer and product name, and model number if applicable.
3. Number and name of room or space.
4. Location within room or space.
5. Submit product schedule in the following format:

   a. PDF electronic file.
   b. Three paper copies of product schedule or list, unless otherwise indicated. Architect will return two copies.

F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
G. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

I. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Submit subcontract list in the following format:
   a. PDF electronic file.
   b. Number of Copies: Three paper copies of subcontractor list, unless otherwise indicated. Architect will return two copies.

J. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.


L. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

M. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

N. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

O. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

P. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

Q. Product Test Reports: Submit written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on
evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

R. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

S. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

T. Preconstruction Test Reports: Submit 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 in the Contract Documents.

U. Compatibility Test Reports: Submit 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.

V. Field Test Reports: Submit reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

W. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

X. Design Data: Prepare and submit 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.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 01 Section "Closeout Procedures."

C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

E. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300
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.

1.2 SUMMARY

A. 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.

C. Related Sections:

1. Division 01 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections.

2. Divisions 02 through 49 Sections for specific test and inspection requirements.

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 constructed to verify selections made under sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged. Architect will provide list of mockup conditions with locations:

1. **Integrated Exterior and/or Sample Mockups:** Mockups of the exterior envelope erected on the building/condition location, consisting of multiple products, assemblies and subassemblies. Mock-ups shall include but not limited to main roof north and south truss caps (metal and membrane), typical sheet-to liquid applied roofing tie-in, atypical membrane tie-ins, temporary roofing tie-ins, metal fascias, through-wall/counterflashing metal and others.

D. **Preconstruction Testing:** Tests and inspections performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

E. **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 specified requirements.

F. **Source Quality-Control Testing:** Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.

G. **Field Quality-Control Testing:** Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. **Testing Agency:** An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. **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. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade or trades.

J. **Experienced:** When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
1.4 CONFLICTING REQUIREMENTS

A. Referenced Standards: 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 conflicting requirements that are different, but apparently equal, to Architect 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 for a decision before proceeding.

1.5 ACTION SUBMITTALS

A. Shop Drawings: For integrated exterior mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.

1. Indicate manufacturer and model number of individual components.
2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

1.6 INFORMATIONAL SUBMITTALS

A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.

B. Contractor's Quality-Control Manager Qualifications: For supervisory personnel.

C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility sent to authorities having jurisdiction before starting work on the following systems.

1. Seismic-force resisting system, designated seismic system, or component listed in the designated seismic system quality assurance plan prepared by the Architect.
2. Main wind-force resisting system or a wind-resisting component listed in the wind-force-resisting system quality assurance plan prepared by the Architect.

D. Testing Agency Qualifications: 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.

E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Entity responsible for performing tests and inspections.
3. Description of test and inspection.
4. Identification of applicable standards.
5. Identification of test and inspection methods.
6. Number of tests and inspections required.
7. Time schedule or time span for tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

1.7 CONTRACTOR'S QUALITY-CONTROL PLAN

A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice of Award, and not less than five days prior to preconstruction conference. Submit in format acceptable to Architect. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.

B. Quality-Control Personnel Qualifications: Engage qualified full-time personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.

1. Project quality-control manager may also serve as Project superintendent.

C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.

D. Testing and Inspection: Include in quality-control plan a comprehensive schedule of Work requiring testing or inspection, including the following:

1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
3. Owner-performed tests and inspections indicated in the Contract Documents.

E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.

F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Architect has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.
1.8 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. 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.
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 reinspecting.

B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical 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.

C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of factory-authorized service representative making report.
2. Statement that equipment complies with requirements.
3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
4. Statement whether conditions, products, and installation will affect warranty.
5. Other required items indicated in individual Specification Sections.

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.

1.9 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. 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.

C. 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.

D. 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.

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 product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain Specification Sections 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. Requirements of authorities having jurisdiction shall supersede requirements for specialists.

G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

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; 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. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at the Project.
4. Demonstrate the proposed range of aesthetic effects and workmanship.
5. 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.
6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
7. Demolish and remove mockups when directed, unless otherwise indicated.

K. Integrated Exterior Mockups: Construct integrated exterior mockup in accordance with approved Shop Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual specification sections, along with supporting materials.

1.10 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. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.

3. Costs for retesting and reinspecting 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. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
   a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.

6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. 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 01 Section "Submittal Procedures."

D. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.

E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

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. Do 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.

G. 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.

H. 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.

I. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.

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.
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 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.

3.2 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 or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Division 01 Section "Execution."

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 014000
SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
B. Related Sections:
   1. Division 01 Section "Summary" for work restrictions and limitations on utility interruptions.

1.3 USE CHARGES
A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, Occupants of Project, testing agencies, and authorities having jurisdiction.
B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS
A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage, including delivery, handling, and storage
provisions for materials subject to water absorption or water damage, discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water damaged Work.

1. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

D. Dust-Control and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust-control and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:

1. Locations of dust-control partitions at each phase of the work.
2. HVAC system isolation schematic drawing.
3. Location of proposed air filtration system discharge.
4. Other dust-control measures.
5. Waste management plan.

1.5 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1; which ever is more stringent.

1.6 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD
line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Provide galvanized steel bases for supporting posts.

2.2 TEMPORARY FACILITIES

A. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect and construction personnel office activities and to accommodate project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:

B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

   1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

C. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.

D. Power Distribution System Circuits: Where permitted and overhead and surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may nonmetallic sheathed cable.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

   1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.
   1. Arrange with utility company, Owner, and existing users for time when service can be
      interrupted, if necessary, to make connections for temporary services.

B. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water
   service facilities in a condition acceptable to Owner. At Substantial Completion, restore these
   facilities to condition existing before initial use.

C. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of
   construction personnel. Comply with requirements of authorities having jurisdiction for type,
   number, location, operation, and maintenance of fixtures and facilities.
   1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are
      cleaned and maintained in a condition acceptable to Owner. At Substantial Completion,
      restore these facilities to condition existing before initial use.

D. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering
   occupied areas.
   1. Prior to commencing work, isolate the HVAC system in area where work is to be
      performed in accordance with approved coordination drawings.
      a. Disconnect supply and return ductwork in work area from HVAC systems
         servicing occupied areas.
      b. Maintain negative air pressure within work area using HEPA-equipped air
         filtration units, starting with commencement of temporary partition construction,
         and continuing until removal of temporary partitions is complete.
   2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-
      producing equipment. Isolate limited work within occupied areas using portable dust
      containment devices.
   3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-
      equipped vacuum equipment.

E. Ventilation and Humidity Control: Provide temporary ventilation required by construction
   activities for curing or drying of completed installations or for protecting installed construction
   from adverse effects of high humidity. Select equipment that will not have a harmful effect on
   completed installations or elements being installed. Coordinate ventilation requirements to
   produce ambient condition required and minimize energy consumption.
   1. Provide dehumidification systems when required to reduce substrate moisture levels to
      level required to allow installation or application of finishes.

F. Electric Power Service: Connect to Owner's existing electric power service. Maintain
   equipment in a condition acceptable to Owner.
G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.

1. Connect temporary service to Owner's existing power source, as directed by Owner.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Provide temporary or use designated areas of Owner's existing parking areas for construction personnel.

D. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

1. Identification Signs: Provide Project identification signs as indicated on Drawings.
2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
   a. Provide temporary, directional signs for construction personnel and visitors.
3. Maintain and touchup signs so they are legible at all times.

E. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."

F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.

G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

H. Existing Elevator Use: Use of Owner's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
1. Do not load elevators beyond their rated weight capacity.
2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

I. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

J. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Division 01 Section "Summary."

B. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.

C. Tree and Plant Protection: Comply with requirements specified in Division 01 Section "Temporary Tree and Plant Protection."

D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

E. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.

F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

G. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
H. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.

1. Construct covered walkways using scaffold or shoring framing.
2. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
3. Paint and maintain appearance of walkway for duration of the Work.

I. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.


1. Prohibit smoking in construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL


3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Operate Project-identification-sign lighting daily from dusk until 12:00 midnight.
D. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

E. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.

2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.

3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000
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.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Sections:

1. Division 01 Section "Alternates" for products selected under an alternate.
2. Division 01 Section "Substitution Procedures" for requests for substitutions.

1.3 DEFINITIONS

A. Products: Items obtained 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. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process 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. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," 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 comparable products of additional manufacturers named in the specification.
1.4 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
   a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
   b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

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 and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

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 determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. 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.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. Refer to Divisions 02 through 49. Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."
PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, 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.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
3. Products:
   a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered, unless otherwise indicated.
   b. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
4. Manufacturers:
   a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered, unless otherwise indicated.
b. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.

5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable 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 requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require 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 (Not Used)

END OF SECTION 016000
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.

1.2 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

2. Installation of the Work.
3. Cutting and patching.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

B. Related Sections:

1. Division 01 Section "Submittal Procedures" for submitting surveys.
2. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For land surveyor and/or professional engineer.

B. Certificates: Submit certificate signed by land surveyor and/or professional engineer certifying that location and elevation of improvements comply with requirements.
C. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate how long services and systems will be disrupted.

D. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

E. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.5 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.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from the Architect before proceeding. Shore, brace, and support structural element during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:

   a. Primary operational systems and equipment.
   b. Fire separation assemblies.
   c. Air or smoke barriers.
   d. Fire-suppression systems.
   e. Mechanical systems piping and ducts.
   f. Control systems.
   g. Communication systems.
   h. Conveying systems.
i. Electrical wiring systems.

j. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

   a. Water, moisture, or vapor barriers.
   b. Membranes and flashings.
   c. Exterior curtain-wall construction.
   d. Equipment supports.
   e. Piping, ductwork, vessels, and equipment.
   f. Noise- and vibration-control elements and systems.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction 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.

C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or 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.

   1. For projects requiring compliance with sustainable design and construction practices and procedures, utilize products for patching that comply with requirements of Division 01 Section "Sustainable Design Requirements."
B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to the Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, 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; underground electrical services, and other utilities.
2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, 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. 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.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of the Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

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 and/or professional engineer 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.

3.4  FIELD ENGINEERING (NOT USED)

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.

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 produce harmful noise levels.

F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

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.

H. 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.

I. 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 personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.

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 personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

2. Do not hold waste materials more than seven days during normal weather or three 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.
   a. Utilize containers intended for holding waste materials of type to be stored.

4. Coordinate progress cleaning for joint-use areas where more than one installer has worked.

B. Site: Maintain Project site free of waste materials and debris.

C. 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.

D. 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.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers and rain leaders or into waterways will not be permitted.

H. 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.
I. 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.

J. 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. Coordinate startup and adjusting of equipment and operating components with requirements in Division 01 Section "General Commissioning Requirements."

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 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.

   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 017300
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 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:
   1. Division 1 Section "Selective Demolition" for demolition of selected portions of the building for alterations.
   2. Divisions 2 through 7 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
      a. Requirements in this Section apply to mechanical and electrical installations.

1.3 DEFINITIONS

A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

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.

7. **Architect's Approval:** Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 **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. Steel reinforcing and accessories.

B. **Operational Elements:** Do not cut and patch the following operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Fire-protection systems.
4. Control systems.
5. Communication systems.
6. Electrical wiring systems.

C. **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 that result in increased maintenance or decreased operational life or safety.

1. Membranes and flashings.
2. Equipment supports.
3. Piping, ductwork, vessels, and equipment.
4. Noise- and vibration-control elements and systems.

D. **Visual Requirements:** Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1. If possible, retain original Installer or fabricator to cut and patch exposed Work listed below. If it is impossible to engage original Installer or fabricator, engage another recognized, experienced, and specialized firm.
E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

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

3.1 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.

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: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. 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.
   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.
3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.

END OF SECTION 017329
SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND 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.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.
2. Recycling nonhazardous demolition and construction waste (all roof membrane, all roof Insulation and product packaging).
3. Disposing of nonhazardous demolition and construction waste.

B. Related Sections:

1. Division 07 Section " Roofing" for disposal requirements for roofing waste.

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 PERFORMANCE REQUIREMENTS

A. General: Achieve end-of-Project rates for salvage/recycling of 75 percent by weight of total non-hazardous solid waste generated by the Work. Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:
   a. Asphalitic concrete paving.
   b. Concrete.
   c. Concrete reinforcing steel.
   d. Brick.
   e. Concrete masonry units.
   f. Wood studs.
   g. Wood joists.
   h. Plywood and oriented strand board.
   i. Wood paneling.
   j. Wood trim.
   k. Structural and miscellaneous steel.
   l. Rough hardware.
   m. Roofing.
   n. Insulation.
   o. Doors and frames.
   p. Door hardware.
   q. Windows.
   r. Glazing.
   s. Metal studs.
   t. Gypsum board.
   u. Acoustical tile and panels.
   v. Carpet.
   w. Carpet pad.
   x. Demountable partitions.
   y. Equipment.
   z. Cabinets.
   aa. Plumbing fixtures.
   bb. Piping.
   cc. Supports and hangers.
   dd. Valves.
   ee. Sprinklers.
   ff. Mechanical equipment.
   gg. Refrigerants.
   hh. Electrical conduit.
   ii. Copper wiring.
   jj. Lighting fixtures.
   kk. Lamps.
   ll. Ballasts.
   mm. Electrical devices.
2. Construction Waste:
   a. Site-clearing waste.
   b. Masonry and CMU.
   c. Lumber.
   d. Wood sheet materials.
   e. Wood trim.
   f. Metals.
   g. Roofing.
   h. Insulation.
   i. Carpet and pad.
   j. Gypsum board.
   k. Piping.
   l. Electrical conduit.
   m. Packaging: Regardless of salvage/recycle goal indicated in paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
      1) Paper.
      2) Cardboard.
      3) Boxes.
      4) Plastic sheet and film.
      5) Polystyrene packaging.
      7) Plastic pails.

1.5 ACTION SUBMITTALS
   A. Waste Management Plan: Submit plan within 7 days of date established for commencement of the Work.

1.6 INFORMATIONAL SUBMITTALS
   A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Use Form CWM-7 for construction waste or Form CWM-8 for demolition waste. Include the following information:
      1. Material category.
      2. Generation point of waste.
      3. Total quantity of waste in tons.
      4. Quantity of waste salvaged, both estimated and actual in tons.
      5. Quantity of waste recycled, both estimated and actual in tons.
      6. Total quantity of waste recovered (salvaged plus recycled) in tons.
      7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.

C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. 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.

1.7 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan including responsibilities of waste management coordinator.
2. Review requirements for documenting quantities of each type of waste and its disposition.
3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
5. Review waste management requirements for each trade.

1.8 WASTE MANAGEMENT PLAN

A. General: Develop a waste management plan according to ASTM E 1609 and requirements of this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. 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. Use Form CWM-1 for construction waste or Form CWM-2 for demolition waste. Include estimated quantities and assumptions for estimates.
C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Use Form CWM-3 for construction waste or Form CWM-4 for demolition waste. 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. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.

