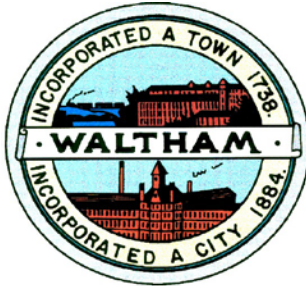


The City of Waltham



**Invites
Interested Parties
To propose the best offer and or bid
For the service or product herewith described:**

HARDY APARTMENTS RE-ROOFING AND EXTERIOR REPAIRS

The GENERAL CONTRACTOR BID is Due: 10:00 AM Monday September 9, 2019

FILED SUB BIDS is Due: 10:00 AM Tuesday August 30, 2019

PRE-BID Meeting and Briefing on Site: 10:00 AM Tuesday August 13, 2019

Meet at the Hardy Apts., 54 Lake Street, Waltham, MA 02451

LAST DAY FOR WRITTEN QUESTIONS: 12 Noon Wednesday August 14, 2019

(To cphilpott@city.waltham.ma.us)

SECTION 00 01 00
CITY OF WALTHAM
MASSACHUSETTS

INVITATION TO BID, INCLUDING SUB-BIDDERS

HARDY APARTMENTS RE-ROOFING AND EXTERIOR REPAIRS

The City of Waltham, Massachusetts invites sealed bids from Contractors for the RE-ROOFING AND PERFORM EXTERIOR REPAIRS AT THE HARDY APARTMENT, 54 Lake Street, Waltham, Massachusetts 02451.

PLANS, SPECIFICATIONS and other Contract Documents may be obtained by visiting the City's Web Site at www.city.waltham.ma.us/bids

Copies of Addenda will be e- mailed to the registered Bidders without charge. Addenda will also be posted on the web site above

Sealed **FILED SUB-BIDS** for categories of "Roofing" and "Painting" will be accepted at the Purchasing Department, Waltham City Hall, 610 Main Street, Waltham, MA 02452 until **10:00 AM on August 30, 2019**, at which place and time they shall be publicly opened, read aloud and recorded for presentation to the Awarding Authority.

Sealed **GENERAL BIDS** for this project will be accepted from eligible bidders at the Purchasing Department, Waltham City Hall, 610 Main Street, Waltham, MA 02452 until **10:00 AM on Monday September 9, 2019**, at which place and time they shall be publicly opened, read aloud and recorded for presentation to the Awarding Authority.

A **PRE-BID CONFERENCE** will be held for all interested parties at **10:00 AM on August 13, 2019** at the site at the **Hardy Apartments, 54 Lake Street, Waltham, MA 02451**. Attendance at this pre-bid conference is strongly recommended for parties submitting a bid. It will be the only opportunity to visit the site prior to the bid opening.

Each general bid, and each sub-bid shall be accompanied by a bid deposit in the form of a bid bond, certified check, or a treasurer's or cashier's check issued by a responsible bank or trust company, payable to the City of Waltham in the amount of five percent (5%) of the value of the bid. Bid deposits will be dealt with as provided in Massachusetts General Laws, Chapter 149, Section 44B.

To be given consideration, all general bids and all sub-bids must be accompanied by a copy of the Bidder's Certificate of Eligibility (DCPO Form CQ7) and an Update Statement (DCPO Form CQ3). The General Bidder must be certified eligible in the General Building category and the filed sub-bidders must be certified in their respective categories (see also Sect 00 47 00)

Bids shall be made on the basis of the Minimum Wage Rates as determined by the Commissioner of Labor and Industries, Pursuant to the Provisions of Chapter 149, Sections 26 to 27D inclusive of Massachusetts General Laws, a copy of which is attached to and is made a part of the Contract. This project shall also be made on the base of the Federal Davis-Bacon Prevailing wages (see sections

00 71 00 and 00 71 10).

Bidders' selection procedures and contract award shall be in conformity with applicable statutes of the Commonwealth of Massachusetts.

Performance and Labor and Materials payment bonds in the full amount of the contract price will be required from the successful bidder.

The Awarding Authority reserves the right to reject any or all general bids, if it be in the public interest to do so, and to reject any sub-bid on any sub-trade if it determines that such sub-bid does not represent the sub-bid of a person competent to perform the work as specified or that less than three such sub-bids were received and that the prices are not reasonable for acceptance without further competition.

The successful bidder will be required to furnish a Certificate of Insurance, naming the City of Waltham as an Additional Named Insured with a waiver of subrogation, for General Liability and Vehicle Liability in the amount of \$500,000 per occurrence and \$1,000,000 in the aggregate and Worker's Compensation Insurance as prescribed by law.

In accordance with M.G.L.Ch 149 the undersigned certifies that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by OSHA that is at least 10 hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12 OF THE CITY ORDINANCES.

All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.

CITY OF WALTHAM

Joseph Pedulla, CPO
Purchasing Department
City Hall, 610 Main Street
Waltham, MA 02452

SECTION 00 10 00 - INSTRUCTION TO BIDDERS

PART 1 - GENERAL

1.01 SCHEDULE OF DATES

- A. Advertisement appears in Central Register and COMMBUYS, Plans and Specifications ready for Bidders at www.city.waltham.ma.us/bids
- B. **Pre-bid** walkthrough on **Tuesday, August 13, 2019, at 10:00 AM** at the Hardy Apartments, 54 Lake Street, Waltham, MA 02451.
- C. Questions and requests for interpretations may be submitted in writing by ALL BIDDERS via e-mail ONLY to cphilpott@city.waltham.ma.us up to and including: August 14, 2019, 12:00 Noon.
- D. Addenda will be issued with interpretations as determined by the Purchasing Department only via e-mail and posting on the web site.
- E. File Sub-Bids Deadline: **10:00 A.M. on August 30, 2019**, in the Purchasing Department, City Hall, 610 Main Street, Waltham, MA 02452, Attn: J. Pedulla, CPO, where the bids will be publicly opened and read.
- F. General Bids Deadline: **10:00 A.M. on September 9, 2019**, in the Purchasing Department, City Hall, 610 Main Street, Waltham, MA 02452, Attn: J. Pedulla, CPO, where the bids will be publicly open and read.

1.02 BIDDING PROCEDURE

- A. Bids for the work are subject to the provisions of General Laws, Chapter 149, Sections 44A-44L inclusive, as amended. Regulations governing the bidding procedures as set forth in the above mentioned amended General Laws must be followed.
- B. In the event of any inconsistencies between any of the provisions of these Contract Documents and of the cited statute, anything herein to the contrary notwithstanding, the provisions of the said statute shall control.
- C. No General Bid received by the Awarding Authority after the time respectively established herein for the opening of General Bids will be considered, regardless of the cause for the delay in the receipt of any such bid.

1.03 WITHDRAWAL OF BIDS

- A. Bids may be withdrawn prior to the time respectively established for the opening of General Bids only on written request to the Awarding Authority.

1.04 INTERPRETATION OF CONTRACT DOCUMENTS

- A. No oral interpretation will be made to any bidder. All questions or requests for interpretations must be made in writing to the Architect.
- B. Every interpretation made to a bidder will be in the form of an Addendum to the drawings and/or specifications, which will be made available to all persons to whom Contract Documents have been issued.
- C. Failure of the Awarding Authority to send, or of any bidder to receive any such Addendum shall not relieve any bidder from obligation under his bid as submitted.
- D. All such Addenda shall become a part of the Contract Documents.

1.05 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- A. Each bidder shall visit the site of the proposed work and fully acquaint himself with conditions as they exist, and shall also thoroughly examine the Contract Documents. Failure of any bidder to visit the site and acquaint himself with the Contract Documents shall not relieve any bidder from any obligation with respect to his bid.
- B. By submitting a bid, the bidder agrees that the Contract Documents are adequate and that the required result for a full and complete installation can be produced. The successful bidder shall furnish any and all labor, materials, insurance, permits and all other items needed to produce the required result to the satisfaction of the Awarding Authority.

1.06 BID SECURITY

- A. The General Contractor's bid must be accompanied by bid security in the amount of five percent (5%) of the bid.
- B. At the option of the bidder, the security may be bid bond, certified, treasurer's or cashier's check issued by a responsible bank or trust company. No other type of bid security is acceptable.

Bid Bonds shall be issued by a Surety Company qualified to do business under the laws of the Commonwealth of Massachusetts.

- C. Certified, Treasurer's or Cashier's check shall be made payable to the City of Waltham, Massachusetts.
- D. The bid security shall secure the execution of the Contract and the furnishing of a Performance and Payment Bond by the successful General Bidder for 100% of the contract value.

- E. Should any General Bidder to whom an award is made fail to enter into a contract therefore within five (5) days, Saturdays, Sundays and Legal Holidays, excluded, after notice of award has been mailed to him or fail within such time to furnish a Performance Bond and also a Labor and Materials or Payment Bond as required, the amount so received from such General Bidder through his Bid Bond, Certified, Treasurer's or Cashier's check as bid deposit shall become the property of the City of Waltham, Massachusetts as liquidated damages; provided that the amount of the bid deposit, which becomes the property of the City of Waltham, Massachusetts, shall not in any event exceed the difference between his bid price and the bid price of the next lowest responsible and eligible bidder; and provided further that, in case of death, disability, bona fide clerical error or mechanical error of a substantial nature, or other unforeseen circumstances affecting the General Bidder, his deposit shall be returned to him.

1.07 BID FORM

- A. General Bids shall be submitted on the "FORM FOR GENERAL BID, 00 10 10" enclosed. Erasures or other changes must be explained or noted over the signature of the bidder.
- B. Bid forms must be completely filled in. Bids which are incomplete, conditional, or obscure, or which contain additions not called for will be rejected.
- C. General Bidders shall submit one set of executed bid forms to the Awarding Authority.

1.08 SUBMISSION OF BIDS AND BID SECURITIES

- A. Each bid submitted by a General Contractor shall be enclosed in a sealed envelope that shall be placed with the bid security in an outer envelope. The outer envelope shall be sealed and clearly marked as follows:

(Firm Name): _____
General Bid and Bid Security for:
Hardy Apartments, Re-Roof and Exterior Repairs

1.09 AWARD OF CONTRACT

- A. The Contract shall be awarded to the lowest responsible and eligible General Bidder on the basis of competitive bids in accordance with the procedure set forth in the provision of Section 44B-44L inclusive, as amended or inserted, of Chapter 149 of the General Laws of the Commonwealth of Massachusetts.
- B. If the bidder selected as the General Contractor fails to perform his agreement to execute a contract in accordance with the terms of his General Bid, and furnish a Performance Bond and also a Labor and Materials or Payment Bond, as stated in his General Bid in accordance with Section 44F, an award shall be made to the next lowest responsible and eligible bidder.

- C. The words “lowest responsible and eligible bidder” shall be the bidder whose name is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work and who shall certify 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. Essential information in regard to such qualifications shall be submitted in such form as the Awarding Authority may require.
- D. Action on the award will be taken within sixty (60) days, Saturdays, Sundays and Legal Holidays excluded after the opening of the bids.

1.10 SECURITY FOR FAITHFUL PERFORMANCE

- A. The successful bidder must deliver to the Awarding Authority simultaneously with his delivery of the executed contract, an executed Performance Bond, and also a Labor and materials or Payment Bond, each issued by a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of One Hundred Percent (100%) of the Contract Price, as surety for the faithful performance of his contract, and for the payment of all persons performing labor or furnishing materials in connection therewith. Said bonds shall provide that, if the General Contractor fails or refuses to complete the Contract, the Surety Company will be obligated to do so.
- B. Premiums are to be paid by the General Contractor, and are to be included in the Contract Price.

1.11 EQUAL OPPORTUNITY

- A. The City of Waltham is an Equal Opportunity employer and will require compliance with the minority business enterprise plan (MBE) on file in the Purchasing Department

1.12 PRE-BID WALK-THRU

- A. A pre-bid conference will be held at the site on **Tuesday, August 13, 2019, at 10:00 AM.** at the Hardy Apartments, 54 Lake Street, Waltham, MA. Interested parties are encouraged to attend given that this will be the only time the building is open prior to the submission of bids. Further, prior to the bid opening, potential bidders may not go onto the site any time other than the aforementioned pre-bid conference.

1.13 SITE VISITS

- A. Prospective bidders are prohibited from going onto the site prior to the Bid Opening or any time other than the pre-bid walk-thru, as set forth in Section 1.12 above, unless authorized by the City.

1.14 CONTRACT DOCUMENTS

- A. The Awarding Authority shall make available the bid documents and addenda in the City Web site at www.city.waltham.ma.us/bids. No plans will be mailed.

1.15 EQUALITY

- A. Except where otherwise specifically provided to the contrary, the words “or approved equal” are hereby inserted immediately following the name or description of each article, assembly, system, or any component part thereof in the Contract Documents. It is the Contractor’s responsibility to provide all the research and documentation that would prove a product or assembly is “equal”. Failure to provide research or documentation does not alleviate the Contractor’s responsibility to meet the schedule.

1.16 TAX FREE NUMBER

- A. The City of Waltham has a tax-free number.

1.17 SCHEDULE

- A. The work of the Contract shall be Substantially Complete in **90 calendar days** after the date of the Notice-to-Proceed.

1.18 LATE FEES

- A. If the work is not Substantially Complete as specified in 1.17, the Contractor shall be charged a maximum of Five Hundred Dollars (\$500.00) per day to pay for consulting and testing fees required to manage and arrange for the completion of the project. Late fees will be deducted from the Contract via Change Order.

1.19 WEEKLY JOB MEETINGS

- A. There will be a weekly job meeting at the site on the same agreed-upon day and time. Time will be provided to discuss and view the progress of the work and to answer questions. The Contractor’s job Superintendent and Project Manager shall attend each meeting. The City reserves the right to have job meetings conducted in the Planning Department at 119 School Street, Waltham.

1.20 PROJECT SUPERINTENDENT

- A. The Contractor shall provide the same person as Superintendent for the entire duration of the project. Failure to maintain the same person in this position shall result in a One Thousand Dollar (\$1,000.00) penalty per incident which shall cover the Architect’s time to re-orient new personnel.

1.21 AWARD

- A. The Awarding Authority reserves the right to reject any or all bids if it be in the public interest to do so, and to act upon the bids and make its award in any lawful manner.

1.22 PREVAILING WAGE SCHEDULE

- A. Bids shall be made on the basis of the Prevailing Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provision of Chapter 149, Section 26 to 27D inclusive, of the Massachusetts General Laws. The Prevailing wage Schedule for this project can be found in the City's web Site at www.city.waltham.ma.us/bids

1.23 CONFLICT OF INTEREST

- A. A bidder filing a proposal thereby certifies that the proposal is made in good faith, without fraud, collusion, or connection of any kind with any other bidder for the same work, and that the bidder is competing solely on its own behalf without connection with, or obligation to, any undisclosed person or firm.

1.24 PROCEED ORDERS

- A. No bidder is to proceed without a proceed order as set out in the contract.

1.25 STAGING

- A. The General Contractor shall provide all the vertical access (which includes staging, vertical lifts, etc.) for the work of the Contract for the General Bidder and his/her non File Sub-bid subcontractor. **Exception:** ALL File Sub-Bidders shall provide ALL their own staging, vertical access, and hoisting necessary to perform their own work.

1.26 COMPLIANCE WITH MASSACHUSETTS GENERAL LAWS

- A. Pursuant to Massachusetts General Laws, Chapter 62C, Section 49A, I certify under the penalty of perjury that I, to the best of my knowledge and belief have filed all state tax returns and paid all the state taxes required under law.

1.27 CONSTRUCTION BARRICADES

- A. The General Contractor shall provide all barricades to enclose the work area to prevent unauthorized access to the site.
1. The barricades shall provide enough room for all construction activities to be performed while separated from pedestrians, students, and staff on site.
 2. Safety is the sole responsibility of the Contractor and any barricades necessary to protect the work and the public shall be provided.

3. Provide entrance protection.

1.28 INSURANCE

- A. The contractor shall purchase and maintain, at his expense all insurance required by the Contract. Documents and all insurance required by the applicable laws of Massachusetts, including but not limited to, General Laws, Chapter 146, in connection with all hoisting equipment.
- B. The Contractor shall purchase and maintain such insurance as will protect him from claims under workmen's compensation acts and from claims for damages because of bodily injury, including death and all property damage including, without limitation, damage to buildings and adjoining the site of construction which might arise from and during operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them including:

1. Statutory Worker's Compensation and Employer's Liability

The contractor shall provide insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws (so-called Worker's Compensation Act) to all persons to be employed under this contract and shall continue in force such insurance as aforesaid shall be deemed a material breach of this Contract and shall operate as an immediate termination thereof. The contractor shall, without limiting the generality of the foregoing, conform to the provisions of Section 34A of Chapter 149 of the General Laws, which Section is incorporated herein by reference and made a part of hereof.

2. Comprehensive General Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person and \$ 1,000,000 per accident, and property damage limits of \$ 500,000 per accident and \$ 1,000,000 aggregate during any 12-month period, shall include the following:

- a. Public liability (bodily injury and property damage)
- b. X.C.U. (explosion, collapse, and underground utilities)
- c. Independent contractor's protective liability.
- d. Products and completed operations.
- e. Save harmless agreement for Owner and Architects set forth in ARTICLE 10.11 of the GENERAL CONDITIONS.

3. Comprehensive All Risk Motor Vehicle Liability Insurance

Minimum bodily injury limits of \$ 500,000 per person, \$ 1,000,000 per accident, and property damage limit of \$ 1,000,000 per accident.

- 4. All Risk Insurance

Covering all Contractor’s equipment with a provision for Waiver of Subrogation against the Owner.
- 5. Excess Liability Insurance in Umbrella Form with combined Bodily Injury and Property Damage Limit of \$ 1,000,000.
- 6. **City of Waltham shall be a Named Additional Insured with a Waiver of Subrogation on the insurance policy for this project.**

1.29 SITE ACCESS

- A. The General Contractor shall gain access to the site via routes approved by the Owner.
 - 1. The General Contractor as part of the bid price will restore all roads, curbs, driveways, walks and grassed or landscaped areas damaged during construction.

1.30 CONSTRUCTION TRAILER (if Applicable)

- A. The General Contractor shall locate the construction trailer at locations approved by the Owner.
- B. The General Contractor shall locate all on site stored or staged materials within the enclosed area designated by the Owner.

1.31 BUILDING PERMIT FEES

- A. Building permit fees will be waived for this project. However, the general Contractor is expected to obtain all proper permits as required by City Ordinances

1.32 COMPLETE BID FORMS

- A. Please Note: Each bidder must fill in all the blanks on all the bid forms, even if the information is “zero dollars” or “not applicable”. Also, please acknowledge all Addenda even if they do not pertain to your trade.

Signature of Individual or Corporate Name

By:

_____ (Signature of Corporate Officer if applicable)

Title: _____

Social Security Number or Federal Identification Number: _____

END OF SECTION

SECTION 00 10 10

FORM FOR GENERAL BID

Hardy Apartments Re-Roofing and Exterior Repairs

General Bid Opening Date: 10:00 am, September 9, 2019

Joseph Pedulla, CPO
City of Waltham
610 Main Street
Waltham, MA 02452

The undersigned:

(Please type or print the business name of the bidding firm)

having visited the site of the above project and having familiarized myself with the local conditions affecting the cost of the work and with the contract documents, including Amendments and Addenda No's. _____, _____, _____, _____, _____ hereby proposes to furnish all labor (including Sub Bids), materials, tools, equipment, insurance, permits and taxes, and to do and lawfully perform all things as provided in the specifications, all in accordance with the contract documents, for the sum of:

TOTAL Bid (in words) _____ **Dollars, \$** _____

The subdivision of the proposed contract price is as follows:

Item 1. The work of the General Contractor, being all work other than that covered by Item 2. \$ _____

Item 2. Sub Bids as follows:

Sub-Trade	Number of Sub-Bidder	Amount	Bonds required indicated by "Yes" or "No"
<u>Roofing</u>	_____	\$ _____	_____
<u>Painting</u>	_____	\$ _____	_____

Total of Items 1+2 = \$ _____

- D. The undersigned agrees that, if s/he is selected as General Contractor, s/he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each issued by a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of the contract price, the premiums for which are to be paid by the General Contractor and are included in the contract price.
- E. The undersigned certifies that s/he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work and that s/he will comply fully with all laws and regulations applicable to awards made subject to section forty-four A.
- F. The undersigned as Bidder certifies that if this proposal is accepted, s/he will furnish to the City of Waltham with the invoice for the material or equipment supplied two copies of any and all Material Safety Data Sheets applicable to such material or equipment, as required by M.G.L. Chapter 111F, so called "Right to Know Law".
- G. The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. The word "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.
- H. Substantial Completion
 - 1. The work of the Contract shall be Substantially Completed in Ninety **(90) calendar days.**
- I. In accordance with M.G.L., the undersigned certifies that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by OSHA that is at least 10 hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

Sincerely,

(Bidder)

(Address of Bidder)

By:

(Title - Owner*, Partner*)

(Seal, if Corporation)

By:

(If Corporation - Name and Office)

* If the business owned by the individual or partnership is conducted under a trade or assumed name, a certified copy of doing business under an assumed name should be annexed.

SECTION 00 11 00 - FORM FOR SUB-BID

INSERT TRADE

Hardy Apartments Re-Roofing and Exterior Repairs

Sub-Bid Opening Date: 10:00 am, August 30, 2019

To all General Bidders except those hereinafter expressly excluded:

A. The undersigned:

_____ *(Please type or print the business name of the bidding firm)*

proposes to furnish all labor and materials required for completing, in accordance with the hereinafter described plans, specifications and addenda, all the work specified and in any plans specified in such section for the contract sum of

Base Bid (in words) _____ dollars (\$ _____).

B. This sub-bid includes addenda number _____, _____, _____, _____, _____, _____

C. This sub-bid

May be used by any general bidder except:

May only be used by the following general bidders:

(To exclude general bidders, insert "X" in one box only and fill in blank following that box. Do not answer C if no general bidders are excluded.)

D. The undersigned agrees that, if he is selected as sub-bidder, he will, within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the general bidder selected as the General Contractor, execute with such general bidder a subcontract in accordance with the terms of this sub-bid and contingent upon the execution of the general contract, and, if requested to do so in the general bid by such general bidder, who shall pay the premiums, furnish a performance and payment bond of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority, in the full sum of the subcontract price.

E. The names of all persons, firms and corporations performing such class of work or part thereof for which the section of the specifications for the sub-trade require a listing in this paragraph (including the undersigned if customarily furnished by persons on his own payroll and in the absence of a contrary provision in the specifications), the name of each such class of work, or part thereof, and the bid price for each such class of work or part thereof are:

<u>NAME</u>	<u>CLASS OF WORK</u>	<u>BID PRICE</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Do not give bid price for any class or part thereof furnished by undersigned.)

- F. The undersigned agrees that the above list of bids to the undersigned represents a bona fide bid based on hereinbefore described plans, specifications, and addenda, and that, if the undersigned is awarded the contract, s/he will be used for the work indicated at the amounts stated, if satisfactory to the Awarding Authority.
- G. The undersigned further agrees to be bound to the General Contractor by the terms of the hereinbefore described plans, specifications (including all general conditions stated therein), and addenda, and to assume toward him all the obligations and responsibilities that he, by those documents, assumes toward the Owner.
- H. The undersigned offers the following information as evidence of his qualifications to perform the work as bid upon according to all requirements of the plans and specifications:
 - 1. Have been in business under present business name _____ years.
 - 2. Have ever failed to complete any work awarded? _____
 - 3. List three or more recent buildings with names of General Contractor and Architect on which you served as subcontractor for work of similar character as required for the above-named project:

<u>BUILDING</u>	<u>ARCHITECT</u>	<u>GENERAL CONTRACTOR</u>	<u>AMOUNT OF CONTRACT</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

4. Bank Reference: _____

- I. 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 and that he will comply

fully with the laws and regulations applicable to awards of subcontractors subject to section 44 F of M.G.L. 149.

J. The undersigned further agrees that, if the undersigned fails to perform his agreement to execute a subcontract with the General Contractor and furnish a performance and payment bond if requested to do so in the general bid by the general bidder, the bid deposit accompanying the copy of this bid filed with the Award Authority shall become and be the property of the Awarding Authority as liquidated damages. The undersigned understands that, if he so executes a subcontract with the General Contractor and furnishes a performance and payment bond, if requested to do so, the bid deposit will be returned within five (5) days after execution of the general contract.

K. The undersigned represents that this proposal is made in good faith without fraud, collusion or connection of any kind with any other bidder for the same work, that the undersigned is competing solely on his own behalf without connection with, or obligation to, any undisclosed person or corporation, that no other person or corporation has any interest in the profits of the contract, that the undersigned has read the form of contract attached hereto and is fully informed in regard to all provisions thereof and to the plans and specifications therein referred to, and that the undersigned has visited the premises described in said form of contract and made his own examination of the place where the work is to be done and of all conditions pertaining to the work and has made his own estimate and from such examination and estimate makes this proposal.

L. The Federal Social Security Identification Number of the sub-bidder (the number used on Employer’s Quarterly Federal Tax Return, US Treasury Department Form 941) is:

M. In accordance with M.G.L., the undersigned certifies that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by OSHA that is at least 10 hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

DATE _____

Sub Bidder _____
(Company Name)

By: _____
Signature of Authorized Representative

Title: _____
(Affix Seal)

Business Address: _____

City and State: _____

Telephone No. _____

Section 00 20 00

COMPLIANCE FORMS

(PLEASE COMPLETE AND SUBMIT THESE FORMS WITH YOUR RESPONSE)

ORIGINAL "WET" SIGNATURES ARE REQUIRED IN ALL OF THE FOLLOWING DOCUMENTS

NON-COLLUSION FORM AND TAX COMPLIANCE FORM

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. The undersigned certifies that no representations made by any City officials, employees, entity, or group of individuals other than the Purchasing Agent of the City of Waltham was relied upon in the making of this bid

_____, _____
(Signature of person signing bid or proposal) Date

(Name of business)

TAX COMPLIANCE CERTIFICATION

Pursuant to M.G.L. c. 62C, & 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

_____, _____
Signature of person submitting bid or proposal Date

Name of business

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

CERTIFICATE OF VOTE AUTHORIZATION

Date:

I _____, Clerk of _____ hereby certify that at a meeting of the Board of Directors of said Corporation duly held on the _____ day of _____ at which time a quorum was present and voting throughout, the following vote was duly passed and is now in full force and effect:

VOTED: That _____ (*name*) is hereby, authorized, directed and empowered for the name and on behalf of this Corporation to sign, seal with the corporate seal, execute, acknowledge and deliver all contracts and other obligations of this Corporation; the execution of any such contract to be valid and binding upon this Corporation for all purposes, and that this vote shall remain in full force and effect unless and until the same has been altered, amended or revoked by a subsequent vote of such directors and a certificate of such later vote attested by the Clerk of this Corporation.

I further certify that _____ is duly elected/appointed _____ of said Corporation whose signature appears below as an officer

Signature of Officer

SIGNED:

Clerk of the Corporation: (Corporate Seal)

Print Name: _____

COMMONWEALTH OF MASSACHUSETTS

County of _____

Date:

Then personally appeared the above named and acknowledged the foregoing instrument to be his/her free act and deed before me, and provided to me through satisfactory evidence of identification which were _____ to be the person whose name is signed on the preceding or attached document in my presence.

Notary Public;

My Commission expires: _____

CORPORATION IDENTIFICATION

The bidder for the information of the Awarding Authority furnishes the following information.

If a Corporation:

Incorporated in what state _____
President _____
Treasurer _____
Secretary _____
Federal ID Number _____

If a foreign (out of State) Corporation – Are you registered to do business in Massachusetts?

Yes _____, No _____

If you are selected for this work you are required under M.G.L.ch. 30S, 39L to obtain from the Secretary of State, Foreign Corp. Section, State House, Boston, a certificate stating that you Corporation is registered, and furnish said certificate to the Awarding Authority prior to the award.

If a Partnership: (Name all partners)

Name of partner _____
Residence _____
Name of partner _____
Residence _____

If an Individual:

Name _____
Residence _____

If an Individual doing business under a firm's name:

Name of Firm _____
Name of Individual _____
Business Address _____
Residence _____
Date _____
Name of Bidder _____
By _____

Signature _____

Title _____

Business Address _____ (POST OFFICE BOX NUMBER NOT ACCEPTABLE)

City _____ State _____ Telephone Number _____ Today's Date _____

CERTIFICATE OF AUTHORITY LIMITED LIABILITY COMPANY

The undersigned, being (a/the) duly elected, qualified and active (member / manager) of _____, a Massachusetts limited Liability Company (hereinafter “the Company”)

Does Hereby Certify that

1. The Articles of Organization of the Company were duly filed with the Office of the Secretary of State of the State of Massachusetts on _____, and the Articles of Organization have not been (further) amended.
2. The Company has complied with the publication requirements contained in Section 67 of the Limited Liability Company Law.
3. There exists an Operating Agreement of the Company and that the said Operating Agreement has not been amended or repealed and that the said Operating Agreement remains in full force and effect as of this date.
4. Neither the Articles of Organization nor the Operating Agreement (as amended) require any further act to be taken or a meeting to be held by its members other than as follows:
5. All said requirements, whether as contained in the Articles of Organization or in the Operating Agreement or by operation of law as to the transaction of _____, 20____ have been met.
6. The following person or persons has/have been duly authorized by the Company to execute all documents in connection with said transaction and that the signature appearing to the right of their name(s) is his/her genuine signature.

NAME	OFFICE HELD	SIGNATURE
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

IN Witness Whereof, the undersigned has executed this Certificate of Authority this _____ day of _____, 20____.

(Signature)

STATE OF MASSACHUSETTS, COUNTY OF _____

On the ____ day of _____, 20____, before me, the undersigned personally appeared _____, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/ they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary Public: _____

My Commission Expires: _____

Notary Stamp:

RIGHT TO KNOW LAW

Any vendor who receives an order or orders resulting from this invitation agrees to submit a Material Safety Data Sheet (MSDS) for each toxic or hazardous substance or mixture containing such substance, pursuant to M.G.L. c. 111F, §§8,9 and 10 and the regulations contained in 441 CMR 21.06 when deliveries are made. The vendor agrees to deliver all containers properly labeled pursuant to M.G.L. c. 111F §7 and regulations contained in 441 CMR 21.05. Failure to furnish MSDS and/or labels on each container may result in civil or criminal penalties, including bid debarment and action to prevent the vendor from selling said substances, or mixtures containing said substances within the Commonwealth. All vendors furnishing substances or mixtures subject to Chapter 111F or M.G.L. are cautioned to obtain and read the laws, rules and regulations referenced above. Copies may be obtained from the State House Bookstore, Secretary of State, State House, Room 117, Boston, MA (617) 727-2834.

Authorized Signature Indicating Compliance with the Right-to-know laws:

Signature

Date

Print Name

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package may cause the disqualification of your proposal.

MASSACHUSETTS WEEKLY CERTIFIED PAYROLL REPORT FORM



Company's Name:	Address:	Phone No.:	Payroll No.:
Employer's Signature:	Title:	Contract No:	Tax Payer ID Number
Awarding Authority's Name:	Public Works Project Name:	Public Works Project Location:	Min. Wage Rate Sheet Number

General / Prime Contractor's Name:		Subcontractor's Name:		"Employer" Hourly Fringe Benefit Contributions															
Employee Name & Complete Address	Work Classification:	Employee is OSHA 10 certified (?)	Appr. Rate (%)	Hours Worked								Project Hours (A) All Other Hours	Hourly Base Wage (B)	Health & Welfare Insurance (C)	ERISA Pension Plan (D)	Supp. Unemp. (E)	Total Hourly Prev. Wage (F)	Project Gross Wages	Check No. (H)
				Su.	Mo.	Tu.	We.	Th.	Fr.	Sa.	(B+C+D+E)								

Are all apprentice employees identified above currently registered with the MA DLS's Division of Apprentice Standards? YES NO

For all apprentices performing work during the reporting period, attach a copy of the apprentice identification card issued by the Massachusetts Department of Labor Standards / Division of Apprentice Standards. No apprentices are identified above

NOTE: Pursuant to MGL c. 149, s. 27B, every contractor and subcontractor is required to submit a **true and accurate** copy of their certified weekly payroll records to the awarding authority by first-class mail or e-mail. In addition, each weekly payroll must be accompanied by a statement of compliance signed by the employer. Failure to comply may result in the commencement of a criminal action or the issuance of a civil citation.

Date Received by Awarding Authority / /
--

WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE

In accordance with Massachusetts General Law c. 149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided. A Payroll Form is available from the Department of Labor Standards (DLS) at www.mass.gov/dols/pw and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

On a weekly basis, every contractor and subcontractor is required to submit a certified copy of their weekly payroll records to the awarding authority; this includes the payroll forms and the Statement of Compliance form. The certified payroll records must be submitted either by regular mail or by e-mail to the awarding authority. Once collected, the awarding authority is required to preserve those records for three years from the date of completion of the project.

Each such contractor and subcontractor shall furnish weekly **and** within 15 days after completion of its portion of the work, to the awarding authority directly by first-class mail or e-mail, a statement, executed by the contractor, subcontractor or by any authorized officer thereof who supervised the payment of wages, this form, accompanied by their payroll:

STATEMENT OF COMPLIANCE

_____, 20_____

I, _____, _____
(Name of signatory party) (Title)

do hereby state:

That I pay or supervise the payment of the persons employed by

_____ on the _____
(Contractor, subcontractor or public body) (Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature _____

Title _____

05/14

00 20 00-9

DEBARMENT CERTIFICATION

In connection with this bid and all procurement transactions, by signature thereon, the respondent certifies that neither the company nor its principals are suspended, debarred, proposed for debarment, declared ineligible, or voluntarily excluded from the award of contracts, procurement or non procurement programs from the Commonwealth of Massachusetts, the US Federal Government and /or the City of Waltham. "Principals" means officers, directors, owners, partners and persons having primary interest, management or supervisory responsibilities with the business entity. Vendors shall provide immediate written notification to the Purchasing Agent of the City of Waltham at any time during the period of the contract of prior to the contract award if the vendor learns of any changed condition with regards to the debarment of the company or its officers. This certification is a material representation of fact upon which reliance will be placed when making the business award. If at any time it is determined that the vendor knowingly misrepresented this certification, in addition to other legal remedies available to the City of Waltham, the contract will be cancelled and the award revoked.

Company Name _____

Address _____

City _____, State _____, Zip Code _____

Phone Number (____) _____

E-Mail Address _____

Signed by Authorized Company Representative: _____

_____ Print name. Date _____

10 HOURS OSHA TRAINING CONFIRMATION

Chapter 306 of the Acts of 2004

CONSTRUCTION PROJECTS

AN ACT RELATIVE TO THE HEALTH AND SAFETY ON PUBLIC

The undersigned hereby certifies that all employees to be employed at a worksite for construction, reconstruction, alteration, remodeling, repair, installation, demolition, maintenance or repair of any public work or any public building estimated to cost more than \$10,000.00 have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first payroll report for each employee and will comply with all laws and regulations applicable to awards of subcontracts subject to section 44F.

Company Name: _____

Address: _____

Signature: _____

Title: _____

Print Name _____

Date _____

See following Chapter 306 of the Acts of 2004

NOTE

Failure to submit any of the required documents, in this or in other sections, with your bid response package will be cause for the disqualification of your company.

Request for Taxpayer Identification Number and Certification

**Give Form to the
requester. Do not
send to the IRS.**

Fill Out This
Section

Print or type
See Specific Instructions on page 2.

Name (as shown on your income tax return)	
Business name/disregarded entity name, if different from above	
Check appropriate box for federal tax classification: <input type="checkbox"/> Individual/sole proprietor <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=partnership) ▶ _____ <input type="checkbox"/> Other (see instructions) ▶ _____	
<input type="checkbox"/> Exempt payee	
Address (number, street, and apt. or suite no.)	Requester's name and address (optional) Chief Procurement Officer Purchasing Department, City of Waltham 610 Main Street Waltham, MA 02452
City, state, and ZIP code	
List account number(s) here (optional)	

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3.

Note. If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social security number									
-				-					
Employer identification number									
-									

Fill out this sect.
either SS or FID

Part II Certification

Under penalties of perjury, I certify that:

- The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
- I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
- I am a U.S. citizen or other U.S. person (defined below).

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

Sign & Date

Sign Here	Signature of U.S. person ▶	Date ▶
------------------	----------------------------	--------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Purpose of Form

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA.

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to:

- Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),
- Certify that you are not subject to backup withholding, or
- Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income.

Note. If a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien,
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States,
- An estate (other than a foreign estate), or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax on any foreign partners' share of income from such business. Further, in certain cases where a Form W-9 has not been received, a partnership is required to presume that a partner is a foreign person, and pay the withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid withholding on your share of partnership income.

DOCUMENT 00 43 00

BID BOND

AIA Document A310 - Bid Bond, 2010 Edition - Electronic Format, is included, following this page, as an integral part of the Bid documents, for use in fulfilling Bid Security requirements in lieu of submitting a certified check.

END OF DOCUMENT

DCAMM Documents

Sect 00 47 00

To be given consideration, all general bids and all sub-bids must be accompanied by a copy of the Bidder's Certificate of Eligibility (DCPO Form CQ7) and an Update Statement (DCPO Form CQ3). The General Bidder must be certified eligible in the General Building category and the filed sub-bidders must be certified in their respective categories.

END OF SECT 00 47 00

**AGREEMENT
CITY OF WALTHAM**

ARTICLE 1. This agreement, made this _____ day of _____, 2019 by and between the CITY OF WALTHAM, party of the first part, hereinafter called the CITY, by its MAYOR, and

_____ hereinafter called the CONTRACTOR.

ARTICLE 2. Witnesseth, that the parties to this agreement, each in consideration of the agreement on the part of the others herein contained, do hereby agree, the CITY OF WALTHAM for itself, and said contractor for his heirs, executors, administrators and assigns as follows:

To furnish all equipment, machinery, tools and labor, to furnish and deliver all materials required to be furnished (except as otherwise specified) and deliver in and about the project and to do and perform all work in strict conformity with the provisions of this Contract and of the Notice to Bidders, bid, Project Manual, and Drawings hereto annexed. The said Notice to Bidders, bid, Project Manual, and Drawings are hereby made a part of this contract as fully and to the same effect as if the same had been set forth at length and incorporated in the contracts.

ARTICLE 3. In consideration of the foregoing premises the CITY agrees to pay and the CONTRACTOR agrees to receive as full compensation for everything furnished and done by the CONTRACTOR under this contract, including all work required by not included in the items herein mentioned, and also for all loss or damage arising out of the nature of the work aforesaid, or from the action of the elements, or from any unforeseen obstruction or difficulty encountered in the prosecution of the work, and for all expenses incurred by or in consequence of the suspension or discontinuance of the work specified, and for well and faithfully completing the work, and the whole thereof, as herein provided, such prices as are set forth in the accompanying bid.

Date for final completion of the project is **90 days** from the date of the Notice to Proceed.

Actual construction activity will commence on or about the date of the Notice-to-Proceed (NTP).

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

CITY OF WALTHAM, MASSACHUSETTS

FOR THE CITY

FOR THE COMPANY

Jeannette A. McCarthy, MAYOR,
City of Waltham
Date: _____

CONTRACTOR (Signature),
Date: _____

Company

Address

John B. Cervone, City Solicitor
Date: _____
APPROVED AS TO FORM ONLY

Robert Waters, Housing Supervisor
Date: _____

Joseph Pedulla, Purchasing Agent
Date: _____

Paul Centofanti, Auditor
Date: _____

I CERTIFY THAT SUFFICIENT FUNDS
ARE AVAILABLE FOR THIS CONTRACT

FEDERAL FUNDING PROVISION

SECT. 00 50 10

Federal Funding Provision

The City has applied for and received funds from the United States Government under the provisions of Title I of the Housing and Community Development Act of 1974, as amended, Public Law 93-383; and Catalog of Federal Domestic Assistance Number 14.218; the City wishes to engage the Contractor to assist the City in utilizing such funds to carry out the purposes and responsibilities associated therewith in connection with the City's Community Development Program, and; Agreement sets forth the terms and conditions under which the Contractor will become the recipient of said grant;

Federal Objective

The activity funded with Community Development Block Grant (hereinafter referred to as CDBG) funds must meet the national objective of benefit to low-and moderate-income persons; as defined in 24 CFR 570.208.

Uniform Administrative Requirements

The Contractor shall comply with Federal Regulation 2 CFR 200. Upon request of the Contractor, the City will assist the Contractor in complying with applicable regulations and standards, and in establishing necessary administrative procedures and recordkeeping and financial control systems and procedures. This offer of assistance shall not in any way relieve the Contractor of the responsibility to ensure compliance with all relevant management requirements. Contractor agrees to adhere to the accounting principles and procedures required therein, utilize adequate internal controls and maintain necessary source documentation for all costs incurred.

