

INVITATION TO BID

SALEM DISTRICT COURT ROOF REPLACEMENT PROJECT

Date: December 13, 2022

TO: Invited and Interested Roofing or General Contractors.

You are invited to submit a stipulated sum proposal for the furnishing of all permitting, taxes, documentation, materials, equipment, services, labor and supervision necessary for and/or reasonably incidental to the Proposed District Court Roof Replacement Project, Salem, NH

A. PREBID MEETING

- 1.) A Prebid meeting will be held at the project location on December 22, 2022 at 11:00 AM. Bidders will meet at the front entrance of the building.
- 2.) **Please confirm your attendance by email to Mlehoullier@tridentgrp.com.**
- 3.) Questions, attendance or additional information should be directed to the attention of Marc Lehoullier of Trident Building & Properties Group at (603) 898-6110 ext16, or by email Mlehoullier@tridentgrp.com.
- 4.) Questions/RFI's shall be taken up to 4 days after the pre-bid meeting.

B. DISCREPANCIES

- 1.) Should a Bidder find discrepancies or ambiguities in, or omissions from, the drawings or specifications, or should he be in doubt as to their meaning, he shall at once notify ICON Architecture, Paul DiGiandomenico. Pdgi@iconarch.com with a Cc to Marc Lehoullier Mlehoullier@tridentgrp.com. A written bulletin to all Bidders will be sent for clarification.
- 2.) Bidders are responsible for all dimensions, building areas, and verifying existing conditions.

C. FORMS

- 1.) All proposals must be submitted on the prepared Bid forms and shall be subject to all requirements of the drawings, the specifications, and any other documents issued in connection with the above including this Invitation to Submit a Proposal.
- 2.) Voluntary alternates are not allowed unless prior approval from Trident & Icon Architecture
- 3.) Attention is directed to the fact that the specifications include a set of bidding and contract forms. These are for bidding purposes on this project.
- 4.) A hard copy must be submitted per the procurement requirements of the Town of Salem.
- 5.) All blank spaces on forms must be filled in.
- 6.) The signature must be in longhand and executed by a principal duly authorized to make contracts. The Bidder's legal name must be fully stated.

D. **SUBMISSION OF PROPOSALS**

Sealed proposals will be received by the Owner no later than Noon, January 19th, 2023, submitted to:

Gia Faccadio
33 Geremonty Drive
Salem, NH 03079

Marked as: **SALEM DISTRICT COURT ROOF REPLACEMENT PROJECT**

- 1.) The Owner reserves the right to reject any/all proposals without explanation, to waive all formality in connection with bid opening, and to waive any informality in the proposals.
- 2.) The opening of the bid proposals will be public. Determination will be based upon all pertinent data contained in the proposals.
- 3.) Proposals submitted by the Contractor, as a result of this invitation to submit a Proposal, shall not obligate the Owner in any way.

E. **THE BID**

The bid shall be for the completed job as specified herein.

F. **VALIDITY**

All bids submitted shall remain valid for a period of not less than 45 calendar days from the Not Later Than date indicated above.

BID FORM

SALEM DISTRICT COURT ROOF REPLACEMENT PROJECT

TO: Town of Salem, NH
33 Geremonty Drive
Salem, NH 03079

Date: _____

SUBJECT: Salem District Court Roof Replacement
35 Geremonty Drive
Salem, NH

Proposal submitted by **(Bidder Name and Address Below)**:

The undersigned proposes to furnish all labor, materials, tools and equipment in complete accordance with the provisions of the Contract Documents dated December 2022, including all supplemental information provided and distributed by ICON Architecture.

The Bidder acknowledges receipt of and includes the requirements of the following Addenda:

Number

Date

In submitting this Bid, the undersigned agrees:

1. The Bidder shall not have defaulted on, or failed to execute, enter into, or perform a contract for services with the Town of Salem, New Hampshire during the past five (5) years.
2. The Bid shall remain in full force and will not be withdrawn for a period of forty-five (45) calendar days after the actual date of Bid opening thereof.
3. To enter into and execute a contract, if awarded on the basis of this Bid.
4. To provide a Payment and Performance Bond for the contract amount.
5. To successfully accomplish the work in accordance with the Contract Documents.

6. Work to be substantially completed by August 1, 2023, and finally complete by September 1, 2023.
7. To provide the Insurances required as defined in the Summary of Work.
8. To **not unbalance** the Bid prices as the Town of Salem reserves the right to delete items in the Bid at any time.
9. The Bid prices submitted on this project shall include all materials, labor, taxes, fees, permits, cartage and disposal fees, and all freight charges, for a total cost to the Town of Salem.
10. Bidder is to include with his Bid a short summary of their approach to the work, as well as any variations from the specification in a letter attached to the Bid.
11. Bidder to submit a draft schedule including mobilization/commencement and substantial completion dates, outlining the major tasks of the project.
12. The Town of Salem, New Hampshire reserves the right to accept any and all Bids and to waive any informalities.

Salem District Court Roof Replacement Project

<u>Item</u>	<u>Description</u>	<u>Bid Price</u>
1.	General Conditions	(L.S.) \$ _____
2.	Payment and Performance Bond	(L.S.) \$ _____
3.	Mobilization	(L.S.) \$ _____
4.	Demolition and Disposal	(L.S.) \$ _____
5.	New Membrane Roofing Including All Underlayment, Flashings, Ridge Vents, Valley Flashing, etc.	(L.S.) \$ _____
6.	New Sky Domes including Insulation, curbs, trim, etc.	(L.S.) \$ _____
7.	Demobilization and Clean-Up	(L.S.) \$ _____
TOTAL BASE BID		(L.S.) \$ _____

\$ _____

In words: _____

[illegible]

Alternate Bid #1 (Lump Sum)

\$ _____

In words: _____

INCLUDE ALL MARK-UPS FOR OH & P

1. It is anticipated that the existing substrate to which the new roofing is to be applied is in good condition and suitable for application of the new roofing materials. If specific portions or sections of the substrate decking is deteriorated and must be replaced, the Contractor shall provide a unit price for replacement of the substrate with material to match the existing. The Contractor shall provide a unit price for substrate replacement based on a total quantity of 200 square feet.

Unit Price for Substrate Replacement: \$ /square foot

Unit Price for : \$ /linear foot

Unit Price for Flashing Replacement: \$ /linear foot

4. **Mark-up for Bond Premium on Change Orders:** _____%
5. **Allowable OH & P Mark-up for Change Orders, exclusive of Unit Cost items shall not exceed Ten (10%) Percent.**

Note: The following items are required as part of the “Bid Form” submission:

1. Bidder accepts the Town of Salem’s general terms and conditions as outlined in the forms contained in the Project Manual.
 - a. Circle One (1) of these: **Yes** **No**If **No** is circled, mark-up of acceptable terms must be provided with Bid.
2. Provide written short summary of the approach to the work and schedule as part of the Bid Form Submission and include the written short summary with the “Bid Form”.
3. Complete the information below:

Bidder:

Business Address:

Authorized Signature:

Name (Print Clearly):

Title:

INSTRUCTIONS TO BIDDERS

- I. PROJECT: **Roof Replacement Project**
Salem District Court
- II. PROJECT DESCRIPTION:
 - A. Base Bid:
 1. The project includes removal of the existing roof components including, roof membrane, insulation, flashings, and miscellaneous roof components on the District Court roof. Examination of decking, and repairs, as specified or noted. Installation additional drains and installation of roof system, as specified.
- III. WORK SCHEDULE:
 - A. The project is to proceed at an agreed to date with Owner. The project is to be done on a continual day-to-day basis except in the case of inclement weather. The project must be completed as soon as possible. All work is to commence after an approved date from the Owner. Work must be done Monday through Friday during normal work hours. The replacement shall be phased to allow the existing roof to remain weathertight during the replacement.
- IV. BID DUE DATE:
 - A. All bids are due by Noon-PM on January 19, 2023
 - B. Bids must be delivered to the designated person in a timely manner to meet the bid deadline.
- V. BASE BID:
 - A. The Base Bid is the sum stated in the bid for which the bidder offers to perform the Work described in the Bidding Documents as the base, to which Work may be added or from which Work may be deleted for the sums stated in the Alternate Bids.
- VI. ALTERNATE BID:
 - A. TBD
- VII. UNIT PRICE BID:
 - A. As listed on bid form.

VIII. CONTRACTORS:

- A. Each Bidder shall include in its bid an outline of the Work to be performed by the Bidder with his own personnel. Any subcontractor work shall be identified within the Bid Proposal and is subject to Owner approval.
- B. Each bidder must provide with the Bid Form three project references with a minimum five-year history.

IX. CLARIFICATIONS

- A. All bidders must conduct their own roof measurements as the roof plan included with the specifications is for reference only.
- B. All requests for clarification or interpretation of the Bidding Documents shall be made to Paul DiGiandomenico PDGI@iconarch.com with a copy to Marc Lehoullier, Owner's Project Manager to Mlehoullier@tridentgrp.com.

X. SUBSTITUTIONS AND VOLUNTARY ALTERNATES

- A. The materials, products, and equipment described in the bidding documents establish the standard of required function, dimension, appearance, and quality to be met.
- B. No substitution will be considered prior to receipt of bids unless a written request for approval has been received by the people at least 14 days prior to the date for receipt of bids. The Owners' decision regarding a proposed substitution shall be final.
- C. If a substitution is approved prior to bidding, such approval will be set forth in an Addendum. Bidders shall not rely on approvals made in any other manner.
- D. Voluntary alternates will not be accepted unless prior approval is given by the Owner or the Owner's representative. These may be rejected for any reason.

XI. PREVAILING WAGE

- A. None.

XII. BID FORM:

- A. Your bid must be prepared on the Bid Form included with the Bidding Documents; additional copies may be obtained from Owner.
- B. All blanks on the Bid Form must be completed in ink or type.
- C. Bids by corporations must be executed in the corporate name by the President or Vice President.

- D. Bids by partnerships must be executed in the partnership name and signed by a partner, whose title must appear under the signature and the official address of the partnership must be shown below the signature.
- E. All names must be typed or printed below the signature.
- F. The bid shall contain an acknowledgement of receipt of all Addenda (the numbers must be filled in on the Bid Form).
- G. The physical and e-mail address and telephone number for communications regarding your bid must be shown.

XIII. OPENING OF BID:

- A. All Bids received prior to the date and time designated for the Bid opening will be opened publicly by the Awarding Authority.

XIV. BID TO REMAIN SUBJECT TO ACCEPTANCE:

- A. All bids will remain subject to acceptance for 45 days after the Bid due date.

XV. AWARD OF CONTRACT:

- A. The Owner reserves the right to reject any or all Bids, if it determines that is in its interest to do so.
- B. Award means the determination and selection of the lowest, responsible and eligible Bidder, by the Awarding Authority.
- C. The Awarding Authority will award the contract to the lowest responsible and eligible Bidder within thirty (30) days, Saturdays, Sundays, and legal holidays excluded after the opening of bids.
- D. The Awarding Authority reserves the right to waive any informalities in or to reject any or all bids if it be in the public interest to do so.
- E. The Awarding Authority also reserves the right to reject any bid if it determines that such bid does not represent the bid of a person competent to perform the work as specified or if less than three (3) available bids are received.
- F. The term "'lowest responsible and eligible bidder" shall mean the Bidder (1) whose bid is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work; (2) 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 in the work; (3) who obtains within ten days of the notification of contract award the security by bond, if required.

XVI. CONTRACT SECURITY:

- A. When the Successful Bidder delivers the executed Agreement to owner, it must be accompanied by the required Performance and Payment Bonds. This requirement cannot be waived by Owner if the Contract Price exceeds \$25,000.

XVII. INSURANCE:

- A. When the Successful Bidder delivers the executed Agreement to the Owner, it must be accompanied by the required insurance certificates.

XVIII. SIGNING OF AGREEMENT:

- A. When Owner gives a Notice of Award to the Successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within five days thereafter Contractor shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner with required Bonds and insurance certificates. Owner shall deliver one fully signed counterpart to the Contractor.

XIX. UNIT/ALTERNATE PRICES:

- A. Prices by Corresponding Unit Are to Be Included in the Bid Form as Separate Line Items and shall be inclusive of Profit and Overhead.

XX. SEALED BIDS marked "SALEM DISTRICT COURT ROOF REPLACEMENT" shall be sent to:

Gia Faccadio
33 Geremonty Drive
Salem, NH 03079

XXI. ADDITIONAL INFORMATION:

- A. If you should need any additional information or have any questions regarding the project or specifications, all questions should be submitted in writing to the attention of Paul DiGiandomenico PDGI@iconarch.com with a copy to Marc Lehoullier, Owner's Project Manager to Mlehoullier@tridentgrp.com.

END OF INSTRUCTIONS TO BIDDERS

SALEM DISTRICT COURT ROOF REPLACEMENT PROJECT

Insurance Requirements

The Contractor shall affect and maintain the following insurance in amounts of not less than the Minimum Insurance Limits set forth below during all times that the Contractor is performing services:

- a. Commercial General Liability for injury to persons and damage to property. Such insurance shall cover the use of all equipment and motor vehicles on the Site or hauling materials or debris to and from the Site and shall be in the following minimum amounts:
Commercial General Liability:
Each Occurrence: \$1,000,000.00 per occurrence
Damage to Rented Premises: \$ 500,000.00 per occurrence
Med. Exp. \$ 5,000.00 any one person
Personal and Adv. Injury \$1,000,000.00 per occurrence
General Aggregate: \$2,000,000.00
Products-COMP/OP Aggregate: \$1,000,000.00
- b. Professional Liability for protection from claims arising out of the performance of professional services (\$1,000,000 per claim/aggregate min). If Applicable.
- c. Worker's Compensation and Employee Liability (as required by law).
- d. Other (as further defined, if any):
Umbrella Liability \$2,000,000.00 per occurrence and in the aggregate

Certificates of Insurance evidencing the coverage required hereunder, together with evidence that all premiums for such insurance have been fully paid, shall be filed with the Owner prior to the commencement of the Services to be rendered by the Contractor hereunder. All such certificates shall be in forms acceptable to the Owner. Without limiting the foregoing, all policies shall contain a provision that coverage's afforded by them will not be canceled or amended until at least thirty (30) days prior written notice has been given to the Owner. All such insurance shall name the Town of Salem NH, Trident Building, LLC, and such other parties as the Owner shall require as additional insured parties at no additional cost to the Owner . The Additional Insureds shall be covered by such coverages for a minimum of twelve (12) months after final payment is made to the Contractor.

The certificate of insurance shall include the following text in the special provision section provided, however, that said text does not cause the coverage to lapse or terminate: "The Town of Salem, NH, Trident Building, LLC, and their respective directors, officers, members, managers, consultants, and

SALEM DISTRICT COURT ROOF REPLACEMENT PROJECT

employees” are listed for liability arising out of the operations of or the professional services provided by the Contractor and its Subcontractors, consultants and vendors on this Project.”

All insurance, excepting the Professional Liability insurance, shall be written on an occurrence basis, unless the Owner pre-approves in writing coverage on a claims made basis. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Services until the date of final payment and termination of any coverage required to be maintained after final payment. Certificates of Insurance acceptable to the Owner and confirming the insurance coverage required by the Agreement shall be attached to this Agreement and the form of the certificate shall be the ACORD form.

To the fullest extent permitted by law, Contractor agrees to indemnify, defend, and hold the above described additional insureds and their respective subsidiaries, affiliates, parent companies, officers, directors, trustees, managers, members, building committee members, representatives, agents, successors and assigns harmless from and against any and all claims, damages, losses, expenses, demands, actions, judgments, costs, fines, fees, interest, attachments, lawsuits, obligations, liens outstanding or unsatisfied, fines, penalties, liabilities, settlements made in good faith, Court costs, attorneys’ fees, costs of investigation and litigation and costs of every kind and description whatsoever to the extent same, directly or indirectly, proximately or remotely, wholly or in part, result or arise from the failure of the Contractor to maintain the above insurance and coverage amounts in force throughout the duration of this Agreement or to otherwise adhere to the terms of this section of the Agreement. The Contractor shall be obligated as provided herein, regardless of whether or not such claims, damages, losses, expenses and the like as described are caused in whole or in part by the actions or inactions of a party indemnified hereunder. In any and all claims by Contractor or any other person, sub-Contractor or firm under the control of the Contractor (or for whom the Contractor is legally responsible and hereinafter collectively “Contractor’s Forces)) against a party indemnified hereunder, the Contractor’s indemnification obligation set forth above shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any sub-Contractor under workers’ or workmen’s compensation acts, disability benefit acts or other employee benefit acts. Such obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which would otherwise exist as to any party or person described in this Section.

The provisions of this section shall survive the termination, suspension or expiration of the Agreement.

Town of Salem

Salem, New Hampshire

09 December 22

Salem District Court Roof Replacement

ICON Job #: 222068

Project Team:

Owner

Town of Salem, NH

33 Geremonty Dr.

Salem, NH 03079

Owner's Project Manager:

Trident Project Advisors

155 N. Broadway

Salem, NH 03079

Architects:

ICON architecture, inc.

101 Summer Street

Boston, MA 02110

(617) 451-3333

MEP Engineer:

Consulting Engineering Services

811 Middle Strret

Middletown, CT 06457

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SECTION 01 11 00

SUMMARY OF WORK

PART 1 - GENERAL

1.01 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.
- B. Equality of material, article, assembly, or system other than those named or described in this Section shall be determined in accordance with the provisions of Article V of the CONTRACT AND GENERAL CONDITIONS.

1.02 REQUIREMENTS INCLUDED

- A. Work under this Contract
- B. Examination of site and documents
- C. Supervision of Work
- D. Contractor Use of premises
- E. Site Logistics and Work Restrictions
- F. Coordination
- G. Reference standards
- H. Preconstruction conference
- I. Project meetings
- J. Permits, inspection, and testing required by governing authorities
- K. Field measurements
- L. OSHA safety and health course documentation
- M. Damage responsibility
- N. Asbestos and Hazardous Materials discovery

1.03 WORK UNDER THIS CONTRACT

- A. General Information: The Salem District Courthouse is located at 35 Geremonty Dr., Salem, NH. The two-story masonry building was built in 1981 and consists of approximately 23,000 sf floor area. The roof area is approximately 11,000 sf.
- B. The work will include all operations necessary to deliver the building(s) and ancillary on and off site amenities in a fully installed and operable condition including all utility and site work and obtaining all necessary licenses, permits, and certificates.

- C. The scope of work, without limiting the generality thereof, includes all labor, materials, equipment and services required to perform the work described fully in the Drawings and Specifications and includes, but is not limited to the following major work:
1. Demolition of existing ballasted roof system, down to the existing deck.
 2. Disconnect and reconnect of all major roof mounted mechanical equipment.
 3. Provide vertical extensions of existing HVAC duct, roof curbs, wiring connections to existing roof top equipment to facilitate the roof replacement.
 4. Installation of new hi-albedo (white) roofing system including minimum R-30 base insulation.

1.04 EXAMINATION OF SITE AND DOCUMENTS

- A. The bidders are expected to examine and to be thoroughly familiar with all contract documents and with the conditions under which the work is to be carried out. The Town will not be responsible for errors, omissions, and/or charges for extra work arising from the General Contractors or Subcontractors failure to familiarize themselves with the contract documents, that he is familiar with the conditions and requirements of both where they require, in any part of the work a given result to be produced, that the contract documents are adequate and he will produce the required results.

1.05 SUPERVISION OF WORK

- A. The Contractor shall be held directly responsible for the correct installation of all work performed under this Contract. The Contractor must make good repair, without expense to the Owner, of any part of the new work, or existing work to remain, which may become inoperative on account of leaving the work unprotected or unsupervised during construction of the system or which may break or give out in any manner by reason of poor workmanship, defective materials or any lack of space to allow for expansion and contraction of the work during the Contractor's warranty period, from the date of final acceptance of the work by the Owner

1.06 CONTRACTOR USE OF PREMISES

- A. Use of the Site: Limit use of the premises to work in areas to be established with the Town before commencement of work. Coordinate work of all trades required outside the established area. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the areas in which the Work is indicated.
1. Owner Occupancy: Allow for Owner occupancy and use by the public.
 2. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 3. The Contractor can gain access to the premises during the hours specified below. In addition the Contractor and his personnel will limit themselves only within the working premises during working hours. If work needs to be scheduled during times other than

those listed below, Contractor shall inform the Owner Project Manager.

- B. Damage to existing work, if caused by the Contractor's operations under this Contract, shall be repaired at the Contractor's expense.

1.08 SITE LOGISTICS AND WORK RESTRICTIONS

- A. The Contractor will be responsible for the following:

- 1. Construction Management Plan: The Contractor shall be required to prepare a detailed Construction Management Plan (CMP) which must be approved by the owner prior to the start of construction. The CMP will include all of the measures the Contractor determines are necessary to successfully complete the project while minimizing project impacts on the building, neighbors and surrounding community. The Contractor should assume that the nearby residences are occupied. The Contractor should assume that the Building can be fully operating during events on any given day and time.

- 2. The CMP must include, but shall not be limited to, the Contractors proposed procedures for following items:

- a. Work logistics plan: A description of how of the Work will be phased and sequenced to minimize disruption to individual spaces and sections of the building.

- i) Work hour limitations:

Hours of operation shall be between the hours of **7:00am** and **5:00pm** Monday thru Friday. No noise work shall commence prior to 7:00am.

Fees for the Town of Salem Staff to be present outside of these hours, to be paid by the General Contractor.

- ii) Notification procedures regarding weekend, early or late day work:

Provide 24 hour written notification to the Town of Salem for work performed during weekend hours.

- b. Conduct of the Work

- i) Safety requirements and accident prevention
- ii) Emergency contact information and procedures
- iii) Conduct of Construction personnel

The Contractor shall employ only competent, first-class workers to do the work, and whenever the Contractor shall be notified by the Town of Salem in writing that any person on the work is, in its opinion, incompetent, unfaithful, disorderly or otherwise dissatisfactory, such a person shall be discharged from the work and shall not be re-employed on it except with the written consent of the Town Administrator.

- iv) Appropriate attire, Personal Protective Equipment
- v) Appropriate language and conduct:
No Smoking allowed on Town property.

No radios allowed on the job site.

- c. Noise control
 - i) General noise control
 - ii) Notification procedures for exceptional noise
- d. Site Logistics:
 - i. Site security, temporary fencing.
 - ii. Temporary facilities site plan
 - 1. Dumpster location within staging area
 - i) Toilet location within staging area
 - iii. Temporary Utilities
 - 1. Water: Coordinate use with Town Facilities
 - 2. Power: Coordinate use of existing Town electrical energy, required for temporary power.
 - a. Special circuits required for electric welders or other special equipment high-amperage and/or special voltage service shall be at the cost of the contractor.
 - iv. Storage of materials on-site within staging area
 - v. Storage of materials off-site

All off-site storage to be insured and Bill of Lading documents submitted to Owner's Project Manager for Approval.
 - vi. Protecting existing utilities
- e. Site Maintenance: Maintain full operation of building and Town grounds
 - i) Dust control
 - ii) Debris control and removal of rubbish
 - iii) Cleaning during construction
 - iv) Rodent control
- f. Transportation / Circulation Management
 - i) Truck routing and delivery schedule
 - ii) Logistics for delivery / loading / unloading
 - iii) No idling of vehicles is allowed
 - iv) Logistics for construction workers parking
- g. Coordinate designated area of parking with town officials
 - v) All posted parking & traffic restrictions must be followed
 - vi) Emergency vehicle access
 - vii) Street and sidewalk occupancy and/or closures
 - viii) Municipal police services if any

3. The format of the CMP must include the following items:
 - a Name of the Project
 - b Name of the Owner
 - c Name of the General Contractor
 - d Name of all Sub-Contractors
 - e Project Address
 4. General Contractor will ensure that all subcontractors and other workers on the site receive and comply fully with the approved CMP.
 5. No work shall commence until the Construction Management Plan has been approved by the Owner
- B Law: All construction procedures shall conform to all local, state, and federal laws (including but not limited to safety, traffic, noise, and pollution laws) governing work in Salem, NH.

1.09 COORDINATION

- A. The General Contractor shall be responsible for the proper fitting of all the work and for the coordination of the operations of all trades, subcontractors or material and men engaged upon the work. The General Contractor shall do, or cause his agents to do, all cutting, fitting, adjusting, and repair necessary in order to make the several parts of the work come together properly.
1. Examine Contract Documents in advance of start of construction and identify in writing questions, irregularities or interference to the Owner Project manager in writing. Failure to identify and address such issues in advance becomes the sole responsibility of the Contractor.
- B. The work sequence shall follow planning and schedule established by the Contractor as approved by the Designer and the Owner Project Manager. The work upon the site of the project shall commence promptly and be executed with full simultaneous progress. Work operations which require the interruption of utilities, service, and access shall be scheduled so as to involve minimum disruption and inconvenience, and to be expedited so as to insure minimum duration of any periods of disruption or inconvenience.
- C. The Contractor shall review the tolerances established in the specifications for each type of work and as established by trade organizations. The Contractor shall coordinate the various trades and resolve any conflicts that may exist between trade tolerances without additional cost to Owner. The Contractor shall provide any chipping, leveling, shoring or surveys to ensure that the various materials align as detailed by the Designer and as necessary for smooth transitions not noticeable in the finished work.