3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.

4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

6. 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.

D. Cost/Revenue Analysis: Indicate total cost of waste disposal as if there was no waste management plan and net additional cost or net savings resulting from implementing waste management plan. Use Form CWM-5 for construction waste or Form CWM-6 for demolition waste. Include the following:

1. Total quantity of waste.

2. Estimated cost of disposal (cost per unit). Include hauling and tipping fees and cost of collection containers for each type of waste.

3. Total cost of disposal (with no waste management).

4. Revenue from salvaged materials.

5. Revenue from recycled materials.


7. Savings in hauling and tipping fees that are avoided.

8. Handling and transportation costs. Include cost of collection containers for each type of waste.

9. Net additional cost or net savings from waste management plan.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
1. Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.

B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.

C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
   1. Distribute waste management plan to everyone concerned within three days of submittal return.
   2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
   2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 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.

END OF SECTION 017419
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.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.

B. Related Sections:

1. Division 01 Section "Photographic Documentation" for submitting final completion construction photographic documentation.
2. Division 01 Section "Execution" for progress cleaning of Project site.
3. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
4. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

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 with request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Prepare and submit Project Record Documents, operation and maintenance manuals, final completion construction photographic documentation, 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.


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 final completion, complete the following:

1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."

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 pest-control final inspection report and warranty.

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. Organization 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.
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.

4. Submit list of incomplete items in the following format:
   a. PDF electronic file.
   b. Three paper copies of product schedule or list, unless otherwise indicated. Architect will return two copies.

1.6 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, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

4. Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide table of contents at beginning of document.

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.

1. Use cleaning products that meet Green Seal GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform 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. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:

   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   d. Remove tools, construction equipment, machinery, and surplus material from Project site.
   e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.

h. Sweep concrete floors broom clean in unoccupied spaces.

i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

k. Remove labels that are not permanent.

l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

1) Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates.

m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.

n. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.

p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

q. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter upon inspection.


r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

s. Leave Project clean and ready for occupancy.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.

D. Construction Waste Disposal: Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls" and Division 01 Section "Construction Waste Management and Disposal."
CLOSEOUT PROCEDURES
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.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Sections:

1. Division 01 Section "Execution" for final property survey.
2. Division 01 Section "Closeout Procedures" for general closeout procedures.
3. Divisions 02 through 49 Sections for specific requirements for project record documents of the Work in those Sections.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit one set(s) of marked-up record prints.
2. Number of Copies: Submit copies of record Drawings as follows:
   a. Initial Submittal: Submit one paper copy set and PDF electronic files of marked-up record prints and one set(s) of plots from corrected record digital data files. Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
   b. Final Submittal: Submit one paper copy set and PDF electronic files of marked-up record prints. Print each Drawing, whether or not changes and additional information were recorded.
   c. Final Submittal: Submit one paper copy set and PDF electronic files of marked-up record prints, one set(s) of record digital data files, and three set(s) of record digital data file plots. Plot each drawing file, whether or not changes and additional information were recorded.
B. Record Specifications: Submit one paper copy and PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit one paper copy and PDF electronic files and directories of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Miscellaneous Record Submittals: Refer to other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy and PDF electronic files and directories of each submittal.

E. Reports: Submit written report weekly indicating items incorporated in Project record documents concurrent with progress of the Work, including modifications, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies 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 provide information for preparation of corresponding 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 acceptable drawing technique.

c. Record data as soon as possible after obtaining it.

d. Record and check the markup before enclosing concealed installations.

e. Cross-reference record prints to corresponding archive photographic documentation.

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 and Shop Drawings completely and accurately. Utilize personnel proficient at recording graphic information in production of marked-up record prints.

4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at 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.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:

1. Format: Same digital data software program, version, and operating system as the original Contract Drawings.
4. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
5. Refer instances of uncertainty to Architect for resolution.
   a. Refer to Division 01 Section "Submittal Procedures" for requirements related to use of Architect's digital data files.
   b. Architect will provide data file layer information. Record markups in separate layers.

C. 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 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.

D. 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. **Format:** Annotated PDF electronic file.

3. **Record Digital Data Files:** Organize digital data 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 digital data 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 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 Specifications, and record Drawings where applicable.

**B. Format:** Submit record Specifications as annotated PDF electronic file and paper copy and scanned PDF electronic file(s) of marked up paper copy of Specifications.

### 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 Specifications, and record Drawings where applicable.

**B. Format:** Submit record Product Data as annotated PDF electronic file and paper copy and scanned PDF electronic file(s) of marked up paper copy of Product Data.
1. Include record Product Data directory organized by specification section number and title, electronically linked to each item of record Product Data.

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.

B. Format: Submit miscellaneous record submittals as PDF electronic file, paper copy and scanned PDF electronic file(s) of marked up miscellaneous record submittals.

   1. Include miscellaneous record submittals directory organized by specification section number and title, electronically linked to each item of miscellaneous record submittals.

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 017839
SECTION 05310 - STEEL DECK

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. Roof deck.
   B. Related Sections include the following:
      1. Division 5 Section "Metal Fabrications" for framing deck openings

1.3 SUBMITTALS
   A. Product Data: For each type of deck, accessory, and product indicated.
   B. Shop Drawings: Show layout and types of deck panels, anchorage details, reinforcing channels,
      pans, cut deck openings, special jointing, accessories, and attachments to other construction.
   C. Product Certificates: For each type of steel deck, signed by product manufacturer.
   D. Welding certificates.
   E. Field quality-control test and inspection reports.

1.4 QUALITY ASSURANCE
   A. Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for
      testing indicated.
   B. Welding: Qualify procedures and personnel according to AWS D1.3, "Structural Welding
      Code - Sheet Steel."

1.5 DELIVERY, STORAGE, AND HANDLING
   A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and
      handling.
B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

1.6  COORDINATION

A. Coordinate installation of deck with curbs for exhaust fans.

PART 2 - PRODUCTS

2.1  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:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Steel Deck:
   a. ASC Profiles, Inc.
   b. Canam Steel Corp.; The Canam Mana Group.
   c. Nucor Corp.; Vulcraft Division.

2.2  ROOF DECK

A. Steel Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 30, and with the following:

1. Prime-Painted Steel Sheet: ASTM A 1008/A 1008M, Structural Steel (SS), Grade 33 (230) minimum, shop primed with manufacturer's standard baked-on, rust-inhibitive primer.
   a. Color: To match existing.
2. Deck Profile: Type F
3. Profile Depth: **1-1/2 inches (38 mm)**
4. Design Uncoated-Steel Thickness: **0.0358 inch (0.91 mm)**

2.3  ACCESSORIES

A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.

B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.
C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 (4.8-mm) minimum diameter.

D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), not less than 0.0359-inch (0.91-mm) design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.

F. Repair Paint: Manufacturer's standard rust-inhibitive primer of same color as primer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

3.2 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 30, manufacturer's written instructions, and requirements in this Section.

B. Install temporary shoring before placing deck panels, if required to meet deflection limitations.

C. Locate deck bundles to prevent overloading of supporting members.

D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.

1. Align cellular deck panels over full length of cell runs and align cells at ends of abutting panels.

E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.

F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.

G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.

H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.
3.3 ROOF-DECK INSTALLATION

A. Fasten roof-deck panels to steel supporting members by #12 tek screws in a 36/4 pattern:

B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of 1/2 of the span or 18 inches (450 mm) and as follows:

1. Mechanically fasten with self-drilling, No. 10 (4.8-mm-) diameter or larger, carbon-steel screws.

C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches (38 mm), with end joints as follows:

1. End Joints: Butted.

3.4 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. Field welds will be subject to inspection.

C. Testing agency will report inspection results promptly and in writing to Contractor and Architect.

D. Remove and replace work that does not comply with specified requirements.

E. Additional inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

3.5 REPAIRS AND PROTECTION

A. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.

1. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.

B. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05310
SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Steel framing and supports for skylight infills and support for exhaust fans

B. Related Sections include the following:
   1. Division 5 Section "Steel Decking."

1.3 SUBMITTALS

A. Shop Drawings: Show fabrication and installation details for metal fabrications.
   1. Include plans, elevations, sections, and details of metal fabrications and their connections.

B. Mill Certificates: Signed by manufacturers of stainless-steel sheet certifying that products furnished comply with requirements.

C. Welding certificates.

1.4 QUALITY ASSURANCE

A. Welding: Qualify procedures and personnel according to the following:
   1. AWS D1.1, "Structural Welding Code--Steel."

1.5 PROJECT CONDITIONS

A. Field Measurements: Verify actual size of openings and other construction contiguous with metal fabrications by field measurements before fabrication and indicate measurements on Shop Drawings.
1.6 COORDINATION

A. Coordinate installation of framing with exhaust fan curbs.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

2.3 MISCELLANEOUS MATERIALS

A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.

B. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

1. Use primer with a VOC content of 420 g/L (3.5 lb/gal.) or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
2. Primer: Epoxy primer applied at spreading rate recommended by manufacturer.
   c. ICI: Tru-Glaze-WB 4030 Waterborne Epoxy Primer.
   d. International: Intergard 251 Thin Film Polyamide Epoxy Rust Inhibitive Primer.
   e. Moore: M08/M09 Waterborne Epoxy Primer.
   f. PPG: 97-14XX Series Pitt-Guard DTR Polyamide Epoxy Coating.
   i. Tnemec: 27 F. C. Typoxy Polyamide Epoxy.
3. Primer color to match existing building structure.

2.4 FABRICATION, GENERAL

A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
B. 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.

C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

D. Form exposed work true to line and level with accurate angles and surfaces and straight edges.

E. Weld corners and seams continuously 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. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) screws or bolts, unless otherwise indicated. Locate joints where least conspicuous.

G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.

2.5 FINISHES, GENERAL

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Finish metal fabrications after assembly.

2.6 STEEL AND IRON FINISHES

A. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed metal fabrications:
   1. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."

B. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications, except those with galvanized finishes and those to be embedded in concrete, sprayed-on fireproofing, 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

3.1 INSTALLATION, GENERAL

A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.

B. 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.

C. Field Welding: Comply with the following requirements:
   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. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag bolts, wood screws, and other connectors.

E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.

3.2 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the 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.

END OF SECTION 05500
SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

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. Wood blocking and nailers.
2. Plywood sheathing at curbs, vertical walls and scupper openings.

B. Related Requirements:

1. Section 076200 "Sheet Metal Flashing and Trim" for wood blocking requirements associated with sheet metal flashings.
2. Section 075323 "Ethylene Propylene Diene Monomer (EPDM) Roofing" for wood blocking and nailers integral to the roof assembly.
3. Section 079200 "Joint Sealants" for joint sealants integral to wood blocking installations.

1.3 DEFINITIONS

A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

3. NLGA: National Lumber Grades Authority.
5. WCLIB: West Coast Lumber Inspection Bureau.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.

3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.

4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.5 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For the following, from ICC-ES:

1. Preservative-treated wood.
2. Fire-retardant-treated wood.
5. Expansion anchors.
6. Metal framing anchors.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Certified Wood: Lumber and plywood shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship."

B. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.

C. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal (38-mm actual) thickness or less, 19 percent for more than 2-inch nominal thickness unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, 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, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawl spaces or unexcavated areas.
5. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Furring.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber and any of the following species:

1. Hem-fir (north); NLGA.
2. Mixed southern pine; SPIB.
3. Spruce-pine-fir; NLGA.
4. Hem-fir; WCLIB or WWPA.
5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
6. Western woods; WCLIB or WWPA.
7. Northern species; NLGA.
8. Eastern softwoods; NeLMA.

C. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:

1. Mixed southern pine, No. 2 or No. 3 grade; SPIB.
2. Hem-fir or hem-fir (north), Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.
3. Spruce-pine-fir (south) or spruce-pine-fir, Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
4. Northern species, No. 2 or No. 3 Common grade; NLGA.

D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

F. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.4 PLYWOOD BACKING PANELS

A. Curbs and Vertical Wall Backing Panels and blocking stiffeners: DOC PS 1, Exterior grade CDX, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.
2.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel or with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Brads, and Staples: ASTM F 1667.


D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening to Metal Framing: ASTM C 1002, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1 (ASME B18.2.3.8M).

G. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.


PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

C. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
D. Install plywood backing panels by fastening to concrete structure or studs; coordinate locations with utilities requiring backing panels. Install fire-retardant treated plywood backing panels with classification marking of testing agency exposed to view.

E. Do not splice structural members between supports unless otherwise indicated.

F. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
   1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

G. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

H. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
   1. Use inorganic boron for items that are continuously protected from liquid water.
   2. Use copper naphthenate for items not continuously protected from liquid water.

I. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
   1. NES NER-272 for power-driven fasteners.
   3. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

J. Use steel common nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 WOOD SLEEPER, BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches 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 INSTALLATION

A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.

B. Furring to Receive Plywood or Hardboard Paneling: Install 1-by-3-inch nominal-size furring horizontally and vertically at 24 inches o.c.

3.4 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect miscellaneous rough carpentry from weather. If, despite protection, miscellaneous rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061053
SECTION 070150.19 - PREPARATION FOR RE-ROOFING

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. Removal of existing gravel surfacing from the existing asphalt built-up roof membrane in all roof areas.

2. Removal of existing skylights and curb assemblies at all roof areas.

3. Removal of the existing roof access hatch and curb.

4. Removal of the existing gutter and edge metal at the upper roof area.

5. Removal of all areas of wet roof materials back to dry, sound materials down to the structural metal deck (Refer to Unit Prices for more information).

6. Removal of the adhered EPDM membrane and Polyisocyanurate overlay repairs at two locations, including associated fasteners and roof edge metal, where indicated on the roof plan.

7. Removal of abandoned roof top curbs, equipment and penetrations, as shown on the Drawings and identified by the Owner.

B. Related Sections:

1. Division 01 Section "Summary" for use of the premises and phasing requirements.

2. Division 01 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.

3. Division 06 Section “Rough Carpentry”.

4. Division 07 Section “EPDM Membrane Roofing”.

5. Division 07 Section “Sheet Metal Flashing and Trim”.

6. Division 07 Section “Roof Hatch and Rail System”.

PREPARATION FOR RE-ROOFING 070150.19 - 1
1.3 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, 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 in full accordance with all applicable codes and ordinances.

1.4 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

B. Existing Membrane Roofing System: Built-up asphalt and adhered EPDM roofing membrane, roof insulation, surfacing, and components and accessories between deck and roofing membrane.

C. Roof Tear-Off: Removal of existing membrane roofing system from deck.

D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.

E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer including certificate that Installer is licensed to perform asbestos abatement and is approved by warrantor of existing roofing system.