The Contractor agrees that the City of Waltham, The United States Department of Housing and Urban Development, the Comptroller General of the United States, or any of their duly authorized representatives shall have access to any records, Agreements, invoices, materials, payrolls, personnel records, books, documents, papers, financial records or computer data maintained, kept or used by which are related to this Agreement, for the purpose of making copies, audits, examinations, excerpts, and transcriptions. Such inspections may be made during normal business hours, and as often as the aforementioned governmental agencies deem necessary.

Massachusetts Unmarked Burial Law

It shall be the duty of a person who discovers unmarked human remains, or who knowingly causes human remains to be disturbed through construction, to immediately notify the office of the chief medical examiner.

The medical examiner shall make reasonable attempts to promptly identify unmarked human remains including, but not limited to, obtaining: (i) photographs of the human remains prior to an autopsy; (ii) dental or skeletal X-rays; (iii) photographs of items found with the human remains; (iv) fingerprints from the remains, if possible; and (v) a sample of bone, hair or tissue for DNA testing.

The office shall conduct an inquiry to determine whether the remains are suspected of being 100 years old or more and, if so determined, shall immediately notify the state archaeologist. The state archaeologist shall determine if the skeletal remains are Native American. If the remains are deemed likely to be Native American, the state archaeologist shall immediately notify the commission on Indian affairs which shall cause a site evaluation to be made to determine if the place where the remains were found is a Native American burial site.

Identification of Federal Funding (NOT APPLICABLE)

The following statement shall be placed permanently on the site once work has completed

“This project was partially financed through a City of Waltham Community Development Block Grant, administered by the United States Department of Housing and Urban Development.”

Women- and Minority-Owned Businesses (W/MBE)

The Contractor will use its best efforts to afford small businesses, minority business enterprises, and women’s business enterprises the maximum practicable opportunity to participate in the performance of this contract. As used in this contract, the terms “small business” means a business that meets the criteria set forth in section 3(a) of the Small Business Act, as amended (15 U.S.C. 632), and “minority and women’s business enterprise” means a business at least fifty-one (51) percent owned and controlled by minority group members or women. For the purpose of this definition, “minority group members” are Afro-Americans, Spanish-speaking, Spanish surnamed or Spanish-heritage Americans, Asian-Americans, and American Indians. The Contractor may rely on written representations by businesses regarding their status as minority and female business enterprises in lieu of an independent investigation.

“Section 3” Clause

Compliance with the provisions of Section 3 of the HUD Act of 1968, as amended, and as implemented by the regulations set forth in 24 CFR 135, and all applicable rules and orders issued hereunder prior to the execution of this contract, shall be a condition of the Federal financial assistance provided under this contract and binding upon the Grantee, the Contractor and any of the Contractor’s s and subcontractors. Failure to fulfill these requirements shall subject the Grantee, the Contractor and any of the Contractors and subcontractors, their successors and assigns, to those sanctions specified by the Agreement through which Federal assistance is provided. The Contractor certifies and agrees that no contractual or other disability exists that would prevent compliance with these requirements.

The Contractor further agrees to comply with these “Section 3” requirements and to include the following language in all subcontracts executed under this Agreement:

“The work to be performed under this Agreement is a project assisted under a program providing direct Federal financial assistance from HUD and is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended (12 U.S.C. 1701). Section 3 requires that to the greatest extent feasible opportunities for training and employment be given to low- and very low-income residents of the project area, and that contracts for work in connection with the project be awarded to business concerns that provide economic opportunities for low- and very low-income persons residing in the metropolitan area in which the project is located.”

The Contractor further agrees to ensure that opportunities for training and employment arising in connection with a housing rehabilitation (including reduction and abatement of lead-based paint hazards), housing construction, or other public construction project are given to low- and very low-income persons residing within the metropolitan area in which the CDBG-funded project is located; where feasible, priority should be given to low- and very low-income persons within the service area of the project or the neighborhood in which the project is located, and to low- and very low-income participants in other HUD programs; and award contracts for work undertaken in connection with a housing rehabilitation (including reduction and abatement of lead-based paint hazards), housing construction, or other public

construction project to business concerns that provide economic opportunities for low- and very low-income persons residing within the metropolitan area in which the CDBG-funded project is located; where feasible, priority should be given to business concerns that provide economic opportunities to low- and very low-income residents within the service area or the neighborhood in which the project is located, and to low- and very low-income participants in other HUD programs.

The Contractor agrees to send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or understanding, if any, a notice advising said labor organization or worker's representative of its commitments under this Section 3 clause and shall post copies of the notice in conspicuous places available to employees and applicants for employment or training.

The Contractor will include this Section 3 clause in every subcontract and will take appropriate action pursuant to the subcontract upon a finding that the subcontractor is in violation of regulations issued by the grantor agency. The Contractor will not subcontract with any entity where it has notice or knowledge that the latter has been found in violation of regulations under 24 CFR Part 135 and will not let any subcontract unless the entity has first provided it with a preliminary statement of ability to comply with the requirements of these regulations.

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at

time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section I (b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the

time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not **(iii)** listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when the following criteria have been met:

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

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

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U. S. Department of Labor, Washington, D. C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

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

(v) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part

of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis- Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis- Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been

communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e. g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

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

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

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

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

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A. 3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A. 3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

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

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

(ii) **Trainees.** Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U. S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by

form HUD-4010 (06/2009)

Previous editions are obsolete

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5. 5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5. 12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

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

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3 (a) of the Davis-Bacon Act or 29 CFR 5. 12 (a)(1) or to be

awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3 (a) of the Davis-Bacon Act or 29 CFR 5. 12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24 .

(iii) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U. S. C. 1001. Additionally, U. S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part:

"Whoever, for the purpose of influencing in any way the action of such Administration makes, utters or publishes any statement knowing the same to be false shall be fined not more than \$5, 000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

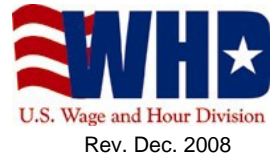
(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91- 54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

PAYROLL

(For Contractor's Optional Use; See Instructions at www.dol.gov/whd/forms/wh347instr.htm)

Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.



NAME OF CONTRACTOR OR SUBCONTRACTOR

ADDRESS

OMB No.: 1235-0008
Expires: 01/31/2015

(1) NAME AND INDIVIDUAL IDENTIFYING NUMBER (e.g., LAST FOUR DIGITS OF SOCIAL SECURITY NUMBER) OF WORKER	(2) NO. OF WITHHOLDING EXEMPTIONS	(3) WORK CLASSIFICATION	OT. OR ST.	(4) DAY AND DATE							(5) TOTAL HOURS	(6) RATE OF PAY	(7) GROSS AMOUNT EARNED	(8) DEDUCTIONS					(9) NET WAGES PAID FOR WEEK
				HOURS WORKED EACH DAY										FICA	WITH- HOLDING TAX		OTHER	TOTAL DEDUCTIONS	

While completion of Form WH-347 is optional, it is mandatory for covered contractors and subcontractors performing work on Federally financed or assisted construction contracts to respond to the information collection contained in 29 C.F.R. §§ 3.3, 5.5(a). The Copeland Act (40 U.S.C. § 3145) contractors and subcontractors performing work on Federally financed or assisted construction contracts to "furnish weekly a statement with respect to the wages paid each employee during the preceding week." U.S. Department of Labor (DOL) regulations at 29 C.F.R. § 5.5(a)(3)(ii) require contractors to submit weekly a copy of all payrolls to the Federal agency contracting for or financing the construction project, accompanied by a signed "Statement of Compliance" indicating that the payrolls are correct and complete and that each laborer or mechanic has been paid not less than the proper Davis-Bacon prevailing wage rate for the work performed. DOL and federal contracting agencies receiving this information review the information to determine that employees have received legally required wages and fringe benefits.

Public Burden Statement

We estimate that it will take an average of 55 minutes to complete this collection, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. If you have any comments regarding these estimates or any other aspect of this collection, including suggestions for reducing this burden, send them to the Administrator, Wage and Hour Division, U.S. Department of Labor, Room S3502, 200 Constitution Avenue, N.W. Washington, D.C. 20210

(over)

Date _____

I, _____
(Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
(Contractor or Subcontractor)

_____ ; that during the payroll period commencing on the
(Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,

all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
(Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(2) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(3) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

— in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

— Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)

EXPLANATION

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:
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NAME AND TITLE	SIGNATURE
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THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

SECTION 00 51 00

PERFORMANCE BOND

CITY OF WALTHAM

KNOW ALL MEN BY THESE PRESENT THAT,

_____ as

principal and _____ as surety, are held and firmly bound unto the CITY OF WALTHAM and to such persons, firms, and corporations, who may furnish materials for or perform labor on the work, construction or improvements contemplated in the Contract hereinafter mentioned, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, in the

SUM OF _____ DOLLARS (\$ _____)

(lawful money of the United States of America) for the payment whereof the Contractor and the Surety of Sureties bind themselves and their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT for the above burden (the Contractor) its

_____ heirs, executors, administrators and assigns, shall faithfully perform the Contract, on his part and during the life of any guaranty or warranty, for defective materials and workmanship required under this Contract, and satisfy all claims and demands incurred for the same; and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of failure so to do, and shall fully reimburse and repay the City all outlay and expense which the City may incur in making good any such default, and shall promptly make payment to all persons supplying labor or materials for use in the prosecution of the work provided for in said Contract; and shall indemnify and save harmless the said City, its officers and agents from any and all suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that (except as to the City) no suit, action or proceeding by reason of any default whatever shall be brought on this Bond after two years from the day on which the final payment under the Contract falls due.

AND PROVIDED, that any alterations which may be made in the terms of the Contract or in the work to be done under it, or any assignment, transfer or subletting of any part of the work, or the giving by the City of any extension of time for the performance of the Contract, or any other forbearance on the part of either the City or the Contractor to the other, shall not in any way release the Contractor and the Surety of Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety or Sureties of any such alterations, assignment, transfer, subletting extension or forbearance being hereby waived.

This Bond is made for the use and benefit of all persons, firms, and corporations who may furnish materials, or perform any labor for or on account of said work, construction or improvements, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, and they and each of them are hereby made obligees hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

And the 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 hereunder, or the Specifications accompanying the same, shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such changes, extension of time, alteration or addition to the terms of the Contract or to the work, or to the Specifications.

IN WITNESS WHEREOF, said Contractor and Surety have hereunto set their respective names this

_____ day of _____, 20_____.

WITNESSES:

(CONTRACTOR) (SEAL)

NAME _____ BY _____
(SIGNATURE AND TITLE)

ADDRESS _____
(SURETY) (SEAL)

NAME _____ BY _____
(SIGNATURE AND TITLE)

ADDRESS _____ BY _____
(ATTORNEY-IN-FACT)

POWER OF ATTORNEY

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

SECTION 00 52 00

PAYMENT BOND

CITY OF WALTHAM

KNOW ALL MEN BY THESE PRESENT THAT,

_____ as

principal and _____ as
surety, are held and firmly bound unto the CITY OF WALTHAM and to such persons, firms, and corporations, who may furnish materials for or perform labor on the work, construction or improvements contemplated in the Contract hereinafter mentioned, or who may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, in the

SUM OF _____ DOLLARS (\$ _____)
(lawful money of the United States of America) for the payment whereof the Contractor and the Surety of Sureties bind themselves and their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, THAT for the above burden (the Contractor) its

_____ heirs, executors, administrators and assigns, shall faithfully perform the Contract, on his part and during the life of any guaranty or warranty, for defective materials and workmanship required under this Contract, and satisfy all claims and demands incurred for the same; and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of failure so to do, and shall fully reimburse and repay the City all outlay and expense which the City may incur in making good any such default, and shall promptly make payment to all persons supplying labor or materials for use in the prosecution of the work provided for in said Contract; and shall indemnify and save harmless the said City, its officers and agents from any and all suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that (except as to the City) no suit, action or proceeding by reason of any default whatever shall be brought on this Bond after two years from the day on which the final payment under the Contract falls due.

AND PROVIDED, that any alterations which may be made in the terms of the Contract or in the work to be done under it, or any assignment, transfer or subletting of any part of the work, or the giving by the City of any extension of time for the payment of the Contract, or any other forbearance on the part of either the City or the Contractor to the other, shall not in any way release the Contractor and the Surety of Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety or Sureties of any such alterations, assignment, transfer, subletting extension or forbearance being hereby waived.

This Bond is made for the use and benefit of all persons, firms, and corporations who may furnish materials, or perform any labor for or on account of said work, construction or improvements, or who

may have any suits or claims for injury or damage to persons or property resulting from or arising out of the work done under this Contract, and they and each of them are hereby made obligees hereunder the same as if their own proper names were written herein as such, and they and each of them may sue hereon in their own names for their own use and benefit.

And the 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 hereunder, or the Specifications accompanying the same, shall in any way affect its obligations on this Bond, and it does hereby waive notice of any such changes, extension of time, alteration or addition to the terms of the Contract or to the work, or to the Specifications.

IN WITNESS WHEREOF, said Contractor and Surety have hereunto set their respective names this

_____ day of _____, 20____.

WITNESSES:

(CONTRACTOR)

(SEAL)

NAME _____ BY _____
(SIGNATURE AND TITLE)

ADDRESS _____
(SURETY) (SEAL)

NAME _____ BY _____
(SIGNATURE AND TITLE)

ADDRESS _____ BY _____
(ATTORNEY-IN-FACT)

POWER OF ATTORNEY

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

**GENERAL CONDITIONS
SECT. 00 70 00**

1. INFORMATION

All information shall come from the Office of the City Purchasing Agent. The Contractor shall inquire at this office for any information needed. Wherever the words "or equal as approved" are used, it is to be understood that the opinion of the City Purchasing Agent shall govern.

2. SUITS

The Contractor shall assume defense of and shall indemnify and hold the City and its agents harmless from all suits and claims against the City and its sub-contractors arising from the use of any invention, patent right labor or employment, or from any act of omission or neglect of the City, its agents, employees or any subcontractor in performing the work, under this contract.

3. LAWS AND REGULATIONS

The Contractor shall conform to all the applicable rules, regulations, laws and ordinances of the City of Waltham, the Commonwealth of Massachusetts, the United States of America and all agencies having jurisdiction over this contract.

4. PROTECTION OF PROPERTY

The Contractor shall take all proper precautions to protect the City's property from damage and unnecessary inconvenience. Any City property damaged by the Contractor in carrying out the provisions of this contract shall be restored to its original condition, by and at the expense of the Contractor.

5. PROTECTION OF PERSONS

The Contractor shall take all proper precautions to protect persons from injury, unnecessary inconvenience, and shall be responsible for his failure to do so. The Contractor agrees to hold the City harmless from any and all liabilities of every nature and description, which may be suffered through bodily injury, including death, to any person, by reason of negligence of the Contractor, his agents or employees, or any subcontractor.

6. CONTRACT DURATION.

This contract is for the period of March 1, 2010 renewable at the discretion of the City of Waltham for an additional two (2) one-year periods ending June 30, 2013.

7. INSURANCE

A. WORKMAN'S COMPENSATION: The Contractor shall provide by insurance for the payment of compensation and furnishing of other benefits under Chapter 152 of the General Laws of the Commonwealth of Massachusetts to all persons to be employed under this contract, the premiums for which shall be paid by the Contractor.

B. COMPREHENSIVE GENERAL LIABILITY

Bodily Injury:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate
Property Damage:	\$1,000,000 Each Occurrence
	\$2,000,000 Aggregate

C. AUTOMOBILE (VEHICLE) LIABILITY

Bodily Injury	\$2,000,000 Each Occurrence
Property Damage	\$1,000,000 Aggregate

D. UMBRELLA POLICY

General liability	\$2,000,000
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Your bid response must include a Certificate of Insurance with the above limits as a minimum. In addition, the Certificate of Insurance must have the following text contained in the bottom left box of the Certificate: "The City of Waltham is a named Additional Insured for all Insurance". The Certificate of Insurance must be mailed directly to:

Office of the Purchasing Agent
Purchasing Department
City of Waltham
610 Main Street
Waltham, MA 02452

8. LABOR AND MATERIALS BOND

The Contractor agrees to execute and deliver to the City, a Labor and Materials or Payment Bond equal to 100% of the contract value. This contract shall not be in force until said bond has been delivered and accepted by the City. Bond to be issued by a company licensed by the Commonwealth of Massachusetts.

A LETTER FROM A SURETY COMPANY CERTIFYING THAT THE CONTRACTOR IS QUALIFIED AND CAPABLE OF OBTAINING THE ABOVE BONDS MUST BE INCLUDED WITH HIS/HERS BID.

9. PERSONNEL:

The Contractor shall employ a competent supervisor and all properly licensed personnel necessary to perform the services required in this contract. The City Purchasing Agent shall have the right to require the Contractor to remove and/or replace any of the personnel for nonperformance or for unprofessional behavior. The City Purchasing Agent may require the Contractor to submit a weekly performance record of the areas and of the work performed, on forms approved by the City Purchasing Agent. The Contractor or his supervisor shall be available to inspect such work as required by the City Purchasing Agent.

10. MASSACHUSETTS PREVAILING WAGES and FEDERAL DAVIS-BACON PREVAILING WAGES

This contract is based on State and Federal prevailing wages. All contractors working on this project shall submit weekly certified payrolls and sworn affidavits showing the actual number of hours charged to the project. The prevailing Wage Schedule is available in the Purchasing Department and a copy will be provided upon requests. The Prevailing Wage Schedule is too large to attach here.

The Contractor is required to pay the prevailing wages as determined under the provisions of Chapter 149, Sections 26 and 27D of the Massachusetts General Laws, including the submission of weekly payrolls to the awarding authority.

11. MATERIALS

The City or its Agent reserves the right to approve or reject any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any supplies, material or equipment used by the Contractor. The Contractor agrees to replace any rejected supplies, materials or equipment, to the satisfaction of the City or its Agents.

12. TERMINATION OF CONTRACT

This contract may be terminated by the City upon deliverance to the Contractor of a five-day written notice of said termination.

13. CONTRACT OBLIGATIONS

Contract obligations on behalf of the City are subject to an annual appropriation to cover the contract obligation.

14. BIDDER EXPERIENCE EVALUATION

Each bidder shall submit with his bid, all the information relative to their experience and qualifications in performing the work required under this contract and shall have been in business for a minimum of five (5) years, in order for their bid to be considered.

15. NOT-TO-EXCEED AMOUNT

The bid amount proposed in your company's response is a "not-to- Exceed" amount unless the City makes changes, in writing, to the scope of work to be performed. The Change Order must be signed and approved by the City's Purchasing Agent, City Auditor, Law Department and the Mayor prior to the commencement of the change order work. No work is to begin until the proper approvals have been obtained. A change order will be priced at the unit price. Failure to comply with this procedure will result in the cancellation of the contract and the non-payment of services provided.

16. FINANCIAL STATEMENTS.

The City may require, within five (5) days after the bid opening, a complete and detailed Financial Statement prepared by a Certified Public Account, to determine a bidder's financial stability.

17 BREACH OF CONTRACT/ NON-PERFORMANCE

If the Contractor shall provide services in a manner, which is not to the satisfaction of the City, the City may request that the Contractor refurnish services at no additional cost to the City until approved by the City. If the Contractor shall fail to provide services, which are satisfactory to the City, the City in the alternative may make any reasonable purchase or Contract to purchase services in substitution for those due from the Contractor. The City may deduct the cost of any substitute Contract for nonperformance of services together with incidental and consequential damages from the Contract price and shall withhold such damages from sums due or to become due to the Contractor. If the damages sustained by the City exceed sums due or to become due, the Contractor shall pay the difference to the City upon demand. The Contractor shall not be liable for any damages sustained by the City due to the Contractor's failure to furnish services under the terms of this Contract if such failure is in fact caused by the occurrence of a contingency the nonoccurrence of which was a basic assumption under which this Contract was made, including a state of war, embargoes, expropriation of labor strike or any unanticipated federal, state or municipal governmental regulation of order, provided that the Contractor has notified the City in writing of such cause within seven (7) days after its occurrence.

18 RIGHT TO AUDIT

The City of Waltham has the right to review and audit documents related to this contract. This right extends to any subcontractor, supplier or other entity used by the prime contractor to fulfill the obligations under this contract.

19. CITY ORDINANCE. APPROVAL OF CONTRACTS BY MAYOR, SEC. 3-12 OF THE CITY ORDINANCES. All contract made by any department, board or commission where the amount involved is two thousand dollars (\$2,000) or more shall be in writing, and no such contract shall be deemed to have been made or executed until the approval of the Mayor is affixed thereto. Any construction contract shall, and all other contracts may, where the contract exceed five thousand dollars (\$5,000) be required to be accompanied by a bond with sureties satisfactory to the Mayor.

20. BID OPENING INCLEMENT WEATHER

If, at the time of the originally scheduled bid opening, City Hall is closed to inclement weather or another unforeseeable event, the bid opening will be extended until 2:00 PM on the next normal business day. Bids will be accepted until that date and time.

21. SIGNATURES

No electronic signatures will be accepted in the Vote authorization form. The Notary Public signature must be an original Signature.

22. NOTARY PUBLIC

The notary public signature certification must be from a notary certified in any of the 50 United States

SECTION 00 71 00

PREVAILING WAGES

Bids shall be made on the basis of the Prevailing Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provision of the Massachusetts General Laws. The Prevailing wage Schedule for this project can be found in the City's web Site at www.city.waltham.ma.us/bids

Section 00 71 00

"General Decision Number: MA20190004 05/17/2019

Superseded General Decision Number: MA20180004

State: Massachusetts

Construction Type: Residential

Counties: Barnstable, Berkshire, Bristol, Essex, Hampden, Hampshire, Middlesex, Norfolk, Plymouth, Suffolk and Worcester Counties in Massachusetts.

RESIDENTIAL CONSTRUCTION PROJECTS (including single family homes and apartments up to and including 4 stories)

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.60 for calendar year 2019 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.60 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2019. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the

Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/04/2019
1	02/01/2019
2	02/22/2019
3	05/17/2019

BRMA0001-026 02/01/2019

LOWELL CHAPTER

MIDDLESEX COUNTY (Acton, Asby, Ashland, Ayer, Bedford, Billerica, Boxboro, Carlisle, Chemsford, Dracut, Dunstable, Framingham, Ft. Devens, Groton, Holliston, Hopkinton, Hudson, Littleton, Lowell, Maynard, Natick, North Acton, Pepperell, Sherborn, Shirley, South Acton, Stow, Tewksbury, Townsend, Tyngsboro, West Acton, Westford, Wilmington) NORFOLK (Medfield, Medway, Mills) WORCESTER (Ashburnham, Athol, Fitchburg, Gardner, Harvard, Hopedale, Hubbardston, Lancaster, Leominster, Lunenburg, Milford, Petersham, Phillipston, Princeton, Royalston, Southboro, Sterling, Templeton, Westminster, Winchendon)

Rates Fringes

Bricklayer, Plasterer,		
Stonemason.....	\$ 51.41	31.09

BRMA0001-027 02/01/2019

SPRINGFIELD/PITTSFIELD CHAPTER

BERKSHIRE, HAMPDEN, HAMPSHIRE, WORCESTER (Warren) COUNTIES

Rates Fringes

Bricklayer, Plasterers,
Stonemasons, Tile Layers.....\$ 41.96 29.80

BRMA0001-028 02/01/2019

FOXBORO CHAPTER

BRISTOL (Attleboro, Berkley, Dighton, Mansfield, North
Attleboro, Norton, Raynham, Rehoboth, Seekonk, Taunton) NORFOLK
(Bellingham, Canton, Dedham, Foxboro, Franklin, Norfolk,
Norwood, Plainville, Sharon, Walpole, Westwood, Wrentham)
PLYMOUTH (Lakeville)

Rates Fringes

BRICKLAYER.....\$ 51.41 31.09

BRMA0001-029 02/01/2019

WORCESTER CHAPTER

(Auburn, Barre, Blackstone, Berlin, Bolton, Boylston,
Brookfield, Charlton, Clinton, Douglas, Dudley, Grafton,
hardwick, Holden, Leicester, Mendon, Millbury, Millville, New
Braintree, Northboro, Northbridge, Oakham, Oxford, Paxton,
Rutland, Shrewbury, Southbridge, Spencer, Sturbridge, Sutton,
Upton, Uxbridge, Webster, Westboro, West Boylston, Worcester)

Rates Fringes

Bricklayer, Plasterer,
Stonemason.....\$ 51.41 31.09

BRMA0003-026 02/01/2019

BOSTON CHAPTER

MIDDLESEX (Arlington, Cambridge, Everett, Malden, Medford,
Melrose, Somerville) NORFOLK (Brookline, Milton) SUFFOLK

	Rates	Fringes
BRICKLAYER.....	\$ 53.55	31.88

BRMA0003-027 02/01/2019

LYNN CHAPTER

ESSEX (Amesbury, Andover, Beverly, Boxford, Danvers, Essex, Georgetown, Gloucester, Groveland, Hamilton, Haverhill, Ipswich, Lawrence, Lynn, Lynnfield, Manchester, Nahant, Newbury, Newburyport, North Andover, Peabody, Rockport, Rowley, Salisbury, Salem, Saugus, Swampscott, Topsfield, Wakefield, Wenham, West Newbury) MIDDLESEX (Reading, North Reading, Wakefield)

	Rates	Fringes
Bricklayer, Plasterer.....	\$ 53.55	31.88

BRMA0003-028 02/01/2019

NEWTON CHAPTER

MIDDLESEX (Newton); NORFOLK (Dover, Needham, Wellesley)

	Rates	Fringes
Bricklayer, Plasterer.....	\$ 53.55	31.88

BRMA0003-029 02/01/2019

NEW BEDFORD CHAPTER

BARNSTABLE, BRISTOL (Acushnet, Darmouth, Fairhave, Fall River, Freetown, New Bedford, Somerset, Swansea, Westport) PLYMOUTH (Marion, Mattapoisett, Rochester, Wareham)

	Rates	Fringes
BRICKLAYER.....	\$ 53.55	31.88

BRMA0003-030 02/01/2019

QUINCY CHAPTER

NORFOLK (Avon, Braintree, Cohasset, Holbrook, Quincy, Randolph, Stoughton, Weymouth) PLYMOUTH (Abington, Bridgewater, Brockton, Carver, Duxbury, East Bridgewater, Halifax, hanover, Hanson, Hingham, Hull, Kingston, Marshfield, Middleboro, Norwell, Pembroke, Plymouth, Rockland, Scituate, West Bridgewater, Whitman)

	Rates	Fringes
Bricklayer, Plasterer.....	\$ 53.55	31.88

BRMA0003-031 02/01/2019

WALTHAM CHAPTER

MIDDLESEX (Belmont, Burlington, Concord, Lixington, Lincoln, Stoneham, Sudbury, Waltham, Watertown, Wayland, Weston, Winchester, Woburn)

	Rates	Fringes
Bricklayer, Plasterer.....	\$ 53.55	31.88

BRMA0003-032 08/01/2018

BARNSTABLE, BRISTOL, SUFFOLK AND WORCESTER

	Rates	Fringes
Tile Layer.....	\$ 40.40	31.52

CARP0026-007 09/01/2017

BRISTOL (Attleborough, North Attleborough) ESSEX, MIDDLESEX (Except Belmont, Cambridge, Everett, Malden, Medford, Somerville) NORFOLK (Bellingham, Canton, Foxboro, Franklin, Medfield, Medway, Millis, Needham, Norfolk, Norwood, Plainville, Quincy, Sharon, Walpole, Wellesley, Westwood, Wrentham) and PLYMOUTH (Duxbury, Hanover, Hingham, Hull, Marshfield, Norwell, Pembroke, Rockland and Scituate)

Rates Fringes

Carpenters (Including Drywall Hanging & Acoustical Ceiling Installation).....\$ 39.28 27.90

CARP0033-006 09/01/2017

MIDDLESEX (Belmont, Cambridge, Everett, Malden, Medford, Somerville) NORFOLK (Brookline, Dedham, Milton) and SUFFOLK

Rates Fringes

Carpenters (Including Drywall Hanging & Acoustical Ceiling Installation).....\$ 46.43 28.35

CARP0107-011 09/01/2017

WORCESTER COUNTY (except Gilbertville, Hardwick, Warren, West Brookfield)

Rates Fringes

Carpenters (Including Drywall Hanging & Acoustical Ceiling Installation).....\$ 39.28 27.90

CARP0108-012 09/04/2017

BERKSHIRE, HAMPDEN, HAMPSHIRE AND WORCESTER (Gilbertville, Hardwick, Warren, West Brookfield)

Rates Fringes

Carpenters (Including Drywall Hanging & Acoustical Ceiling Installation).....	\$ 35.56	23.76
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CARP0624-008 09/01/2017

BARNSTABLE, BRISTOL (Except Attleboro and North Attleboro) AND PLYMOUTH (Bridgewater, Brockton, Kingston, Lakeville, Middleboro, Plymouth, South Hanover, Whitman)

Rates Fringes

Carpenters (Including Drywall Hanging & Acoustical Ceiling Installation).....	\$ 39.28	27.90
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CARP0723-001 04/01/2018

ZONE 2: BARNSTABLE, BERKSHIRE, BRISTOL, ESSEX, HAMPDEN, HAMPSHIRE, PLYMOUTH, WORCESTER COUNTIES AND PART OF MIDDLESEX, NORFOLK AND SUFFOLK COUNTIES

(All other cities and towns in Massachusetts + Chelsea & Winthrop)

Rates Fringes

CARPENTER (New Wood Frame
Construction not exceeding 4
stories including basement)
Wood framing, siding and

exterior trim work.....\$ 26.34	15.82
All other carpentry work on wood frame projects.....\$ 26.34	15.82

CARP0723-002 04/01/2018

ZONE 1: MIDDLESEX, NORFOLK AND SUFFOLK COUNTIES (Consists of Boston, Islands of Boston Harbor, Brookline, Cambridge, Dedham, Malden, Medford and Somerville)

	Rates	Fringes
Carpenters (New Wood Frame Construction not exceeding 4 stories including basement) Wood framing, siding and exterior trim work.....\$ 31.20		15.82
All other carpentry work on wood frame projects.....\$ 31.20		15.82

ELEC0007-008 12/30/2018

HAMPDEN (Except Chester and Holyoke); HAMPSHIRE (Belchertown, Ware)

	Rates	Fringes
ELECTRICIAN.....\$ 41.91		23.16

ELEC0007-009 12/30/2018

BERKSHIRE; HAMPDEN (Chester, Holyoke); HAMPSHIRE (Except Belchertown, Ware)

	Rates	Fringes
ELECTRICIAN.....\$ 41.91		23.16

Teledata System Installer

(Berkshire County).....\$ 41.91 23.16

ELEC0096-004 12/01/2018

MIDDLESEX (Ashby, Ashland, Ayer, Ft. Devens, Groton, Hopkinton,
Hudson, Marlboro, Pepperell, Shirley, Stow, Townsend);
WORCESTER (Except Warren)

Rates Fringes

ELECTRICIAN.....\$ 42.57 11%+21.92
Teledata System Installer.....\$ 29.04 24.67

ELEC0096-005 12/01/2018

WORCESTER (Warren)

Rates Fringes

ELECTRICIAN.....\$ 42.57 11%+21.92

ELEC0099-005 06/01/2017

BRISTOL (North & South Attleboro, Seekonk)

Rates Fringes

ELECTRICIAN.....\$ 28.56 6.3%+13.91

* ELEC0103-002 03/01/2019

ESSEX (Amesbury, Andover, Boxford, Georgetown, Groveland,
Haverhill, Lawrence, Merrimac, Methuen, Newbury, Newburyport,
North Andover, Rowley, Salisbury, West Newbury); MIDDLESEX
(Bedford, Billerica, Boxboro, Burlington, Carlisle, Chelmsford,
Dracut, Dunstable littleton, Lowell, North Reading, Tewksbury,
Tyngsboro, Westford, Wilmington)

	Rates	Fringes
ELECTRICIAN.....	\$ 51.10	32.65

* ELEC0103-004 03/01/2019

ESSEX (Beverly, Danvers, Essex, Gloucester, Hamilton, Ipswich, Manchester, Marblehead, Middleton, Peabody, Rockport, Salem, Topsfield, Wenham)

	Rates	Fringes
ELECTRICIAN.....	\$ 51.10	32.65

* ELEC0103-010 03/01/2019

ESSEX (Lynn, Lynnfield, Nahant, Saugus, Swampscott); MIDDLESEX (Acton, Arlington, Belmont, Cambridge, Concord, Everett, Framingham, Holliston, Lexington, Lincoln, Malden, Maynard, Medford, Melrose, Natick, Newton, Reading, Sherborn, Somerville, Stoneham, Sudbury, Wakefield, Waltham, Watertown, Wayland, Weston, Winchester, Woburn); NORFOLK (Bellingham, Braintree, Brookline, Canton, Coahasset, Dedham, Dover, Foxboro, Franklin, Medfield, Medway, Millis, Milton, Needham, Norfolk, Norwood, Quincy, Sharon, Walpole, Wellesley, Westwood, Weymouth, Wrentham); PLYMOUTH (Hingham and Hull); SUFFOLK

	Rates	Fringes
ELECTRICIAN.....	\$ 51.10	32.65

Teledata System Installer
(ESSEX; MIDDLESEX {Excluding Ashby, Ashland, Ayer, Ft. Devens, Groton, Hokinton, Hudson, Marlboro, Pepperell, Shirley, Stow, Townsend}; NORFOLK {Excluding Avon,

Holbrook, Plainville,
Randolph, Stoughton}; SUFFOLK)...\$ 38.33 30.39

* ELEC0223-011 03/01/2019

BARNSTABLE, BRISTOL (Except Attleboro, North Attleboro,
Seekonk); NORFOLK (Avon, Halbrook, Randolph, Sloughton);
PLYMOUTH (Except Hingham and Hull Townships)

	Rates	Fringes
ELECTRICIAN.....	\$ 41.64	30.14%+11.65
Teledata System Installer (PLYMOUTH COUNTY (except Townships of Hingham and Hull)).....	\$ 35.25	30.10%+11.40

ELEV0004-003 01/01/2019

BARNSTABLE, BRISTOL, ESSEX, MIDDLESEX, NORFOLK AND SUFFOLK

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 59.47	34.125+a+b

FOOTNOTE FOR ELEVATOR MECHANICS

a. Vacation: 6%/under 5 years based on regular hourly rate for
all hours worked. 8%/over 5 years based on regular hourly
rate for all hours worked.

b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence
Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday
after Thanksgiving Day; and Christmas Day.

ELEV0041-007 01/01/2019

BERKSHIRE, HAMPDEN AND HAMPSHIRE

	Rates	Fringes
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ELEVATOR MECHANIC.....\$ 53.11 34.125+a+b

FOOTNOTE:

a.Vacation: 6%/under 5 years based on regular hourly rate for all hours worked. 8%/over 5 years based on regular hourly rate for all hours worked.

b. PAID HOLIDAYS: New Year's Day; Memorial Day; Independence Day; Labor Day; Veterans' Day; Thanksgiving Day; the Friday after Thanksgiving Day; and Christmas Day.

ENGI0004-017 12/01/2018

BARNSTABLE; BRISTOL; ESSEX; MIDDLESEX, NORFOLK; PLYMOUTH; SUFFOLK; and WORCESTER (Remainder of County)

Rates Fringes

Power Equipment Operator:

Excavators & Loaders.....\$ 47.58 28.10

FOOTNOTE:

a. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Labor Day, Memorial day, Independence Day, Patriot's Day, Columbus Day, Veteran's Day, Thanksgiving Day and Christmas Day.

ENGI0004-018 12/01/2018

WORCESTER (Athol, Barre, Brookfield, East Brookfield, hardwick, New Braintree, North Brookfield, Oakham, Petersham, Phllipston, Royalston, Struthbridge, Templeton, Warren, West Brookfield, Winchendon)

Rates Fringes

Power Equipment Operator:

Excavators & Loaders.....\$ 47.58 28.10

FOOTNOTES:

- a. New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Patriots Day, Columbus Day, Veteran's Day, Thanksgiving Day and Christmas Day.

ENGI0098-012 12/01/2016

BERKSHIRE; HAMPDEN and HAMPSHIRE COUNTIES

Rates	Fringes
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Power Equipment Operator:

Excavators & Loaders.....\$ 33.68 23.96+A

FOOTNOTE:

- a. PAID HOLIDAYS: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day and Christmas Day

LABO0022-014 06/01/2018

Rates	Fringes
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Laborers: Mason Tender,

Stone/Stucco.....\$ 33.25 22.92

LABO0473-003 06/01/2018

BERKSHIRE, HAMPSHIRE (Chesterfield, Cummington, Goshen, Middlefield, Plainfield and Worthington)

Rates	Fringes
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Laborers: Mason Tender,
 Stone/Stucco.....\$ 26.40 20.75

 LABO0596-007 06/04/2018

HAMPDEN, HAMPSHIRE (except Chesterfield, Cummington, Goshen,
 Middlefield, Plainfield and Worthington)

Rates Fringes

Laborers: Mason Tender,
 Stone/Stucco.....\$ 31.25 22.19

 PAIN0035-016 01/01/2019

BERKSHIRE, HAMPDEN, AND HAMPSHIRE COUNTIES

Rates Fringes

PAINTER (DRYWALL FINISHING
 ONLY).....\$ 32.33 26.35

 PAIN0035-017 01/01/2019

BARNSTABLE, BRISTOL, ESSEX, MIDDLESEX, NORFOLK, PLYMOUTH,
 SUFFOLK, AND WORCESTER COUNTIES

Rates Fringes

PAINTER (DRYWALL FINISHING
 ONLY).....\$ 39.86 30.25

 * PLAS0534-006 01/01/2019

MIDDLESEX; NORFOLK AND SUFFOLK COUNTIES

Rates Fringes

PLASTERER.....\$ 42.00 36.21

* PLUM0004-006 03/01/2019

MIDDLESEX (Ashby, Ayer-West of Greenville branch of Boston and
Maine Railroad, Ft. Devens, Groton, Shirley, Townsend)
WORCESTER (except Hopedale and Southboro)

Rates Fringes

Plumbers, Pipefitters
(including HVAC work).....\$ 44.81 26.36

* PLUM0012-008 03/01/2019

ESSEX (Ames, Andover, Beverly, Boxford, Byfield, Danvers, Essex,
Georgetown, Gloucester, Groveland, Hamilton, Haverhill,
Ipswich, Lawrence, Manchester, Marblehead, Merrimac, Methuen,
Middleton, Newbury, Newburyport, North Andover, Peabody,
Rockport, Rowley, Salem, Salisbury, Topsfield, Wenham, West
Newbury)

Rates Fringes

PLUMBER.....\$ 52.61 29.93

* PLUM0012-009 03/01/2019

ESSEX (Lynn, Lynnfield, Nahant, Saugus, and Swampscott);
MIDDLESEX (Acton, Arlington, Ashland, Ayer-except west of
Greenville Branch of Boston & Maine Rail Road, Bedford,
Belmont, Billerica, Boxboro, Burlington, Cambridge, Carlisle,
Chelmsford, Concord, Dracut, Dunstable, Everett, Framingham,
Hudson, Holliston, Hopkinton, Lexington, Lincoln, Littleton,
Lowell, Malden, Marlboro, Maynard, Medford, Melrose, Natick,
Newton, North Reading, Pepperell, Reading, Sherborn,
Somerville, Stoneham, Stow, Sudbury, Tewksbury, Tyngsboro,

Wakefield, Waltham, Watertown, Wayland, Westford, Wilmington, Winchester, Wobrun); NORFOLK (Bellingham, Braintree, Brookline, Canton, Cohasset, Dedham, Dover, Foxboro, Franklin, Medfield, Medway, Millis, Milton, Needham, Norfolk, Norwood, Plainville, Quincy, Sharon, Walpole, Wellesley, Westwood, Weymouth, Wrentham); PLYMOUTH (Hingham, Hull, Scituate); SUFFOLK; WORCESTER (Hopedale and Southboro)

	Rates	Fringes
PLUMBER.....	\$ 56.69	29.93

PLUM0051-006 09/01/2018

BARNstable; BRISTOL; PLYMOUTH (Except Hingham, Hull, Scituate)

	Rates	Fringes
Plumbers, Pipefitters (including HVAC work).....	\$ 42.04	29.91

* PLUM0104-005 03/17/2019

BERKSHIRE (Becket, Otis, Sandisfield); HAMPDEN; HAMPSHIRE

	Rates	Fringes
Plumbers, Pipefitters (including HVAC work).....	\$ 40.21	25.90

FOOTNOTE FOR PLUMBERS & STEAMFITTERS:
A. Paid holidays: Independence Day and Labor Day, provided the employee has been employed seven days prior to the holiday by the same employer.

* PLUM0104-011 03/17/2019

BERKSHIRE (Except Becket, Otis, Sandisfield)

	Rates	Fringes
Plumbers, Pipefitters (including HVAC work).....	\$ 40.21	25.90

FOOTNOTE FOR PLUMBERS & STEAMFITTERS:

A. Paid holidays: Independence Day and Labor Day, provided the employee has been employed seven days prior to the holiday by the same employer.