1.10 REFERENCE STANDARDS

- A. For products specified by association or trade standards, comply with requirements for the standard, except where more rigid requirements are specified or are required by codes.
- B. Where reference is made in the Contractual Documents to Publications and Standards issued by Associations or Societies, the intent shall be understood to specify the current edition of

such Publications or Standards (including tentative revision) in effect on the date of the contract advertisement notwithstanding any reference to a particular date.

1.12 PROJECT MEETINGS

- A. Project meetings shall be held on a weekly basis and | or as required subject to the discretion of the Owner Project Manager.
- B. As a prerequisite for monthly payments, ordering schedules, shop drawing submitted schedules, shall be prepared and maintained by the Contractor and shall be revised and updated on a monthly basis, and a copy shall be submitted to the Owner Project Manager and Designer.
- C. In order to expedite construction progress on this project, the Contractor shall order all materials immediately after the approval of shop drawings and shall obtain a fixed date of delivery to the project site for all materials ordered which shall not impede or otherwise interfere with construction progress. The Contractor shall present a list and written proof of all materials and equipment ordered (through purchase orders). Such list shall be presented at the meetings and shall be continuously updated.

1.13 PERMITS, INSPECTION, AND TESTING REQUIRED BY GOVERNING AUTHORITIES

- A. If the Contract Documents, laws, ordinances, rules, regulations or orders of any public authority having any jurisdiction require any portion of the Work to be inspected, tested, or approved, the Contractor shall give the Designer, the Owner Project Manager or his/her designated representative, and such Authority timely notice (5 business days minimum) of its readiness so the Designer may observe such inspecting, testing, or approval.
 - 1. Coordinate with the requirements noted in Appendix B for testing to be executed by the General Contractor, in the presence of the Commissioning Agent.
- B. Unless otherwise specified under the Sections of the Specifications, the Contractor shall pay such proper and legal fees to public officers and others as may be necessary for the due and faithful performance of the work and which may arise incidental to the fulfilling of this Contract. As such, all fees, charges, and assessments in connection with the above shall be paid by the Contractor
- C. The Contractor shall furnish and install all information required by the building official and shall secure the general building permit for the work promptly on award of the Contract. The Contractor shall conform to all conditions and requirements of the permit and code enforcement authority. The Contractor shall provide names and license numbers of its responsible representatives to complete the application for permit, and shall receive the permit and promptly distribute copies to Owner and the Designer.
 - 1. Where Inspecting Authorities require corrective work for conformance with applicable Codes and Authorities, the Contractor shall promptly comply with such requirements, except in cases where such requirements clearly exceed the requirements of the Contract Documents, in which case the Contractor shall proceed in accordance with the procedures for modifications or changes in the work established in the Contract Documents, as amended.

1.14 FIELD MEASUREMENTS

- A. Although care has been taken to ensure their accuracy, the dimensions shown for existing items and structures are not guaranteed. It is the responsibility of the Contractor to verify these dimensions in the field before fabricating any construction component. No claims for extra payment due to incorrect dimensions will be considered by the Owner.

1.15 SAFETY REGULATIONS

- A. This project is subject to compliance with Public Law 91-596 "Occupational Safety and Health Act" - latest edition (OSHA 29 CFR 1926), with respect to all rules and regulations pertaining to construction, including Volume 36, numbers 75 and 105, of the Federal Register, as amended, and as published by the U.S. Department of Labor. OSHA cards for all contractors on site should be on file at the site.

1.16 DAMAGE RESPONSIBILITY

- A. The Contractor shall repair, at no cost to Owner, any damage to building elements, site appurtenances, landscaping, utilities, etc. caused during demolition operation and work of this Contract.

1.17 ASBESTOS AND HAZARDOUS MATERIALS DISCOVERY

- A. Given the building's age, it is assumed that there are no hazardous materials present. If unanticipated asbestos-containing materials or other Hazardous Materials not included in Contract are discovered at any time during the course of work, the Contractor shall cease work in the affected areas only and continue work in other areas, at the same time notify Owner and the Designer of such discovery. Do not proceed with work in such affected areas until written instructions are received. In the absence of unit prices, costs shall be negotiated or otherwise established prior to commencement of removal, in accordance with provisions of the Contract.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SECTION 01 32 00

CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.01 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.

1.02 REQUIREMENTS INCLUDED

- A. Preliminary schedule.
- B. Construction progress schedule, updated with each application for Payment with network analysis diagrams and reports.

1.03 RELATED SECTIONS

- A. CONTRACT AND GENERAL CONDITIONS
 - 1. Failure to complete the Work on Time
- B. Section 01 11 00 – SUMMARY OF WORK
 - 1. Progress meetings.

1.04 REFERENCES

- A. AGC (CPM) - The Use of CPM in Construction - A Manual for General Contractors and the Construction Industry; Associated General Contractors of America; 1976.

1.05 TIME OF COMPLETION

- A. In accordance with the General Conditions, the Work shall be commenced at the time stated in the Notice to Proceed & shall be completed within the time period(s) specified in the Owner/Contractor Agreement.

1.06 SUBMITTALS

- A. Within 10 days after date of Agreement, submit preliminary schedule defining planned operations for the first 30 days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 10 days after review of preliminary schedule, submit draft of proposed schedule for review.
- D. Within 10 days after joint review, submit complete schedule.

PART 2 - PRODUCTS –
NOT USED

PART 3 - EXECUTION

3.01 PRELIMINARY SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.

3.02 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Identify work of separate stages and other logically grouped activities.
- D. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- E. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, Products identified under Allowances, and dates reviewed submittals will be required from ICON architecture, inc,. Indicate decision dates for selection of finishes.
- F. Provide legend for symbols and abbreviations used.

3.03 BAR CHARTS

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

3.04 REVIEW AND EVALUATION OF SCHEDULE

- A. Participate in joint review and evaluation of schedule with ICON architecture, inc, at each submittal.
- B. Evaluate project status to determine work behind schedule and work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 days.

3.05 UPDATING SCHEDULE

- A. Maintain schedules with monthly updates to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.
- C. Update diagrams to graphically depict current status of Work.

3.06 DISTRIBUTION OF SCHEDULE

- A. Distribute copies of updated schedules to project site file, to Subcontractors, suppliers, ICON architecture, inc., the Owners Project Manager and the Owner.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 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.

1.02 REQUIREMENTS INCLUDED

- A. Shop drawings, products data, samples, and schedule of values.

1.03 SHOP DRAWINGS, PRODUCTS DATA, AND SAMPLES

- A. General:
 - 1. Review and submit to the Designer, shop drawings, project data and samples required by Specifications Sections.
 - 2. No submissions made by FAX will be accepted.
 - 3. The Contractor, within the time frame stated in Section 01 32 00 – CONSTRUCTION PROGRESS DOCUMENTATION, shall prepare and submit for the Designer’s approval, a Schedule of Shop Drawings, Product Data and Samples required to be submitted for the Work. The schedule shall indicate, by trade, the date by which final approval of each item must be obtained, and shall be revised as required by conditions of the Work. The Schedule of Shop Drawings, Product Data and Samples shall correspond with the construction schedule so that the submissions relate to the time when the products and/or systems will be required on the site. The Designer will not approve a schedule that calls for out-of-sequence submittals.
- B. Shop Drawings:
 - 1. Original drawings shall be prepared by General Contractor, Subcontractor, Supplier or Distributor, which illustrate some portion of the Work, showing fabrication, layout, setting, or erection of details.
 - a. Shop drawings shall be prepared by a qualified detailer.
 - b. Details shall be identified by reference to sheet and detail numbers indicated on Contract Drawings.
 - c. Maximum sheet size shall be 30-inch by 42-inch.
 - d. Submit with the required number of opaque prints specified herein.
 - e. Electronic Submittals are preferred, by email or the designer’s file transfer site.
- C. Product Data:

1. Manufacturers' catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data. Provide manufacturer's catalogue sheet, specification for each product and other pertinent data as required under the individual specification.
 - a. Modify product data submittals to delete information, which is not applicable to the project.
 - b. Supplement standard information to provide additional information applicable to the project.
 - c. Clearly mark each copy to identify pertinent materials, products, or models.
 - d. Show dimensions and clearances required.
 - e. Show performance characteristics and capacities.
 - f. Show wiring diagrams and controls.
2. All such data shall be specific and identification of material or equipment submitted shall be clearly made in ink. Data of general nature will not be accepted.
3. Product Data shall be accompanied by transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself.

D. Samples:

1. Physical samples shall illustrate materials, or workmanship, and shall establish standards by which work is judged. After review and approval, samples may be used in construction of project if not retained for comparison
 - a. Office samples of sufficient size and quantity shall clearly illustrate:
 - 1) Functional characteristics of product or material, with integrally related parts and attachment devices.
 - 2) Full range of color samples.
 - 3) After review and approval by Designer, samples may be used in construction of project if not retained for comparison.
2. Unless otherwise specified in the individual Section, the Contractor shall submit two labeled specimens of each Sample.
3. Samples shall be of adequate size to permit proper evaluation of material. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of the approved samples will not be approved on the Work.
4. Samples which can be conveniently mailed shall be sent directly to the Designer, accompanied by transmittal notice. On the transmittal notice the Contractor shall stamp his approval of Samples submitted.
5. If Sample is rejected by the Designer, a new Sample shall be resubmitted in the manner specified herein above. This procedure shall be repeated until the Sample is approved in writing by the Designer.
6. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of Samples whether or not specified in the Specifications, at no additional cost to the Owner.

1.04 GENERAL CONTRACTOR'S RESPONSIBILITIES:

- A. Review shop drawings, Product Data and Samples prior to submission. Verify:
1. Field measurements.
 2. Field construction criteria.
 3. Catalog numbers and similar data.
 4. Conformance with Specifications.
 5. Integration with adjoining work.
- B. All shop drawings prepared by subcontractors shall be processed through the General Contractor. The General Contractor shall check all the shop drawings for conformity with the Contract Documents and particularly for field measurements and proper fit with adjoining work prior to submitting same to the Designer for approval. Certification shall appear on each shop drawing stating that the General Contractor has made his/her check. Format and content of the Contractor's certification stamp shall be subject to approval by the Designer and shall include, but not be limited to:
1. The Term "By Others" shall not be used on shop drawings, the General Contractor shall state by whom the related items are to be furnished and/or installed.
 2. The Designer reserves the right to reject and return to the General Contractor, without examination, any shop drawings which have not been previously checked and certified as outlined above, which carry the term "by other" or such vague reference, which are difficult to read, which have arrived by FAX or which in any way are obviously not in conformity with Contract Requirements.
 3. Shop drawings shall show materials, design, dimensions, connections and other details necessary to ensure that they accurately interpret the Contract Documents and shall also show adjoining work in such detail as required to provide proper connection with same.
 4. The Designer will check and approve shop drawings only for conformance with the design concept and for compliance with information given in the Contract Documents. Approval of shop drawings by the Designer will not release the General Contractor from his responsibility for furnishing same of proper dimensions, size quantity and quality to effectively perform the work and carry out the requirements and intent of Contract Documents.
 5. Such approval will not relieve the Contractor from responsibility for errors of any sort in the shop drawings, nor for the proper coordination of any submittal with all other work. If the shop drawings deviate, or are intended to deviate, from the Contract Documents, the General Contractor shall so advise the Designer in writing at the time the shop drawings are submitted, stating the difference in value between the Contract requirements and that denoted by said shop drawings.
 6. The General Contractor shall assume full liability for delay attributed to insufficient time for delivery and/or installation of material or performance of the work when approval of pertinent shop drawing is withheld due to the failure of the General Contractor to submit, revise, or resubmit shop drawings in adequate time to allow the Designer a reasonable time, not to exceed twenty-one (14) calendar days, for normal checking and processing of each submission or resubmission.

- C. Coordinate each submittal with requirements of Contract Documents.
- D. The Contractor's responsibility for errors and omissions in submittals is not relieved by the Designer's review and approval of submittals, unless Designer gives tentative written acceptance of specific deviations identified.
- E. Notify the Designer in writing at the time of submission, of deviations in submittals from requirements of Contract Documents or previous submissions.
- F. Work that requires submittals shall not commence unless submitted with Designer's stamp and initials or signature indicating review and approval.
 - 1. No work shall be started in the shop or on the job, or materials delivered to the site, until pertinent shop drawings have been approved by the Designer.
- G. After the aforesaid review and approval, distribute copies.
- H. Maintain one (1) copy of each approved submittal at the project site.

1.05 SUBMISSION REQUIREMENTS:

- A. General: All submittals shall be made to the Designer's Office. The quantity and make-up of submittals shall be as established by the Designer; however, one electronic copy of all submittals shall be transmitted to the owner's Project Manager at the same time that such submittals are transmitted to the Designer. The Designer will log and distribute submittals for review by his consultant engineers.
- B. Make submittals promptly in accordance with approved schedules, and in such sequence as to cause no delay in the work.
- C. Submit number of samples specified in each Section of the Specifications.
- D. Submittals shall include:
 - 1. Date and revision dates.
 - 2. Project title and number.
 - 3. The names of:
 - a. Designer;
 - b. General Contractor;
 - c. Subcontractor;
 - d. Supplier;
 - e. Manufacturer;
 - f. Separate detailer when pertinent.
 - 4. Identification of product or material.
 - 5. Location of work and relation to adjacent structure or materials.
 - 6. Field dimensions clearly identified as such.
 - 7. Specification Section number and specific paragraph under which item is specified.

8. Submission number.
9. Applicable standards, such as ASTM number.
10. A blank space, five-inch by four-inch, for the Designer's stamp.
11. Contractor's remarks. Identify exceptions or deviations from Contract Documents and reasons for them.
 - a. If shop drawings submitted by the Contractor indicate a departure from the Contract and the Designer deems it to be minor adjustment in the interest of the owner (subject to concurrence by the Contractor stating it does not involve a change in Contract Price or extension of time), the Designer may approve the submission.
12. Contractor's stamp, initialed or signed certifying review and approval of submittal.
13. Any other items as called for by the Designer.
14. The Designer reserves the right to ask for shop drawings for any or all items on the project, whether or not requested in individual specification sections, at no additional cost to the Owner.

1.06 RESUBMISSION REQUIREMENTS:

- A. Resubmission: Resubmission procedure shall follow the same procedures as the initial submittal with the following exceptions:
- B. Shop Drawings:
 1. Transmittal shall contain the same information as the first transmittal except that the submission number shall change sequentially. The drawing number/description shall be identical as the first transmittal but the date shall be the revised date for that submission.
 2. No new material should be included on the same transmittal for the resubmission.
 3. Indicate on drawings any changes which may have been made other than those requested by the Designer.
- C. Product Data and Samples:
 1. Submit any new data and samples as required from previous submittal.

1.07 THE DESIGNER'S REVIEWS AND DISTRIBUTION OF SUBMISSIONS:

- A. The time frame for the Designer's review will not exceed fourteen (14) calendar days between her/his receipt of submittal. After the Designer's (and his/her consultant engineers) review, distribution shall be as stated herein.
 1. If submittal is 'reviewed - no exceptions taken', or 'reviewed, make corrections noted', the Designer shall compose a transmittal indicating the status. The Contractor shall then distribute said submittals to appropriate subcontractors.
 2. If submittal is 'reviewed - revise and resubmit' or 'rejected', the Designer shall compose a transmittal indicating the status.
 3. The Contractor is required to anticipate review time, including time for possible

rejection and resubmission, in establishing Schedule dates.

- a. The aforementioned time provided the Designer for checking shop drawings is from the date of receipt of shop drawings by the Designer to the date of shop drawings returned to the Contractor by the Designer.
 4. The Designer will process the submission and indicate the appropriate action on the submission and the transmittal. Incomplete or erroneous transmittals will be returned without action.
 5. The Designer will fill out transmittal in the following sequence:
 - a. Date received from Contractor.
 - b. Date returned to Contractor.
 - c. Action taken on submission.
 - d. Distribution, including number of copies distributed and type of material distributed (i.e., print, brochure or sample, etc.).
 - e. Designer's remarks (note major deviations from the Contract Documents).
- B. Designer's Review Procedure:
1. Stamped REVIEWED, "NO EXCEPTIONS TAKEN":
 - a. No corrections or resubmissions required, fabrication may proceed.
 2. Stamped REVIEWED, "MAKE CORRECTIONS NOTED":
 - a. If Contractor complies with noted corrections, fabrication may proceed. Submit corrected print for final review.
 - b. If, for any reason, the Contractor cannot comply with the noted corrections, fabrication shall not proceed and Contractor shall resubmit, following procedures outlined in this Section.
 3. Stamped REVIEWED, "REVISE AND RESUBMIT" OR "REJECTED":
 - a. Contractor shall revise and resubmit for review. Fabrication shall not proceed.
- C. Manufacturer's Instruction
1. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting and finishing, in quantities specified for product data.
- D. Certificates of Compliance: Submit certificates of compliance with the associated Shop Drawings, Product Data, and Samples required for the product in quantities specified for certificates of compliance.
- E. Field Samples: Provide field samples of finishes at the project as required by individual Specification Section. Install sample complete and finished.
- F. Patterns and Colors: Submit accurate color charts and pattern charts to the Designer for review and selection whenever a choice of color or pattern is available in a specified product, unless the exact color and pattern of a product are indicated in the Contract Documents. Color and Pattern charts shall represent the manufacturer's complete standard offerings, except where Specifications limit the offerings by defining a particular series or product type which is normally limited in color and pattern availability.

1.08 SCHEDULE OF VALUES:

- A. Prior to the first request for payment, the General Contractor shall submit to the Designer and the Owner's Project Manager, a Schedule of Values of the various portions of the Work in sufficient detail to reflect various major components of each trade, including quantities when requested, aggregating the total contract sum, and divided so as to facilitate payments for work under each Section. The schedule shall be prepared in such form as specified or as the Designer or the Owner's Project Manager may approve, and it shall include data to substantiate its accuracy. Each item in the Schedule of Values shall include its proper share of overhead and profit. This schedule, including breakdown and values, requires the approval of the Designer and the Owner's Project Manager and shall be used only as a basis for the Contractor's request for payment.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION

SUBSTITUTION REQUEST COVER SHEET

This cover sheet is required for all proposed substitutions including "OR EQUAL"s.

Contractor: _____

Subcontractor: _____

This Request Reference Number: _____

Substitution Summary: _____

Specification Section and Paragraph Number: _____

Contract Drawing and Detail Reference: _____

Date of This Request: _____

This Request Prepared By: _____

Conditions: Indicate all conditions that apply to this proposed substitution:

- ☐ Substitution required because specified item is no longer available.
- ☐ Substitution required because Contractor believes specified item is incorrect, inappropriate, or incompatible.
- ☐ Substitution recommended because it offers the Owner substantial advantage in:
 - ☐ Quality
 - ☐ Time
 - ☐ Cost
- ☐ This is an "OR EQUAL".

Evidence: Indicate evidence attached:

- ☐ Tabulated side by side comparison of specified item and proposed substitution directly comparing each feature, characteristic, and performance.
- ☐ Manufacturer's product data for both specified item and proposed substitution. Origin of all information included on tabulated side by side comparison is highlighted
- ☐ Details showing how the proposed substitution interfaces with adjacent work.
- ☐ Certification that warranty, if any required, will be provided as required.
- ☐ Complete cost change information.
- ☐ Higher cost to Owner as stated in cost change information
- ☐ No change in cost to Owner.
- ☐ Lower cost to Owner, credit to Owner as stated in cost change information.

Deviations from Contract Documents: Itemize all deviations from Contract Documents if this proposed substitution is approved.

The undersigned attests that the undersigned has carefully examined this entire submission and that the requirements of the Contract Documents have been met.

By: _____
Signature date

Printed or Typed Name Title

ARCHITECT'S REVIEW STAMP: [Stamp review stamp below and indicate action on this substitution.]

Architect's Response:

SECTION 01 74 19

WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL PROVISIONS

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 SUMMARY

- A. This Section includes administrative and procedural requirements for disposing of demolition waste and construction waste.

1.3 RELATED SECTIONS

- A. Section 02 41 19 – SELECTIVE DEMOLITION:
 - 1. Demolition and selective demolition activities.

1.4 DEFINITIONS

- A. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- B. Disposal: Removal off-site of demolition waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

1.5 PERFORMANCE REQUIREMENTS

- A. In the event the Contractor encounters previously unidentified material that is reasonably believed to be hazardous, asbestos containing, coated with lead-based paint, or oily debris, the Contractor shall immediately stop work in the affected area and report the condition to the Designer and the owner. At no time shall such material be handled or disposed of by the Contractor. The Contractor agrees to cooperate with the owner and any consultants engaged by owner to perform services with respect to the analysis, detection, removal, containment, treatment, and disposal of such regulated materials.

1.6 SUBMITTALS

- A. Record Keeping for Landfill and/or Incinerator Disposal: Documentation to be submitted by the Contractor shall include the following as a condition of each payment:
 - 1. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, and/or receipts.
- B. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- C. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt. All Proceeds of Sales to be returned to Owner.

1.7 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

1.8 WASTE MANAGEMENT PLAN

- A. Waste Identification: Indicate anticipated types and quantities of demolition and site-clearing waste generated by the Work. Include estimated quantities and assumptions for estimates.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement Waste Management Plan as approved by the Designer. Provide containers, storage, signage, transportation, and other items as required to implement WMP for the entire duration of the Contract.
 - 1. Review WMP with each trade when they first begin work on-site. Review plan procedures and locations established for recycling and disposal.
 - 2. Review and finalize procedures for material separation and verify availability of containers and bins needed to maintain production.
 - 3. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
- B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, sold, and disposed.
2. Comply with project requirements for controlling dust and dirt, environmental protection, and noise control.

3.2 DISPOSAL OF WASTE

- A. General: Remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
 1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION

SECTION 01 77 00

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the General and Supplementary Conditions and Division 1 General requirements, apply to the work of and are hereby 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 whether or not such work is specifically mentioned in this Section.
- C. This section contains information that applies to all work performed under the contract and is hereby made a part of each specification section.

1.02 FINAL CLEANING

- A. Unless otherwise specified under the various Sections of the Specifications, the General Contractor shall perform final cleaning operations as herein specified prior to final inspection.
- B. Maintain project site free from accumulations of waste, debris, and rubbish, caused by operations. At completion of work, remove waste materials, rubbish, tools, equipment, machinery and surplus materials, and clean all sight-exposed surfaces; leave project clean and ready for occupancy.
- C. Broom clean exterior paved surfaces and rake clean other surfaces of the grounds
- D. Leave pipe and duct spaces, plenums, furred spaces and the like clean of debris & decayable materials.
- E. At the end of the Project, General Contractor and each Subcontractor shall remove all his tools, equipment, machinery, and surplus materials from the job site. The General Contractor shall remove waste materials and rubbish from the project at this time. All temporary structures shall be removed and the project shall be left clean.

1.03 RECORD DOCUMENTS

- A. Record Documents: Provide complete and accurate Record Documents.
 - 1. Maintain Record Documents up-to-date at all times.
 - 2. Record information immediately as the work progresses.
- B. Record Documents Required: The following Record Documents are required:
 - 1. Record drawings.
 - 2. Record specifications.
 - 3. Record maintenance manuals.
 - 4. Record warranty and maintenance agreements.
 - 5. Record test reports and inspections.
 - 6. Record submittal file.
- C. Record Document Information Required: Customize and create Record Documents which incorporate all information from:
 - 1. Original contract documents.

2. Addenda.
 3. Change order modifications.
 4. Construction change directives.
 5. Field directions and instructions from the Architect.
 6. All changes and deviations from the original Contract Documents.
- D. Method of Information Incorporation: Provide customized Record Documents. Revise, change, and modify original Contract Documents to clearly show all Record Document information required. Transfer the Record Document information to the original Contract Documents.
- E. Labeling and Identification of Record Documents: Clearly label all Record Documents.
1. Clearly label all Record Documents.
 2. Date each entry of Record Document information.
 3. Date final Record Documents with the final Record Document submission date.
 4. Keep the Architect's and Engineer's original Contract Document title blocks, but remove all professional seals and signatures from Record Documents.
 5. Add the Contractor's name, address, and telephone number.
 6. Add names, addresses, and telephone numbers of subcontractors with primary Record Document responsibility for mechanical, plumbing, fire protection, and electrical disciplines.
- F. Record Documents Are Tied to Progress Payments: Maintaining Record Documents up-to-date, accurate, and in excellent condition is a prerequisite for approval of Contractor's application for progress payments.
- G. Cost of Preparing Record Documents: Record Documents are a "General Requirement". The cost of General Requirements including Record Documents is included in the Contract Amount.
1. Changes in the Work: Recording changes in the Work is an essential function of Record Documents. No additional, special, itemized, or line item payment will be made for Record Document work. The cost of preparing Record Documents to incorporate changes in the work is included in the Contract Amount & in the Contractor's overhead percentage. The cost of preparing Record Documents related to changes in the work shall be included in the cost of each change in the work, whether the cost increases, decreases, or does not change the Contract Amount.

1.04 RECORD DOCUMENTS BINDERS

- A. Record Documents in Binders.
- B. Record Approved Submittals.
1. Record Document maintenance manuals.
 2. Record Document warranty and maintenance agreements.
 3. Record Document test reports and inspections.
- C. Record Document Warranty and Maintenance Agreements: As the work progresses, compile complete binders and CDs of all warranties, guarantees, certificates, and maintenance agreements required by the Contract Documents.
1. Ensure that all documents are properly conformed and signed.
 2. Ensure that each document is in a form acceptable to the Owner.
 3. For each warranty and maintenance agreement, clearly indicate date of commencement and expiration date.