B. Fastener pull-out test report.

C. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

D. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

1.7 QUALITY ASSURANCE

A. Installer Qualifications: Installer of new membrane roofing system, licensed to perform asbestos abatement in the State or jurisdiction where Project is located and approved by warrantor of existing roofing system to work on existing roofing.
B. Regulatory Requirements: Comply with governing EPA notification regulations before
beginning membrane roofing removal. Comply with hauling and disposal regulations of
authorities having jurisdiction.

C. Reroofing Conference: Conduct conference at the DPW Service garage located at 55 Sea
Street, Quincy, MA.

1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency
representative; roofing system manufacturer's representative; roofing Installer including
project manager, superintendent, and foreman; and installers whose work interfaces with
or affects reroofing including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing system tear-off and replacement
including, but not limited to, the following:

   a. Reroofing preparation, including membrane roofing system manufacturer's written
      instructions.
   b. Existing roof drains and roof drainage during each stage of reroofing, and roof
      drain plugging and plug removal requirements.
   c. Construction schedule and availability of materials, Installer's personnel,
      equipment, and facilities needed to make progress and avoid delays.
   d. Existing deck removal procedures and Owner notifications.
   e. Condition and acceptance of existing roof deck and base flashing substrate for
      reuse.
   f. Structural loading limitations of deck during reroofing.
   g. Base flashings, special roofing details, drainage, penetrations, equipment curbs,
      and condition of other construction that will affect reroofing.
   h. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
   i. Asbestos removal and discovery of asbestos-containing materials.

      1. Note: The rooftop vent caulking was found to be Asbestos Containing Materials
         (ACM). All removals and disposal of ACM is to be performed in full compliance
         with all applicable laws and ordinances.
   j. Governing regulations and requirements for insurance and certificates if
      applicable.
   k. Existing conditions that may require notification of Architect before proceeding.

1.8 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing
so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice
of activities that may affect Owner's operations.

1. Coordinate work activities daily with Owner or Architect so Owner can place protective
dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC
and fire-alarm or -detection equipment if needed, and evacuate occupants from below the
work area.

2. Before working over structurally impaired areas of deck, notify Owner to evacuate
occupants from below the affected area. Verify that occupants below the work area have
been evacuated before proceeding with work over the impaired deck area.
B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.

C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

D. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
   1. Construction Drawings and Project Manual for existing roofing system are provided for Contractor's reference. Contractor is responsible for conclusions derived from existing documents.

E. No member of the roof shall be overstressed due to construction loads and demolition operations. The Owner assumes no responsibility for the actual condition of the structure.

F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

G. Hazardous Materials: Present in building to be reroofed. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
   1. Hazardous material remediation is specified elsewhere in the Contract Documents.
   2. Do not disturb hazardous materials or items suspected of containing hazardous materials except according to procedures specified elsewhere in the Contract Documents.
   3. Coordinate with hazardous material remediation subcontractor to prevent water from entering existing roofing system or building.

The Contractor is hereby notified that the built-up asphalt roof flashings at the pool roof unit curbs (Roof Area 01) and the perimeter edge flashings at the gymnasium roof (Roof Area 03) contain asbestos containing materials (ACM’s). The Contractor shall contact the appropriate Massachusetts State Agency and the appropriate Federal Agency concerning all questions and the latest procedures for the safe removal, disposal, or encapsulation of these materials and adhere to all procedures. The Contractor shall provide the Owner these procedures prior to any demolition. The Contractor shall also provide the Owner all information related to the safe disposal of such (i.e. dumping slips, manifestation reports, etc.).

If additional asbestos materials, or materials suspected to contain asbestos, are encountered during construction, demolition, or cutting and patching, the Contractor shall immediately cease work in the area of the suspected material, and immediately notify both the Owner and Consultant. The Owner or Consultant, or their designated representative, will investigate these materials and determine the method for removal, disposal, or encapsulation of these materials.

If the Contractor or Subcontractor disturbs, removes, disposes, or encapsulates these materials without written authorization and instructions from the Owner or Consultant; or disturbs, removes, disposes, or encapsulates these materials in a manner not in accordance with the authorizations and instructions, the Contractor and Subcontractor shall indemnify, defend, and hold harmless the Owner and Consultant.
against any loss, damage, or liability arising or resulting from such unauthorized improper acts of the Contractor and Subcontractor; and further, the Owner and Consultant shall not be responsible for any such loss, damage, or liability arising or resulting from the Contractor’s or Subcontractor’s acts.

PART 2 - PRODUCTS

2.1 MATERIALS
   A. Provide adequate number and size of dumpsters, refuse containers, trucks, chutes, etc. for proper execution of demolition work. All demolition removal containers shall be properly protected and maintained on a daily basis. Owner must approve locations of dumpsters/refuse containers. Contractor shall submit to the Architect, for approval, proposed methods used to conduct demolition operations and debris control.

PART 3 - EXECUTION

3.1 PREPARATION
   A. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
   B. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
   C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.

1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
   D. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.2 ROOF REPLACEMENT
   A. General: Notify Owner and Architect each day of extent of selective roof tear-off proposed for that day and obtain authorization to proceed.
   B. Remove loose aggregate from aggregate-surfaced built-up bituminous roofing using a power broom or vacuum.
C. **Roof Tear-Off**: Remove wet existing roofing system and associated components back to dry materials down to the existing metal deck where indicated on the plans.

1. Remove cover boards.
2. Remove fasteners from deck.

D. Remove existing EPDM roof overlay repairs at two locations indicated on the roof plan.

### 3.3 DECK PREPARATION

A. Inspect deck after tear-off of membrane roofing system.

B. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.

C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

D. Repair deteriorated areas of metal deck as required in accordance with Unit Prices. Base bid quantity: 100 s.f.

### 3.4 EXISTING BASE FLASHINGS

A. Remove existing base flashings around roof edges, curbs, walls, and penetrations as required to perform new work shown on the drawings.

1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.

B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish.

### 3.5 FASTENER PULL-OUT TESTING

A. Perform fastener pull-out tests according to SPRI FX-1, and submit test report to Architect before installing new membrane roofing system.

1. Obtain Architect's and roofing membrane manufacturer's approval to proceed with specified fastening pattern. Architect and Roofing membrane manufacturer may furnish revised fastening pattern commensurate with pull-out test results.

### 3.6 DISPOSAL

A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
1. Storage or sale of demolished items or materials on-site is not permitted.

B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19
SECTION 075323 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

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. Adhered ethylene-propylene-diene-monomer (EPDM) roofing system.
   2. Adhered EPDM membrane flashings.
   3. Roof insulation.
   5. Roof Accessories.
   6. Fan/Vent Units and Curbs.
   7. Reference Unit Prices Section 012200 for metal deck repair, drain assembly replacement and additional wet replacement areas unit pricing.

B. Related Requirements:
   1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, plywood and blocking.
   2. Section 076200 "Sheet Metal Flashing and Trim" for roof edge metal, metal base flashings and counterflashings.
   3. Section 077233 “Roof Hatch and Rail System”
   4. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS

A. Preliminary Roofing Conference: Before starting roofing replacement operations/construction, conduct conference at City of Quincy Department of Public Works at 55 Sea Street, Quincy, MA

   1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative 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, equipment curbs, and condition of other construction that affects 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.

B. Product Data: For each type of product.

C. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:

1. Base flashings and membrane terminations.

2. Tapered insulation, including sumps, crickets and slopes.

3. Roof plan showing orientation of roofing and fastening spacing and patterns for mechanically attached and adhered roofing for corner, perimeter, and field-of-roof locations.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.

1. Submit evidence of complying with performance requirements.

C. Product Test Reports: For components of roofing system, tests performed by manufacturer and witnessed by a qualified testing agency.

D. Research/Evaluation Reports: For components of roofing system, from ICC-ES.

E. Field quality-control reports.

F. Sample Warranties: For manufacturer's special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.
1.7 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project.

B. 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 special warranty.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.9 FIELD 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.

1.10 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.

1. Special warranty includes membrane roofing, base flashings, roof insulation/HD Polyiso Cover board, roofing accessories, and other components of roofing system.

2. Warranty Period: Twenty (20) years from date of Substantial Completion.

B. Special Project 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 such as membrane roofing, base flashing, roof insulation, fasteners, accessories and walkway products, for the following warranty period:
1. Warranty Period: **Two (2) years** from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain components including roof insulation and fasteners for roofing system from same manufacturer as membrane roofing.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.

2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Roofing System Design: Tested by a qualified testing agency to resist the following:

1. 1-90 uplift requirements with perimeter and corner enhancements.

D. Solar Reflectance Index: Not less than 29 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

E. Energy Star Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low slope roof products.

F. Energy Performance: Roofing system shall have an initial solar reflectance index of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.

G. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

H. Fire-Resistance Ratings: Comply with fire-resistance-rated assembly designs indicated. Identify products with appropriate markings of applicable testing agency.
2.3 EPDM ROOFING

A. EPDM: ASTM D 4637, Type II, scrim or fabric internally reinforced, uniform, flexible EPDM sheet.

1. Manufacturers: Subject to compliance with requirements, provide products by the following:
   a. Carlisle SynTec Incorporated.
   b. Firestone Building Products.
   c. Johns Manville.
   d. Or Approved Equal.

2. Thickness: 60 mils nominal thickness minimum.
3. Exposed Face Color: Black

2.4 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.
2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content:
   a. Plastic Foam Adhesives: 50 g/L.
   b. Gypsum Board and Panel Adhesives: 50 g/L.
   c. Multipurpose Construction Adhesives: 70 g/L.
   d. Fiberglass Adhesives: 80 g/L.
   e. Single-Ply Roof Membrane Adhesives: 250 g/L.
   f. Single-Ply Roof Membrane Sealants: 450 g/L.
   g. Nonmembrane Roof Sealants: 300 g/L.
   h. Sealant Primers for Nonporous Substrates: 250 g/L.
   i. Sealant Primers for Porous Substrates: 775 g/L.
   j. Other Adhesives and Sealants: 250 g/L.

3. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the testing and product requirements of the California Department of Public Health's (formerly, the California Department of Health Services') "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

B. Sheet Flashing: 60-mil- thick EPDM, partially cured or cured, according to application.

C. Protection Sheet: Epichlorohydrin or neoprene nonreinforced flexible sheet, 55- to 60-mil thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil.
D. Bonding Adhesive: Manufacturer's low VOC solvent based adhesive (VOC Compliant per Commonwealth of Massachusetts).

   1. Follow manufacturer’s requirements for adhesive applications during low outside temperature, including keeping materials in a warmed environment to maintain adhesive temperature above 60 degrees Fahrenheit.

E. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 6-inch-wide minimum, butyl splice tape with release film.

F. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.

G. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.

H. Metal Termination Bars: Manufacturer's standard, predrilled aluminum approximately 1 by 1/8 inch thick; with anchors.

I. Metal Battens: Manufacturer's standard, aluminum-zinc-alloy-coated, approximately 1 inch wide by 0.05 inch thick pre-punched.

J. Fasteners: Factory-coated steel or stainless steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening membrane to substrate, and acceptable to roofing system manufacturer.

K. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, molded pipe boot flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

L. Roof Membrane Rehabilitation Products: Carlisle-Syntec Weathered Membrane cleaner, solvent based primer Carlisle HP-250) and Carlisle-Syntec pressure sensitive cured EPDM Cover Tape (widths as required). All products shall be from manufacturer of existing roof system manufacturer (Carlisle-Syntec).

M. Reinforcing Perimeter Strip: Manufacturer’s standard.

2.5 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured by EPDM roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

B. Polysocyanurate Board Insulation: Minimum 1-1/2” thick total (including laminated HD Polyiso coverboard).

C. Tapered Insulation: Provide factory-tapered insulation boards and crickets as required to prevent ponding of water and to provide a minimum positive slope to drain of 1/8 inch per foot unless otherwise indicated.
D. Provide preformed saddles, crickets, tapered edge strips, drain sump areas (4 foot square – typical) and other insulation shapes as required for positive slope to drain.

2.6 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roof membrane, and acceptable to roofing system manufacturer.

1. Fastening to meet or exceed 1-90 wind uplift requirements.

C. Cover Board: Cover Board shall be Manufacturer’s 1/2 inch HD Polyiso laminated to insulation board - approved by roofing system’s manufacturer.

1. Total insulation thickness, including coverboard, to be 1-1/2” (to match wood blocking height).

2.7 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads (30 inch x 30 inch square) approximately 3/16 inch thick and acceptable to roofing system manufacturer. Reference Drawings for locations for Base Bid.

2.8 ROOF DRAINS

A. New Drain Assemblies:

1. Replace existing removed low roof drains where indicated on the drawings with new adjustable, extension-type S1010 roof drains as manufactured by Jay R. Smith Mfg. Co. with the following Jay R. Smith Mfg. Co. S1010 roof drain parts per the manufacturer and drawings:

   a. Cast iron strainer basket
   b. Combined cast iron flashing clamp and gravel stop
   c. Adjustable extension sleeve for required insulation thickness at drain
   d. O-ring gasket
   e. Reversible collar
   f. Neoprene gasket
   g. S1010 drain body
   h. Underdeck clamp

2. See Unit Prices for more information.

B. Existing Drain Repairs:
1. Roof drains to be fitted with new stainless steel bolts and hardware. All drain baskets, drain bodies and bowls shall be SSPC-SP3 (power wire brushed) and painted with Elastometal Red Primer and Light Gray Topcoat coating as manufactured by RD Coatings, Inc. Stratford, CT. Repaint rusted drains as required.

2. Existing To Remain drains to have new Baskets/Strainers, Clamping Rings and Extensions

3. Replace lead and oakum joints at all existing to remain drains with new.

C. Roof Drain Coating: All drain baskets, drain bodies and bowls shall be SSPC-SP3 (power wire brushed) and painted with Elastometal Red Primer and Light Gray Topcoat coating as manufactured by RD Coatings, Inc. Stratford, CT or approved equal

D. Roof Drain Insulation: Mineral-Fiber, Preformed Pipe Insulation with factory-applied jacket (requirements are specified in "Factory-Applied Jackets" Article) for drain bowl and pipe (4 feet from bowl minimum) at new roof drains.

E. ALL ROOF DRAINS shall be snaked prior to re-roofing operations to a distance of 75 linear feet from drain bowl by a certified industrial plumbing contractor regularly providing this professional service. All drains shall be plugged during roofing operations, but not during inclement weather. At the completion of the roof replacement project, snake all roof drains to a distance of 75 linear feet from drain bowl.

2.11 METAL DECK REPAIR COATING:

A. Scrape, prime and prepare existing rusted metal deck for new rust-inhibiting coating. New coating to be “Monograff” by RD Coatings or approved equal.

