



Union County Public Schools

Request For Proposal # 5-97648022

Date Issued: January 31, 2025 New Town

Elementary School Roof Replacement

**Direct all inquiries concerning this RFP to:
Jennifer West**

Purchasing/Construction Contracts Specialist

Email: facilitiesbids@ucps.k12.nc.us

	Union County Public Schools (UCPS) Facilities Department 201 Venus Street Monroe NC, 28112 Request for Proposal #: 5-97648022
Request for Proposal Description: New Town Elementary School Roof Replacement	Date of Issue: January 31, 2025
Bid Opening Date: February 25, 2025	BID Opening Time: 10:00 AM
Refer ALL Inquiries regarding this RFP to: Jennifer West (Construction Contracts Spec) Email to: facilitiesbids@ucps.k12.nc.us	

EXECUTION

In compliance with this Request for Proposal (RFP), and subject to all the conditions herein, the undersigned Vendor offers and agrees to furnish and deliver any or all items upon which prices are bid, at the prices set opposite each item within the time specified herein.

By executing this bid, the undersigned Vendor understands that false certification is a Class I felony and certifies that:

- this bid is submitted competitively and without collusion (G.S. 143-54),
- none of its officers, directors, or owners of an unincorporated business entity has been convicted of any violations of Chapter 78A of the General Statutes, the Securities Act of 1933, or the Securities Exchange Act of 1934 (G.S. 143-59.2), and
- it is not an ineligible Vendor as set forth in G.S. 143-59.1.

Furthermore, by executing this bid, the undersigned certifies to the best of Vendor's knowledge and belief, that:

- it and its principals are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any Federal or State department or agency.

As required by G.S. 143-48.5, the undersigned Vendor certifies that it, and each of its sub-Contractors for any Contract awarded as a result of this RFP, complies with the requirements of Article 2 of Chapter 64 of the NC General Statutes, including the requirement for each employer with more than 25 employees in North Carolina to verify the work authorization of its employees through the federal E-Verify system.

As required by Executive Order 24 (2017), the undersigned vendor certifies they will comply with all Federal and State requirements concerning fair employment and that it does not and will not discriminate, harass, or retaliate against any employee in connection with performance of any Contract arising from this solicitation. G.S. 133-32 and Executive Order 24 (2009) prohibit the offer to, or acceptance by, any State Employee associated with the preparing plans, specifications, estimates for public contracts;

or awarding or administering public contracts; or inspecting or supervising delivery of the public contract of any gift from anyone with a contract with the State, or from any person seeking to do business with the State. By execution of this response to the RFP, the undersigned certifies, for Vendor's entire organization and its employees or agents, that Vendor is not aware that any such gift has been offered, accepted, or promised by any employees of your organization.

By executing this bid, Vendor certifies that it has read and agreed to the **INSTRUCTION TO VENDORS and the NORTH CAROLINA GENERAL TERMS AND CONDITIONS incorporated herein**. These documents can be accessed from the ATTACHMENTS page within this document.

Failure to execute/sign bid prior to submittal may render bid invalid and it MAY BE REJECTED. Late bids shall not be accepted.

ACCEPTANCE OF BIDS

If your bid is accepted, all provisions of the RFP, along with the written results of any negotiations, shall become part of the written agreement between the parties ("Contract"). If applicable, the North Carolina General Terms and Conditions are incorporated herein and shall apply. Depending upon the Goods or Services being offered, other terms and conditions may apply, as mutually agreed.

COMPLETE/FORMAL NAME OF VENDOR:		
STREET ADDRESS:	P.O. BOX:	ZIP:
CITY & STATE & ZIP:	TELEPHONE NUMBER:	TOLL FREE TEL. NO:
PRINCIPAL PLACE OF BUSINESS ADDRESS IF DIFFERENT FROM ABOVE (SEE INSTRUCTIONS TO VENDORS ITEM #21):		
PRINT NAME & TITLE OF PERSON SIGNING ON BEHALF OF VENDOR:		FAX NUMBER:
VENDOR'S AUTHORIZED SIGNATURE*:	DATE:	EMAIL:

VALIDITY PERIOD

Offer shall be valid for at least 30 days from date of bid opening, unless otherwise stated. After this time, any withdrawal of this offer shall be made in writing, effective upon receipt by the agency issuing this RFP.

1.0 PURPOSE AND BACKGROUND

The intent of this solicitation is for Union County Public Schools to award a contract for the Union County Public School New Town Elementary School Roof Replacement.

Work shall consist of furnishing all labor, taxes, materials, equipment, services, permits, incidental and implied for Union County Public School New Town Elementary School Roof Replacement.

Bid shall be submitted in accordance with the terms and conditions of the RFP and any addendum issued hereto.

2.0 GENERAL INFORMATION

2.1 Request for Proposal Document

This RFP is comprised of the base RFP document, any attachments, and any addenda released before Contract award, which are incorporated herein by reference.

2.2 Taxes

UCPS is **NOT** tax-exempt. Unless otherwise indicated, tax must be computed and added to your proposal. Any itemized shipping charges are also subject to tax. When invoiced, tax should be invoiced as a separate line item.

2.3 Notice to Vendors Regarding RFP Terms and Conditions

It shall be the Vendor's responsibility to read the Instructions to Vendors, and the North Carolina General Terms and Conditions, all relevant exhibits and attachments, and any other components made a part of this RFP and comply with all requirements and specification herein. Vendors are also responsible for obtaining and complying with all Addenda and other changes that may be issued in connection with this RFP.

If Vendors have questions or issues regarding any component of this RFP, those must be submitted as questions in accordance with the instructions in the Bid Questions Section. If UCPS determines that any changes will be made as a result of the questions asked, then such decisions will be communicated in the form of an RFP addendum. UCPS may also elect to leave open the possibility for later negotiation of specific provisions of the Contract that have been addressed during the question-and-answer period, prior to contract award.

Other than through the process of negotiation under 01 NCAC 05B.0503, UCPS rejects and will not be required to evaluate or consider any additional or modified terms and conditions submitted with Vendor's bid or otherwise. This applies to any language appearing in or attached to the document as part of the Vendor's bid that purports to vary any terms and conditions or Vendor's instructions herein or to render the bid non-binding or subject to further negotiation. Vendor's bid shall constitute a firm offer that shall be held open for the period required herein ("Validity Period" above). UCPS may exercise

its discretion to consider Vendor proposed modifications. By execution and delivery of this RFP Response, the Vendor agrees that any additional or modified terms and conditions, whether submitted purposely or inadvertently, shall have no force or effect, and will be disregarded unless expressly agreed upon during negotiations and incorporated by way of a Best and Final Offer (BAFO). Noncompliance with, or any attempt to alter or delete, this paragraph shall constitute sufficient grounds to reject Vendor's bid as nonresponsive.

2.4 RFP Schedule

The table below shows the intended schedule for this RFP. UCPS will make every effort to adhere to this schedule.

Event	Responsibility	Date and Time
Issue RFP	UCPS	January 31, 2025
Hold Pre-Bid Meeting/Site Visit	UCPS	February 11, 2025 at 10:30 AM
Submit Written Questions	Vendor	February 18, 2025 by 2:00 PM
Provide Response to Questions	UCPS	February 19, 2025 by 2:00 PM
Bid Proposal Due Date	Vendor	February 25, 2025 by 10:00 AM
Contract Award	UCPS	Pending UCPS Board Approval

2.4 Site Visit or Pre-Bid Conference

A site visit or pre-bid conference has been scheduled as follows and it **MANDATORY**:

Date	Time	Location	Where to Meet
February 11, 2025	10:00 AM	1100 Waxhaw Indian Trail Rd S, Waxhaw, NC 28173	Front Lobby

2.5 Bid Questions

Upon review of the RFP documents, Vendors may have questions to clarify or interpret the RFP in order to submit the best bid possible. To accommodate the Bid Questions process, Vendors shall submit any such questions by the "Submit Written Questions" date and time provided in the above RFP Schedule Section above, unless modified by an Addendum.

Written questions must be emailed to the contact listed below by the date and time specified above in Section 2.3 RFP Schedule. Vendors should format the subject of the email as follows: "RFP #5-97648022 Replacement Questions". Question submittals should include a reference to the applicable RFP section and be submitted in the following format: RFP Section, Page Number – Vendor Question.

Contact Name	Contact Title	Contact Email Address
Jennifer West	Construction Contracts Specialist	facilitiesbids@ucps.k12.nc.us

No information, instruction or advice provided orally or informally by any UCPS personnel, whether made in response to a question or otherwise in connection with this RFP, shall be considered authoritative or binding. Vendors shall rely on written material contained in the RFP and an addendum to this RFP.

2.6 Bid Submittal

IMPORTANT NOTE: This is an absolute requirement. Late bids, regardless of cause, will not be opened or considered, and will be automatically disqualified from further consideration. Vendor shall bear the sole risk of late submission due to unintended or unanticipated delay. It is the Vendor’s sole responsibility to ensure its bid has been received as described in this RFP by the specified time and date of opening. The time and date of receipt will be marked on each bid when received. Any bid or portion thereof received after the bid deadline will be rejected.

CAUTION: Vendors are cautioned that bids sent by U.S. Mail, including Express Mail, may not be delivered to the UCPS Facilities/Purchasing Office in time to meet the required bid closing date and time. All Vendors are urged to take the possibility of delay into account when submitted bids by the U.S. Postal Service, courier, or other delivery service.

If confidential and proprietary information is included in the proposal, also submit one (1) signed, REDACTED copy of the proposal. Such information may include trade secrets defined by N.C. General Statutes 66-152 and other information exempted from the Public Records Act pursuant to N.C. General Statutes 132-1.2 Vendor may designate information, Products, Services, or appropriate portions of its response as confidential, consistent with and to the extent permitted under the statutes and rules set forth above. By so redacting any page, or portion of a page, the Vendor warrants that it has formed a good faith opinion, having received such necessary or proper review by counsel and other knowledgeable advisors, that the portions determined to be confidential and proprietary and redacted as such, meet the requirements of the Rules and Statutes set forth above. However, under no circumstances shall price information be designated as confidential.

If the vendor does not provide a redacted version of the proposal with its proposal submission, the Department may release an unredacted version if a record request is received.

Bids for this project will be received by the UCPS Facilities/Purchasing Department until the date and time listed below. At that time, the bids will be opened and evaluated. A bid tab will also be prepared.

Bid Closing Date	Bid Closing Time (Eastern Standard Time)
February 25, 2025	10:00 PM

Mailed bids must be sent to
Union County Public Schools
Attn: Facilities/Jennifer West
201 Venus Street
Monroe NC, 28112

Please note on the envelope: Bid: New Town Elementary School Roof Replacement
Bid Closing Date: February 25, 2025 10:00 PM

Delivered bids must be delivered to:

Union County Public Schools
Attn: Facilities/Jennifer West
201 Venus Street
Monroe NC, 28112

Delivered bids will be accepted at the UCPS Facilities Department at Visitor Entrance only. Bids may be delivered Monday – Friday from 7:30 a.m. through 4:00 p.m. Bid proposals will not be accepted after the bid closing time on the bid closing date.

2.7 Bid Contents

Vendors shall complete the bid proposal form, and all indicated attachments and include all authorized signatures where requested. Failure to provide all required items, or Vendor's submission of incomplete items, may result in UCPS rejecting the Vendor's bid, in UCPS' sole discretion.

Mailed, delivered, and bid submission must contain:

Item Description	Required (Yes or No)
RFP Page 2 – Acceptance of Bids	Yes
Cover Letter that includes (i) statement that confirms the Vendor has read the RFP in its entirety, including all links, and all Addend released in conjunction with the RFP (ii) a statement that the Vendor agrees to perform in accordance with the scope of work, requirements, and specifications contained herein, and (iii) Vendor's agreement to comply with all instructions, terms, and conditions, and attachments	Yes
Title Page that includes the company name, address, phone number, and authorized representative along with the Bid Number	Yes
Completed and Signed Attachment: Bid Proposal Form	Yes
Completed and Signed Attachment: Certification of Financial Condition	Yes
Completed and Signed Attachment: Customer Reference Form	Yes

General Contractor License	Yes
Completed and Signed Attachment: HUB Supplemental Vendor Information	Yes

Bid Bond Form (<i>Required for all bids of \$300,000.00 or more</i>)	Yes
Most Recent Audited Financial Statement	Yes

Additional items attached to this bid:

Item	Required
NC General Terms and Conditions	Yes
Vendor Instructions	Yes
NC Sales and Use Tax Form	Yes

Mailed or delivered bid submissions must contain the following copy requirements:

Item	Required (Yes or No)
Original Signed Hard Copy	Yes
Flash Drive Copy	No

3.0 Method of Award and Bid Evaluation Process

3.1 Method of Award

North Carolina G.S. 143-52 provides a general list of criteria Union County Public Schools shall use to award contracts, as supplemented by the additional criteria herein. The Goods and Services being procured shall dictate the application and order of criteria; however, all award decisions shall be in Union County Public Schools' best interest.

All responsive bids will be reviewed, and an award or awards will be based on the responsive bid(s) offering the lowest price that meets the specifications provided herein, to include any required verifications set out here in such as but not limited to past performance, references, and financial documents.

While the intent of this RFP is to award a Contract(s) to a single vendor UCPS reserves the right to make separate awards to different Vendors for one or more-line items, to not award one or more-line items, or to cancel this RFP in its entirety without awarding a Contract, if it is considered to be most advantageous to UCPS to do so.

UCPS reserves the right to waive any minor informality or technicality in bids received.

UCPS reserves the right to reject any or all bids for any or no reasons.

3.2 Confidentiality and Prohibited Communications During Evaluation

While this RFP is under evaluation, the responding Vendor, including any subcontractors and suppliers, is prohibited from engaging in conversations intended to influence the outcome of the evaluation.

Each Vendor submitting a bid to this RFP, including its employees, agents, subcontractors, suppliers, subsidiaries and affiliates, is prohibited from having any communications with any person inside or outside the using agency; issuing agency, other government agency office or body (including the purchaser named above, any department secretary, agency head, members of the Board of Education) or private entity, if the communication refers to the content for Vendor's qualifications or ability to perform a resulting contract, and/or the transmittal of any other communication of information that could be reasonably considered to have the effect of directly or indirectly influencing the evaluation of proposals, the award of a contract, or both.

Any Vendor not in compliance with the provision shall be disqualified from evaluation and award. A Vendor's proposal may be disqualified if its subcontractor and/or supplier engage in any of the foregoing communications during the time that the procurement is active (i.e., the issuance date of the procurement until the date of contract award or cancellation of the procurement). Only those discussions, communications or transmittals of information authorized or initiated by the issuing agency for this RFP or inquiries directed to the purchaser named in this RFP regarding requirements of the RFP (prior to proposal submission) or the status of the award (after submission) are exempt from this provision.