1.05 PUNCH LIST

- A. Carefully check all work as the work is being performed. Correct unsatisfactory work immediately.
- B. Make frequent inspections of work during the finishing stages of the project, progressively checking for and correcting faulty work.
- C. Before substantial completion, provide to the Architect, a list of items to be completed or corrected. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all work in accordance with the Contract Documents.
- D. Upon receipt of the Contractor's list of items to be completed or corrected, the Architect will promptly make a thorough inspection and prepare a "punch list", setting forth in accurate detail any items on the Contractor's list and additional items that are not acceptable.
- E. Correct all 'punch list' items or shall cause the correction of the "punch list' items within a time frame to be established when the "punch list" is made. Do not exceed the contractual limits for completion of the punch list.

1.06 CLOSEOUT REQUIREMENTS AND SUBMITTALS

- A. Final Inspection:
 - 1. Submit written certification that:
 - a. Project has been inspected for compliance with Contract Documents and has satisfied the Department of Public Safety.
 - b. Equipment and systems have been tested and are operational and satisfactory.
 - c. Project is completed, and ready for final inspection.
 - d. Provide the required spare/replacement parts as specified within the particular sections.
 - 2. Inspectional Services Department Use and Occupancy Permit:
 - a. Arrange for a Town of Salem Inspectional Services Department final inspection and secure the signed Certificate of Inspection for Use and Occupancy.

END OF SECTION

SECTION 02 41 19

SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the General and Supplementary Conditions and Division 1 General requirements, apply to the work of and are hereby 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 whether or not such work is specifically mentioned in this Section.
- C. This section contains information that applies to all work performed under the contract and is hereby made a part of each specification section.

1.02 DESCRIPTION OF WORK

- A. Work Included:
 - 1. Demolition, removal and disposal of roofing system, metal flashings, caulking, sealants, fillers and fasteners. Refer to Drawing and specifications for additional requirements.
 - 2. Salvage of existing items to be reused, or turned over to the facility, including but not limited to mechanical equipment and services at the roof.
 - 3. Removal and legal disposal of demolished materials off site. Except those items specifically designated to be relocated, reused, or turned over to the facility, all existing removed materials, items, trash and debris shall become property of the Contractor and shall be completely removed from the site and legally disposed of at her/his expense. Salvage value belongs to the Owner. On-site sale of materials is not permitted.
 - 4. Demolition and removal work shall properly prepare for alteration work and new construction to be provided under the Contract.
- B. Items To Be Installed Only: Not Applicable.
- C. Items to be Removed, Stored and Reinstalled 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 01 74 19 – WASTE MANAGEMENT AND DISPOSAL:
 - a) Waste management and recycling.

1.03 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and reinstalled.

- B. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated. Protect from weather until reinstallation.
- C. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, or removed and reinstalled.
- D. Existing to Remain to be Altered: Existing items of construction that are not to be removed but are to be altered in order to accommodate new roof installation.

1.04 SUBMITTALS

- A. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with early and late starting and finishing dates for each activity. Ensure User Agency's on-site operations are uninterrupted if applicable.
 - 2. Interruption of utility services, if any. Indicate how long utility services will be interrupted.
 - 3. Use of elevator and stairs.
 - 4. Locations of proposed dust- and noise-control temporary partitions and means of egress, including for other occupants affected by selective demolition operations.
 - 5. Coordination of User Agency's continuing occupancy of portions of existing building and of User Agency's partial occupancy of completed Work.
 - 6. Means of protection for items to remain and items in path of waste removal from building.
- B. Landfill Records: Provide trip tickets (receipts) indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
 - 1. Comply with submittal requirements in Section 01 74 19 - WASTE MANAGEMENT AND DISPOSAL.

1.05 QUALITY ASSURANCE

- A. Examination of Existing Conditions: The Contractor shall examine the Contract Drawings for demolition and removal requirements and provisions for new work. Verify all existing conditions and dimensions before commencing work. The Contractor shall visit the site and examine the existing conditions as he finds them and shall inform herself/himself of the character, extent and type of demolition and removal work to be performed. Submit any questions regarding the extent and character of the demolition and removal work in the manner and within the time period established for receipt of such questions during the bidding period.
- B. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in Section 01 11 00 Summary of Work. Review methods and procedures related to selective demolition including, but not limited to, the following:
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review and finalize selective demolition schedule and verify availability of materials,

demolition personnel, equipment, and facilities needed to make progress and avoid delays.

3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
4. Review areas where existing construction is to remain and requires protection.

1.06 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.03 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Designer.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction videotapes.
- F. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
- G. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.04 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Comply with requirements for access and protection specified in Section 01 11 00 Summary of Work.
- C. Maintain adequate passage to and from all exits at all times. Before any work is done which significantly alters access or egress patterns, consult with the Designer and obtain approval of code required egress. Under no condition block or interfere with the free flow of people at

legally required exits, or in any way alter the required condition of such exits.

- D. Post warning signs and place barricades as applicable during placement and removal of temporary shoring.
- E. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area(s).
- F. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction. Provide temporary barricades as required to limit access to demolition areas.
- G. Protect existing site improvements, appurtenances, and landscaping to remain.

3.05 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 - 3. Maintain adequate ventilation when using cutting torches.
 - 4. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - 5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 6. Dispose of demolished items and materials promptly. Comply with requirements in Section 01 74 19 - WASTE MANAGEMENT AND DISPOSAL.
- B. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse.
 - 2. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- C. Existing Items to Remain: Protect construction indicated to remain against damage and

soiling during selective demolition. When permitted by Designer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

D. Items for Re-use and Preservation of Existing Surfaces to Remain:

1. The Contractor shall inspect closely each item specifically designated to be relocated, re-used, or turned over to the Owner prior to its removal, and immediately report damages and defects to the Designer.
2. Unless special surface preparation is specified under other Specification Sections, leave existing surfaces that are to remain in a condition suitable to receive new materials and/or finishes.

3.06 PROTECTION OF PUBLIC AND PROPERTY

- A. Ensure exposed roof, roof edges and other exposed openings or penetrations in the roof are protected from damage, weather or other potential elements that may be detrimental to the safety, security and structural integrity of the building.
- B. Provide all measures required by federal, state and municipal laws, regulations, and ordinances for the protection of surrounding property, the public, workmen, and employees during all demolition and removal operations. Measures are to be taken, but not limited to installation of sidewalks, sheds, barricades, fences, warning lights and signs, trash chutes and temporary lighting.
- C. Protect all walks, roads, streets, curbs, pavements, trees and plantings, on and off premises, and bear all costs for correcting such damage as directed by the Designer.
- D. Demolition shall be performed in such a manner that will insure the safety of adjacent property. Protect adjacent property from damage and protect persons occupying adjacent property from injuries which might occur from falling debris or other cause and so as not to cause interference with the use of other portions of the building, of adjacent buildings or the free access and safe passage to and from the same.
- E. Remove portions of structures with care by using tools and methods that will not transfer heavy shocks to existing and adjacent building structures, both internal and external of the particular work area.
- F. Provide and maintain in proper condition, suitable fire resistive dust barriers around areas where interior demolition and removal work is in progress. Dust barriers shall prevent the dust migration to adjacent areas. Remove dust barriers upon completion of major demolition and removal in the particular work area.

3.07 DISCOVERY OF HAZARDOUS MATERIALS

- A. If hazardous materials, such as chemicals, asbestos-containing materials, or other hazardous materials are discovered during the course of the work, cease work in affected area only and immediately notify the Designer of such discovery. Do not proceed with work in such areas until instructions are issued by the Designer. Continue work in other areas.

- B. If unmarked containers are discovered during the course of the work, cease work in the affected area only and immediately notify the Designer of such discovery. Do not proceed with work in such areas until instructions are issued by the Designer. Take immediate precautions to prohibit endangering the containers integrity. Continue work in other areas.

3.08 CUTTING

- A. Perform all cutting of existing surfaces in a manner which will ensure a minimal difference between the cut area and new materials when patched.
- B. Provide a flush clean edge where concrete equipment pads, louver removals abut existing surfaces to remain undisturbed.

3.09 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Comply with requirements of Section 01 74 19 - WASTE MANAGEMENT AND DISPOSAL and the following.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.

3.10 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Premises shall be left in a clean condition and ready to accept alteration work and new construction.

END OF SECTION

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the General and Supplementary Conditions and Division 1 General requirements, apply to the work of and are hereby 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 whether or not such work is specifically mentioned in this Section.
- C. This section contains information that applies to all work performed under the contract and is hereby made a part of each specification section.

1.02 DESCRIPTION OF WORK:

- A. Work Included: Provide all, labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Wood nailers, blocking and sleepers.
 - 2. Wood furring.
 - 3. Sheathing.
 - 4. Concealed blocking, grounds, nailers and equipment curbs.
- B. Related Work: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
 - 1. Section 07 53 23 - EDPM Roofing.
 - 2. Section 07 92 00 – Joint Sealants

1.03 REFERENCES:

- A. The following standards and publications are applicable to the extent referenced in the text. The most recent version of these standards is implied unless otherwise stated.
- B. Lumber Standards: Comply with American Softwood Lumber Standards PS 20 and with applicable rules of the respective grading and inspecting agencies for species and products indicated certified by American Lumber Standard Committees (ALSC) Board of Review.
 - 1. Northeast Lumber Manufacturer's Association (NELMA): Listed Standards.
 - 2. Northern Softwood Lumber Bureau (NSLB): Listed Standards.
 - 3. National Lumber Grades Authority (NLGA): Listed Standards.
 - 4. American Society for Testing and Materials (ASTM): Listed Standards.
 - 5. American Wood Preserves Bureau Standards (AWPB): Listed Standards.

- 6. National Forest Products Association (NFPA), National Design Specifications for Wood Construction (NDS) and NDS Supplement, Design Values for Wood Construction.
- C. Plywood Product Standards: Comply with PS 1 (ANSI A 199.1) or, for products not manufactured under PS 1 provisions, with applicable American Plywood Association APA Performance Standard for type of panel or laminated veneer beam indicated.
- D. AITC 104, Typical Construction Details.

1.04 GRADING REQUIREMENTS:

- A. Grade and Trademark: Shall be required on plywood and each piece of framing and softwood lumber (or bundle in bundled stock). Use only the recognized official marks of the association under whose rules it is graded.
- B. Moisture Content: Moisture content shall not exceed 19% for lumber, 12% for plywood.
- C. Quality: Lumber shall be new; sound; commercially dried and seasoned; well manufactured; and free from bows, twists, crook and wanes that cannot be corrected in the process of bridging or nailing

1.05 INTENT:

- A. A major intent of the work of this section is to provide concealed blocking, grounds, and nailers for all work in this project including, but not limited to, roofing, flashings, sheet metal and the like.

1.06 SUBMITTALS

- A. Provide the following FOR REVIEW in accordance with Section 01 33 00 "SUBMITTALS PROCEDURES":
- B. Provide the following FOR INFORMATION in accordance with Section 01330 "SUBMITTALS":
 - 1. Product Data: Submit manufacturer's specifications, product data, installation instructions, use limitations and recommendations for each material used, including, but not limited to, the following materials. Provide certifications stating that materials comply with requirements.
 - a. Manufacturer's data on metal connectors for wood construction.
 - b. Material Certificates: Where dimensional lumber is provided to comply with minimum allowable unit stresses, submit listing of species and grade selection for each use, and submit evidence of compliance with specified requirements. Compliance may be in form of a signed copy of applicable portion of lumber producer's grading rules showing design values for selected species and grade. Design values shall be as approved by the Board of Review of American Lumber Standards Committee.
 - 2. Treatment Data: For each type of treatment required provide manufacturer's certification stating chemicals and process used, quantities of chemicals retained, conformance with applicable standards, and certification that moisture content after treatment was reduced to maximum specified. Submit treatment manufacturer's

instructions for proper use of each type of treated material including, but not limited to, the following materials.

- a. Pressure Treated: For type specified, include certification by treating plant stating chemicals and process used, net amount of preservative retained and conformance with applicable standards.
- b. For water-borne preservatives, include statement that moisture content of treated materials was reduced to a maximum of 15% prior to shipment to project site.

1.07 STORAGE AND HANDLING:

- A. Store and handle in strict compliance with manufacturer's instructions and recommendations. Protect from moisture and damage. Stack materials to insure ventilation and drainage. Protect lumber from the elements and against dampness during and after delivery. Store all lumber on sleepers, laid flat, under cover in a well-ventilated area.
- B. Sequence deliveries to avoid delays, but minimize onsite storage.

1.08 PROJECT CONDITIONS:

- A. Coordinate work of this section with work of other sections to ensure proper location and attachment of other work. Scribe and trim work to provide accurate fit.

1.09 TESTING AND INSPECTION:

- A. However, such inspection, wherever conducted, shall not relieve the Contractor of his responsibility to furnish materials and workmanship in accordance with Contract requirements, nor shall inspector's acceptance of materials or workmanship prevent later rejection of same by the Owner or Architect if defects are discovered.
- B. The Contractor must set up a quality control program in the shop and in the field to ensure compliance with the Specifications.
- C. Report in writing to the Architect the results of the Contractor's inspection.

PART 2 - PRODUCTS

2.01 LUMBER:

- A. Factory-mark each piece of lumber and plywood with type, grade, mill and grading agency, except omit marking from surfaces to be exposed with transparent finish or without finish.
- B. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.
 1. Provide dressed lumber S4S, unless otherwise indicated.
 2. Provide seasoned lumber with 15% maximum moisture content at time of dressing.
- C. Miscellaneous Lumber:

1. Provide wood for support or attachment of other work including nails, blocking, furring and similar members. Provide lumber of sizes shown or specified.
2. Provide above ground lumber in contact with roofing, flashing, sheet metal, masonry, concrete, dampproofing and waterproofing that is pressure treated with waterborne preservatives complying with AWPB LP-2 and AWPB C2. Dry lumber to maximum moisture content of 15% after treatment

2.02 PLYWOOD:

- A. OSB will not be accepted for roof, exterior wall, floor sheathing, or exposed locations.
- B. Trademark: Identify each panel with appropriate APA trademark.
- C. Concealed Performance-Rated Plywood: Where panels will be used for the following concealed types of applications, provide APA Performance-Rated Panels complying with requirements indicated for grade designation, span rating, exposure durability classification, edge detail (where applicable) and thickness.
 1. Wall Sheathing: APA-RATED SHEATHING.
 - a. Exposure Durability Classification: Exterior.
 - b. Span Rating: As required to suit stud spacing indicated.
 - c. Panel thickness: 5/8" thick minimum.
 2. Roof membrane flashing substrate: smooth-surfaced exterior grade plywood with exterior grade glue shall be used.
 - a. Minimum 1/2" thickness
 - b. Marine Grade A-B.

2.03 MISCELLANEOUS MATERIALS:

- A. Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.
- B. Wood Nailer: Provide treated wood nailers at the perimeter of the entire roof and around such other roof projections and penetrations as specified on Drawings. Thickness of nailers must match the insulation thickness to achieve a smooth transition. Wood nailers shall be treated for fire and rot resistance and be #2 quality or better lumber.
 1. Wood nailers shall conform to Factory Mutual Loss Prevention Data Sheet 1-49
 2. Note: Wood nailers or wood blocking for snow protection system shall be installed prior to the installation of the roof membrane whenever possible.

2.04 WOOD TREATMENT:

- A. Preservative Treatment shall comply with applicable requirements of AWPB Standards C2 (Lumber) and C9 (Plywood) and of AWPB Standards listed below. Mark each treated item with the AWPB Quality Mark Requirements.

1. Pressure treat above-ground items with water-borne preservatives complying with AWPB Lp-2, LP-3, LP-4 and LP-5. After treatment, kiln-dry to a maximum moisture content of 15%. Treat indicated items and the following:
 - a. Nailers, curbs, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers and waterproofing.
 - b. Wood sills, blocking, furring, stripping and similar concealed members in contact with masonry or concrete.
 - c. Wood framing members less than 8" above grade.
2. Complete fabrication of treated items prior to treatment, where possible. If cut after treatment, coat cut surfaces with heavy brush coat of same chemical used for treatment. Inspect each piece of lumber or plywood after drying and discard damaged or defective pieces.

PART 3 - EXECUTION

3.01 INSPECTION:

- A. The Installer/Erector shall examine substrates, supports and conditions under which this work is to be performed and notify Contractor, in writing, of conditions detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected. Beginning work means installer accepts substrates and conditions.

3.02 INSTALLATION / ERECTION:

- A. General:
 1. Strictly comply with referenced standards, except where more restrictive requirements are specified in this section. Choose pieces carefully to eliminate split, warped and twisted members.
 2. Discard units of material with defects which might impair quality of work, and units which are too small to fabricate work with minimum joints or optimum joint arrangement.
 3. Securely attach carpentry work to substrate and structure by anchoring and fastening as shown and as required by state building code. Ensure that blocking is capable of supporting applied work and loadings. Countersink bolts, nail heads and other fasteners flush with face of wood on exposed carpentry work and fill holes.
 4. Use common wire nails, except as otherwise indicated. Use finishing nails for finish work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; pre-drill as required.
 5. Saturate cut ends of treated wood with same chemicals used for original treatment.
- B. Wood Grounds, Nailers and Blocking:
 1. Provide wherever shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.
 2. Attach to substrates as required to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise shown. Build into masonry during installation of masonry work. Where possible, anchor to formwork before concrete placement.

Use only approved fasteners for attachment of nailers to tectum roof deck that meet or exceed pull-out data in section 075323 EDPM ROOFING.

- C. Wood Furring:
 - 1. Install plumb and level with closure strips at edges and openings. Shim with wood as required for tolerances of finished work.
- D. Wood Framing, General:
 - 1. Provide framing members of sizes and on spacings shown, and frame openings as shown, or if not shown, comply with recommendations of Manual for House Framing at the National Forest Products Association. Do not splice structural members between supports.
 - 2. Anchor and nail as shown and to comply with Recommended Nailing Schedule as indicated.
 - 3. Firestop concealed spaces with wood blocking not less than 2" thick, if not blocked by other framing members. Provide blocking at each building story level and at ends of joist spans.
- E. Maintain premises in neat, safe and orderly condition during execution of work.

END OF SECTION

SECTION 075323

EPDM ROOFING

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. Adhered membrane-roofing system.
 - 2. Cover board.
 - 3. Roof insulation.
 - 4. Vapor retarder.
 - 5. Flashing for equipment mounted on roofing and roofing penetrations.
- B. 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 076200 - SHEET METAL FLASHING AND TRIM for metal roof penetration flashings, flashings, and counterflashings.
 - 3. Section 079200 - JOINT SEALANTS for sealants.

1.3 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.

1.4 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.
- D. Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations in NRCA Roofing and Waterproofing Manual (Fourth Edition) for Construction Details and SMACNA Architectural Sheet Metal Manual (Fifth Edition) for Construction Details, as applicable.

1.5 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.

1.6 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.

1.7 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.

1.8 WARRANTY

- A. Roofing Contractor's Warranty: The roofing subcontractor shall supply User Agency with a minimum two-year workmanship warranty for each roof, starting from the date of Certificate of Agency Use and Occupancy. In the event any work related to the roofing, flashing, or metalwork is found to be defective within two years from the date of Certificate of Agency Use and Occupancy, the roofing contractor shall remove and replace such at no additional cost to the Town. 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 from the date of Certificate of Agency Use and Occupancy. Guarantees or warranties that start at the date of shipment from the factory, or from the completion date of an individual portion of the project, are not acceptable. The warranty shall be a 20-year no dollar limit (NDL), non-prorated total system labor and material warranty, for wind speeds up to (110) 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 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. Or equal.
 - 2. Thickness: 60 mils (1.5 mm) nominal.
 - 3. Exposed Face Color: White

2.2 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 degrees F ASTM D 746.
 - 5. Resistance to Ozone Aging: No cracks after 168 hours' exposure of 50 percent elongated sample at 104 degrees 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 degrees F; ASTM D 471.
- D. Bonding Adhesive: Manufacturer's standard bonding adhesive.
- 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.

2.3 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.

2.4 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.
- B. Extruded-Polystyrene Board Insulation: ASTM C 578, Type IV, 1.6-lb/cu. ft. minimum density, square edged.
 - 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. DiversiFoam Products.
 - b. Dow Chemical Company.
 - c. Pactiv/Greenguard
 - d. Owens Corning.
 - e. Or equal.

- C. 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.
 - f. Or equal.
- D. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.
- E. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.5 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.

2.6 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 minimum concrete drying period recommended by roofing system manufacturer has passed.
 - 4. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
 - 5. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.
 - 6. 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 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.
- J. Apply epichlorohydrin sheet over roofing membrane at locations indicated.

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. Provide 400 LF of walkway material, locate around mechanical equipment as directed by the Architect.

3.8 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.

- 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.

END OF SECTION

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

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. Through-wall flashing.
 - b. Formed wall flashing and trim.
 - c. Formed low-slope roof flashing and trim.
- B. 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.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to provide a weathertight condition and to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, warping, waving, buckling, fastener distortion, and fastener disengagement.
- B. Fabricate and install roof edge flashing and copings capable of resisting the Wind Zone forces required by Code.
- 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 degrees F, ambient; 180 degrees F material surfaces.
- D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior or interior side of flashing.

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, finish and color 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 joints and 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.

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 and inspect materials for damage, dampness, and wet-storage stains upon delivery to the site. Do not accept materials with any of these defects. Handle, store, and install sheet

metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage of the materials.

- C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering, and sloped to shed water. Do not store sheet metal flashing and trim materials in contact with other materials that might cause corrosion, 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. Coordinate with other trades to allow for timely progress of construction.
- B. The sheet metal mechanic is responsible for cutting, fitting, drilling, and other operations in connection with sheet metal required to accommodate the work of other trades.

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: As selected by Designer from manufacturer's full range, including metallics.
- 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 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. Fasteners should be of the same metal or a metal compatible with the item fastened. Use stainless steel fasteners to fasten dissimilar materials.
 - 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. Isolation Coating: ASTM D 1187, cold-applied asphalt emulsion, VOC compliant, 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.

2.3 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.

2.4 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing 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.

2.5 WALL SHEET METAL FABRICATIONS

- A. Through-Wall Flashing: Fabricate continuous flashings in minimum 96-inch-long, but not exceeding 12 foot long, sections, under copings, at shelf angles, and where indicated. Fabricate discontinuous lintel, sill, and similar flashings to extend 6 inches beyond each side of wall openings. Form with 2-inch-high end dams. 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 isolation 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. Fold back the exposed edges neatly to form a 1/2 inch hem on the concealed side.
- 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. Seams shall be uniform in width and height.
- 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 degrees 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 degrees 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. Prein edges of sheets to be soldered to a width of 1-1/2 inches except where prein surface would show in finished Work.
 - 1. Do not solder aluminum sheet.
 - 2. Stainless-Steel Soldering: Prein 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. Do not allow aluminum surfaces in direct contact with other metals except stainless steel, zinc, or zinc coating. Where aluminum contacts another metal, paint the dissimilar metal with a primer followed by two coats of aluminum paint. Where drainage from a dissimilar metal passes over aluminum, paint the dissimilar metal with a non-lead pigment paint.

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: Factory form counterflashing to provide spring action against the base flashing. Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Unless indicated otherwise, insert counterflashing in reglets located 9 to 10 inches above the roof surface and secure at least every 18 inches. Extend counterflashing 4 inches over base flashing. Lap

counterflashing joints a minimum of 4 inches and bed with elastomeric sealant. Fold the exposed edges of counterflashings 1/2 inch.

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 WALL FLASHING INSTALLATION

- A. General: Install sheet metal wall flashing to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.

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. Repair scratches, abrasions, blemishes, variations in color and texture, and minor surface defects in the finish in accordance with the manufacturer's written instructions.
- E. Replace sheet metal flashing and trim that have been damaged or discolored or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

SECTION 07 92 00

CAULKING AND SEALANTS

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

- A. All of the Contract Documents, including the General and Supplementary Conditions and Division 1 General requirements, apply to the work of and are hereby 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 whether or not such work is specifically mentioned in this Section.
- C. This section contains information that applies to all work performed under the contract and is hereby made a part of each specification section.

1.02 DESCRIPTION OF WORK

- A. Work Included: Provide all labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
 - 1. Preparing sealant substrate surfaces.
 - 2. Furnishing and installing sealants and joint backing where indicated on the drawings and specified herein.
 - 3. Furnishing and Installing sealants at all exterior penetrations in roof.
- B. Related Work: Other specification sections which directly relate to the work of this section include, but are not limited to, the following:
 - 1. Section 06 10 00 – Rough Carpentry
 - 2. Section 07 53 23 – EDPM Roofing
 - 3. Section 07 62 00 – Sheet Metal Flashing and Trim.

1.03 SUBMITTALS

- A. Provide the following FOR REVIEW in accordance with Section 01 33 00 "SUBMITTALS":
 - 1. Product Data: For each joint-sealant product indicated, provide data indicating:
 - a. sealant chemical characteristics,
 - b. performance criteria, substrate preparation,
 - c. limitations, and
 - d. color availability.
 - 2. Initial Selection Samples: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

3. Verification Samples: For each kind 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.
4. Joint-Sealant Schedule: Include the following information:
 - a. Joint-sealant application, joint location, and designation.
 - b. Joint-sealant manufacturer and product name.
 - c. Joint-sealant formulation.
 - d. Joint-sealant color.
- B. Provide the following FOR INFORMATION in accordance with Section 01 33 00 "SUBMITTALS":
 1. Manufacturer's Installation Instructions: Indicate special procedures.
 2. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
 3. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.
 4. Warranties: Sample of special warranties.
- C. Provide the following in accordance with Section 01 33 00
 1. Health and Safety documents, including MDS sheets.
- D. Provide the following FOR CLOSEOUT in accordance with Section 01 33 00
 1. Warranty Documentation.