PLUM0537-006 09/01/2016

ESSEX (Ames, Andover, Beverly, Boxford, Byfield, Danvers, Essex, Georgetown, Gloucester, Groveland, Hamilton, Haverhill, Ipswich, Lawrence, Lynn, Lynnfield, Manchester, Marblehead, Merrimac, Methuen, Middleton, Nahant, Newbury, Newburyport, North Andover, Peabody, Rockport, Rowley, Salem, Salisbury, Saugus, Swampscott, Topsfield, Wenham, West Newbury); MIDDLESEX (Acton, Arlington, Ashford, Ayer-except west of Greenville Branch of Boston & Maine Rail Road, Bedford, Belmont, Billerica, Boxboro, Burlington, Cambridge, Carlise, Chelmsford, Concord, Dracut, Dunstable, Everett, Framingham, Hudson, Holliston, Hopkinton, Lexington, Lincoln, Littleton, Lowell, Malden, Marlboro, Maynard, Medford, Melrose, Natick, Newton, North Reading, Pepperell, Reading, Sherborn, Somerville, Stoneham, Stow, Sudbury, Tewksbury, Tyngsboro, Wakefield, Watham, Watertown, Wayland, Westford, Wilmington, Winchester and Woburn), NORFOLK (Bellingham, Braintree, Brookline, Canton, Cohasset, Dedham, Dover, Foxboro, Franklin, Medford, Medway, Millis, Milton, Needham, Norfolk, Norwood, Plainville, Quincy, Sharon, Walpole, Wellesley, Westwood, Weymouth and Wrentham); PLYMOUTH (Hingham, Hull, Scituate); SUFFOLK; WORCHESTER (Hopedale and Southboro)

	Rates	Fringes
Pipefitter including HVAC work...	\$ 50.19	29.76

ROOF0033-006 02/01/2019

BARNSTABLE, BRISTOL, ESSEX, MIDDLESEX, NORFOLK, SUFFOLK,
WORCESTER

	Rates	Fringes
Rofer, Waterproofers/Caulkers...	\$ 43.36	28.32

ROOF0248-004 07/16/2017

BERKSHIRE, HAMPDEN, HAMPSHIRE

	Rates	Fringes
Rofer, Waterproofers/Caulkers...	\$ 31.75	23.66
ROOFER: Slate & Tile Roof.....	\$ 32.25	24.16

SHEE0017-004 10/01/2015

WORCESTER (Harvard, Lancaster)

	Rates	Fringes
Sheet metal worker.....	\$ 35.60	30.05

SHEE0017-010 10/01/2015

BARNSTABLE, BRISTOL (Acushnet, Dartmouth, Dighton, Fairhaven,
Fall River, Freetown, New Bedford, Rehoboth, Seekonk, Somerset,
Swansea, Westport); PLYMOUTH (Marion, Mattapoissett, Rochester,
Wareham)

	Rates	Fringes
Sheet Metal Worker.....	\$ 35.60	30.05

SHEE0017-011 10/01/2015

BRISTOL (Attleboro, Berkley, Easton, Mansfield, North
Attleboro, Norton, Raynham, Taunton); ESSEX; MIDDLESEX;
NORFOLK; PLYMOUTH (Except Marion Mattapoisett, Rochester,
Wareham); SUFFOLK

	Rates	Fringes
Sheet Metal Worker.....	\$ 35.60	30.05

SHEE0063-002 01/01/2016

WORCESTER (Except Harvard & Lancaster)

	Rates	Fringes
Sheet metal worker.....	\$ 31.57	28.12

SHEE0063-004 01/01/2016

BERKSHIRE, HAMPDEN AND HAMPSHIRE COUNTIES

	Rates	Fringes
Sheet metal worker.....	\$ 31.57	28.12

SUMA2003-001 01/08/2003

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 39.38	
FLOOR LAYER: Carpet.....	\$ 31.96	
LABORER		
Unskilled.....	\$ 18.73	6.33

PAINTER

Brush & Roller, excluding
drywall finishing.....\$ 30.86

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====
Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification
and wage rates that have been found to be prevailing for the
cited type(s) of construction in the area covered by the wage
determination. The classifications are listed in alphabetical

order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion

date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted

because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION"

SECTION 00 82 10

PERMITS

PART 1 GENERAL

1.01 CONTRACT DOCUMENTS

- A. The general provisions of the Contract, including General and Supplemental Conditions and General Requirements, apply to the work specified in this section.

1.02 PERMITS

- A. The Contractor shall be responsible for obtaining and complying with all permits required of his equipment, work force, or particular operations (such as blasting and fuel storage permits, etc.) in the performance of the Contract. All costs associated with obtaining permits will be included in the price of the work.
- B. If included as part of this project, The Contractor shall be responsible for complying with requirements of the Local Conservation Commission and the Cambridge Watershed Protection District. All costs associated with complying with the conditions will be included in the price of the work.
- C. The Contractor shall be responsible for obtaining and complying with the requirements of the Street Opening and Trench Permits required by the City Department of Public Works in the performance of the Contract. All costs associated with complying with the conditions of the permits will be included in the price of the work. All costs associated with obtaining permits will be waived by the City.

END OF SECTION

DIVISION 1

TECHNICAL SPECIFICATIONS

CITY OF WALTHAM

HARDY APARTMENTS RE-ROOFING
AND EXTERIOR REPAIRS
51 Lake Street, Waltham MA

TECHNICAL SPECIFICATIONS

HARDY APARTMENTS, RE-ROOFING and
EXTERIOR REPAIRS
54 LAKE STREET, WALTHAM, MA 02451

LIVERMORE EDWARDS AND ASSOCIATES
Architect-of-Record

END OF SEALS

PROFESSIONAL SEALS
000005-1

August 15, 2019

MGL CHAPTER 149 - DESIGN-BID-BUILD PROJECTS

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DIVISION 02 - EXISTING CONDITIONS

Not Used

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Section 031330	Concrete Repair
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Not Used

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DIVISION 07 - THERMAL AND MOISTURE PROTECTION

Section 076123 Gutters and Downspouts (**Roofing Filed Sub-Bid**)

Section 076200 Sheet Metal Flashing (**Roofing Filed Sub-Bid**)

Section 075323 EDPM Roofing (**Roofing Filed Sub-Bid**)

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DIVISION 08 - OPENINGS

Not Used

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Section 099000 Painting and Coating (**Filed Sub-Bid**)

DIVISION 10 - SPECIALTIES

Not Used

DIVISION 11 - EQUIPMENT

Not Used

DIVISION 12 - FURNISHINGS

Not Used

END OF TABLE OF CONTENTS

FORM FOR GENERAL BID

SEC. 00 00 10

A. The undersigned proposes to furnish all labor and materials required for the project

Hardy Apartments Re-Roofing and Exterior Repairs
51 Lake Street
Waltham, MA

In accordance with the documents dated August 15, 2019 prepared by

Livermore Edwards and Associates
14 Spring Street
Waltham, MA 02451

B. This bid includes Addenda numbered _____.

C. The Proposed Contract Price is:

_____ Dollars

Bid Amount in words

\$ _____

Bid Amount in Numbers

D. The subdivision of the proposed contract price is as follows:

ITEM 1. (The work of the General Contractor, being all work other than that covered by Item 2.)

TOTAL OF ITEM 1:\$ _____

ITEM 2. Sub-Bids as follows:

Sub- Trade	Name of Filed Sub-Bidder	Sub- Bid Amount
<u>ROOFING</u>	_____	_____
<u>PAINTING</u>	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

TOTAL OF ITEM 2:\$ _____

The undersigned agrees that each of the above named sub-bidders will be used for the work indicated at the amount stated, unless a substitution is made. The undersigned further agrees to pay the premiums for the performance and payment bonds furnished by sub-bidders as requested herein and that all of the cost of all such premiums is included in the amount set forth in Item I of this bid.

The undersigned agrees that if selected as general contractor, they will promptly confer with the awarding authority on the question of sub-bidders; and that the awarding authority may substitute for any sub-bid listed above a sub-bid filed with the awarding authority by another sub-bidder for the sub-trade against whose standing and ability the undersigned makes no objection; and that the undersigned will use all such finally selected sub-bidders at the amounts named in their respective sub-bids and be in every way as responsible for them and their work as if they had been originally named in this general bid, the total contract price being adjusted to conform thereto.

- E. The undersigned agrees that, if selected as general contractor, he will within five days, Saturdays, Sundays, and legal holidays excluded, after presentation thereof by the awarding authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price, provided, however, that if there is more than 1 surety company, the surety companies shall be jointly and severally liable.

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 10 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 applicable to awards made subject to section 44A.

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 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 Bidder)

By _____
(Title)

(Business Address)

END OF PROPOSAL FORM

FORM FOR SUB-BID

SECT. 00 00 11

TO ALL GENERAL BIDDERS EXCEPT THOSE EXCLUDED:

- A. The undersigned proposes to furnish all labor and materials required for the project:

Hardy Apartments Re-Roofing and Exterior Repairs
51 Lake Street
Waltham, MA

In accordance with the documents dated August 15, 2019 prepared by:

Livermore Edwards and Associates
14 Spring Street
Waltham, MA 02451

- B. This bid includes Addenda numbered _____.

- C. The Proposed Contract Price is:

_____ Dollars
Bid Amount in words

\$ _____
Bid Amount in Numbers

- D. This Sub-Bid may be used by any General Bidder EXCEPT:

This Sub-Bid may ONLY be used by the following General Bidders:

The undersigned agrees that, if selected as a sub-bidder, they will, within five days, Saturdays, Sundays and legal holidays excluded, after presentation of a subcontract by the general bidder selected as the general contractor, execute with such general bidder a subcontract in accordance with the terms of this

sub-bid, and contingent upon the execution of the general contract, and, if requested to do so in the general bid by such general bidder, who shall pay the premiums therefor, furnish a performance and payment bond of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the awarding authority, in the full sum of the subcontract price.

The names of all persons, firms and corporations furnishing to the undersigned labor or labor and materials for the class or classes or part thereof of work for which the provisions of the section of the specifications for this sub-trade require a listing in this paragraph, including the undersigned if customarily furnished by persons on his own payroll and in the absence of a contrary provision in the specification the name of each such class of work or part thereto and the bid price for such class of work or part thereof are:

NAME	CLASS OF WORK	BID PRICE
_____	_____	\$ _____
_____	_____	\$ _____
_____	_____	\$ _____

The undersigned agrees that the above list of bids of the undersigned represents bona fide bids based on hereinbefore described plans, specifications and addenda, and that, if the undersigned is awarded the contract, they will be used for the work indicated at the amounts stated, if satisfactory to the awarding authority.

The undersigned further agrees to be bound to the general contractor by the terms of the hereinbefore described plans, specifications (including all general conditions stated therein) and addenda, and to assume toward him all the obligations and responsibilities that the contractor, by those documents, assumes toward the owner.

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 10 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 applicable to awards of subcontracts subject to section 44F.

The undersigned further certifies under penalty of perjury that this sub-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 there under.

Date _____

(Name of Bidder)

By _____
(Title)

(Business Address)

(Signature)

END OF PROPOSAL FORM

SECTION 010100

SUMMARY OF WORK

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. The work of this Contract shall consist the removal of an existing membrane roof and the re-installation of a new roofing membrane with additional roof insulation. Additionally the work consists of a new railing and repairs, repairs at the elevator lobby windows and repainting of various elements of the exterior of the building.
- B. With the exception of some repairs to the existing elevator lobbies the work will take place outside of the existing building.
- C. The construction will take place in and on an occupied residential building. The Contractor will conduct his operations so as not to interfere with the ongoing operations of other building tenants. Construction work areas will be protected from intrusion by building occupants. Work in the interior of the building must be done so as not to interrupt the use of the elevator and Contractors tools must be removed and the worksite made safe during non-construction hours.

1.2 WORK SEQUENCE

- A. The work shall commence on a timely basis and thereafter be carried out in a diligent and forthright manner, with a proper supply of labor, materials, plant, and equipment to assure the satisfactory completion of the work.
- B. For the work to be completed under this Contract the Contractor is notified that time is of the essence. The Contractor is expected to meet the completion dates set by the Owner for the various parts of the Project.

1.3 CONTRACTOR'S USE OF SITE AND SURROUNDING AREAS

- A. Prior to beginning work of the Contract, the Contractor shall meet with the Owner and the Architect to determine procedures regarding access to and use of existing buildings and site, exterior staging and storage areas, tree protection, special site conditions, and any other restrictions regarding the use of the site.
- B. Where work on public roads or walks, or other work on municipal property or easement is done, all such work shall conform to the rules, regulations, and specifications of the public agencies having jurisdiction. All permits and fees for such off-site work shall be obtained and paid for by the Contractor.

- C. The Contractor shall keep all public and private access roads and walks clear of debris caused by this work during the entire term of the Contract. He shall repair all public and private streets, drives, curbs, walks, and other improvements where disturbed by work of, or related to, building operations, leaving them in as good condition after completion of the work as before operations started, in accordance with rules, regulations, and specifications of the public agencies having jurisdiction.
- D. Parking of workmen's personal vehicles on the site shall be only as specifically permitted by the Owner and Architect.
- E. Access roads and fire-lanes on and about the site shall be kept open and free at all times, except moving traffic, for passage of emergency vehicles.
- F. A reasonable sum (cost of equivalent replacement) will be deducted from the Contract Sum for any permanent damage to existing trees or plantings which are outside the limit-of-work lines but on the Owner's property or which are within the limit-of-work lines and are designated to be protected. Contractor shall be fully responsible for damage to trees and plants off the Owner's property.
- G. The Contractor shall maintain as low a level of construction noise as practicable in order not to create a disturbance in the neighborhood and meeting the requirements of the local jurisdiction.
- H. No smoking will be allowed inside the building at the worksite.
- J. Low VOC products will be used to protect the residents from harmful or odorous fumes.

1.4 OWNER'S OCCUPANCY

- A. Prior to the date of Substantial Completion, the Contractor agrees to the use of building systems provided under this contract by the Owner provided the Owner secures written consent of the Contractor, such consent not to be unreasonably withheld.
- B. If the Project has not been substantially completed by the specified date, the Owner may from time to time occupy the buildings or any portion of any building as the Work thereon is completed to such extent that they are usable for the purpose for which they are intended.
- C. The Owner will give notice to the Contractor prior to any such occupancy, subject to the following:
 - 1. In case of partial occupancy prior to the substantial completion date, the Owner shall secure endorsement from the insurance carrier and consent of the Surety permitting occupancy during the remaining period of construction.

2. In case of partial occupancy after the substantial completion date, the Contractor shall extend all necessary insurance coverage until final acceptance of the Project. Owner's use and occupancy prior to final acceptance shall not relieve the Contractor of his responsibility to maintain the insurance coverage required by the Contract Documents.
- D. Occupancy of any building or any portion thereof by the Owner shall not constitute an acceptance of the Work or portion thereof nor relieve Contractor of responsibility to perform any of the required work not completed at the time of occupancy.
- E. Contractor shall not be required to furnish heat, light, or water used by the Owner in such occupancy, nor pay maintenance costs, nor shall be responsible for wear and tear or damage in the occupied buildings, or portion thereof resulting directly from such occupancy.

1.5 CONTRACT DOCUMENTS

- A. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner; anything not expressly set forth but which is reasonably implied or necessary for the proper performance of the project shall be included.
- B. Writing style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, "Provide tile" means "Contractor shall provide tile."
- C. Existing Conditions: Notify Owner of existing conditions differing significantly from those indicated on the drawings. Do not remove or alter structural components without prior written approval.
- D. Definitions for terms used in the specifications:
 1. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.
 2. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of "Approved" in General and Supplementary Conditions.
 3. Match Existing: Match existing as acceptable to the Owner and Architect.

1.6 EXAMINATION OF SITE

- A. Prior to bidding the Contractor shall thoroughly examine the building site and the Contract Documents to ensure his knowledge of conditions and requirements affecting the work. No claim for extra compensation or extension of time will be allowed for

Contractor's failure to comply with this requirement nor will any condition at the site, whether or not in agreement with conditions shown or called for on the Bid and Contract Documents, be allowed as a basis for such claims, except as may be otherwise specifically provided for.

1.7 DISCOVERY

- A. If during the work, articles of unusual value, or of historical or archaeological significance are encountered the ownership of such articles is retained by the Owner, and information regarding their discovery shall be immediately furnished to the Architect. Resolution shall be handled as a change-in-the-work.

1.8 CONSTRUCTION WASTE MANAGEMENT

- A. The Project requires that construction waste be recycled so far as is practical. A construction waste management plan is required. The Architect will review and monitor the record the Contractor's efforts in this regard and will require that management reports are submitted before approval of payment requisitions.

1.9 PROJECT CONDITIONS

- A. Hazardous Materials: It is believed that that the building does not contain any hazardous materials for areas involved under this contract.
 1. If materials suspected of containing hazardous materials are encountered that are in the way of accomplishing the work of this contract, do not disturb; immediately notify Architect and Owner. Alternative methods of accomplishing the work will be used or the hazardous materials will be removed by Owner under a separate contract.

1.10 OWNER PURCHASED - OWNER INSTALLED ITEMS

- A. The following items will be purchased and installed by the Owner. Provide access to the site as required. Provide coordination with the contractor(s) providing and installing this work. Prepare substrates to receive this work under this contract. The Contractor shall protect all Owner installed items until project completion.
 1. The Owner will purchase and install the following items of equipment:
 - NA
 2. The Owner will purchase and install the following items of furniture:
 - NA

1.11 OWNER PURCHASED - CONTRACTOR INSTALLED ITEMS

A. The following items will be purchased by the Owner and installed by the Contractor.

- NA

1.12 CONTRACTOR PURCHASED - OWNER INSTALLED ITEMS

A. The Contractor will purchase and deliver to the site the following items to be installed by the Owner or the Owner's representatives:

- NA

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 010700

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Contractor shall be responsible for all cutting, fitting, and patching, including attendant excavation and backfill, required to complete the Work or to:
 - 1. Make its several parts fit together properly.
 - 2. Uncover portions of the Work to provide for installations of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to requirements of Contract Documents.
 - 5. Remove samples of installed work as specified for testing.
 - 6. Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.
 - 7. Provide patching in surfaces for items that have been removed as a result of demolition under this contract.

1.02 RELATED REQUIREMENTS

- A. Substitutions and product options: Section 016000, MATERIAL AND EQUIPMENT.

1.03 QUALITY ASSURANCE

- A. Permission to patch any items of work does not imply a waiver of the Architect's right to require complete removal and replacement in said areas and of said items if, in Architect's opinion, said patching does not satisfactorily restore the quality and appearance of the work.
- B. Requirements for Structural Work: Do not reduce load-carrying capacity or load/deflection ratio.
- C. Operational and Safety Limitations: Do not cut and patch operational elements and safety-related components in a manner resulting in a reduction of capacities to perform in the manner intended or resulting in decreased operational life, increased maintenance, or decreased safety.

- D. Visual Requirements: Do not cut and patch exposed work in exterior and occupied spaces so that visual qualities are reduced or cut and patch work is visible, as judged by the Architect. Remove and replace unsatisfactory work as directed by Architect.

1.04 SUBMITTALS

- A. Submit a written request to Architect well in advance of executing any cutting or alteration which affects:
 - 1. Work of the Owner or any separate contractor.
 - 2. Structural value or integrity of any element of the Project.
 - 3. Integrity or effectiveness of weather-exposed or moisture-resistant elements or systems.
 - 4. Efficiency, operational life, maintenance, or safety of operational elements.
 - 5. Visual qualities of sight-exposed elements.
- B. Request shall include:
 - 1. Identification of the Project.
 - 2. Description of affected work.
 - 3. The necessity for cutting, alteration, or excavation.
 - 4. Effect on work of Owner or any separate contractor, or on structural or weatherproof integrity of project.
 - 5. Description of proposed work:
 - a. Description of why cutting and patching cannot (reasonably) be avoided.
 - b. Scope of cutting, patching, alteration, or excavation.
 - c. Methods.
 - d. How structural elements (if any) will be reinforced.
 - e. Trades who will execute the work.
 - f. Products proposed to be used.
 - g. Extent of refinishing to be done.

- h. Approximate dates of the work, and anticipated results in terms of variations from the work as originally completed (structural, operational, visual, and other qualities of significance).
- 6. Alternatives to cutting and patching.
- 7. Cost proposal, when applicable.
- 8. Written permission of any separate contractor whose work will be affected.
- C. Should conditions of work or the schedule indicate a change of products from original installation, submit request for substitution as specified in Section 01600, MATERIALS AND EQUIPMENT.
- D. Submit written notice to Architect designating date and time the work will be uncovered.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Except as otherwise indicated or authorized by the Architect, provide materials for cutting and patching shall be selected to produce equal-or-better work than the work being cut and patched in terms of performance characteristics and visual effect. Use materials identical to original materials where feasible and satisfactory.
- B. Comply with specifications and standards for each specific product involved.

PART 3 EXECUTION

3.01 INSPECTION

- A. Inspect existing conditions of Project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect conditions affecting installation of Products, or performance of work.
- C. Report unsatisfactory or questionable conditions to Architect in writing; do not proceed with work until Architect has provided further instructions.

3.02 PREPARATION

- A. Provide adequate temporary support as necessary to assure structural value or integrity of affected portion of work.

- B. Provide devices and methods to protect other portions of Project from damage.
- C. Provide protection from elements for that portion of the Project which may be exposed by cutting and patching work, and maintain excavations free from water.

3.03 PERFORMANCE

- A. Execute cutting and demolition by methods which prevent damage to other work and provide proper surfaces to receive installation of repairs.
 - 1. In general, where mechanical cutting is required, cut work with sawing and grinding tools, not with hammering and chopping tools. Core drill openings through concrete work.
- B. Employ excavating and backfilling methods that prevent settlement or damage to other work.
- C. Employ original installer or fabricator to cut and patch for:
 - 1. Weather-exposed or moisture-resistant elements.
 - 2. Sight-exposed finished surfaces.
- D. Execute fitting and adjustment of products to provide specified products, functions, tolerances, and finishes.
- E. Restore work which has been but or removed; install new products to provide complete work in accordance with requirements of Contract Documents.
- F. Fit work airtight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces.
- G. Patch with seams which are durable and as invisible as possible. Comply with specified tolerances for the work.
- H. Restore exposed finishes of patched areas; extend finish restoration to retained work to eliminate evidence of patching.
 - 1. Where patch occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing patch.
- I. Refinish entire surfaces as necessary to provide even finish to match adjacent finishes:
 - 1. For continuous surfaces, refinish to nearest intersection.
 - 2. For an assembly, refinish entire unit.

3.04 CLEANING

- A. In addition to cleaning specified in Section 01710, clean all areas affected by the work of this Section.
- B. Completely remove paint, mortar, oils, putty and similar items.
- C. Thoroughly clean piping, conduit, ductwork and similar elements before applying paint or other finishes. Restore all damaged pipe and ductwork coverings to its original condition.

END OF SECTION

SECTION 010900

REFERENCE STANDARDS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Abbreviations and acronyms used in Contract Documents to identify reference standards.

1.02 QUALITY ASSURANCE

- A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or applicable codes established stricter standards.
- B. Publication Date: The publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

1.03 ABBREVIATIONS AND NAMES OF ORGANIZATIONS

- A. Obtain copies of referenced standards direct from publication source, when needed for proper performance of Work, or when required for submittal by Contract Documents.

AA	Aluminum Association
AABC	Associated Air Balance Council
AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADC	Air Diffusion Council
AGC	Associated General Contractors of America
AI	Asphalt Institute
AISC	American Institute of Steel Construction
AITC	American Institute of Timber Construction
AISI	American Iron and Steel Institute
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
ARI	Air Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASPA	American Sod Producers Associates
ASTM	American Society for Testing and Materials
AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWS	American Welding Society
AWWA	American Water Works Association

CRSI	Concrete Reinforcing Steel Institute
EJMA	Expansion Joint Manufacturer's Association
FGMA	Flat Glass Marketing Association
FM	Factory Mutual System
FS	Federal Specifications
GA	Gypsum Association
IEEE	Institute of Electrical and Electronics Engineers
IMIAC	International Masonry Industry-All Weather Council
ISA	International Society of Arboriculture
MFMA	Maple Flooring Manufacturers Association
MIL	Military Specifications
ML/SFA	Metal Lath/Steel Framing Association
NAAMM	National Association of Architectural Metal Manufacturers
NCMA	National Concrete Masonry Association
NEBB	National Environmental Balancing Bureau
NEMA	National Electrical Manufacturers' Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
NRCA	National Roofing Contractors Association
NSWMA	National Solid Waste Management Association
NTMA	National Terrazzo and Mosaic Association
NWMA	National Woodwork Manufacturers Association
PCA	Portland Cement Association
PCI	Prestressed Concrete Institute
PS	Product Standard
SCPI	Structural Clay Products Institute
SDI	Steel Deck Institute
SDI	Steel Door Institute
SIGMA	Sealed Insulating Glass Manufacturers Association
SJI	Steel Joint Institute
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SPRI	Single Ply Roofing Institute
SSPC	Steel Structures Painting Council
TAS	Technical Aid Series
TCA	Tile Council of America, Inc.
UL	Underwriters' Laboratories, Inc.
MCLIB	West Coast Lumber Inspection Bureau

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 012000

PROJECT MEETINGS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. The Contractor shall schedule and administer pre-construction meeting, periodic progress meetings, and specially called meetings throughout progress of the Work.
- B. The Contractor shall:
 - 1. Prepare agenda for meetings.
 - 2. Distribute written notice of each meeting four days in advance of meeting date.
 - 3. Make physical arrangements for meetings.
 - 4. Preside at the meetings.
 - 5. Record the minutes; include significant proceedings and decisions.
 - 6. Reproduce and distribute copies of minutes within three days after each meeting.
 - a. To participants in the meeting.
 - b. To parties affected by decisions made at the meeting.
 - c. Furnish one copy of minutes to Architect.
- C. Representatives of contractors, subcontractors, and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.
- D. Architect may attend meetings to ascertain that Work is expedited consistent with Contract Documents and construction schedules.

1.02 RELATED REQUIREMENTS

- A. Shop Drawings: Section 013400, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Record documents: Section 017200, PROJECT RECORD DOCUMENTS.
- C. Operation and maintenance data: Section 017300, OPERATING AND MAINTENANCE DATA.

1.03 PRE-CONSTRUCTION MEETING

- A. Schedule within 15 days after date of Notice to Proceed.
- B. Location: A central site, convenient for all parties, designated by Contractor.
- C. Attendance:
 - 1. Owner's Representative.
 - 2. Architect and his Professional Consultants.
 - 3. Resident Project Representative.
 - 4. Contractor's Superintendent.
 - 5. Major Subcontractors.
 - 6. Major suppliers.
 - 7. Others as appropriate.
- D. Suggested Agenda:
 - 1. Distribution and discussion of:
 - a. List of major subcontractors and suppliers.
 - b. Projected Construction Progress Schedules.
 - 2. Critical work sequencing.
 - 3. Major equipment deliveries and priorities.
 - 4. Project Coordination.
 - a. Designation of responsible personnel.
 - 5. Procedures and processing of:
 - a. Field Decisions.
 - b. Proposal Requests.
 - c. Submittals.
 - d. Change Orders.

- e. Application for Payment.
- 6. Adequacy of distribution of Contract Documents.
- 7. Procedures for maintaining Record Documents.
- 8. Use of premises:
 - a. Office, work, and storage areas.
 - b. Owner's requirements.
- 9. Construction facilities, controls, and construction aids.
- 10. Temporary utilities.
- 11. Safety and first-aid procedures.
- 12. Security procedures.
- 13. Housekeeping procedures.

1.04 PROGRESS MEETINGS

- A. Schedule regular periodic meetings, as required.
- B. Hold called meetings as required by progress of the Work.
- C. Location of the meetings: Project site at location designated by the Contractor.
- D. Attendance:
 - 1. Owner
 - 2. Architect, and his professional consultants as needed.
 - 3. Subcontractors as appropriate to the agenda.
 - 4. Suppliers as appropriate to the agenda.
 - 5. Mechanical and electrical subcontractors.
 - 6. Others.
- E. Suggested Agenda:

1. Review and approval of minutes of previous meeting.
2. Review of Work progress since previous meeting.
3. Field observations, problems, conflicts.
4. Problems which impede Construction Progress Schedule.
5. Review of off-site fabrication, and delivery schedules.
6. Corrective measures and procedures to regain project schedule.
7. Revisions to Construction Progress Schedule.
8. Progress schedule during succeeding work period.
9. Coordination of schedules.
10. Review submittal schedules; expedite as required.
11. Maintenance of quality standards.
12. Pending changes and substitutions.
13. Review proposed changes for:
 - a. Effect on Construction Progress Schedule and on completion date.
 - b. Effect on other contracts of the Project.
14. Other business.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 013000

SUBMITTALS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Progress Schedules.
- B. Schedule of Values.
- C. Manufacturer's Certificates.

1.02 RELATED DOCUMENTS

- A. Testing Laboratory Reports: Section 014100, TESTING LABORATORY SERVICES.
- B. Manufacturer's instructions: Section 016000, MATERIAL AND EQUIPMENT.
- C. Contractor's list of Products: Section 016000, MATERIAL AND EQUIPMENT.
- D. Shop drawings submittals: Section 013400, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- E. Closeout submittals: Section 017200, PROJECT RECORD DOCUMENTS; Section 017300, OPERATING AND MAINTENANCE DATA and Section 017400, WARRANTIES AND BONDS.

1.03 PROCEDURES

- A. General
 - 1. Deliver submittals to Architect at address listed on cover of Project Manual. Send 1 copy of a complete submittal to Owner concurrently.
 - 2. Provide each submittal in form and content acceptable to Architect.
 - 3. After Architect review of submittal, if not approved, revise and resubmit as required, identifying changes made since previous submittal.
 - 4. Distribute copies of approved submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.
 - 5. Resubmit periodically when conditions are changed so as to warrant resubmission or as directed by the Architect.

6. The Contractor shall keep a submittal log of all submittals in a format approved by the Architect and Owner that tracks each submittal including date of submittal, distribution, return date and action. This submittal log will be prepared and reviewed in advance of each project meeting.
- 6 Within 5 days of notice to proceed all submittals will be made on the following long lead time items.

1. NA

B. Progress Schedules

1. Prepare schedule in bar chart form or alternate form as approved by Architect.
2. Show progress of job on weekly basis for each major element of construction.
3. Identify fixed milestones and critical path elements.
4. Revise schedule on a weekly basis and submit with application for payment. Submit initial schedule within 10 days after award of contract.
5. For subsequent submittals, provide written narrative explaining deviations from originally submitted schedule.
6. Submit schedule of delivery of major items that have long lead times or that are not readily available from local suppliers. Coordinate with submittal schedule to show adequate lead time from approvals for all items.

C. Schedule of values

1. Submit schedule of values for the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.
2. The sum of all values listed in the schedule shall equal the total contract sum.
3. The application for payment shall use the same values and categories as the approved schedule of values.
4. Resubmit schedule of values until approval by Architect is obtained.
5. Submit schedule of values within 10 days of award of project. Final approval must be obtained before approval of first application for payment.

D. Manufacturer's Certificates

1. Submit certificates in duplicate, in accordance with the requirements of each specification section.

2. Provide proper identification of each submittal; project, contractor, subcontractor, supplier and specification section or drawing number.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 013400

SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submit Shop Drawings, Product Data, and Samples required by Contract Documents.

1.02 RELATED REQUIREMENTS

- A. Definitions and Additional Responsibilities of Parties: GENERAL CONDITIONS and MODIFICATIONS TO THE GENERAL CONDITIONS.
- B. Submittal of manufacturer's certificates: Section 013000, SUBMITTALS.
- C. Record documents: Section 017200, PROJECT RECORD DOCUMENTS.

1.03 SUBMITTAL SCHEDULE

- A. A Schedule of shop drawings, product data, and samples shall be submitted indicating by trade the date by which each such item is to be submitted and the date by which final approval of each item must be obtained. This schedule shall be revised as required by conditions of the Work, subject to Architect's approval. In each case, reasonable time must be permitted for Architect's review, Consultant's review, and for resubmittals if required.

1.04 SHOP DRAWINGS

- A. Drawings shall be presented in a clear and thorough manner.
 - 1. Details shall be identified by reference to Project name and number, Architect's name, sheet and detail number, schedule or room numbers shown on Contract Drawings.
- B. Minimum sheet size: 8-1/2 x 11 in.
- C. Each submittal shall be accompanied by appropriate transmittal form.
- D. With approval of the Architect submittals may be provided by internet in PDF format.

1.05 PRODUCT DATA

- A. Preparation
 - 1. Clearly mark each copy to identify pertinent products or models.
 - 2. Show performance characteristics and capacities.
 - 3. Show dimensions and clearances required.
 - 4. Show wiring and piping diagrams and controls.
 - B. Manufacturer's standard schematic drawings and diagrams:
 - 1. Modify drawings and diagrams to delete information not applicable to the Work, and to identify clearly applicable products and work.
 - 2. Supplement standard information to provide information specifically applicable to the Work.
- 1.06 SAMPLES

- A. Office samples shall be of sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of the product, with integrally related parts and attachment devices.
 - 2. Full range of color, texture, and pattern.
- B. Field samples and mock-ups:
 - 1. Contractor shall erect, at the Project site, at a location acceptable to the Architect.
 - 2. Size or area: that specified in the respective specification section.
 - 3. Fabricate each sample and mock-up complete and finished.
 - 4. Remove mock-ups at conclusion of Work or when acceptable to the Architect, unless incorporated in the Work.

1.07 CONTRACTOR RESPONSIBILITIES

- A. Review Shop Drawings, Product Data, and Samples prior to submission.
- B. Determine and verify:

1. Field measurements.
 2. Field construction criteria.
 3. Catalog numbers and similar data.
 4. Conformance with specifications.
- C. Submit Shop Drawings, Product Data and Samples for individual items of work as single package.
- D. Submit interior finish samples as single package.
- E. Coordinate each submittal with requirements of the Work and of the Contract Documents.
- F. Notify the Architect in writing, at time of submission, of any deviations in the submittals from requirements of the Contract Documents.
- G. Do not begin work that requires Submittals until return of Submittals with Architect's approval.

1.08 SUBMISSION REQUIREMENTS

- A. Make submittals promptly in accordance with approved schedule, and in such sequence as to cause no delay in the Work or in the work of any other contractor.
- B. Number of submittals required:
1. Shop Drawings:
 - a. Architectural Work: Submit one reproducible transparency and one opaque reproduction.
 - b. Engineering Consultant's Work: Submit one reproducible transparency and one opaque reproduction directly to the consultant; submit one opaque reproduction to the Architect with a copy of the transmittal sent to the consultant. The Consultant's review and comments will be made on the reproducible which will be forwarded to the Architect who will then return the reproducible to the Contractor.
 2. Product Data:

- a. Architectural Work: Submit the number of copies which the Contractor requires, plus two which will be retained by the Architect.
 - b. Engineering Consultant's Work: Submit the number of copies which the Contractor requires, plus three to the consultant and one to the Architect with a copy of the transmittal sent to the consultant. The Consultant's review and comments will be made on the Product Data which will be forwarded to the Architect who will then return the Product Data to the Contractor.
3. Samples: Submit the number stated in each specification section.
- C. Submittals shall contain:
1. The date of submission and the dates of any previous submissions.
 2. The Project title and number.
 3. Contract identification.
 4. The names of:
 - a. Contractor.
 - b. Supplier.
 - c. Manufacturer.
 5. Identification of the product, with the specification section number.
 6. Field dimensions, clearly identified as such.
 7. Relation to adjacent and critical features of the Work and materials.
 8. Reference to shop drawings to the work of other trade(s) shall designate such trade(s); the term "By Others" shall not be used.
 9. Applicable standards, such as ASTM, ANSI, or Federal Specification Numbers.
 10. Identification of deviations from Contract Documents.
 11. Identification of revisions on resubmittals.
 12. An 8 in. X 3 in. blank space for Contractor and Architect stamps.

13. Contractor's stamp, initialed or signed, certifying to review of submittal, verification of products, field measurements and field construction criteria, and coordination of the information within the submittal with requirements of the Work and of Contract Documents.

1.09 ARCHITECT'S REVIEW

- A. Architect's stamp shall contain the following data:

"Review/approval neither extends nor alters any contractual obligations of the Architect or Contractor.

APPROVED

APPROVED AS CORRECTED

REVISE AND RESUBMIT

REJECTED"

- B. The Architect will insert the date of action taken and an identification of the person taking the action.
- C. Explanation of the designated actions is as follows:

APPROVED: No corrections, no marks: Resubmission not required.

APPROVED AS CORRECTED: Minor amount of corrections; all items can be fabricated without further corrections to original submittal; checking is complete and all corrections are deemed obvious without ambiguity. Resubmission not required.

REVISE AND RESUBMIT: Amount of corrections requires that noted items must not be fabricated without further corrections of original submittal; checking is complete; details of items noted by checker are to be clarified further before full approval can be given for fabrication. Resubmission required.

REJECTED: Submittal is rejected as not in accord with the Contract Documents, too many corrections, or other justifiable reasons. When returning submittal, Architect will state reasons for rejection. Correct and resubmit. Do not fabricate.

1.09 RESUBMISSION REQUIREMENTS

- A. Make any corrections or changes in the submittals required by the Architect and resubmit until approved.

- B. Shop Drawings and Product Data:
 - 1. Revise initial drawings or data, and resubmit as specified for the initial submittal.
 - 2. Indicate any changes which have been made other than those requested by the Architect.
- C. Samples: Submit new samples as required for initial submittal.

1.10 DISTRIBUTION

- A. Distribute reproductions of Shop Drawings and copies of Product Data which carry the Architect's stamp of approval to:
 - 1. Job site file.
 - 2. Record Documents file.
 - 3. Other affected contractors.
 - 4. Subcontractors.
 - 5. Supplier or fabricator.
 - 6. Owner
- B. Distribute samples which carry the Architect stamp of approval as directed by the Architect.

1.11 ARCHITECT DUTIES

- A. Review submittals with reasonable promptness and in accord with the schedule and the requirements of the GENERAL CONDITIONS.
- B. Affix stamp and initials or signature, and indicate requirements for resubmittal, or approval of submittal.
- C. Return submittals to Contractor for distribution, or for resubmission.

PART 2 PRODUCTS

Not applicable to this section.

CITY OF WALTHAM

HARDY APARTMENTS RE-ROOFING
AND EXTERIOR REPAIRS
51 Lake Street, Waltham MA

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 015300

BARRIERS AND ENCLOSURES

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Furnish, install and maintain suitable barriers and enclosures as required to prevent public entry, and to protect the Work, and existing facilities from construction operations; remove when no longer needed, or at completion of Work.
- B. Barriers within the building are required to prevent building occupants from entering into a work area. Installation and removal of such barriers will be made according to the scheduled execution of the construction as coordinated with the building manger.

1.02 RELATED REQUIREMENTS

- A. Carpentry work: Section 061000 – Rough Carpentry.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

- A. Materials may be new or used, suitable for intended purpose, and shall meet requirements of applicable codes and standards.

2.02 FENCING

- A. Minimum fence height shall be 6 ft., or as indicated on Drawings.
- B. Chain Link Fence:
 - 1. No. 11 gauge, 2 in. mesh, 72 in. high galvanized chain link fabric, with extension arms and three strands of galvanized barbed wire.
 - 2. Galvanized steel posts; 1-1/2 in. line posts and 2 in. corner posts.

2.03 BARRIERS

- A. Materials to Contractor's option, as appropriate to serve required purpose.

2.04 ENCLOSURES

- A. Materials to Contractor's option, as appropriate for sufficient protection of work and materials.

PART 3 - EXECUTION

3.01 GENERAL

- A. Install facilities of a neat and reasonable uniform appearance, structurally adequate for required purposes.
- B. Maintain barriers and enclosures during entire construction period.
- C. Relocate barriers and enclosures as required by progress of construction.

3.02 FENCES

- A. Prior to start of work at the Project site, install enclosure fence with suitably locked entrance gates.
 - 1. Locate fence to enclose substantially entire Project site, or that portion the Contractor establishes as required to encompass entire Project construction operation, subject to the approval of the Owner.
 - 2. Locate vehicular entrance gates in suitable relation to construction facilities; and to avoid interference with traffic on public thoroughfares.
 - 3. Locate pedestrian entrance as required to provide controlled personnel entry, in suitable relation to construction parking facilities.
- B. Construct chain link fence in accordance with industry standards.

3.03 REMOVAL

- A. Completely remove barricades and enclosures, including foundations, when construction has progressed to the point that they are no longer needed, and when approved by Architect.
- B. Clean and repair damage caused by installation, fill and grade areas of the site to required elevations and slopes, and clean the area.

END OF SECTION

SECTION 015600

TEMPORARY CONTROLS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Provide and maintain methods, equipment, and temporary construction, as necessary to provide controls over environmental conditions at the construction site and related areas under Contractor's control; remove physical evidence of temporary facilities at completion of Work.