3. BASE BID: Quantity to carry for base bid is 100 sf of metal deck repair.

2.12 METAL DECK INFILL:

A. Furnish and install new metal deck supports and metal deck infill at existing abandoned skylight openings that are to be infilled and roofed over.

B. Refer to structural drawings for locations, sizes and infill requirements.

2.13 MINERAL WOOL

A. Roxul mineral wool insulation for cavities and gaps between the structural deck and through-roof penetrations such as the lightning protection cable and structural steel anchors as manufactured by Roxul or approved equal.

2.14 ROOF HATCH:

A. Install new roof access hatch and curb, including roof hatch Manufacturer’s guardrail system.
2.15 ROOFTOP FAN/VENT CURBS:

A. Install new rooftop fan/vent curbs that are supplied by the Owner and flash per EPDM manufacturer’s requirements.

1. Coordinate locations with the Owner.

B. Coordinate fan/vent unit installation with the owner to provide a complete flashed curb assembly per EPDM roof manufacturer’s warranty requirements.

C. Refer to structural drawings for curb sizes, locations and infill requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
3. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
4. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
5. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Roof Rehabilitation: Contractor shall clean all heavy dirt and debris prior to application of weathered membrane cleaner, primer and pressure sensitive EPDM tape. Contractor to strictly adhere to all manufacturer’s instructions and guidelines for application of roof rehabilitation materials.
3.3 EXISTING WET ROOF MATERIAL REPLACEMENT

A. Cut out and replace wet roof insulation and associated materials with new insulation to match the height of the new roof system, wherever indicated on the roof plans.

B. Refer to Unit Prices for additional information.

3.4 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

C. Install roofing and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition and to not void warranty for existing roofing system.

3.5 ROOFTOP FAN/VENT CURBS AND UNITS

A. Coordinate with Owner for installation of the new rooftop fan/vent curbs and units. Refer to the plans and structural drawings for more information.

B. Install new EPDM roof and flashing membranes and accessories required to make the new roof system acceptable to roof Manufacturer for warranty requirements.

1. Coordinate as required with Owner to install new fan/vent units atop the new fan/vent curbs.
   
   a. Contractor to provide to the Owner five (5) business days’ notice prior to Substantial Completion for the Owner to install the new fans.

   b. Temporarily install plywood and membrane flashings over fan/vent curb openings if new fan/vent curbs and/or units are not available at the time of the new roof installation.

   1. Ensure that all temporary conditions are watertight and will not interfere with the Roof Manufacturer’s final acceptance of the roof installations for the Manufacturer’s warranty.

3.6 ROOF BOARD INSTALLATION

A. Install substrate board with long joints in continuous straight lines, perpendicular to roof slopes with end joints staggered between rows. Stagger boards so that the edge of one board is at the center of the adjacent insulation board. Stagger no less than 12”. Gap all substrate boards as per all Manufacturers specific installation instructions including all site-specific environmental conditions.
3.7 INSULATION INSTALLATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Install tapered insulation under area of roofing to conform to slopes indicated.

D. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

E. Install insulation with long joints of insulation in a continuous straight line perpendicular to roof slopes with end joints staggered to the centerpoint between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation. Stagger boards so that the edge of one board is at the center of the adjacent insulation board. Stagger no less than 12”. Gap all substrate boards as per all Manufacturers specific installation instructions including all site-specific environmental conditions.

1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.

3.8 ADHERED MEMBRANE ROOFING INSTALLATION

A. Adhere roofing over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll membrane roofing and allow to relax before installing.

B. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

C. Accurately align roofing, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Bonding Adhesive: Apply to substrate and underside of roofing at rate required by manufacturer, and allow to partially dry before installing roofing. Do not apply to splice area of roofing.

1. Maintain bonding adhesive temperature above sixty degrees Fahrenheit at all times during application in low ambient temperature. Place adhesives in heated enclosures as required to ensure adhesives remain above sixty degrees Fahrenheit during application.

E. In addition to adhering, mechanically fasten roofing securely at terminations, penetrations, and perimeters.

F. Apply roofing with side laps shingled with slope of roof deck where possible.

G. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement, and firmly roll side and end laps of overlapping roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of roofing terminations.
1. Apply a continuous bead of in-seam sealant before closing splice if required by roofing system manufacturer.

2. Install the Manufacturer’s Reinforcing Perimeter strip wherever required by the manufacturer.

H. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape, and firmly roll side and end laps of overlapping roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of roofing terminations.

I. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.

J. Spread sealant or mastic bed over deck-drain flange at roof drains, and securely seal membrane roofing in place with clamping ring.

K. Adhere protection sheet over membrane roofing at locations indicated.

L. In-Splice Attachment: Secure one edge of roofing using termination bars centered within splice, and mechanically fasten roofing. Field splice seam.

M. Through-Membrane Attachment: Secure roofing using fastening plates or metal battens, and mechanically fasten roofing to roof deck. Cover battens and fasteners with a continuous cover strip.

N. Adhere protection sheet over membrane roofing at locations indicated.

O. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

P. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

Q. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

R. 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.

S. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.9 ROOF EDGE METAL

A. Provide and install the roof manufacturer’s standard edge metal system, or .040” minimum thick painted brake formed sheet metal to meet the minimum uplift and requirements.

1. Color: Owner to select from the manufacturer’s full range of standard Kynar finishes.
3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components, and to furnish reports to Architect.

B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

E. Walkway Pads: Install manufacturer’s standard protective walkway pads where indicated on the drawings. Install after roof has been flood tested, confirmed to be defect-free and inspected by the manufacturer for the Manufacturer’s warranty coverage.

3.11 PROTECTING AND CLEANING

A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates, and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.12 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _______________________________ of ___________________________, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner:
2. Address:
3. Building Name/Type: DPW SERVICE GARAGE
4. Address: 55 Sea Street Quincy, MA
5. Area of Work: – Roof
6. Acceptance Date: ________________.
7. Warranty Period: 20 years
8. Expiration Date: ________________.
B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
   a. lightning;
   b. peak gust wind speed exceeding 75 mph
   c. fire;
   d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
   e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
   f. vapor condensation on bottom of roofing; and
   g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.

3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.

4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.

6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.

7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully
available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _________ day of __________________, ________________.

1. Authorized Signature: ________________________________________.
2. Name: ________________________________________.
3. Title: ________________________________________.

END OF SECTION 075323
SECTION 076200 - SHEET METAL FLASHING AND TRIM

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. Edge Metal Fascia.
   2. Wall Reglet Flashing.
   3. Base Curb Flashing.
   4. Sheet Metal Counterflashing.
   5. Miscellaneous Sheet Metal Flashing and Trim.

B. Related Requirements:
   1. Section 061053 "Miscellaneous Rough Carpentry"
   2. Section 075323 – “Ethylene Propylene Diene Monomer (EPDM) Roofing”
   3. Section 079213 – “Joint Sealants”

1.3 COORDINATION

A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.

B. Coordinate sheet metal flashing and trim installation with adjoining wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

   1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
   2. Review requirements for insurance and certificates if applicable.
1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. Shop Drawings: For sheet metal flashing and trim.
   1. Include plans, elevations, sections, and attachment details.
   2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work.
   3. Include identification of material, thickness, weight, and finish for each item and location in Project.
   4. Include details for forming, including profiles, shapes, seams, and dimensions.
   5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
   6. Include details of termination points and assemblies.
   7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
   8. Include details of special conditions.
   9. Include details of connections to adjoining work.
   10. Detail formed flashing and trim at scale of not less than 3 inches per 12 inches.
   11. Detailed color schedule for all new metal flashings and trims.

C. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.

D. Samples for Verification: For each type of exposed finish and in thicknesses/gauges to be installed.
   1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
   2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
   3. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

B. Product Test Reports: For each product, for tests performed by a qualified testing agency.

C. Sample Warranty: For special warranty.
1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.

1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.

B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.10 WARRANTY

A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

   a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
   b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
   c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: 20 years from date of Substantial Completion.
PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

1. Roof edge metal to withstand minimum uplift pressures as indicated in Factory Mutual Global 1-49 Requirements.

B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Stainless-Steel Sheet: ASTM A 240/A 240M Type 316L, dead soft, fully annealed; with smooth, flat surface.

1. Finish: 2D (Dull, cold rolled).
2. Stainless Steel: 22 Gauge Thickness.

2.3 OVERFLOW SCUPPERS

A. Minimum 22 Gauge thickness stainless steel, fully soldered thru-parapet box insert, exterior conductor head and leaders.

B. Scupper opening to be 4” high minimum

C. Exterior Conductor head to be 6” tall minimum and sized to accommodate water runoff.

D. Fasteners and Straps: Size, quantity and spacing as required to fully support the scupper assembly.
2.4  MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

1. General: Blind fasteners or self-drilling coated low-profile head concrete or wood screws.
   a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
   b. Blind Fasteners: Stainless-steel rivets suitable for metal being fastened.

2. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.

C. Solder:
   1. For Stainless Steel: ASTM B 32, Grade Sn96, with acid flux of type recommended by stainless-steel sheet manufacturer.

D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane 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; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

H. Bituminous Coating: Cold-applied asphalt emulsion according to ASTM D 1187.

2.5  FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with details shown and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with Factory Mutual Global Wind Uplift performance requirements, but not less than that specified for each application and metal.
2. Obtain field measurements for accurate fit before shop fabrication.
3. Form sheet metal flashing and trim to fit substrates without excessive oil canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
4. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal to provide for proper installation of elastomeric sealant according to cited sheet metal standard.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal. All cleats to be continuous.

F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard and by FM Global Property Loss Prevention Data Sheet 1-49 for application, but not less than thickness of metal being secured.

G. Securement Clips: Clips to be 2” wide minimum, 22 Gauge thickness stainless steel spaced at 8” on center, maximum. Conform to Factory Mutual Global securement requirements.

H. Blind Nailers: Blind nailers are to be continuous and fabricated from the same Gauge metal as that to be concealed. Fully bed blind nailers in water cutoff mastic.

I. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

J. Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use.


L. Do not use graphite pencils to mark metal surfaces.
PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.

1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION
A. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free. Prime substrate if recommended by underlayment manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation; use primer for installing underlayment at low temperatures. Apply in shingle fashion to shed water, with end laps of not less than 6 inches (150 mm) staggered 24 inches (600 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps and edges with roller. Cover underlayment within 14 days.

B. Apply slip sheet, wrinkle free, over underlayment before installing sheet metal flashing and trim.

3.3 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, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
3. Space cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim with limited oil canning, and free of buckling and tool marks.
5. Torch cutting of sheet metal flashing and trim is not permitted.
6. Do not use graphite pencils to mark metal surfaces.
B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.

1. Coat concealed side of uncoated-aluminum sheet metal flashing and trim with bituminous coating where flashing and trim contact wood, ferrous metal, or cementitious construction.
2. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.

E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.

F. Seal joints as required for watertight construction.

1. Use sealant-filled joints unless otherwise indicated. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pre-tinning where pre-tinned surface would show in completed Work.

1. Do not solder aluminum sheet.
2. Do not use torches for soldering.
3. Heat surfaces to receive solder, and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
5. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.
6. Copper-Clad Stainless-Steel Soldering: Tin edges of uncoated sheets, using solder for copper-clad stainless steel.

H. Rivets: Rivet joints in zinc where necessary for strength.

3.4 WALL BASE FLASHING INSTALLATION

A. General: Install sheet metal wall counterflashing to intercept and exclude penetrating moisture according to cited sheet metal standard unless otherwise indicated. Coordinate installation of curtainwall base counterflashing and door sill pan flashing with removal and reinstallation of roof access door.

3.5 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 SCUPPERS

A. Install scupper inserts, boxes, conductor heads, leaders, straps and all associated accessories as required to make a complete and fully secured system.

B. Solder all laps and joints wherever practical.

C. Coordinate all installations with Roof Contractor to make the systems watertight.

3.7 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean and neutralize flux materials. Clean off excess solder.

C. Clean off excess sealants.

D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended by sheet metal flashing and trim manufacturer. Maintain sheet metal flashing and trim in clean condition during construction.

E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200
SECTION 077233- ROOF HATCH AND RAIL SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Work Included: Provide factory-fabricated roof hatches for ladder access.

1.2 SUBMITTALS

A. Product Data: Submit manufacturer’s product data.

B. Shop Drawings: Submit shop drawings including profiles, accessories, location, adjacent construction interface, and dimensions.

C. Warranty: Submit executed copy of manufacturer’s standard warranty.

1.3 QUALITY ASSURANCE

A. Manufacturer: A minimum of 5 years experience manufacturing similar products.

B. Installer: A minimum of 2 years experience installing similar products.

C. Manufacturer’s Quality System: Registered to ISO 9001:2008 Quality Standards including in-house engineering for product design activities.

1.4 DELIVERY, STORAGE AND HANDLING

A. Deliver products in manufacturer’s original packaging. Store materials in a dry, protected, well-vented area. Inspect product upon receipt and report damaged material immediately to delivering carrier and note such damage on the carrier’s freight bill of lading.

1.5 WARRANTY

A. Manufacturer’s Warranty: Provide manufacturer’s standard warranty. Materials shall be free of defects in material and workmanship for a period of five years from the date of purchase. Should a part fail to function in normal use within this period, manufacturer shall furnish a new part at no charge.

PART 2 - PRODUCTS

2.1 MANUFACTURER


2.2 ROOF HATCH

A. Furnish and install where indicated on plans metal roof hatch Type S-50TB, size width: 36” (914mm) x length: 36” (914mm). Size of new roof hatch to match existing roof opening. The roof hatch shall be single leaf. The roof hatch shall be pre-assembled from the manufacturer.

B. Performance characteristics:
1. Cover and curb shall be thermally broken to prevent heat transfer between interior and exterior surfaces.
2. Cover shall be reinforced to support a minimum live load of 40 psf (195kg/m²) with a maximum deflection of 1/150th of the span or 20 psf (97kg/m²) wind uplift.
3. Operation of the cover shall be smooth and easy with controlled operation throughout the entire arc of opening and closing.
4. Operation of the cover shall not be affected by temperature.
5. Entire hatch shall be weather tight with fully welded corner joints on cover and curb.

C. Cover: Shall be 11 gauge (2.3mm) aluminum with a 5” (127mm) beaded flange with formed reinforcing members. Interior and exterior surfaces shall be thermally broken to minimize heat transfer and to resist condensation. Cover shall have a heavy extruded EPDM rubber gasket bonded to the cover interior to assure a continuous seal when compressed to the top surface of the curb.

D. Cover insulation: Shall be 3” (75mm) thick polyisocyanurate with an R-value = 20.3 (U=0.279 W/m²K), fully covered and protected by an 18 gauge (1mm) aluminum liner.