1.04 QUALITY ASSURANCE

- A. Reference Standards
 1. ASTM C 834 - Standard Specification for Latex Sealants; 1995.
 2. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications; 1998.
 3. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 1998.
 4. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 1991 (Re-approved 1995).
 5. ASTM D 1667 - Standard Specification for Flexible Cellular Materials--Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam); 1997.
 6. ASTM D 2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for concrete Pavements; 1991 (Re-approved 1998).
 7. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers- Tension; 1998a.
 8. ASTM D 903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds; 1998.
 9. ASTM D 4060 - Standard Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser; 2001.
 10. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2001.

- B. Maintain one copy of each referenced document covering installation requirements on site.
- C. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.
- D. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- E. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- F. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.05 PROJECT CONDITIONS

- A. Delivery, Storage And Handling:
 - 1. Deliver Products in manufacturer's original unopened containers or packages with labels intact, identifying product and manufacturer, date of manufacture, lot number, shelf life, curing time, and mixing instructions, where applicable.
 - 2. Store and handle materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, or other causes.
 - 3. Store products in manufacturer's unopened packaging until ready for installation.
- B. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for application and cure.
- C. 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 degrees Fahrenheit.
 - 2. When joint substrates are wet.
 - 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 - 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.06 WARRANTY

- A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: 5 years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish 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: 5 years from date of Substantial Completion.
2. Include coverage for installed sealants and accessories that fail to achieve air-tightness.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
 1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 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

2.01 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 joint-sealant manufacturer, based on testing and field experience.
- B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
- C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- D. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.02 URETHANES:

- A. Two-Part Urethane: Self-Leveling, ASTM C920, Type M, Grade P, Class 25.
 1. Chem-Calk CC-550, by Bostik.
 2. Vulkem 245, by Mameco.
 3. Vulkem 255, Wide-Joint, by Mameco.
 4. NR-200 Urexpan, by Pecora Corporation.
 5. Sikaflex-2c NS/SL, by Sika Corporation.
- B. Two-Part Urethane: Non-Sag, ASTM C920, Type M, Grade NS, Class 25.
 1. Chem-Calk 500, by Bostik.

2. Vulkem 227, by Mameco.
3. Dynatrol II, by Pecora Corporation.
4. Sikaflex-2c NS/SL, by Sika Corporation.
5. Sonolastic NP 2, by Sonneborn Building Products, ChemRex Inc.
- C. One-Part Urethane: Self-Leveling, ASTM C920, Type S, Grade P, Class 25.
 1. Vulkem 45, by Mameco.
 2. Urexpam NR-201, by Pecora Corporation.
 3. Sonolastic SL1, by Sonneborn Building Products, ChemRex Inc.
- D. One-Part Urethane: Non-Sag, ASTM C920, Type S, Grade NS, Class 25.
 1. Chem-Calk 900, by Bostik.
 2. Vulkem 116, by Mameco.
 3. Sonolastic NP I, by Sonneborn Building Products, ChemRex Inc.

2.03 ACRYLICS, LATEX:

- A. One-Part Acrylic Latex, Non-Sag, ASTM-C-834-76.
 1. Chem-Calk 600, by Bostik.
 2. LC-130, by MACCO Adhesives, The Glidden Company.
 3. Easa-ply ALS, by W. R. Meadows, Inc.
 4. AC-20+Silicone Acrylic Latex, by Pecora Corporation.
 5. Sonolac, Sonneborn Building Products, ChemRex Inc.

2.04 PREFORMED COMPRESSIBLE & NON-COMPRESSIBLE FILLERS:

- A. Backer Rod - Closed cell polyethylene foam:
 1. HBR Backer Rod, by Nomaco.
 2. #92 Greenrod, by Nomaco.
 3. Sonofoam Closed-Cell Backer Rod, Sonneborn Building Products, ChemRex Inc.
- B. Backer Rod - Open cell polyurethane foam:
 1. Denver Foam, by Backer Rod Mfg Inc.
 2. Foam Pack II, by Nomaco.
- C. Neoprene compression seals:
 1. WE, WF, and WG Series, by Watson Bowman & Acme Corp.
 2. Will-Seal 150 Precompressed Expanding Foam Sealants, by Will-Seal, a Division of Illbruck.
- D. Butyl Rod: Kirkhill Rubber Co. (714)529-4901.

2.05 BOND BREAKER TAPE:

- A. Polyethylene tape of plastic as recommended by sealant manufacturer, to be applied to sealant contact surfaces where bond to substrate of joint filler must be avoided for proper performance of sealant.

2.06 COLORS

- A. Generally use sealant colors matching color of material joint is located in.
- B. Where a joint occurs between two materials of differing colors and Contractor cannot determine which material to match, contact the Architect for selection.

2.07 ACCESSORIES FOR SEALANTS

- A. Joint Cleaner: Provide type of joint cleaning compound recommended by sealant manufacturer for joint surfaces to be cleaned.
- B. Primer: As recommended by sealant manufacturer.
- C. Masking tape and similar accessories to protect surfaces from damage.

2.08 SCHEDULE FOR SEALANTS

- A. Exterior Joints:
 - 1. Coping joints, coping-to-facade joints, or horizontal surface joints not subject to foot or vehicular traffic.
 - a. Sealant No. 2.02 B
 - b. Sealant No. 2.02 D
 - c. Sealant No. 2.03 A (for prefinished materials only)
 - 2. Painted metal lap or flashing joints.
 - a. Sealant 2.02 A

PART 3 - EXECUTION

3.01 SEALANT INSPECTION

- A. Verification of Conditions: Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive Work.
 - 1. Verify that joint widths are in conformance with sealant manufacturer allowable limits.
 - 2. Verify that contaminants capable of interfering with adhesion have been cleaned from joint and joint properly prepared.
- B. Report in writing to the Architect prevailing conditions that will adversely affect satisfactory execution of the Work of this Section. Do not proceed with Work until unsatisfactory conditions have been corrected.
- C. By beginning Work, Contractor accepts conditions and assumes responsibility for correcting unsuitable conditions encountered at no additional cost to Owner.

3.02 SEALANT PREPARATION

- A. Prepare and size joints in accordance with manufacturer's instructions. Clean substrates of dirt, laitance, dust, or mortar using solvent, abrasion, or sandblasting as recommended by manufacturer. Remove loose materials and foreign matter which might impair adhesion of sealant.

- B. Verify that joint backing and release tapes are compatible with sealant. Verify sealant is suitable for substrate. Verify that sealant is paintable if painted finish is indicated.
- C. Protect materials surrounding work of this Section from damage or disfiguration.

3.03 SEALANT INSTALLATION

- A. Install sealant in accordance with manufacturer's published instructions. Perform work in accordance with ASTM C804 for solvent release sealants and ASTM C790 for latex base sealants.
- B. Prime or seal joint surfaces where recommended by sealant manufacturer. Do not allow primer or sealer to spill or migrate onto adjoining surfaces.
- C. Install backer rod and bond breaker tape where required by manufacturer.
- D. Install preformed compressible and non-compressible fillers in accordance with manufacturer's published instructions.
- E. Install sealants to depths recommended by sealant manufacturer in uniform, continuous ribbons free of air pockets, foreign embedded matter, ridges, and sags, "wetting" joint bond surfaces equally on both sides.
- F. Tool joints concave unless shown otherwise. Where horizontal joints are between a horizontal surface and a vertical surface, fill joint to form slight cove so that joint will not trap moisture and foreign matter. Dry tool joints. Do not use soap, water, or solvent to tool joints.

3.04 SEALANT CURING

- A. Cure sealants in compliance with manufacturer's published instructions.

3.05 SEALANT CLEANING

- A. Remove excess and spillage of sealants promptly as the work progresses, using materials and methods as recommended by sealant and substrate manufacturers. Clean adjoining surfaces to eliminate evidence of spillage without damage to adjoining surfaces or finishes.

END OF SECTION

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SECTION 086300

METAL-FRAMED SKYLIGHTS

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. Aluminum-framed skylights with insulated glass.
- B. 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 curbs.
 - 2. Section 076200 - SHEET METAL FLASHING AND TRIM for metal flashings installed at perimeters of assemblies.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide metal-framed skylights, including anchorage, capable of withstanding, without failure, the effects of the following:
 - 1. Structural loads.
 - 2. Thermal movements.
 - 3. Movements of supporting structure.
 - 4. Dimensional tolerances of building frame and other adjacent construction.
 - 5. Loosening or weakening of fasteners, attachments, and other components.
 - 6. Sealant failure.
- B. Structural Loads: Wind loads, snow loads, concentrated live loads and seismic loads as required by Code.

- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

- 1. Temperature Change (Range): 120 degrees F ambient; 180 degrees F material surfaces.

1.4 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for metal-framed skylights.
- B. Shop Drawings: For metal-framed skylights. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Verification: For each type of exposed finish required, in manufacturer's standard sizes.
- D. Fabrication Sample: Of each framing intersection of assemblies, made from 12-inch lengths of full-size components and showing details of the following:
 - 1. Joinery.
 - 2. Anchorage.
 - 3. Expansion provisions.
 - 4. Glazing.
 - 5. Flashing and drainage.
- E. Maintenance Data: For metal-framed skylights to include in maintenance manuals.
- F. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Entity capable of assuming engineering responsibility and performing work of this Section and who is acceptable to manufacturer.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Indicate measurements on Shop Drawings.

1.7 WARRANTY

- A. Special Assembly Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal-framed skylights that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:
 - a. Structural failures including, but not limited to, excessive deflection.
 - b. Noise or vibration caused by thermal movements.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - d. Adhesive or cohesive sealant failures.
 - e. Water leakage.
2. Warranty Period: Ten years from the date of Certificate of Agency Use and Occupancy. Guarantees or warranties that start at the date of shipment from the factory, or from the completion date of an individual portion of the project, are not acceptable.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. Velux America, LLC.
 2. Wasco Products, Inc.
 3. Or equal.

2.2 FRAMING SYSTEMS

- A. Aluminum: Alloy and temper recommended in writing by manufacturer for type of use and finish indicated.
 1. Sheet and Plate: ASTM B 209.
 2. Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
 3. Extruded Structural Pipe and Tubes: ASTM B 429.
- B. Pressure Caps: Manufacturer's standard aluminum components that mechanically retain glazing. Include snap-on aluminum trim that conceals fasteners.
- C. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning skylight components.
- D. Anchors, Fasteners, and Accessories: Manufacturer's standard, corrosion-resistant, nonstaining, and nonbleeding; compatible with adjacent materials.
 1. Where fasteners are subject to loosening or turning out from thermal and structural movements, wind loads, or vibration, use self-locking devices.

METAL FRAMED SKYLIGHTS

2. Exposed Fasteners:
 - a. Use exposed fasteners with countersunk Phillips screw heads.
 - b. Finish exposed portions to match framing system.
 3. At movement joints, use slip-joint linings, spacers, and sleeves of material and type recommended in writing by manufacturer.
- E. Anchor Bolts: ASTM A 307, Grade A hot-dip zinc coating, ASTM A 153/A 153M, Class C.
- F. Concealed Flashing: Manufacturer's standard, corrosion-resistant, nonstaining, nonbleeding flashing compatible with adjacent materials.
- G. Exposed Flashing and Closures: Manufacturer's standard aluminum components not less than 0.040 inch thick.
- H. Framing Gaskets: Manufacturer's standard
- I. Framing Sealants: As recommended in writing by manufacturer.

2.3 GLAZING SYSTEMS

- A. Glazing: Provide insulating-glass units.
- B. Spacers, Setting Blocks, and Gaskets: Manufacturer's standard elastomeric types.
- C. Glazing Sealants: As recommended in writing by manufacturer.

2.4 FABRICATION

- A. Fabricate aluminum components before finishing.
- B. Fabricate aluminum components that, when assembled, have the following characteristics:
 1. Profiles that are sharp, straight, and free of defects or deformations.
 2. Accurately fitted joints with ends coped or mitered.
 3. Internal guttering systems or other means to drain water passing joints, condensation occurring within framing members, and moisture migrating within skylight to exterior.
 4. Physical and thermal isolation of glazing from framing members.
 5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
- C. Fabricate aluminum sill closures with weep holes and for installation as continuous component.
- D. Reinforce aluminum components as required to receive fastener threads.

2.5 ALUMINUM FINISHES

- A. General: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Color and Gloss: As selected by Designer from manufacturer's full range, including metallics.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
 - 1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General:
 - 1. Comply with manufacturer's written instructions.
 - 2. Do not install damaged components.
 - 3. Fit joints between aluminum components to produce hairline joints free of burrs and distortion.
 - 4. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent impeding movement of moving joints.
 - 5. Seal joints watertight, unless otherwise indicated.
- B. Install components to drain water passing joints, condensation occurring within framing members, and moisture migrating within skylight to exterior.
- C. Install components plumb and true in alignment with established lines and elevations.

END OF SECTION

PROJECT TEAM:

OWNER:
SALEM, NH 03079
33 GEREMONTY DR., SALEM, MA 03079
603.890.2000

OWNER'S PROJECT MANAGER:
TRIDENT PROJECT ADVISORS AND DEVELOPMENT GROUP
155 N. BROADWAY, SALEM, NH 03079
603.340.6635

ARCHITECT:
ICON ARCHITECTURE
101 SUMMER STREET, BOSTON, MA 02110
617.451.3333

MEP:
CONSULTING ENGINEERING SERVICES
811 MIDDLE STREET, MIDDLETOWN CT 06457
860.632.1682

DRAWING LIST	
SHEET NUMBER	SHEET NAME
GENERAL	
G-000	COVER SHEET
G-001	ABBREVIATIONS & GRAPHIC SYMBOLS
ARCHITECTURAL DEMO	
D-101	ROOF PLAN - DEMO PLAN
D-701	DEMO ROOF DETAILS
D-702	DEMO ROOF DETAILS
ARCHITECTURAL	
A-101	ROOF PLAN
A-701	ROOF DETAILS
A-702	ROOF DETAILS
A-703	ROOF DETAILS
PLUMBING	
P-1.0	ROOF PLUMBING PLAN
MECHANICAL	
M-1.0	ROOF MECHANICAL PLAN
ELECTRICAL	
E-1.0	ELECTRICAL ROOF PLAN
Total Number of Sheets: 12	

SALEM DISTRICT COURTHOUSE ROOF REPLACEMENT

222068

35 GEREMONTY DR
TOWN OF SALEM
SALEM, NH 03079

ISSUE DATE: 12/09/2022
BID DOCUMENTS

ABBREVIATIONS	
A	Air
A/C	Air Conditioning
AV	Audio Visual
AB	Anchor Bolts
ABV	Above
AC	Alternating Current
ACP/C	Architectural Cast In Place Concrete
ACC	Accessory Accessories
ACP	Access Panel
ACT	Acoustical Ceiling Tile
AD	Area Drain
ADA	Americans with Disabilities Act
ADDNL	Additional
ADH	Adhesive
ADJ	Adjustable
AF	Above Floor
AF	Above Finished Floor
AGG	Aggregate
ALT	Alternate
ALUM	Aluminium
ANC	Anchor(s), Anchorage(s)
AND	And/or
ANT	Antenna(e)
AP	Access Panel
APP	Approved
APPROX	Approximate
ARA	Area of Rescue Assistance
ARCH	Architectural
AT	Aluminum Threshold
ATS	Animal Transfer Station
AV	Audio Visual
AVB	Air/Vapor Barrier
AVE	Avenue
AVG	Average
AW	Automated Watering
AW/S	Animal Watering System
AWSC	Animal Watering System Controller
L	Angle
BAS	Building Automated System
BC	Bottom of Curb
BCO	Brick Course
BD	Board
BDD	Back Draft Damper
BF	Bottom of Footing
BG	Bearing
BIT	Bituminous
BK	Brick
BLDG	Building
BLK	Block
BLKG	Blocking
BLW	Below Countertop at Knee Space
BM	Beam
BMK	Bench Mark
BO	Bottom of
BOC	Bottom of Concrete
BOL	Bollard
BOT	Bottom
BOW	Bottom of Wall
BPL	Bearing Plate
BRG	Bridging (Bridge(d))
BRKT	Bracket
BS	Both Sides
BSC	Bio Safety Cabinet
BTB	Back to Back
BTU	British Thermal Unit
BUR	Built Up Roofing
BW	Both Ways
C	Centigrade (Celsius)
CAB, CBT	Cabinet
CABO	Council of American Building Officials
CB	Catch Basin, Chalkboard
CEM	Cement
CF	Cubic Feet
CFCI	Contractor Furnished & Contractor Installed
CFL	Counterflashing(s)
CFM	Cubic Feet per Minute
CFS	Cubic Feet per Second
CG	Corner Guard
CH, [Channel
CHB	Chalkboard
CHWR	Chilled Water Return
CHWS	Chilled Water Supply
CI	Cast Iron
CIP	Cast In Place
CJ	Control Joint
CK	Chalk/Chalk
CKT	Circuit
CL	Centerline
CLF	Chain Link Fence
CLG	Ceiling
CLL	Contract Limit Line
CUM	Centerline of Mullion
CLOS	Closet
CLR	Clear(ance)
CLS	Closure
cm	Centimeter
CMU	Concrete Masonry Unit
CO	Convenience Outlet Receptacle, Cleanout
COL	Column
COMM	Command
COMP	Compressed(ed), (ton), (ble)
CONC	Concrete (Portland Cement)
COND	Conduit
CONST	Construction
CONT	Continuous
CONTR	Contractor
CR	Cold Rolled
CS	Countersink, Countersunk
CT	Ceramic Tile
CTC	Center to Center
CTR	Center
CTR	Center
CU	Cubic, Copper
CU IN	Cubic Inch
CUH	Cabinet Unit Heater
CV	Check Valve
CW	Cold Water
CX	Connection
CY	Cubic Yard
CYL	Cylinder, Cylindrical
D	Drain, Drainage Line
DB	Decibel, Drainboard (Interchangeable w/ DR)
DBL	Double
DC	Direct Current
DCX	Disconnect
DEG	Degree
DEM	Demolish, Demolition
DEP	Depressed
DET	Detail
DF	Drinking Fountain
DH	Double-Hung
DI	Drain Inlet
DIA	Diameter
DIA/G	Diagonal
DIF	Diffuser
DIM	Dimension
DL	Dead Load
DMH	Drop Manhole
DN	Down
DP	Dampproof (ed), (ing)
DPL	Disposal, Disposable
DPN	Dispenser
DR	Door
DS	Downspout
DT	Drain Tile
DTA	Dovetail Anchor
DT/S	Dovetail Anchor Slot
DW	Dishwasher
DWG, DRWG	Drawing(s)

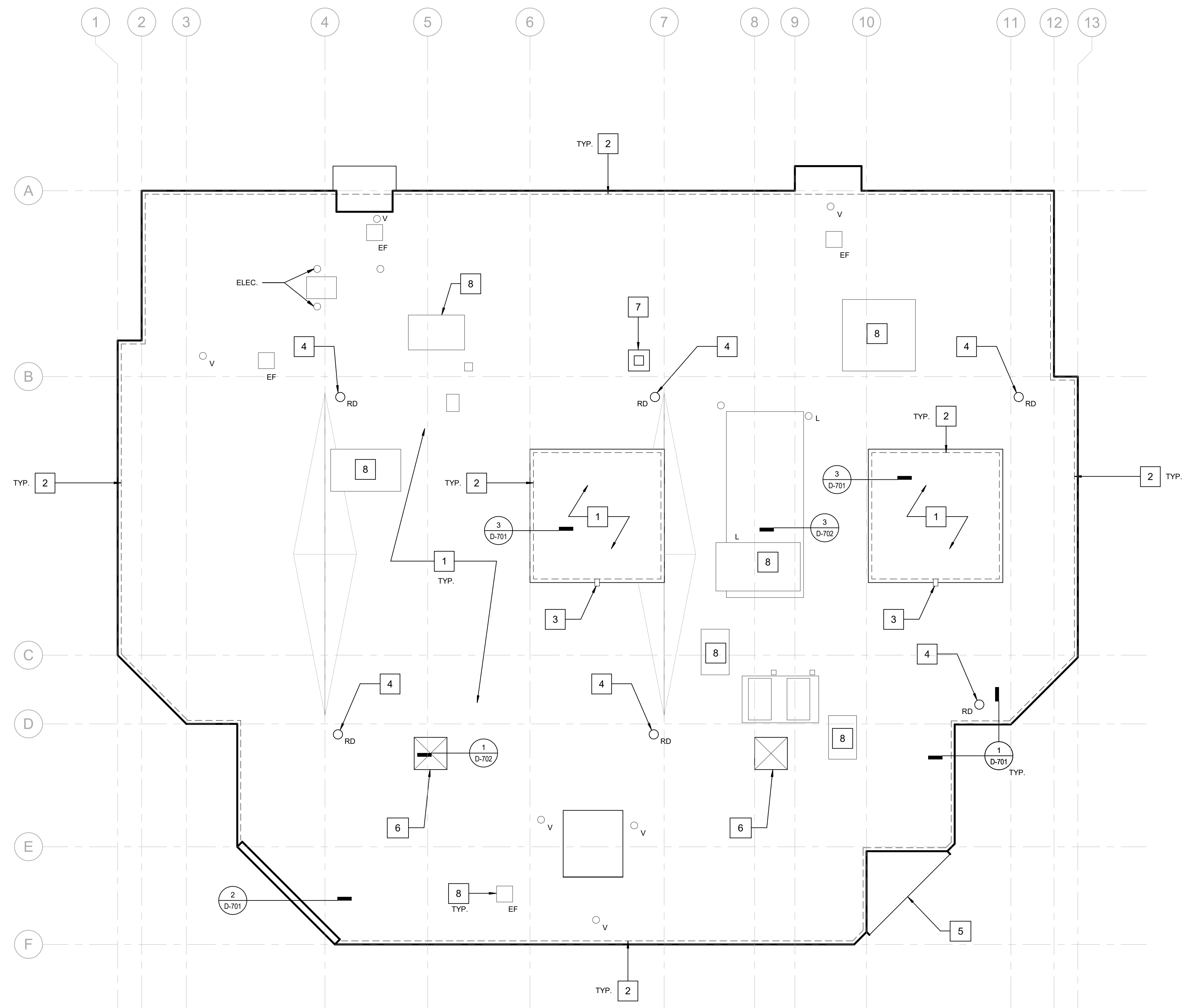
ABBREVIATIONS	
E, ELECT	Electric, Electrical
EA	Each
EB	Expansion Bolt
ED	Exhaust Duct
EF	Exhaust Fan
EFF	Efficiency
EH	Exhaust Hood
EHS	Exterior Insulated Finish System
EXP	Expansion Joint
EL	Elevation
ELEC	Electric(al)
ELEV	Elevator
EMERG	Emergency
ENC, ENCL	Enclose, Enclosure
EO	Edge of
EOS	Edge of Slab
EP	Electric Panel
EPS	Extruded Polystyrene
EQ, =	Equal
EQP, EQUIP	Equipment
ES	Emergency Shower
ESV	Emergency Shower Valve
ET	Extended Extension
ETR	Existing to Remain
EW	Each Way
EW	Electric Water Cooler
EW	Existing
EXH	Exhaust
EXIST	Existing
EXP	Expansion, Exposed
EXT	Exterior
F & I	Furnish & Install
FA	Fire Alarm Station
FAB	Fabrication
FAI	Fresh Air Intake
FBD	Finner Board
FBO	Furnished by Others
FCO	Floor Clean Out
FD	Floor Drain
FDC	Fire Department Connection
FDN	Foundation
FE	Fire Extinguisher
FEC, FXC	Fire Extinguisher Cabinet
FEH	Fire Extinguisher Hook
FF	Finish Floor
FFE	Finish Floor Elevation
FFL	Finish Floor Line
FGL	Fiberglass
FGR	Floor Grille (Register)
FH	Fire Hydrant
FHC	Fire Hose Cabinet
FHCE	Fume Hood Ceiling Enclosure
FHCS	Fat Head Countersink Screw
FHR	Fire Hose Rack
FWWS	Flat Head Wood Screw
FIL	Filler(s)
FIN	Finish
FIXT	Fixture
FL	Low Line
FLG	Flooring
FLR	Floor, Flooring
FLU, FLUOR	Fluorescent
FLX	Flexible
FMN	Fire Main
FND, FDW	Foundation (Wall)
FNDP	Feminine Napkin Disposal Unit
FNDR	Feminine Napkin Dispenser Unit
FO	Face of, Fiber Optic
FOC	Face of Concrete
FOP	Face of Precast
FOS	Face of Stud
FP	Fireproof (ing)
PPM	Feet per Minute
FRG	Feet per Second
FR	Fire Resistant
FR	Frame(d), (ing)
FRC	Fire-Resistant Coating
FRM	Frame
FRP	Fiber Reinforced Plastic
FRT	Fire-Retardant Treatment
FS	Firestopping
FSL	Fusible Link
FT	Feet, Foot
FTG	Footing
FTR	Fin Tube Radiation
FURR	Furring
FUT	Future
FCU	(Contractor to) Field Verify
FWK	Formwork
FWP	Fiber Wrapped Panel
FXD	Fixed
FXT	Fixture
G	Gas
GA	Gauge
GAL	Gallon(s)
GALV	Galvanized
GA/V	Gate Valve
GB	Grab Bar
GC	General Contractor
GD	Ground(ed)
GFI	Ground Fault Interrupting
GFRG	Glass Fiber Reinforced Concrete
GFRG	Glass Fiber Reinforced Gypsum
GI	Galvanized Iron
GKT	Gasket(ed)
GL	Glass
GLB	Glass Block
GMU	Glazed Masonry Unit
GPH	Gallon per Hour
GPL	Gypsum Plaster
GPM	Gallon per Minute
GPS	Gallon per Second
GR	Grille
GRD	Grade, Grading
GRT	Grate
GST	Galvanized Steel
GT	GROUT(ed)
GV	Gas Valve
GVL	Gravel
GWB, GYP BD	Gypsum Wall Board
GYP	Gypsum
HA	Hanger
HAV	Heating & Air Conditioning
HB	Hose Bib
HBD	Hardboard
HC	Handicap(ped)
HCHD	Hollow Core Wood
HDE	Heat Detector
HDN	Hardener(ed)
HDR	Header
HDW	Hardware
HE	Helium
HeR	Helium Return
HGT	Height
HH	Hand Hold
HK	Hook
HM	Hollow Metal
HMD	Hollow Metal Door
HMF	Hollow Metal Frame
HO	Hold Open
HOR, HORZ	Horizontal
HP	High Point, Horsepower
HPL	High Pressure Laminate
HR	Hour
HTG	Heating
HTR	Heater
HV	High Voltage
HVAC	Heating, Ventilation and Air Conditioning
HVC	Heating, Ventilating, Cooling