1.02 RELATED REQUIREMENTS

- A. Temporary utilities: Section 015100, TEMPORARY UTILITIES.
- B. Cleaning: Section 017100, CLEANING.
- C. Roofing: Section 075323, EDPM Roofing

1.03 NOISE CONTROL

- A. Noise levels shall not exceed those stipulated by Occupational Safety and Health Administration.

1.04 DUST CONTROL

- A. Provide positive methods and apply dust control materials to minimize raising dust from construction operations and provide positive means to prevent air-borne dust from dispersing into the atmosphere.

1.05 WATER CONTROL

- A. Provide methods to control surface water to prevent damage to Project, site, and adjoining properties.
 - 1. Control fill, grading, and ditching to direct surface drainage away from excavations, pits, tunnels, and other construction areas; and to direct drainage to proper runoff.
- B. Provide, operate, and maintain hydraulic equipment of adequate capacity to control surface and water.
- C. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas and properties.

1.06 PEST AND RODENT CONTROL

- A. The Owner will provide pest and rodent control as necessary to prevent infestation of construction and storage areas.
- B. The Contractor will cooperate with the owner to coordinate and schedule rodent and pest control activities during construction. The Contractor shall notify the owner of specific areas requiring attention as soon as it is evident.

1.07 DEBRIS CONTROL

- A. Maintain all areas under Contractor's control free of extraneous debris.
- B. Initiate and maintain a specific program to prevent accumulation of debris at construction site, storage and parking areas, or along access roads and haul routes.
 - 1. Provide containers for deposit of debris as specified in Section 017100, CLEANING.
 - 2. Prohibit overloading of trucks to prevent spillages on access and haul routes.
 - a. Provide periodic inspection of traffic areas to enforce requirements.
- C. Schedule periodic collection and disposal of debris as specified in Section 017100, CLEANING.
 - 1. Provide additional collections and disposals of debris whenever the periodic schedule is inadequate to prevent accumulation.

1.08 POLLUTION CONTROL

- A. Provide methods, means, and facilities required to prevent contamination of soil, water, or atmosphere by the discharge of noxious substances from construction operations.
- B. Provide equipment and personnel, perform emergency measures required to contain any spillages and to remove contaminated soils or liquids.
 - 1. Excavate and dispose of any contaminated earth off-site and replace with suitable compacted fill and topsoil.
- C. Take special measures to prevent harmful substances from entering public waters.
 - 1. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
- D. Provide systems for control of atmospheric pollutants.

1. Prevent toxic concentrations of chemicals.
2. Prevent harmful dispersal of pollutants to atmosphere.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 016000

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Products.
- B. Workmanship.
- C. Manufacturer's Instructions.
- D. Transportation and Handling.
- E. Storage and Protection.
- F. Substitutions and Product Options.

1.02 RELATED REQUIREMENTS

- A. Conditions of the Contract: GENERAL CONDITIONS and SUPPLEMENTARY CONDITIONS.
- B. Submittal of manufacturer's certificates: Section 013000, SUBMITTALS.
- C. Shop Drawings, Product Data submittals: Section 013400, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- D. Maintenance of approved Submittals on site: Section 017200, PROJECT RECORD DOCUMENTS.
- E. Operation and maintenance data: Section 017300, OPERATING AND MAINTENANCE DATA.
- F. Warranties and Bonds: Section 017400, WARRANTIES AND BONDS.

1.03 PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification Section shall be the same and shall be interchangeable.

- D. Do not use materials and equipment removed from existing structure, except as specifically required, or allowed, by Contract Documents.

1.04 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.05 MANUFACTURERS' INSTRUCTIONS

- A. When work is specified to comply with manufacturers' instructions, submit copies of published instructions as part of product data required in Section 013000, SUBMITTALS. Distribute copies as specified and maintain one set in field office as required in Section 017200, PROJECT RECORD DOCUMENTS.
- B. Perform work in accordance with details of instructions and specified requirements. Should a conflict exist between Specifications and manufacturer's instructions, consult with Architect.

1.06 TRANSPORTATION AND HANDLING

- A. Arrange deliveries of products in accordance with construction schedules. Coordinate to avoid conflict with work and conditions at site.
- B. Prevent damage to and soiling of materials and equipment in transit and in handling, deliver in dry, undamaged condition in manufacturer's unopened containers or packaging.
- C. Promptly inspect shipments to assure that Products comply with requirements, quantities are correct, and products are undamaged.
- D. Coordinate for cranes and lifting with the City Authorities when materials are to be unloaded and/or lifted from the street onto or into the building.

1.07 STORAGE AND PROTECTION

- A. Store Products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive Products in weathertight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.

- B. For exterior storage of fabricated Products, place on sloped supports above ground. Cover Products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.
- C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect to ensure that Products are undamaged and are maintained under required conditions.
- E. After installation, provide coverings to protect Products from damage from traffic and construction operations, remove when no longer needed.

1.08 PRODUCT OPTIONS

- A. Within 30 days after date of Contract, submit complete list of materials and equipment proposed, with names of manufacturers, trade names, and model designations.
- B. Options:
 - 1. Products specified only by reference standard: Any Product meeting that standard.
 - 2. Products specified by naming several manufacturers: Products of any named manufacturer meeting Specifications.
 - 3. Products specified by naming one or more manufacturers and "or approved equal": Submit a request for substitution for any manufacturer not specifically named.
 - 4. Products specified by naming only one manufacturer: No option.

1.09 MATERIAL SUBSTITUTIONS

- A. Where products or materials are specified by manufacturer's name, trade name or catalog reference, the words "or approved equal" shall be understood to follow unless there is a statement specifically indicating that no substitution will be allowed. An item shall be considered equal to the item so named or described if in the opinion of the Architect:
 - 1. It is at least equal in quality, durability, appearance, strength and design; including compliance with applicable specifications and compatibility with physical space allocations provided for the item;
 - 2. It performs at least equally the function imposed by the general design for the work;
 - 3. It conforms substantially, even with deviations, to the detailed requirements for the item as indicated by the Specifications.

- B. Where two or more products or materials are specified, the choice of these shall be optional with the Contractor.
- C. Should the Contractor, after the award of the Contract, wish to use any products or materials other than those specified, he shall request written permission of the Architect. His request shall name and adequately describe (including shop drawings) the proposed substitutions, furnish any information requested by the Architect, and state what difference, if any, will be made in the Contract price, including the cost of changes in the Work, for such substitutions should they be accepted. Upon receipt of complete information from the Contractor, the Architect will consider all aspects of the proposed substitution and advise the Contractor in writing approving or disapproving the substitution. The principal reasons for approval or disapproval of the substitution will be enumerated by the Architect. Disapproval of the substitution shall not cause for an increase in contract price or a delay in schedule.
- D. Request constitutes a representation that Contractor:
 - 1. Has investigated proposed Product and determined that it meets or exceeds, in all respects, specified Product.
 - 2. Will provide the same warranty for substitution as for specified Product.
 - 3. Will coordinate installation and make other changes which may be required for Work to be complete in all respects.
 - 4. Waives claims for additional costs which may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request, or when acceptance will require substantial revision of Contract Documents.
- F. Architect will determine acceptability of proposed substitution, and will accept or reject substitutions in writing within a reasonable time.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 017000

CONTRACT CLOSEOUT

PART 1 GENERAL

1.01 SUMMARY

- A. The following are prerequisites to substantial completion. Provide the following:
 - 1. Punch list.
 - 2. Supporting documentation.
 - 3. Warranties.
 - 4. Certifications.
 - 5. Occupancy permit.
 - 6. Start-up and testing of building systems.
 - 7. Change over of locks.

- B. Provide the following requisites to final acceptance:
 - 1. Final payment request with supporting affidavits.
 - 2. Completed punch list.

- C. Provide a hard copy set of drawings (full & half size) and one electronic version which include changes which occurred during construction. (Record Documents)

- D. Provide the following closeout procedures:
 - 1. Submission of record documents.
 - 2. Submission of maintenance manuals.
 - 3. Training and turnover to Owner's personnel.
 - 4. Final cleaning and touch-up.
 - 5. Removal of temporary facilities, including all restoration and repair work required.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 017100

CLEANING

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- A. Conditions of the Contract and Special Conditions Relative to Cleaning Requested by the Owner: GENERAL CONDITIONS and MODIFICATIONS TO THE GENERAL CONDITIONS.
- B. Cleaning for specific Products or Work: Division 2 through 16.

1.2 DISPOSAL REQUIREMENTS

- A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations, and antipollution laws.

1.3 QUALITY ASSURANCE

- A. Do not allow accumulation of waste materials or rubbish. At the completion of Work remove all waste materials and rubbish from the Project as well as all tools, equipment, machinery, and surplus materials. Restore all areas used for storage of debris or rubbish to rough grade condition. Where storage of trash is designated, such storage shall be in an orderly manner as directed by the Owner.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Use cleaning materials that pose no hazards to health or property and will not damage surfaces.
- B. Use those cleaning materials and methods recommended by manufacturer of surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.1 DURING CONSTRUCTION

- A. Execute daily cleaning to keep the Work, the site, and adjacent properties free from accumulations of waste materials, rubbish, and windblown debris resulting from construction operations.

- B. Provide on-site containers for collection of waste materials, debris, and rubbish.
- C. Remove waste materials, debris, and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

3.2 DUST CONTROL

- A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.
- B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.3 FINAL CLEANING

- A. Employ skilled workers for final cleaning.
- B. Clean and restore adjoining surfaces and other work which was soiled or damaged superficially during the installation; replace other work damaged beyond successful restoration. Where the performance of subsequent work could possibly result in damage to the complete unit or element, provide protective covering or other provisions to minimize possible damage.
- C. Remove, grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight-exposed interior and exterior surfaces.
- D. Wash and shine glazing and mirrors.
- E. Polish glossy surfaces to clear shine.
- F. Heating, Ventilating and Air Conditioning Equipment:
 - 1. Clean permanent filters and replace disposable filters units in units that are operated during construction.
 - 2. Do not operate equipment without filters during construction and testing.
- G. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.
- H. Before final completion and Owner-occupancy, inspect sight-exposed interior and exterior surfaces and work areas to verify that Work is clean.

END OF SECTION

SECTION 017200

PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Maintain at the site for the Owner one record copy of:
 - 1. Project Manual and Specifications, including discrete sets of Contract Documents for:
 - a. Site work and architectural and structural work,
 - b. HVAC work, and
 - c. Electrical work.
 - 2. Drawings.
 - 3. Addenda and Bulletins.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Architect's Supplemental Instructions or other written instructions.
 - 6. Approved Shop Drawings, Product Data, and Samples.
 - 7. Field test records.
 - 8. Construction photographs.

1.02 RELATED REQUIREMENTS

- A. Manufacturer's certificates: Section 013000, SUBMITTALS.
- B. Shop Drawings, etc.: Section 013400, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

1.03 MAINTENANCE OF DOCUMENTS AND SAMPLES

- A. Store documents and samples in Contractor's field office apart from documents used for construction.
 - 1. Provide files and racks for storage of record documents.

2. Provide locked cabinet or secure storage space for storage of samples.
- B. File documents and samples in accordance with Construction Specifications Institute Master format.
 - C. Maintain documents in a clean, dry, legible condition and in good order. Do not use record documents for construction purposes.
 - D. Make documents and samples available at all times for inspection by Architect.

1.04 MARKING DEVICES

- A. Provide felt tip marking pens for recording information in color code designated by Architect.

1.05 RECORDING

- A. Maintain current, discrete sets of Record Documents for general construction (site work and architectural and structural work) and for HVAC, and Electrical Work.
- B. Label each document "PROJECT RECORD" in neat large printed letters.
- C. Record information concurrently with construction progress. Do not conceal any work until required information is recorded.
- D. Drawings: Legibly mark to record actual construction:
 1. Depths of various elements of foundations in relation to finish first floor datum.
 2. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 3. Location of internal utilities and appurtenances concealed in the construction, referenced to visible and accessible features of the structure.
 4. Field changes of dimensions and detail.
 5. Changes made by Architect's Supplemental Instructions or Change Order.
 6. Details not on original Contract Drawings.
- E. Specifications and Addenda; Legibly mark each Section to record:
 1. Manufacturer, trade name, catalog number, and supplier of each Product and item of equipment actually installed.

2. Changes made by Architect's Supplemental Instructions or by Change Order.

1.06 SUBMITTAL

- A. At Contract closeout, deliver complete electronic CAD drawing files for each trade compatible with Owner's requirements and reproducible mylar copies of each set of Record Documents to Architect for Owner. Revisions shall be neat, legible, accurate and consistent with original Drawings in quality of drafting.
- B. Accompanying submittal with transmittal letter in duplicate, containing:
 1. Date.
 2. Project title and number.
 3. Contractor's name and address.
 4. Title and number of each Record Document.
 5. Signature of Contractor or his authorized representative.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 017300

OPERATING AND MAINTENANCE DATA

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Compile product data and related information appropriate for Owner's maintenance and operation of products furnished under the Contract.
 - 1. Prepare operating and maintenance data as specified in this Section and as referenced in other pertinent Sections of the Specifications.
- B. Instruct Owner's personnel in maintenance of products and in operation of equipment and systems.

1.02 RELATED REQUIREMENTS

- A. Submittals: Section 013400, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Record Specifications and Drawings: SECTION 017200, PROJECT RECORD DOCUMENTS.
- C. Warranties and bonds: Section 017400, WARRANTIES AND BONDS.

1.03 QUALITY ASSURANCE

- A. Preparation of data shall be done by personnel:
 - 1. Trained and experienced in maintenance and operation of described products.
 - 2. Familiar with requirements of this Section.
 - 3. Skilled as technical writer to the extent required to communicate essential data.
 - 4. Skilled as draftsman competent to prepare required drawings.

1.04 FORM OF SUBMITTALS

- A. Prepare data in form of an instructional operating and maintenance manual for use by Owner's personnel.
- B. Format:
 - 1. Size: 8-1/2 in. X 11 in.

2. Paper: 20 pound minimum, white, for typed pages.
3. Text: Manufacturer's printed data, or neatly typewritten.
4. Drawings:
 - a. Provide reinforced punched binder tab, bind in with text.
 - b. Fold larger drawings to size of text pages.
5. Provide fly-leaf for each separate product or each piece of operating equipment.
 - a. Provide typed description of product and major component parts of equipment.
 - b. Provide indexed tabs.
6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
 - a. Title of Project.
 - b. Identity of general subject matter covered in the manual.

C. Binders:

1. Commercial quality three-ring binders with durable and cleanable plastic covers.
2. Maximum ring size: 1 inch.
3. When multiple binders are used, correlate the data into related consistent groupings.

1.05 CONTENT OF MANUAL

- A. Neatly typewritten table of contents for each volume, arranged in systematic order.
1. Contractor, name of responsible principal including address, and telephone number.
 2. A list of each product required to be included, indexed to content of the volume.
 3. List, with each product, name, address, and telephone number of:
 - a. Subcontractor or installer.
 - b. Maintenance contractor, as appropriate.

- c. Identify area of responsibility of each.
 - d. Local source of supply for parts and replacement.
 4. Identify each product by product name and other identifying symbols as set forth in Contract Documents.
- B. Product Data:
 1. Include only those sheets which are pertinent to the specific product.
 2. Annotate each sheet to:
 - a. Clearly identify specific product or part installed.
 - b. Clearly identify data applicable to installation.
 - c. Delete references to inapplicable information.
- C. Drawings:
 1. Supplement Product Data with drawings as necessary to clearly illustrate:
 - a. Relations of component parts of equipment and systems.
 - b. Control and flow diagrams.
 2. Include reduced photocopies or microfiche aperture cards of Project Record Drawings for Plumbing, Fire Protection, HVAC and Electrical work. Provide additional maintenance and operations drawings keyed to Record Drawings.
- D. Written text, as required to supplement product data for the particular installation:
 1. Organize in consistent format under separate headings for different procedures.
 2. Provide logical sequence of instructions for each procedure.
- E. Copy of each warranty, bond, and service contract issued.
 1. Provide information sheet for owner's personnel, give:
 - a. Proper procedures in event of failure.
 - b. Instances which might affect validity of warranties or bonds.

1.06 MANUAL FOR MATERIALS AND FINISHES

- A. Submit four copies of complete manual in final form.
- B. Content; for architectural products, applied materials and finishes:
 - 1. Manufacturer's data, giving full information on products.
 - a. Catalog number, size, composition.
 - b. Color and texture designations.
 - c. Information required for re-ordering special manufactured products.
 - 2. Instructions for care and maintenance.
 - a. Manufacturer's recommendation for types of cleaning agents and methods.
 - b. Cautions against cleaning agents and methods which are detrimental to product.
 - c. Recommended schedule for cleaning and maintenance.
- C. Content, for moisture-protection and weather-exposed products:
 - 1. Manufacturer's data, giving full information on products.
 - a. Applicable standards.
 - b. Chemical composition.
 - c. Details of installation.
 - 2. Instructions for inspection, maintenance, and repair.
- D. Additional requirements for maintenance data: Respective sections of Specifications.

1.07 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Submit four copies of complete manual in final form.
- B. Content, for each unit of equipment and system, as appropriate:
 - 1. Description of unit and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.

- b. Performance curves, engineering data, and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Operating procedures:
 - a. Start-up, break-in, routine and normal operating instructions.
 - b. Regulation, control, stopping, shut-down and emergency instructions.
 - c. Summer and winter operating instructions.
 - d. Special operating instructions.
 3. Maintenance Procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair, and reassembly.
 - d. Alignment, adjusting, and checking.
 4. Servicing and lubrication schedule.
 - a. List of lubricants required.
 5. Manufacturer's printed operating and maintenance instructions.
 6. Description of sequence of operation by control manufacturer.
 7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance, including:
 - a. Predicted life of parts subject to wear.
 - b. Items recommended to be stocked as spare parts.
 8. As-installed control diagrams by controls manufacturer.
 9. Each contractor's coordination drawings.
 - a. As-installed color code piping diagrams.
 10. Charts of valve tag numbers, with location and function of each valve.

11. List of original manufacturer's spare parts recommendations, manufacturer's current prices, and recommended quantities to be maintained in storage.
 12. Other data as required under pertinent sections of specifications.
- C. Contents, for each electric and electronic system, as appropriate:
1. Description of system and component parts.
 - a. Function, normal operating characteristics, and limiting conditions.
 - b. Performance curves, engineering data, and tests.
 - c. Complete nomenclature and commercial number of replaceable parts.
 2. Circuit directories of panelboards.
 - a. Electrical service.
 - b. Controls.
 - c. Communications.
 3. As-installed color coded wiring diagrams.
 4. Operating procedures:
 - a. Routine and normal operating instructions.
 - b. Sequences required.
 - c. Special operating instructions.
 5. Maintenance procedures:
 - a. Routine operations.
 - b. Guide to "trouble-shooting".
 - c. Disassembly, repair and reassembly.
 - d. Adjustment and checking.
 6. Manufacturer's printed operating and maintenance instructions.

7. List of original manufacturer's spare parts, manufacturer's current prices, and recommended quantities to be maintained in storage.
 8. Other data as required under pertinent sections of specifications.
- D. Prepare and include additional data when the need for such data becomes apparent during instruction of Owner's personnel.
 - E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

1.08 SUBMITTAL SCHEDULE

- A. Submit two copies of preliminary draft of proposed formats and outlines of contents prior to start of Work.
 1. Architect will review draft and return one copy with comments.
- B. Submit one copy of complete data in final form 15 days prior to final inspection or acceptance.
 1. Copy will be returned after final inspection or acceptance, with comments.
- C. Submit four copies of approved data in final form within ten days after final inspection or acceptance.

1.09 INSTRUCTION OF OWNER'S PERSONNEL

- A. Before final inspection or acceptance, instruct Owner's designated operating and maintenance personnel in the operation, adjustment and maintenance of products, equipment, and systems.
- B. Operating and maintenance manual shall constitute the basis of instruction. Review contents of manual with personnel in full detail to explain all aspects of operating and maintenance.

PART 2 PRODUCTS

Not applicable to this section.

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 017400

WARRANTIES AND BONDS

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Compile specified warranties and bonds.
- B. Compile specified service and maintenance contracts.
- C. Co-execute submittals to verify compliance with Contract Documents.
- D. Review submittals to verify compliance with Contract Documents.
- E. Submit to Architect for review and transmittal to Owner.

1.2 RELATED REQUIREMENTS

- A. General warranty of construction: GENERAL CONDITIONS.
- B. Operating and maintenance data: Section 017300, OPERATING AND MAINTENANCE DATA.
- C. Warranties and Bonds required by Specific Products: Divisions 2 through 16.

1.3 SUBMITTAL REQUIREMENTS

- A. Assemble warranties, bonds, and service and maintenance contracts, executed by each of the respective manufacturers, suppliers, and subcontractors.
- B. Number of original signed copies required: Two each.
- C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item including:
 - 1. Product or work item.
 - 2. Firm, with name of principal, address, and telephone number.
 - 3. Scope.
 - 4. Date of beginning of warranty, bond, or service and maintenance contract.
 - 5. Duration of warranty, bond, or service and maintenance contract.

6. Provide information for Owner's personnel:
 - a. Proper procedures in case of failure.
 - b. Instances which might affect the validity of warranty or bond.
7. Contractor, name of responsible principal, address, and telephone number.

1.4 FORM OF SUBMITTALS

- A. Prepare in duplicate packets.
- B. Format:
 1. Size 8-1/2 in. X 11 in., punched sheets for standard three-ring binder.
 - a. Fold larger sheets to fit into binders.
 2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS".
List:
 - a. Title of Project.
 - b. Name of Contractor.
- C. Binders: Commercial quality, three-ring, with durable and cleanable plastic covers.

1.5 TIME OF SUBMITTALS

- A. For equipment or components parts of equipment put into service during progress of construction: Submit documents within ten days after inspection and acceptance.
- B. Otherwise make submittals within ten days after Date of Substantial Completion, prior to final request for payment.
- C. For items of work where acceptance is delayed materially beyond Date of Substantial Completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.6 SUBMITTALS REQUIRED

- A. Submit warranties, bonds, service, and maintenance contracts as specified in respective section of Specifications.

PART 2 PRODUCTS

Not applicable to this section.

CITY OF WALTHAM

HARDY APARTMENTS RE-ROOFING
AND EXTERIOR REPAIRS
51 Lake Street, Waltham MA

PART 3 EXECUTION

Not applicable to this section.

END OF SECTION

SECTION 031330

CONCRETE REPAIR

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Repair of existing concrete masonry lintels, sills and watercourses where spalled and/or cracked.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.
- D. Items To Be Furnished Only: Not Applicable.
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 099000 – PAINTING AND COATING for final finish of masonry lintels, sills and watercourses.

1.3 QUALITY ASSURANCE

- A. Field Construction Mock-Ups: Prior to start of general concrete restoration, prepare the following sample panels and sample areas on building where directed by Architect or Owner's Representative. Obtain Architect or Owner's Representative approval of sample before proceeding with the work. Retain accepted panels/sample areas in undisturbed condition, suitably marked, during restoration as a standard for judging completed work.
 - 1. Cleaning: Demonstrate materials and methods to be used for cleaning for each type of concrete surface and condition on sample panels each approximately 25 sq. ft. in area. Test adjacent non-masonry materials for possible reaction with cleaning materials.

Allow waiting period of duration indicated, but not less than 7 calendar days after completion of sample panels for negative reactions.

2. Crack Repair: Prepare a sample area for each type of crack repair required for stone (i.e. hairline cracks and microscopic cracks 1/64"-1/16" in size; cracks and voids larger than 1/8"). Repair shall demonstrate methods and quality of workmanship expected for crack repair.
3. Patching: Prepare on-building sample of each type of construction to be patched, rebuilt and/or replaced (e.g. one balcony surface, one deck area, one cornice unit, one window sill; one wall area). Patching shall demonstrate methods and quality of workmanship expected of repair work.
4. The samples of each type of repair work shall be done in an area that will be exposed to the same weathering conditions as the building. Allow samples to cure at least three days before obtaining acceptance of color, texture and detailing match. Samples shall be viewed from an approved distance

1.4 SUBMITTALS

- A. Product Data: For each paint system indicated. Include block fillers and primers.
 1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
 2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
- B. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
 1. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
 2. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
 3. Submit two eight inch by 12 inch Samples for each type of finish coating for Designer's review of color and texture only.
- C. Qualification Data: For Applicator.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.

- B. Source Limitations: Obtain fillers and primers for each coating system from the same manufacturer as the finish coats.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Application instructions.
 - 6. Color name and number.
 - 7. VOC content.
- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.7 PROJECT CONDITIONS

- A. Apply repair materials only when temperatures of surfaces to be painted and surrounding air are between 40 and 86 deg F.
- B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.
- C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

1.8 SEQUENCING AND SCHEDULING

- A. Perform concrete restoration work in the following sequence:
 - 1. Remove paint, stains and plant material from all surfaces.
 - 2. Remove existing unsound materials from areas indicated to be restored.
 - 3. Pressure wash repair surfaces.
 - 4. Patch and repair existing concrete surfaces.

5. Final finish coating to be as specified under Section 099000, PAINTING AND COATINGS.

PART 2 - PRODUCTS

2.1 CONCRETE REPAIR SYSTEM

- A. The concrete repair system is to be an acrylic primer/bonding agent used in conjunction with a polymer-modified cementitious product as manufactured by Edison Coatings, Inc., (800) 697-8055, or approved equal.
- B. Similar products by the following manufacturers are acceptable:
 1. BASF Group "MasterSeal 583"
 2. Degussa Building Systems, "Thorite".

2.2 PRODUCTS

- A. Acrylic latex primer/bonding agent shall be "System 42" as manufactured by Edison Coating, Inc., Plainville, CT.
- B. Patching compound shall be polymer-modified product, "System 44-Custom, as manufactured by Edison Coatings, Inc., Plainville, CT.
 1. Patching compound shall develop a minimum 200 psi direct tensile adhesion with host substrate when applied in accordance with these specifications.
 2. Tensile strength of patching compound shall be a minimum of 400 psi. Flexural modulus shall be 1.1×10^6 .
 3. Material must be vapor permeable, with a minimum permeance of 8 perms at $\frac{1}{2}$ " depth as measured by ASTM E-96.
- C. Water used for cleaning, mixing and finishing shall be clean, potable, free from oil, acid, injurious amounts of vegetable matter, alkalis or other salts.
- D. Crack sealants for small cracks shall be 100% solids, 2-component elastomeric epoxy with 110% elongation and minimum 1200 psi tensile strength as measured by ASTM D412. Sealant shall be Flexi-Seal 510 as manufactured by Edison Coatings, Inc., or approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for concrete repairs.

1. Prior to patching all surfaces must be prepared in accordance as indicated below.
2. Remove all unsound concrete using lightweight demolition hammers in accordance with ICRI Guideline #03730. Following demolition test surfaces for alkalinity/carbonation with a 1-2% solution of phenolphthalein. Surfaces which do not indicate alkalinity (solution turns pink) shall require further demolition.
3. Pressure wash all indicated surfaces using 3000-400 psi water blast, as required to remove all dust and dirt. Abrasive shall be used in combination with water when cleaning repair cavities to remove micro-cracked surface resulting from demolition. No water with concrete dust shall be allowed to remain on the surface following washing.

3.2 CRACK REPAIR

- A. Patching compounds are not to be used to bridge working cracks or joints.
 1. Crack repair for small cracks less than 1/16" shall be filled following pressure wash by filling with elastomeric crack sealant. Cracks wider than 1/16" shall be grooved out to a nominal 1/2" x 1/2" and filled with crack sealant.

3.3 CONCRETE PATCHING

- A. Following cleaning surfaces to be patched maintain work area in a clean condition.
- B. Prior to patching all repair areas to be patched shall be kept continuously wet for at least 20 minutes prior to the application of the patching compound. Before placing patch remove excess water from surface leaving area to be patched damp dry.
- C. Vigorously brush apply a thin primer coat of acrylic latex bonding agent with added 10% neat Type 1 Portland cement in to all cavity surfaces.
- D. Within 4 hours of primer application, mix and place patching compound in accordance with manufacturer's instructions.
 1. Mix precisely measured quantity of water as directed with full bags of patching compound only. Mix using slow speed drill (450 rpm maximum) with mud or paddle mixer. Mix time as per manufacturer. Mix to uniform consistency, free of lumps or dry material but do not whip or overmix.
 2. Place patching compound taking care that all gaps and corners are completely filled and compacted to prevent unbonded areas. Work material to assure good contact between patch and substrates.
 3. Patches deeper than 1" may be extended by coarse aggregate addition.
- E. Do not re-temper material which has begun to set. Discard any unused material after 20 minutes. Do not excessively wet patch surfaces after placement or as an aid to troweling. Limit surface water addition to light misting and do not wet or rework repeatedly.

- F. Observe curing requirements for each day's working conditions as specified by manufacturer. Protect from disturbance or weather until completely cured.

3.4 CLEANING

- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded patching materials from Project site.
 - 1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered patching materials by washing and scraping or as directed by manufacturer without scratching or damaging adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Designer.

END OF SECTION

SECTION 055100

METAL RAILINGS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Steel tube handrails set in concrete steps and ramps.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.
- D. Items To Be Furnished Only: Not Applicable.
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 061000 - ROUGH CARPENTRY for wood blocking drilling concrete slabs for anchoring railings.

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance of Railings: Provide railings capable of withstanding the effects of gravity loads and Code required loads and stresses within limits and under conditions indicated:

1.4 SUBMITTALS

- A. Product Data: For metal stairs and the following:
 - 1. Paint products.
 - 2. Grout.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Provide templates for anchors and bolts specified for installation under other Sections.

C. Welding certificates.

D. Qualification Data: For professional engineer licensed in the Commonwealth of Massachusetts.

1.5 QUALITY ASSURANCE

A. Engineering Responsibility: Preparation of Shop Drawings, design calculations, and other structural data by a qualified professional engineer.

B. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the Commonwealth of Massachusetts and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of metal stairs that are similar to those indicated for this Project in material, design, and extent.

C. Installer Qualifications: Fabricator of products.

D. NAAMM Stair Standard: Comply with "Recommended Voluntary Minimum Standards for Fixed Metal Stairs" in NAAMM AMP 510, "Metal Stairs Manual," for class of stair designated, unless more stringent requirements are indicated.

1. Preassembled Stairs: Commercial class.

2. Ornamental Stairs: Architectural class.

E. Welding: Qualify procedures and personnel according to the following:

1. AWS D1.1, "Structural Welding Code--Steel."

2. AWS D1.3, "Structural Welding Code--Sheet Steel."

1.6 COORDINATION

A. Coordinate installation of anchorages for metal stairs and ramps. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

B. Coordinate locations of hanger rods and struts with other work so that they will not encroach on required stair width and will be within the fire-resistance-rated stair enclosure.

PART 2 - PRODUCTS

2.1 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces, unless otherwise indicated. For components exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.2 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.
- B. Steel Tubing: ASTM A 500 (cold formed) or ASTM A 513, Type 5 (mandrel drawn)
- C. Rolled-Steel Floor Plate: ASTM A 786/A 786M, rolled from plate complying with ASTM A 36/A 36M or ASTM A 283/A 283M, Grade C or D.
- D. Uncoated, Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M either commercial steel, Type B, or structural steel, Grade 30, unless another grade is required by design loads.
- E. Galvanized Steel Sheet: ASTM A 653/A 653M, G90 coating, either commercial steel, Type B, or structural steel, Grade 33, unless another grade is required by design loads.
- F. Galvanized Metal Grating for Stair Treads and Landings

2.3 FASTENERS

- A. General: Comply with ASTM A325 and be hot dipped galvanized.

2.4 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that comply with Section 099000 - PAINTING AND COATING.
- C. Zinc-Rich Primer: Complying with SSPC-Paint 20 or SSPC-Paint 29 and compatible with topcoat.
 - 1. Available Products: Dupont Ganicin, Keeler and Long Urethane Zinc Rich Primer, or Tnemec Series 394 PerimePrime.
- D. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC-Paint 20.

1. Provide interior, field-applied paint with a VOC content of 250 g/L or less, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.5 FABRICATION, GENERAL

- A. Provide complete stair assemblies, including metal framing, hangers, struts, railings, clips, brackets, bearing plates, and other components necessary to support and anchor stairs and platforms on supporting structure.
1. Join components by welding, unless otherwise indicated.
 2. Use connections that maintain structural value of joined pieces.
 3. Fabricate treads and platforms of exterior stairs so finished walking surfaces slope to drain.
- B. Preassembled Stairs: Assemble stairs in shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- E. Form exposed work true to line and level with accurate angles and surfaces and straight edges.
- F. Weld connections to comply with the following:
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. Weld exposed corners and seams continuously, unless otherwise indicated.
 5. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- G. 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.
- H. Fabricate joints that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.

2.6 STEEL TUBE RAILINGS

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of tube, post spacings, and anchorage, but not less than that needed to withstand indicated loads.
- B. Welded Connections: Fabricate railings with welded connections. Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
- C. Form changes in direction of railings as detailed on the Drawings.
- D. Form simple and compound curves by bending members in jigs to produce uniform curvature for each repetitive configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- E. Close exposed ends of railing members with prefabricated end fittings.
- F. Provide wall returns at ends of wall-mounted handrails, unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.
- G. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnecting components and for attaching to other work. Furnish inserts and other anchorage devices for connecting to concrete or masonry work.
 - 1. Connect posts to stair framing by direct welding, unless otherwise indicated.
 - 2. For galvanized railings, provide galvanized fittings, brackets, fasteners, sleeves, and other ferrous-metal components.
 - 3. For nongalvanized railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves, except galvanize anchors embedded in exterior masonry and concrete construction.
- H. Fillers: Provide fillers made from steel plate, or other suitably crush-resistant material, where needed to transfer wall bracket loads through wall finishes to structural supports. Size fillers to suit wall finish thicknesses and to produce adequate bearing area to prevent bracket rotation and overstressing of substrate.

2.7 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Finish metal stairs after assembly.
- C. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
 - 1. ASTM A 123/A 123M, for galvanizing steel and iron products.

2. ASTM A 153/A 153M, for galvanizing steel and iron hardware.
 3. Fill vent and drain holes that will be exposed in finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
- D. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface preparation specifications and environmental exposure conditions of installed products:
1. Exterior Stairs (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
 2. Interior Stairs (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
- E. Apply shop primer to uncoated surfaces of metal stair components, except those with galvanized finishes and those to be embedded in concrete or masonry unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing metal stairs to in-place construction. Include threaded fasteners for concrete and masonry inserts, through-bolts, lag bolts, and other connectors.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.
- C. Install metal stairs by welding stair framing to steel structure or to weld plates cast into concrete, unless otherwise indicated.
- D. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
- E. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
- F. Field Welding: Comply with 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.

3.2 INSTALLING STEEL TUBE RAILINGS

- A. Adjust railing systems before anchoring to ensure matching alignment at abutting joints. Space posts at spacing indicated or, if not indicated, as required by design loads. Plumb posts in each direction. Secure posts and rail ends to building construction as follows:
1. Anchor posts to steel by welding directly to steel supporting members.
 2. Anchor handrail ends to concrete and masonry with steel round flanges welded to rail ends and anchored with postinstalled anchors and bolts.
- B. Attach handrails to wall with wall brackets. Provide bracket with 1-1/2-inch clearance from inside face of handrail and finished wall surface. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads. Secure wall brackets to building construction as follows:
1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt.
 2. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
 3. For hollow masonry anchorage, use toggle bolts.
 4. For steel-framed gypsum board assemblies, fasten brackets directly to steel framing or concealed steel reinforcements using self-tapping screws of size and type required to support structural loads.

3.3 ADJUSTING AND CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with 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 dry film thickness.
- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

END OF SECTION

SECTION 061000

ROUGH CARPENTRY

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Include all rough carpentry work as required to complete the Work of the Contract, as indicated. Include, but do not limit to:
 - 1. All rough hardware, inserts, related metal components, etc., for work of this Section, except those items specifically specified to be provided by other trades.
 - 2. All dimensioned rough carpentry framing (beams, joists, rafters, headers, studs, cripples, sills, plates, ledgers, ridge boards, etc.) blockings, edgings, curbs, grounds, screeds, nailing strips, nailing inserts, furring, strapping, sheathing, subflooring, etc., required for all trades, including preservative treatments and applications.
 - 3. Building felts for work of this Section, and protective papers and boards for finished floors and walls. Protection for installed items as required.
 - 4. Other usual items of normal rough carpentry work indicated on the Drawings or necessary for the proper completion of the project, even though not specifically mentioned herein.

1.2 RELATED REQUIREMENTS

- A. Gypsum drywall: Section 092500, GYPSUM DRYWALL
- B. Metal Rails: Section 055000, METAL FABRICATIONS
- C. Wood blocking for roofing: Section 075323, EDPM ROOFING

1.3 REFERENCE STANDARDS

- A. Testing and Grading Agencies
 - AITC American Institute of Timber Construction (www.aitc-glulam.org)
 - ALSC American Lumber Standards Committee (www.alsc.org)
 - ANSE American National Standards Institute (www.ansi.org)
 - APA The Engineered Wood Association (www.apawood.org)

AWPA American Wood Preservers Association (www.awpa.com)

CSA Canadian Standards Association (www.csa.ca)

1.4 QUALITY ASSURANCE

- A. All lumber products to comply with the most current American Softwood Lumber standards: grade stamped.
- B. Pressure treated lumber must be CSA or ALSC labeled for type of use. Arsenic containing wood preservative is not acceptable. Alkaline Copper Quaternary (ACQ) and Copper Azole (CBA) are for wet, below grade and exterior building components. Acid Copper Chromate (ACC) and Copper HDO (CX-A) shall not be used for ground contact, wet or below ground use.
- C. Plywood sheathing must be grade stamped (APA) by the Engineered Wood Association, Teco or Pittsburgh Labs and shall meet the requirements of the latest edition of Voluntary Product Standards PS-1 or PS-2. Exterior sheathing must be Exposure 1 performance rated.

PART 2 PRODUCTS

2.1 MATERIALS

- A. All materials when delivered to site shall be stacked and stored above the ground under protective coverings or indoors in such manner as to insure proper drainage, ventilation, and protection. No kiln dried materials shall be placed in the building until concrete, and masonry work have been completed and are sufficiently dry.
- B. Lumber shall be of sound stock, new, straight, of consistent size, free of stains and mildew, and kiln dried to a moisture content of not more than 19%. Where exposed or semi-exposed, wood members shall be selected for best possible appearance from the grade of stock specified.
- C. Lumber shall be surfaced four sides and shall bear the grade and trademark of the association under whose rules it was produced, and a mark of mill identification.
- D. Lumber shall be furnished in longest practical lengths with respect to each intended use, and single length pieces shall be used wherever possible.
- E. General Carpentry Material Schedule:

<u>Item</u>	<u>Grade</u>	<u>Species</u>
Lumber 2 in. nominal	Stress Rated Structural	Douglas Fir

thickness or greater for beams, rafters, and joists. Built up headers.	Framing, Fb 1500 psi	or Larch	
Lumber 2 in. nominal thickness for non-structural studs and cripples.	Stud Grade	Hem-Fir	
Lumber 2 in. nominal thickness or greater for other uses.	No. 2 Structural or Better	Hem-Fir	
Lumber less than 2 in. nominal thickness:	No. 2 Common	Hem-Fir	
Plywood Roof Sheathing:	U.S. Product Standard PS-1-74, Standard Sheathing, Exterior Grade, S2S CDX	Group 1 Species	
Wall Sheathing Gypsum - G-P Dens-Glass	5/8" Firestop type X One Hour Rated - Mfg. by Georgia Pacific		Exterior
Plywood Interior Subflooring:	U.S. Product Standard PS-1-74, STURD-I-FLOOR Interior Grade, Exterior Glue, T & G Edges	Group 1 Species	

F. Wood Preservative Treatment

1. Pressure Type: All lumber for use as sill plates, plates, furring strips, etc., in contact with face brick masonry, foundation walls, roofing or slabs-on-grade shall be pressure treated with a toxic salt wood preservative conforming to Fed. Spec. TT-W-535, Type B, applied in a closed cylinder by vacuum process, full cell method in strict accordance with the recommended practices of the American Wood Preservers Association and Fed. Spec. TT-W- 571g. Retention shall be at least 0.35 lbs. of dry salts per cu. ft. of wood. Supply certificate of treatment to Architect. All treated wood shall be redried before installation and all field cuts shall be brush treated with the preservative material.
2. Pressure treatment shall be .25 lbs/ft³ for above ground use, .40 lbs/ft³ for ground contact and .60 lbs/ft³ for wood foundation and marine use. Lumber is to contain AWWPA certification stamp for the level of preservation retention. Surface brushing is not acceptable.

3. Wood preservative treatment for roofing elements shall be compatible with EDPM roofing materials and with the guidelines of Factory Mutual.

G. Fire Retardant Treated Wood

1. Where required all fire retardant treated wood shall meet the requirements of the Building Code and shall have the necessary approvals from the governing authorities in the use and assembly for which it is intended. All fire retardant treated wood shall be in conformance with the guidelines of Factory Mutual.
2. The following wood elements require fire retardant treatment:
 - a. Structural wood elements
 - b. Wood blocking
 - c. Wood framing
 - d. Wood sheathing

- H. Sill Sealer shall be 1 in. by 6 in. fiberglass "Sill Sealer" by Owens-Corning Fiberglas Corp.