3.3 Proposal Evaluation Process

UCPS will conduct an evaluation of responsive Proposals, as follows:

- a) UCPS shall review the responses to this RFP to confirm that they meet the specifications and requirements. UCPS reserves the right to waive any minor informality or technicality.
- b) Proposals are requested for the items as specified. UCPS reserves the right to reject any proposal on the basis of fit, form and/or function, as well as cost.
- c) For all responses that pass the initial review process, UCPS will review and assess the Vendors' pricing. UCPS may request additional formal responses or submissions from any or all Vendors for the purpose of clarification or to amplify the materials presented in any part of the quote.

Vendors are cautioned, however, UCPS is not required to request clarification, and often does not. Therefore, all proposals should be complete and reflect the most favorable terms available from the Vendor. Prices quoted cannot be altered or modified as part of a clarification.

- d) Proposals will be evaluated, based on the award criteria identified by UCPS.

Award of a Contract to one Vendor does not mean that the other proposals lacked merit, but that, all factors considered, the selected proposal was deemed most advantageous and represented the best value to UCPS.

Vendors are cautioned that this is a request for proposal, not a request or an offer to contract, and UCPS reserves the unqualified right to reject any and all offers at any time if such rejection is deemed to be in the best interest of UCPS.

3.4 Interpretation of Terms and Phrases

This RFP serves two (2) functions: (1) to advise potential Vendors of the parameters of the solution being sought by UCPS; and (2) to provide (together with other specified documents) the terms of the Contract resulting from this procurement. The use of phrases such as “shall”, “must”, and “requirements” are intended to create enforceable contract conditions. In determining whether bids should be evaluated or rejected, UCPS will take into consideration the degree to which Vendors have proposed or failed to propose solutions that will satisfy UCPS needs as described in the RFP. Except as specifically stated in the RFP, no one requirement shall automatically disqualify a Vendor from consideration. However, failure to comply with any single requirement may result in UCPS exercising its discretion to reject a bid in its entirety.

4.0 Requirements

This Section lists the requirements related to this RFP. By submitting a bid, the Vendor agrees to meet all stated requirements in this Section as well as any other specifications, requirements, and terms and conditions stated in this RFP. If a Vendor is unclear about a requirement or specification or believes a change to a requirement would allow for UCPS to receive a better bid, the Vendor is urged to submit these items in the form of a question during the question-and-answer period in accordance with Section 2.5 Bid Questions.

4.1 Pricing

Bid price shall constitute the total cost to UCPS for the complete performance in accordance with the requirements and specifications herein, including all applicable charges for handling, transportation, administrative and other similar fees. Complete Attachment: Proposal Bid Form and include in Vendor’s response.

4.2 Invoices

Vendor shall invoice UCPS. The standard format for invoicing shall be Single Invoices meaning that the Vendor shall provide Union County Public Schools with an invoice for each order or service date. Invoices shall include detailed information to allow UCPS to verify pricing at point of receipt matches the correct price from the original date of order. The following fields shall be included on all invoices, as relevant:

Vendor’s Billing Address, Customer Account Number, RFP #, Order Date, Buyer’s Order Number, Item or Service Descriptions, Price, Quantity, and Unit of Measure.

4.3 Financial Stability

As a condition of contract award, the Vendor must certify that it has the financial capacity to perform and to continue to perform its obligations under the Contract; that the Vendor has no constructive or actual

knowledge of an actual or potential legal proceeding being brought against Vendor that could materially adversely affect performance of this Contract; and that entering into this Contract is not prohibited by any contract, or order by any court of competent jurisdiction.

Each Vendor shall certify it is financially stable by completing Attachment: Certification of Financial Condition. UCPS is requiring this certification to minimize potential issues from contracting with a Vendor that is financially unstable. From the date of the Certification to the expiration of the Contract, the Vendor shall notify UCPS within thirty (30) days of any occurrence or condition that materially alters the truth of any statement made in this Certification. The Contract Manager may require annual recertification of the Vendor's financial stability.

In lieu of Attachment: Certification of Financial Condition, UCPS may require a bidder to submit their most recent financial statement (balance sheet and income statements).

4.4 HUB Participation

Pursuant to North Carolina General Statute G.S. 143-48, it is UCPS policy to encourage and promote the use of small, minority, physically handicapped, and women contractors in purchasing Goods and Services. As such, this RFP will serve to identify those Vendors that are minority owned or have a strategic plan to support UCPS Historically Underutilized Business program by meeting or exceeding the goal of 10% utilization of diverse firms as 1st or 2nd tier subcontractors. Vendor shall complete Attachment: HUB Supplemental Vendor Information.

4.5 References

Vendor shall provide at least three (3) references, using Attachment: Customer Reference Form, for which it has provided Services of similar size and scope to those proposed herein. UCPS shall contact these users to determine whether the Services provided are substantially similar in scope to those proposed herein and whether Vendor's performance has been satisfactory. The information obtained shall be considered in the evaluation of the Bid.

4.6 Background Checks

Vendor and its personnel are required to provide or undergo background checks at Vendor's expense prior to beginning work with UCPS. As part of Vendor background, the following details must be provided to UCPS.

- a) Any criminal felony conviction, or conviction of any crime involving moral turpitude, including but not limited to fraud, misappropriation or deception, By Vendor, its officers or directors, or any of its employees or other personnel to provide Services on this project, of which Vendor has knowledge, or provide a statement that Vendor is aware of none.
- b) Any criminal investigation for any offense involving moral turpitude, including, but not limited to fraud, misappropriation, falsification or deception pending against Vendor of which it has knowledge, or provide a statement Vendor is aware of none;
- c) Any regulatory sanctions levied against Vendor or any of its officers, directors or its professional employees expected to provide Services on this project by any state or federal regulatory agencies within the past three years or a statement that there are none. As used herein, the term "regulatory

sanctions" includes the revocation or suspension of any license or certification, the levying of any monetary penalties or fines, and the issuance of any written warnings;

- d) Any regulatory investigations pending against Vendor or any of its officers, directors or its professional employees expected to provide Services on this project by any state or federal regulatory agencies of which Vendor has knowledge or a statement that there are none.
- e) Any civil litigation, arbitration, proceeding, or judgments pending against Vendor during the three (3) years preceding submission of its bid herein or a statement that there are none.

Vendor's response to these requests shall be considered a continuing representation, the Vendor's failure to notify the State within thirty (30) days of any criminal litigation, investigation or proceeding involving Vendor or its then current officers, directors or persons providing Services under this Contract during its term shall constitute a material breach of contract. The provisions of this paragraph shall also apply to any subcontractor utilized by Vendor to perform Services under this Contract.

4.6.1 Background Checks General Information

It is the policy of UCPS to provide a safe environment for UCPS employees and students. Due to the Contract requirements, UCPS requires criminal background checks of awarded Vendors, including but not limited to: owners, employees, agents, representatives, subcontractors, and all personnel of their respective companies. All costs and expenses associated with criminal background checks are the responsibility of the Vendor.

The following requirements must be met:

- a) Criminal background checks shall be current and completed within ninety (90) days of the Contract effective date.
- b) The criminal background check shall include a social security verification/check, felonies, misdemeanors, and traffic records covering a minimum of the last seven (7) years for all states and countries where the individual has resided. The criminal background check information shall be first thoroughly reviewed by the Vendor and then sent to the Contract Administrator for review and approval. Out of state searches shall be required for persons living in the state of North Carolina for fewer than seven (7) years. Fingerprint background checks may be required in some instances depending on the facility requirements.
- c) A criminal background check on the awarded Vendor and its employees shall be provided by the Vendor prior to the Contract effective date. Copies of the original criminal background check shall be sent to the Contract Administrator for evaluation.
- d) When a new employee or individual is identified to perform Services on this Contract, the Vendor shall provide the Contract Administrator with a criminal background check shall not be allowed to work in the relevant building until proper documentation is submitted and approved.
- e) UCPS may require the Vendor to exclude the Vendor's employees, agents, representatives, or subcontractors based on the background check results. Discovery that one or more employees have convictions does not disqualify the Vendor from award.
- f) Additionally, UCPS may use The North Carolina Department of Public Safety Offender Public Information or similar Services to conduct additional background checks on the Vendor's proposed employees.

4.6.2 Background Check Limitations

Any individual representing the Vendor, who:

- a) In his/her lifetime, has been adjudicated as a habitual felon as defined by GS 14-7.1 or a violent habitual felon as defined by GS 14-7.7, shall not be allowed to work in buildings occupied by UCPS employees or students.
- b) During the last seven (7) years has been convicted of any criminal felony or misdemeanor sexual offense or a crime of violence shall not be allowed to work in buildings occupied by UCPS employees or students.
- c) At any time has an outstanding warrant or a criminal charge for a crime described in (b) above shall not be allowed to work on UCPS property.
- d) The Vendor must ensure that all employees have a responsibility to self-report to the Vendor within twenty-four (24) hours any arrest for any disqualifying offense. The Vendor must notify the Contract Administrator within twenty-four (24) hours all the details concerning any reported arrest.
- e) Upon the request of the Contract Administrator, the Vendor will re-screen any of its employees, agents, representatives, and subcontractors during the term of the Contract.
- f) Vendor's responses to these background check requests shall be considered a continuing representation, and Vendor's failure to notify UCPS within thirty (30) days of any criminal charge, investigation, or proceeding involving Vendor or its then-current officers, directors or persons providing Services under this Contract during its term shall constitute a material breach of contract. The provisions of this paragraph shall also apply to any subcontractor utilized by Vendor to perform Services under this Contract.
- g) If there are problems or delays with performance associated with the completion and compliance with this background check requirements, any Vendor's performance bond could be used to complete these Services.

4.6.3 Background Document Requirements

Required documentation to be submitted prior to date Contract is effective and for performing any Services on UCPS property shall include:

- a) A cover letter by the Vendor on company letterhead with a list of the full names matching a required government issued photo ID, addresses, and birth dates of each person representing the contracting company.
- b) Vendor shall also provide a photocopy of the required State or Federal government issued picture ID or Driver License.
- c) A letter on company letterhead is not acceptable proof in itself but can be used to further clarify information on the criminal background check submitted. All documentation shall be submitted at the same time. Submit documents which are clear and legible.
- d) Background checks consisting of:
 - 1) Original unaltered criminal background check from the organization providing the background check.
 - 2) The background check provider's company name, company mailing address, and contact phone numbers.

- 3) The full name of the individual, which matches the government issued photo ID.
- 4) The current address of individual being checked.
- 5) The date the criminal background check search was conducted.

4.7 Personnel

Vendor warrants those qualified personnel shall provide Services under this Contract in a professional manner. "Professional Manner" means that the personnel performing the Services will possess the skill and competence consistent with the prevailing business standards in the industry. Vendor will serve as the prime contractor under this Contract and shall be responsible for the performance and payment of all subcontractor(s) that may be approved by UCPS. Names of any third-party Vendors or subcontractors of Vendor may appear for purposes of convenience in Contract documents; and shall not limit Vendor's obligations hereunder. Vendor will retain executive representation for functional and technical expertise as needed in order to incorporate any work by third party subcontractor(s). Should the Vendor's bid result in an award, the Vendor shall be required to agree that it will not substitute key personnel assigned to the performance of the Contract without prior written approval by the Contract Lead. Vendor shall further agree that it will notify the Contract Lead of any desired substitution, including the name(s) and references of Vendor's recommended substitute personnel. UCPS will approve or disapprove the requested substitution in a timely manner. UCPS may, in its sole discretion, terminate the Services of any person providing Services under this Contract. Upon such termination, UCPS may request acceptable substitute personnel or terminate the contract Services provided by such personnel.

4.8 Vendor's Responsibility

If Vendor's bid results in an award, Vendor agrees that it will not enter any agreement with a third party that may abridge any rights of UCPS under the Contract. If any Services, deliverables, functions, or responsibilities not specifically described in this solicitation are required for Vendor's proper performance, provision and delivery of the Service and deliverables under a resulting Contract, or are an inherent part of or necessary sub-task included within such Service, they will be deemed to be implied by and included within the scope of the Contract to the same extent and in the same manner as is specifically described in the Contract. Unless otherwise expressly provided herein, Vendor will furnish all of its own necessary management, supervision, labor, facilities, furniture, computer and telecommunications equipment, software, supplies and materials necessary for the Vendor to provide and deliver the Service and/or other Deliverables.

4.9 Agency Insurance Requirements Modification

During the term of the contract, the contractor at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably associated with the contract. As a minimum, the contractor shall provide and maintain the following coverage and limits:

- 1) Workers' Compensation shall be maintained with at least the minimum statutory limits, including Employer's Liability with limits of at least \$1,000,000.
- 2) Employer's Liability shall be maintained with at least limits of \$100,000,000 each accident; \$100,000 disease, each employee; and \$1,000,000 disease, policy limit.

3) Commercial General Liability shall be maintained with at least the following minimum limits with the policy and the Certificate of Insurance indicating that the coverage is written on a "project" basis:

- a) \$1,000,000 Bodily Injury and Property Damage for each occurrence
- b) \$100,000 Fire Damage
- c) \$1,000,000 Medical Expenses Any One Person
- d) \$1,000,000 Personal and Advertising Injury
- e) \$1,000,000 Products/Completed Operations Aggregate
- f) \$2,000,000 General Aggregate

List the Owner (including its officers, agents, and employees) as an additional insured on the policy as evidenced by a policy endorsement. Coverage shall include, but not be limited to, the following supplementary coverages: Contractual Liability to cover liability assumed under this Agreement, Product and Completed Operations Liability Insurance, Broad Form Property Damage Liability Insurance, and Independent Contractors.

Such policy shall include all of the coverages, which may be included in coverages A, B, and C contained in the Commercial General Liability Policy, without deletion. Such policy must be issued on an "occurrence" basis, as distinguished from a "claims made" basis.

Completed Operations shall extend six (6) years after final payment.

If Contractor has design responsibility, endorsement CG22 80 and DIC for contractors' professional liability is required unless waived by the Owner.

- 4) Automobile Liability – Including Hired-Auto and Non-Owned Auto shall be maintained with at least a Minimum Combined Single Limit of \$1,000,000 per occurrence.
- 5) For Contractors with remediation or abatement responsibilities, Contractors shall carry Contractor's Pollution Liability Coverage. Coverage must be sudden and non-sudden, and include: Bodily injury, sickness, disease, mental anguish, or shock sustained by any person, including death; Property damage, including physical injury to or destruction of tangible property that has not been physically injured or destroyed; and Defense, including costs, charges, and expenses incurred in the investigation, adjustment, or defense of claims for such compensatory damages. List the Owner (including its officers, agents, and employees) as an additional insured on the policy as evidenced by a policy endorsement.

The Owner must be named as Additional Insured, and Non-Owned Disposal Site Endorsement must provide, scheduling the appropriate landfill.