ABBREVIATIONS	
HW	Hot Water
HWC	Hot Water Circulator
HWR	Hardwood
HWF	Hot Water Faucet
HWH	Hot Water Heating
HWR	Hot Water Return
HWT	Hot Water Tank
HWW	Highway
HYD	Hydrant
Hz	Hertz (Cycle per Second)
ID	Inside Diameter
IM	Isolate Die, Metals
IE	Invert Elevation
IMC	Insulated Metal Clad
IN	Inch or Inches
INCAND	Incandescent
INCL	Including led), (sive)
INFO	Information
INSUL	Insulate(d), (ation)
INT	Interior
INV	Invert
J	Joist
JAN	Janitor
JB	Junction Box
JCT	Junction
JLMB	Joint Lumber
JF	Joint Filler
JS	Joint Sealer
JT	Joint
K	Kip
KD	Knock Down
KVA	Kilovolt-Ampere
KW	Kilowatt
L or LH	Long Span Steel Joist
LAD	Ladder
LAM	Laminate(d)
LAT	Lateral
LAV	Lavatory
LB	Lag Bolt
LBL	Lable
LBS, #	Pound's
LCC	Lead Coated Copper
LDR	Leader
LG	Long, Length
LGMF	Light Gauge Metal Framing
LH	Left-Hand
LIN	Linen
LKR	Lock
LL	Live Load
LMF	Light Gauge Metal Framing (sim)
LOC	Location
LONG	Longitudinal
LP	Low Point, Low Pressure, Light Proof
LS	Limestone
LTG	Lighting
LVL	Lintel
LV	Low Voltage
LVR	Ref. or Frezer (by owner)
LW	Light Weight
LWOD	Less Width of Door
M	Meter
MACH	Machine
MAS	Masonry
MAX	Maximum
MB	Machine Bolt
MBL	Machine Bolt
MBR	Member
MC	Medicine Cabinets
MCJ	Masonry Control Joint
MDF	Medium Density Fiberboard
MDO	Medium Density Overlay
ME	Metal Edge
MECH	Mechanical
MED	Medium
MEMB	Membrane
RM	Room
MEZZ	Mozzanine
MFD, MFRD	Manufactured
MFR	Manufacturer
MP	Manhole
MHT	Mounting Height
MIC	Microphone
MIN	Minimum
MIR	Mirror
MISC	Miscellaneous
MJ	Masonry Joint
MK	Mark
MLD	Molding
mm	Millimeter
MMB, MEMB	Membrane
MO	Masonry Opening
MOD	Modular
MOS	Mosaic
MP	Metal Panel
MR	Moisture Resistant
MRE	Metal Roof Deck(ing)
MT	Mount(ed), (ing)
MTC	Metal Clad
MTD	Mounted
SEL	Metal, Material(s)
MUL	Mullion
MW	Modular Wall (enclosing autoclaves, etc.)
MWK	Millwork
MXV	Mixing Valve
N	Nitrogen
NA	Not Applicable
NAT	Natural (Finish)
NC	Non-corrosive
NER	National Evaluation Report
NIC	Not In Contract
NL	Not Available
No, #	Number
NOM	Normal
NRC	Noise-Reduction Co-efficient
NTS	Not To Scale
K.L.H	Open-Web steel Joist
O.H, OPH	Overhead
O.H.DR, OVHD	Overhead Door
OA	Overall
OAE	Or Approved Equal
OBL	Oblique
OC	On Center
OD	Outside Diameter
OF	Owner Furnished
OFCI	Owner Furnished & Contractor Installed
OFI	Owner Furnished & Owner Installed
OFI	Owner Furnished & Owner Installed
OH	Overhead
OHB	Overhead Braced
OHS	Opposite Hand Similar
OHS	Opposite Hand Similar
OPG, OPGN	Opening
OPNG	Opening
OPP	Opposite
OPPH	Opposite Hand
OPR	Opposite
OSB	Oriented Strand Board
OVP	Overhead Video Projector
OVPS	Overhead Video Projector Support
OX	Oxygen
oz	Ounce

ABBREVIATIONS	
P	Patch
PA	Public Address System
PABR	Parallel
PB	Pull Box
PBD	Particle Board
PC	Physically Challenged
PCC	Precast Concrete
PCT or %	Percent
PCWR	Process Chilled Water Return
PCWS	Process Chilled Water Supply
PD	Pump Discharge
PDI	Power Driven Fastener(ing)
PE	Porcelain Enamel
PERIM	Perimeter
PERP	Perpendicular
PGL	Perforated
PGL	Plate Glass
PH (1)	Single Phase
PH (3)	Three Phase
PIC	Poured In-Place Concrete
PIL	Post Indicator Valve
PL	Plate
PLAM	Plastic Laminate
PLAS	Plaster
PLF	Pond per Linear Foot
PLUMB	Plumbing
PLWD	PLYwood
PM	Pressed Metal, Premolded
PMTL	Pressed Metal
PNL	Panel
PMU	Pneumatic
POL	Polished(ed)
PP	Pumping Port
PP	Pump
PR	Pair
PREFAB	Prefabricated
PRF	Preformed
PRN	Prefinish(ed)
PROJ	Project
PRS	Pressure Reducing Station
PS	Projector Screen
PSF	Pounds per Square Foot
PSI	Pounds per Square Inch
PT	Point
PT	Pressure Treated, Point, "P" Trap
PTD, PNT	Paint(ed)
PTN	Partition
PJ	Pull, Pull Chain
PUB	Public
PVC	Polyvinyl Chloride
PVT	Private
QT	Quarry Tile
QTY	Quantity
R&D	Remove & Dispose
R&R	Remove and Reinstall
R&S	Remove and Salvage
R, RA	Riser (or) Radius
R	Ref. or Frezer (by owner)
RA	Return Air
RAD	Radiator
RC	Reinforced Concrete
ROCP	Reflect Ceiling Plan
RD	Roof Drain
RE	Reference
RECP	Receptacle
RECV	Receiving
REF	Refinishing
REG	Register
REINF, RFC	Reinforce(d) (ing)
REQ'D, REQ	Required
RESIL	Resilient
REV	Revision, Revise(d)
RFG	Roofing
RFL	Reflective
RH	Right-Hand
RL	Rail, Railing
RM	Room
RMS	Rooms
RO	Rough Opening
ROW	Right-of-Way
RP	Rustproof(ing)
RPM	Revolutions per Minute
RPS	Revolutions per Second
RR	Railroad
RTN	Retain(ed) (er) (ing)
RU	Rubbish
RW	Raceway
RWL	Rain Water Leader
S&R	Shelf & Rod
SK	Shrink
S, STR	Structural
SAN	Sanitary (sewer)
SAT	Suspended Acoustical Tile
SCA	Spray on Cementitious Acoustical
SCN	Screen
SCW	Solid Core Wood
SD, SDE	Smoke Detector, Storm Drain
SDL	Saddle
SECT	Section
SEL	Select (or) (ion)
SF	Square Feet
SG	Special Glass
SH	Shelf, Shelving, Single-Hung
SHR	Shower Receptor
SHT	Sheet
SIM	Similar
SIP	Structural Insulated Panel
SKL	Skylight
SL	Sleeve
SLR	Sealer
SLT	Sealant
SMRF	Seamless Mechanical Room Floor
SMV	Smoke-Venting Hatch
SP	Soundproof(ing)
SPEC	Specifications
SPF	Specified
SPK	Speaker
SPR	Sprinkler
SPT	Septic Tank
SQ	Square
SS	Stainless Steel
SSK	Service Sink
SSM	Solid Surface Material
ST	Steel
ST, STL	Steel
STAG	Stagger
STD	Standard
STG	Sealing
STH	Sheathing
STIFF	Stiffener
STN	Stone
STOR, STO	Storage
SUP	Support
SUSP	Suspended
SUSP CEIL	Suspended Ceiling
SVC	Service
SV	Service Yard
SYM	Symmetry (ical)
SYS	System

ABBREVIATIONS	
T	Tread
T.O.	Top of
T.O.C.	Top of Concrete / Curb
T.O.F.	Top of Footing
T.O.M.	Top of Masonry
T.O.P.	Top of Parapet
T.O.R.	Top of Rail
T.O.S., TS	Top of Steel
T.O.T.	Top of Tunnel
T.O.W.	Top of Wall
TB	Tackboard
TC	Top of Curb
TCL	Time Clock
TCV	Temperature Control Valve
TD	Trench Drain
TEL	Telephone
TEMP, TMP	Tempered (or) Temporary
TG	Tempered Glass
TG, T&G	Tongue & Groove
TH	Thickness
THM	Thermometer
THR	Threshold
THS	Thermostat
TJI	Truss Joist "I" Section
TMV	Thermoslastic Mixing Valve
TOL	Tolerance
TP	Test Pit, Turning Point
TR	Transom
TRANS	Transformer
TV	Television
TYP	Typical
TZ	Terrazzo
U.N.O.	Unless Noted Otherwise
U.O.N.	Unless Otherwise Noted
UAS	Upward Acting Sectional
UC	Under Counter
UF	Under Floor (duct)
UG	Underground
UH	Unit heater
UHF	Ultrahigh Frequency
UK	Unit Kitchen
UL	Underwriters Laboratory
UNF	Unfinished
UV	Unit Ventilator
V	Volt(age)
V.I.F.	Verify In Field
VA	Vacuum
VAB	Vacuum Breaker
VB	Vapor Barrier, Vinyl Base
VC	Vitrified Clay
VCT	Vinyl Composition Tile
VE	Vent
VERT. VER	Vertical
VF	Vinyl Fabric
VHF	Very High Frequency
VI	Vibration Isolator
VIT	Vitreous
VJ	V-Jointed
VLF	Very Low Frequency
VNL	Vinyl
VNR	Veneer
VP	Vaporproof
VQT	Vinyl Quartz Tile
VR, VTR	Vent Through Roof
VS	Vinyl Sheet
VT	Vinyl Tile
VTR	Ventilator
VWC	Vinyl Walkcovering
W	Waste
w/	With
w/in	Within
w/o, WO	Without
WB	Wood Base
WBM	Wooden Beam
WBO	Work By Others
WBOR	Work By Owner
WBT	Work By Tenant
WC	Water Closet
WD	Wood
WE	Weeephole
WF	Steel Beam (Wide Flange)
WG	Wire Glass, Wall Guard
WH	Wall-Hung
WHA	Water Hammer Arrestor
WHY	Wall Hydrant
WI	Wrought iron
WID, W	Width
WK	Work
WKRM	Workroom
WM	Wire Mesh
WMS	Wire Mesh Screen
WN	Waincoat
WP	Waterproof(ed) (ing)
WPT	Working Point
WR	Waste Receptacle
WST	Weather Stripping
WTW	Wall to Wall
WWF	Welded Wire Fabric
XPS	Exposed
XR	X-ray
Y	WYE Fitting
Z	Zone
ZC	Zinc Coated
ZS	Zee Steel

DEMO GENERAL KEY NOTES	
1	EXISTING STONE BALLAST AND MEMBRANE ROOFING SYSTEM TO BE REMOVED DOWN TO STRUCTURAL DECK.
2	EXISTING METAL GRAVEL STOP TO BE REMOVED.
3	EXISTING METAL SCUPPER AND DOWNSPOUT TO BE REMOVED.
4	REMOVE EXISTING DRAIN COVER AND ROOF DRAIN ASSEMBLY. SEE PLUMBING DRAWINGS.
5	EXISTING METAL ROOFING SYSTEM BELOW, TO REMAIN.
6	REMOVE EXISTING SKYLIGHT AND CURB
7	EXISTING CHIMNEY TO REMAIN.
8	SEE MECHANICAL PLANS FOR DISCONNECT/RECONNECT SCOPE OF WORK.



1 EXISTING ROOF PLAN
1/8" = 1'-0"

SALEM DISTRICT COURTHOUSE ROOF REPLACEMENT

35 GEREMONTY DR
SALEM, NH 03079

ARCHITECT



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KEY PLAN

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SHEET TITLE

ROOF PLAN - DEMO
PLAN

D-101

SALEM
DISTRICT
COURTHOUSE
ROOF
REPLACEMENT

35 GEREMONTY DR

SALEM, NH 03079

ARCHITECT

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101 SUMMER ST BOSTON MA 02110

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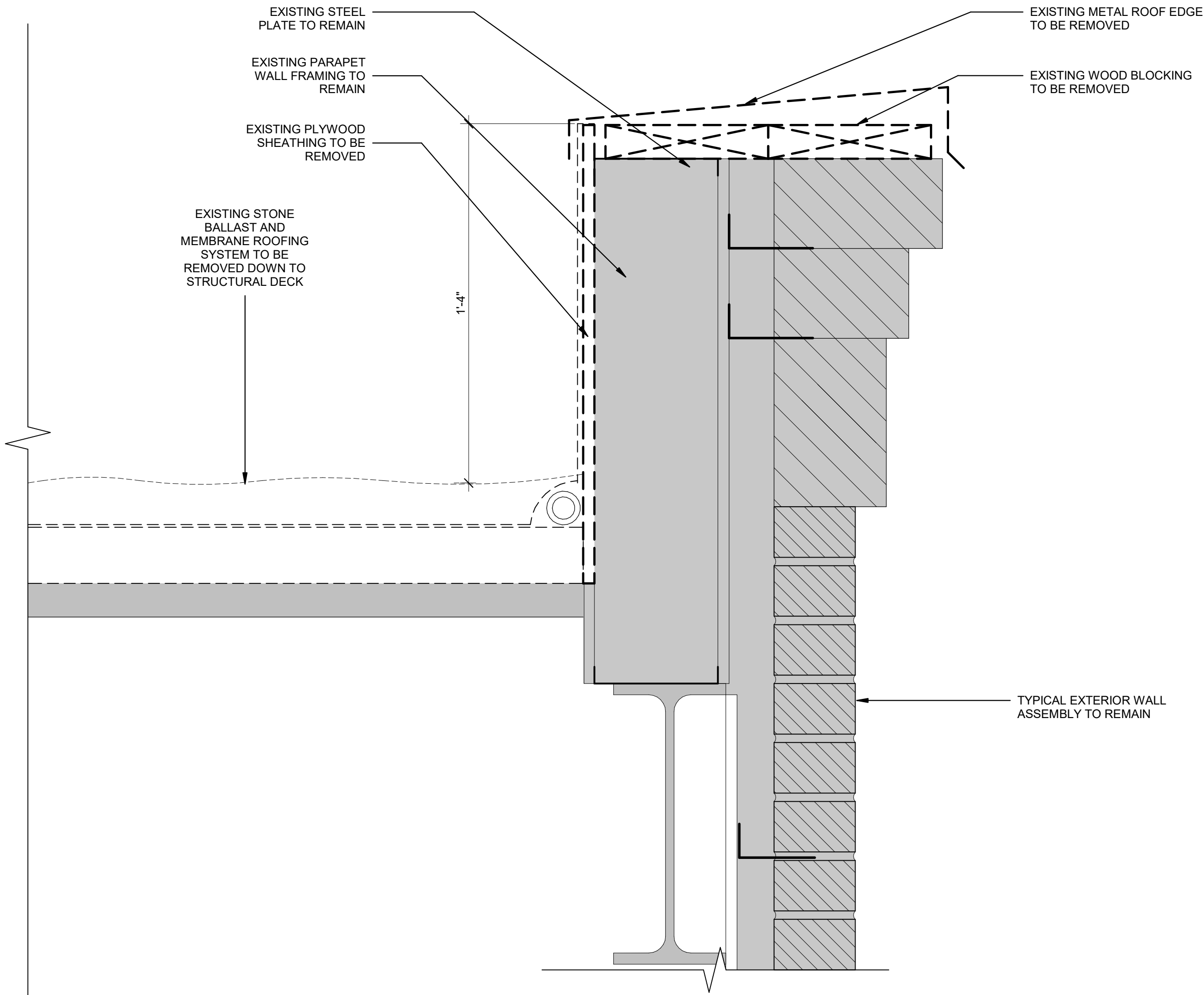
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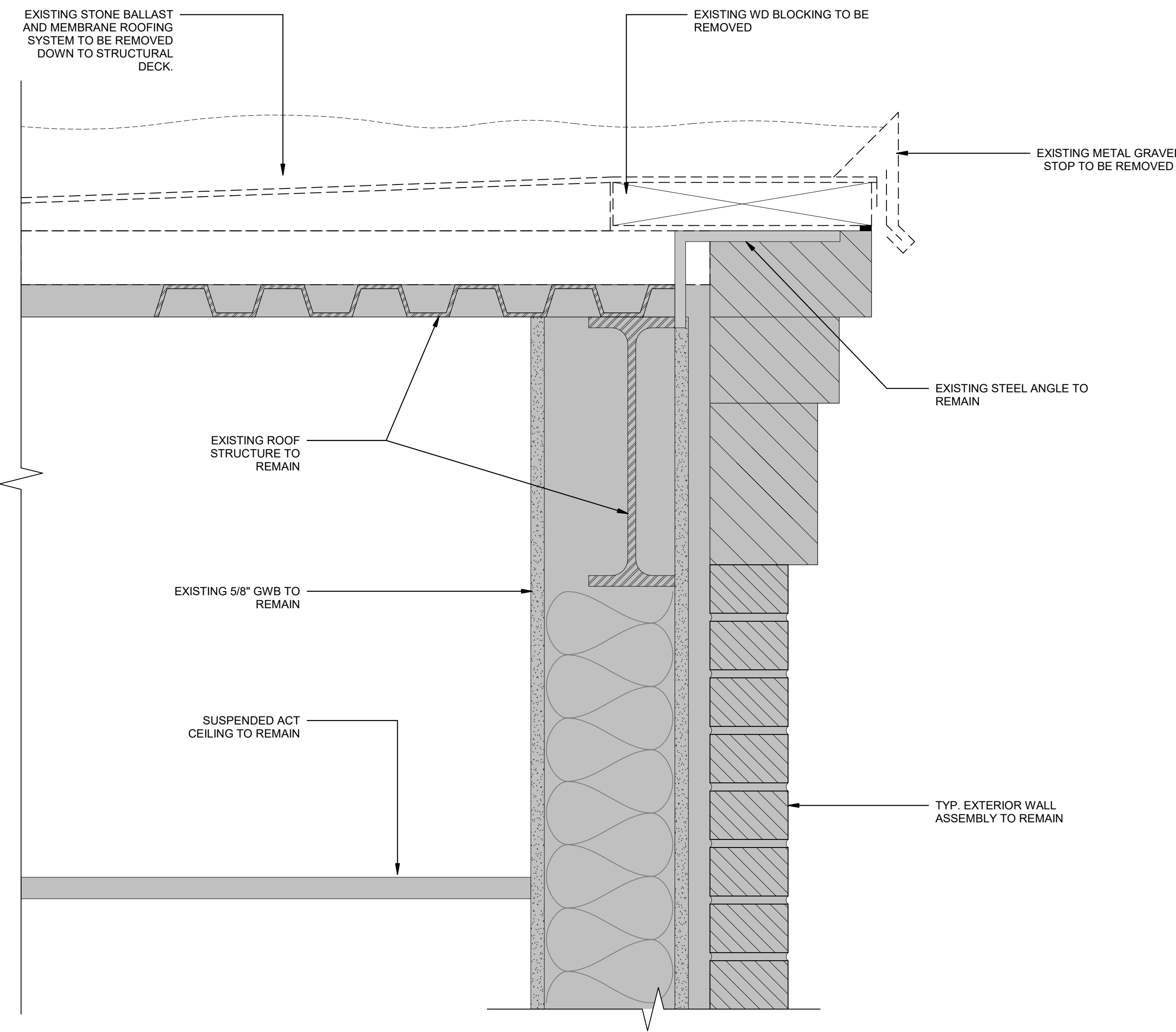
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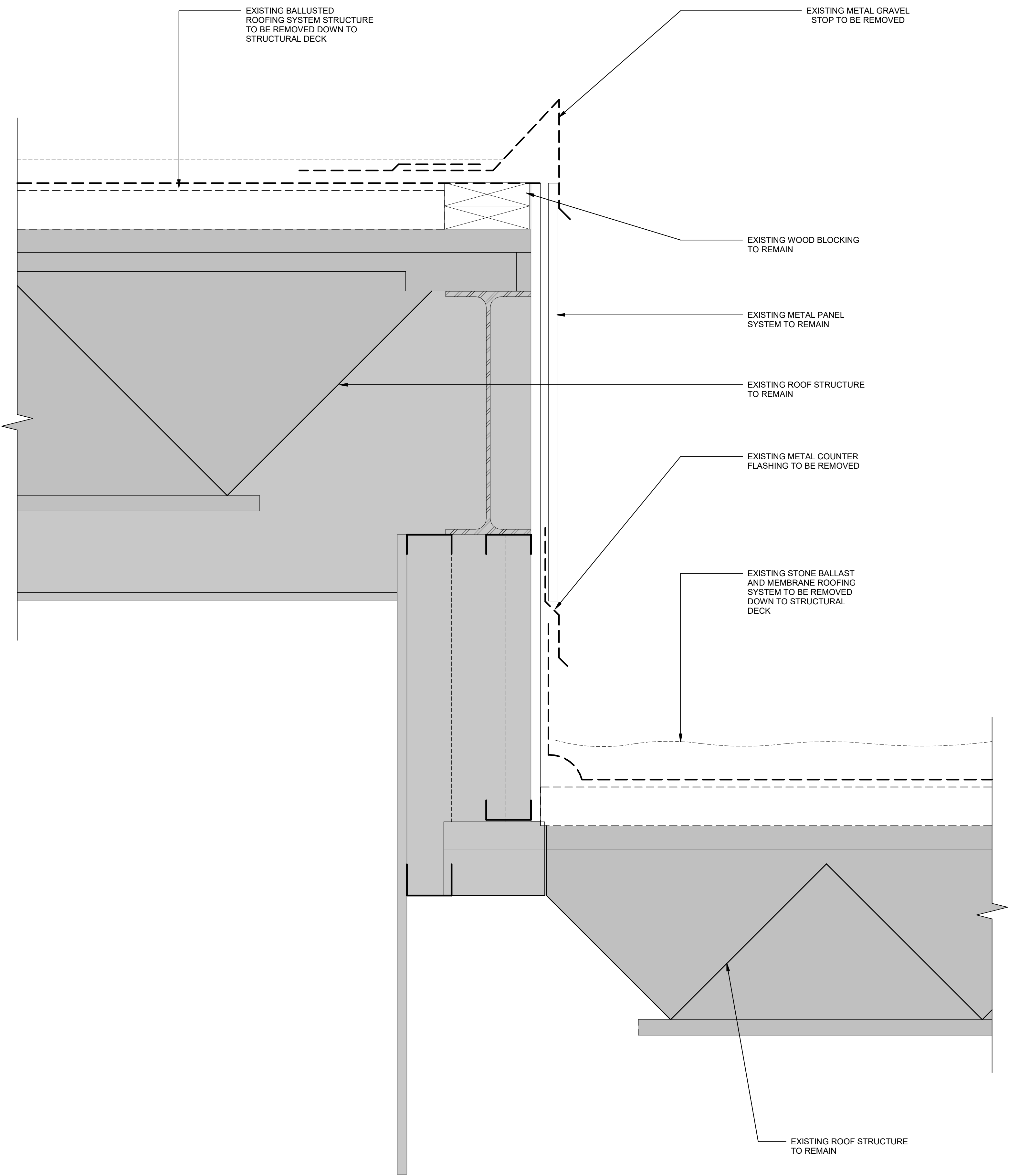
D-701