2.2 ROUGH HARDWARE

- A. Provide all rough hardware required to complete this work and to attach this work in a secure and rigid manner to work of this and other trades, including all inserts, anchors, anchor bolts, "L" bolts, lag bolts, screws, washers, nuts, nails, joist hangers, post anchors, and other rough hardware. Assist other trades as necessary in the placement of inserts and anchor bolts in concrete and masonry and furnish full instructions regarding locations, sizes, and other requirements of the items in order that they may properly prepare their work to receive same. All rough hardware shall comply in all respects with the governing laws and codes.
- B. All rough hardware to be exposed in the finished exterior and interior work shall be hot-dip galvanized steel (conforming to applicable ASTM-A653 standard) or non-ferrous, except that cadmium plating may be substituted for galvanized at interior locations only. Concealed rough hardware may be unplated. Exposed exterior nails shall be hot-dip galvanized steel, or non-ferrous. Fully concealed exterior nails and interior nails shall be bright steel. Rough hardware items shall be of appropriate type and of proper capacity and size as required for each specific project condition. For fasteners in contact with the ground or concrete stainless steel fasteners (Type 304) shall be used.
- C. Beam hangers shall be proprietary steel assemblies, with top flanges, equal to "Series LB and B", by Simpson Co., equivalent by Cleveland Steel Specialties or Heckman Building Products Co., or equal approved by Architect. Joist hangers shall be proprietary steel assemblies, as manufactured by Simpson Co., Cleveland Steel Specialties or Heckman Building Products Co., or equal approved by Architect. Types, capacities, and size of all steel framing

accessories shall conform to building code and job requirements. Where exposed to exterior weather, metal framing accessories shall be hot-dip galvanized.

- D. Unless otherwise specifically indicated, wood sill plates, ledgers, etc., of 2 in. nominal thickness or greater shall be bolted to backup concrete or masonry materials by use of 1/2 in. "L" bolts located 4 in. from ends and splices and spaced not greater than 32 in. on center along lengths of the members, to develop positive and secure anchorage to the back-up material.
- E. Unless otherwise specifically indicated wood nailers, furrings, etc., less than 2 in. nominal thickness shall be secured to back-up concrete or masonry materials by use of appropriate fasteners located 4 in. from ends and spaced not greater than 16 in. on center along lengths of the members. Type and length of fastening devices shall be such as to develop positive and secure anchorage to the back-up material.

2.3 BUILDING FELTS AND PROTECTIVE PAPERS

- A. Building felts for general use shall be Type K.
- B. Kraft paper for protective purposes shall conform to Fed. Spec. UU-P-246a, Type 1, and shall be positively non-staining.

PART 3 EXECUTION

3.1 ROUGH CARPENTRY WORK

- A. No attempt is made in this Specification to list the various elements of rough carpentry work, as the major part of the work to be done is clearly shown on or reasonably inferred from the Drawings. The rough carpentry work required shall include all such work required throughout the project to complete the entire intent of the work, regardless of whether or not each and every item is specifically called for. Refer to Drawings to determine the major extent of the rough carpentry work required.
- B. The Contractor shall be responsible for structural integrity, connections, and anchorage of all rough carpentry work.
- C. Construct all rough carpentry work plumb, level, and true with tight, close fitting joints, securely attached and braced to surrounding construction, all in a first class workmanlike manner. Counterbore for bolt heads, nuts, and washers where required to avoid interference with other materials.
- D. Install continuous strips of fiberglass sill sealer under all sill plates bearing on perimeter foundation walls.
- E. Install wood framing members in one-piece, full length members for maximum strength, laid out and spaced in accordance with the structural framing drawings.

- F. Install wood blockings, nailers, ledgers, etc., as indicated, specified or required, furnished in not less than 12 ft. lengths, except where shorter lengths are required.
- G. Install all wood grounds required at gypsum drywall, and all grounds and screeds required at stucco soffit work, including those required by other trades to properly attach their work, such as grounds for attachment of fixtures, louvers, grilles, registers, diffusers, etc. At gypsum drywall include all blockings for attachment and anchorage of all fixtures, accessories, cabinets, shelves, rail brackets, door stops, and other items required to be attached to finished walls and ceilings, all of adequate strength to carry with a factor of safety of at least 2 to 1 the various loads to be applied.
- H. Nailing of rough carpentry work shall conform to requirements of the governing laws and codes.
- I. Where nailing or power-driving into concrete or masonry is done, take care to avoid puncturing conduits, pipes, ducts, etc., embedded in such work, and repair any damage so caused.
- J. Install all plywood sheathing and subflooring throughout, as indicated. Where one side is to be exposed, install with best veneer to exposed side. Provide solid framing or blocking under all ends and edges. Allow approximately 1/16 in. gap between panel edges at square edged plywood panels and 3/32 in. gap at tongue-and-groove edged plywood panels. Installation and nailing of plywood board shall be in strict accordance with the printed specifications and recommendations of the American Plywood Association.

3.2 BUILDING FELTS AND PROTECTIVE PAPERS

- A. Provide (1) all building felts required for installation of work of this Section and (2) protective papers required for protection of finished floors, previously installed equipment and existing equipment, except where specified to be provided by a different trade.

3.3 CLEANING

- A. Upon completion of rough carpentry work in any given area, remove all rubbish and debris from the work area and leave in broom clean condition.

END OF SECTION

SECTION 075323

EPDM ROOFING

(Filed Sub-Bid Required)

PART 1 - GENERAL

1.1 FILED SUB-BIDS

- A. EDPM ROOFING work is stipulated as a Filed Sub-Bid under Part D, Item 2 of the Form for General Bid.
- B. All sub-bids shall be submitted on the Form for Sub-Bid furnished by the Awarding Authority, as required by section 44F of Chapter 149 of the Massachusetts General Laws, as amended. Page 2 of 4 M.G.L. c.149, §§ 44A-J Revised 10/24/14
- C. Sub-Bids must be filed with the Awarding Authority in a sealed envelope, before twelve o'clock (noon), Boston time, on the date stipulated in the Advertisement.
- D. Specific information relating to the sub-bidders is set forth in the Contract Documents, under the heading "Notice to All Bidders, Including Sub-Bidders" and the attention of sub-bidders is directed thereto.

The work to be done under this section EDPM ROOFING is included in the following specifications sections: Section 0761223 – GUTTERS AND DOWNSPOUTS and Section 076200 – SHEET METAL FLASHING.

And is shown on Drawings numbered: A1-2, A2-1, A5-1, A9-1, A9-2.

1.2 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.3 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Demolition and disposal of existing EDPM roofing system as indicated on the drawings.
 - 2. Temporary weather protection during re-roofing work.
 - 3. Adhered membrane-roofing system.
 - 4. Cover board.

5. Roof insulation.
 6. Vapor retarder.
 7. Flashing for equipment mounted on roofing and roofing penetrations.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.
- D. Items To Be Furnished Only: Not Applicable.
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 061000 - ROUGH CARPENTRY for wood nailers, curbs, and blocking.
 2. Section 079200 - JOINT SEALANTS for sealants.
 3. Section 230001 - HEATING, VENTILATING, AND AIR CONDITIONING for roof curbs for HVAC equipment and adjustments to raise equipment and re-roof.

1.4 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.5 PERFORMANCE REQUIREMENTS

- A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C. Roofing System Design: Roofing system shall be designed to withstand Code required loads and wind speeds. Design to meet the requirements of the Factory Mutual Research Corporation (FMRC) Approval Guide.
- D. Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations in FMG 1-49 Loss Prevention Data Sheet for Perimeter Flashings; FMG 1-29 Loss Prevention Data Sheet for Above Deck Roof Components; NRCA Roofing and Waterproofing Manual (Fourth Edition) for Construction Details and SMACNA Architectural Sheet Metal Manual (Fifth Edition) for Construction Details, as applicable.
- E. Energy Performance: Provide roofing system with Solar Reflectance Index (SRI) not less than 78 when calculated according to ASTM E 1980 based on testing identical products by a qualified testing agency.

1.6 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other Work.
 - 1. Base flashings and membrane terminations.
 - 2. Tapered insulation, including slopes.
 - 3. Insulation fastening patterns.
- C. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system.
- D. Qualification Data: For Installer and manufacturer.
- E. Design Letter: Roofing system manufacturer's Design Acceptance Letter identifying components, warranty and wind speed.
- F. Maintenance Data: For roofing system to include in maintenance manuals.
- G. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

1.7 QUALITY ASSURANCE

- A. Source Limitations: Obtain components for roofing system from or approved by roofing system manufacturer.
- B. Roofing Signage: At entry points to roof, provide signage-listing type of roofing system, manufacturer, date installed, and holder of the warranty.
- C. Preinstallation Conference: Conduct conference at Project site. Comply with requirements in Division 01. Review methods and procedures related to roofing system including, but not limited to, the following:
 - 1. Meet with the City's Representative; Designer, User Agency's insurer if applicable; testing and inspecting agency representative; roofing Installer; roofing system manufacturer's representative; deck Installer; and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5. Review structural loading limitations of roof deck during and after roofing.
 - 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.

7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.8 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, 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 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.10 WARRANTY

- A. Roofing Contractor's Warranty: The roofing subcontractor shall supply Owner with a minimum two-year workmanship warranty for each roof, starting at the date of Substantial Completion of the portion of the Project of which the roof is a part. In the event any work related to the roofing, flashing, or metalwork is found to be defective within two years of substantial completion, the roofing contractor shall remove and replace such at no additional cost to the Commonwealth. The roofing subcontractor's warranty obligation shall run directly to the building owner, and a copy the roofing signed warranty shall be sent to the roofing system's manufacturer.
 1. The duration of the Roofing Contractor's two-year warranty shall run concurrent with the roofing system's manufacturer's 20-year warranty.

- B. Roofing Systems Manufacturer's Warranty: The roofing manufacturer shall guarantee roof areas to be in a watertight condition, for a period of 20 years, starting at the date of Substantial Completion of the portion of the Project of which the roof is a part. The warranty shall be a 20-year no dollar limit (NDL), non-prorated total system labor and material warranty, for wind speeds up to 72 miles per hour. Total system warranty shall include all roofing materials, related components and accessories including, but not limited to the substrate board, vapor retarder, insulation board, cover board, roofing membrane, membrane flashings, fasteners, adhesives, metal roof copings, metal roof edges and termination metals and roof drain assemblies. The manufacturer shall repair defects in materials and workmanship as promptly after observation as weather and site conditions permit.

PART 2 - PRODUCTS

2.1 EPDM ADHERED ROOFING SYSTEM

- A. Roofing system shall be a mechanically fastened fully adhered EDPM membrane roof system, Materials and insulation shall conform to the manufacturer's standard specifications and work of this section shall be executed by Roofing Subcontractor licensed by the manufacturer
- B. Roofing system shall be listed in most recent Factory Mutual Research Corporation (FMRC) Approval Guide for Class I-60 Roofing systems. Installations shall be in accordance with FMRC Data Sheets 1-28, 1-29 and 1-49. Roofing shall meet the Class A rating set by the Underwriters Laboratories (UL).
- C. Manufacturer's approved walkway pads to all equipment from roof access.

2.2 EPDM ROOFING MEMBRANE

- A. EPDM Roofing Membrane: ASTM D 4637, Type I, nonreinforced uniform, flexible sheet made from EPDM, and as follows:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Carlisle Coatings & Waterproofing Inc.
 - b. Firestone Building Products Company.
 - c. Johns Manville International, Inc.
 - d. Versico Inc.
 2. Thickness: 60 mils (1.5 mm) nominal.
 3. Exposed Face Color: Black.

2.3 AUXILIARY MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
 - 1. Liquid-type auxiliary materials shall meet VOC limits of authorities having jurisdiction.
- B. Sheet Flashing: 60-mil-thick EPDM, partially cured or cured, according to application.
- C. Epichlorohydrin Sheet at Areas Requiring Grease Resistance: 60-mil-thick, unreinforced flexible sheet with the following typical properties as determined per ASTM test method indicated:
 - 1. Tensile Strength: 1500 psi; ASTM D 412.
 - 2. Ultimate Elongation: 200 percent; ASTM D 412.
 - 3. Tear Resistance: 150 lbf/in; ASTM D 412.
 - 4. Brittleness Temperature: Minus 20 deg F ASTM D 746.
 - 5. Resistance to Ozone Aging: No cracks after 168 hours' exposure of 50 percent elongated sample at 104 deg F and 100-pphm ozone; ASTM D 1149.
 - 6. Resistance to Oil Aging: 15 percent maximum mass change after 168 hours' immersion in diesel fuel No. 2 at 158 deg F; ASTM D 471.
- D. Bonding Adhesive: Manufacturer's standard low VOC bonding adhesive/primer.
- E. Seaming Material: Manufacturer's standard synthetic-rubber polymer primer and 3-inch-wide minimum with cover strip or 6-inch-wide, butyl splice tape with release film.
- F. Lap Sealant: Manufacturer's standard single-component sealant, color to match roofing membrane.
- G. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- H. Metal Termination Bars: Manufacturer's standard predrilled stainless steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- I. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening membrane to substrate, and acceptable to membrane roofing system manufacturer.
- J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.4 VAPOR RETARDER

- A. Self-Adhering Sheet Vapor Retarder: ASTM D 1970, minimum 40-mil- thick film laminated to layer of rubberized asphalt adhesive; maximum permeance rating of 0.1 perm; cold-applied, with slip-resisting surface and release paper backing. Provide primer when recommended by vapor-retarder manufacturer.

- B. Vapor Retarder: Minimum 10 mil polyethylene sheet with maximum permeance rating of 0.10 perm.
 - 1. Tape: Pressure-sensitive tape of type recommended by vapor-retarder manufacturer for sealing joints and penetrations in vapor retarder.

2.5 ROOF INSULATION

- A. General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thicknesses indicated.
 - 1. For thickness over 3 inches, install in two layers.
 - 2. When installing over existing insulation verify condition of existing insulation and make repairs if necessary to insure proper roofing attachment and slope.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Grade 2 (20 psi) or Grade 3 (25 psi) felt or glass-fiber mat facer on both major surfaces.
 - 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Atlas Roofing Corporation.
 - b. Carlisle SynTec Incorporated.
 - c. Firestone Building Products Company.
 - d. GAF Materials Corp.
 - e. Johns Manville International Inc.
- C. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.
- D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.6 INSULATION ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FMG 4470, designed for fastening roof insulation to substrate, and acceptable to roofing system manufacturer.
- C. Cold Fluid-Applied Adhesive: Manufacturer's standard cold fluid-applied adhesive formulated to adhere roof insulation to substrate.
- D. Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/2 inch thick.

2.7 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads or rolls approximately 3/16 inch thick, and acceptable to membrane roofing system manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and set and braced and that roof drains 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 surface plane flatness and fastening of existing roof deck comply with roofing attachment requirements.
 - 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. 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. 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.

3.3 VAPOR-RETARDER INSTALLATION

- A. Self-Adhering Sheet Vapor Retarder: Prime substrate if required by manufacturer. Install self-adhering sheet vapor retarder over area to receive vapor retarder, side, and end lapping each sheet a minimum of 3-1/2 inches and 6 inches, respectively. Seal laps by rolling.
- B. Polyethylene Film Vapor Retarder: Loosely lay polyethylene-film vapor retarder over area to receive vapor retarder, side, and end lapping each sheet a minimum of 2 inches and 6 inches, respectively. Continuously seal side and end laps with tape.

- C. Completely seal vapor retarder at side laps, end laps, terminations, obstructions, and penetrations to prevent air movement into roofing system.

3.4 INSULATION AND COVERBOARD INSTALLATION

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system manufacturer's written instructions for installing roof insulation.
- C. Install tapered insulation under area of roofing to conform to slopes indicated.
- D. Install one or more layers of insulation under area of roofing to achieve required thickness. Install 2 or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
- E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- F. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
 - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
- G. Mechanically Fastened Insulation and Coverboard: Install each layer of insulation and coverboard and secure to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
 - 1. Fasten insulation according to requirements in FMG's "Approval Guide" for specified Windstorm Resistance Classification.
 - 2. Fasten insulation to resist uplift pressure at corners, perimeter, and field of roof.

3.5 ADHERED ROOFING MEMBRANE INSTALLATION

- A. Install roofing membrane over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll roofing membrane and allow to relax before installing.
- B. Start installation of roofing membrane in presence of membrane roofing system manufacturer's technical personnel.
- C. Accurately align roofing membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

- D. Bonding Adhesive: Apply bonding adhesive to substrate and underside of roofing membrane at rate required by manufacturer and allow to partially dry before installing roofing membrane. Do not apply bonding adhesive to splice area of roofing membrane.
- E. Mechanically or adhesively fasten roofing membrane securely at terminations, penetrations, and perimeter of roofing.
- F. Apply roofing membrane with side laps shingled with slope of roof deck where possible.
- G. Tape Seam Installation: Clean and prime both faces of splice areas, apply splice tape, and firmly roll side and end laps of overlapping roofing membranes according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of roofing membrane terminations as required by roofing manufacturer.
- H. Repair tears, voids, and lapped seams in roofing that does not meet requirements.
- I. Spread sealant or mastic bed over deck drain flange at deck drains and securely seal roofing membrane in place with clamping ring.

3.6 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply bonding adhesive to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings.

3.7 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.8 FIELD QUALITY CONTROL

- A. Cooperate with field quality control personnel. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.

- B. Additional inspections and retesting of materials which fail to comply with specified material and installation requirements shall be performed at Contractor's expense.
- C. Final Roof Inspection: Engage roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Designer.
- D. Repair or remove and replace components of membrane roofing system where test results or inspections indicate that they do not comply with specified requirements.

3.9 PROTECTING AND CLEANING

- A. Protect membrane-roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Designer 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.

3.10 FINAL CLEANUP AND CLOSEOUT

- A. Remove all excess materials and debris from the site.
- B. Install roofing installation information at entry to roof.
- C. Follow close-out procedures under Section 017000, PROJECT CLOSEOUT.

END OF SECTION

SECTION 076200

SHEET METAL FLASHING AND TRIM

(Part of Work of Section 075323 – EPDM ROOFING, Filed Sub-Bid Required)

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Sheet metal flashing and trim for the following applications:
 - a. Formed wall flashing and trim.
 - b. Formed low-slope roof flashing and trim.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.
- D. Items To Be Furnished Only: Furnish the following items for installation by the designated Sections
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 061000 - ROUGH CARPENTRY for wood nailers, curbs, and blocking.
 - 2. Section 075323 - EPDM ROOFING for installing sheet metal flashing and trim integral with roofing membrane.
 - 3. Section 076123 – GUTTERS AND DOWNSPOUTS for bringing water from existing roof edges to the ground.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.

- B. Fabricate and install roof edge flashing and copings capable of resisting the Wind Zone forces required by Code according to recommendations in FMG Loss Prevention Data Sheet 1-49.
- C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F material surfaces.
- D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show layouts of sheet metal flashing and trim, including plans and elevations. Distinguish between shop- and field-assembled work. Include the following:
 - 1. Identify material, thickness, weight, and finish for each item and location in Project.
 - 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
 - 3. Details for fastening, joining, supporting, and anchoring sheet metal flashing and trim, including fasteners, clips, cleats, and attachments to adjoining work.
 - 4. Details of expansion-joint covers, including showing direction of expansion and contraction.
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
 - 1. Sheet Metal Flashing: 12 inches long. Include fasteners, cleats, clips, closures, and other attachments.
 - 2. Trim: 12 inches long. Include fasteners and other exposed accessories.
 - 3. Accessories: Full-size Sample.

1.5 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- B. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01.

1. Meet with the DCAMM Project Manager, Designer, User Agency's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
2. Review methods and procedures related to sheet metal flashing and trim.
3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.
- B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.7 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. Aluminum Sheet: ASTM B 209, Alloy 3003, 3004, 3105, or 5005. Thickness as specified in this Section. Temper suitable for forming and structural performance required, but not less than H14, finished as follows:
 1. High-Performance Organic Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid-chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Fluoropolymer 3-Coat System: Manufacturer's standard 3-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight, with a minimum total dry film thickness of 1.5 mil; complying with AAMA 2605.
 - 1) Color and Gloss: to match existing perimeter flashing.

- B. Stainless-Steel Sheet: ASTM A 240/A 240M, Type 304, with No. 2D dull, cold rolled finish. Thickness as specified in this Section.

2.2 UNDERLAYMENT MATERIALS

- A. Felts: ASTM D 226, Type II (No. 30), asphalt-saturated organic felt, nonperforated.
- B. Slip Sheet: Rosin-sized paper, minimum 3 lb./100 sq. ft.

2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
 - 1. Exposed Fasteners: Heads matching color of sheet metal by means of plastic caps or factory-applied coating.
 - 2. Fasteners for Flashing and Trim: Blind fasteners or self-drilling screws, gasketed, with hex washer head.
 - 3. Blind Fasteners: High-strength aluminum or stainless-steel rivets.
- C. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.
- D. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
- 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. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- G. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
- H. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.4 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
- B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
- C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 - 1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
 - 2. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.
- E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.
- F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.
- G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
 - 1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" for application but not less than thickness of metal being secured.

2.5 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing (Gravel Stop) and Fascia Caps: Fabricate in minimum 96-inch-long, but not exceeding 10-foot-long, sections. Furnish with 6-inch-wide joint cover plates.
 - 1. Joint Style: Butt, with 12-inch-wide concealed backup plate.
 - 2. Fabricate scuppers from the following material:
 - a. Aluminum: 0.050 inch thick.
- B. Copings: Fabricate in minimum 96-inch-long, but not exceeding 10-foot-long, sections. Fabricate joint plates of same thickness as copings. Furnish with continuous cleats to support edge of external leg and drill elongated holes for fasteners on interior leg. Miter corners, seal, and solder or weld watertight.
 - 1. Joint Style: Butt, with 12-inch-wide concealed backup plate.

2. Fabricate copings from the following material:
 - a. Aluminum: 0.050 inch thick.
- C. Base Flashing: Fabricate from the following material:
 1. Stainless Steel: 0.0187 inch thick.
- D. Counterflashing: Fabricate from the following material:
 1. Stainless Steel: 0.0187 inch thick.
- E. Roof-Penetration Flashing: Fabricate from the following material:
 1. Stainless Steel: 0.0187 inch thick.
- F. Splash Pans: Fabricate from the following material:
 1. Stainless Steel: 0.0187 inch thick.
- G. Roof-Drain Flashing: Fabricate from the following material:
 1. Stainless Steel: 0.0156 inch thick.

2.6 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of work.
 1. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
1. Torch cutting of sheet metal flashing and trim is not permitted.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.
1. Coat side of stainless-steel sheet metal flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip-sheet or install a course of polyethylene underlayment.
 3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.
- C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
- D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.
- E. 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.
1. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
- F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with elastomeric sealant concealed within joints.
- G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
 2. Aluminum: Use aluminum or stainless steel fasteners.
 3. Stainless Steel: Use stainless-steel fasteners.
- H. Seal joints with elastomeric sealant as required for watertight construction.
1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient

temperature at time of installation is moderate, between 40 and 70 deg F set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.

2. Prepare joints and apply sealants to comply with requirements in Section 079200 - JOINT SEALANTS.
- I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches except where pretinned surface would show in finished Work.
 1. Do not solder aluminum sheet.
 2. Stainless-Steel Soldering: Pretin edges of uncoated sheets to be soldered using solder recommended for stainless steel and phosphoric acid flux. Promptly wash off acid flux residue from metal after soldering.
 3. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.
 - J. Aluminum Flashing: Rivet or weld joints in uncoated aluminum where necessary for strength.

3.3 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal roof flashing and trim to comply with performance requirements[, sheet metal manufacturer's written installation instructions,] and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches over base flashing. Install stainless steel draw band and tighten.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with elastomeric sealant.
 1. Secure in a waterproof manner by means of snap-in installation and sealant.
- D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:
 1. Seal with elastomeric sealant and clamp flashing to pipes penetrating roof except for flashing on vent piping.

3.4 FIELD QUALITY CONTROL

- A. Cooperate with field quality control personnel. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
- B. Additional inspections and retesting of materials which fail to comply with specified material and installation requirements shall be performed at Contractor's expense.

3.5 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 and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. 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

SECTION 076213

SHEET METAL GUTTERS AND DOWNSPOUTS

(Part of Work of Section 075323 – EDPM ROOFING, Filed Sub-Bid Required)

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Gutters and downspouts
- B. Accessories

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM A653: Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot Dip Process.
 - 2. ASTM A792: Standard Specification for Steel Sheet, 55 percent Aluminum Zinc Alloy Coated by the Hot Dip Process.
 - 3. ASTM A924: Standard Specification for General Requirements for Steel Sheet, Metallic Coated by the Hot Dip Process.
 - 4. ASTM B370: Standard Specification for Copper Sheet and Strip for Building Construction.
- B. Leadership in Energy and Environmental Design (LEED)
- C. National Green Building System (NGBS)

1.3 SUBMITTALS

- A. Refer to Section 076200, SHEET METAL FLASHING AND TRIM.
- B. Product Data: Submit manufacturer current technical literature for each type of product.
- C. Samples: Provide nominal 3 x 5 inch sample of each color indicated for gutters, downspouts and accessories.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Manufacturer shall have a minimum of five (5) years experience in the production of sheet metal gutters and downspouts.
- B. Fabricator Qualifications: Shall be approved by manufacturer for fabrication of gutters and downspouts.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store materials on dry, level, firm, and clean surface.

1.6 WARRANTY

- A. Finish Warranty:
 - 1. Manufacturing Defects: Standard form in which manufacturer agrees to repair or replace items that fail by blistering, checks, crazes, flakes, peels or weathers unevenly due to a defect in manufacturing within warranty period from date of original installation.
 - 2. Warranty Period: 20 years.

PART 2 - PRODUCTS

2.1 GUTTERS

- A. Materials:
 - 1. Aluminum Coil Stock: Formed and coated aluminum coil stock; 3105 H24 aluminum.
- B. K-Style Gutter Fabrication:
 - 1. Gutter Size: 5 inches.
 - 2. Length: Continuous.
 - 3. Aluminum Thickness: 0.032 inch.
- C. Gutter Corner Fabrication:
 - 1. Provide mitered corners, lapped, sealed and riveted. Corners shall extend a minimum of 12 inches from the corner in each direction. Lap joint and sealant where connecting to continuous gutter.
 - 2. Match material, shape and finish of gutter.

2.2 DOWNSPOUTS

A. Rectangular downspout fabrication:

1. Size: 3 by 4 inches
2. Length: Standard 10 foot length
3. Texture: Corrugated.
4. Material thickness:
 - a. Aluminum Thickness: 0.025 inch.

2.3 ACCESSORIES

A. Gutters:

1. End Caps: Match material, shape and finish of gutter.
2. Outlet Tubes: Match material and shape of downspout.
3. Gutter Support:
 - a. Hidden Gutter Hanger: Manufacturer's standard aluminum hidden hanger.

B. Downspouts:

1. Downspout Support:
 - a. Exposed strap.
 - b. Color: White
2. Miscellaneous downspout components: Provide all necessary elbows, downspout offset sections, and pop rivets as required for a complete installation. All miscellaneous components shall match downspouts.

C. Fasteners:

1. Stainless steel fasteners of sufficient length to penetrate minimum 1 inch into substrate.

D. Flashing: Provide flashing complying with Section 07 62 00 Sheet Metal Flashing and Trim at roof apron, fascia apron, and where indicated.

E. Sealants: Tripolymer, single component sealant as recommended by manufacturer at gutter joints.

F. Downspout Strainer: Aluminum wire-ball downspout strainer.

2.4 FINISH

- A. Exterior Coating:
 - 1. Standard Coating; Kynar 500.
 - 2. Color: White

- B. Interior coating: Manufacturer's standard primer wash coat.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify that substrates are in place and ready for installation of gutters and downspouts.

3.2 INSTALLATION

- A. General: Install Work securely in place and provide for expansion and contraction of components using lapped and sealed joints
 - 1. Do not install damaged components.
 - 2. Separate dissimilar metals to prevent galvanic action through the use of bituminous coating or other permanent separation recommended by SMACNA.
 - 3. Space expansion joints in gutters at a maximum of 70 foot centers.
 - 4. Rivet joints where required for strength, exposed rivet shall match gutter or downspout color.
 - 5. Torch cutting of components is not allowed.

- B. Gutters:
 - 1. Install gutter supports at no more than 24 inches on center.
 - 2. Slope gutters evenly to downspouts; provide end caps at gutter ends and seal watertight per manufacturer's instructions.
 - 3. Install outlet tubes at all downspout locations, seal watertight.
 - 4. Apply joint sealants at gutter joints per manufacturer's installation instructions.

- C. Downspouts:
 - 1. Install downspouts, provide elbows and offsets, and secure downspouts to wall construction using downspout supports spaced no more than 10 feet spacing on center. Maximum distance of downspout support from top or bottom of downspout shall be 2 feet. Provide 45 degree elbow at bottom of downspout to direct water away from wall surface or foundation.

2. Where downspout connects to building perimeter drainage system, lap downspout and perimeter drainage pipe a minimum of 3 inches.
3. Install pre-cast concrete splash pans under downspouts.

3.3 CLEANING AND PROTECTION

- A. Remove damaged, defective or improperly installed materials. Replace with new materials installed per requirements of this section.
- B. Clean finished surfaces according to manufacturer's written instructions; maintain clean condition until Final Completion.

END OF SECTION

SECTION 079200

JOINT SEALANTS

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Joint sealants and fillers.
- B. This Section includes joint sealants for the applications specified with the products in this Section and as indicated on the Drawings.
- C. Alternates: Not Applicable.
- D. Items To Be Installed Only: Not Applicable.
- E. Items To Be Furnished Only: Not Applicable.
- F. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
 - 1. Section 075323 – EDPM ROOFING for penetrations of roofing systems.
 - 2. Section 092500 - GYPSUM DRYWALL for sealing perimeter joints of gypsum board partitions.
 - 3. Section 099000 – PAINTING AND COATING for sealing edge moldings at perimeters of exterior panels and mouldings.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.4 SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- C. Qualification Data: For Installer.
- D. Preconstruction Field Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on preconstruction testing specified in "Quality Assurance" Article.
- E. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- F. Field Test Report Log: For each elastomeric sealant application.
- G. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
 - 1. Use manufacturer's standard test method to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 - 2. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 - 3. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
 - 4. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

1.6 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 2. When joint substrates are wet.
 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.7 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Five years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.

- B. VOC Content of Interior Sealants: Provide interior sealants and sealant primers that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
1. Architectural Sealants: 250 g/L.
 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Colors of Exposed Joint Sealants: As indicated by manufacturer's designations.

2.2 JOINT SEALANTS

- A. Elastomeric Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied chemically curing sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- B. Stain-Test-Response Characteristics: Elastomeric sealants shall be nonstaining to porous substrates. Provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- C. Suitability for Contact with Food: Where elastomeric sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.
- D. Single-Component Neutral-Curing Silicone Sealant:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Dow Corning Corporation; 790.
 - b. GE Silicones; SilPruf LM SCS2700.
 - c. May National Bondaflex Sil 290
 - d. Pecora Corporation; 864.
 - e. Tremco Inc.; Spectrem 1.
 2. Extent of Use: Joints in exterior vertical and soffit surfaces.
- E. Single- or Multi-component Pourable Urethane Sealant:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Bostik Findley; Chem-Calk 550.
 - b. May National Bondaflex PUR 2 SL
 - c. Meadows, W. R., Inc.; POURTHANE.
 - d. Pecora Corporation; Urexpan NR-200.
 - e. Tremco Inc.; THC-901, multi-component.
 - f. Tremco Inc.; Vulkem 45SSL, single component.

2. Extent of Use: Joints in exterior horizontal surfaces.

F. Single-Component Mildew-Resistant Acid-Curing Silicone Sealant:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

- a. Dow Corning Corporation; 786 Mildew Resistant.
- b. GE Silicones; Sanitary SCS1700.
- c. May National Bondaflex Sil 100 WF
- d. Tremco Inc.; Tremsil 200.

2. Extent of Use: Sanitary joints at interior toilet rooms and other wet areas.

G. Latex Sealant: Comply with ASTM C 834, Type P, Grade NF.

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

- a. BASF Building Systems; Sonolac.
- b. Bostik Findley; Chem-Calk 600
- c. May National Bondaflex Sil-A 700
- d. Pecora Corporation; AC-20+.
- e. Tremco Inc.; Tremflex 834.

2. Extent of Use: Joints at non-moving interior surfaces, except where indicated to be sanitary joints.

2.3 JOINT-SEALANT BACKING

A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D 1056, nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 26 deg F. Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and to otherwise contribute to optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include concrete, masonry and unglazed surfaces of ceramic tile.
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following metal, glass, porcelain enamel and glazed surfaces of ceramic tile.

- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

3.4 FIELD QUALITY CONTROL

- A. Cooperate with field quality control personnel. Allow inspectors access to scaffolding and work areas, as needed to perform inspections.
- B. Additional inspections and retesting of materials which fail to comply with specified material and installation requirements shall be performed at Contractor's expense.

3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION

SECTION 092500

GYPSUM DRYWALL

PART 1 GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Furnish and install gypsum drywall work, as indicated on the Drawings and as specified herein. Include, but do not limit to:
 - 1. New drywall surfaces and the repair and refinishing of drywall surfaces where disturbed by the work of this contract.

1.2 RELATED REQUIREMENTS

- A. Wood blocking, furring, grounds, etc., except plumbing fixture support blocking: Section 061000, ROUGH CARPENTRY.
- B. Painting: Section 099000, PAINTING.

1.3 REFERENCES

- A. The BIDDING REQUIREMENTS, CONTRACT FORMS AND CONDITIONS OF THE CONTRACT and applicable parts of DIVISION 1 - GENERAL REQUIREMENTS, as listed in the Table of Contents, shall be included in and made a part of this Section.
- B. Examine all Drawings and all other Sections of the Specifications for requirements therein affecting the work of this Section.

1.4 REFERENCED STANDARDS

- A. American Society for Testing and Materials (ASTM):
 - C 36 Specification for Gypsum Wallboard
 - C 79 Test Method for Gypsum Sheathing Board
 - C 442 Specification for Gypsum Backing Board and Coreboard
 - C 475 Joint Treatment Materials for Gypsum Wallboard Construction
 - C 514 Specification for Nails for the Application of Gypsum Wallboard
 - C 630 Specification for Water-Resistant Gypsum Backing Board

- C 645 Specification for Non-Load (Axial) Bearing Steel Studs, Runners (Track), and Rigid Furring Channels for Screw Application of Gypsum Board
 - C 646 Specification for Steel Drill Screws for the Application of Gypsum Board to Light-Gauge Steel Studs
 - C 754 Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Board
 - C 840 Specifications for Application and Finishing of Gypsum Board
 - C 893 Type G Steel Screws for the Application of Gypsum Board to Gypsum Board
 - C 894 Type W Screws for the Application of Gypsum Board to Wood Framing
 - C 919 Sealants in Acoustical Applications
 - C 931 Specification for Exterior Gypsum Soffit Board
 - C 954 Specification for Steel Drill Screws for the Application of Gypsum Board to Steel Studs from 0.033 in. (0.84-mm) to 0.112 in. (2.84-mm) in Thickness
 - C 1002 Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases
 - C 1047 Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base
- B. Level of finish of gypsum wallboard products:
- GA-214 Level of Finish Consensus Document - Gypsum Association

All products used in the Project shall be manufactured by the same manufacturer.

1.5 SUBMITTALS

- A. Shop Drawings: Furnish complete shop drawings and product cuts of all work of this Section to Architect for approval, showing all pertinent details of construction and installation, and sizes, gauges, configurations, and connections of all components. Confirm on shop drawings that deflection will not exceed L/360 of length.
- B. Samples: Furnish samples of materials to be furnished under this Section to Architect for approval.

1.6 QUALITY ASSURANCE

- A. Reference Standards: Conform to governing laws, building code and manufacturer's printed standards.

1.7 COORDINATION

- A. Work of this Section shall be coordinated with the work of other Sections to assure the steady progress of all the work of the Contract. Obtain complete information regarding wall and ceiling mounted fixtures, grilles, registers, access panels, equipment, accessories, etc. to be used on the work from other trades. In no case shall work of other Sections be concealed until it has been inspected.

1.8 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver all manufactured materials to site in original packages, containers, or bundles bearing the manufacturer's name and brand names, type of material, and contents.
- B. Store materials in interior spaces, above floors, under cover, away from sweating walls and other damp surfaces, and with good ventilation.
- C. Handle gypsum boards to prevent damage to edges, ends, or surfaces. Protect metal corner beads, casing beads, and trim from being bent or damaged.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Materials shall be manufactured by Gold Bond Building Products, United States Gypsum Co., Georgia-Pacific Co.

2.2 MATERIALS

- A. Ceiling Suspension System: Shall be a complete, mechanical suspension system, conforming to ASTM C 645, consisting of cold-rolled steel channel main runners, screwable steel furring channels, hangers, and anchors, and all required clips and other components, required for complete installation.
 - 1. Hanger anchors shall be of type suitable for each of project conditions, and of sufficient capacity (not less than 150 lb. live load each) for purpose intended.
 - 2. Hangers shall be 12 gauge, minimum, galvanized and annealed steel wire.
 - 3. Steel runner channels shall be 1-1/2 in. cold-rolled 16 gauge steel channels, weighing 475 lb. per 1,000 lin. ft., shop painted black.

4. Screwable steel ceiling furring channels shall be 25 gauge hot-dip galvanized, screwable, pressed steel furring channels, 7/8 in. thick, hat section.
 5. Clips for attachment of steel furring channels to steel carrying channels shall be proprietary clips as recommended by manufacturer.
 6. Tie Wire: Not less than 16 gauge annealed and galvanized.
- B. Screwable Steel Stud Framing System: Unless otherwise indicated, shall be a complete proprietary framing system consisting of prefabricated, non-load bearing, screwable 20 gauge (heavy gauge) and 25 gauge (light gauge) hot-dip galvanized steel studs, and all required steel track, anchors, and related items, conforming to ASTM C 645, all hot-dip galvanized.
1. Steel studs at jambs of door and fixed glass frames, at open partition ends, where the partition is to receive wall-mounted shelves, heavy fixtures, etc., and where use of light gauge studs is limited by manufacturer's structural design tables shall be 20 gauge. At other locations studs shall be 25 gauge.
 2. Wood blockings for support of fixtures, accessories, etc., shall be Construction and/or Standard Grade Hem-fir.
- C. Screwable Steel Wall Furring Channels: 25 gauge hot-dip galvanized, screwable, pressed steel furring channels, 7/8 in. thick, hat section, Z furring channels, lin., 1-1/2 in. and 2 in. Z shaped channels.
- D. Gypsum Wallboard: Indicated thickness(es) by 48 in. width by lengths as required, tapered edge, paper finish, conforming to ASTM C36. Where used in fire-rated assemblies, Type X fire resistant type shall be used. Moisture resistant gypsum wall board shall be used at toilet rooms and kitchen areas and as indicated on the drawings. Acoustical board shall be used where indicated on the drawings.
- E. Joint Treatment Materials: Joint treatment materials shall conform to ASTM C 475.
1. Laminating Adhesive and Joint Finishing compound: As recommended by gypsum wallboard manufacturer, interior type for interior general use, exterior type for use at water-resistant gypsum backer board.
 2. Joint Tape: 2 in. to 2-1/2 in. wide paper tape, as recommended by gypsum wallboard manufacturer.
- F. Screws:
1. Screws for Attachment of Gypsum Wallboard to Steel Framing and Furring Members: Self-drilling, Type S, bugle head screws, conforming to ASTM C 646, with bugle-type

Phillips-head, appropriate size and length in each case as recommended by manufacturer.

2. Screws for Attachment of Gypsum Wallboard to Wood Blocking: Self-drilling Type W screws conforming to ASTM C 894, with bugle-type Phillips-head. Screw length and size in each case shall be as recommended by gypsum wallboard manufacturer.
 3. Screws for Attachment of Steel Framing and Furring Members to Other Steel Members: Self-drilling, Type S, pan head screws, conforming to ASTM C 646, appropriate size and length in each case as recommended by manufacturer.
- G. Accessories shall conform to ASTM C 840 and the following:
1. Corner Bead: 1 in. by 1 in. perforated flange, standard type, 26 gauge, galvanized steel, with paper facing bead for compound finishing equal to B1XW EL B1 (Super Wide) as manufactured by USG.
 2. Metal Trim: 24 gauge, galvanized steel, with paper facing bead for compound finishing.
 3. Control Joint: 26 gauge, galvanized steel, "Vee" type, with perforated flanges, for compound finishing.