Minimum CPL limits of coverage shall be:

- a) \$1,000,000 Per Loss
- b) \$2,000,000 All Losses

Umbrella Liability shall be maintained with the following minimum limits:

- a) \$5,000,000 Per Occurrence
- b) \$5,000,000 Aggregate

- 6) **Builder's Risk Insurance:** If requested by the Owner, the Contractor shall be responsible for purchasing and maintaining insurance satisfactory to the Owner to protect the Project from perils of physical loss. The Owner shall receive copies of the builder's risk insurance policies that satisfy this Article. The Contractor shall be responsible for any deductibles associated with this coverage.

The builder's risk insurance shall provide for the cost of replacement of the Work at the time of any loss. The insurance shall include as additional insureds the Owner, the Contractor, the Contractors and their subcontractors and shall insure against the loss from the perils of fire and all risk coverage for physical loss or damage due theft, vandalism, collapse, malicious mischief, terrorism, transit, flood, mold, earthquake, testing, or damages resulting from defective design, negligent workmanship or defective material. The Contractor shall obtain approval from the Owner before increasing any coverage due to increases in construction costs. See the Supplementary General Conditions 9.3.2 regarding Contractor's responsibilities for materials stored off-site.

Providing and maintaining adequate insurance coverage is a material obligation of the contractor and is of the essence of this contract. All such insurance shall meet all laws of the State of North Carolina. Such insurance coverage shall be obtained from companies that are authorized to provide such coverage and that are authorized by the Commissioner of Insurance to do business in North Carolina. The contractor shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina laws of this contract. The limits of coverage under each insurance policy maintained by the contractor shall not be interpreted as limiting the contractor's liability and obligations under the contract.

The Contractor shall furnish a Certificate of Insurance as proof of the above coverages. Certificate will contain provision that the insurance coverages cannot be canceled, reduced in amount or coverage eliminated without thirty (30) days written notice to the Union County Board of Education. Owner's Protective insurance must list Union County Board of Education as the Certificate Holder and as "additional insured" as it's interest may appear. Owner's approval of Certificate of Insurance does not decrease or relieve the contractor's responsibility for maintaining insurance coverage as required in this Request for Proposal.

5.0 Specifications and Scope of Work

5.1 Project

New Town Elementary School Roof Replacement

5.2 Scope

Work shall consist of furnishing all labor, taxes, materials, equipment, services, permits; incidental and implied; to install a complete and warranted retrofit system as designed per the attached drawings and specifications:

5.3 Materials

No materials are to be stored onsite. Vendor must adhere to the guidelines within these specifications. Failure to do so will result in default of payment by the Union County Board of Education.

5.4 Safety Regulations

The Vendor shall adhere to the rules, regulations, and interpretations of the North Carolina Department of Labor.

5.5 License and Permits

The Vendor shall hold the appropriate license of work to be performed and shall secure all permits required for the job completion, obtain, and deliver to Union County Public Schools, all certification of inspection issued by the Authorities Having Jurisdiction.

5.6 Scheduling

The Contractor must submit a precise time schedule as to when specific work will occur in specific areas within the building. This will be used to coordinate the work with the occupants of the building. The Maintenance Project Manager or building Administrator may alter the schedule at any time to maintain the work process within the facility. Work must be scheduled during hours that are acceptable to the school Administrator and Maintenance Project Manager. The Union County Board of Education shall not incur any additional cost due to scheduling.

All work must be scheduled to avoid safety concerns and disruption of classroom instruction time and/or operation times. If required, all permits and inspections will be the responsibility of the contractor, and copies of permits and final inspection will be submitted to UCPS prior to final payment.

5.7 Liquidated Damages

Time is of the essence. The contractor shall complete work on site within the allotted time.

Liquidated damages shall be assessed for each calendar day beyond the substantial completed date in the amount of \$500.00 per day. Liquidated damages shall be assessed for final completion beyond the final completion date in the amount of \$500.00 per day.

5.8 Workers on the Job

All employees of the Vendor shall, while on Union County Board of Education property, act in a professional and courteous manner. All workers shall be expected to dress appropriately for a school site while on Board property. Also, all employees of the Vendor must sign-in in the main office upon entering the facility and sign-out in the main office upon leaving the property. Any employee of the Vendor may be told to leave the property by either the school administration or responsible department director if they do not follow the above procedure. The employee shall be replaced with another Vendor employee at no additional cost to the Union County Board of Education.

Smoking, vaping, or the use of tobacco products is prohibited on UPCS' property.

5.9 Sex Offender and Public Protection Program

In accordance with G.S. 14-208.18 all persons who (1) are required to register under the Sex Offender and Public Protection Program and (2) have been convicted of certain sexually violent offenses or any offense where the victim was under the age of sixteen (16) years at the time of the offense are expressly forbidden to knowingly be present on any property owned or operated by the school system, including school buildings, athletic fields, playgrounds, parking lots, school buses, activity buses or other property of any kind for any reason, including attendance at sporting events or other school related functions, whether before, during or after school hours. It is the responsibility of the Vendor that their employees and sub-contractors are in accordance with G.S. 14-208.18.

5.10 E-Verify

Vendor shall comply with E-Verify, the federal E-Verify program operated by the United States Department of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law and as in accordance with NCGS 64-25 et seq. In addition, to the best of Vendor's knowledge, any subcontractor employed by Vendor as a part of this contract shall be in compliance with the requirements of E-Verify and NCGS 64-25 et seq.

5.11 Equipment and Tools

The Vendor shall not use equipment or tools owned by the UCPS. Also, employees of UCPS shall not be utilized by the Vendor except for opening locked doors or giving directions.

5.12 Clean Up

The work area shall be cleaned after each service visit so that the Union County Board of Education shall not incur any additional cost to clean the treated area. Also, the Vendor shall make minimal use of UCPS' trash receptacles. All large trash items and Vendor used materials shall be properly disposed of off the property. Onsite dumpsters shall not be used.

5.13 Changes During Service Contract Period

Changes during the service contract period shall only be made by written direction signed by UCPS. No additional cost to the contract shall be allowed unless accepted in writing by UCPS before work has begun.

5.14 Contract Terms

Price must be applicable for the term agreed upon by both parties.

5.15 Price Adjustments – Term Contracts Only

Any price changes, downwards or upward, which might be permitted during the contract period must be general, either by reason of market change or on the part of the Vendor to the other customers.

- 1) Notifications: Notifications must be given to UCPS, in writing, concerning any proposed price adjustments. Such notifications shall be accompanied by copy of manufacturer's office notice or other acceptable evident that the change is general in nature.
- 2) Decreases: UCPS shall receive full proportionate benefit immediately at any time during the contract.
- 3) Increases: Consumer Price Index (CPI) – Contract prices for equipment and/or service will remain firm through the initial contract dates. Contractors must request price adjustments, in writing (30) days prior to the renewal date. If a Vendor fails to request CPI price adjustment thirty (30) days prior

to the adjustment date, the adjustment will be effective thirty (30) days after UCPS receives the written request. Price adjustments will be made in accordance with the percentage change in the U.S. Department of Labor Consumer Price Index (CPI-U) for all urban consumers, all items, southern region. The price adjustment rate will be determined by comparing the percentage difference between the CPI in effect for the base yearly average (January through December beginning the year the contract is effective); and each January through December thereafter. The percentage difference between those two CPI issues will be the price adjustment rate. No retroactive contract price adjustments will be allowed. All bidders will be capped with a 3% maximum price increase.

- 4) Invoices: It is understood and agreed that services will be provided at the established contract price in effect for a specified contract term. Vendor will provide a single monthly invoice detailing recurring charges for all serviced facilities.

5.18 Payment

Payment will be processed monthly from the single invoice provided by the Vendor. Invoice discrepancies must be resolved before payment will be processed.

5.19 Performance of Work

All work shall be performed at the highest level of quality. UCPS shall be responsible for determining the quality of work and may notify the Vendor of the same. **ANY WORK COMPLETED THAT IS NOT SUITABLE TO THE OWNER SHALL BE REPEATED BY THE VENDOR AT NO COST TO UNION COUNTY PUBLIC SCHOOLS.** Any damage to existing area or utilities will be the responsibility of the Vendor. No Exceptions.

5.20 Specifications

See Exhibit 1

Contractor must adhere to the guidelines within these specifications. Failure to do so will result in default of payment of Union County Board of Education and/or cancellation of this contract.

The Union County Board of Education reserves the right to reject any or all bids or any or no reason.

End of RFP # 5-97648022

Exhibit 1

Scope of Work

Roof Replacement New Town Elementary School

Union County Public Schools



Project Manual Vol. 2
1.6.25

UCPS Project No.
ButePLLC Project No. 2401B

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DIVISION 1 GENERAL REQUIREMENTS

SECTION 011100: SUMMARY OF WORK

PART 1: GENERAL

1-01: This project consists of roof replacement and repairs as indicated on drawings and specified herein at New Town Elementary School, 1100 Waxhaw Indian Trail Rd, Waxhaw, NC

1-02: Base Bid work includes, but is not limited to the following items as indicated on see drawings.

- Removal of existing membrane roofing, and insulation.
- Removal of existing coping, gravel stops, gutters and metal work as indicated on drawings
- Installation of self-adhered air/vapor barrier
- Installation of new mechanically fastened rigid insulation system (see plans), both tapered and flat stock
- Installation of new adhered cover board
- Installation of new torch applied (SBS) Modified Bituminous Membrane Roofing
- Installation of new copings, gravel stops gutters and other metal work as indicated on drawings.

PART 2: CONTRACTS

The method of contracting for this project shall be based upon the current North Carolina Bid Laws as amended for awarding contracts. This project will be awarded as a Single Prime Contract.

1-01: Prime Contract

- a. Work on this project shall be awarded to Contractor as follows:
General Contract, with specialty license (S-ROOFING). Specialty Contractor (S-ROOFING), with General License or sub-contractor with General License. See General and/or Supplementary Conditions and Part 1 above for permit and fee requirements.
- b. Any subcontractors needed to complete the work shall be licensed according to their respective trade.
- c. The contractor shall be responsible for all costs associated with the building permit.

PART 3: Project Phasing/Completion Dates

1-01: Completion Dates

The Owner and A/E make no warranty, either express or implied, as to the reasonableness or feasibility of the following listing, with all activities and duration as they must occur, in order to complete the work by the specified completion date:

For Bidding purposes, the anticipated construction schedule is as follows:

Pre-Bid Conference	Tuesday 1.14.2025
Receive Bids	Tuesday 2.4.2025
Substantial Completion	150 calendar days from NTP
Final Completion	170 calendar days from NTP

END OF SECTION

SECTION - 012000: MEASUREMENT & PAYMENT

PART 1: GENERAL

Unit prices, listed here are requested in order that they may be used to determine the debit, or credit to the Owner resulting from a change in the work - see General Conditions. Prices quoted shall be gross, inclusive of overhead, profit, insurance, bond and tax adjustments. Prices shall become fixed and non-negotiable for the duration of the project upon execution of the contract.

PART 2: UNIT PRICES

Unit prices are gross, inclusive of all adjustments, profit or overhead.

ITEM	PRICE	UNIT
A. Treated wood blocking replacement, in place	\$	Bd. Ft.

END OF SECTION

SECTION - 012100: ALLOWANCES

PART 1: GENERAL

Allowances are subject to the requirements of the General Conditions of the Contract. Costs to be applied to any allowance must be approved by the Architect before any work begins. **NOTE ALL OF THE FOLLOWING ARE IN ADDITION TO ANY ITEMS SPECIFICALLY SHOWN ON THE DRAWINGS.**

PART 2: Allowance Amounts

2-01: General Contingency Allowances:

The Contractor shall include in his Base Bid the following sum to cover the cost of connections, repair or modifications due to concealed or unknown conditions.

Cash Contingency Allowance: \$ 50,000

END OF SECTION

SECTION 012300: ALTERNATES

PART 1: GENERAL

Alternate prices are requested as listed in this section; prices shall be gross, inclusive of all incidental cost adjustments related to the work being priced. Omissions of items required for a complete installation of the alternate shall be the responsibility of the Contractor; no adjustment will be made after acceptance of the alternate as part of the Contract Price. For Single Prime Bidders, furnish total price inclusive of all trades on the bid form. The Owner reserves the right to accept or reject any or all alternate prices; the order of listing on the Bid Form does not reflect a priority for acceptance by the Owner.

PART 2: ALTERNATE PRICES REQUESTED

(Note that some alternates constitute entire sections of these specifications. Work for alternates shall comply with applicable provisions of the Contract Documents unless specified otherwise).

2-01: Alternate No 1.

Add to include installing a new elastomeric coating to all existing metal roofs as indicated on drawings and specified herein.

2-02: Alternate No 2

Add to include EIFS repairs and window and sill replacement as indicated on sheets 2.1 and 4.3 and specified herein.

END OF SECTION

SECTION 013223: FIELD ENGINEERING

PART 1: GENERAL

1-01: Work Included

This section includes the labor, materials, equipment and related services necessary to perform required testing as shown on drawings and specified herein.

1-02: Standards

Except as modified by governing codes and these specifications, survey and testing crews shall comply with all applicable provisions and recommendations of ANSI A10.2, Safety Code for Building Construction, and OSHA.

1-03: Record Drawings

Maintain a set of record drawings with survey data, elevations, field dimensions and notes regarding changes or adjustments to the Contract Drawings. The Contractor shall be responsible for maintaining and updating these record drawings for inclusion in the Project Closeout Document submission to the Architect.

1-04: Weather Data

Weather data to be submitted as specified in General Condition & Supplementary General Conditions.

SECTION 014000: QUALITY CONTROL

PART 1: GENERAL

It shall be the responsibility of the Prime Contractor to schedule periodic meetings between the Prime Contractors, subcontractors, suppliers, foremen, inspectors and other parties involved with the daily progress of the work. Cooperation among all parties is expected for timely completion of the project.

PART 2: CRITICAL EVENTS

The Prime Contractor shall exercise control over the project regarding critical events during which no other activity can take place in a given area. For areas to be inspected and covered up, 48 hour notice must be given to Local Inspectors and A/E.

PART 3: COOPERATIVE ARRANGEMENTS

a) Safety

Because of the nature of work taking place on an occupied school campus, the Owner and Architect advise the Prime Contractors to establish among themselves a Safety Committee, consisting of the Job site Superintendents for each Prime, to monitor job site safety, report violations, and maintain protective devices and warnings in accordance with OSHA guidelines.

b) Contractor to prepare a project specific safety plan and submit for Owner's approval. Copy of plan to be maintained on site at all times.