E. Curb: Shall be 12” (305mm) in height and of 11 gauge (2.3mm) aluminum. Interior and exterior surfaces shall be thermally broken to minimize heat transfer and to resist condensation. The curb shall be formed with a 5-1/2” (140mm) flange with 7/16” (11mm) holes provided for securing to the roof deck. The curb shall be equipped with an integral metal cap-flashing of the same gauge and material as the curb, fully welded at the corners, that features the Bil-Clip® flashing system, including stamped tabs, 6” (153mm) on center, to be bent inward to hold single ply roofing membrane securely in place.

F. Curb insulation: Shall be 3” (75mm) thick polyisocyanurate with an R-value = 20.3 (U=0.279 W/m²K).

G. Lifting mechanisms: Manufacturer shall provide compression spring operators enclosed in telescopic tubes to provide, smooth, easy, and controlled cover operation throughout the entire arc of opening and closing. The upper tube shall be the outer tube to prevent accumulation of moisture, grit, and debris inside the lower tube assembly. The lower tube shall interlock with a flanged support shoe welded to the curb assembly.

H. Hardware

1. Heavy stainless steel pintle hinges shall be provided
2. Cover shall be equipped with a spring latch with interior and exterior turn handles
3. Roof hatch shall be equipped with interior and exterior padlock hasps.
4. The latch strike shall be a stamped component bolted to the curb assembly.
5. Cover shall automatically lock in the open position with a rigid hold open arm equipped with a 1” (25mm) diameter red vinyl grip handle to permit easy release for closing.
6. Compression spring tubes shall be an anti-corrosive composite material and all other hardware shall be zinc plated and chromate sealed. [For installation in highly corrosive environments or when prolonged exposure to hot water or steam is anticipated, specify Type 316 stainless steel hardware].
7. Cover hardware shall be bolted into heavy gauge channel reinforcing welded to the underside of the cover and concealed within the insulation space.

I. Finishes: Factory finish shall be mill finish aluminum.

2.3 HATCH RAIL SYSTEM

A. Furnish and install where indicated on plans hatch rail system. The hatch rail system shall be field assembled and installed per the manufacturer’s instructions.

B. Performance characteristics:
1. High visibility safety yellow powder coat paint finish (*other colors available as a special order*).
2. Hatch rail system shall attach to the cap-flashing of the roof hatch and shall not penetrate any roofing material.
3. Hatch rail system shall satisfy the requirements of OSHA 29 CFR 1910.23 and shall meet OSHA strength requirements with a factor of safety of two.
4. Corrosion resistant construction with a five-year warranty.
5. Hinged gate shall ensure continuous barrier around the roof hatch.
6. Self-closing gate hinge and positive latching system provided with hatch rail system.

C. Posts and Rails: 1-1/4” (32mm) 6061 T6 schedule 40 aluminum pipe

D. Hardware: Mounting brackets shall be 3/8” (9mm) thick extruded aluminum. Pivoting post guides with compression fittings and latching mechanism shall be cast aluminum. Self-closing hinges and all fasteners shall be type 316 stainless steel.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and openings for compliance with requirements for installation tolerances and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install products in strict accordance with manufacturer’s instructions and approved submittals. Locate units level, plumb, and in proper alignment with adjacent work.

1. Test units for proper function and adjust until proper operation is achieved.
2. Repair finishes damaged during installation.
3. Restore finishes so no evidence remains of corrective work.

3.3 ADJUSTING AND CLEANING

A. Clean exposed surfaces using methods acceptable to the manufacturer which will not damage finish.

END OF SECTION
SECTION 079213 – JOINT SEALANTS

PART 1 - GENERAL

1.1 SYSTEM DESCRIPTION
A. Section Includes:
   1. Elastomeric joint sealants.

B. Related Sections:
   1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, plywood and blocking.
   2. Section 075323 "Ethylene Propylene Diene Monomer (EPDM) Roofing" for installing sealants integral with membrane roofing.
   3. Section 076200 "Sheet Metal Flashing and Trim" for sealants associated with sheet metal flashings.

1.2 SUBMITTALS
A. Comply with Section 013300.
B. Product Data: Submit manufacturer's technical data sheets and LEED product information for each product.
C. Samples:
   1. Initial Selection Purposes: For each product exposed to view, manufacturer's standard bead consisting of strips of actual products showing full range of colors available.
   2. Verification: 2 sets of each type and color of joint sealant required. Install joint sealant samples in 1/2-inch wide joints formed between two 6-inch long strips of material matching appearance of exposed surfaces adjacent to joint sealants.
D. Submit laboratory tests or data validating product compliance with performance criteria specified.
E. Submit list of references from 5 projects similar in scope to this Project. Include contact name and phone number of person charged with oversight of each project.
F. Warranty: Provide manufacturer's standard material warranty.

1.3 QUALITY ASSURANCE
A. Comply with Section 014000
B. Qualifications:
   1. Manufacturer Qualifications: Company regularly engaged in manufacturing and marketing of products specified in this Section.
3. Applicator Qualifications: Qualified to perform Work specified by reason of experience or training provided by product manufacturer.

C. Mock-Ups:
1. At start of Project, perform mock-up of required sealant Work at 1 area of building. Perform minimum of 1 mock-up for each different combination of substrates to be sealed. Coordinate mock-up areas with Architect.
2. Install mock-ups and test in presence of sealant manufacturer’s authorized representative and Architect to ensure application procedures are consistent with warranty requirements.
3. After sealant has achieved sufficient cure as coordinated with manufacturer’s representative, conduct adhesion pull-tests or non-destructive testing, at discretion of Architect. Conduct tests in accordance with ASTM C1521. Confirm results of adhesion tests as acceptable to Architect and sealant manufacturer before starting Work.
4. Leave approved mock-ups in place to establish standards and guidelines for acceptable application of sealant Work and acceptable appearance.

1.4 DELIVERY, STORAGE, AND HANDLING
A. Comply with Section 016000

B. Deliver products in original factory packaging bearing identification of product, manufacturer, and batch number.

C. Store products in original, unopened containers in clean, dry area away from heat and direct sunlight.

1.5 PROJECT CONDITIONS
A. Do not use products under conditions of precipitation or in inclement or freezing weather. Verify that substrates are clean, dry, and frost free. Use appropriate measures for protection and supplementary heating to ensure proper curing conditions in accordance with manufacturer’s recommendations if application during inclement weather occurs.

PART 2 - PRODUCTS

2.1 QUALITY ASSURANCE

B. MANUFACTURERS
1. Subject to compliance with requirements, provide products from the following manufacturers:
   a. BASF Corporation, Construction Chemicals (Basis of Design).
   b. Dow Chemical Company.
   c. Tremco Commercial Sealants & Waterproofing.
   d. Or approved equal.

2. Substitutions: Comply with Section 012500.
3. Specifications and Drawings are based on manufacturer's proprietary literature from BASF Construction Chemicals. Other manufacturers shall comply with minimum levels of material, color selection, and detailing indicated in Specifications or on Drawings. Architect will be sole judge of appropriateness of substitutions.

2.2 MATERIALS

A. One-component, high-performance, nonpriming, gun-grade, elastomeric polyurethane sealant.
   1. Acceptable Product: MasterSeal NP 1 (formerly Sonolastic NP 1) by BASF.
   2. Or approved equal

B. Performance Requirements: Provide sealant complying with the following requirements:
   1. Compliances:
      - ASTM C920, Type S, Grade NS, Class 35, Use NT, T, M, A, G, and I.
      - Federal Specification TT-S-00230C, Type II, Class A.
      - Corps of Engineers CRD C541, Type II, Class A.
      - UL classified, fire resistance only.
      - SWR Institute validated.
      - ISO 11600-F-25LM.
   2. Service Temperature Range: Minus 40 to 180 degrees F (minus 40 to 82 degrees C).
   3. Shrinkage: None.
   5. Tensile Strength, ASTM D412: 350 psi (2.4 MPa).
   10. Hardness, ASTM C661, Shore A:
   13. Weight Loss, ASTM C792, after heat aging: 3 percent.
   14. Cracking and Chalking, ASTM C792, after heat aging: None.
   17. Bond Durability, ASTM C719, on glass, aluminum, and concrete: Passes, plus or minus 35 percent movement.
   18. Adhesion in Peel, ASTM C794: 30 pli.
   19. Adhesion in Peel, after UV radiation through glass, ASTM C794: Passes.
   20. Artificial Weathering, ASTM C793, Xenon arc, 250 hours: Passes.
   21. Artificial Weathering, ASTM G26, Xenon arc, 3,000 hours: No surface cracking.
   23. VOC Content: 0.36 lbs per gal (43 g/L), less water and exempt solvents.

C. Design Requirements:
1. Design number of joints and joint widths for maximum of plus or minus 25 percent movement.
2. Design depth of sealant to be 1/2 width of joint.
   Maximum Depth: 1/2 inch (13 mm).
   Minimum Depth: 1/4 inch (6 mm).
   Maximum Recommended Width: 1-1/2 inches (38 mm).

2.3 COLOR

   A. Sealant Colors: Selected by Architect from manufacturer's full color range.

PART 3 - EXECUTION

3.1 EXAMINATION

   A. Comply with Section 017300
   B. Inspect areas involved in Work to establish extent of Work, access, and need for protection of surrounding construction.
   C. Examine joints for defects that would adversely affect quality of installation.
   D. Provide additional joint preparation, beyond that outlined in Specifications, as required by sealant manufacturer and Architect’s recommendations based on mock-ups and field adhesion tests.

3.2 SURFACE PREPARATION

   A. Prepare surfaces in accordance with manufacturer’s instructions.
   B. Clean joints as required to expose sound surface free of contamination and laitance.
   C. Ensure structurally sound surfaces, dry, clean, free of dirt, moisture, loose materials, oil, grease, asphalt, tar, paint, wax, rust, waterproofing, curing and parting compounds, membrane materials, and other foreign matter that impair adhesion of sealant.
   D. Concrete, Stone, and Other Masonry:
      1. Clean by grinding, sandblasting, or wire brushing to expose sound surface free of contamination and laitance.
   E. Metal:
      1. Remove scale, rust, and coatings from metal to expose bright white surface. Remove protective coatings and chemical residue or film.
      2. Aluminum Frames: Remove clear lacquer before application of joint sealants. If coatings cannot be removed, test coatings to verify adhesion of sealant or determine appropriate primer.
      3. Remove other protective coatings or finishes that could interfere with adhesion.
3.3 PRIMING

A. Where circumstances or substrates require primer, comply with the following requirements:
   1. Apply primer in accordance with manufacturer’s instructions.
   2. Allow primer to dry before applying joint sealants.
   3. Prime and seal on same workday.

3.4 APPLICATION

A. Back-Up Material:
   1. Install appropriate size backer rod, larger than joint where necessary in accordance with manufacturer’s recommendations, and in manner to provide concave sealant profile.
   2. Where joint depth does not permit installation of backer rod, install adhesive-backed polyethylene bond-breaker tape along entire back of joint to prevent 3-sided adhesion of joint sealant.

B. Sealant:
   1. Apply sealant in accordance with manufacturer’s instructions.
   2. Verify that temperature and moisture conditions are within manufacturer’s acceptable limits.
   3. Completely fill joint with sealant, filling from bottom up to avoid entrapping air.
   4. Using clean, dry tool with rounded edge, and of appropriate width for each joint, tool freshly installed sealant to provide preferred concave profile, to ensure intimate contact between sealant and substrate, and to provide neat appearance. Where surface aggregate does not permit proper tooling, install sealant and backer rod so that face of joint is recessed behind exposed aggregate, and sealant is bonded to firm, even surface.
   5. Use dry tooling method. Do not use tooling agents such as soapy water or solvents that have not been approved by sealant manufacturer.

3.5 CURING

A. Allow sealant to cure in accordance with manufacturer’s instructions.

3.6 INSPECTION

A. During Work of the section, inspect Work to assure compliance with manufacturer’s instructions, Specifications, and Drawings.
   1. Evaluate adhesion of sealant in accordance with ASTM C1521.
   2. Allow inspections of Work and assist in testing requested by manufacturer’s representative and Architect.
   3. Non-Compliant Work: If inspections reveal non-compliant Work or Work that was not installed in accordance with Specifications, and/or manufacturer requirements, remove adjacent Work until a location is reached where installation was performed properly. Assist in spot-checking of remainder of Work.

3.7 CLEANING

A. Remove excess sealant in accordance with manufacturer’s instructions.
3.8 PROTECTION

A. Protect sealant from damage during construction.

END OF SECTION
THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT
DEPARTMENT OF LABOR STANDARDS
Prevailing Wage Rates
As determined by the Director under the provisions of the Massachusetts General Laws, Chapter 149, Sections 26 to 27H

CHARLES D. BAKER
Governor

ROSALIN ACOSTA
Secretary

KARYN E. POLITO
Lt. Governor

WILLIAM D. MCKINNEY
Director

Awarding Authority: City of Quincy

City/Town: QUINCY

Contract Number: REMOVE BALLAST, ALL WET INSULATION & BLISTERS FROM ROOF, FILL IN ALL AREAS, REMOVE SKYLIGHTS, INSTALL NEW EXHAUST FANS INTO THE EXISTING SKYLIGHT OPENINGS, INSTALL NEW EPDM ROOF OVER EXISTING ROOF

Description of Work: 55 SEA ST. QUINCY

Job Location: 55 SEA ST. QUINCY

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

• This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the “Wage Request Number” on all pages of this schedule.

• An Awarding Authority must request an updated wage schedule from the Department of Labor Standards (“DLS”) if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.

• The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.

• All apprentices working on the project are required to be registered with the Massachusetts Department of Labor Standards, Division of Apprentice Standards (DLS/DAS). Apprentice must keep his/her apprentice identification card on his/her person during all work hours on the project. An apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. Any apprentice not registered with DLS/DAS regardless of whether or not they are registered with any other federal, state, local, or private agency must be paid the journeyworker’s rate for the trade.

• The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F “rental of equipment” contracts.

• Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee’s name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at http://www.mass.gov/dols/pw.

• Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.

• Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.

• Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and
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## Classification

**BLOCK PAVER, RAMMER / CURB SETTER**

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For apprentice rates see "Apprentice- LABORER"

## BOILER MAKER

*BOILERMAKERS LOCAL 29*

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### Notes:

Apprentice to Journeyworker Ratio: 1:5

## BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)

*BRICKLAYERS LOCAL 3 (QUINCY)*

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**Notes:**

Apprentice to Journeyworker Ratio: 1:5

- **BULLDOZER/GRADER/SCRAPER OPERATING ENGINEERS LOCAL 4**
  - 06/01/2017: $45.93, $10.00, $15.25, $0.00, $71.18
  - 12/01/2017: $46.92, $10.00, $15.25, $0.00, $72.17

  For apprentice rates see "Apprentice- OPERATING ENGINEERS"

- **CAISSON & UNDERPINNING BOTTOM MAN LABORERS - FOUNDATION AND MARINE**
  - 12/01/2016: $37.45, $7.60, $14.35, $0.00, $59.40

  For apprentice rates see "Apprentice- LABORER"

- **CAISSON & UNDERPINNING LABORER LABORERS - FOUNDATION AND MARINE**
  - 12/01/2016: $36.30, $7.60, $14.35, $0.00, $58.25

  For apprentice rates see "Apprentice- LABORER"

- **CAISSON & UNDERPINNING TOP MAN LABORERS - FOUNDATION AND MARINE**
  - 12/01/2016: $36.30, $7.60, $14.35, $0.00, $58.25

  For apprentice rates see "Apprentice- LABORER"

- **CARBIDE CORE DRILL OPERATOR LABORERS - ZONE 1**
  - 06/01/2017: $37.10, $7.60, $14.65, $0.00, $59.35
  - 12/01/2017: $37.95, $7.60, $14.65, $0.00, $60.20
  - 06/01/2018: $38.90, $7.60, $14.65, $0.00, $61.15
  - 12/01/2018: $39.85, $7.60, $14.65, $0.00, $62.10
  - 06/01/2019: $40.85, $7.60, $14.65, $0.00, $63.10
  - 12/01/2019: $41.85, $7.60, $14.65, $0.00, $64.10

  For apprentice rates see "Apprentice- LABORER"

- **CARPENTER CARPENTERS -ZONE 2 (Eastern Massachusetts)**
  - 09/01/2017: $39.28, $9.90, $17.50, $0.00, $66.68
  - 03/01/2018: $40.28, $9.90, $17.50, $0.00, $67.68
  - 09/01/2018: $41.32, $9.90, $17.50, $0.00, $68.72
  - 03/01/2019: $42.35, $9.90, $17.50, $0.00, $69.75

**Issue Date:** 10/27/2017 **Wage Request Number:** 20171027-019
### Apprentice - CARPENTER - Zone 2 Eastern MA

**Effective Date:** 09/01/2017

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**Notes:**

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Apprentice to Journeyworker Ratio: 1:5

### CEMENT MASONRY/PLASTERING

**BRICKLAYER'S LOCAL 3 (QUINCY)**

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**Issue Date:** 10/27/2017  **Wage Request Number:** 20171027-019  **Page 5 of 33**
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| 1 | 50 | $24.09 | $12.20 | $12.41 | $0.00 | $48.70 |
| 2 | 60 | $28.90 | $12.20 | $14.41 | $1.30 | $56.81 |
| 3 | 65 | $31.31 | $12.20 | $15.41 | $1.30 | $60.22 |
| 4 | 70 | $33.72 | $12.20 | $16.41 | $1.30 | $63.63 |
| 5 | 75 | $36.13 | $12.20 | $17.41 | $1.30 | $67.04 |
| 6 | 80 | $38.54 | $12.20 | $18.41 | $1.30 | $70.45 |
| 7 | 90 | $43.35 | $12.20 | $19.41 | $1.30 | $76.26 |

**Notes:**
Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.

**Apprentice to Journeyworker Ratio:** 1:3

**CHAIN SAW OPERATOR**

| LABORERS - ZONE 1 | | | | | | |
| 06/01/2017 | $37.10 | $7.60 | $14.65 | $0.00 | $59.35 |
| 12/01/2017 | $37.95 | $7.60 | $14.65 | $0.00 | $60.20 |
| 06/01/2018 | $38.90 | $7.60 | $14.65 | $0.00 | $61.15 |
| 12/01/2018 | $39.85 | $7.60 | $14.65 | $0.00 | $62.10 |
| 06/01/2019 | $40.85 | $7.60 | $14.65 | $0.00 | $63.10 |
| 12/01/2019 | $41.85 | $7.60 | $14.65 | $0.00 | $64.10 |

For apprentice rates see "Apprentice- LABORER"

**CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES**

| OPERATING ENGINEERS LOCAL 4 | | | | | | |
| 06/01/2017 | $47.38 | $10.00 | $15.25 | $0.00 | $72.63 |
| 12/01/2017 | $48.38 | $10.00 | $15.25 | $0.00 | $73.63 |

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**COMPRESSOR OPERATOR**

| OPERATING ENGINEERS LOCAL 4 | | | | | | |
| 06/01/2017 | $31.86 | $10.00 | $15.25 | $0.00 | $57.11 |
| 12/01/2017 | $32.55 | $10.00 | $15.25 | $0.00 | $57.80 |

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**DELEADER (BRIDGE)**

| PAINTERS LOCAL 35 - ZONE 2 | | | | | | |
| 01/01/2017 | $51.41 | $7.85 | $16.10 | $0.00 | $75.36 |
### Apprentice - PAINTER Local 35 - BRIDGES/TANKS

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.
- Apprentice to Journeyworker Ratio: 1:1

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## ELECTRICIAN - Local 103

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**Notes:**
App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80

### Apprentice to Journeyworker Ratio: 2:3***

## ELEVATOR CONSTRUCTOR

**ELEVATOR CONSTRUCTORS LOCAL 4**

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#### Effective Date -
01/01/2017

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#### Notes:
- Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

Apprentice to Journeyworker Ratio: 1:1

### ELEVATOR CONSTRUCTOR HELPER

**ELEVATOR CONSTRUCTORS LOCAL 4**

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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

### FENCE & GUARD RAIL ERECTOR

**LABORERS - ZONE 1**

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For apprentice rates see "Apprentice- LABORER"

### FIELD ENG.INST.PERSON-BLDG,SITE,HVY/HWY

**OPERATING ENGINEERS LOCAL 4**

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental</th>
<th>Unemployment</th>
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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### FIELD ENG.PARTY CHIEF-BLDG,SITE,HVY/HWY

**OPERATING ENGINEERS LOCAL 4**

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### FIELD ENG.ROD PERSON-BLDG,SITE,HVY/HWY

**OPERATING ENGINEERS LOCAL 4**

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### FIRE ALARM INSTALLER

**ELECTRICIANS LOCAL 103**

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For apprentice rates see "Apprentice- ELECTRICIAN"

### FIRE ALARM REPAIR / MAINTENANCE

**/ COMMISSIONING ELECTRICIANS**

**LOCAL 103**

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For apprentice rates see "Apprentice- TELECOMMUNICATIONS TECHNICIAN"
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<td>Health</td>
<td>Pension</td>
<td>Supplemental Unemployment</td>
<td>Total Rate</td>
</tr>
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<td><strong>GENERATOR/LIGHTING PLANT/HEATERS</strong></td>
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## GLAZIER - Local 35 Zone 2

### Apprentice - Effective Date - 01/01/2017

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<th>Health</th>
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<th>Supplemental Unemployment</th>
<th>Total Rate</th>
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**Notes:**
- Steps are 750 hrs.
- Apprentice to Journeyworker Ratio: 1:1
<table>
<thead>
<tr>
<th>Classification</th>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental</th>
<th>Total Rate</th>
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<td><strong>Health</strong></td>
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<td>$66.99</td>
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</table>

| **Effective Date - 12/01/2017** |          |        |        |         |              |            |
| **Step** | **percent** | **Apprentice Base Wage** | **Health** | **Pension** | **Unemployment** | **Total Rate** |
| 1 | 55 | $26.06 | $10.00 | $0.00 | $0.00 | $36.06 |
| 2 | 60 | $28.43 | $10.00 | $15.25 | $0.00 | $53.68 |
| 3 | 65 | $30.80 | $10.00 | $15.25 | $0.00 | $56.05 |
| 4 | 70 | $33.17 | $10.00 | $15.25 | $0.00 | $58.42 |
| 5 | 75 | $35.54 | $10.00 | $15.25 | $0.00 | $60.79 |
| 6 | 80 | $37.90 | $10.00 | $15.25 | $0.00 | $63.15 |
| 7 | 85 | $40.27 | $10.00 | $15.25 | $0.00 | $65.52 |
| 8 | 90 | $42.64 | $10.00 | $15.25 | $0.00 | $67.89 |

**Notes:**

Apprentice to Journeyworker Ratio: 1:6

---

**HVAC (DUCTWORK)**  
*SHEETMETAL WORKERS LOCAL 17 - A*

<table>
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For apprentice rates see "Apprentice- SHEET METAL WORKER"

**HVAC (ELECTRICAL CONTROLS)**  
*ELECTRICIANS LOCAL 103*

<table>
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<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental</th>
<th>Total Rate</th>
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<tr>
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For apprentice rates see "Apprentice- ELECTRICIAN"

**HVAC (TESTING AND BALANCING - AIR)**  
*SHEETMETAL WORKERS LOCAL 17 - A*

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For apprentice rates see "Apprentice- SHEET METAL WORKER"

**HVAC (TESTING AND BALANCING -WATER)**  
*PIPEFITTERS LOCAL 537*

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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

**HVAC MECHANIC**  
*PIPEFITTERS LOCAL 537*

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For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"
### HYDRAULIC DRILLS

**LABORERS - ZONE 1**

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For apprentice rates see "Apprentice- LABORER"

### INSULATOR (PIPES & TANKS)

**HEAT & FROST INSULATORS LOCAL 6 (BOSTON)**

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#### Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

**Effective Date - 09/01/2017**

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**Effective Date - 09/01/2018**

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**Notes:**

- Steps are 1 year

**Apprentice to Journeyworker Ratio: 1:4**

### IRONWORKER/WELDER

**IRONWORKERS LOCAL 7 (BOSTON AREA)**

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**Issue Date:** 10/27/2017

**Wage Request Number:** 2017027-019

**Page 14 of 33**
### Apprentice - IRONWORKER - Local 7 Boston

**Effective Date:** 03/16/2017

<table>
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<th>Step</th>
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**Notes:**
- **Structural 1:6; Ornamental 1:4**

**Apprentice to Journeyworker Ratio:**

### JACKHAMMER & PAVING BREAKER OPERATOR

**LABORERS - ZONE 1**

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For apprentice rates see "Apprentice - LABORER"

### LABORER

**LABORERS - ZONE 1**

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### Laborer - Zone 1

#### Effective Date - 06/01/2017

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#### Effective Date - 12/01/2017

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#### Notes:

Apprentice to Journeyworker Ratio: 1:5

### Laborer: Carpenter Tender

LABORERS - ZONE 1

For apprentice rates see "Apprentice - LABORER"

### Laborer: Cement Finisher Tender

LABORERS - ZONE 1

For apprentice rates see "Apprentice - LABORER"

### Laborer: Hazardous Waste/Asbestos Remover

LABORERS - ZONE 1

For apprentice rates see "Apprentice - LABORER"
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<td>$64.10</td>
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</table>

For apprentice rates see "Apprentice- LABORER"

| LABORER: MULTI-TRADE TENDER   | 06/01/2017     | $36.85    | $7.60  | $14.65  | $0.00                     | $59.10     |
| LABORERS - ZONE 1             | 12/01/2017     | $37.70    | $7.60  | $14.65  | $0.00                     | $59.95     |
|                               | 06/01/2018     | $38.65    | $7.60  | $14.65  | $0.00                     | $60.90     |
|                               | 12/01/2018     | $39.60    | $7.60  | $14.65  | $0.00                     | $61.85     |
|                               | 06/01/2019     | $40.60    | $7.60  | $14.65  | $0.00                     | $62.85     |
|                               | 12/01/2019     | $41.60    | $7.60  | $14.65  | $0.00                     | $63.85     |

For apprentice rates see "Apprentice- LABORER"

| LABORER: TREE REMOVER         | 06/01/2017     | $36.85    | $7.60  | $14.65  | $0.00                     | $59.10     |
| LABORERS - ZONE 1             | 12/01/2017     | $37.70    | $7.60  | $14.65  | $0.00                     | $59.95     |
|                               | 06/01/2018     | $38.65    | $7.60  | $14.65  | $0.00                     | $60.90     |
|                               | 12/01/2018     | $39.60    | $7.60  | $14.65  | $0.00                     | $61.85     |
|                               | 06/01/2019     | $40.60    | $7.60  | $14.65  | $0.00                     | $62.85     |
|                               | 12/01/2019     | $41.60    | $7.60  | $14.65  | $0.00                     | $63.85     |

This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER"

| LASER BEAM OPERATOR           | 06/01/2017     | $37.10    | $7.60  | $14.65  | $0.00                     | $59.35     |
| LABORERS - ZONE 1             | 12/01/2017     | $37.95    | $7.60  | $14.65  | $0.00                     | $60.20     |
|                               | 06/01/2018     | $38.90    | $7.60  | $14.65  | $0.00                     | $61.15     |
|                               | 12/01/2018     | $39.85    | $7.60  | $14.65  | $0.00                     | $62.10     |
|                               | 06/01/2019     | $40.85    | $7.60  | $14.65  | $0.00                     | $63.10     |
|                               | 12/01/2019     | $41.85    | $7.60  | $14.65  | $0.00                     | $64.10     |

For apprentice rates see "Apprentice- LABORER"

| MARBLE & TILE FINISHERS       | 08/01/2017     | $39.82    | $10.75 | $17.80  | $0.00                     | $68.37     |
| BRICKLAYERS LOCAL 3 - MARBLE & TILE | 02/01/2018 | $40.36    | $10.75 | $17.80  | $0.00                     | $68.91     |
|                               | 08/01/2018     | $41.44    | $10.75 | $17.93  | $0.00                     | $70.12     |
|                               | 02/01/2019     | $41.95    | $10.75 | $17.93  | $0.00                     | $70.63     |
|                               | 08/01/2019     | $43.03    | $10.75 | $18.07  | $0.00                     | $71.85     |
|                               | 02/01/2020     | $43.54    | $10.75 | $18.07  | $0.00                     | $72.36     |
|                               | 08/01/2020     | $44.62    | $10.75 | $18.22  | $0.00                     | $73.59     |
|                               | 02/01/2021     | $45.13    | $10.75 | $18.22  | $0.00                     | $74.10     |
|                               | 08/01/2021     | $46.25    | $10.75 | $18.38  | $0.00                     | $75.38     |
|                               | 02/01/2022     | $46.72    | $10.75 | $18.38  | $0.00                     | $75.85     |
## Classification

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<th>Supplemental Unemployment</th>
<th>Total Rate</th>
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### Notes:

- Apprentice to Journeyworker Ratio: 1:3

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**Marble Masons, Tile Layers & Terrazzo Mech**

**Bricklayers Local 3 - Marble & Tile**

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**Notes:**
- Apprentice to Journeyworker Ratio: 1:5

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### MECH. SWEEPER OPERATOR (ON CONST. SITES)

**OPERATING ENGINEERS LOCAL 4**

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### MECHANICS MAINTENANCE

**OPERATING ENGINEERS LOCAL 4**

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### MILLWRIGHT (Zone 1)

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**Effective Date:** 10/01/2017

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**Effective Date:** 04/01/2018

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**Notes:**

- Steps are 2,000 hours

Apprentice to Journeyworker Ratio: 1:5

### MORTAR MIXER

**LABORERS - ZONE 1**

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For apprentice rates see "Apprentice- LABORER"

### OILER (OTHER THAN TRUCK CRANES, GRADALLS)

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### OILER (TRUCK CRANES, GRADALLS)

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### OTHER POWER DRIVEN EQUIPMENT - CLASS II

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### PAINTER (BRIDGES/TANKS)

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"
### Apprentice - PAINTER Local 35 - BRIDGES/TANKS

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:** 1:1

*PAINTER (SPRAY OR SANDBLAST, NEW)*

*If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.*

---

### Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:** 1:1

*PAINTER (SPRAY OR SANDBLAST, REPAINT)*

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### Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:** 1:1

---

*PAINTER (SPRAY OR SANDBLAST, REPAINT)*

- If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.*

---

**Issue Date:** 10/27/2017  **Wage Request Number:** 20171027-019
## Classification

### Apprentice - **PAINTER Local 35 Zone 2 - Spray/Sandblast - Repaint**

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**Notes:**
- Steps are 750 hrs.