2 DEMO ROOF PARAPET DETAIL
3" = 1'-0"



1 DEMO ROOF EDGE DETAIL
3" = 1'-0"



3 DEMO ROOF DETAIL AT METAL PANEL
3" = 1'-0"

SALEM
DISTRICT
COURTHOUSE
ROOF
REPLACEMENT

35 GEREMONTY DR

SALEM, NH 03079

ARCHITECT

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101 SUMMER ST BOSTON MA 02110

CONSULTANT

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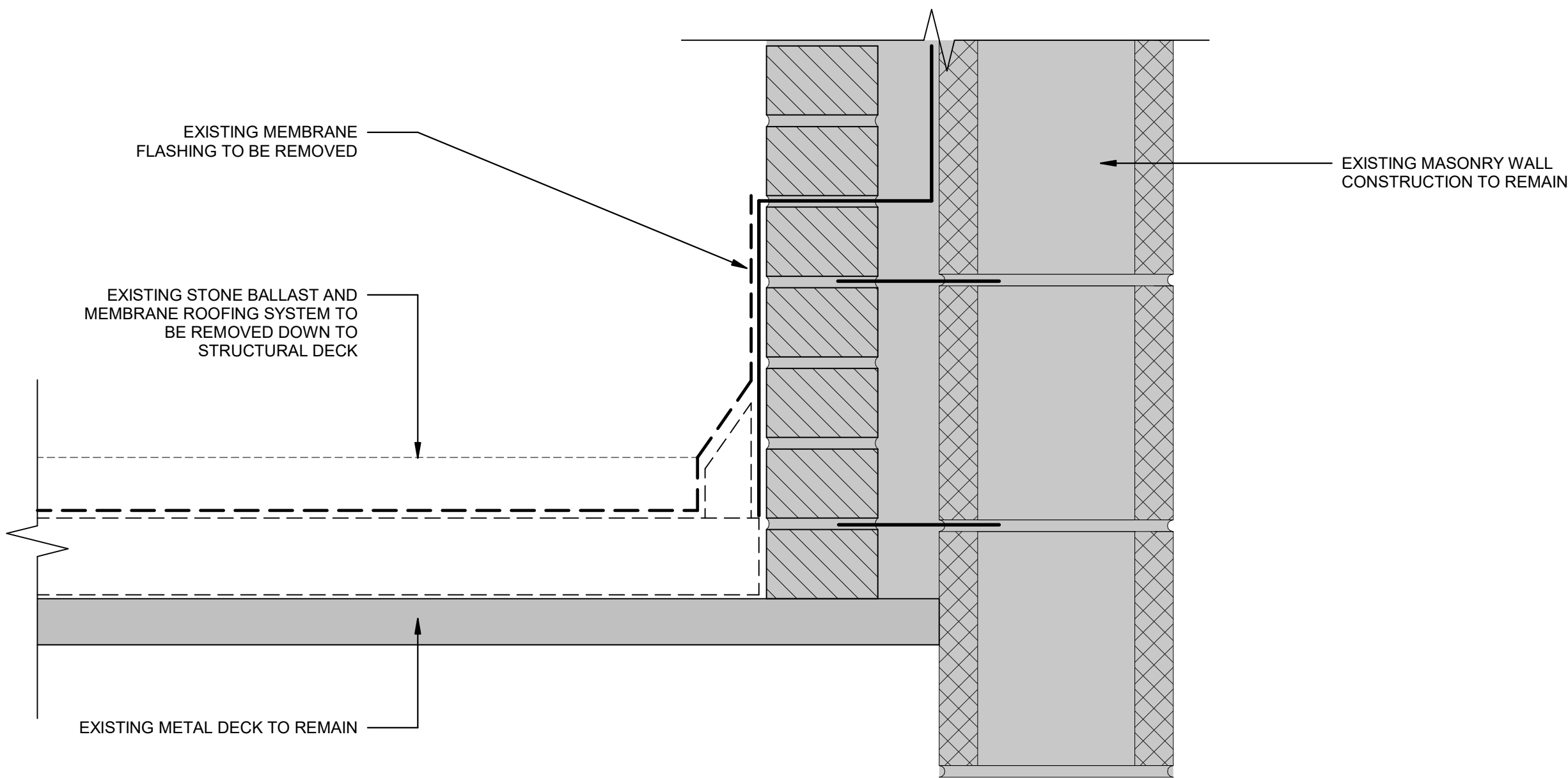
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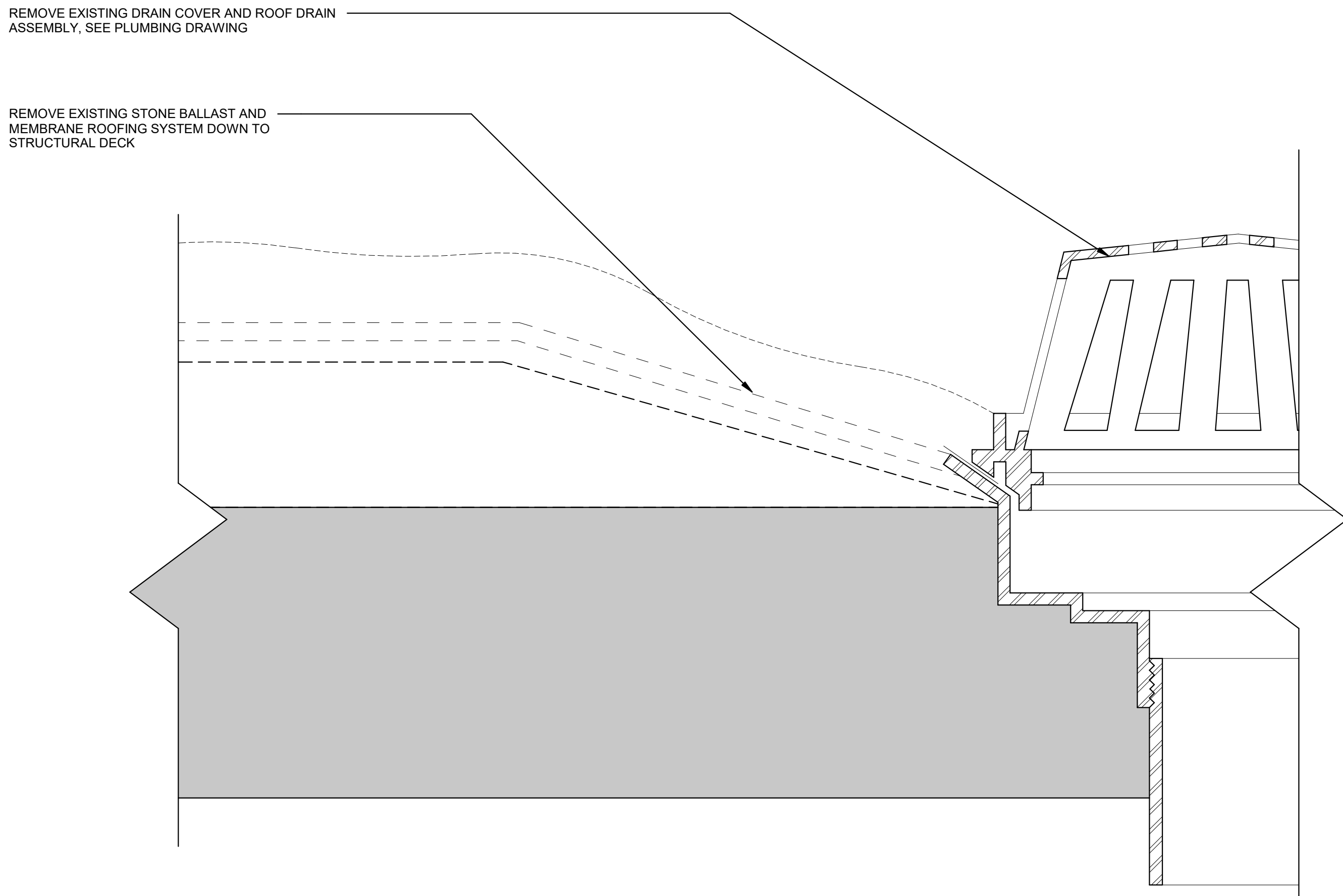
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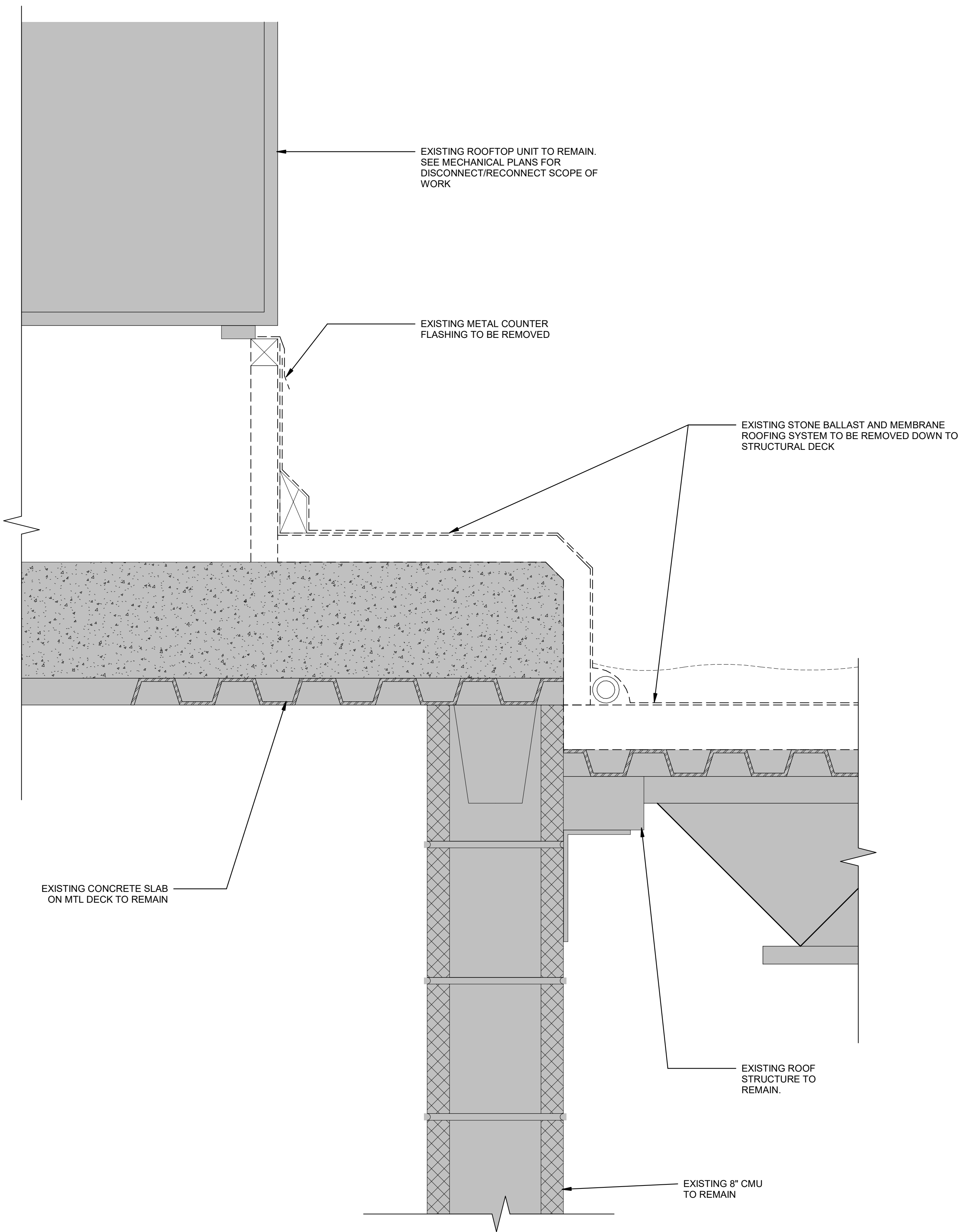
D-702



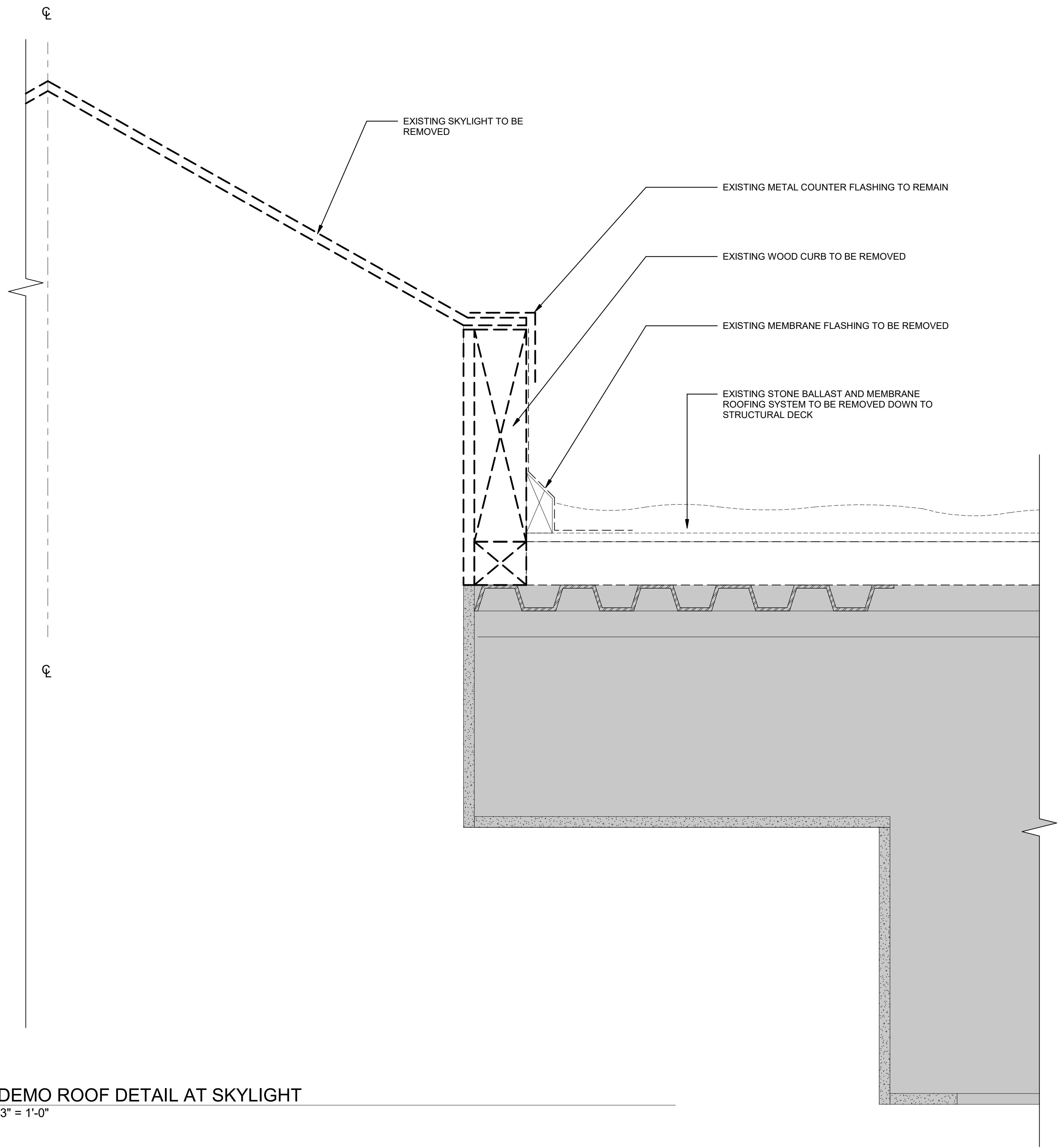
4 DEMO ROOF DETAIL AT MASONRY
3" = 1'-0"



2 ROOF DRAIN DETAIL
6" = 1'-0"



3 DEMO DETAIL AT ROOFTOP UNIT
3" = 1'-0"



1 DEMO ROOF DETAIL AT SKYLIGHT
3" = 1'-0"

SALEM
DISTRICT
COURTHOUSE
ROOF
REPLACEMENT

35 GEREMONTY DR

SALEM, NH 03079

ARCHITECT



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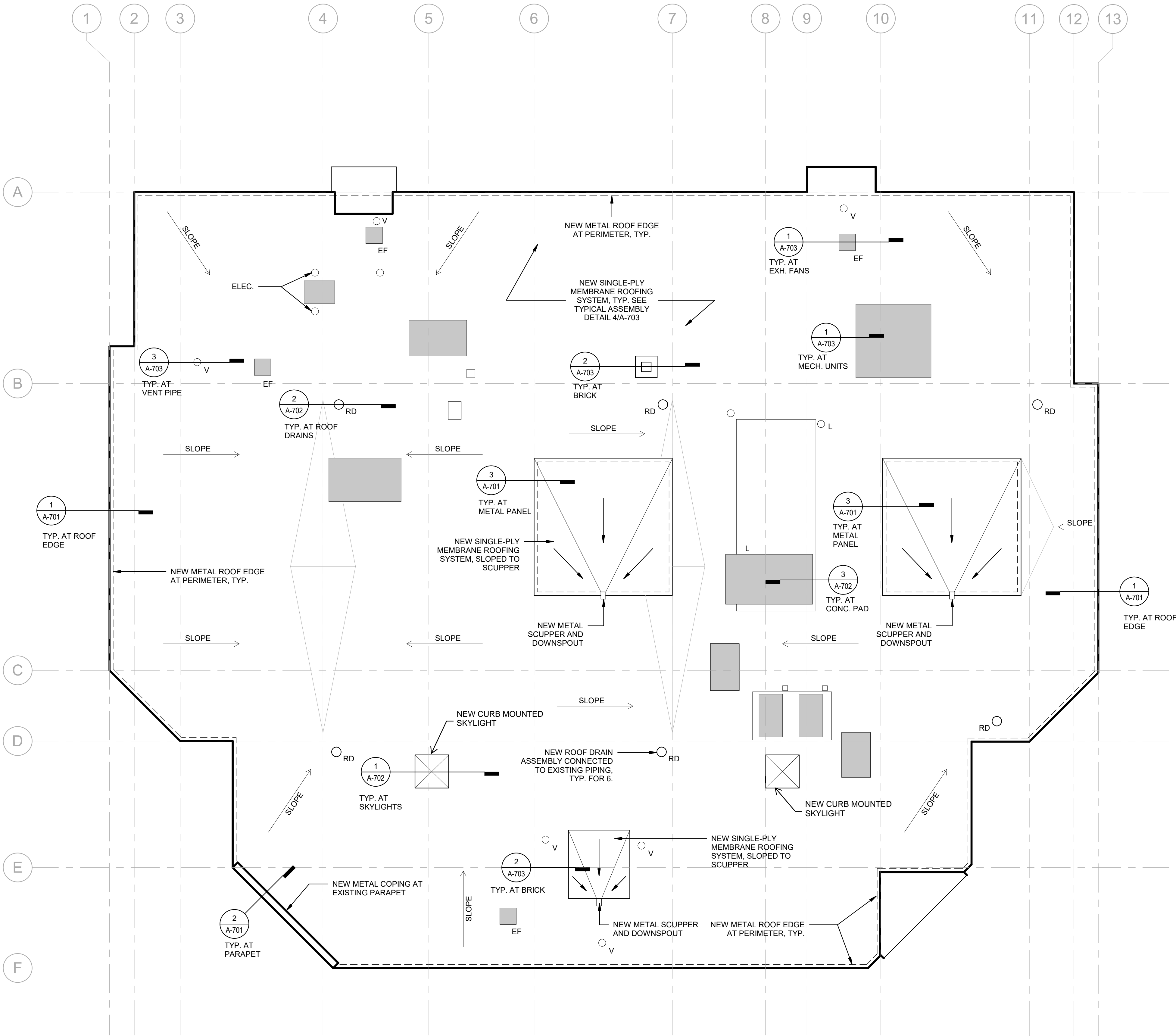
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ROOF PLAN

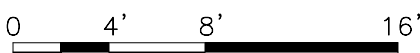
A-101

LEGEND

- NEW ROOF DRAIN CONNECTED TO EXISTING PIPING, SEE PLUMBING PLANS
- EXISTING PLUMBING VENT
- NEW CURB MOUNTED SKYLIGHT
- EXISTING EXHAUST FAN TO BE REINSTALLED ON NEW CURB, SEE MECHANICAL PLANS
- EXISTING MECHANICAL UNIT TO BE REINSTALLED ON NEW CURB, SEE MECHANICAL PLANS



1 PROPOSED ROOF PLAN
1/8" = 1'-0"



SALEM
DISTRICT
COURTHOUSE
ROOF
REPLACEMENT

35 GEREMONTY DR

SALEM, NH 03079

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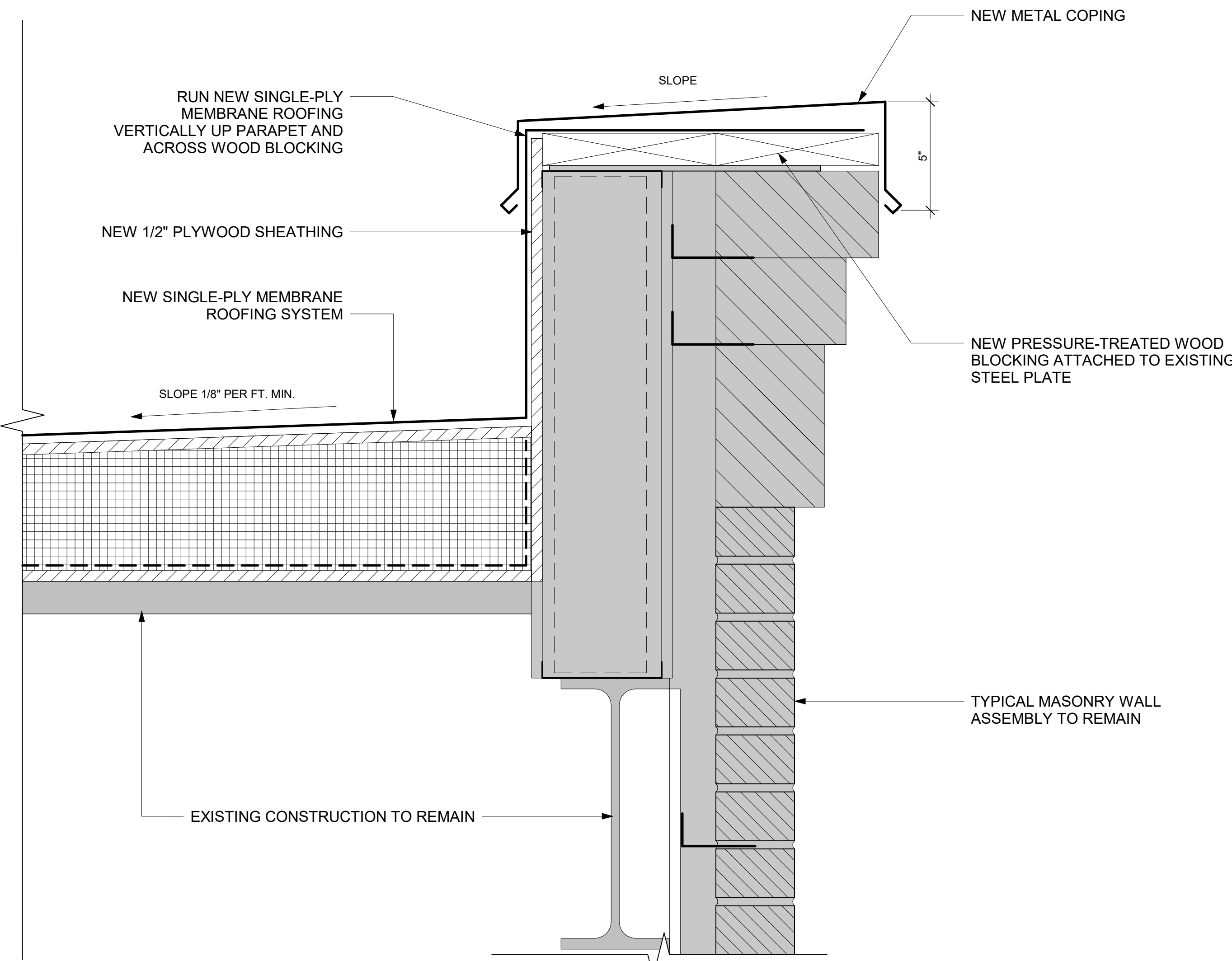
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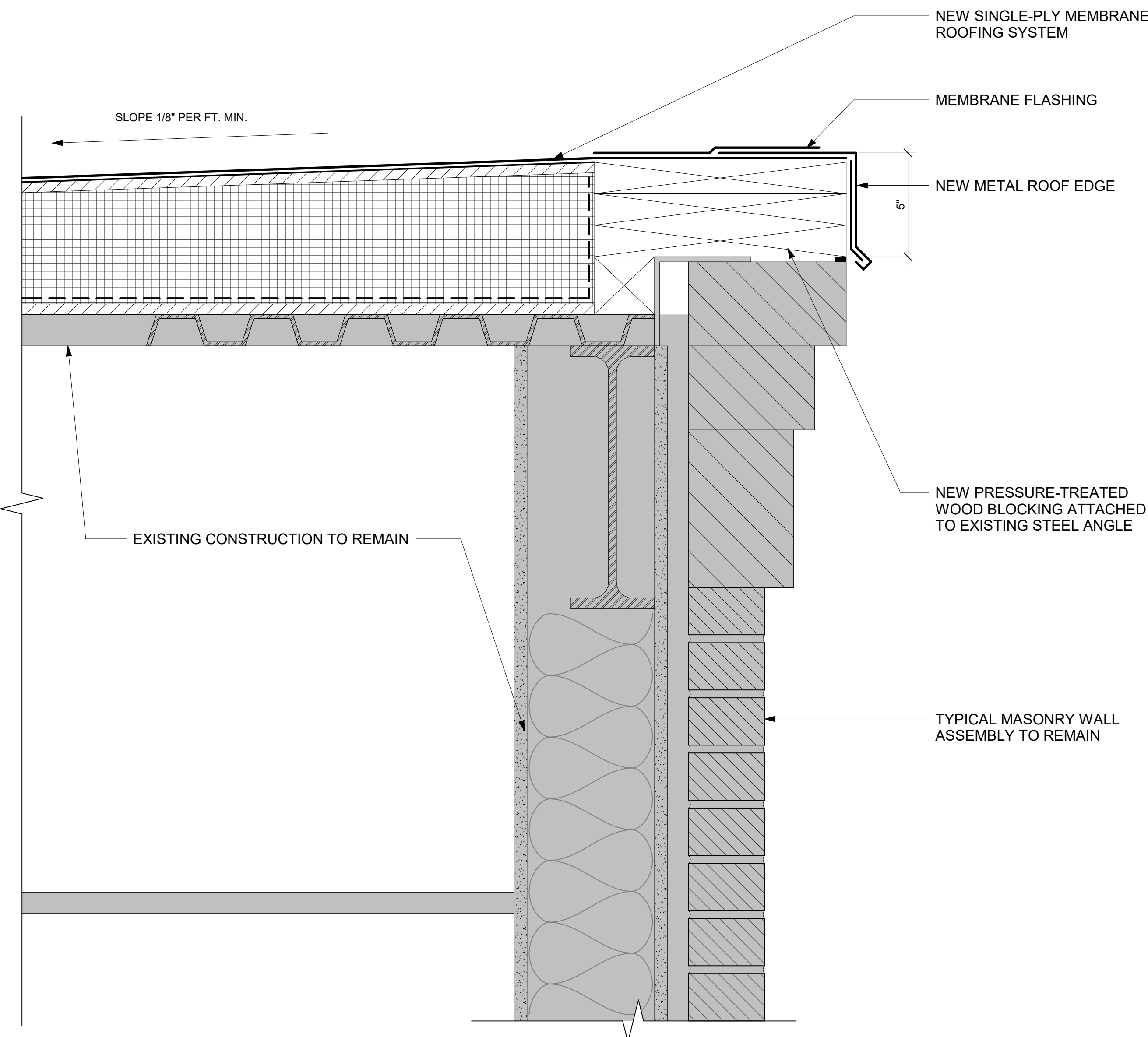
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ROOF DETAILS