END OF SECTION

SECTION 014100: REGULATORY REQUIREMENTS

PART 1: GENERAL

In addition to regulatory requirements of governing authorities, codes, ordinances, industry requirements and association requirements noted in or reasonably implied from these specifications, the following shall become a part of the Contract Documents:

- A) 2018 North Carolina State Building Code(IBC with NC amendments) - Latest Edition for General Construction, Electrical Construction with reference to the National Electrical Code, Mechanical Construction and Vol. I- C Accessibility Code along with applicable ADA requirements.
- B) Zoning Ordinance of Authority having Jurisdiction - Latest Edition.
- C) UL Fire Resistance Rating - Latest Edition.
- D) FM Engineering Corporation - Latest Edition.
- E) NFPA 101 Life Safety Standards - Latest Edition

END OF SECTION

SECTION 014200: ALTERATION PROCEDURES

PART 1: GENERAL

1-01: Work Included

The work described herein includes the demolition, alteration and refinishing work as outlined on the drawings and specified herein. Alteration work will be performed by all Prime Contractors in the existing building during the school year.

1-02: Asbestos Removal

All Prime Contractors are cautioned that should any asbestos-containing material (ACM) be encountered during the demolition activities, cease work immediately and notify the Owner and Asbestos Removal Subcontractor, who will be on standby for any additional removal as needed. If asbestos-containing material is damaged and subject to airborne release, invoke emergency procedures to contain material as described later in this section.

1-03: Existing Utilities

General Contractor shall be responsible for coordinate with Utility Companies for disconnecting, removal, relocating or stubbing out of existing services (gas, power, telephone) to new meter locations as shown on drawings.

1-04: Standards

Except as modified by governing codes and these specifications, comply with all applicable provisions and requirements of ANSI A10.2, Safety Code for Building Construction, OSHA and NFPA 101.

1-05: Schedules

Before beginning any alteration work, the General Contractor shall submit for review by the Owner, A/E and other Primes, an abbreviated schedule showing the start and finish dates for the work of that particular phase. Highlight the sequence and duration of utility interruptions anticipated in each phase for the Owner's review.

PART 2: PROCEDURES

2-01: Protection

a) The Owner, A/E, or their agents, employees or representatives are not responsible for the means, methods, techniques, sequences or procedures utilized by a Prime Contractor in the execution of the work, or for safety precautions and programs in connection with the work. Each Prime Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work.

b) Each Prime Contractor shall exercise extreme caution for the safety of, and shall provide protection to prevent injury, damage or loss to:

- 1) Owner's staff and property property.
- 2) All Construction Personnel.
- 3) All Visitors on property.
- 4) All the Work and all the materials and equipment to be incorporated therein, whether stored on or off-site and under care of the Prime Contractor or Tiered Subcontractors, machinery, and equipment.
- 5) All Property on the project site grounds or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

c) The Prime Contractor shall give all notices and comply with all applicable laws, ordinances, permits, rules, regulations and lawful orders of any public authority having local jurisdiction bearing on the safety of persons or property or their protection from damage, injury or loss.

d) The General Contractor shall erect passageways, guard fences, temporary lighting and other facilities required for protection by applicable safety regulations. All protective devices must be

Union County Public Schools
Roof Replacement New Town Elementary School
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maintained for the duration of the particular phase of construction activity for which they were intended.

e) The Prime Contractor shall erect and maintain, as required by the existing conditions and progress of the work, all safeguards for safety and protection, including posting danger signs and other warning devices against hazards, promulgating safety regulations and notifying Owners and Users of adjacent utilities.

f) The storage of explosives or other hazardous materials will not be permitted on the project site. When hazardous materials or equipment must be used for the execution of the work, the Prime Contractor shall exercise the utmost care and shall expedite such activities under the supervision of properly qualified personnel. Such activity may be more safely scheduled for after school or weekends.

g) The Prime Contractor shall promptly remedy at his own cost and expense all damage or loss to any property referred to in Paragraphs B4 & B5 caused in whole or in part by the Prime Contractor or Tiered Subcontractors or anyone directly or indirectly employed by them, or by anyone for whose acts any of them may be liable and for which the Prime Contractor is responsible. The Prime Contractor shall perform corrective restoring as required by the Owner and A/E, or shall make good such damage in a manner satisfactory to the Owner. In case of failure on the part of the Prime Contractor to make good the corrective actions required to restore the damaged property, the Owner may, upon two (2) calendar days written notice to the Prime Contractor, proceed with the corrective action required and the cost thereof will be deducted from monies due or to become due the Prime Contractor under the terms of the Contract.

h) It shall be the responsibility of the General Contractor, in preparing the phasing schedule of the work after consulting with the other Prime Contractors, to designate areas in which each Prime Contractor may store materials. Storage areas shall not obstruct any passageways, corridors, stairways or exit doors. Stored materials or equipment shall be located so as to facilitate proper inspection and, if delivered crated, shall remain crated until time for installation.

1) Temporary Fire-Rated Exit Ways

The General Contractor shall install all temporary exit ways prior to beginning any alteration work in a particular phase of work; no work shall begin until the means of egress is inspected and approved by the Building Inspector, Fire Marshal, Owner and Architect. Construction shall conform with Nonbearing Wall Rating of 1 hour - UL Design No. U465. Partitions shall extend from the floor to the existing plaster ceiling and be maintained for the duration of the particular phase of renovation. Painting is not required.

2) Temporary Dust-Proof Partitions

The General Contractor shall install all temporary dustproof partitions as indicated on drawings and described herein.

a) Wood Studs - see Section 06100.

b) Sheet Plastic - shall be 6 mil polyethylene in as wide a roll as practicable.

c) Tape - as recommended for sealing joints at laps.

d) Install standard wood stud partition with studs at 16" o.c. maximum from floor to ceiling. Staple plastic sheeting each side of studs; lap sheets a minimum of 3" and tape as required.

i) Prior to beginning demolition operations, make explorations and probes as necessary to ascertain required protective measures. Give particular attention to shoring and bracing requirements for adjacent construction to remain; consult with the Structural Engineer if questionable structural conditions exist.

Prevent dust and dirt from rising and spreading through the existing building by wetting demolished masonry, concrete, plaster and other debris. Protect unaltered portions of the existing building affected by demolition operations by erecting temporary dustproof partitions as shown on drawings.

- j) It shall be the responsibility of the General Contractor to provide temporary fire protection. Requirements may consist of Fire Extinguishers, fire blankets, water hoses or a combination of devices as specified and located by the Fire Marshal assigned to this project.
- k) The Prime Contractor shall protect all utilities encountered while performing the work, whether indicated on the Contract Drawings or not. Maintain all utilities in service until scheduled to be moved (or abandoned), tested and made ready for use. Exercise extreme care around utilities being excavated and restore any utilities damaged by personnel or machine to the same condition or better as existed prior to starting the work, at no cost to the Owner.

2-02: Emergencies

- a) In any emergency affecting the safety of persons or property, each Prime Contractor shall act at his discretion to prevent threatened damage, injury or loss. The Contractor shall notify the Owner and the Architect of the situation and all actions taken immediately thereafter.
- b) If, in the opinion of the Prime Contractor, immediate action is not required, the Contractor shall notify the Owner and Architect of the emergency situation and proceed in accordance with the Owner's instructions. However, if any loss, damage, injury or death occurs that could have been prevented by the Prime Contractor's immediate action, the Contractor shall be held liable for all costs, damages, claims, actions, suits, attorney's fees and all other expenses arising from the emergency. Any additional compensation or extension of contract time claimed by the Contractor on account of emergency work shall be determined in accordance with the General and Supplementary Conditions.
- c) Prior to demolition, make explorations as necessary to discover any hazardous materials or materials which, if released, would cause environmental contamination. Upon discovery of suspicious material, immediately notify the Owner and Architect for instructions as to procedure.
- d) Should any toxic or hazardous material be accidentally released, immediately notify the Fire Marshal, Owner and Architect. Take immediate action to seal off area from airborne contamination by erecting dustproof partitions. With dikes or earth berms, physically contain liquid contamination from entering into storm drains, sewers, adjacent waterways or streets. If an underground fuel line, vent or tank is encountered, stop work and notify the Fire Marshal for instructions. If an underground septic system, grease trap, holding tank or cesspool is encountered, stop work and notify the County Health Department or other authority having jurisdiction for instructions.

PART 3: EXECUTION

3-01: Workmanship

Demolition and alteration work shall be conducted as shown on drawings. Each Prime Contractor shall be responsible for all cutting, fitting or patching that is required to complete the work of fitting old components with new components or to penetrate existing construction. Cut existing construction to a reasonable dimension in order to fit new material or equipment in place and minimize patching; where adjacent construction is damaged unnecessarily, it shall be the responsibility of the Prime Contractor to restore the material to a condition matching the original as close as possible, at no additional cost to the Owner. See respective M/E/P drawings for UL penetration details.

3-02: Cleaning Up

The Prime Contractor shall be responsible at all times for keeping the premises free from accumulation of waste materials or rubbish caused by his work. At the completion of the work, all waste materials and rubbish, tools, construction equipment, machinery and surplus materials shall be removed from the site. If the Prime Contractor fails to clean up during or at the completion of the work, the Owner may do so as provided in the General and Supplementary Conditions, and the cost thereof shall be withheld from monies due the Contractor.

3-03: Adjoining Surfaces

Where new and existing surfaces adjoin and are detailed for a flush condition, clean existing surface free from dirt, grease, loose paint, etc. before refinishing. Cut out embedded anchorage and attachment items as required to properly restore and repair existing substrate prior to refinishing.

3-04: Existing Equipment (Ref: Demolition Drawings)

- a) Materials or items designated to remain in place shall be protected from damage or loss due to the progress of the work.
- b) Materials or items removed having to be stored outside temporarily shall be properly weather-protected by the General Contractor and set on pallets above grade until the Owner can relocate them.
- c) Materials or items removed shall be inspected, repaired and refinished as required to good working order prior to reinstallation.

SECTION 015000: CONSTRUCTION FACILITIES & TEMPORARY CONTROLS
PART 1: GENERAL

Section Includes

- A. Temporary utilities.
- B. Protection of Work.
- C. Barriers and fences.
- D. Project identification.
- E. Field storage.

1-01: Temporary Water Service

General Contractor shall be responsible for temporary water needed for construction. Owner's source of water shall be determined by Owner's Representative. All temporary connections shall be done by the Contractor and shall be removed upon completion of the work.

1-02: Temporary Sanitary Facilities

- A. Contractor shall provide and maintain required facilities and enclosures. All portable units shall be approved by the local Health Dept. Location shall be approved by the Owner's Representative.
- B. Maintain in clean and sanitary condition on a regular basis.

1-03: Temporary Electricity

General Contractor shall be responsible for maintaining temporary electrical needed for construction from Owners source. All temporary connections shall be approved in advance by the Owner. All temporary connections shall be done by the Contractor and shall be removed at the completion of construction.

1-04: Protection of Installed Work

Protect installed Work and provide special protection where specified in individual specification Sections.

1-05: Progress Cleaning

Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition as determined by the Owner and Architect. Site shall be cleaned at the end of each working day.

1-06: Barriers and Fencing

Provide fencing as indicated on drawings, and as determined at the pre-construction conference for security control and for the protection of students. Location shall be adjusted, if necessary, during the progress of the work. All staging areas shall be enclosed by min. 6 ft. high chain link fence, gates to be kept locked after work hours. All Ladders or scaffolding outside of secure fenced area shall be taken down each day.

1-07: Project Signs: The Contractor shall be allowed one project identification sign near main construction entrance, as approved by the Owner. No other signs will be permitted on site.

1-08: Field Storage and Traffic

Material storage shall be weather tight with fire protection and ventilating systems along with security provisions. If storage trailers are to be located on site, for storage purposes, location shall be approved by the Owner.

1-09: The Contractor shall be responsible to meet all protection requirements in each section of these specifications. Location of vehicle parking and storage shall be as shown on the drawings. All deliveries shall be coordinated with the Owner to minimize disturbance to operation and activities. The security of all stored materials and equipment shall be the responsibility of the Contractor.

1-10: Existing egresses must be maintained at all times. Any disruption must be approved in advance by the Authority Having Jurisdictions/Fire Marshall/Owner.

SECTION 017000: CONTRACT CLOSEOUT

PART 1: GENERAL

Following Substantial Completion and prior to Final Payment of retainage, the Contractor shall furnish to the Architect/Engineer the documents required for certifying completion of the work. Documents to be submitted in a single package.

PART 2: DOCUMENTS REQUIRED

2.01 The following are to be submitted in pdf format. (Items marked with an asterisks * will be supplied by the Architect)

- a. Project Contact List (all participants including contractors, subcontractors, suppliers, etc)
- b. Certificate of Compliance from Local Inspections Dept
- c. Certificate of Substantial Completion and Punchlist *
- d. Certificate of Final Completion *
- e. Certification letter stating no asbestos containing materials were used.
- f. Roofing Manufacturer's Warranties, Twenty (20) Years NDL.
- g. Roofing Contractor's Warranty, Two (2) Years.
- h. Copies of all Manufacturer's inspection reports
- i. Scanned PDF set of marked up as-built drawings
- j. PDF of Project Manual & Addendum *
- k. PDF of Bid Addendum *

2.02 One hard copy of the following is to be submitted as a single package

- a.(Final) Application & Certificate for Payment, AIA G702.
- b. Consent of Surety to Final Payment, AIA G707.
- c. Contractor's Affidavit of Payment of Debts and Claims, AIA G706.
- d. Contractors Affidavit of Release of Liens, AIA G706A.
- e. Roofing Contractor's Warranty, Two (2) Years.
- f. Modified Bitumen Roofing Manufacturer's Warranty, Twenty (20) Years.
- g. Elastomeric Coating Manufacturer's Warranty, Twelve (12) Years.
- h. Exterior Insulation and Finish System Contractor's Warranty, Two (2) Years.
- i. Window Contractor's Warranty, Two (2) Years.

END OF DIVISION 1

DIVISION 2

SECTION 024000: DEMOLITION

PART 1: GENERAL

1-01: Reference to Other Documents

The General Conditions and Supplementary General Conditions contain requirements relevant to the work covered by this section.

1-02: Work Included

This section includes the labor, materials, equipment, and related services necessary to remove existing structures and other construction as listed below and as indicated on drawings:

- a. Existing single ply membrane roofing and rigid insulation as indicated on drawings.
- b. Existing copings, gravel stops, gutters and other metal flashings, as indicated on drawings.
- c. Other conditions as indicated on drawings

1-03: Standards

Except as modified by governing codes and these specifications, comply with all applicable provisions and recommendations of ANSI A10.2, Safety Code for Building Construction.

1-04: Demolition

The work shall be executed in a careful and orderly manner with the least possible disturbance or inconvenience to the surrounding property Owners. Noise and dust shall be kept at the lowest practicable minimum. Dust partitions shall be constructed where necessary to keep dust and debris from entering building. Spread of dust shall be prevented by wetting down materials thoroughly as often as may be necessary. Debris shall be removed promptly from the premises; the location of dumping area and length of haul shall be the Contractor's responsibility. Before starting any work related to existing utilities (electrical, water, fire lines, etc.) Contractor shall notify respective utility company and coordinate schedule of disconnects/demolition. Note, Contractor to perform magnetic cleanup of site upon completion of project.