PART 3 EXECUTION

3.1 INSPECTION AND COORDINATION

- A. Inspect job conditions and related work and report to Architect in writing, all conditions interfering with the proper installation of work of this Section. Commencement of work in any given area shall constitute acceptance of conditions in that area as acceptable to receive work of this Section.
- B. Make all changes and adjustments in work of this Section as needed to accommodate the work of other trades, providing all cutting and patching until it has been inspected.

3.2 GENERAL REQUIREMENTS

- A. Work shall conform to published specifications and installation instructions of each manufacturer, the approved shop drawings, above-referenced quality assurance standards, the governing laws and code. Refer to Drawings to determine location of fire-resistive, fire-protective, and acoustically-rated work, and construct this work to conform to the specifications and installation instructions of UL or other testing agency(ies). Also refer to the Drawings to determine the number of layers of gypsum board, thickness of board, etc., for each of the installations.

- B. Erect gypsum drywall work, rigidly support, and securely fasten in place, in such manner that plumb, level, and true finished lines and surfaces will result in the finished work in accordance with the requirements of ASTM C 754 and ASTM C 840.
- C. Do gypsum drywall work only after all windows and door openings are enclosed and a temperature of not less than 55°F. is maintained during and up to completion of the drywall work.
- D. Gypsum drywall work only after permanent heat is installed.

3.3 STEEL FRAMING AND FURRING

- A. Suspended Ceilings: Install complete suspended steel ceiling framing system in accordance with ASTM C 754, and the following:
 - 1. Install hangers at ends of, and 48 in. on center along lengths of main runners, securing to ceiling structure above with the appropriate anchors. Provide all additional secondary framing as required to provide support by primary framing members or deck above. Do not anchor hangers to pipes, ducts, or other overhead non-structural elements.
 - 2. Install steel runner channels 48 in. on center maximum and within 6 ft. of walls.
 - 3. Install screwable steel furring channels perpendicular to main runners and spaced 24 in. on center along length of, and within 6 in. of walls without wall angles, and within 8 in. of ends of panels and clipped to, the main runners.
 - 4. Entire installation shall be level and true, with maximum variation from level 1/8 in. when measured with a 10 ft. straight-edge, and with accumulation of variation of level not to exceed 1/2 in. per room or area.
- B. Screwable Steel Stud Partition construction shall conform to ASTM C754, and the following:
 - 1. Installation of Partition Track: Align standard steel track at floors and ceiling construction according to partition layouts and secure with suitable fasteners to the floor and ceiling construction at a spacing not to exceed 24 in. o.c. Carry all walls and partitions full height as noted on the Drawings above ceiling to underside of floor and roof decks. Fill all voids above track, such as steel deck flutes, solidly with packing wool or fiberglass insulation at non-fire rated partitions, and with mineral wool fire-safing insulation at fire rated partitions for smoke and fire-stopping purposed in flutes of steel deck directly above top track where partitions run perpendicular to flutes, to achieve effective closure and to assure the rated performance at fire-rated assemblies. Where partitions run parallel to trusses provide 2 X 6 bridging 2'0" o.c. Where acoustical partitions (those to receive acoustical insulation) and fire-rated partitions run parallel to trusses, install all the track in continuous bed of acoustical or thermal sealant formed by applying a 1/4 in. minimum bead of sealant to the rear of

the track and pressing into place. At fire-rated partitions also install tightly backed fire-safing insulation in the voids for smoke and fire-stopping purposes to achieve effective closure and to assure the rated performance of the fire-rated assemblies.

2. Installation of Steel Studs: Steel studs shall be one piece, without splices installed at spacing not to exceed 16 in. o.c. (or other spacing indicated) and located at abutting construction and at the internal apex of corners. Provide additional studs at corner conditions, frame jambs, etc., as called for on the Drawings and specified herein.
 3. Position steel studs vertically engaging both floor and runners. Anchor studs located adjacent to door and floor glass frames, partition intersections, corners, and over partition ends, to the floor and ceiling runner flanges with positive screw engagement with 3/8 in. Type S partition screws or by locking the studs with metal lock fasteners and to the ceiling runner flanges by screw engagement. Allow for relief of 1/2 in. roof or ceiling deflection at tops of all partitions by screwing through slotted holes.
 4. Install double stud at door and fixed glass frame jambs and securely attach to the frame anchors by at least two screws per anchor. Over steel door and fixed glass frames, install steel track header and install studs above, with back-to-back pair, centered over the door to secure control joints. Run continuous length of cold-rolled steel channel through the stud cores, overlapping at least one stud beyond jamb studs at each end. Frame out for recessed cabinets, accessories, grilles, etc., as recommended by the manufacturer for each of the project conditions.
- C. Steel Stud Chase Walls: Construct partitions on both sides of non-fire rated chase walls in same manner as other partitions, with studs in direct alignment across the chase. Brace with three gypsum wallboard gussets, per pair of studs, across the chase, located at quarter points, and screwed to the studs. Comply with manufacturer's published details.
- D. Steel Furring: Install screwable steel furring channels over faces of concrete or masonry walls to receive gypsum wallboard finishes, continuously along tops and bottoms of walls and in continuous vertical rows space 16 in. o.c. along full length of each furring member, through alternate flanges.
- E. Metal Access Panels: Install all metal access panels at partitions, furrings, and suspended ceilings. Access panels will be furnished to this trade loose under other Section(s).
- F. Fixture Attachments: Before any wallboard is installed, a complete survey of all fixtures, accessories, cabinet work, shelves, rail brackets, door stops, or other items to be attached to the finished work of this Section shall be made and wood blocking or other attachments shall be installed within the steel framing and furring work to receive the loads. Blockings or other attachments for the various loads shall be as recommended by the manufacturer and shall be described on the shop drawings. All such fixture attachments shall be observed by the Contractor before commencing installation of wallboard. All such blockings and attachments shall be provided as work of this Section.

- G. Miscellaneous Framing and Furring: Construct all special miscellaneous screwable steel stud framing and furring, such as at ceiling edgings, soffits, column and beam enclosures, skylight wells, etc., as detailed and as required to achieve the shapes and profiles indicated and other miscellaneous framing indicated and/or reasonably required for the thorough completion of the Project.
1. Thoroughly fasten together, anchor, and brace to provide absolutely rigid structural conditions fully capable of supporting the loads to be applied with factor of safety not less than 2-1/2 to 1. Carry out the work generally as detailed, strictly following instructions of the manufacturer for steel and stud structural framing use. Screw all connections with self-tapping metal screws or other appropriate fasteners and provide all additional reinforcement required to assure the required performance.

3.4 GYPSUM WALLBOARD APPLICATION

- A. Unless otherwise indicated, application of gypsum wallboard shall conform to ASTM C840.
- B. Apply thickness and layers of gypsum wallboard at ceilings, walls, partitions, column and beam enclosures as indicated. Stagger joints in each layer. Locate joints in first layer on opposite sides of partitions to occur on different studs. Apply wallboard at ceilings with long dimension perpendicular to furring channels, with each end occurring over a framing member. Install wallboard at walls and partitions with long dimension vertical, and with each end and edge lying over a framing member.
1. At double layer installations apply second layer by combination of laminating adhesive and mechanical fastenings (through first layer into the steel framing and/or furring member behind), in strict accordance with manufacturer's printed recommendations for each project condition.
- C. Carry gypsum wallboard, each side, continuously from floor to underside of deck construction above, including above suspended ceilings, for acoustical and fire-resistive performances.
- D. To minimize end joints, use maximum practical lengths. Bring gypsum wallboard panels into contact, but do not force into place. Fit abutting ends and edges neatly. Provide slots for sealant at top, bottom, ends, and corners of wallboard at all walls and partitions indicated to receive acoustical insulation, as indicated. Also provide slots for sealant where wallboard abuts other finish materials, as specified hereinbelow.
- E. Spacing and installation of drywall screws for the various applications and fire-rating requirements shall conform to the printed standards of the manufacturer.
- F. Set heads of fasteners flush with surface of the paper, but not breaking the paper. Where attached loosely to a framing or furring member, a second fastener shall be installed within 1-1/2 in.

- G. Cut gypsum wallboard neatly at corners, edges, etc., and for pipes, electrical outlets, electrical conduit and raceway, recessed cabinets, and other projections.

3.5 INSTALLATION OF WALLBOARD ACCESSORIES

- A. Install accessories at gypsum wallboard installations, as follows, in strict accordance with manufacturer's instructions.
 - 1. Install joint reinforcement tape at all joints, and at all internal corners where abutting surfaces are both gypsum wallboard construction.
 - 2. Install corner beads at all external wallboard corners.
 - 3. Install casing bead wherever finish wallboard abuts dissimilar materials and other places where specifically called for on the Drawings.
 - 4. Install control joints generally over (and under) centers of all major wall openings (those greater than 40% of wall height, measured floor to ceiling), over all door frames, over control joints in back-up materials, and at maximum distance of 30 ft. in walls, 60 ft. or to limit areas to not more than 2400 sq. ft., at ceilings (except where lesser distance is indicated), and other places specifically called for on the Drawings. Interrupt furring and/or framing behind the control joints. In all cases, specific locations of control joints shall be as indicated or as directed by the Architect, and this information must be in hand before control joint installation is begun.
 - 5. Install access panels supplied by others as required. Before installation, verify correct rating of panel to be installed.

3.6 JOINT FINISHING

- A. The level of finish shall be equal to "Level 4" as indicated by the Gypsum Association document GA-214 unless otherwise indicated on the documents. Level 0 may be suitable for temporary construction. Level 1 is often called "fire-taping" and may be suitable for locations above ceilings that are not exposed to view or required for finishing. Level 2 finish can be used for areas where finish appearance is not a concern or where used as a substrate for another solid finish material such as tile. Level 3 finish is suitable for areas that will be covered with a heavy textured spray or heavy wall covering finish is specified. Level 5 is used for areas requiring a high degree of smoothness and durability in the final finish that may have a gloss or semi-gloss finish applied. This finish is often called "veneer plaster.
- B. Finish all corners, joints, and edges of gypsum wallboard and gypsum soffit board work, and all corner beads, casing beads, control joints and other trim to provide complete finishing of all exposed wallboard surfaces, in strict accordance with manufacturer's printed instructions and ASTM C 840. Finish to absolutely flush, true surface showing no irregularity when tested by light source parallel to the plane of the nominal wallboard face.

- C. Finish all concealed joints in wallboard above ceiling finishes flush with tape and a minimum of two coats of compound to provide a continuous, uninterrupted plane for acoustical and fire-resistive performance. Concealed joints may be left in rough condition without finish sanding.

3.9 PROTECTION AND CLEANING

- A. Protect the work of other trades and work of this Section already installed against soiling and damage by the exercise of reasonable care and precautions. Repair or replace any work so damaged or soiled.

- A. Protect the work of other trades and work of this Section already installed against soiling and damage by the exercise of reasonable care and precautions. Repair or replace any work so damaged or soiled.

END OF SECTION

SECTION 099000

PAINTING AND COATING

(Filed Sub-Bid Required)

PART 1 -

PART 2 - GENERAL

2.1 FILED SUB-BIDS

- A. PAINTING work is stipulated as a Filed Sub-Bid under Part D, Item 2 of the Form for General Bid.
- B. All sub-bids shall be submitted on the Form for Sub-Bid furnished by the Awarding Authority, as required by section 44F of Chapter 149 of the Massachusetts General Laws, as amended. **Page 2 of 4 M.G.L. c.149, §§ 44A-J Revised 10/24/14**
- C. Sub-Bids must be filed with the Awarding Authority in a sealed envelope, before twelve o'clock (noon), Boston time, on the date stipulated in the Advertisement.
- D. Specific information relating to the sub-bidders is set forth in the Contract Documents, under the heading "Notice to All Bidders, Including Sub-Bidders" and the attention of sub-bidders is directed thereto.

The work to be done under this section PAINTING is included in the following specifications section: Section 099000 – PAINTING AND COATING.

2.2 And is shown on Drawings numbered: A1-1, A1-2, A2-1, A5-1, and A9-2.

2.3 GENERAL PROVISIONS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

2.4 DESCRIPTION OF WORK

- A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:

1. Field painting of exposed interior items and surfaces disturbed by the work of this contract.
 2. Field painting of exterior stucco panels and related wood trim as indicated on the drawings.
 3. Field painting of concrete masonry trim indicated to be painted on the drawings.
 4. Field painting of new metal railings.
 5. Surface preparation for painting.
- B. Alternates: Not Applicable.
- C. Items To Be Installed Only: Not Applicable.
- D. Items To Be Furnished Only: Not Applicable.
- E. Related Work: The following items are not included in this Section and will be performed under the designated Sections:
1. Section 031330 – CONCRETE REPAIR for repair of exterior concrete masonry trim.
 2. Section 055000 - RAILINGS for shop priming galvanized ferrous metal.
 3. Section 092116 - GYPSUM BOARD ASSEMBLIES for surface preparation of gypsum board.

2.5 DEFINITIONS AND EXTENT

- A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85-degree meter.
 2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60-degree meter.
 3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
 4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60-degree meter.
- B. This Section includes surface preparation and field painting of exposed exterior and interior items and surfaces.
1. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.
- C. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Designer will select from standard colors and finishes available.

1. Painting includes field painting of exposed bare and covered pipes and ducts (including color coding), hangers, exposed steel and iron supports, and surfaces of mechanical and electrical equipment that do not have a factory-applied final finish.
- D. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
1. Prefinished items include the following factory-finished components:
 - a. Finished mechanical and electrical equipment.
 - b. Light fixtures.
 2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
 - a. Foundation spaces.
 - b. Furred areas.
 - c. Ceiling plenums.
 - d. Utility tunnels.
 - e. Pipe spaces.
 - f. Duct shafts.
 3. Finished metal surfaces include the following:
 - a. Anodized aluminum.
 - b. Stainless steel.
 - c. Chromium plate.
 - d. Copper and copper alloys.
 - e. Bronze and brass.
 4. Operating parts include moving parts of operating equipment and the following:
 - a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
 5. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

2.6 SUBMITTALS

- A. Product Data: For each paint system indicated. Include block fillers and primers.
1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.

2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
- B. Samples for Verification: For each color and material to be applied, with texture to simulate actual conditions, on representative Samples of the actual substrate.
1. Provide stepped Samples, defining each separate coat, including block fillers and primers. Use representative colors when preparing Samples for review. Resubmit until required sheen, color, and texture are achieved.
 2. Provide a list of materials and applications for each coat of each Sample. Label each Sample for location and application.
 3. Submit two eight inch by 12 inch Samples for each type of finish coating for Designer's review of color and texture only.
- C. Qualification Data: For Applicator.

2.7 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Source Limitations: Obtain block fillers and primers for each coating system from the same manufacturer as the finish coats.
- C. Mockups: Provide a full-coat benchmark finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5. Duplicate finish of approved sample Submittals.
1. Designer will select one room or surface to represent surfaces and conditions for application of each type of coating and substrate.
 - a. Wall Surfaces: Provide samples on at least 100 sq. ft.
 - b. Small Areas and Items: Designer will designate items or areas required.
 2. Apply benchmark samples, according to requirements for the completed Work, after permanent lighting and other environmental services have been activated. Provide required sheen, color, and texture on each surface.
 - a. After finishes are accepted, Designer will use the room or surface to evaluate coating systems of a similar nature.
 3. Final approval of colors will be from benchmark samples.

2.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label and the following information:
 - 1. Product name or title of material.
 - 2. Product description (generic classification or binder type).
 - 3. Manufacturer's stock number and date of manufacture.
 - 4. Contents by volume, for pigment and vehicle constituents.
 - 5. Thinning instructions.
 - 6. Application instructions.
 - 7. Color name and number.
 - 8. VOC content.

- B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
 - 1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

2.9 PROJECT CONDITIONS

- A. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.

- B. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.

- C. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
 - 1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

2.10 EXTRA MATERIALS

- A. Furnish extra materials that match and are from same production runs as products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: Furnish four unopened gallons of each type of paint and coating work, in color and gloss as used for the Project.

PART 3 - PRODUCTS

3.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work are listed in the Finish Schedule at the end of this Section.

3.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
- B. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.
 - 1. Proprietary Names: Use of manufacturer's proprietary product names to designate colors or materials is not intended to imply that products named are required to be used to the exclusion of equivalent products of other manufacturers. Furnish manufacturer's material data and certificates of performance for proposed substitutions.

PART 4 - EXECUTION

4.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for paint application.
 - 1. Proceed with paint application only after unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
 - 2. Start of painting will be construed as Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 - 1. Notify Designer about anticipated problems when using the materials specified over substrates primed by others.

4.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the item, provide surface-applied protection before surface preparation and painting.
1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean substrates of substances that could impair bond of the various coatings. Remove oil and grease before cleaning.
1. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions and technical bulletins for each particular substrate condition and as specified.
1. Provide barrier coats over incompatible primers or remove and reprime.
 2. Cementitious Materials: Prepare concrete, concrete unit masonry, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
 - a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
 - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces if moisture content exceeds that permitted in manufacturer's written instructions.
 - c. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.
 3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
 - a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
 - b. Prime, stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
 - c. If transparent finish is required, backprime with spar varnish.

- d. Backprime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on back side.
 - e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
 - a. Blast steel surfaces clean as recommended by paint system manufacturer and according to SSPC-SP 6/NACE No. 3.
 - b. Treat bare and sandblasted or pickled clean metal with a metal treatment wash coat before priming.
 5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free of oil and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from coil stock by mechanical methods.
- D. Material Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
 2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
 3. Use only thinners approved by paint manufacturer and only within recommended limits.
- E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat but provide sufficient differences in shade of undercoats to distinguish each separate coat.

4.3 APPLICATION

- A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
1. Paint colors, surface treatments, and finishes are indicated in the paint schedules.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 3. Provide finish coats that are compatible with primers used.
 4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, grilles, convactor covers, covers for finned-tube radiation, and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.

5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 6. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
 7. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 8. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
 9. Sand lightly between each succeeding enamel or varnish coat.
- B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. The number of coats and film thickness required are the same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
 2. Omit primer over metal surfaces that have been shop primed and touchup painted.
 3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure that edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.
 4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm and does not deform or feel sticky under moderate thumb pressure, and until application of another coat of paint does not cause undercoat to lift or lose adhesion.
- C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.
1. Brushes: Use brushes best suited for type of material applied. Use brush of appropriate size for surface or item being painted.
 2. Rollers: Use rollers of carpet, velvet-back, or high-pile sheep's wool as recommended by manufacturer for material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness of the entire system as recommended by manufacturer.
- E. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.
- F. Mechanical items to be painted include, but are not limited to, the following:

1. Uninsulated metal piping.
 2. Uninsulated plastic piping.
 3. Pipe hangers and supports.
 4. Tanks that do not have factory-applied final finishes.
 5. Visible portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets.
 6. Duct, equipment, and pipe insulation having "all-service jacket" or other paintable jacket material.
 7. Mechanical equipment that is indicated to have a factory-primed finish for field painting.
- G. Electrical items to be painted include, but are not limited to, the following:
1. Switchgear.
 2. Panelboards.
 3. Electrical equipment that is indicated to have a factory-primed finish for field painting.
- H. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.
- I. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn-through or other defects due to insufficient sealing.
- J. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.
- K. Transparent (Clear) Finishes: Use multiple coats to produce a glass-smooth surface film of even luster. Provide a finish free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes, or other surface imperfections.
1. Provide satin finish for final coats.
- L. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.
- 4.4 CLEANING
- A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping without scratching or damaging adjacent finished surfaces.

4.5 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Designer.
- B. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by others to protect their work.
 1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

4.6 PAINT SCHEDULE

- A. Schedule: Provide products and number of coats specified. Use of manufacturer's proprietary product names to designate colors, materials, generic class, standard of quality and performance criteria and is not intended to imply that products named are required to be used to the exclusion of equivalent performing products of other manufacturers.
- B. Acceptable manufacturers include:
 1. Benjamin Moore
 2. Glidden
 3. PPG
 4. Tnemec
- C. Interior Paint Schedule:
 1. Interior Gypsum Wallboard and Plaster Walls for Latex Eggshell Finish:

One Coat	1.	Moore Eco Spec WB Interior Latex Primer (372)
And Two Coats	1.	Moore Eco Spec WB Interior Latex Eggshell (374)
 2. Interior Gypsum Wallboard and Plaster Ceilings for Latex Flat Finish:

One Coat	1.	Moore Eco Spec WB Interior Latex Primer (372)
And Two Coats	1.	Moore Eco Spec WB Interior Latex Flat (373)
 3. Exterior Stucco and Wood Frames for Semi-Gloss Finish:

One Coat	1.	Benjamin Moore Regal Select High-Build Soft-Gloss N403 (43 g/l), MPI#11, 311.
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- And One Coat 2. Benjamin Moore Regal Select High-Build Soft-Gloss N403 (43 g/l), MPI#11, 311.

- 4. Exterior Concrete Trim for Semi-Gloss Finish:
 - One Coat 1. Benjamin Moore Regal Super Spec Interior/Exterior Acrylic High-Build Masonry primer N068 (97 g/l), MPI#3, LEED 2009.
 - And Two Coats 2. Benjamin Moore Regal Select High-Build Low Lustre N401 (40 g/l), MPI#15, 315.

- 5. Mechanical and Electrical Work (Paint all exposed items throughout the project except factory finished items with factory-applied baked enamel finishes which occur in mechanical rooms or areas, and excepting chrome or nickel plating, stainless steel, and aluminum other than mill finished. Paint all exposed ductwork and inner portion of all ductwork: Same as specified for other interior metals, hereinabove.




END OF SECTION

DRAWINGS

ARCHITECTURAL ABBREVIATIONS

AA	AD	EA	IN	INCH	RA0	RAIN	WC
AB	ADJ	EAC	INCL	INCLUDED (ING)	RA1	RAIN WATER LEADER	WC
ABC	ADH	EAL	IC	INSIDE CLEAR	RA2	RAIL	WTR
ABD	ADK	EAM	IG	INSULATED (ING)	RA3	RAISED	WTR RESISTANT
ABE	ADL	EAN	INSUL	INSULATED (ION)	RA4	RAISED (VE)	WTR
ABF	ADM	EAO	INT	INTERIOR	RA5	REINFORCED	WT
ABG	ADN	EAP	JAN	JANITOR	RA6	REINFORCED TOR	W/F
ABH	ADO	EAQ	J	JOIST	RA7	REMOVE	W/W
ABI	ADP	EAS	KIT	KITCHEN	RA8	REQUIRED	W
ABJ	ADQ	EAT	LAM	LAMINATE	RA9	RESHLENT TILE	WIN
ABK	ADR	EAX	LAV	LAVATORY	RAA	REVISION	WIN
ABL	ADT	EAH	LEV	LEVEL	RAB	RAMP	W/D
ABM	ADU	EAL	LS	LEFT	RAC	ROOF BRAN	W/D
ABN	ADV	EAM	LWT	LIGHT WEIGHT	RAD	ROOF OPENING	WPT
ABO	AE	EAN	LVR	LOUVER	RAD	RUBBER	WPT
ABP	AEV	EAO	MCH	MACHINE	RAD	SANITARY NAPIN DISPENSER	WPT
ABQ	AEW	EAP	MBS	MASS BRICK	RAD	SCHEDULE	WPT
ABR	AEV	EAM	MBS	MASS BRICK	RAD	SECTION	WPT
ABS	AEV	EAN	MBS	MASS BRICK	RAD	SHEET METAL	WPT
ABT	AEW	EAO	MBS	MASS BRICK	RAD	SHEET METAL	WPT
ABU	AEW	EAM	MBS	MASS BRICK	RAD	SH	WPT
ABV	AEW	EAN	MBS	MASS BRICK	RAD	SH	WPT
ABW	AEW	EAM	MBS	MASS BRICK	RAD	SH	WPT
ABX	AEW	EAN	MBS	MASS BRICK	RAD	SH	WPT
ABY	AEW	EAM	MBS	MASS BRICK	RAD	SH	WPT
ABZ	AEW	EAN	MBS	MASS BRICK	RAD	SH	WPT

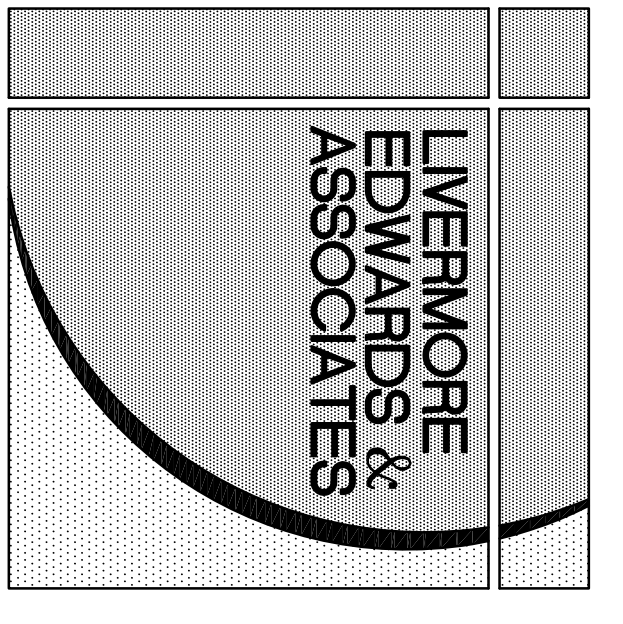
ARCHITECTURAL SYMBOLS

	ROOM NAME ROOM NUMBER AREA (WHERE APPLICABLE)
	DOOR TYPE
	WINDOW TYPE
	LOUVER TYPE
	PARTITION TYPE
	TITLE REFERENCE
	ELEVATION
	INTERIOR/EXTERIOR ELEVATION
	BUILDING SECTION
	WALL SECTION
	DETAIL SECTION
	DETAIL REFERENCE
	COLUMN CENTER LINE
	KEY NOTE

HARDY APARTMENTS RE-ROOFING

BID SET
AUGUST 15, 2019

51 LAKE STREET
WALTHAM, MA



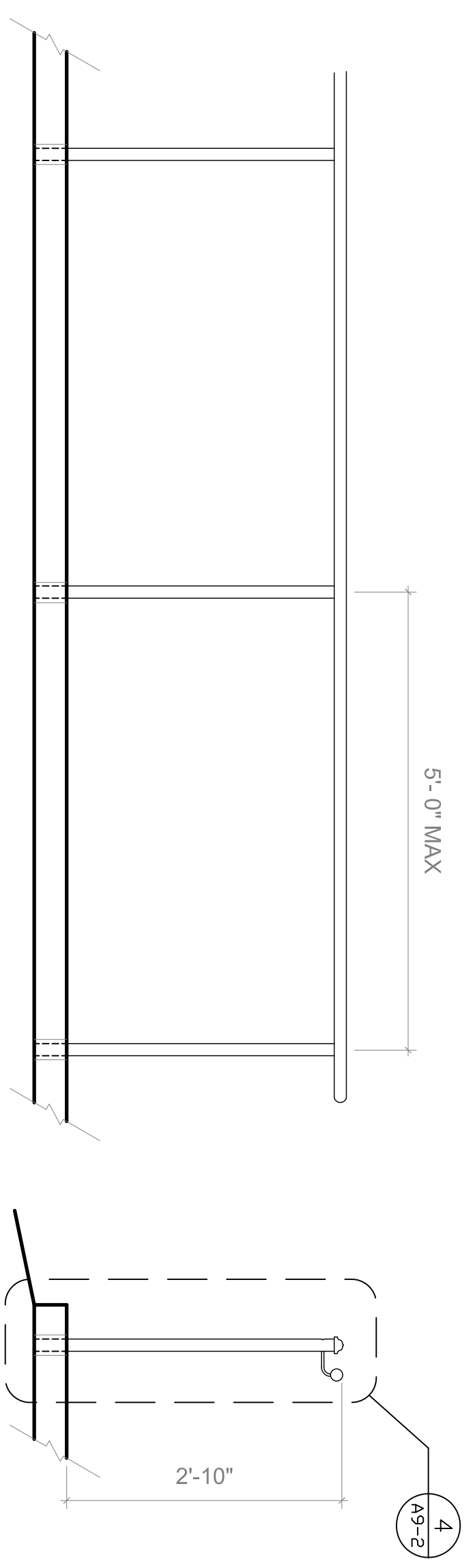
ARCHITECTS & PLANNERS
14 Spring Street
Waltham, MA 02451
Tel (781) 891-1250
Fax (781) 891-1850
www.livermoreedwards.com



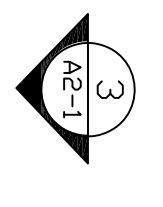
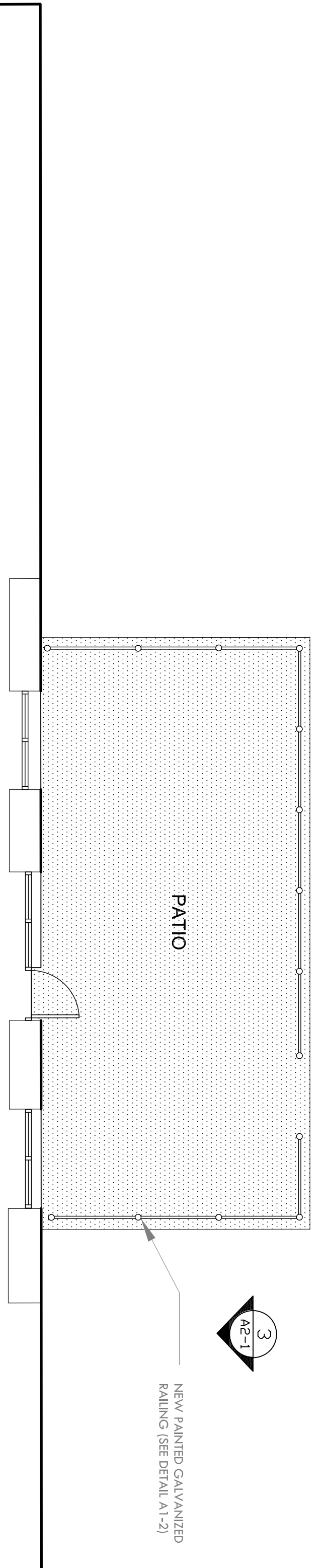
LOCUS PLAN

ARCHITECTURAL
A1-1 1ST FLOOR PLAN
A1-2 ROOF PLAN
A2-1 ELEVATIONS
A5-1 WALL DETAILS
A9-1 ROOF DETAILS
A9-2 MISC DETAILS

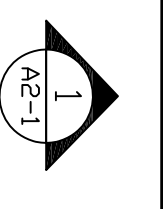
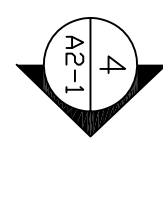
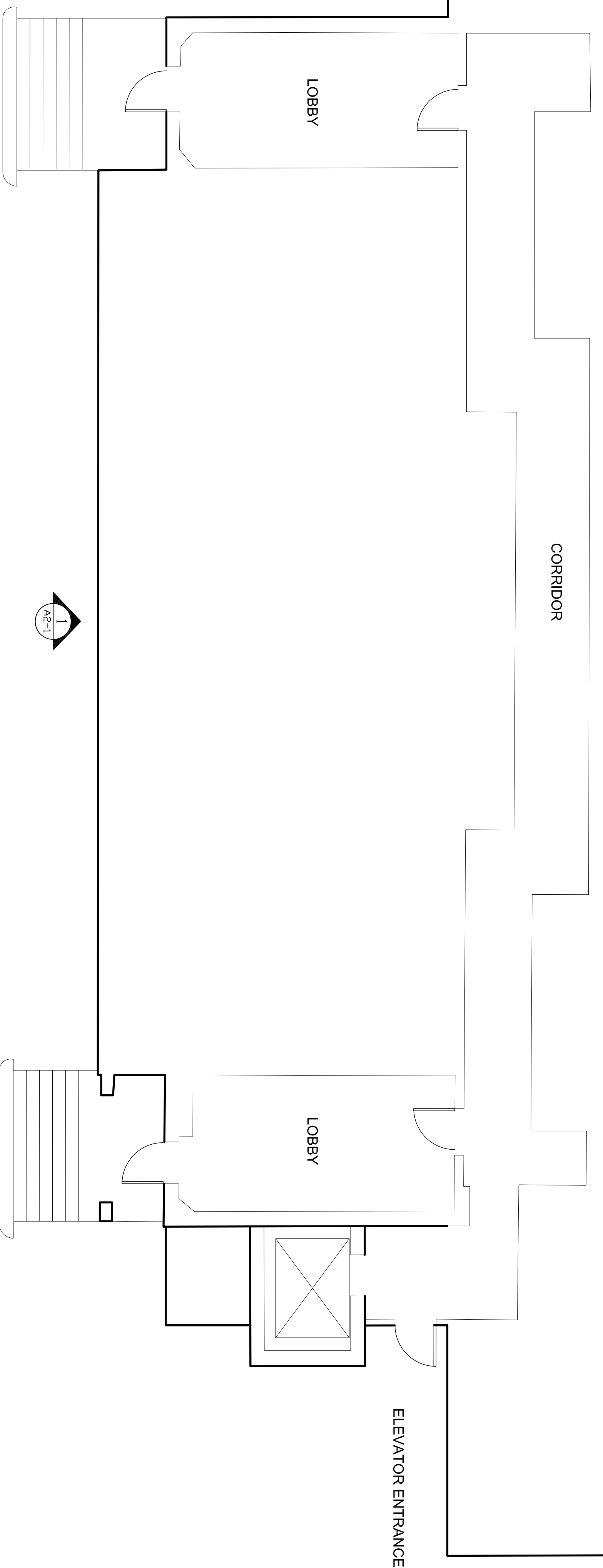
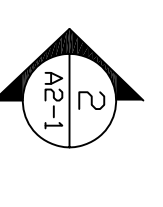
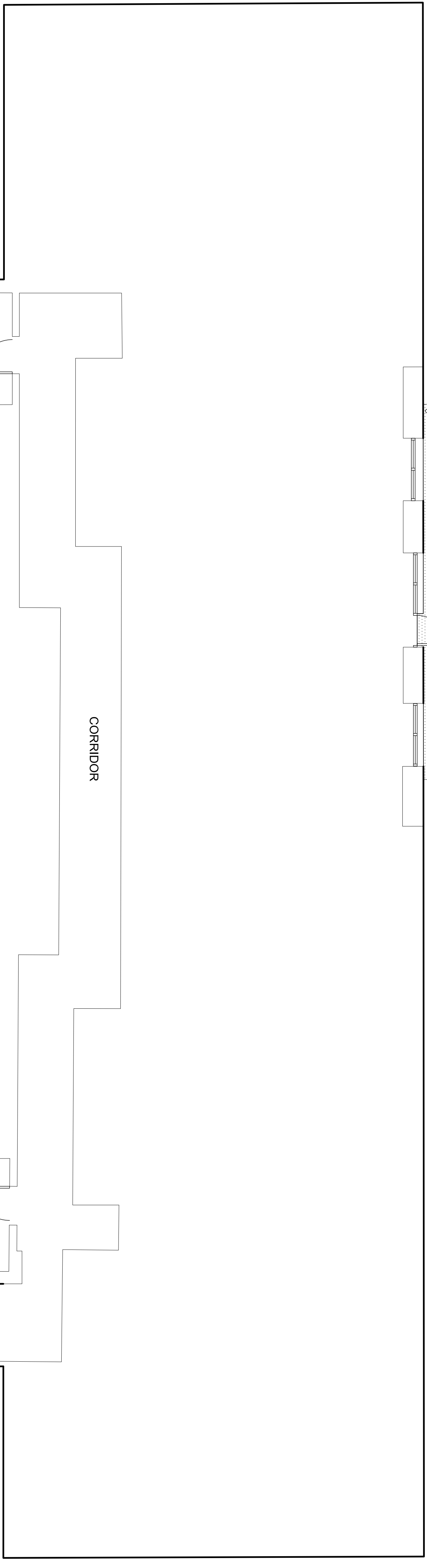
COVER/INDEX/LEGENDS



2 PIPE RAIL FENCE DETAIL
3/4" = 1'-0"



NEW PAINTED GALVANIZED
RAILING (SEE DETAIL A1-2)



1 FIRST FLOOR PLAN
3/16" = 1'-0"

PROJECT:
**HARDY APARTMENTS
RE-ROOFING**

51 LAKE STREET
WALTHAM, MA

PROJECT #: LE 1803
DRAWN BY: RL
CHECKED BY: RL
APPROVED BY: RL
SCALE:

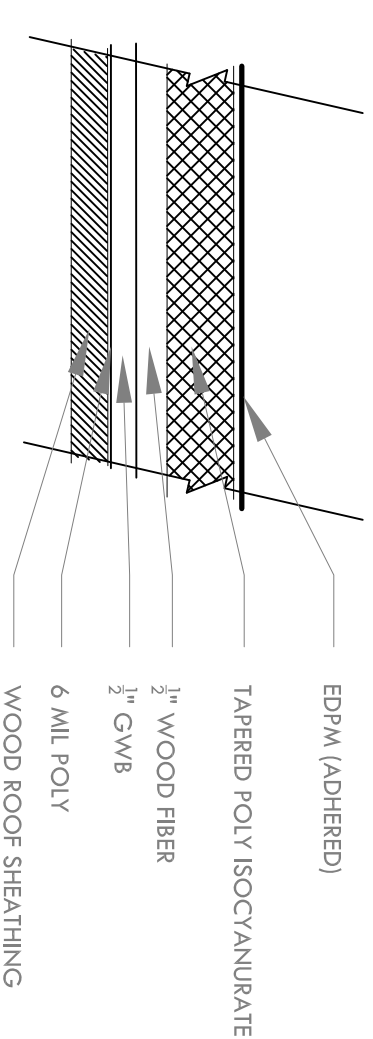
- STATUS:
- SCHEMATIC DESIGN
 - PRELIMINARY DESIGN
 - DESIGN DEVELOPMENT
 - FINAL REVIEW
 - BIDDING
 - PERMIT
 - CONSTRUCTION
 - OPEN CONSTRUCTION
 - AS-BUILT
- DATE: 8/15/19

REVISIONS:

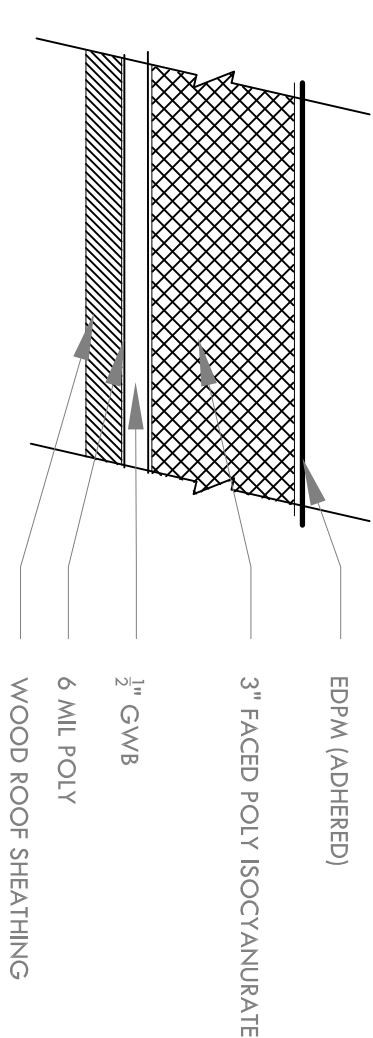
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DRAWINGS:
1 ST FLOOR PLAN

A1-1



B1
3" = 1'-0"

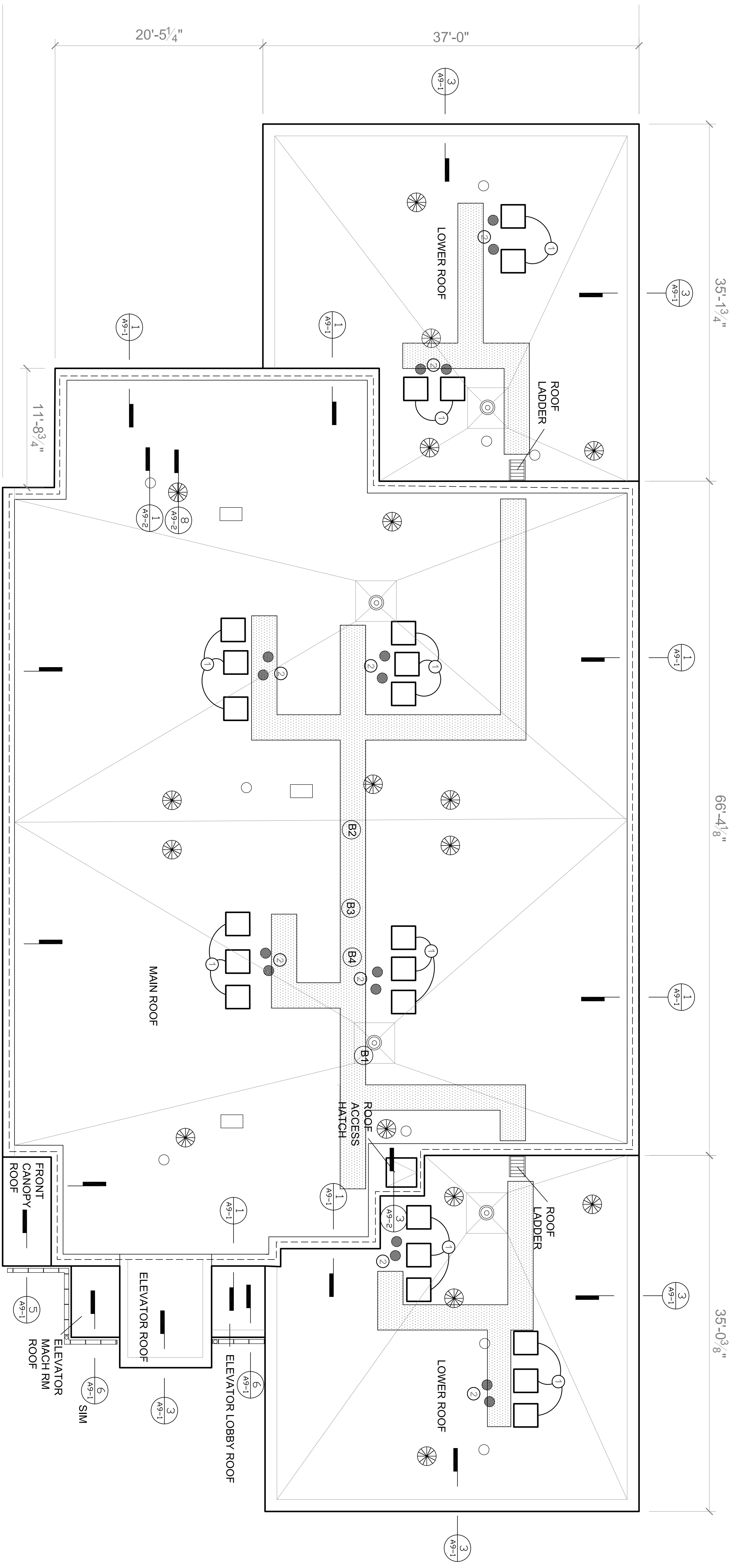


B2 B3 B4
3" = 1'-0"

- RE-ROOFING NOTES**
1. REMOVE EXISTING EPDM ROOFING MEMBRANE.
 2. HIGH ROOF EDGE FLASHINGS WILL BE REUSED AND LOW ROOF AND ELEVATOR ROOF EDGE FLASHINGS WILL BE REPLACED.
 3. ROOFING IS TO BE DESIGNED FOR 110 V MPH.
 4. NEW 2" POLYISO INSULATION WILL BE ADDED OVER EXISTING ROOF INSULATION TO MEET R-25 CI.
 5. PROVIDE TAPERED INSULATION AT EXISTING DRAINS.
 6. RENEW PITCH ROCKETS AND FLASHINGS TO ACCOMMODATE NEW INSULATION THICKNESS.
 7. ADJUST EXISTING LADDERS AND HVAC EQUIPMENT TO MEET NEW INSULATION THICKNESS AND PROVIDE NEW TREATED WOOD SLEEPERS FOR HVAC UNITS.
 8. HVAC CONTRACTOR TO REINSULATE ALL CONDENSER LINES.