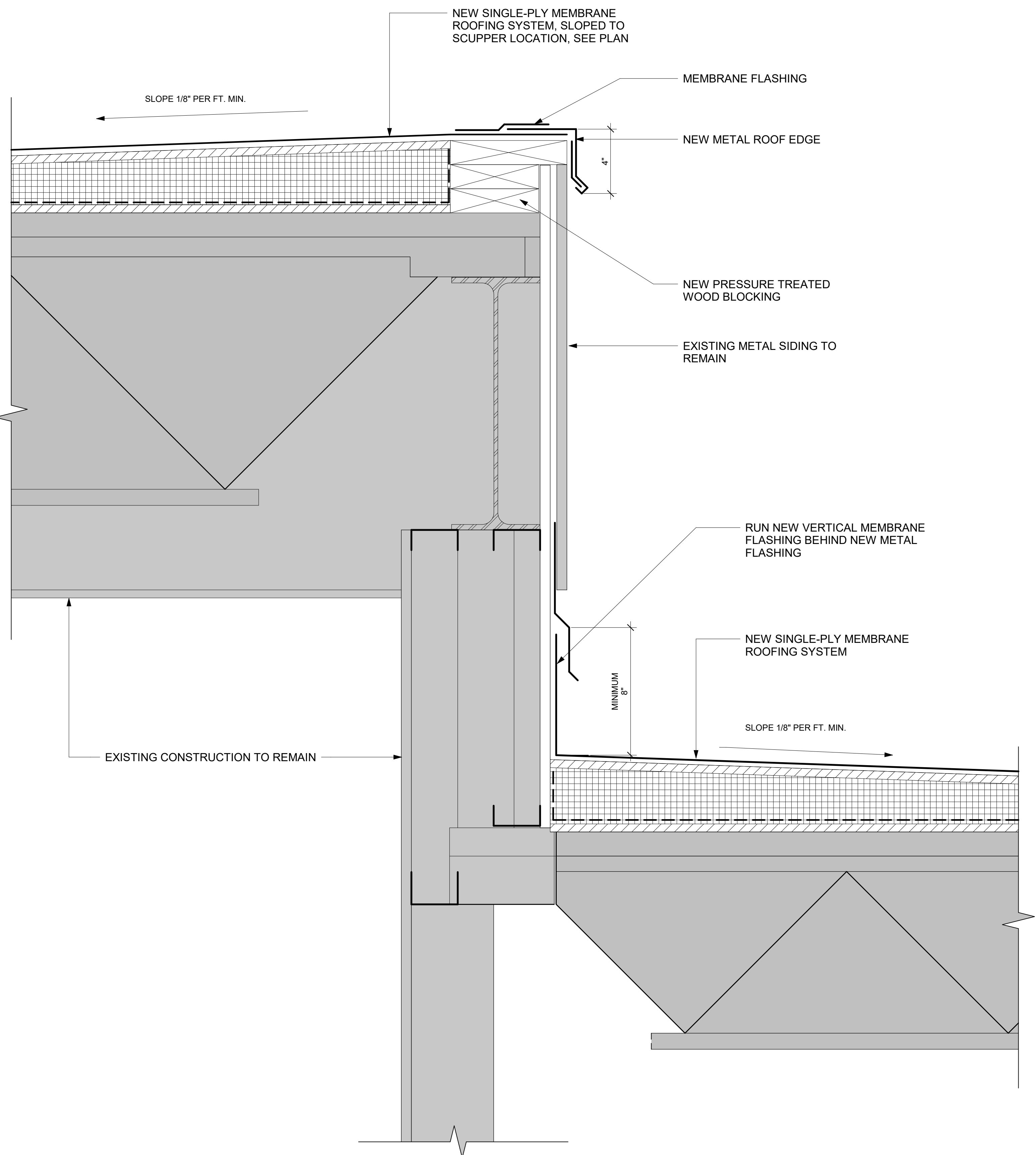
A-701



2 ROOF PARAPET DETAIL
3" = 1'-0"



1 ROOF EDGE DETAIL
3" = 1'-0"



3 ROOF DETAIL AT VERTICAL WALL
3" = 1'-0"

SALEM
DISTRICT
COURTHOUSE
ROOF
REPLACEMENT

35 GEREMONTY DR

SALEM, NH 03079

ARCHITECT



CONSULTANT

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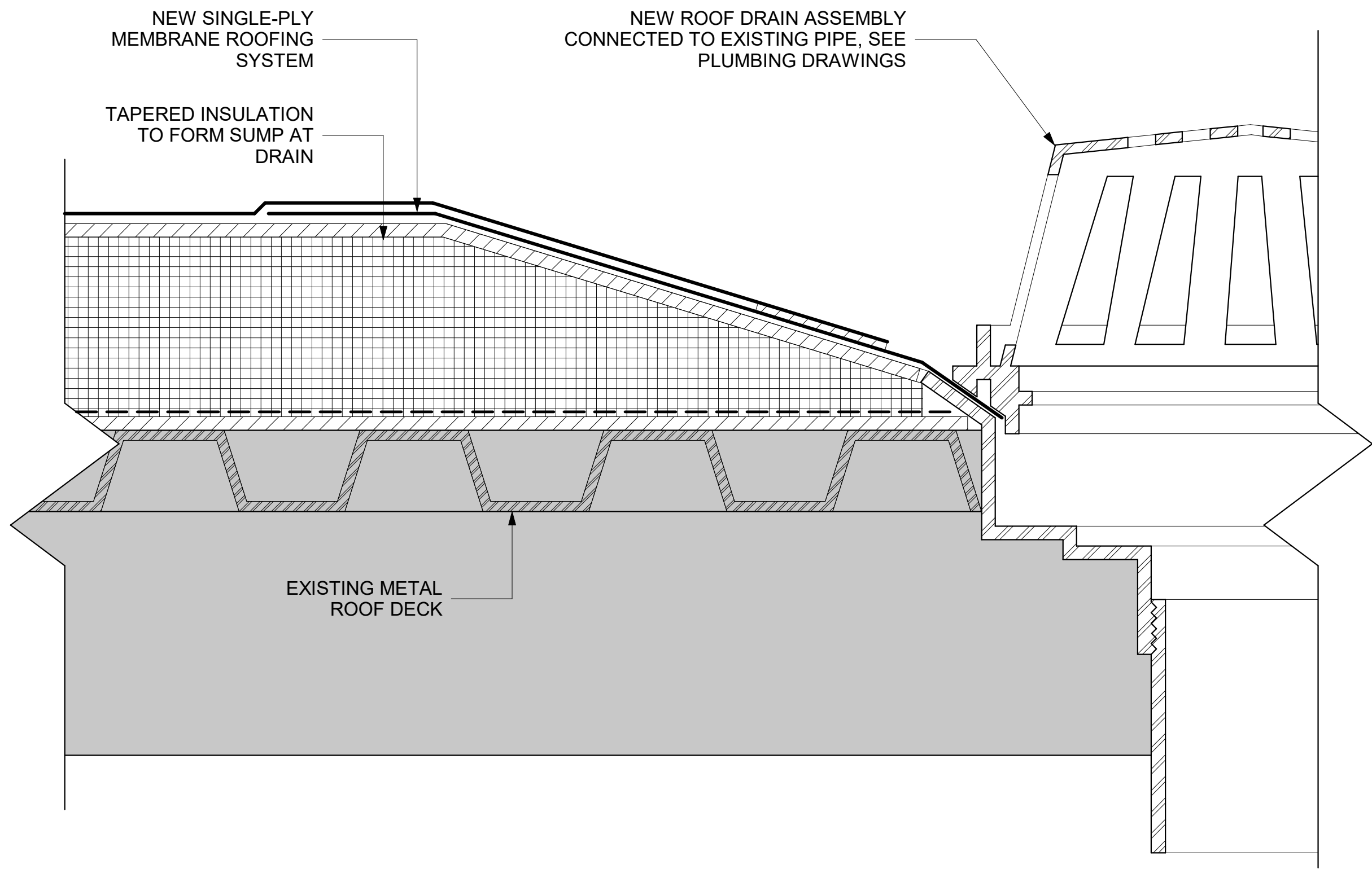
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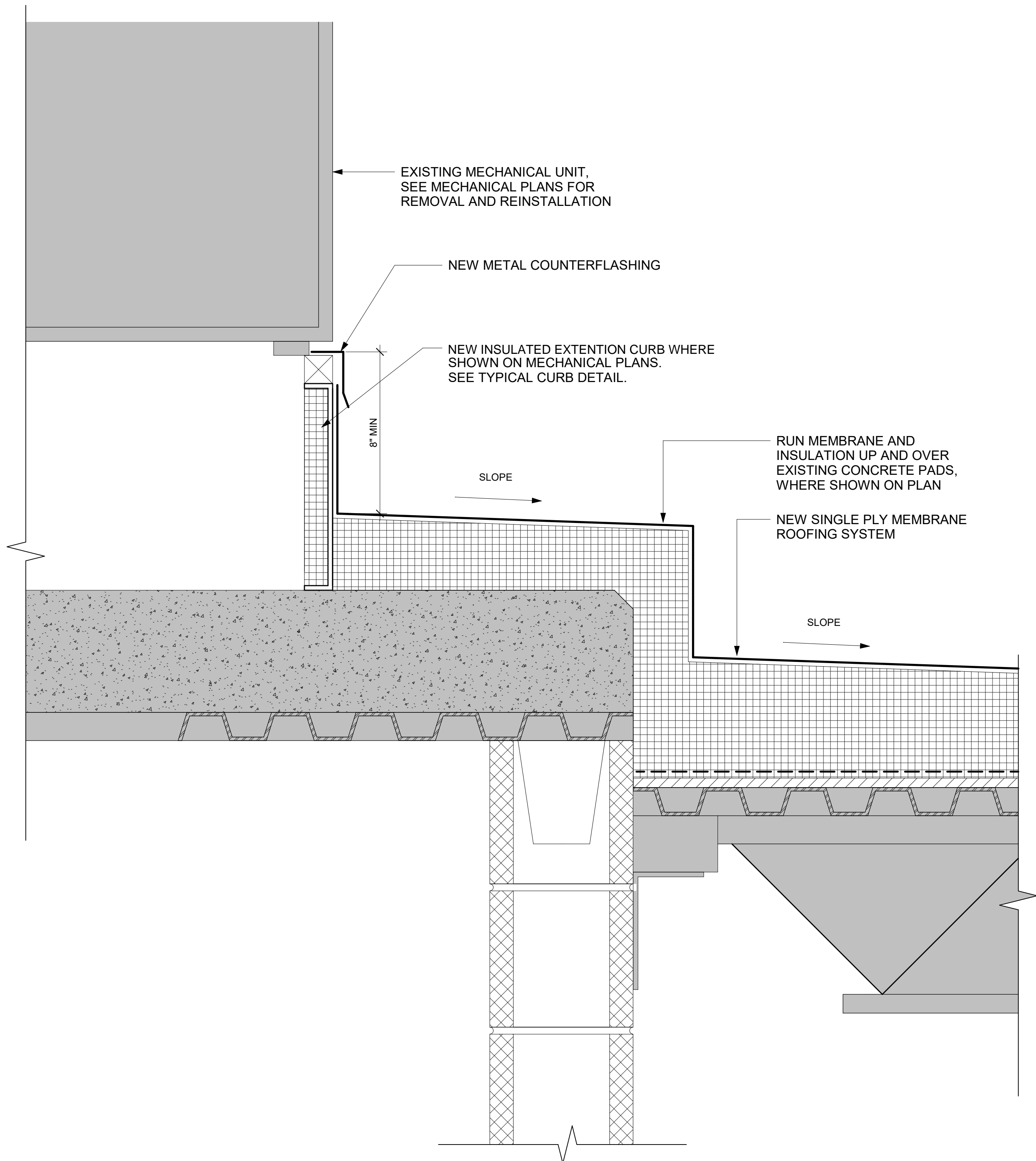
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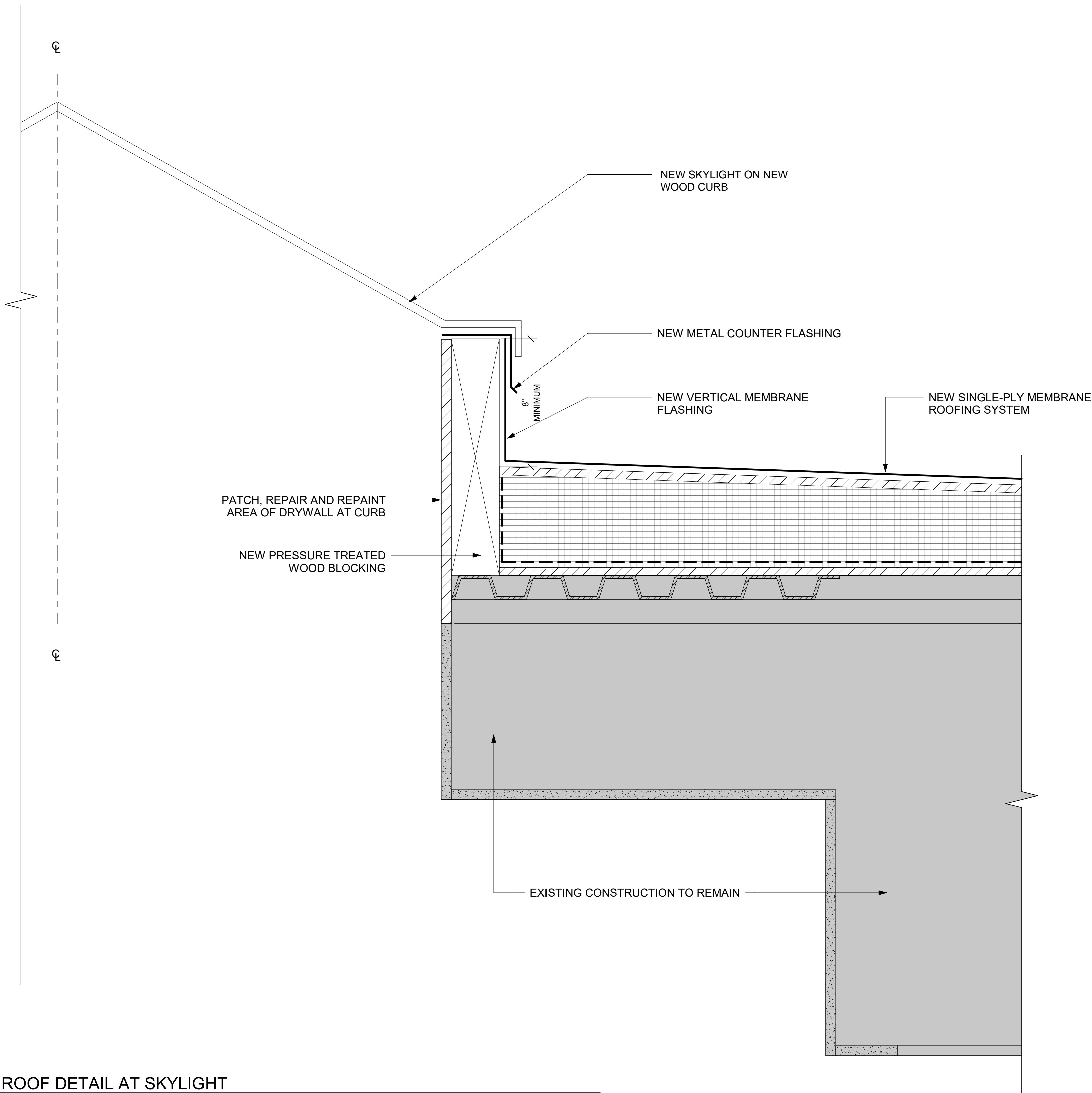
A-702



2 ROOF DRAIN DETAIL
6" = 1'-0"



3 DETAIL AT ROOFTOP UNIT
3" = 1'-0"



1 ROOF DETAIL AT SKYLIGHT
3" = 1'-0"

SALEM
DISTRICT
COURTHOUSE
ROOF
REPLACEMENT

35 GEREMONTY DR

SALEM, NH 03079

ARCHITECT

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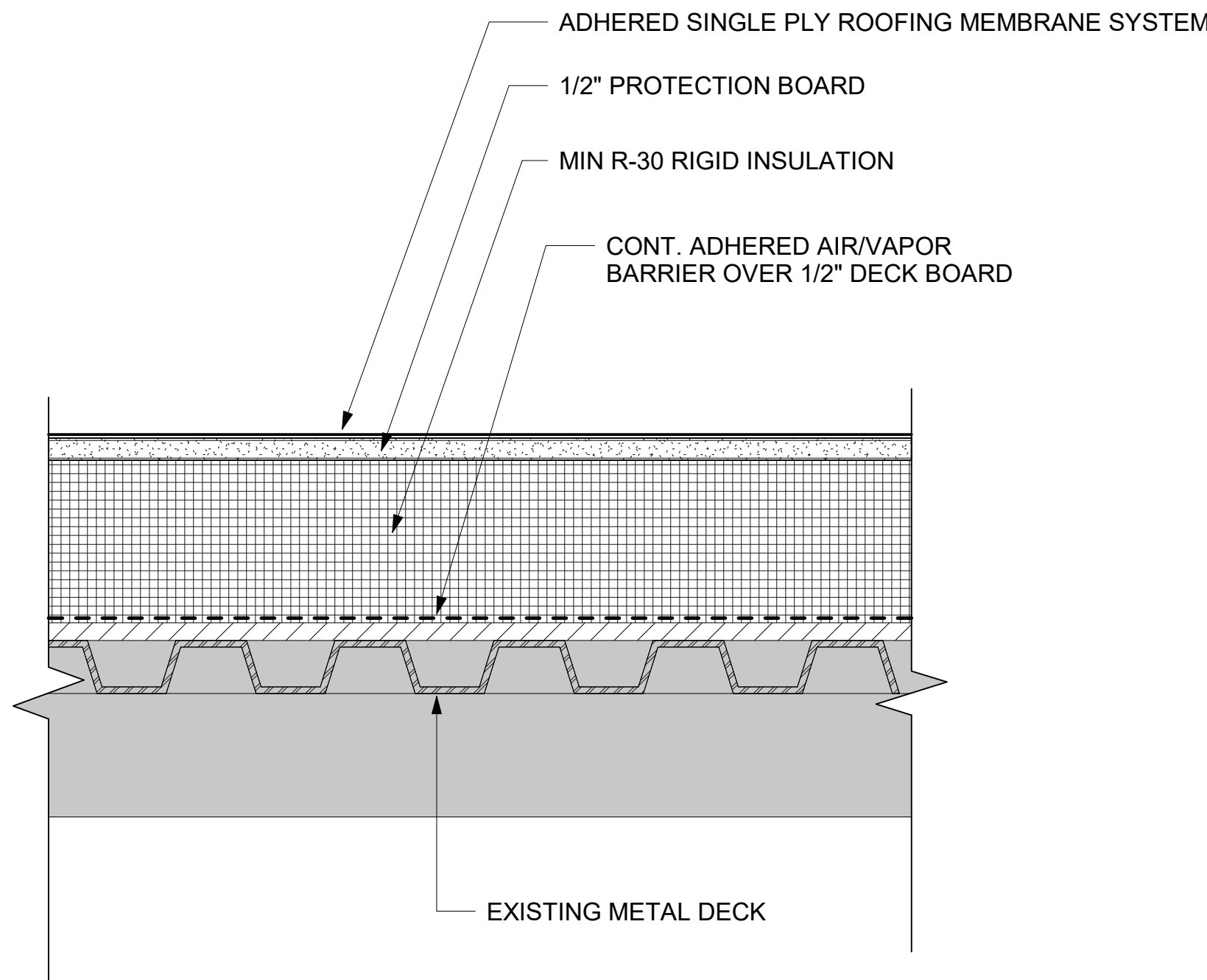
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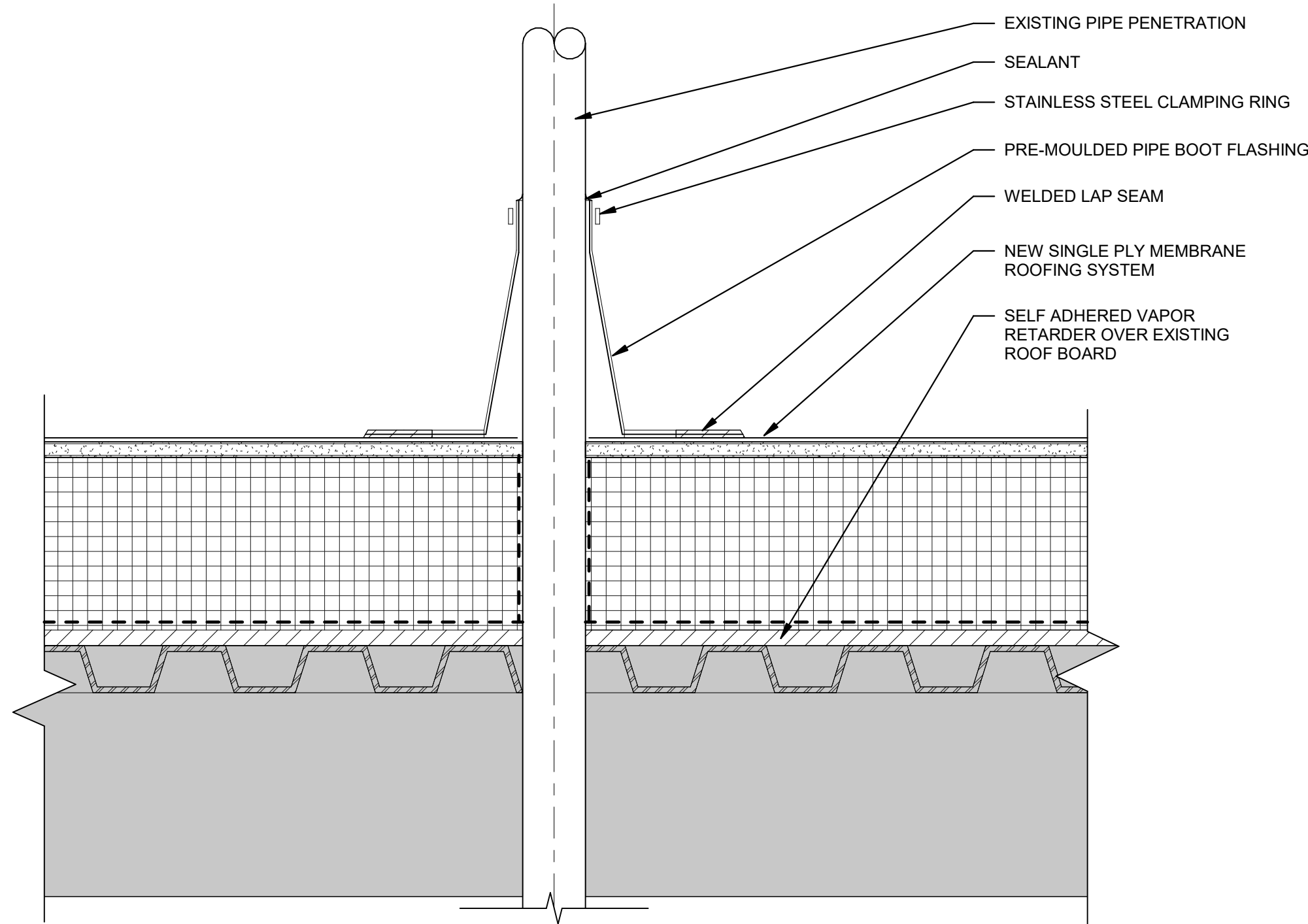
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ROOF DETAILS