1-05: Owner will occupy portions of the building immediately below roofing area. Conduct roofing so that Owner's operations are not disrupted. Provide Owner with not less than 72 hours notice of activities that may effect Owner's operations.

- a. Coordinate work activities daily with Owner so Owner can place protective dust and water leakage covers over sensitive equipment and furnishings, shut down HVAC and fire-alarm or detection equipment if needed, and evacuate occupants from below work area.
- b. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below effected areas. Verify that occupants from below work area have been evacuated before proceeding with work over impaired deck areas.

1-06: BURNING OF MATERIALS ON SITE WILL NOT BE PERMITTED.

END OF SECTION

DIVISION 5

SECTION 055133: Wall Mounted Ladders

PART 1: GENERAL

1.01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1.02: Work Included

This section includes labor, materials, equipment and related services necessary to furnish and install factory prefabricated wall mounted ladder with all accessories as necessary for a complete installation as shown on drawings and specified herein.

1.03: Substitutions

For purposes of establishing the type and quality of materials required for work included in this section, manufacturer's names, types, patterns, etc. are used. Equal products of other manufacturers will be considered, provided that requests for substitutions are accompanied by supporting technical literature, samples, and performance data for comparative evaluation 15 days prior to receipt of Bids. Approval will be made by written Addendum.

1-04: Submittals

Submit 6 copies of shop drawings to the Designer for approval showing all materials, dimensions, profiles and fastening and connecting systems.

1-05: Warranty

a) Submit manufacturer's and installer's written warranty agreeing to repair or replace work which exhibits defects in materials or workmanship. Warranty Period: 1 years commencing on date of Certificate of Occupancy.

PART 2 - PRODUCTS

2-01: General

The following manufacturers/products are approved for use, see paragraph 1-03 above for substitution requirements:

1. Cotterman Ladders, Croswell, MI 810.679.4400
2. EGA Products, Brookfield, WI 800.937.3427

2-02: Wall Mounted Ladders

a). Ladder shall be equal in all respects to Cotterman "Series M Fixed Ladder With Walk-Thru Handrails and Safety Cage". Ladder to be fabricated with 2"x 2"x 1/4" steel angle side rails, 3/4" corrugated steel round rungs at 12" centers, and 7 " standoff brackets and ladder guard. Walk-thru brackets to extend 42" above roof surface. Ladder to be one piece welded unit, grey powder coat finish. Unit to meet all applicable OSHA requirements.

PART 3 - EXECUTION

3-01: Manufacturer's Instructions

Union County Public Schools
Roof Replacement New Town Elementary School
Project No. 2401B

- a). Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.
- b). Set bottom of ladder guard 3' above grade.

3-02: Examination

- a). Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.
 - 1. Take field dimensions and examine conditions of substrates, supports, and other conditions under which work is to be performed and notify Contractor, in writing, of circumstances detrimental to proper completion of work. Do not proceed with work until unsatisfactory conditions are corrected.

3-03: Protection

- a). Protection: Protect installed product and finish surfaces from damage during construction.

END OF SECTION

DIVISION 6

SECTION 060100: ROUGH CARPENTRY

PART 1: GENERAL

1-01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1-02: Work Included

This section includes labor, materials, equipment, and related services necessary to furnish and install grounds, nailers, bracing, blocking, sheathing, etc. It also includes provision of temporary closures for doors and glazed openings as required for protection from weather and maintenance of proper temperature and humidity; and nails, screws, bolts, nuts, washers, and other fastening devices necessary for assembly and attachment of wood to wood, or wood to other materials, required to achieve results and effects specified and detailed. Pressure treatment to prevent decay, specified in Section 0630300, is required of all lumber in contact with masonry or concrete, sills within 18 inches of grade, roof and curb blocking and other locations subject to moisture contact.

1-03: Quality Control

Each piece of lumber shall comply with American Softwood Lumber Standard PS 20-70 and with specific grading requirements of Southern Pine Inspection Bureau. Each piece of lumber shall be identified as to grade species by grade mark of recognized agency or organization certified by Board of Review, American Lumber Standards Committee, Washington, D.C.

1-04: Substitutions

For purposes of establishing type and quality of materials used in this section, manufacturers names and brand names are used. Equal products of other manufacturers may be acceptable, provided that requests for substitutions are accompanied by supporting technical literature, samples, drawings and performance data for comparative evaluation 10 days prior to receipt of Bids. Manufacturers approved for use include the following:

Georgia-Pacific Corp., (800) 243-8160.

Koppers Company, Inc., Pittsburgh PA, (800) 556-7737.

Weyerhaeuser Co., Tacoma WA, (206) 924-2345.

PART 2: PRODUCTS

2-01: Framing (minimum grades)

- a) General: All new members to match thickness, profile of adjacent existing material.
- b) Sills, Plates, Caps, Bucks, Blocking - NO. 2
- c) Decking - NO. 2

2.01 Plywood, thickness as indicated on drawings or to match existing, shall bear APA Gradenarks conforming with requirements of U.S. Products Standard PSI for Construction and Industrial Plywood.

2.02: For anchoring existing wood blocking to existing metal studs use anchor equal in all respects to Simpson Strong Tie TB Wood-To-Steel screw (TB1475S) at 12" o.c. (see details)

2.03: For anchoring new 2x wood blocking to existing wood blocking use anchor equal in all respects to Simpson Strong Tie SDWS Timber Screw. Install two (2) 0.219" x 3" screws (SDWS22300DB) at 12" o.c. (see details) for blocking up to 6" in width. Install three (3) 0.219" x 3" screws (SDWS22300DB) at 12" o.c. (see details) for blocking greater than 6" in width.

PART 3: EXECUTION

3-01: General

Rough carpentry items shall be laid out as called for by the drawings, cut and fitted as necessitated by conditions encountered. All work shall be plumbed, leveled, and braced with sufficient nails, spikes, bolts, etc., to ensure rigidity.

3-02: Defective Material

Any piece of wood or other carpentry material defective to prevent it from serving its intended purpose (including but not limited to crooked, warped, bowed, checked, gouged or other defects) within limits of grade specified will be rejected and shall be replaced with an acceptable piece.

3-03: Wood Blocking and Nailers

- 1) Provide wood blocking, stripping, and shimming necessary to maintain lines and to support finishes called for by drawings.
- 2) For anchoring wood flashing cleats to existing masonry use 1/4" x 2" stainless steel expansion anchor, equal to "Lok/bolt" as manufactured by Rawlplug Co., New Rochelle, NY (914) 235-6300.
- 3) Secure wood blocking, nailers, grounds, etc., called for by drawings, specified herein, and by job conditions in place with approved types and sizes of nails, ties, bolts, inserts, etc., spaced so as to provide rigid support. All fasteners in contact with treated lumber shall be either hot-dipped galvanized steel or stainless steel. All fasteners used for aluminum components in contact with treated lumber shall be stainless steel.

END OF SECTION

SECTION 060300: PRESSURE TREATED LUMBER

PART 1: GENERAL

1-01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1-02: Work Included

This section includes treatment of material to prevent decay. Requirements for decay preventative treatment apply to all wood in contact with earth, concrete or masonry, at locations subject to moisture, and as noted on drawings.

PART 2: PRODUCTS

2-01: Decay Treatment

Members to be treated with preservative to prevent decay shall be treated with 0.40 pounds per cubic foot minimum net retention of Alkaline Copper Quarternary (ACQ) as produced by Chemical Specialties, Inc. 200 East Woodlawn Road, Suite 350, Charlotte, NC, or other manufacturer producing and equal product. After treatment, members listed shall be treatment grade-marked for ground contact and shall be air seasoned or kiln dried to a maximum moisture content of 19 percent. They shall be stored at job site under a waterproof and weatherproof covering, and shall be coated with same preservative during construction. See section 06100 for fastener requirements.

PART 3: TREATMENT

Members listed shall be treated at an approved processing plant, and shall be identified with type of treatment and processor's name. Materials to be treated shall be cut to finish sizes and shapes in so far as practicable; unavoidable field cuts shall be heavily brush coated with a concentrated solution of the preservative specified. After treatment, members listed shall be air seasoned or kiln dried to a maximum moisture content of 19 percent.

END OF SECTION

DIVISION 7

SECTION 072419 EXTERIOR INSULATION AND FINISH SYSTEM
PART 1 GENERAL

1.01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1.02: Work Included

This section includes labor, materials, equipment, and related services necessary to furnish and install Exterior Insulation and Finish System repairs work with related accessories and specialties as indicated on drawings and specified herein.

A. Section Includes:

1. This document is to be used in preparing specifications for an Exterior Insulation and Finish System (EIFS) with Moisture Drainage including:
 - a. An integral fluid applied air and water-resistive membrane barrier compatible with the substrate surface and adhesive application of the EIF system.
 - b. Accessory materials required for treating sheathing joints, fasteners, penetrations, rough openings, and material transitions compatible with substrate surfaces and the adhesive application of the EIF system.
 - c. Joint sealants compatible with specified EIFS for use in all exterior envelope joint waterproofing.
 - d. A comprehensive single source limited EIF system warranty inclusive of EIFS, fluid applied air and water-resistive membrane barrier, accessory materials, and sealants.

B. Related Requirements:

1. 07 62 00 Sheet Metal Flashing and Trim
2. 07 90 00 Joint Sealants

1.03: Inspection Before Installation

Areas to be repaired shall be examined by the contractor before beginning work to determine if they are in proper condition to receive plaster repairs. Defects shall be corrected. **Installation of new work shall constitute acceptance of substrate material by Subcontractor.**

1.04 Reference Standards:

1. ASTM Standards:

- | | |
|-----------------|--|
| e. ASTM C 510 | Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants |
| p. ASTM C 1184 | Standard Specification for Elastomeric Joint Sealants |
| v. ASTM C 1397 | Standard Practice for Application of Class PB Exterior Insulation and Finish System (EIFS) and EIFS with Drainage |
| ii. ASTM E 84 | Standard Test Method for Surface Burning Characteristics of Building Materials |
| jj. ASTM E 96 | Standard Test Methods for Water Vapor Transmission of Materials |
| kk. ASTM E 119 | Standard Method for Fire Tests of Building Construction and Materials |
| ll. ASTM E 2098 | Test Method for Determining the Tensile Breaking Strength of Glass Fiber Reinforcing Mesh for use in Class PB Exterior Insulation and Finish Systems (EIFS), after Exposure to Sodium Hydroxide Solution |
| mm. | ASTM E 2134 Test Method for Evaluating the Tensile-Adhesion Performance of Exterior Insulation and Finish Systems (EIFS) |
| nn. ASTM E 2178 | Standard Test Method for Air Permeance of Building Materials |
| oo. ASTM E 2273 | Test Method for Determining the Drainage Efficiency of Exterior Insulation and Finish Systems (EIFS) Clad Wall Assemblies |
| vv. ASTM E 2430 | Standard Specification for Expanded Polystyrene (EPS) Thermal Insulation Boards for use in Exterior Insulation and Finish Systems (EIFS) |
| ww. ASTM E 2485 | Standard Test Method for Freeze-Thaw Resistance of Exterior Insulation and Finish Systems (EIFS) and Water-Resistive Barrier Coatings |

- xx. ASTM E 2486 Standard Test Method for Impact Resistance of Class PB and PI Exterior Insulation and Finish Systems (EIFS)
 - yy. ASTM E 2568 Standard Specification for PB Exterior Insulation and Finish Systems
 - zz. ASTM E 2570 Standard Test Method for Evaluating Water-Resistive Barrier (WRB) Coatings Used Under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage
2. National Fire Protection Association (NFPA) Standards:
- a. NFPA 268 Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Source
 - b. NFPA 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load Bearing Wall Assemblies Containing Combustible Components

1.05 ADMINISTRATIVE REQUIREMENTS

A. Pre-Construction Meetings

The EIFS installer shall coordinate with the General Contractor to schedule, invite and administer a pre-construction meeting including but not limited to the architect of record, consultant(s), EIFS, sheathing board, accessory materials and sealant manufacturer's representatives and the owner to assure required integration of products selected as specified herein and for proper sequencing and installation detailing.

B. Sequencing

1. Coordinate installation of sheathing board and accessory materials, flashing, foundation waterproofing, roofing membrane, windows, doors, and other penetrations of the exterior walls to provide a continuous air and water-resistive membrane barrier.
2. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
3. Install copings and sealants immediately after installation of the Exterior Insulation and Finish System with Moisture Drainage and when EIFS coatings are dry.
4. Attach penetrations through Exterior Insulation and Finish System to structural support and provide water-tight seals at penetrations.

1.06 ACTION SUBMITTALS / INFORMATIONAL SUBMITTALS

- A. Submit product data as required by Section 01 33 00, Administrative Requirements.
- B. Submit shop drawings for panelized EIFS with Moisture Drainage showing wall layout, connections, details, expansion joints, and installation sequence.
- C. Submit two (2) samples of the Exterior Insulation and Finish System with Moisture Drainage for each finish, texture, and color to be used on the project. Use the same tools and techniques proposed for the actual installation. Make the samples of sufficient size to accurately represent each color and texture being utilized on the project.
- D. Submit a current copy of the manufacturer's Trained Contractor Certificate for the EIF system specified. Submit Owner/Architect-requested test results verifying the performance of the Exterior Insulation and Finish System with Moisture Drainage.
- E. Submit a copy of the manufacturer's installation details and application instructions.

1.07 CLOSEOUT SUBMITTALS

- A. Submit a copy of the manufacturer's recommended maintenance and repair manual.
- B. Submit a copy of the Exterior Insulation and Finish System with Moisture Drainage manufacturer's comprehensive single source limited warranty.

1.08 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

- 1. A member in good standing of the EIFS Industry Members Association (EIMA).
- 2. Manufacture Exterior Insulation and Finish System with Moisture Drainage materials at a facility covered by a current ISO 9001:2015 and ISO 14001:2015 certification. Certification of the facility is done by a registrar accredited by the American National Standards Institute, Registrar Accreditation Board (ANSI-RAB).

B. Contractor Qualifications:

- 1. Knowledgeable in the proper installation of the Exterior Insulation and Finish System with Moisture Drainage.
- 2. Possess a current copy of the manufacturer's Trained Contractor Certificate for the EIF system specified.
- 3. Successfully complete a minimum of three (3) projects of similar scope and scale to the specified project.

C. Insulation Board Manufacturer Qualifications:

- 1. Listed by EIFS Manufacturer, and capable of producing the Expanded Polystyrene (EPS) in accordance with the current EIFS Manufacturer's Specification for Insulation Board

C. Panel Fabricator Qualifications:

- 1. Experienced and competent in the fabrication of architectural wall panels.