### Apprentice to Journeyworker Ratio: 1:1

**PAINTER (TRAFFIC MARKINGS)**

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**For Apprentice rates see "Apprentice - LABORER"**

### PAINTER / TAPER (BRUSH, NEW) *

*If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.*

**PAINTERS LOCAL 35 - ZONE 2**

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## Notes:
- Steps are 750 hrs.

### Apprentice to Journeyworker Ratio: 1:1

**PAINTER / TAPER (BRUSH, REPAINT)**

**PAINTERS LOCAL 35 - ZONE 2**

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**Issue Date:** 10/27/2017  **Wage Request Number:** 20171027-019  **Page 22 of 33**
### Apprentice - **PAINTER Local 35 Zone 2 - BRUSH REPAINT**

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.
- **Apprentice to Journeyworker Ratio:** 1:1

### PANEL & PICKUP TRUCKS DRIVER

**TEAMSTERS JOINT COUNCIL NO. 10 ZONE A**

**Effective Date:** 12/01/2016

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### PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)

**PILE DRIVER LOCAL 56 (ZONE 1)**

**Effective Date:** 08/01/2015

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For apprentice rates see "Apprentice- PILE DRIVER"

### PILE DRIVER

**PILE DRIVER LOCAL 56 (ZONE 1)**

**Effective Date:** 08/01/2015

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### Apprentice - **PILE DRIVER - Local 56 Zone 1**

**Effective Date:** 08/01/2015

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**Notes:**
- **Apprentice to Journeyworker Ratio:** 1:3

### PIPEFITTER & STEAMFITTER

**PIPEFITTERS LOCAL 537**

**Effective Date:** 03/01/2017

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**Issue Date:** 10/27/2017  
**Wage Request Number:** 20171027-019
### Apprentice - PIPEFITTER - Local 537

**Effective Date:** 03/01/2017

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**Notes:**
- **1:** 1:3; 3:15; 1:10 thereafter / Steps are 1 yr.

**Apprentice to Journeyworker Ratio:**

### PIPELAYER

**LABORERS - ZONE 1**

- **Effective Date:** 06/01/2017
- **Rate:** $37.10
- **Health:** $7.60
- **Pension:** $14.65
- **Unemployment:** $0.00
- **Total Rate:** $59.35
- **Effective Date:** 12/01/2017
- **Rate:** $37.95
- **Health:** $7.60
- **Pension:** $14.65
- **Unemployment:** $0.00
- **Total Rate:** $60.20

**Notes:**
- Apprentice to Journeyworker Ratio: **2:** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr.
- Step 4 with lic: $58.50
- Step 5 with lic: $65.36

### PLUMBERS & GASFITTERS

**PLUMBERS & GASFITERS LOCAL 12**

- **Effective Date:** 03/01/2017
- **Rate:** $52.69
- **Health:** $11.32
- **Pension:** $15.46
- **Unemployment:** $0.00
- **Total Rate:** $79.47

**Notes:**
- **1:** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr.
- Step 4 with lic: $58.50
- Step 5 with lic: $65.36

### PNEUMATIC CONTROLS (TEMP.)

**PIPEFITTERS LOCAL 537**

- **Effective Date:** 03/01/2017
- **Rate:** $51.19
- **Health:** $9.70
- **Pension:** $18.14
- **Unemployment:** $0.00
- **Total Rate:** $79.03

**Notes:**
- Apprentice to Journeyworker Ratio: **2:** 1:2; 2:6; 3:10; 4:14; 5:19/Steps are 1 yr.
- Step 4 with lic: $58.50
- Step 5 with lic: $65.36

### PNEUMATIC DRILL/TOOL OPERATOR

**LABORERS - ZONE 1**

- **Effective Date:** 06/01/2017
- **Rate:** $37.10
- **Health:** $7.60
- **Pension:** $14.65
- **Unemployment:** $0.00
- **Total Rate:** $59.35
- **Effective Date:** 12/01/2017
- **Rate:** $37.95
- **Health:** $7.60
- **Pension:** $14.65
- **Unemployment:** $0.00
- **Total Rate:** $60.20

**Notes:**
- For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"
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**Notes:**

Apprentice to Journeyworker Ratio: 1:5

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**RIDE-ON MOTORIZED BUGGY OPERATOR**

*LABORERS - ZONE 1*

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For apprentice rates see "Apprentice- LABORER"

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**ROLLER/SPREADER/MULCHING MACHINE**

*OPERATING ENGINEERS LOCAL 4*

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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**ROOFER (Inc.Roof防水 Waterproofg &Roofer Damproofg)**

*ROOFERS LOCAL 33*

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### ROOFER - Local 33

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### Notes:
1. 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
2. Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.
3. (Hot Pitch Mechanics' receive $1.00 hr. above ROOFER)
4. Apprentice to Journeyworker Ratio:
   - ROOFER SLATE / TILE / PRECAST CONCRETE
   - ROOFERS LOCAL 33

For apprentice rates see "Apprentice - ROOFER"

## Classification

### SHEETMETAL WORKER

#### SHEETMETAL WORKERS LOCAL 17 - A

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### Issue Date: 10/27/2017
### Wage Request Number: 20171027-019
### SHEET METAL WORKER - Local 17-A

#### Effective Date - 08/01/2017

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### Notes:

Steps are 6 mos.

Apprentice to Journeyworker Ratio: 1:4

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**SIGN ERECTOR**

Painters Local 35 - Zone 2

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**Effective Date:** 06/01/2013

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**Notes:**
- Steps are 4 mos.

- Apprentice to Journeyworker Ratio: 1:1

### SPECIALIZED EARTH MOVING EQUIP < 35 TONS

**Effective Date:** 12/01/2016

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<th>Health</th>
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<th>Supplemental Unemployment</th>
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### SPECIALIZED EARTH MOVING EQUIP > 35 TONS

**Effective Date:** 12/01/2016

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### SPRINKLER FITTER

**Effective Date:** 03/01/2017

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**Notes:**
- Apprentice entered prior 9/30/10: 40/45/50/55/60/65/70/75/80/85
- Steps are 850 hours
- Apprentice to Journeyworker Ratio: 1:3

### STEAM BOILER OPERATOR

**Effective Date:** 06/01/2017

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**Effective Date:** 12/01/2017

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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### Apprentice - TELECOMMUNICATION TECHNICIAN - Local 103

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### Notes:

Apprentice to Journeyworker Ratio: 1:1
### TERRAZZO FINISHERS

**BRICKLAYERS LOCAL 3 - MARBLE & TILE**

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#### Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

**Effective Date - 08/01/2017**

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**Effective Date - 02/01/2018**

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#### Notes:

Apprentice to Journeyworker Ratio: 1:3

**TEST BORING DRILLER**

**LABORERS - FOUNDATION AND MARINE**

For apprentice rates see "Apprentice- LABORER"

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**TEST BORING DRILLER HELPER**

**LABORERS - FOUNDATION AND MARINE**

For apprentice rates see "Apprentice- LABORER"

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**TEST BORING LABORER**

**LABORERS - FOUNDATION AND MARINE**

For apprentice rates see "Apprentice- LABORER"

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**TRACTORS/PORTABLE STEAM GENERATORS**

**OPERATING ENGINEERS LOCAL 4**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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**TRAILERS FOR EARTH MOVING EQUIPMENT**

**TEAMSTERS JOINT COUNCIL NO. 10 ZONE A**

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<td>$42.65</td>
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<td>VAC-HAUL TEAMSTERS JOINT COUNCIL NO. 10 ZONE A</td>
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<tr>
<td>WAGON DRILL OPERATOR LABORERS - ZONE 1</td>
<td>06/01/2017</td>
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<td>12/01/2017</td>
<td>$38.45</td>
<td>$7.60</td>
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<tr>
<td></td>
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<td>12/01/2019</td>
<td>$42.35</td>
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<td>WASTE WATER PUMP OPERATOR OPERATING ENGINEERS LOCAL 4</td>
<td>06/01/2017</td>
<td>$46.38</td>
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<tr>
<td>WATER METER INSTALLER PLUMBERS &amp; GASFITTERS LOCAL 12</td>
<td>03/01/2017</td>
<td>$52.69</td>
<td>$11.32</td>
<td>$15.46</td>
<td>$0.00</td>
</tr>
<tr>
<td>OUTSIDE ELECTRICAL - East CABLE TECHNICIAN (Power Zone) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</td>
<td>09/03/2017</td>
<td>$27.14</td>
<td>$7.75</td>
<td>$1.81</td>
<td>$0.00</td>
</tr>
<tr>
<td>CABLEMAN (Underground Ducts &amp; Cables) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</td>
<td>09/03/2017</td>
<td>$38.45</td>
<td>$7.75</td>
<td>$9.53</td>
<td>$0.00</td>
</tr>
<tr>
<td>DRIVER / GROUNDMAN CDL OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</td>
<td>09/03/2017</td>
<td>$31.66</td>
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<tr>
<td>DRIVER / GROUNDMAN -Inexperienced (&lt;2000 Hrs) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</td>
<td>09/03/2017</td>
<td>$24.88</td>
<td>$7.75</td>
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<tr>
<td>EQUIPMENT OPERATOR (Class A CDL) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</td>
<td>09/03/2017</td>
<td>$38.45</td>
<td>$7.75</td>
<td>$13.61</td>
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<tr>
<td>EQUIPMENT OPERATOR (Class B CDL) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</td>
<td>09/03/2017</td>
<td>$33.92</td>
<td>$7.75</td>
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<tr>
<td>GROUNDMAN OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</td>
<td>09/03/2017</td>
<td>$24.88</td>
<td>$7.75</td>
<td>$1.75</td>
<td>$0.00</td>
</tr>
<tr>
<td>GROUNDMAN -Inexperienced (&lt;2000 Hrs) OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104</td>
<td>09/03/2017</td>
<td>$20.35</td>
<td>$7.75</td>
<td>$1.61</td>
<td>$0.00</td>
</tr>
</tbody>
</table>
### JOURNEYMAN LINEMAN

**OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104**

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/03/2017</td>
<td>$45.23</td>
<td>$7.75</td>
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### Apprentice - LINEMAN (Outside Electrical) - East Local 104

**Effective Date:** 09/03/2017

<table>
<thead>
<tr>
<th>Step</th>
<th>percent</th>
<th>Apprentice Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
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<tr>
<td>1</td>
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<td>$3.31</td>
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<tr>
<td>2</td>
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<td>80</td>
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Notes: 

Apprentice to Journeyworker Ratio: 1:2

### TELEDATA CABLE SPLICER

**OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104**

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2016</td>
<td>$28.98</td>
<td>$4.25</td>
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### TELEDATA LINEMAN/EQUIPMENT OPERATOR

**OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104**

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2016</td>
<td>$27.31</td>
<td>$4.25</td>
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<td>$0.00</td>
<td>$34.63</td>
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</table>

### TELEDATA WIREMAN/INSTALLER/TECHNICIAN

**OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104**

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/01/2016</td>
<td>$27.31</td>
<td>$4.25</td>
<td>$3.07</td>
<td>$0.00</td>
<td>$34.63</td>
</tr>
</tbody>
</table>

### TREE TRIMMER

**OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104**

This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company’s equipment, and (c) by a person who is using hand or mechanical cutting methods and is not on the ground. This classification does not apply to wholesale tree removal.

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
<tbody>
<tr>
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<td>$18.51</td>
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</table>

### TREE TRIMMER GROUNDMAN

**OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104**

This classification applies only to tree work done: (a) for a utility company, R.E.A. cooperative, or railroad or coal mining company, and (b) for the purpose of operating, maintaining, or repairing the utility company’s equipment, and (c) by a person who is using hand or mechanical cutting methods and is on the ground. This classification does not apply to wholesale tree removal.

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Base Wage</th>
<th>Health</th>
<th>Pension</th>
<th>Supplemental Unemployment</th>
<th>Total Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/31/2016</td>
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<td>$3.55</td>
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### Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.

*** APP to JM: 1;1, 2;2, 2;3, 3;4, 4;4, 4;5, 4;6, 5;7, 6;6, 7;7, 8;6, 9;7, 10;8, 10;9, 11;10, 12;11, 13;12, 14;13, 15;14, etc.

**** APP to JM: 1;1, 1;2, 2;3, 2;4, 3;5, 4;6, 4;7, 5;8, 6;9, 6;10, 7;11, 8;12, 9;13, 10;14, 10;15, 10;16, etc.
PROJECT:

DPW SERVICE GARAGE
ROOF RENOVATION

55 SEA STREET
QUINCY, MA 02169

CLIENT:

CITY OF QUINCY
DEPARTMENT OF PUBLIC WORKS

55 SEA STREET
QUINCY, MA 02169

ARCHITECT:

WESSLING ARCHITECTS
AIA-CSI-BOCA

PRESIDENTS PLACE, 1250 HANCOCK STREET, SUITE 815N
QUINCY, MA 02169 TEL. 617-773-8150 FAX 617-773-4902
www.wesslingarchitects.com

ISSUED FOR BID 11/07/17
THE SCOPE OF WORK ON THIS PROJECT AS DEFINED BY THE CONTRACT DOCUMENTS INCLUDES THE FOLLOWING:

1. INSTALL A NEW ROOF ACCESS HATCH AND GUARDRAIL SYSTEM

2. INSTALL NEW EPDM ROOF SYSTEM WITH 1" INSULATION BOARD OVER EXISTING ROOFING, INCLUDING PERIMETER WOOD BLOCKING, EDGE METAL AND ASSOCIATED SHEETING.