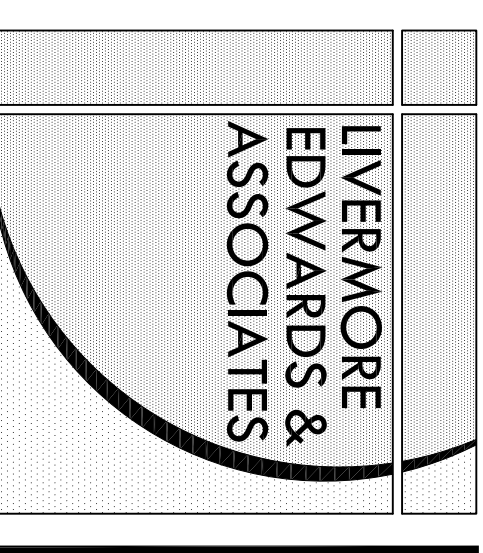
- LEGEND:**
- ⊙ ROOF DRAIN
 - ⊗ VENTILATOR
 - GODSE NECK VENT
 - VENT PIPE
 - ⊖ PITCH POCKET
 - ▤ ROOF LADDER
 - ▨ NEW GUTTER AND DOWNSPOUT
 - ▧ EXISTING EDGE FLASHING TO BE RETAINED AND SPLICED INTO NEW MEMBRANE
 - ▩ LOCATION OF NEW WALKWAY PADS

- DRAWING NOTES**
1. ROOFTOP CONDENSERS ON WOOD SLEEPERS BY ROOFING CONTRACTOR
 2. NEW PITCH ROCKETS FOR EXISTING ELECTRIC CONNECTIONS AND CONDENSER LINES. (SEE DETAIL 21A9-2)



1
3/16" = 1'-0"

14 Spring Street
Waltham, MA 02451
Tel: (781) 891-1260
Fax: (781) 891-1650
www.livermoreedwards.com

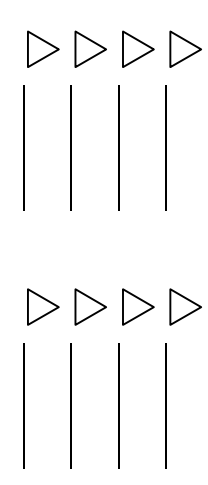


PROJECT:
**HARDY APARTMENTS
RE-ROOFING**

51 LAKE STREET
WALTHAM, MA

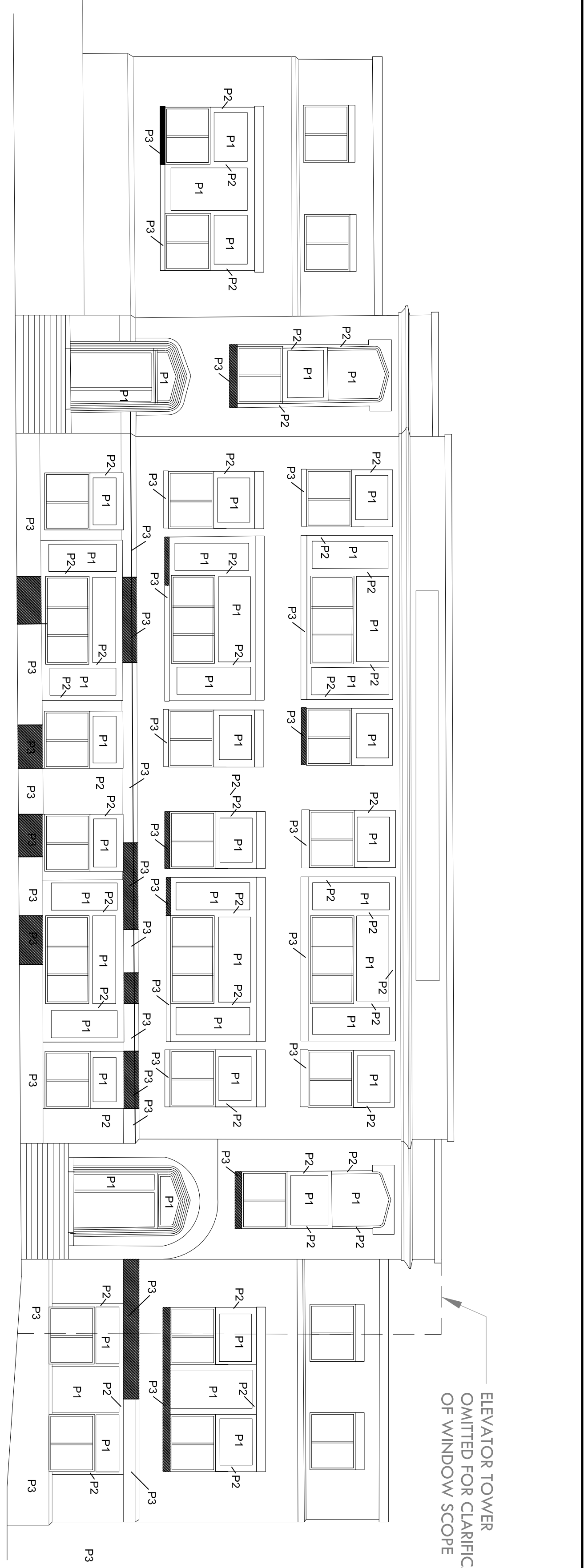
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DRAWN BY: RL
CHECKED BY: RL
APPROVED BY: RL
SCALE:

- STATUS:
- SCHEMATIC DESIGN
 - DESIGN DEVELOPMENT
 - FINAL REVIEW
 - BIDDING
 - PERMIT
 - PRELIMINARY CONSTRUCTION
 - AS-BUILT
- DATE: 8/15/19

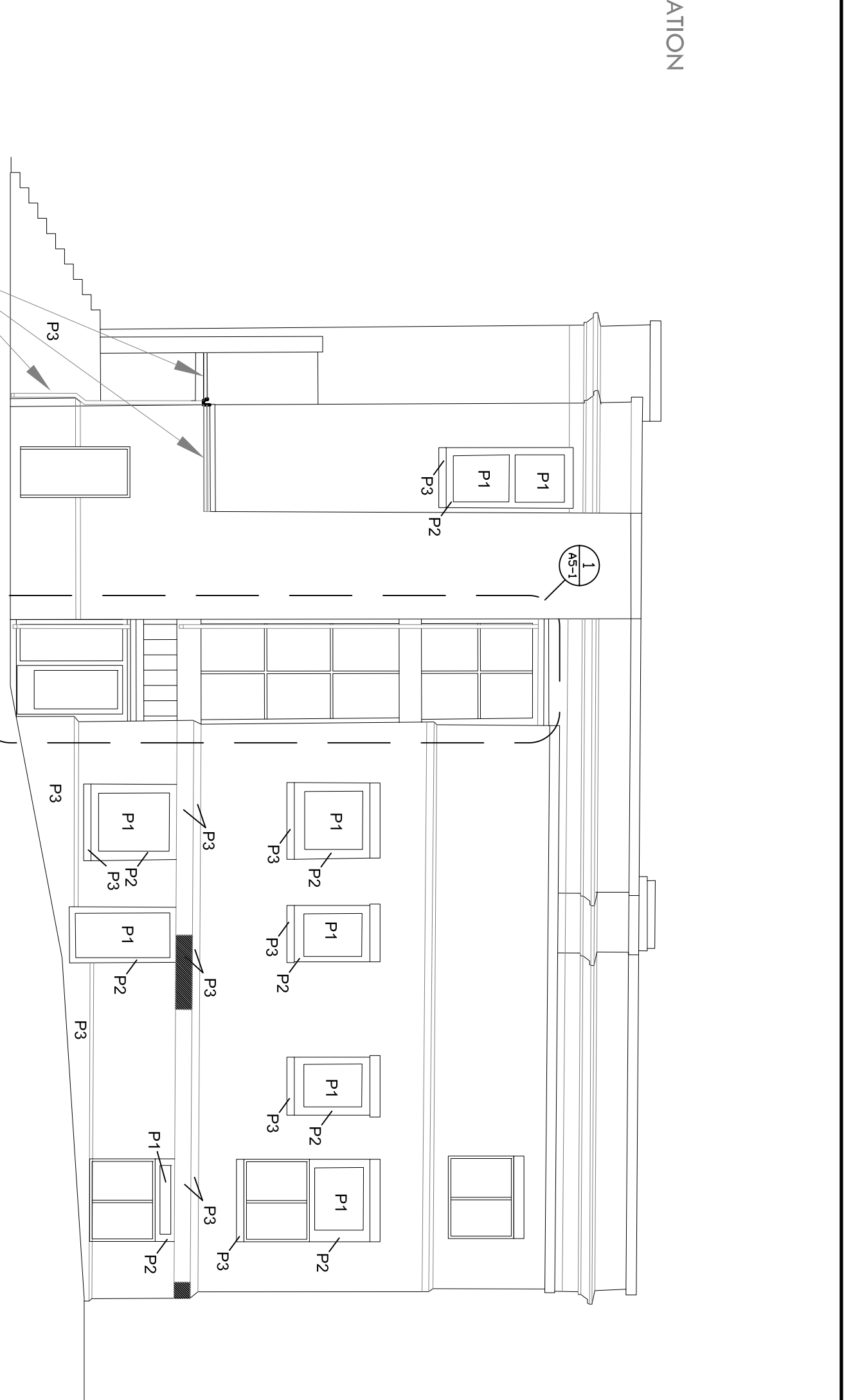


DRAWINGS:
ROOF PLAN

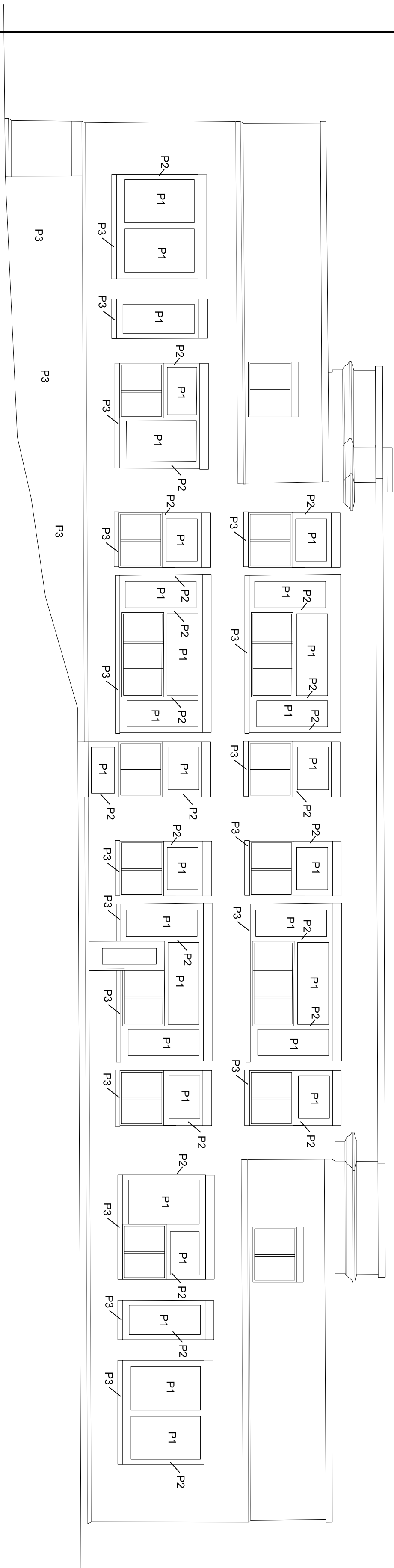
A1-2



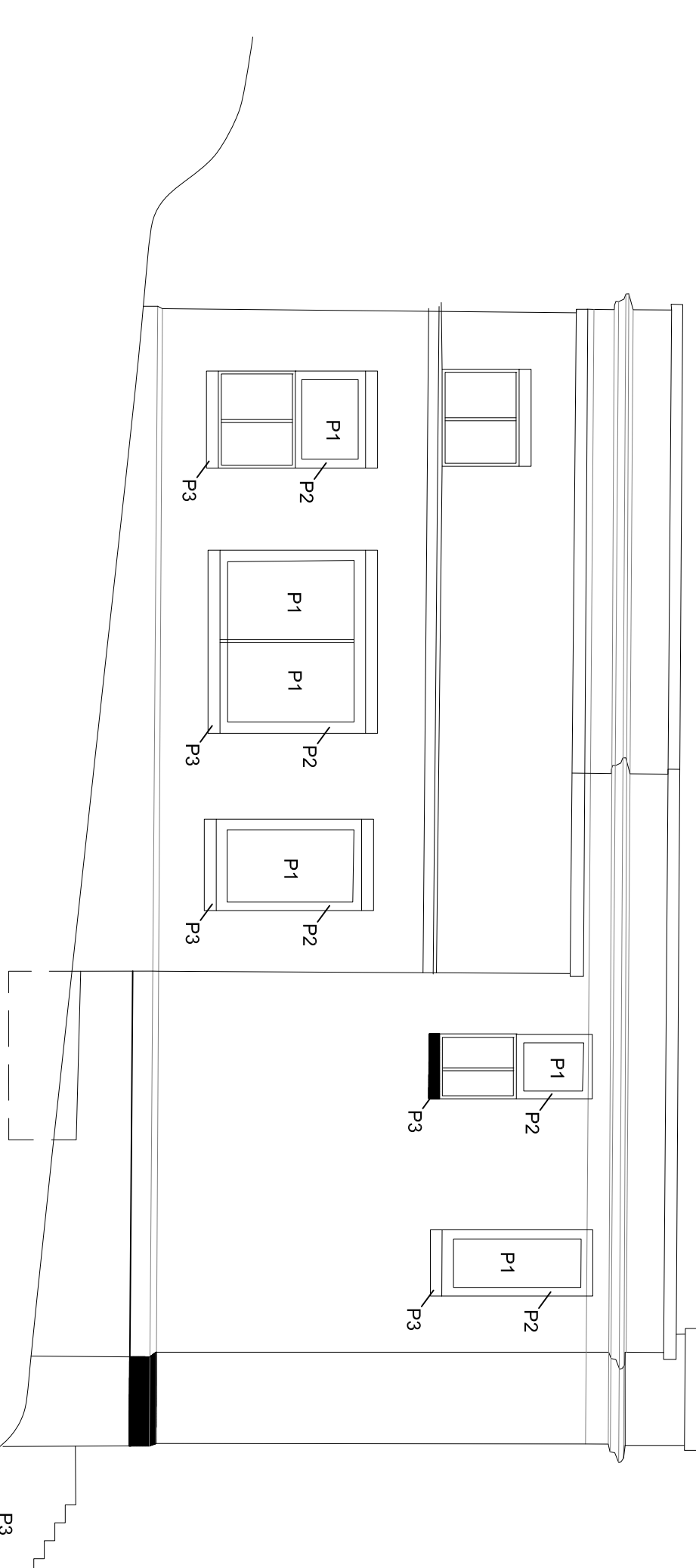
1
FRONT ELEVATION (SOUTH)
1/8" = 1'-0"



2
RIGHT ELEVATION (EAST)
1/8" = 1'-0"



3
REAR ELEVATION (NORTH)
1/8" = 1'-0"



3
LEFT ELEVATION (WEST)
1/8" = 1'-0"

- LEGEND**
- REPAIR CRACKED AND SPALLING CONCRETE MASONRY TRIM
 - PAINT STUCCO PANEL (WHITE TO MATCH EXISTING)
 - PAINT WOOD TRIM (GREY TO MATCH EXISTING)
 - PAINT CONCRETE MASONRY DETAIL (DARK GREY TO MATCH EXISTING)

STATUS:

- SCHEMATIC DESIGN
- DESIGN DEVELOPMENT
- FINAL REVIEW
- BIDDING
- PERMIT
- DEMOLITION
- NEW CONSTRUCTION
- AS-BUILT

DATE: 8/15/19

REVISIONS:

△	△
△	△
△	△
△	△

ELEVATIONS

PROJECT:
**HARDY APARTMENTS
RE-ROOFING**

51 LAKE STREET
WALTHAM, MA

PROJECT #: LE 1803
DRAWN BY: RL
CHECKED BY: RL
APPROVED BY: RL
SCALE:



PROJECT:
**HARDY APARTMENTS
RE-ROOFING**

51 LAKE STREET
WALTHAM, MA

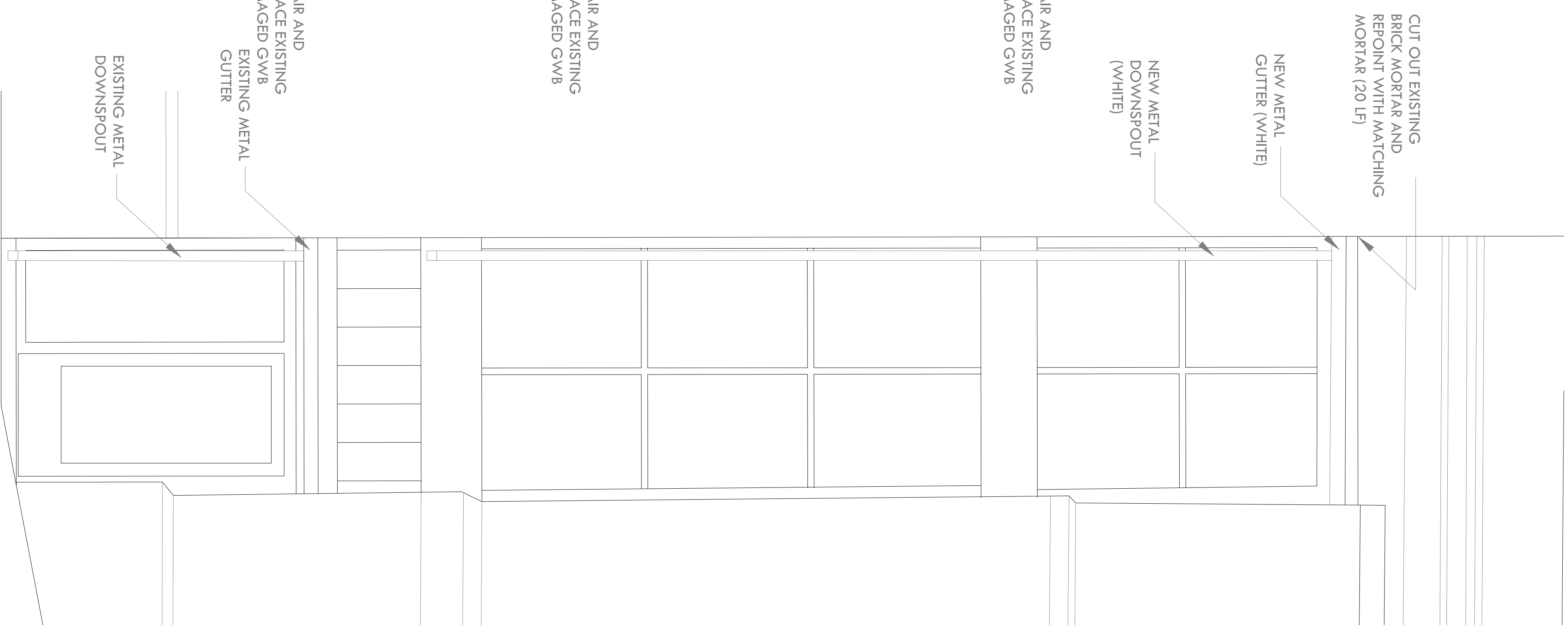
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DRAWN BY: RL
CHECKED BY: RL
APPROVED BY: RL
SCALE:

STATUS:
 SCHEMATIC DESIGN
 DESIGN DEVELOPMENT
 FINAL REVIEW
 BIDDING
 PERMIT
 CONSTRUCTION
 AS-BUILT
 DATE: 8/15/19

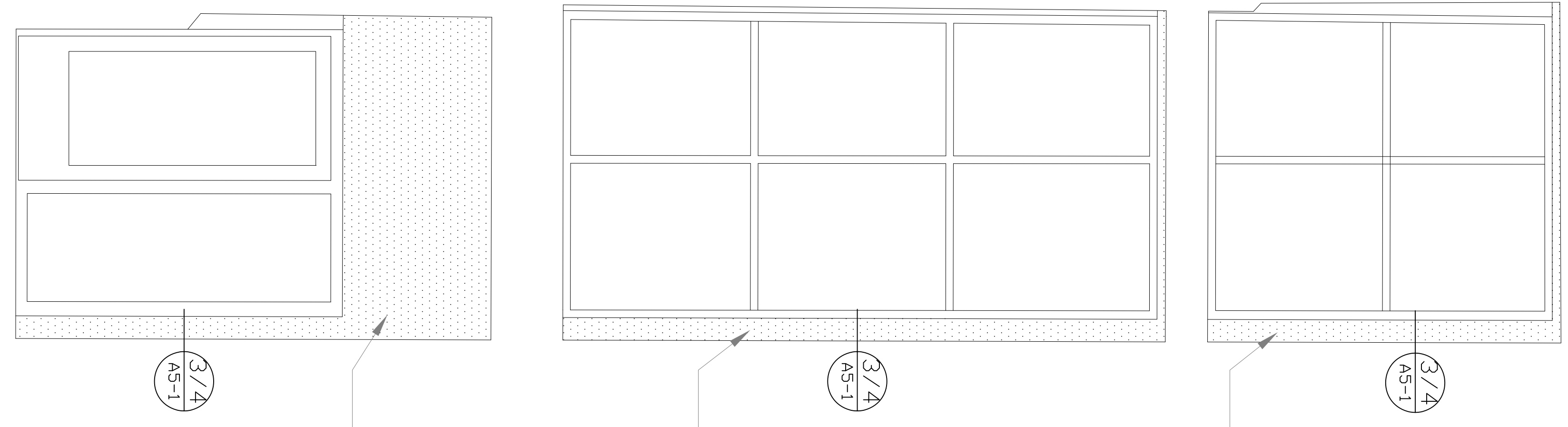
REVISIONS:
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DRAWINGS
WALL DETAILS

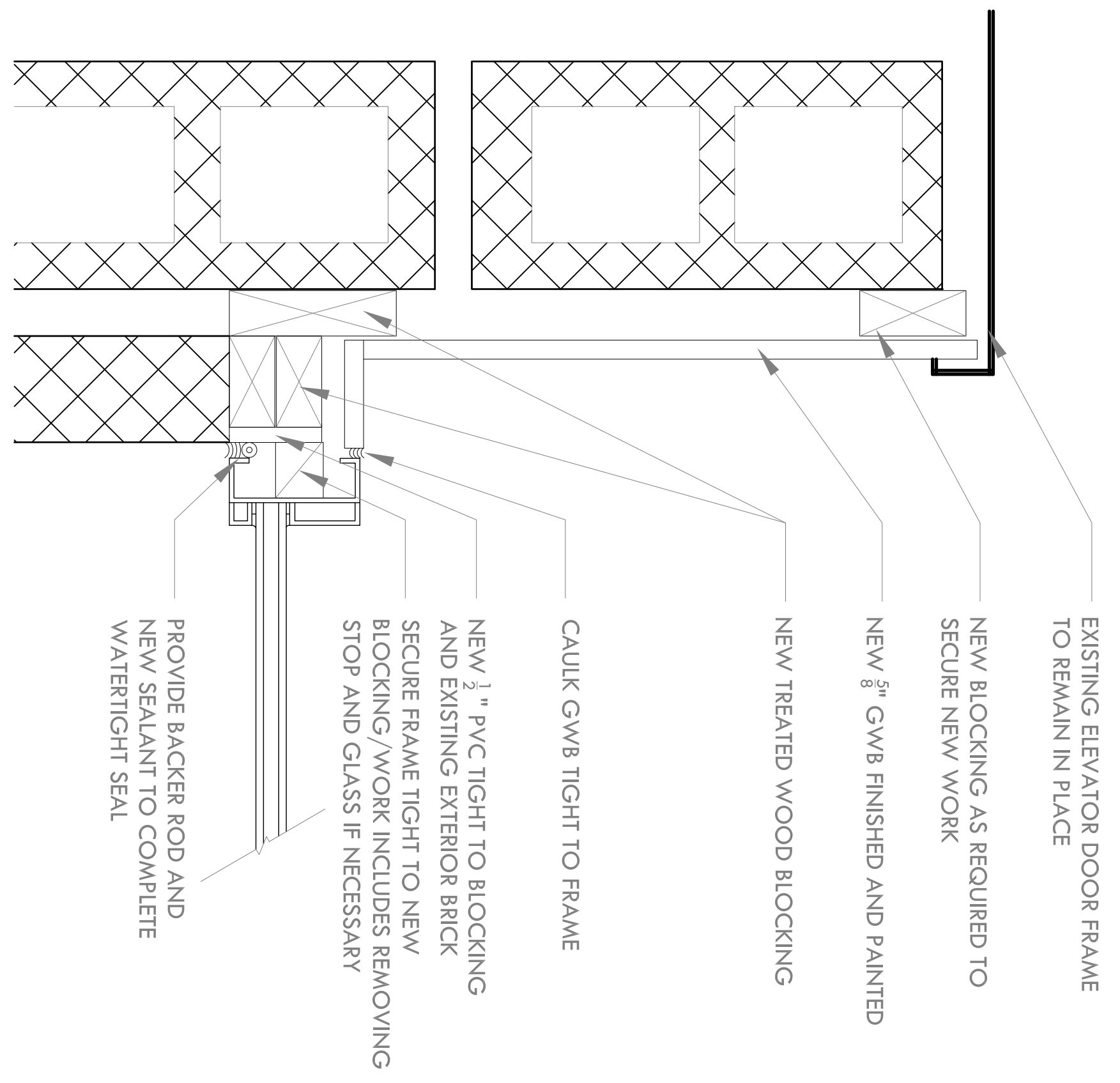
A5-1



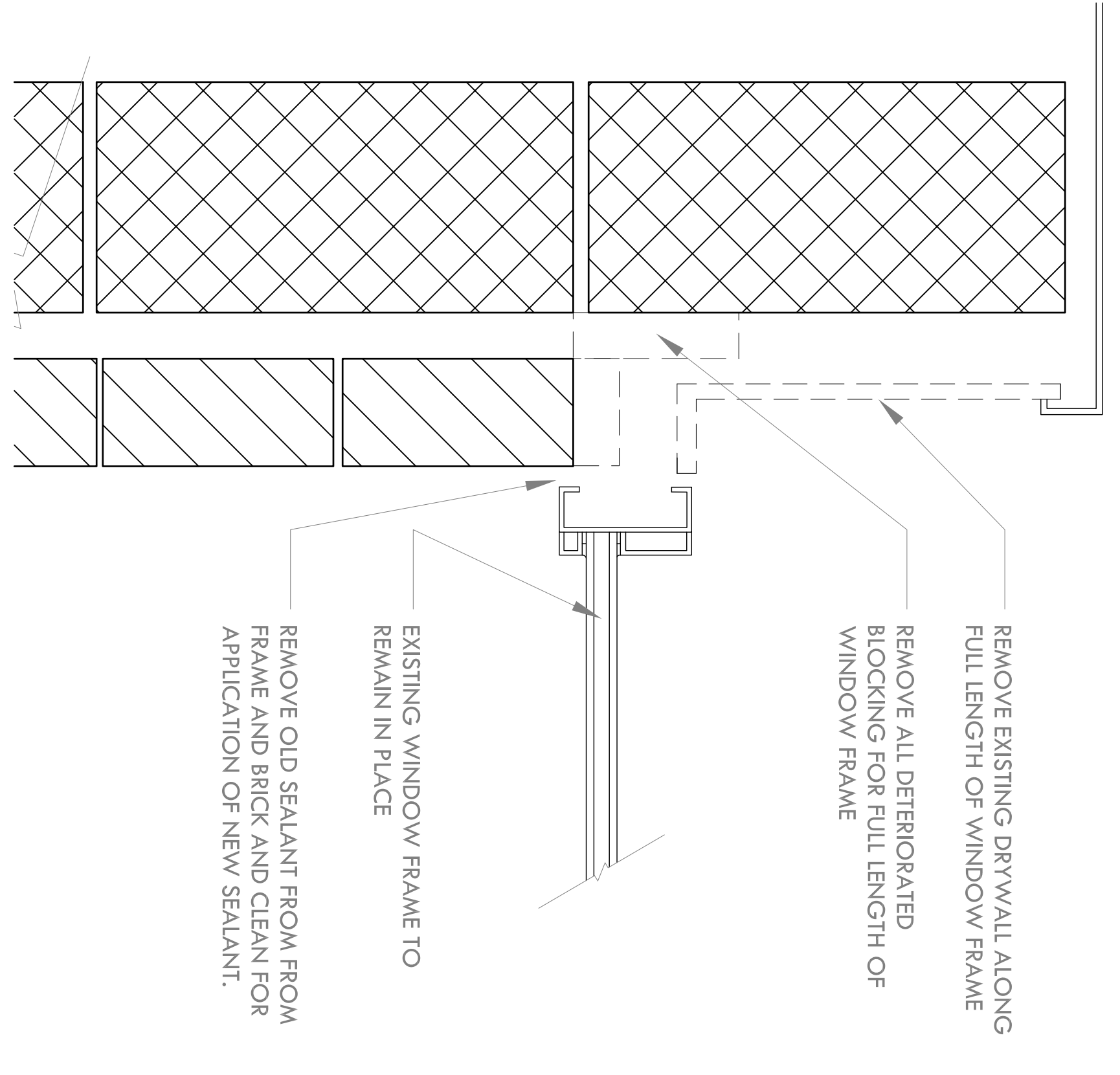
1 EXTERIOR ENTRY ELEVATION
1/2" = 1'-0"



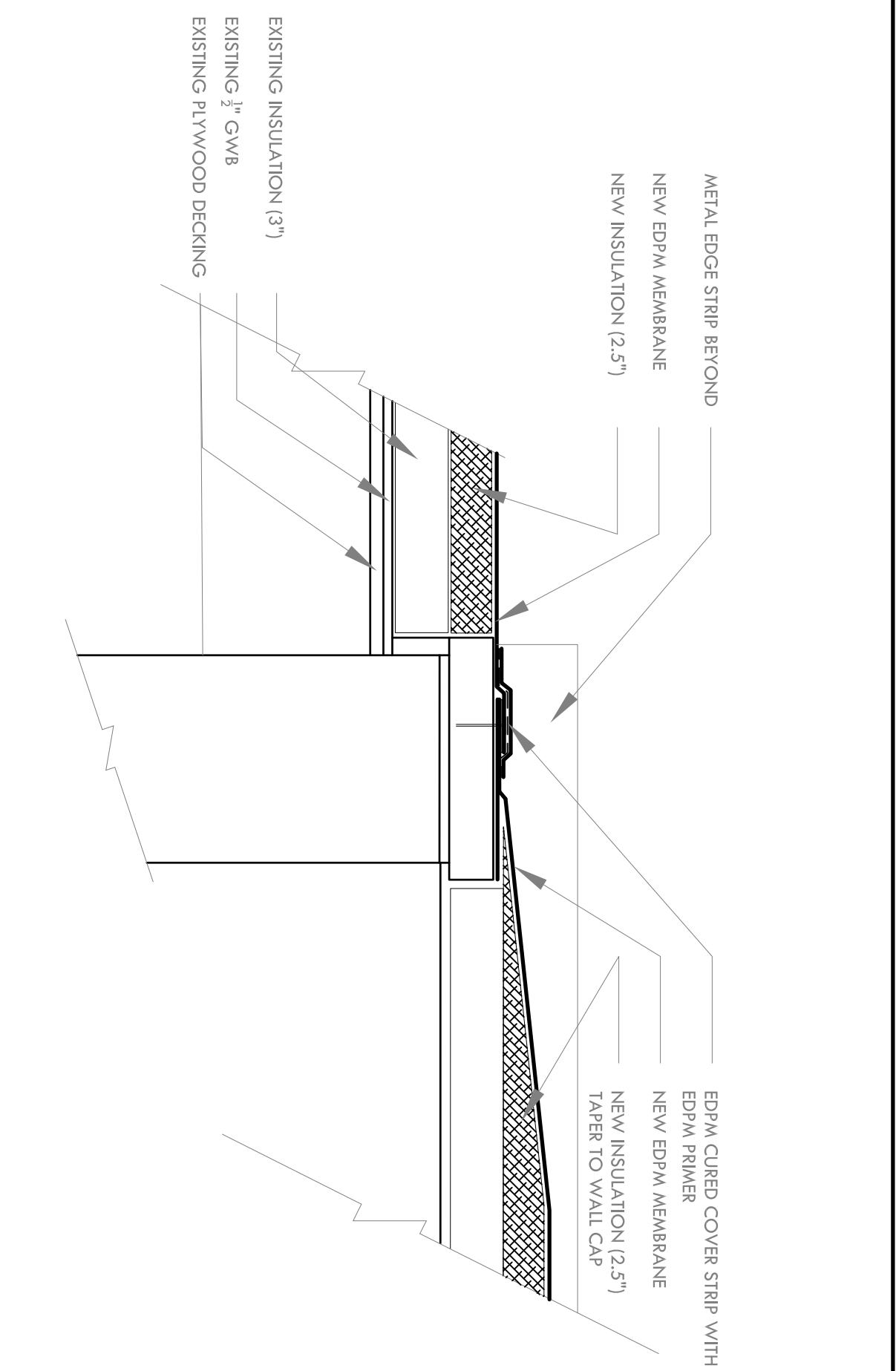
2 INTERIOR ENTRY ELEVATION
1/2" = 1'-0"



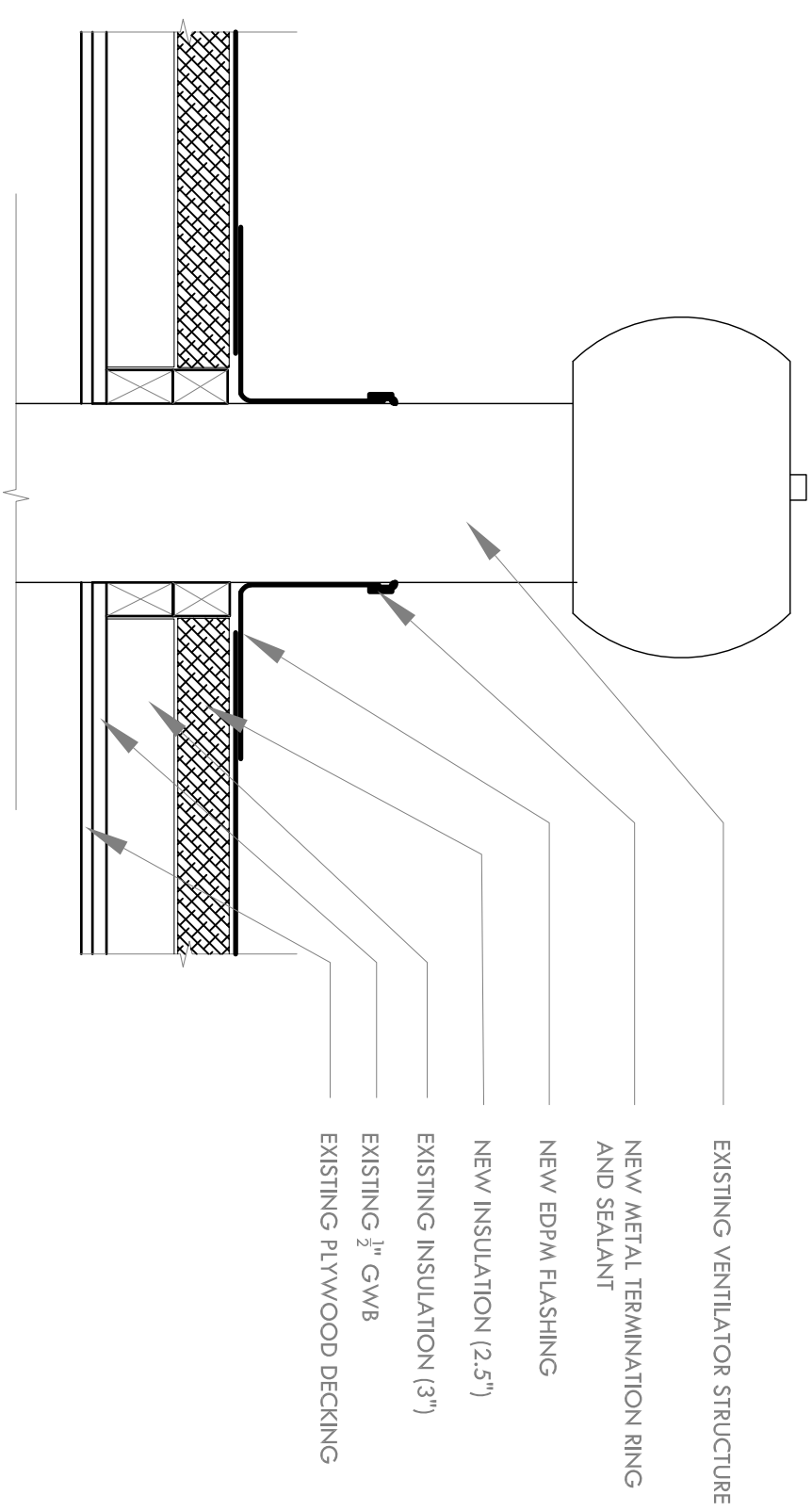
4 WINDOW JAMB REPAIR DETAIL
1 1/2" = 1'-0"