D. Panel Erector Qualifications:

- 1. Experienced and competent in the installation of architectural wall panel EIF systems.

E. Mock-Up:

- 1. Provide the owner/architect with a mock-up for approval.
 - a. Of suitable size as required to accurately represent the products being installed, as well as each color and texture to be utilized on the project.
 - b. Prepared with the same products, tools, equipment and techniques required for the actual applications. Use finish from the same batch that is being used on the project.
 - c. Available and maintained at the jobsite.

1.07 DELIVERY, STORAGE AND HANDLING

- 1. Deliver all Exterior Insulation and Finish System with Moisture Drainage components and materials to the job site in the original, unopened packages with labels intact.
- 2. Inspect all Exterior Insulation and Finish System with Moisture Drainage components and materials upon arrival for physical damage, freezing or overheating. Do not use questionable materials.
- 3. Store all Exterior Insulation and Finish System with Moisture Drainage components and materials at

the jobsite in a cool, dry location, out of direct sunlight, protected from weather and other sources of damage. Maintain minimum and maximum storage temperature as stated in the product data sheets or specifications for the materials selected.

4. Protect all products from inclement weather and direct sunlight.

1.08 SITE CONDITIONS

A. Ambient Conditions

1. Do not apply wet materials during inclement weather unless appropriate protection is provided. Protect materials from inclement weather until they are completely dry.
2. Verify the minimum air and wall surface temperatures at the time of application as stated in the product data sheets or specifications for the materials selected.
3. Maintain these temperatures with adequate air ventilation and circulation for a minimum of 24 hours (48 hours for specific Specialty Finishes) thereafter, or until the products are completely dry.

1.09 WARRANTY

A. Manufacturers' Limited EIF System Warranty

1. Manufacturer shall offer a limited material defect and labor to repair or replace defective material warranty stating the Products will be free from manufacturing defect and will perform as warranted in the manner specified for the stated term measured from the Date of Project Substantial Completion.
 - a. A pre-construction meeting, including representatives of the Manufacturer, the Applicator, the Owner, and the Consultant (if applicable), shall be required prior to installation of the Products.
 - b. The warranty is available upon written request.
2. The EIF system warranty shall additionally include the following for the term of the warranty or as specifically noted hereunder.
 - a. The EIF system warranty term shall be 10 years
 - b. The EIFS will remain in a watertight condition when the EIFS is used in conjunction with approved Company Joinery and Sealants.
 - c. The EIFS will drain incidental moisture between the air/water-resistive barrier and the insulation board.
 - 1) Remedy includes repair or replacement of any sheathing or framing member that is damaged as a result of the EIF system failing to drain incidental moisture between the secondary weather barrier and the insulation board.
 - d. Finish will be UV fade resistant for 10 years, except for specially produced colors.
 - 1) Specially produced colors will be UV fade resistant for 5 years when high-performance colorants are used to formulate.
 - e. The EIFS shall be eligible to receive a renewal of the original warranty if the Owner satisfactorily completes the specific renovation requirements published by the Manufacturer.

B. Installer Warranty

1. EIF system Installer shall provide a separate minimum 2-year warranty for all workmanship related to the proper installation and drainage performance of the EIFS application.

PART 2 - PRODUCTS

2.01 GENERAL

- A. In order to establish type and quality of materials required for work covered by this section, manufacturer's names and brands are listed. Products of manufacturers other than those named equal in quality and in suitability for the usage intended, will be acceptable provided that requests for substitutions shall be accompanied by supporting technical literature, samples, and performance data for comparative evaluation 5 days prior to receipt

of Bids. All products shall be supplied and approved by the same manufacturer. Basis of design: Dryvit Outsulation® Plus MD System

B. Manufacturers approved for use include:

1. Dryvit Systems, Inc., One Energy Way, West Warwick, RI 02893, 800-556-7752, www.dryvit.com.
2. Tremco, Inc., 3735 Green Road Beachwood, OH 44122, www.tremco.com.

2.02 DESCRIPTION

A. System Description:

1. The Dryvit Outsulation Plus MD System is an Exterior Insulation and Finish System (EIFS) with Moisture Drainage, consisting of:
 - a. An Air and Water-Resistive Membrane Barrier
 - b. Accessory Materials
 - c. Adhesive – installed in vertical ribbons to facilitate egress of incidental moisture
 - d. Expanded Polystyrene (EPS) insulation board
 - e. Base Coat
 - f. Reinforcing Mesh
 - g. Finish Coat
 - h. Joint Sealants as specified herein below

B. Materials:

1. Fluid-Applied Air and Water-Resistive Barrier:

a. Permeable:

- 1) Dryvit Backstop® NT: A standard film vapor permeable, flexible, polymer-based non-cementitious water-resistive and air barrier coating available in Texture and Smooth versions. Backstop NT can be installed in ambient air and substrate surface temperatures of 40 °F (5 °C) and rising for a minimum 24 hours and exposed for up to 6 months during the construction process. Backstop NT Texture is additionally used for treatment of sheathing board joints, inside / outside corners and spotting of fastener heads.

2. Accessory Materials for Fluid Applied Air and Water-Resistive Barrier (AWRB):

- a. Provide compatible accessory materials as required by project conditions for substrate, rough opening and penetration preparation, bridge expansion joints in substrate, material transitions and flashing integration to produce a complete air and water-resistant assembly.
 - 1) Dryvit Grid Tape™: An open weave fiberglass mesh tape with pressure sensitive adhesive. Used in combination with Backstop NT or Backstop NTX Texture for treating sheathing board joints and inside / outside corners and preparing rough openings and penetrations. Backstop NT or Backstop NTX Texture is used alone for spotting fastener heads.
 - 2) Dryvit AquaFlash®: Fluid-applied, water-based polymer transition membrane. Used in preparing rough openings and penetrations, bridging expansion joints in substrate, material transitions and flashing integration. AquaFlash can be installed in ambient air and substrate surface temperatures of 40 °F (5 °C) and rising for 24 hours.
 - i. Dryvit AquaFlash Mesh and Corners: Polyester reinforcing mesh for use with AquaFlash.
 - 3) Dryvit Backstop Flash and Fill: A flexible, waterproof, low temperature gun applied material. Used in substrate preparation, treating sheathing board joints, inside/outside corners and fastener heads, preparing rough openings and penetrations, bridging expansion joints in substrate material transitions and flashing integration. Backstop Flash and Fill can be installed in ambient air and substrate surface temperatures of 32 °F (0 °C) and rising for 24 hours.
 - 4) Tremco Dymonic 100: A high-performance, high-movement, single-component, medium-modulus, low-VOC, UV-stable, non-sag, gun applied polyurethane sealant. Used in substrate preparation, treating sheathing board joints and inside/outside corners and fastener heads,

preparing rough openings and penetrations, bridging expansion joints in substrate, material transitions and flashing integration. Dymonic 100 can be installed in ambient air and substrate surface temperatures of 40 °F (5 °C) and rising. Where Dymonic 100 must be applied in temperatures below 40 °F, (5 °C), please refer to the Tremco Technical Bulletin for Applying Sealants in Cold Conditions (No. S-08-44 rev 1) that can be found at www.tremcosealants.com.

- 5) Tremco ExoAir 110AT: A 22-mil composite impermeable membrane that is comprised of 16 mils of butyl and 6 mils of HDPP facer. Used in limited applications as a membrane flashing that will not interfere with the adhesive application of EIFS.

3. Drainage Components:

- a. Drainage Track UV treated PVC "J" channel perforated with weep holes, complying with ASTM D 1784 and ASTM C 1063. **Acceptable manufacturers of Drainage Track:**
 - 1) Starter Trac STWP – without drip edge by Plastic Components, Inc.
 - 2) Starter Trac STDE – with drip edge by Plastic Components, Inc.
 - 3) Universal Starter Track by Wind-lock Corporation
 - 4) Sloped Starter Strip with Drip by Vinyl Corp.
- b. Dryvit AP Adhesive™ urethane-based adhesive used to attach Drainage Track and Dryvit Drainage Strip to the sheathing.

4. Adhesives:

- a. Liquid polymer-based adhesive field mixed with Portland cement.
 - 1) Dryvit Primus®
 - 2) Dryvit Genesis®
- b. Ready mixed dry blend cementitious, copolymer-based adhesive field mixed with water.
 - 1) Dryvit Primus® DM
 - 2) Dryvit Genesis® DM
 - 3) Dryvit Genesis® DMS
 - 4) Rapidry DM™ 35-50
 - 5) Rapidry DM™ 50-75

5. Insulation Board:

- a. Expanded Polystyrene; minimum thickness 25 mm (1 in); meeting Dryvit Specification [DS131](#) and ASTM E 2430.

6. Pre-Coated Insulation Starter Boards, Corners and Shapes:

- a. Machine Coated Starter Boards, Corners and Shapes: Shall be produced with materials approved by Dryvit Systems, Inc. and be supplied by a fabricator approved by Dryvit Systems, Inc.
- b. Non-Machine Coated Starter Boards, Corners and Shapes: Shall be produced with materials approved by Dryvit Systems, Inc.

7. Base Coat:

- a. Liquid polymer-based base coat field mixed with Portland cement.
 - 1) Dryvit Primus
 - 2) Dryvit Genesis
 - 3) Dryvit Dryflex
- b. Ready mixed dry blend cementitious, copolymer-based base coat field mixed with water.
 - 1) Dryvit Primus DM
 - 2) Dryvit Genesis DM
 - 3) Dryvit Genesis DMS
 - 4) Rapidry DM 35-50
 - 5) Rapidry DM 50-75
 - 6) Dryvit NCB – Non-cementitious

8. Reinforcing Mesh:

- a. Open-weave, glass fiber fabric treated for compatibility with other EIF system materials.
- b. Provide for ultra high impact mesh assembly including **[Panzer 15 mesh] [Panzer 20 mesh]** for all EIFS clad wall areas within 8'-0" of grade and where additionally indicated on contract drawings.

Reinforcing Mesh ¹ /Weight oz/yd ² (g/m ²)	Minimum Tensile Strengths	EIMA Impact Classification	EIMA Impact Range In-lbs (Joules)		Impact Test Results In-lbs (Joules)	
Intermediate™ - 12 (407)	300 lbs/in (54 g/cm)	High	90-150	(10-17)	108	(12)
Panzer® 15 ¹ - 15 (509)	400 lbs/in (71 g/cm)	Ultra High	>150	(>17)	162	(18)
Panzer 20 ¹ - 20.5 (695)	550 lbs/in (98 g/cm)	Ultra High	>150	(>17)	352	(40)
Detail Mesh® Short Rolls - 4.3 (146)	150 lbs/in (27 g/cm)	n/a	n/a	n/a	n/a	n/a
Corner Mesh™ - 7.2 (244)	274 lbs/in (49 g/cm)	n/a	n/a	n/a	n/a	n/a

* It shall be colored blue and bear the Dryvit logo for product identification
1. Shall be used in conjunction with Standard Mesh (recommended for areas exposed to high traffic)

9. Finish:

- a. Contractor to provide 2'x2' sample of proposed finish that matches the adjacent EFIS surfaces on the remainder of the building.
- b. Hydrophobic (HDP™) Finishes: 100% acrylic coating with integral color and texture and formulated with hydrophobic properties:
 - 1) Available textures:
 - a) Quarzputz® HDP
 - b) Sandblast® HDP
 - c) Sandpebble® HDP
 - d) Sandpebble® Fine HDP
 - e) Limestone™ HDP

10. Coatings, Primers, and Sealants:

- a. HDP Water-Repellent Coating

C. Joint Sealants:

1. Silicone Sealant:

- a. Tremco Spectrem 1: An ultra low modulus, high-performance, one-part, moisture-curing silicone joint sealant with physical properties making it an ideal sealant for sealing dynamic joints.
- b. Tremco Spectrem 3: A general-purpose, low-modulus, high performance, one-part, neutral-cure, non-staining, low dirt pickup, construction-grade silicone sealant.
- c. Tremco Spectrem 4-TS: A multi-component, neutral-curing, non-staining, low dirt pick up, low-modulus silicone sealant specially formulated for use in dynamically moving building joints. Spectrem 4-TS offers color flexibility with the opportunity to tint the material on site.
 - a. Coordination for custom sealant colors is required.
- d. Where deemed necessary, use TREMPprime Silicone Porous Primer.
- e. See related specification section or consult with Tremco, Inc. for more information.

2. Polyurethane Sealant:

- a. Tremco Dymonic FC: A one component hybrid polyurethane sealant. Where deemed necessary, use TREMPprime Silicone Porous Primer for porous surfaces and TREMPprime Silicone Metal Primer for metals or plastics. Coordinate for primer use as indicated.

D. Jobsite-Mixed Materials:

1. Portland cement: verify is Type I or II, meeting ASTM C 150, white or gray in color, fresh and free of lumps.
2. Water: verify is clean and free of foreign matter.

E. Reference Documentation for Outsulation Plus MD System:

1. Data Sheet – DS929
2. Details – DS944
3. Application Instructions – DS934

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:

1. Verify access to electric power, clean water and a clean work area at the location where the Dryvit materials are to be applied.
2. Verify the deflection of the substrate does not exceed 1/240 times the span. Verify substrate is flat within 1/4 in (6.4 mm) in a 4 ft (1.2 m) radius.
3. Verify substrate is sound, dry, connections are tight; has no surface voids, projections, or other conditions that may interfere with the Exterior Insulation and Finish System with moisture drainage installation or performance.
4. Verify the slope of inclined surfaces are not less than 6:12 (27 °) where the length of the slope does not exceed 12 in (305 mm) or 3:12 (14 °) where the length of the slope does not exceed 4 in (102 mm).
5. Verify metal roof flashings have been installed in accordance with Sheet Metal and Air Conditioning Contractors National Association (SMACNA) standards.
6. Verify all rough openings are flashed in accordance with the Exterior Insulation and Finish System with Moisture Drainage manufacturer's installation details, or as otherwise necessary to prevent water penetration. Verify chimneys, balconies and decks have been properly flashed as necessary to prevent water penetration.
7. Verify windows and doors are installed and flashed per manufacturer's requirements and installation details.
8. Notify general contractor of all discrepancies prior to the installation of the Exterior Insulation and Finish System with moisture drainage.
9. Verify that expansion joints are installed:
 - a. Where expansion joints occur in the substrate system.
 - b. Where building expansion joints occur.
 - c. At floor lines in wood frame construction.
 - d. At floor lines of non-wood framed buildings where significant movement is expected.
 - e. Where the Exterior Insulation and Finish System with moisture drainage abuts dissimilar materials.
 - f. Where the substrate type changes.
 - g. Where prefabricated panels abut one another.
 - h. In continuous elevations at intervals not exceeding 75 ft (23 m).
 - i. Where significant structural movement occurs, such as changes in roof line, building shape or structural system.
10. Vapor Retarders: The use and location of vapor retarders within a wall assembly is the responsibility of the project designer and shall comply with local building code requirements. The type and location shall be noted on the project drawings and specifications. Vapor retarders may be inappropriate in certain climates and can result in condensation within the wall assembly.