3. REMOVE ALL GRAVEL, ALL WET INSULATION AND BLISTERS FROM EXISTING BUILT-UP ROOF SYSTEM - ALL DRY ROOF AREAS TO REMAIN.

4. COORDINATE INSTALLATION OF NEW EXHAUST FANS INTO THE EXISTING SKYLIGHT OPENINGS ON NEW CURBS WITH OWNER AS REQUIRED WHERE INDICATED ON THE DEMOLITION ROOF PLAN AD-101.

5. REMOVE ALL GRAVEL, ALL WET INSULATION, ALL WOOD BLOCKING, ALL EXISTING METAL DECK, AND ASSOCIATED METAL DECK AND ROOF DECK FRAMES TO REMAIN.

6. INSTALL NEW ROOF FRAMING WITH UNENHANCED MANUFACTURED MATERIALS.

THE SCOPE OF WORK ON THIS PROJECT AS DEFINED BY THE CONTRACT DOCUMENTS INCLUDES THE FOLLOWING:

1. INSTALL A NEW ROOF ACCESS HATCH AND GUARDRAIL SYSTEM

2. INSTALL NEW EPDM ROOF SYSTEM WITH 1" INSULATION BOARD OVER EXISTING ROOFING, INCLUDING PERIMETER WOOD BLOCKING, EDGE METAL AND ASSOCIATED SHEETING.

3. REMOVE ALL GRAVEL, ALL WET INSULATION AND BLISTERS FROM EXISTING BUILT-UP ROOF SYSTEM - ALL DRY ROOF AREAS TO REMAIN.

4. COORDINATE INSTALLATION OF NEW EXHAUST FANS INTO THE EXISTING SKYLIGHT OPENINGS ON NEW CURBS WITH OWNER AS REQUIRED WHERE INDICATED ON THE DEMOLITION ROOF PLAN AD-101.

5. REMOVE ALL GRAVEL, ALL WET INSULATION, ALL WOOD BLOCKING, ALL EXISTING METAL DECK, AND ASSOCIATED METAL DECK AND ROOF DECK FRAMES TO REMAIN.

6. INSTALL NEW ROOF FRAMING WITH UNENHANCED MANUFACTURED MATERIALS.
DEMOlITION ROOF Plan GENERAL Notes

1. ALL EXISTING ROOF MATERIALS TO REMOVE AND DISPOSE OF EXISTING SKYLIGHTS AND CURBS. REFER TO NEW ROOF ASSEMBLY TYPE 1 CROSS SECTION

2. REMOVE AND DISPOSE OF EXISTING DRAIN STRAINERS AND CLAMPING RINGS.

3. REMOVE AND DISPOSE OF EXISTING ROOF EDGE METAL OF THE EPDM ROOF ASSEMBLY TYPE 2 (EPDM PATCH)

4. REMOVE AND DISPOSE OF ALL WET INSULATION AND ROOFING MATERIALS DOWN TO THE METAL DECK.

5. EXISTING EPDM MEMBRANE OVERLAY TO BE REMOVED WITH EXISTING BUILT-UP ROOFING AND FIBERGLASS INSULATION DOWN TO THE METAL DECK.

6. EXISTING 1" LAYER OF RIGID INSULATION TO BE REMOVED.

7. EXISTING BUILT-UP ROOF; REMOVE GRAVEL SURFACE.

8. EXISTING BUILT-UP ROOF SYSTEM; SURFACE GRAVEL TO BE REMOVED TO BOXED OUT CURB TO REMAIN.

9. METAL DECK INFILL REQUIREMENTS. PREP EXISTING OPENINGS TO REMAIN THAT PLAN AND STRUCTURAL DRAWINGS FOR INFORMATION IN REGARDS TO NEW ROOF EDGE METAL.

10. OWNER.

11. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH CONTRACTOR.


14. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

15. OWNER.

16. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH OWNER.

17. PROVIDE A SMOOTH SURFACE TO RECEIVE THE NEW ROOFING SYSTEM. REFER TO DRAWINGS FOR METAL DECK INSTALLATION AND ARCHITECT'S DETAIL 2/A-101.


19. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

20. OWNER.

21. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH OWNER.

22. PROVIDE A SMOOTH SURFACE TO RECEIVE THE NEW ROOFING SYSTEM. REFER TO DRAWINGS FOR METAL DECK INSTALLATION AND ARCHITECT'S DETAIL 2/A-101.


24. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

25. OWNER.

26. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH OWNER.

27. PROVIDE A SMOOTH SURFACE TO RECEIVE THE NEW ROOFING SYSTEM. REFER TO DRAWINGS FOR METAL DECK INSTALLATION AND ARCHITECT'S DETAIL 2/A-101.


29. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

30. OWNER.

31. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH OWNER.

32. PROVIDE A SMOOTH SURFACE TO RECEIVE THE NEW ROOFING SYSTEM. REFER TO DRAWINGS FOR METAL DECK INSTALLATION AND ARCHITECT'S DETAIL 2/A-101.


34. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

35. OWNER.

36. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH OWNER.

37. PROVIDE A SMOOTH SURFACE TO RECEIVE THE NEW ROOFING SYSTEM. REFER TO DRAWINGS FOR METAL DECK INSTALLATION AND ARCHITECT'S DETAIL 2/A-101.


39. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

40. OWNER.

41. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH OWNER.

42. PROVIDE A SMOOTH SURFACE TO RECEIVE THE NEW ROOFING SYSTEM. REFER TO DRAWINGS FOR METAL DECK INSTALLATION AND ARCHITECT'S DETAIL 2/A-101.

43. DETAIL 2/AD-101. SEE NOTES NO. 7 AND 8.

44. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

45. OWNER.

46. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH OWNER.

47. PROVIDE A SMOOTH SURFACE TO RECEIVE THE NEW ROOFING SYSTEM. REFER TO DRAWINGS FOR METAL DECK INSTALLATION AND ARCHITECT'S DETAIL 2/A-101.


49. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

50. OWNER.

51. CONSTRUCTION. COORDINATE TEMPORARY DISCONNECTS/RECONNECTS WITH OWNER.

52. PROVIDE A SMOOTH SURFACE TO RECEIVE THE NEW ROOFING SYSTEM. REFER TO DRAWINGS FOR METAL DECK INSTALLATION AND ARCHITECT'S DETAIL 2/A-101.


54. MATERIALS (ACM). ALL REMOVALS AND DISPOSAL OF ACM IS TO BE PERFORMED IN FULL COMPLIANCE WITH ALL APPLICABLE LAWS AND ORDINANCES.

55. OWNER.
NEW ROOF PLAN

- New roof drain. Refer to detail 8/A-501.
- New exhaust fan installed on existing curb. Refer to detail 5/A-501.
- Existing exhaust fan to remain. Refer to detail 6/A-501.
- Existing chimney to remain. Provide bracing to support and protect.
- Existing metal deck to remain. Protect and support as necessary.
- Existing conduit to remain. Protect and support as necessary.
- INFILLED ROOF AREA AT PREVIOUSLY INFILLED LOCATIONS.

NEW ROOF PLAN KEY NOTES

- INFILLED AREAS OF PREVIOUSLY WET ROOF INSULATION.

NEW ROOF PLAN LEGEND

- INFILLED ROOF DECK AND INSULATION AT SKYLIGHT OPENINGS.
- INFILLED ROOF AREA AT PREVIOUSLY INFILLED LOCATIONS. TO MATCH ROOF HEIGHT.
- INFILLED ROOF AREA AT PREVIOUSLY INFILLED LOCATIONS. TO MATCH ROOF HEIGHT.

NEW ROOF ASSEMBLY CROSS SECTION

- Existing roof drain to remain. Refer to detail 8/A-501.
- Existing vent or pipe penetration to remain. Refer to detail 7/A-501.
- Existing roof assembly fan to remain. Refer to detail 6/A-501.
- Existing EPDM membrane.
- Existing 1" layer of insulation to remain.
- Existing metal deck to remain.
- New 1/2" layer of roof assembly insulation.

NEW ROOF PLAN

- Existing EPDM roofing system over existing built-up roof. Refer to detail 12/A-101.
- Existing pipe penetration to remain. Refer to detail 7/A-501.
- Existing fan / vent curb and unit. Coordinate curb opening and size.
- Existing satellite communication dish as directed by the owner.
- Existing exhaust fan to remain. Refer to detail 6/A-501.
- Existing air conditioning unit to remain. Refer to detail 6/A-501.
- Existing duct penetration to remain. Refer to detail 7/A-501.

NEW ROOF ASSEMBLY

- New 1" layer of polyisocyanurate insulation.
- New "r" layer of roof assembly insulation.

NEW ROOF PLAN

- Owner. Mason as required.
- Reinstall existing satellite communication dish as directed by the owner.
- Reinstall existing chimney. Provide bracing to support and protect.
- Reinstall existing roof exhaust fan. Refer to detail 6/A-501.
- Reinstall existing air conditioning unit. Refer to detail 6/A-501.
- Reinstall existing exhaust fan. Refer to detail 5/A-501.
- Reinstall existing air conditioning unit. Refer to detail 6/A-501.

NEW ROOF DRAIN

- Existing air conditioning unit to remain. Refer to detail 6/A-501.
- Existing duct penetration to remain. Refer to detail 7/A-501.
- Existing roof assembly fan to remain. Refer to detail 6/A-501.
- Existing ventilation to remain. Provide bracing to support and protect.
- Existing mechanical installations.

NEW ROOF DRAIN

- Existing EPDM roofing system over existing built-up roof. Refer to detail 12/A-101.
- Existing pipe penetration to remain. Refer to detail 7/A-501.
- Existing fan / vent curb and unit. Coordinate curb opening and size.
- Existing satellite communication dish as directed by the owner.
- Existing exhaust fan to remain. Refer to detail 6/A-501.
- Existing air conditioning unit to remain. Refer to detail 6/A-501.
- Existing duct penetration to remain. Refer to detail 7/A-501.

NEW ROOF DRAIN

- Existing EPDM roofing system over existing built-up roof. Refer to detail 12/A-101.
- Existing pipe penetration to remain. Refer to detail 7/A-501.
- Existing fan / vent curb and unit. Coordinate curb opening and size.
- Existing satellite communication dish as directed by the owner.
- Existing exhaust fan to remain. Refer to detail 6/A-501.
- Existing air conditioning unit to remain. Refer to detail 6/A-501.
- Existing duct penetration to remain. Refer to detail 7/A-501.

NEW ROOF DRAIN

- Existing EPDM roofing system over existing built-up roof. Refer to detail 12/A-101.
- Existing pipe penetration to remain. Refer to detail 7/A-501.
- Existing fan / vent curb and unit. Coordinate curb opening and size.
- Existing satellite communication dish as directed by the owner.
- Existing exhaust fan to remain. Refer to detail 6/A-501.
- Existing air conditioning unit to remain. Refer to detail 6/A-501.
- Existing duct penetration to remain. Refer to detail 7/A-501.

NEW ROOF DRAIN

- Existing EPDM roofing system over existing built-up roof. Refer to detail 12/A-101.
- Existing pipe penetration to remain. Refer to detail 7/A-501.
- Existing fan / vent curb and unit. Coordinate curb opening and size.
- Existing satellite communication dish as directed by the owner.
- Existing exhaust fan to remain. Refer to detail 6/A-501.
- Existing air conditioning unit to remain. Refer to detail 6/A-501.
- Existing duct penetration to remain. Refer to detail 7/A-501.

NEW ROOF DRAIN

- Existing EPDM roofing system over existing built-up roof. Refer to detail 12/A-101.
- Existing pipe penetration to remain. Refer to detail 7/A-501.
- Existing fan / vent curb and unit. Coordinate curb opening and size.
- Existing satellite communication dish as directed by the owner.
- Existing exhaust fan to remain. Refer to detail 6/A-501.
- Existing air conditioning unit to remain. Refer to detail 6/A-501.
- Existing duct penetration to remain. Refer to detail 7/A-501.
FOR MORE INFORMATION IN REGARDS TO DECK INFILL REQUIREMENTS.

NOTE

MINIMUM OVERLAP 3" = 1'-0"

TYPICAL VENT PIPE PENETRATION DETAIL 3" = 1'-0"

TYPICAL DRAIN DETAIL

EXISTING ROOF OPENING/ AREA OF DECK REPLACEMENT 8"

NOTES:

1. 1/2 INCH BEYOND THE ATTACHMENT POINTS OF THE INSULATION TAPER AT DRAIN SLUMP SHALL NOT BE

2. HOLE IN MEMBRANE SHALL EXCEED SIZE OF DRAIN LESS THAN PIPE DRAIN CLAMPING RING 1" PER FOOT

3. PROVIDE WATER CUT-OFF MASTIC BETWEEN MEMBRANE AND DRAIN BOWL AT NEW CONTINUOUS SEALANT

4. PROVIE UNIT PRICING TO REPLACE COMPLETE DRAIN ASSEMBLIES

5. PROVIDE SCRAPE, PRIME AND PAINT ALL EXISTING DRAIN BOWLS

6. SAW CUT NEW REGLET INTO EXISTING MASONRY WALL. NEW BACKER ROD AND TRANSITION CUTOFF MASTIC

7. SAW CUT NEW REGLET INTO EXISTING MASONRY WALL. NEW BACKER ROD AND TRANSITION CUTOFF MASTIC

TYPICAL LARGE ROOF FAN CURB DETAIL

NEW COPPER FLASHING WITH NEW 2" WIDE STAINLESS STEEL CLIPS AT 24" O.C.

TYPICAL EDGE DETAIL

NEW GUARD RAIL SYSTEM SECURED TO ROOF HATCH CURB

TYPICAL BASE TRANSITION DETAIL

NEW FULLY ADHERED PERIMETER REINFORCING STRIP

TYPICAL CHIMNEY REGLET DETAIL

NEW P.T. SOLID 2X6 WOOD BLOCKING TO MATCH HEIGHT OF INSULATION, FULLY

TYPICAL ROOF DECK INFILL DETAIL

NEW TWO COMPONENT URETHANE ADHESIVE PITCH POCKET SEALANT

TYPICAL SMALL ROOF FAN CURB DETAIL

NEW METAL PITCH PAN FASTENED @ 4" O.C. USING GALVANIZED ANNULAR RING

TYPICAL ROOF EDGE DETAIL

NEW CEMENT BASED GROUT OR APPROVED FILLER

TYPICAL VENT PIPE PENETRATION DETAIL

NEW GUARD RAIL SYSTEM SECURED TO ROOF HATCH CURB

TYPICAL CHIMNEY REGLET DETAIL

NEW CEMENT BASED GROUT OR APPROVED FILLER

TYPICAL EDGE DETAIL

NEW GUARD RAIL SYSTEM SECURED TO ROOF HATCH CURB

NEW COPPER FLASHING WITH NEW 2" WIDE STAINLESS STEEL CLIPS AT 24" O.C.

TYPICAL EDGE DETAIL

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