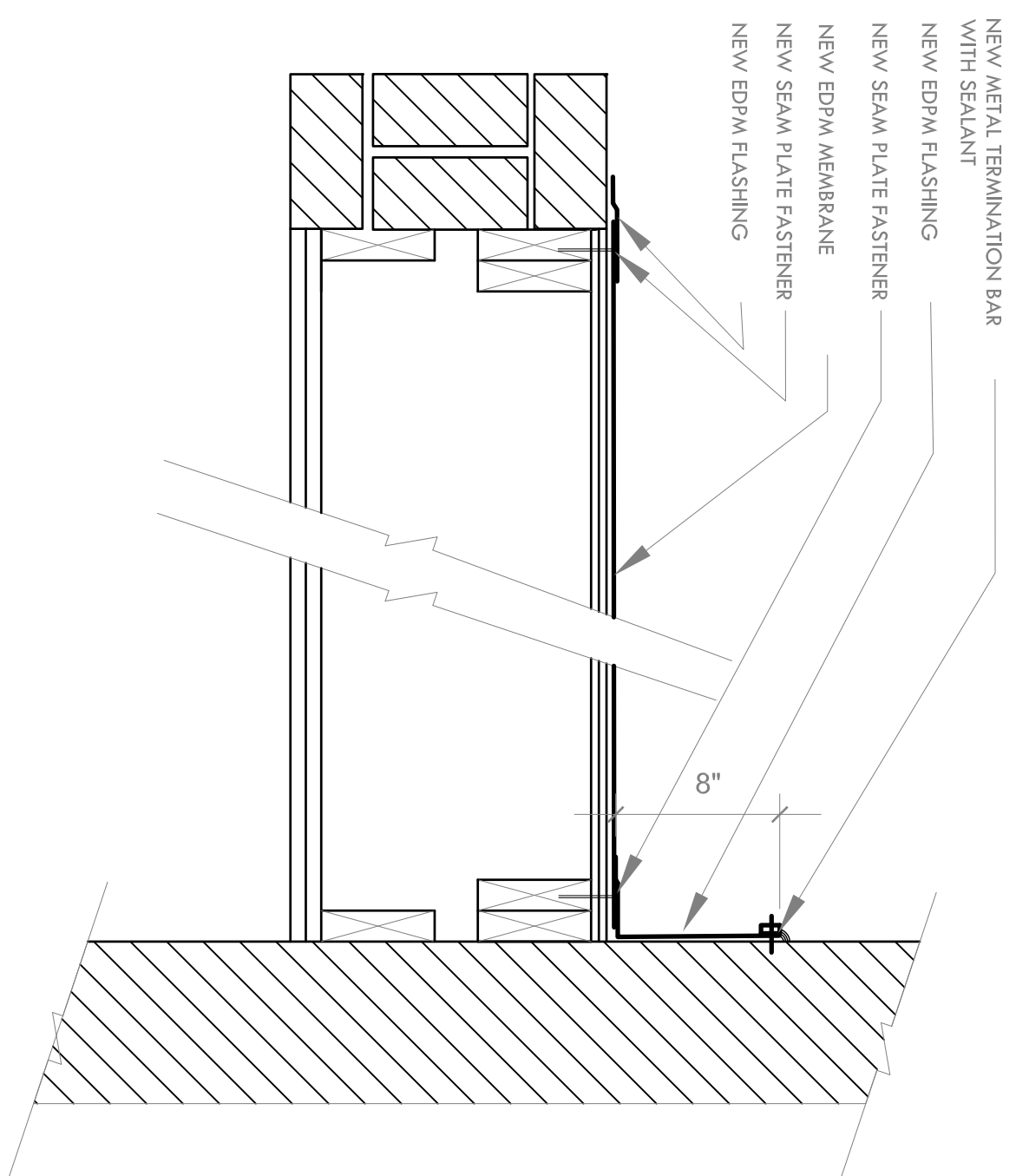
3 WINDOW JAMB DEMO DETAIL
1 1/2" = 1'-0"



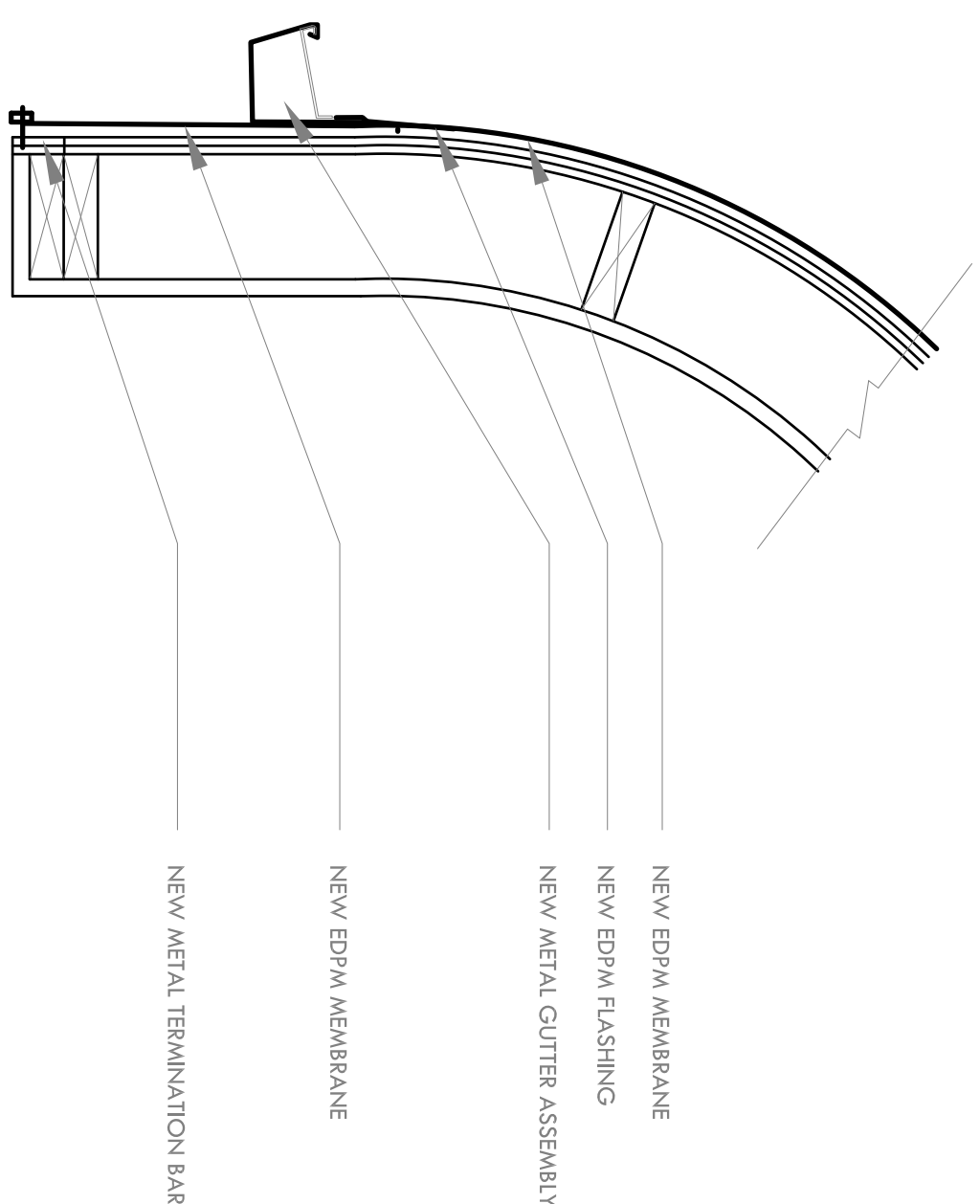
7 FLASHING DETAIL
1 1/2" = 1'-0"



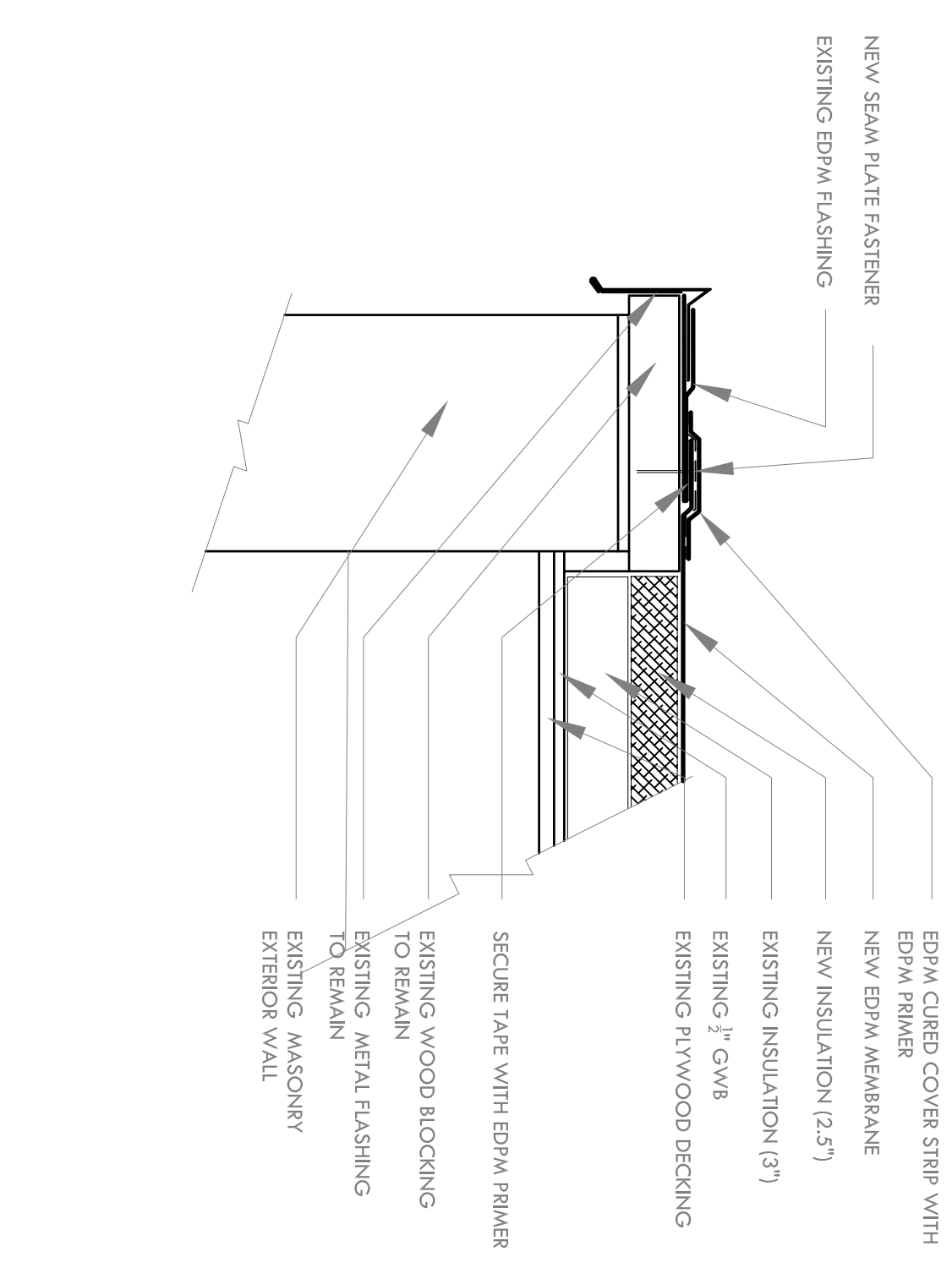
8 VENT FLASHING DETAIL
1 1/2" = 1'-0"



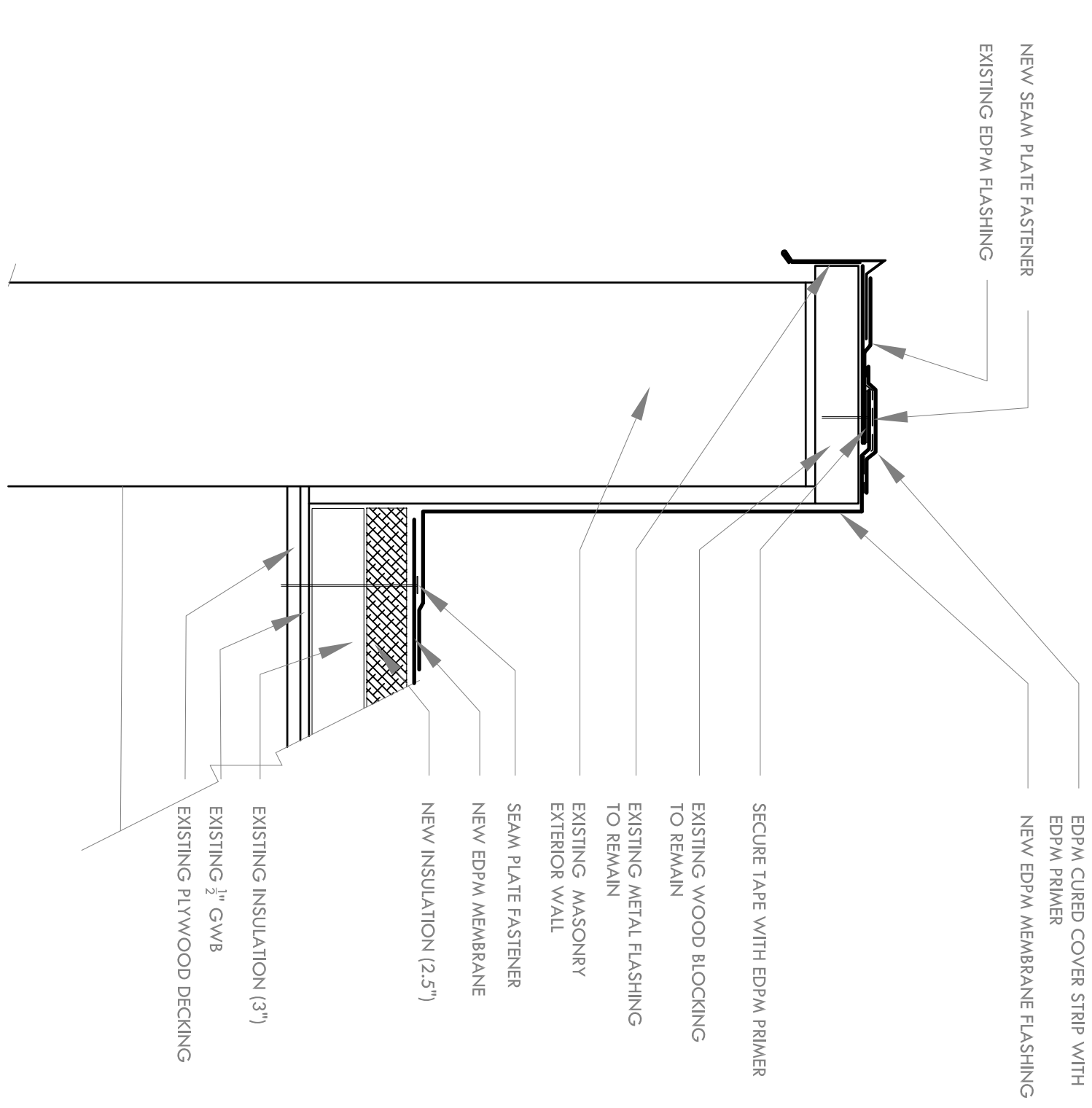
4 CANOPY EDGE DETAIL
1 1/2" = 1'-0"



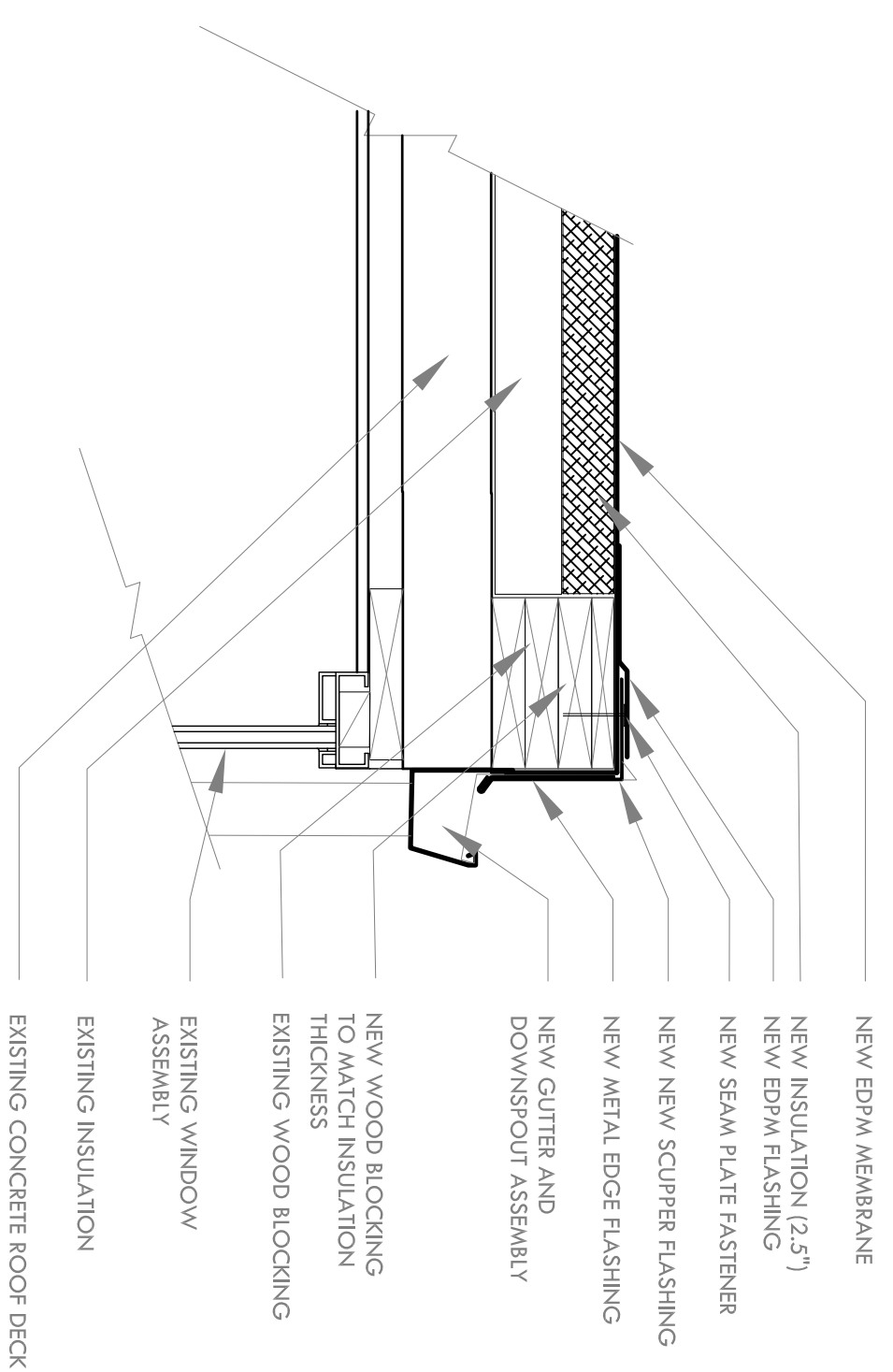
5 CANOPY ROOF AND GUTTER DETAIL
1 1/2" = 1'-0"



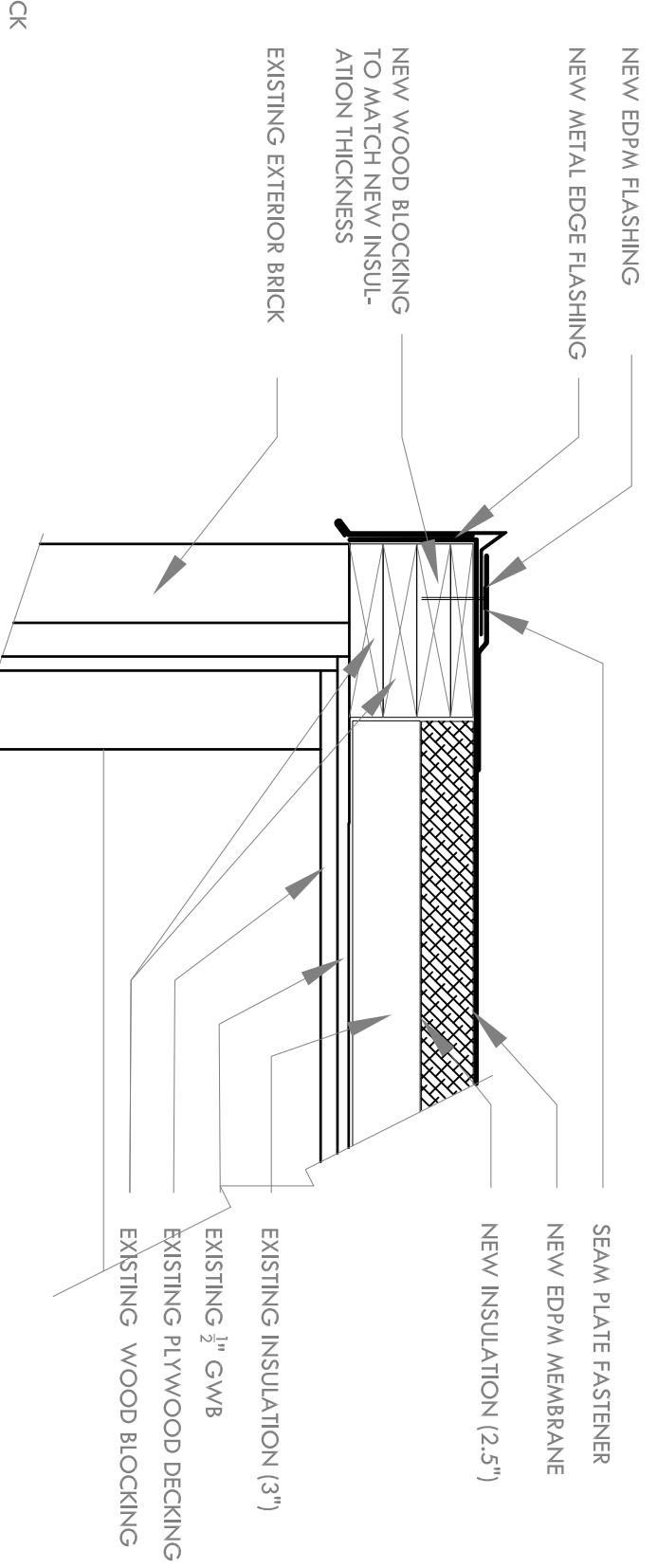
1 ROOF EDGE DETAIL
1 1/2" = 1'-0"



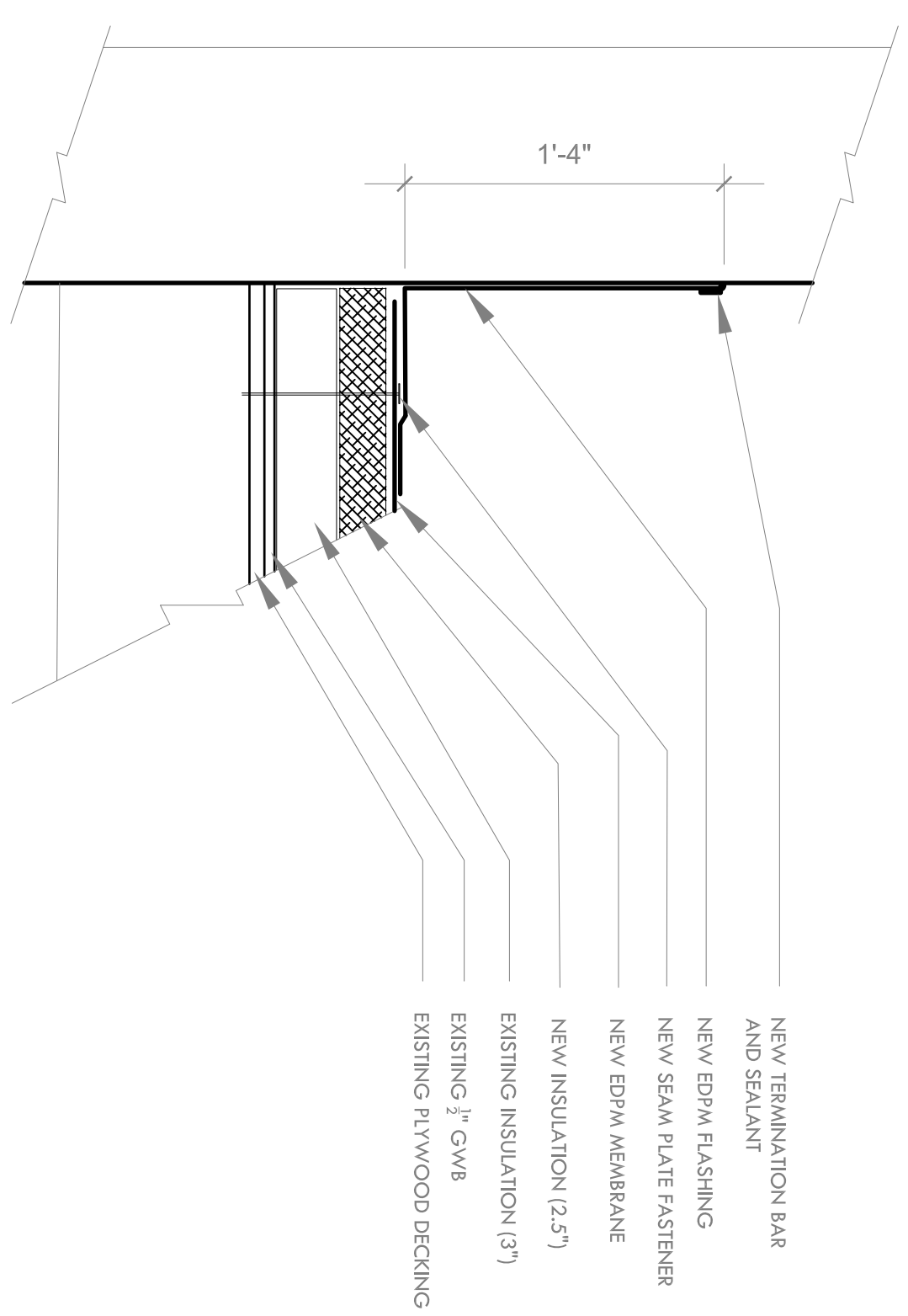
2 ROOF PARAPET DETAIL
1 1/2" = 1'-0"



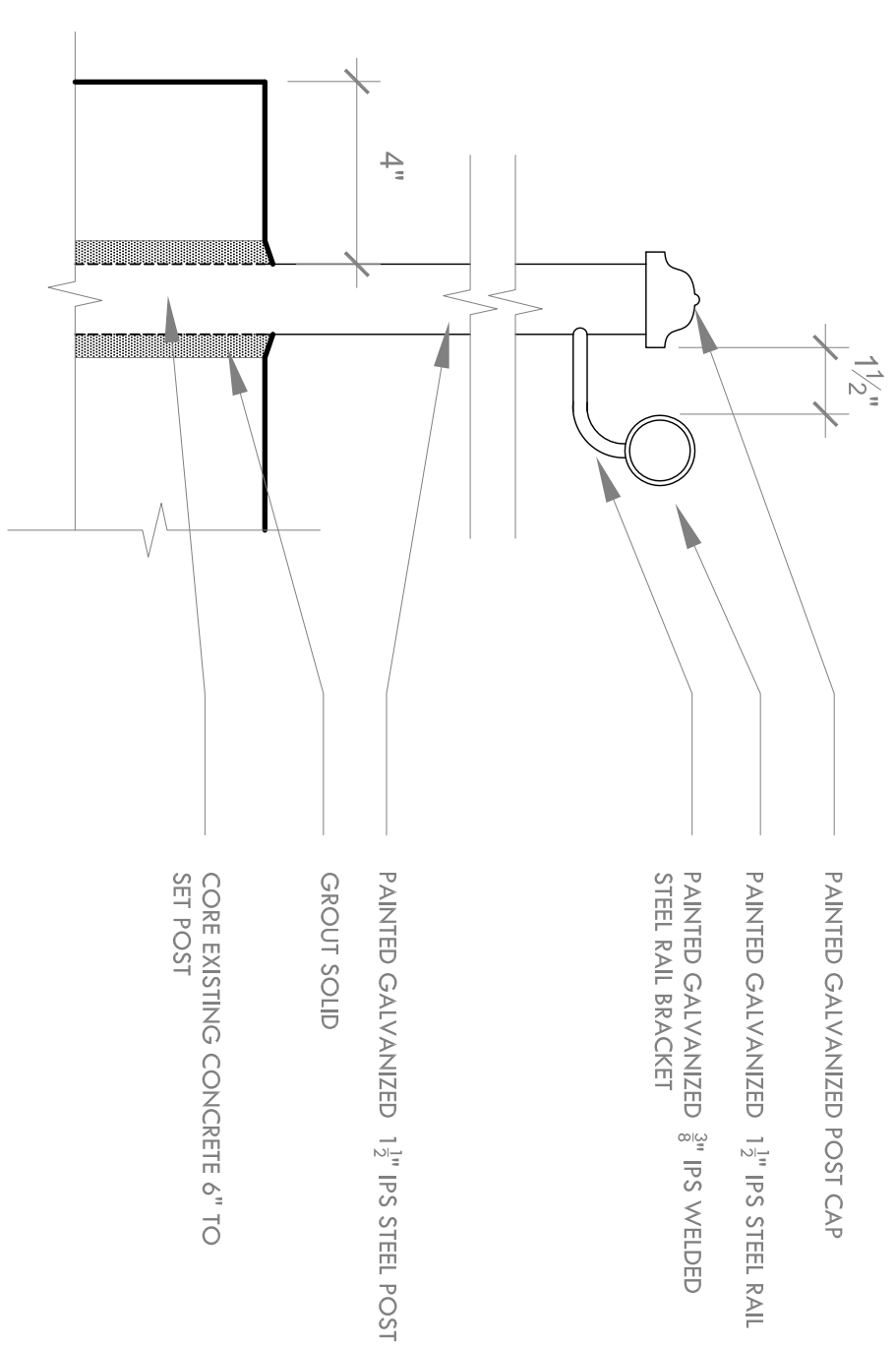
6 SCUPPER/GUTTER FLASHING DETAIL
1 1/2" = 1'-0"



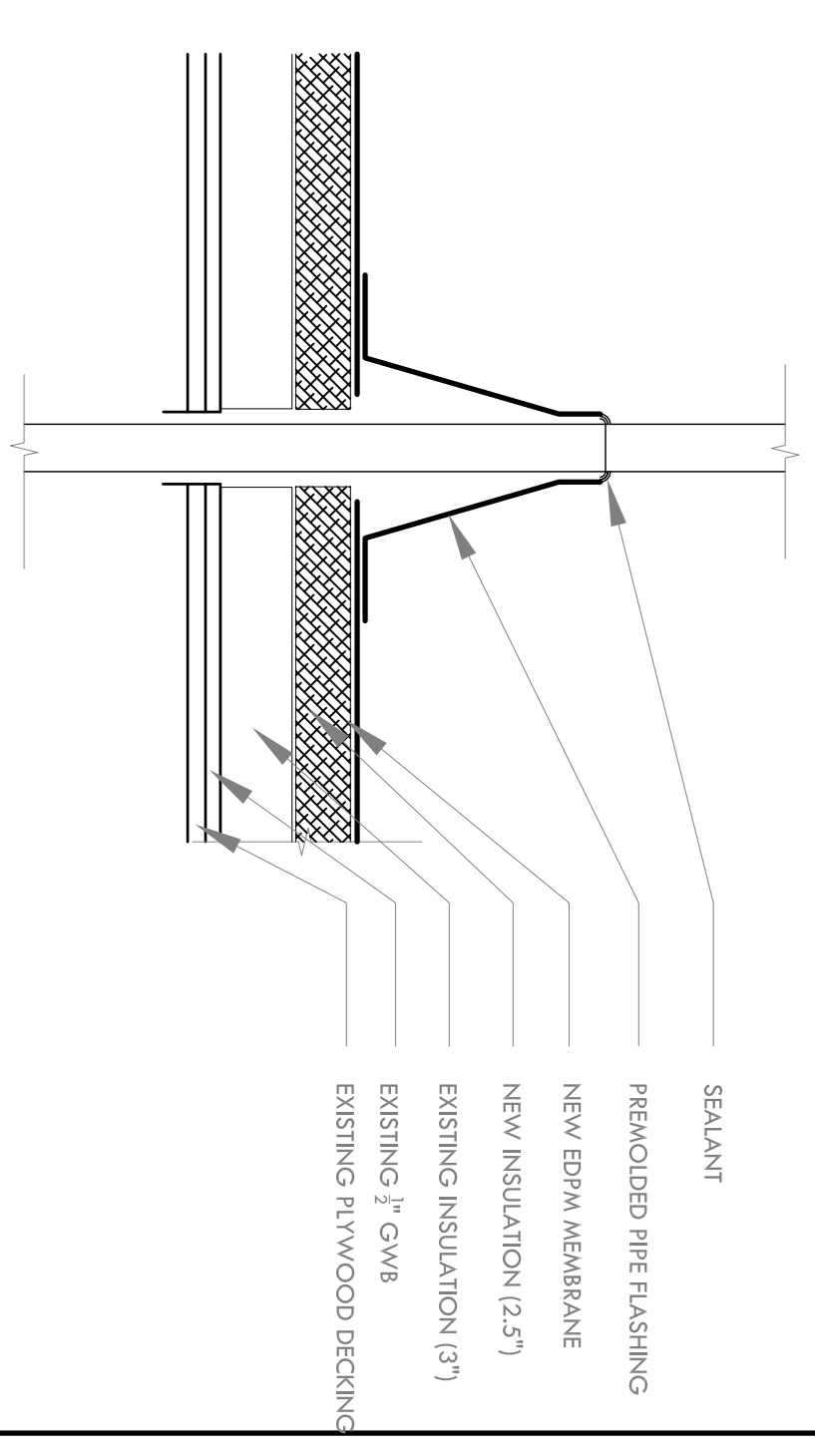
3 ROOF EDGE DETAIL
1 1/2" = 1'-0"



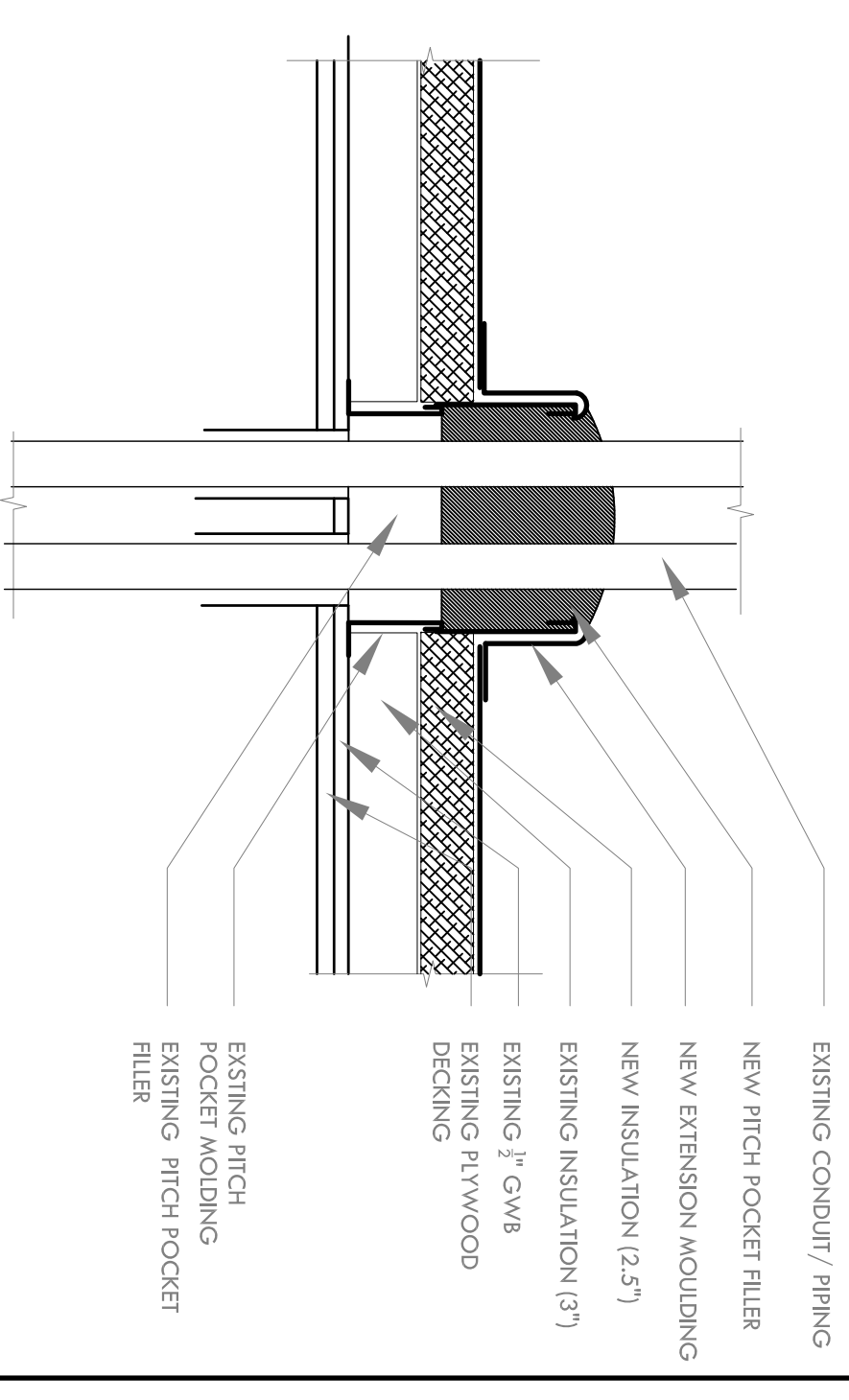
9 WALL TERMINATION FLASHING
1 1/2" = 1'-0"



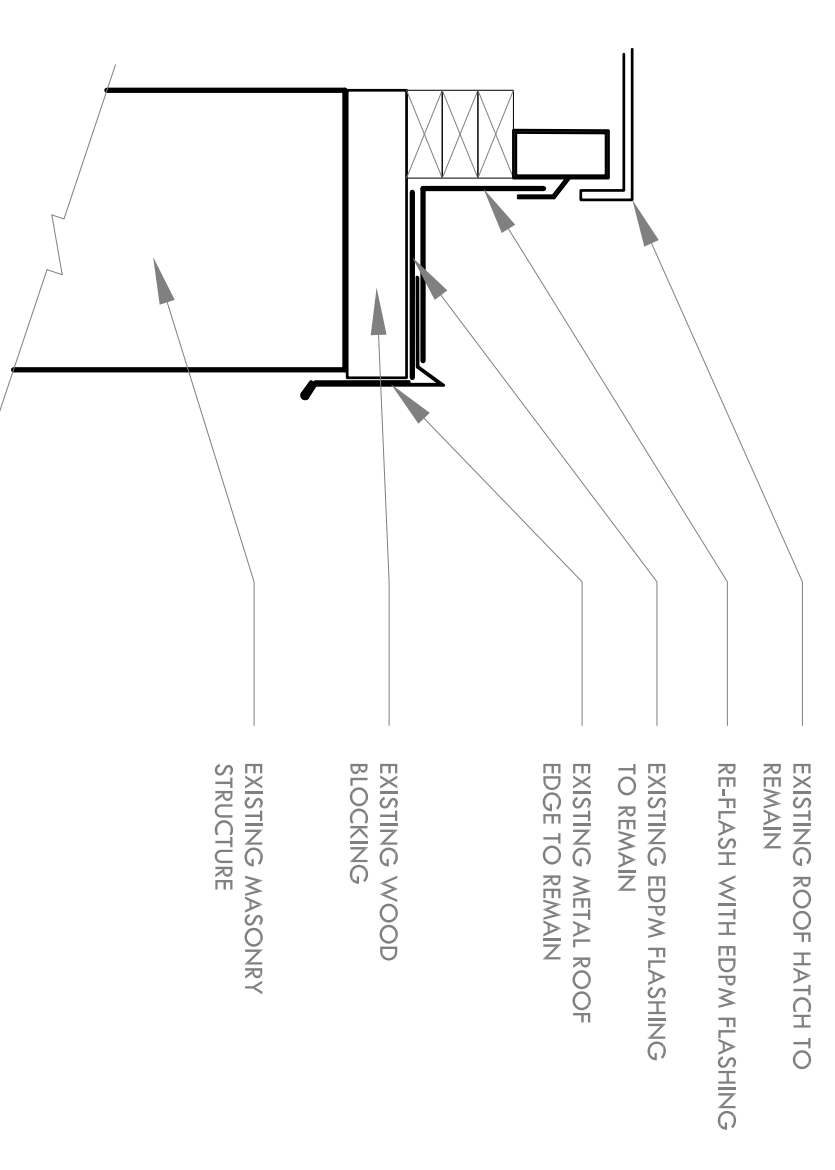
4
HAND RAIL DETAIL
3" = 1'-0"



1
PIPE FLASHING DETAIL
1 1/2" = 1'-0"



2
POURABLE SEALER POCKET EXTENSION
1 1/2" = 1'-0"



3
ROOF HATCH FLASHING
1 1/2" = 1'-0"

PROJECT:
**HARDY APARTMENTS
RE-ROOFING**

51 LAKE STREET
WALTHAM, MA

PROJECT #: LE 1803
DRAWN BY: RL
CHECKED BY: RL
APPROVED BY: RL
SCALE:

STATUS:
 SCHEMATIC DESIGN
 DESIGN DEVELOPMENT
 FINAL REVIEW
 BIDDING
 PERMIT
 CONSTRUCTION
 AS-BUILT
 DATE: 8/15/19

REVISIONS:

△	△
△	△
△	△
△	△

DRAWINGS:
MISC DETAILS