3.02 PREPARATION

- A. Protect the Exterior Insulation and Finish System with Moisture Drainage materials by permanent or temporary means from inclement weather and other sources of damage prior to, during, and following

application until completely dry.

- B. Protect adjoining work and property during installation of the Exterior Insulation and Finish System with Moisture Drainage.
- C. Prepare the substrate to be free of foreign materials, such as oil, dust, dirt, form-release agents, efflorescence, paint, wax, water repellants, moisture, frost, and any other condition that may inhibit adhesion.

3.03 INSTALLATION

- A. Install the EIF system in accordance with ASTM C1397 and the Dryvit Outsulation Plus MD System Application Instructions, DS934. Apply base coat sufficient to fully embed the reinforcing mesh. The recommended method is to apply the base coat in two (2) passes.
- B. Apply sealant to base coat surface prepared in accordance with DS153.
- C. Install high impact reinforcing mesh as specified at ground level, high traffic areas and other areas exposed to or susceptible to impact damage as designated on contract drawings.
- D. Install Machine Coated Dryvit EPS Shapes in accordance with Dryvit Publication DS854.

3.04 SITE QUALITY CONTROL

- A. Exterior Insulation and Finish System with Moisture Drainage manufacturer assumes no responsibility for on-site inspections or application of its products.
- B. EIFS sub-contractor to certify in writing the quality of work performed relative to the substrate system, details, installation procedures, and as to the specific products used.
- C. EPS supplier, if requested, to certify in writing that the EPS meets the Exterior Insulation and Finish System with Moisture Drainage manufacturer's specifications.
- D. The sealant contractor, if requested, to certify in writing that the sealant application is in accordance with the sealant manufacturer's and the Exterior Insulation and Finish System with Moisture Drainage manufacturer's recommendations.

3.05 CLEANING

- A. Remove all excess Exterior Insulation and Finish System materials from the job site by the contractor in accordance with contract provisions and as required by applicable law.
- B. Leave all surrounding areas, where the Exterior Insulation and Finish System with Moisture Drainage has been applied, free of debris and foreign substances resulting from the EIFS sub-contractor's work.

**SECTION 07 52 16: STYRENE-BUTADIENE-STYRENE (SBS) MODIFIED BITUMINOUS
MEMBRANE ROOFING**

PART 1: CONDITIONS

1.01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1.02: Work Included:

A. This section includes labor, materials, equipment, and related services required to furnish and install a heat welded Modified Bitumen membrane roofing system and flashing over cover board and rigid insulation system with related accessories and specialties shown on drawings and specified herein. Include tapered crickets as indicated on drawings and specified herein. Pre-finished metal is specified in Section 076200.

B. Base Bid Scope includes but is not limited to:

1. Preparation of existing, roof deck, and all flashing substrates.
2. Adhered Air/Vapor Barrier
3. Mechanically fastened rigid insulation, 2 layers minimum.
4. Adhered cover Board
5. SBS-modified bitumen base ply heat-welded s
6. SBS-modified bitumen cap sheet heat-welded.
- a. Granule surfacing: Roof granules designed with photo-catalyst coating that absorbs nitrogen oxide gasses and washed away by rain water.
7. SBS-modified bitumen membrane flashings.
8. Liquid-applied, reinforced flashings.
9. Refer to related Sections for Insulation, Coverboard and Roof Edge Systems
10. All related materials and labor required to complete specified roofing necessary to receive specified manufacturer's warranty.

1.03 Definitions:

A. ASTM D 1079-Definitions of Term Relating to Roofing and Waterproofing.

B. The National Roofing Contractors Association (NRCA) Roofing and Waterproofing Manual, Fifth Edition Glossary.

1.04 References:

A. AMERICAN SOCIETY OF CIVIL ENGINEERS - Reference Document ASCE 7, Minimum Design Loads for Buildings and Other Structures.

B. AMERICAN STANDARD OF TESTING METHODS (ASTM):

1. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants
2. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Damp proofing, and Waterproofing.
3. ASTM D 3746 - Standard Test Method for Impact Resistance of Bituminous Roofing System.
4. ASTM D 4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
5. ASTM D 4601 - Standard Specification for Asphalt-Coated Glass Fiber Base Sheet Used in Roofing.

- 6.ASTM D 5147 - Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material.
- 7.ASTM D 5849 - Standard Test Method for Evaluating Resistance of Modified Bituminous Roofing Membrane to Cyclic Fatigue (Joint Displacement)
8. ASTM D 6162 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.
- 9.ASTM D 6163 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.
- 10.ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.
- 11.ASTM E 108 - Standard Test Methods for Fire Tests of Roof Coverings.
- 12.ASTM E 1980 - Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.

C.AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI):

- 1.ANSI/SPRI/FM 4435/ES-1 Wind Design Standard for Edge System Used with Low Slope Roofing System.
- 2.ANSI/SPRI FX-1, Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners.
- 3.ANSI/FM 4474- American National Standard for Evaluating the Simulated Wind Resistance of Roof Assemblies Using Static Positive and/or Negative Differential Pressures.

D.CANADIAN GENERAL STANDARDS BOARD (CGSB):

- 1.CGSB 37-GP 56M- Standard for: Modified Bituminous, Prefabricated, and Reinforced for Roofing.

E.COOL ROOF RATING COUNCIL (CRRC)

F.EPA ENERGY STAR

G.FACTORY MUTUAL (FM):

- 1.FM 4450 - Approval Standard - Class I Insulated Steel Roof Decks.
- 2.FM 4470 - Approval Standard - Class I Roof Covers.

H.INTERNATIONAL CODES COUNCIL (ICC):

- 3.20XX International Building Code (IBC)

I.NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)

- 4.UL 790 Standard Test Methods for Fire Tests of Roof Coverings.
- 5.UL 1256 - Fire Test of Roof Deck Constructions.

1.05 Submittals:

- A Samples of each primary component to be used in the roof system and the manufacturer's current literature for each component.
- B Sample warranty from the manufacturer and contractor.
- C. Written approval by the insulation manufacturer (as applicable) for use and performance of the product in the proposed system. Sample copy of manufacturer's warranty.
- D. Dimensioned shop drawings which shall include, roof plan, and all details.
- E. Technical acceptance from Manufacturer.

- F. Certifications by manufacturers of roofing and insulating materials that all materials supplied comply with all requirements of the identified ASTM and other industry standards or practices.
- G. Certification from the Contractor that the system specified meets all identified code and insurance requirements as required by the Specification
- H. **Manufacturer's fastener pull out tests report and recommended fastener/pattern to meet requirements herein.**

1.06 Quality Assurance

A.MANUFACTURER QUALIFICATIONS:

- 1.Manufacturer shall have 20 years of manufacturing experience.
2. The manufacturer shall inspect the work at a minimum of 2 times (50% and completion) and provide a written report to the Owner/Architect after each inspection. **Upon completion of the installation and the delivery to manufacturer by the Contractor of certification that all work has been done in strict accordance with the contract specifications and manufacturer's requirements.**

B.CONTRACTOR QUALIFICATIONS:

- 1.Contractor shall be authorized by the manufacturer to install specified materials prior to the bidding period through satisfactory project completion.
- 2.Applicators shall have completed projects of similar scope using same or similar materials specified.
- 3.Contractor shall provide full time, on-site superintendent or foreman experienced with the specified roofing from beginning through satisfactory project completion.
- 4.Applicators shall be skilled in the application methods for all materials.
- 5.Contractor shall maintain a daily record, on-site, documenting material installation and related project conditions.
- 6.Contractor shall maintain a copy of all submittal documents, on-site, available at all times for reference.

1.07 Product Delivery, Storage, Handling

- A. Refer to each product data sheet or other published literature for specific requirements.
- B. Deliver materials and store them in their unopened, original packaging, bearing the manufacturer's name, related standards, and any other specification or reference accepted as standard.
- C. Protect and store materials in a dry, well-vented, and weatherproof location. Only materials to be used the same day shall be removed from this location. During cold weather, store materials in a heated location, removed only as needed for immediate use.
- D. When materials are to be stored outdoors, store away from standing water, stacked on raised pallets or dunnage, at least 4 in or more above ground level. Carefully cover storage with "breathable" tarpaulins to protect materials from precipitation and to prevent exposure to condensation.
- E. Carefully store roof membrane materials delivered in rolls on-end with selvage edges up. Store and protect roll storage to prevent damage.
- F. Properly dispose of all product wrappers, pallets, cardboard tubes, scrap, waste, and debris. All damaged materials shall be removed from job site and replaced with new, suitable materials.
- G. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
- H. All materials which are determined to be damaged by the Owner's Representative or Manufacturer are to be removed from the job site and replaced at no cost to the Owner.

1.08 Job Conditions:

A.SAFETY:

- 1.The contractor shall be responsible for complying with all project-related safety and environmental requirements.
- 2.Heat-welding shall include heating the specified membrane ply using propane roof torches or electric hot-air welding equipment. The contractor shall determine when and where conditions are appropriate to utilize heat-welding equipment.
- 3.Refer to NRCA CERTA recommendations, local codes and building owner's requirements for hot work operations.
- 4.,The contractor shall review project conditions and determine when and where conditions are appropriate to utilize the specified liquid-applied, or semi-solid roofing materials. When conditions are determined by the contractor to be unsafe or undesirable to proceed, measures shall be taken to prevent or eliminate the unsafe or undesirable exposures and conditions, or equivalent approved materials and methods shall be utilized to accommodate requirements and conditions.
- 5.The contractor shall refer to product Safety Data Sheets (SDS) for health, safety, and environment related hazards, and take all necessary measures and precautions to comply with exposure requirements.

B.ENVIRONMENTAL CONDITIONS:

- 1Monitor substrate temperature and material temperature, as well as all environmental conditions such as ambient temperature, moisture, sun, cloud cover, wind, humidity, and shade. Ensure conditions are satisfactory to begin work and ensure conditions remain satisfactory during the installation of specified materials. Materials and methods shall be adjusted as necessary to accommodate varying project conditions. Materials shall not be installed when conditions are unacceptable to achieve the specified results.
- 2Precipitation and dew point: Monitor weather to ensure the project environment is dry before, and will remain dry, during the application of roofing materials. Ensure all roofing materials and substrates remain above the dew point temperature as required to prevent condensation and maintain dry conditions.
- 3.Heat-Welding Application: Take all necessary precautions and measures to monitor conditions to ensure all environmental conditions are safe to use roof torches and hot-air welding equipment. Combustibles, flammable liquids and solvent vapors that represent a hazard shall be eliminated. Flammable primers and cleaners shall be fully dry before proceeding with heat-welding operations. Prevent or protect wood, paper, plastics and other such combustible materials from direct exposure to open flames from roof torches. Refer to NRCA CERTA recommendations.

1.09 Performance Requirements:

A.WIND UPLIFT RESISTANCE:

1. Performance testing shall be in accordance with ANSI/FM 4474, FM 4450, FM 4470, UL 580 or U1897.
2. Roof System Design Pressures: Calculated in accordance with ASCE 7, or applicable standard, for the specified roof system attachment requirements.
- 3.Design Pressures: Pressures as listed on drawings.

B. FIRE CLASSIFICATION:

10 Performance testing: Testing shall be in accordance with UL 790, ASTM E108, FM 4450 or FM 4470 Meets requirements of UL Class A or FM Class A.

1.11 Warranty

A. Manufacturer's No Dollar Limit (NDL) Warranty. The manufacturer shall provide the owner with the manufacturer's warranty providing labor and materials for 20 years from the date the warranty is issued.

B. The contractor shall guarantee the workmanship and shall provide the owner with the contractor's warranty covering workmanship for a period of 2 years from completion date.

PART 2: PRODUCTS

2.01 Manufacturers:

A. All SBS modified bitumen membrane and flashing materials shall be manufactured by a single supplier with 20 years or more manufacturing history in the US.

1. Comply with the Manufacturer's requirements as necessary to provide the specified warranty.

B. Basis of Design: SOPREMA, located at: 310 Quadral Dr.; Wadsworth, OH 44281; Tel: 800-356-3521; Tel: 330-334-0066; Website: www.soprema.us.

C. Additional Pre-Approved Manufacturers:

1. Johns Manville
2. Siplast

D. For purposes of establishing type and quality of materials required for work included in this section, manufacturer's names and brand names are listed below. Equal products of other manufacturers will be acceptable, provided that the request for substitutions are accompanied by supporting technical literature, samples, drawings and performance data for comparative evaluation 10 days prior to receipt of bids.