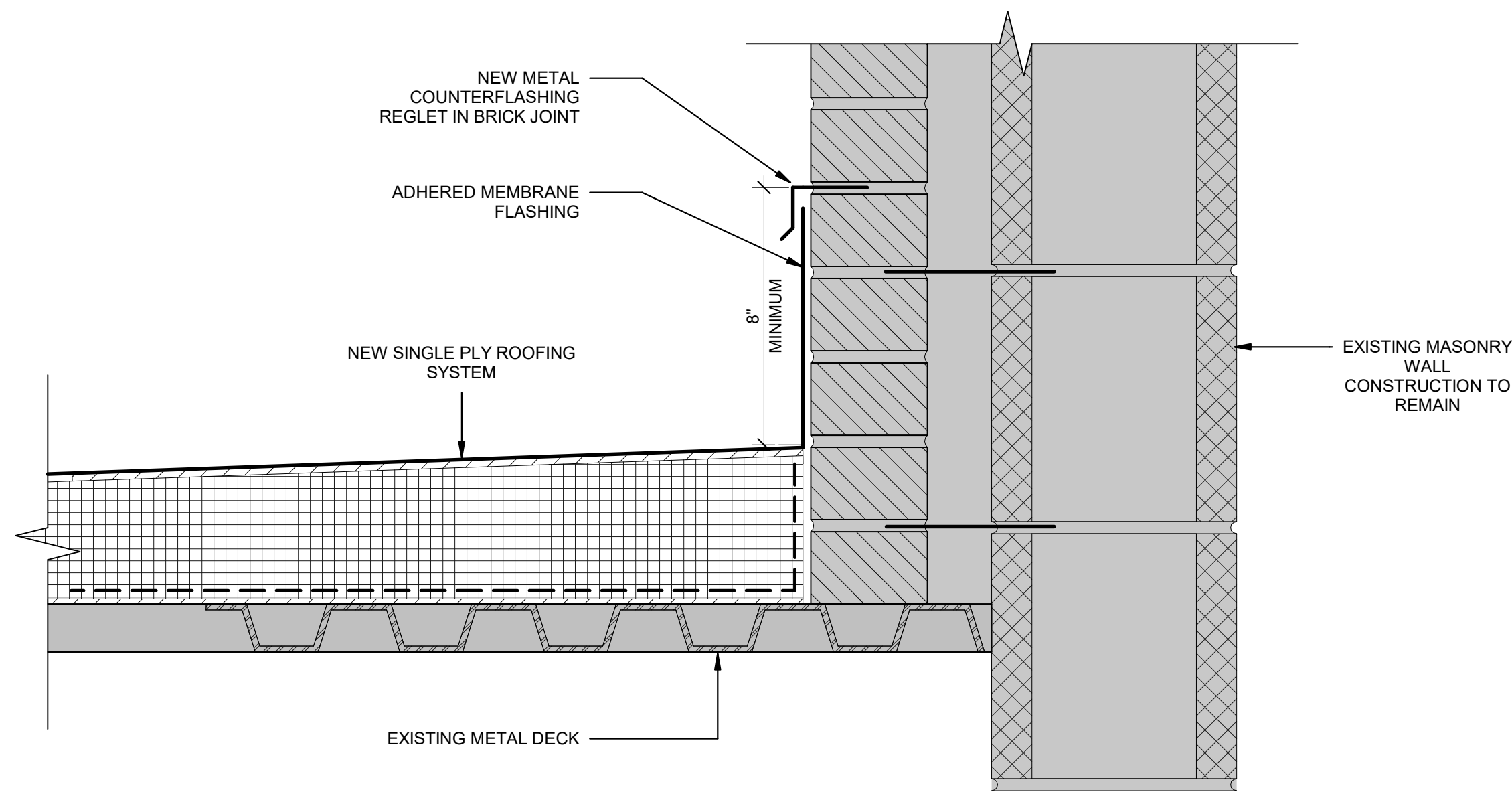
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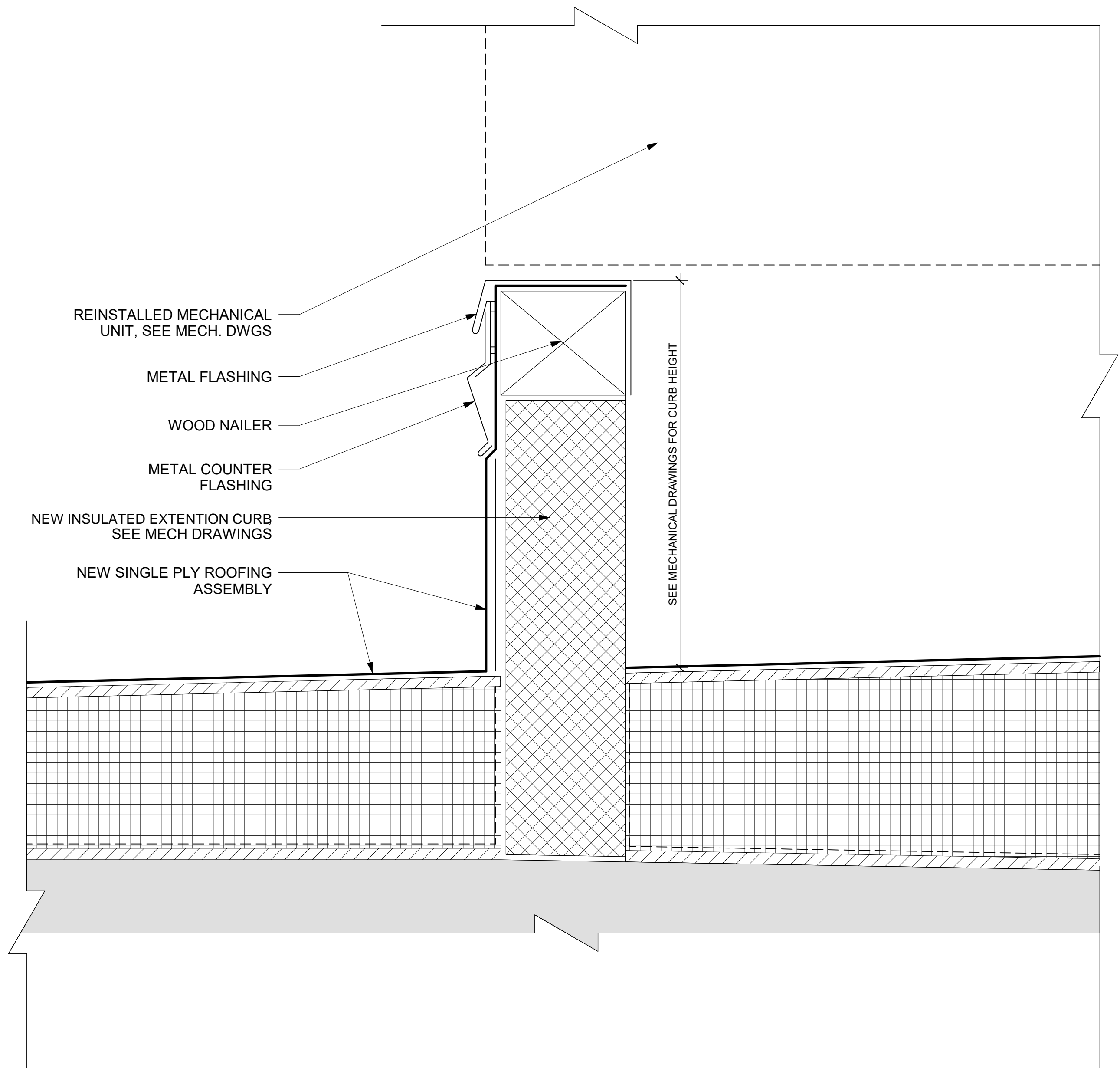
4 TYPICAL ROOF ASSEMBLY DETAIL
3" = 1'-0"



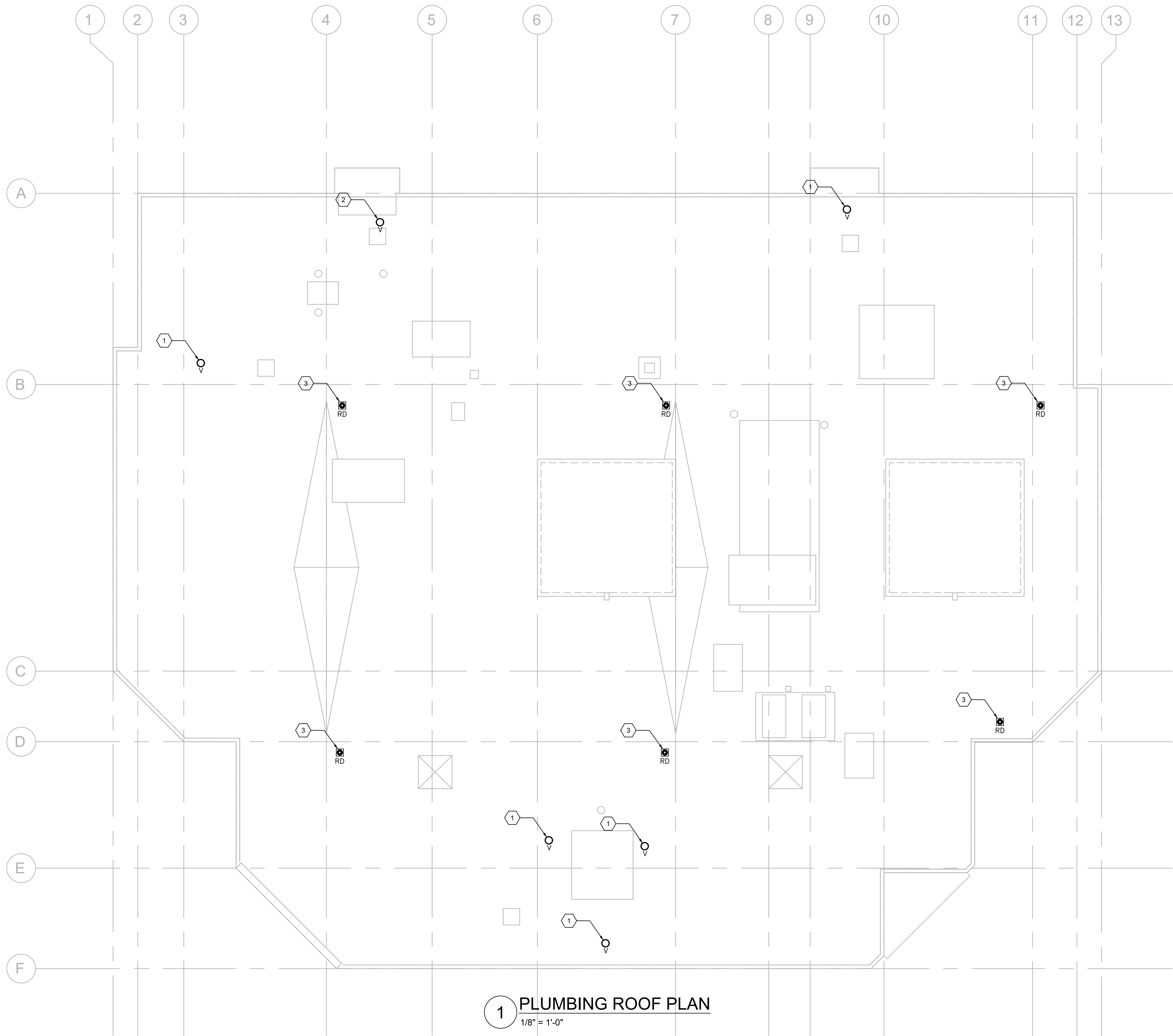
3 TYPICAL PIPE PENETRATION DETAIL
3" = 1'-0"



2 ROOF DETAIL AT MASONRY
3" = 1'-0"



1 TYPICAL CURB DETAIL AT MECHANICAL UNIT
3" = 1'-0"



- KEY NOTES
- 1 EXISTING VENT TO REMAIN.
 - 2 REMOVE EXISTING VENT PIPE BACK TO NEAREST PIPE JOINT AND PROVIDE NEW VENT PIPING TO EXTEND 18" ABOVE THE SURFACE OF THE NEW ROOF. COUPLING ABOVE THE ROOF IS NOT ACCEPTABLE.
 - 3 DEMOLISH EXISTING DOME AND EXISTING ROOF DRAIN. PROVIDE JR SMITH MODEL 1010 WITH CAST IRON BODY, VANDAL PROOF CAST IRON DOME, FLASHING UNDERDECK CLAMP, SLUMP RECEIVER, GRAVEL STOP AND EXTENSION SLEEVE FOR ROOF INSULATION. MODIFY/REPLACE EXISTING PIPING RISER AS REQUIRED.

SALEM
COURTHOUSE
ROOF
REPLACEMENT

35 GEREMONTY DR, SALEM,
NH 03079

TOWN OF SALEM, NH

ARCHITECT



CONSULTANT



STAMP

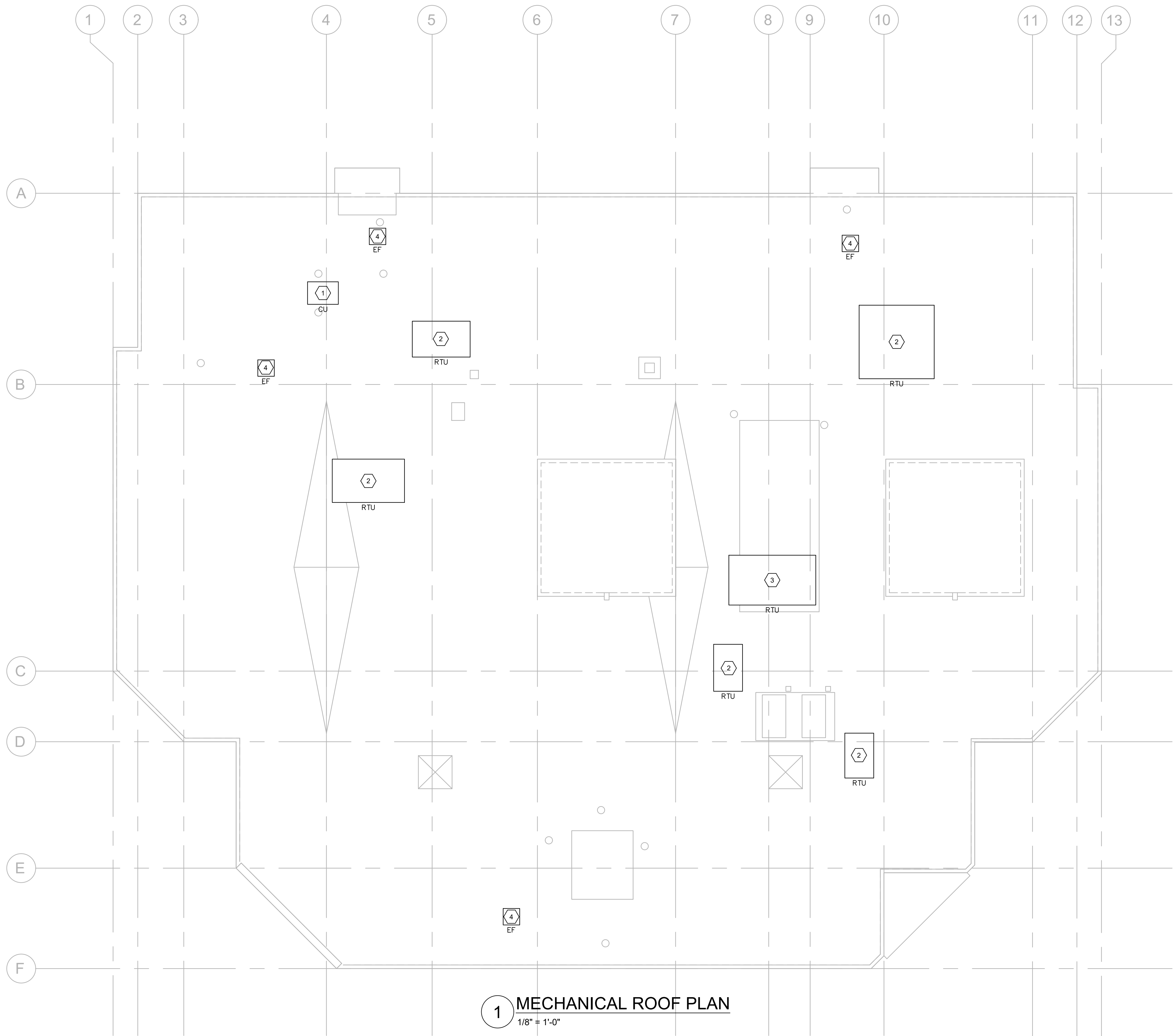
KEY PLAN

1	12/09/2022	BID
NO.	DATE	DESCRIPTION
PROJECT NUMBER: 222068		
DRAWN BY: CWW		
CHECKED BY: NHF		

SHEET TITLE

ROOF PLUMBING
PLAN

P1.0



KEY NOTES

1

DEMOLITION:

- CONDENSING UNIT: REMOVE AND STORE UNIT.
- REFRIGERANT PIPING: DISCONNECT, CAP AND COIL BELOW ROOF.
- CONTROLS: DISCONNECT AND COIL/STORE BELOW ROOF.
- ROOF RAIL: REMOVE EXISTING.

REINSTALLATION:

- CONDENSING UNIT: PROVIDE (2) NEW HIGH ROOF RAILS, 24" ABOVE THE SURFACE OF THE ROOF. REINSTALL UNIT ON NEW ROOF RAILS.
- REFRIGERANT PIPING: RECONNECT AND RECHARGE. PROVIDE NEW INSULATION FOR SECTIONS OF UNINSULATED PIPE.
- CONTROLS: RECONNECT TO UNIT. CONDUIT AND JUNCTION BOXES SHALL BE NEW AND SHALL BE IN ACCORDANCE TO THE REQUIREMENTS OF DIVISION 26.

2

DEMOLITION:

- ROOFTOP UNIT: REMOVE AND STORE UNIT.
- REFRIGERANT PIPING: DISCONNECT, CAP AND COIL BELOW ROOF.
- CONTROLS: DISCONNECT AND COIL/STORE BELOW ROOF.
- CURB: REMOVE EXISTING.

REINSTALLATION:

- CURB: PROVIDE NEW CURB EXTENDING A MINIMUM OF 18" ABOVE ROOF SURFACE SIMILAR TO GREENHECK MODEL GPR.
- REFRIGERANT PIPING: RECONNECT AND RECHARGE. PROVIDE NEW INSULATION FOR SECTIONS OF UNINSULATED PIPE.
- CONTROLS: RECONNECT TO UNIT. CONDUIT AND JUNCTION BOXES SHALL BE NEW AND SHALL BE IN ACCORDANCE TO THE REQUIREMENTS OF DIVISION 26.

3

EXISTING PACKAGED ROOFTOP UNIT TO REMAIN. NO SCOPE OF WORK ASSOCIATED WITH THIS UNIT.

4

DEMOLITION:

- DUCTWORK RISER: REMOVE AND STORE.
- EXHAUST FAN: REMOVE AND STORE.
- CONTROLS: DISCONNECT AND COIL/STORE BELOW ROOF.
- CURB: REMOVE EXISTING.

REINSTALLATION:

- CURB: PROVIDE NEW CURB EXTENDING A MINIMUM OF 18" ABOVE ROOF SURFACE SIMILAR TO GREENHECK MODEL GPR.
- EXHAUST FAN: REINSTALL.
- DUCTWORK RISER: REINSTALL.
- CONTROLS: RECONNECT TO UNIT. CONDUIT AND JUNCTION BOXES SHALL BE NEW AND SHALL BE IN ACCORDANCE TO THE REQUIREMENTS OF DIVISION 26.

1

12/09/2022

BID

NO.

DATE

DESCRIPTION

PROJECT NUMBER: 222068

DRAWN BY: CWW

CHECKED BY: NHF

SHEET TITLE

ROOF MECHANICAL PLAN

M1.0

SALEM
COURTHOUSE
ROOF
REPLACEMENT

35 GEREMONTY DR, SALEM,
NH 03079

TOWN OF SALEM, NH

ARCHITECT



CONSULTANT



STAMP

KEY PLAN

1	12/09/2022	BID
NO.	DATE	DESCRIPTION
PROJECT NUMBER: 222068		
DRAWN BY: CWW		
CHECKED BY: NHF		

SHEET TITLE

ELECTRICAL ROOF
PLAN

E1.0

DEMO NOTES

- ALL ELECTRICAL DEVICES SHALL BE REMOVED UNLESS NOTED OTHERWISE, INCLUDING BUT NOT LIMITED TO RECEPTACLES, LIGHT FIXTURES, LIGHTING CONTROLS, FIRE ALARM DEVICES, MECHANICAL CONNECTIONS, ETC. REMOVAL SHALL BE COMPLETE INCLUDING BOXES, BRACKETS, HANGERS AND BRANCH CIRCUIT WIRING BACK TO SOURCE. PANELBOARD OR LAST ACTIVE DEVICE TO REMAIN (EXCEPT WHERE NOTED).
- CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL ITEMS TO BE REMOVED IN A SAFE, LEGAL AND RESPONSIBLE MANNER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR STORAGE AND HANDLING OF EXISTING TO BE RELOCATED EQUIPMENT.
- CONTRACTOR SHALL MODIFY EXISTING CIRCUITS, WHEN EXISTING DEVICES ARE REMOVED, AS REQUIRED TO MAINTAIN CIRCUIT CONTINUITY.
- THIS PLAN IS DIAGRAMMATIC AND NOT INTENDED TO DEPICT THE ENTIRE SCOPE OF ELECTRICAL DEMOLITION. ADDITIONAL DEMOLITION AND MODIFICATION WORK NOT SHOWN SHOULD BE ANTICIPATED.
- THIS PROJECT COMPRISES ALTERATIONS AND RENOVATIONS TO THE EXISTING BUILDING. THE EXISTING BUILDING IS CURRENTLY OCCUPIED AND THE PROJECT WILL PROCEED IN A MANNER WHICH WILL MINIMIZE ANY INCONVENIENCE TO THE BUILDING OCCUPANTS.
- PRIOR TO SUBMITTING BID THE CONTRACTOR SHALL VISIT THE SITE AND IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT WORK TO BE PERFORMED. NO COMPENSATION WILL BE GRANTED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY IDENTIFIED BY EXPERIENCED OBSERVERS. INCLUDE IN THE BID ALL DEMOLITION WORK REQUIRED.
- ELECTRICAL CONTRACTOR SHALL VERIFY IN FIELD ALL EXISTING ELECTRICAL LOCATED ON THE ROOF, SUCH AS, BUT NOT LIMITED TO: ROOF PENETRATIONS, CONDUITS ROUTED EXPOSED ON THE ROOF, MISCELLANEOUS POWER FOR RECEPTACLES AND LIGHTING, ETC. ELECTRICAL CONTRACTOR SHALL TEMPORARILY DISCONNECT, REMOVE AND SUPPORT ALL ELECTRICAL TO ALLOW FOR THE EXISTING ROOF REMOVAL AND NEW ROOF INSTALLATION. ELECTRICAL CONTRACTOR SHALL RE-INSTALL AND RECONNECT ALL ELECTRICAL. ANY ELECTRICAL IN POOR CONDITION SHALL BE REPLACED WITH NEW AND SHALL MATCH EXISTING.

KEY NOTES

- ① DEMOLITION:
- SHUT OFF POWER AT BREAKER FOR ROOFTOP HVAC UNIT.
- REINSTALLATION:
- RESTORE POWER TO ROOFTOP HVAC UNIT AT BREAKER.
- ② DEMOLITION:
- SHUT OFF POWER AT BREAKER FOR ROOFTOP HVAC UNIT (LOCKOUT-TAG OUT).
 - DISCONNECT ALL CONDUCTORS FROM HVAC UNIT.
 - DISCONNECT AND REMOVE EXISTING DISCONNECT.
- REINSTALLATION:
- PROVIDE NEW WEATHERPROOF NON-FUSED DISCONNECT AT HVAC UNIT.
 - RECONNECT EXISTING CONDUCTORS TO HVAC UNIT VIA THE NEW WEATHERPROOF NON-FUSED DISCONNECT. EXTEND CONDUCTORS IN LIQUIDTIGHT FLEXIBLE CONDUIT. COORDINATE WEATHERPROOFING AND FLASHING CONDUIT PENETRATIONS OF THE NEW ROOF WITH ROOFING CONTRACTOR.
 - RESTORE POWER TO HVAC UNIT AT BREAKER.