2.02 Cover Board:

Soprema Sopra Board 1/4": (Johns Manville 1/4" JM Duraboard, Siplast 1/4" Siplast Asphaltic Cover Board,

1. Thickness: 1/4 inches
2. Weight: 1.9 lbs/sq ft
3. Puncture resistance ASTM E154 100 lbf
4. Water absorption % ASTM D994 <1.0 %
5. Compressive strength ASTM C472 1320 psi
6. Hardness min 20 lbf ASTM C1278 Pass

2.03 Base Sheet:

1. A. SOPREMA SOPRALENE FLAM 180: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

2.
 1. Thickness: 118 mils (3.0 mm)
 2. Width: 39.4 in (1 m)
 3. Length: 32.8 ft (10 m)
 4. Roll weight: 81 lb (36.7 kg)
 5. Net mass per unit area, lb/100 sq ft (g/sq m): 75 lb (3662 g)
 6. Peak load @ 0F (-18C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)
 7. Elongation at peak load @ 0F (-18C), lbf/in (kN/m): MD 35%, XMD 40%
 8. Peak load @ 73.4F (23C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)

9. Elongation at peak load @ 73.4F (23C), lbf/in (kN/m): MD 55%, XMD 60%
10. Ultimate Elongation @ 73.4F (23C), lbf/in (kN/m): MD 65%, XMD 80%
11. Tear Strength @ 73.4F (23C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)
12. Low temperature flexibility, F (C): MD/XMD: -15F (-26C)
13. Dimensional stability, %: MD/XMD: Less than 0.5%
14. Compound stability, F (C): MD/XMD: 240F (116C)

2.04 Base Flashing Ply:

A.SOPREMA SOPRALENE FLAM 180: SBS-modified bitumen membrane with plastic burn-off film on top and bottom surfaces. Non-woven polyester reinforcement. Meets or exceeds ASTM D6164, Type I, Grade S, per ASTM D5147 test methods:

1. Thickness: 118 mils (3.0 mm)
2. Width: 39.4 in (1 m)
3. Length: 32.8 ft (10 m)
4. Roll weight: 81 lb (36.7 kg)
5. Net mass per unit area, lb/100 sq ft (g/sq m): 75 lb (3662 g)
6. Peak load @ 0F (-18C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)
7. Elongation at peak load @ 0F (-18C), lbf/in (kN/m): MD 35%, XMD 40%
8. Peak load @ 73.4F (23C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)
9. Elongation at peak load @ 73.4F (23C), lbf/in (kN/m): MD 55%, XMD 60%
10. Ultimate Elongation @ 73.4F (23C), lbf/in (kN/m): MD 65%, XMD 80%
11. Tear Strength @ 73.4F (23C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)
12. Low temperature flexibility, F (C): MD/XMD: -15F (-26C)
13. Dimensional stability, %: MD/XMD: Less than 0.5%
14. Compound stability, F (C): MD/XMD: 240F (116C)

2.05 Cap Flasing Ply:

A.SOPREMA ELASTOPHENE FLAM LS FR GR SG: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Glass fiber reinforced. UL Class A for low-slope (LS) roof applications, 1/2:12 or less. Meets or exceeds ASTM D6163, Type I, Grade G, per ASTM D5147 test methods:

1. Thickness: 138 mils (3.5 mm)
2. Width: 39.4 in (1 m)
3. Length: 32.8 ft (10 m)
4. Roll weight: 106 lb (48.1 kg)
5. Net mass per unit area, lb/100 sq ft (g/sq m): 98.5 lb (4808 g)
6. Peak load @ 0F (-18C), lbf/in (kN/m): MD 110 lbf/in (19.3 kN/m), XMD 95 lbf/in (16.6 kN/m)
7. Elongation at peak load @ 0F (-18C), lbf/in (kN/m): MD 4%, XMD 4%
8. Peak load @ 73.4F (23C), lbf/in (kN/m): MD 50 lbf/in (8.8 kN/m), XMD 40 lbf/in (7.0 kN/m)
9. Elongation at peak load @ 73.4F (23C), lbf/in (kN/m): MD 5%, XMD 4%
10. Ultimate Elongation @ 73.4F (23C), lbf/in (kN/m): MD 50%, XMD 50%
11. Tear Strength @ 73.4F (23C), lbf (N): MD 60 lbf (267N), XMD 60 lbf (267N)
12. Low temperature flexibility, F (C): MD/XMD: -15F (-26C)
13. Dimensional stability, %: MD/XMD: Less than 0.1%
14. Compound stability, F (C): MD/XMD: 250F (120C)
15. Granule Surfacing: SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRRC).

2.06 Flashing Cap Sheet:

A.SOPREMA SOPRALENE FLAM 180 FR GR SG: SBS-modified bitumen membrane Cap Sheet with a burn-off film bottom surface and mineral granule top surface. Non-woven polyester reinforced. UL Class A for specified roof slope requirements. Meets or exceeds ASTM D6164, Type I, Grade G

1. Thickness: 157 mils (4.0 mm)
2. Width: 39.4 in (1 m)
3. Length: 32.8 ft (10 m)
4. Roll weight: 118 lb (53.5 kg)
5. Net mass per unit area, lb/100 sq ft (g/sq m): 110 lb (5371 g)
6. Peak load @ 0F (-18C), lbf/in (kN/m): MD 115 lbf/in (20.1 kN/m), XMD 90 lbf/in (15.8 kN/m)
7. Elongation at peak load @ 0F (-18C), lbf/in (kN/m): MD 35%, XMD 40%
8. Peak load @ 73.4F (23C), lbf/in (kN/m): MD 85 lbf/in (14.9 kN/m), XMD 65 lbf/in (11.4 kN/m)
9. Elongation at peak load @ 73.4F (23C), lbf/in (kN/m): MD 55%, XMD 60%
10. Ultimate Elongation @ 73.4F (23C), lbf/in (kN/m): MD 65%, XMD 80%
11. Tear Strength @ 73.4F (23C), lbf (N): MD 125 lbf (556 N), XMD 85 lbf (378 N)
12. Low temperature flexibility, F (C): MD/XMD: -15F (-26C)
13. Dimensional stability, %: MD/XMD: Less than 0.5%
14. Compound stability, F (C): MD/XMD: 240F (116C)
15. Granule Surfacing: SOPREMA SG GRANULE: Highly reflective, bright white mineral granule surfacing, listed by the Cool Roof Rating Council (CRRC).

2.07 Accessories:

A.SOPREMA ELASTOCOL 500 Primer: Asphalt cut-back primer. Primer for the preparation of membrane substrates for asphalt, heat-welded, hot asphalt and COLPLY ADHESIVE, solvent-based, cold adhesive-applied and cement applications.

- 1.Meets or exceeds ASTM D41
- 2.VOC content: 350 g/L or less.

B.SOPREMA COLPLY FLASHING CEMENT: SBS-modified bitumen membrane flashing cement for use with sanded base ply flashing and granule-surfaced Cap Sheet flashing.

- 1.VOC Content: 250 g/L or less.
- 2.Meets or exceeds ASTM D4586

C.SOPREMA SOPRAMASTIC: SBS Mastic. Fiber-reinforced, roofing cement, packaged in 5 gallon pails. General purpose roofing cement for low-slope roofing used for sealing membrane T-joints and membrane edges along terminations, transitions and at roof penetrations.

- 1.VOC Content: 190 g/L or less.
2. Meets or exceeds ASTM D4586, Type I, Class II.

D. SOPREMA SOPRAMASTIC SP1: General purpose, paintable, gun-grade, elastomeric, polyether moisture curing sealant for sealing SBS membrane terminations, Kynar 500 PVDF, horizontal and vertical construction joints.

- 1.VOC Content: 20 g/L or less.
- 2.Meets or exceeds ASTM C920, Type S, Grade NS, Class 50
- 3.Standard color

E. MEMBRANE FASTENERS AND PLATES

- 1.SOPREMA #14 MP Fastener: Membrane base ply fastener.
- 2.SOPRAPHIX 3" Insulation Plates

F. SOPREMA ALSAN FLASHING: Single-component, polyurethane-bitumen resin with polyester reinforcing fleece fabric fully embedded into the resin to form roof system flashings.

1. VOC Content: 250 g/L.
2. SOPREMA ALSAN FLASHING: Liquid resin, Meets or exceeds ASTM C836.
3. SOPREMA ALSAN POLYFLEECE: Non-woven polyester reinforcement.
4. Surfacing: SOPREMA ALSAN FLASHING with mineral granules broadcast into wet SOPREMA ALSAN FLASHING to match adjacent SBS-modified bitumen cap sheet.

G. SOPREMA Granules: No. 11, mineral coated colored granules, color to match cap sheet, supplied by membrane cap sheet manufacturer.

H. SOPREMA SOPRAJOINT EXPANSION JOINT: Low-profile, polyester knit-reinforced, SBS-modified bitumen expansion joint membrane. Top surface consists of an aluminum-clad bond-breaker, with plastic burn-off film on the bottom surface for torch or hot air welding.

1. Thickness: 160 mils (4.0 mm)
2. Width: 18 in (457 mm)
3. Roll Length: 32.8 ft (10 m)
4. Expansion joint, maximum unsupported span: 2 in (51 mm)
5. Expansion joint, maximum displacement: 5/8 in (16 mm)

I. SOPREMA SOPRAVAP'R : Self-adhered air/barrier/vaporbarrier.

1. Thickness: 31 mils
2. Width: 45 inches
3. Roll Length: 134 ft.
4. Top Surfacing: Tri-laminate woven polyethylene
5. Back Surfacing: Self-adhesive with release film
6. Water vapor permeance: <0.03 perm
7. Air permeability: <0.002 L/s*m²

I. SOPREMA SOPRAWALK: Polyester reinforced SBS modified bitumen walkway protection with a granule surface and sanded underside.

1. Thickness: 200 mils (5.0 mm)
2. Width: 39.4 in (1 m)
3. Roll Length: 26 ft (7.9 m)
4. Granule Surfacing:
 5. Color: grey

2.08 Insulation:

Insulation to be equal in all respects to Soprema "Sopra-Iso" with properties as listed below. Insulation to be installed in a minimum of (2) layers, tapered and flat stock with thicknesses as listed on drawings. Minimum R value of completed system = R 30

A. Field at sloped structure to be two (2) layers of 2.6" flat stock insult as indicated on drawings

B. Provide 1/2" per foot tapered crickets and saddles as listed on drawings.

C. Tapered insulation system at level structure to be sloped 1/4" per foot. Thicknesses as indicated on drawings.

D. Insulation must certified as meeting requirements of UL 1256.

1. Compressive Strength	20 psi (grade 2)	ASTM D1621
2. Dimensional Stability	<2 %	ASTM D2126
3. Vapor Transmission	<1.5 perm	ASTM E96
4. Water Absorption	<1.5 %	ASTM C209
5. Flame Spread	<75	ASTM E84
6. Smoke Developed	<450	ASTM E84
7. Service Temp	-40 - 250	

PART 3: EXECUTION

3.01 Examination:

- A. Examination includes visual observations, qualitative analysis, and quantitative testing measures as necessary to ensure conditions remain satisfactory throughout the project.
- B. The contractor shall examine all roofing substrates including, but not limited to: insulation materials, roof decks, walls, curbs, rooftop equipment, fixtures, and wood blocking.
- C. The applicator shall not begin installation until conditions have been properly examined and determined to be clean, dry and, otherwise satisfactory to receive specified roofing materials. Beginning installation shall constitute acceptance of the deck by the Contractor.
- D. During the application of specified materials, the applicator shall continue to examine all project conditions to ensure conditions remain satisfactory to complete the specified roofing system.

3.02 Preparation:

- A. Before commencing work each day, the contractor shall prepare all roofing substrates to ensure conditions are satisfactory to proceed with the installation of specified roofing materials. Preparation of substrates includes, but is not limited to, substrate repairs, securing of substrates, eliminating all incompatible materials, and cleaning.
- B. Where conditions are found to be unsatisfactory, work shall not begin until conditions are made satisfactory to begin work. Commencing of work shall indicate contractor's acceptance of conditions.

3.03 Primer Application:

- A. Examine all substrates, and conduct adhesion peel tests as necessary, to ensure satisfactory adhesion is achieved.
- B. Apply the appropriate specified primer to dry, compatible substrates as required to enhance adhesion of new specified roofing materials.
- C. Apply primer using brush, roller, or sprayer at the rate published on the product data sheet. Lightly prime for uniform coverage, do not apply heavy or thick coats of primer.
- D. Asphalt Primer: Apply SOPREMA ELASTOCOL 500 primer to dry compatible masonry, metal, wood and other required substrates before applying asphalt and heat-welded membrane plies. Primer is optional for solvent based solvent-based SBS adhesives and cements. Refer to product data sheets.
- E. Project conditions vary throughout the day. Monitor changing conditions, monitor the drying time of primers, and monitor the adhesion of the membrane plies. Adjust primer and membrane application methods as necessary to achieve the desired results.

3.04 Heat Welding:

- A. The Contractor is responsible for project safety. Where conditions are deemed unsafe to use open flames, manufacturer's alternate membrane application methods shall be used to install SBS modified bitumen membrane and flashings. Acceptable alternate installation methods include hot asphalt, cold adhesive-applied, self-adhered membranes and mechanically fastened plies. Hot-air welding

equipment may be used in lieu of roof torches to seal membrane side and end laps where heat welding the laps is necessary. Refer to NRCA CERTA, local codes and building owner's requirements for hot work operations.

B. Single or multi-nozzle, hand-held propane roof torches shall be used to install heat-welded membrane and flashing plies. Multi-nozzle carts (dragon wagons) may also be utilized to install membrane plies. Seven (7) nozzle carts are recommended for more uniform heat application in lieu of five (5) nozzle carts.

3.05 Flashing Cement Application:

A. The ambient temperature shall be above 50F (10C), and the flashing cement temperature shall be a minimum of 70F (21C) at the point of membrane application.

B. To ensure the flashing cement is applied at 70F (21C), during cold weather, pails shall be stored in heated areas. Pails exposed to cold temperature on the roof shall be provided with heaters when necessary to ensure the minimum application temperature is maintained.

C. Priming substrates is optional when solvent-based membrane adhesives are used. Primer may be applied to reduce adhesive consumption rates for some absorptive substrates.

D. SOPREMA COLPLY FLASHING CEMENT may be applied using 1/4 inch notched trowel. Apply 2.0 – 2.5 gallons per square to each surface. Primer may be used to reduce consumption of solvent based flashing cement.

E. Application rates vary based on substrate porosity and roughness.

3.06 General Purpose Mastic Application:

A. Apply SOPREMA SOPRAMASTIC general purpose SBS mastic and roofing cement to seal drain leads, metal flanges, seal along membrane edge at terminations, and where specified and required in detail drawings.

B. Do not use general purpose SBS mastics and roofing cement where flashing cement applications are required. Do not use SBS mastics and roofing cement beneath SBS-modified bitumen membrane and flashing plies.

C. Apply general purpose SBS mastic and elastic roofing cement using caulk gun, or notched trowel at 2.0 – 2.5 gallons per square on each surface. Application rates vary based on substrate porosity and roughness. Tool-in as necessary to seal laps.

D. Embed matching granules into wet cement where exposed.

3.07 Air/Vapor Barrier:

Air/Vapor barrier to be adhered to metal deck in full compliance with manufacturer's recommendations.

3.08 Insulation (mechanically fastened):

A. Insulation shall be mechanically fastened to the metal deck with approved fasteners and plates at a rate according to the insulation and membrane manufacturer's recommendations for fastening rates and patterns. The quantity and locations of the fasteners and plates shall also cause the insulation boards to rest evenly on the roof deck so that there are no significant and avoidable air spaces between the boards and the substrate. Each insulation board shall be installed tightly against the adjacent boards on all sides.

B. Fasteners are to be installed consistently in accordance with fastener manufacturer's recommendations. Fasteners are to have minimum penetration into structural deck recommended by the fastener manufacturer and membrane manufacturer.

C. Use fastener tools with a depth locator and torque-limiting attachment as recommended or

supplied by fastener manufacturer to ensure proper installation.

- D. Insulation to be installed in a minimum of (2) layers, tapered and flat stock with thicknesses as listed on drawings. Provide ½" per foot tapered crickets and saddles as listed on drawings.

3.09 Cover Board (Adhered):

- A. Follow material product data sheets and published general requirements for installation instructions.
- B. Ensure environmental conditions are satisfactory, and will remain satisfactory, during the application.
- C. Starting at the low point of the roof, lay out the to ensure the boards are installed perpendicular to the roof slope, shingled to prevent back-water laps.
- D. Cut boards to working lengths and widths as required, conforming to rooftop conditions.
- E. Apply adhesive using methods and at rates recommended by the manufacturer over properly installed and prepared substrates. Allow to rise as recommended by manufacturer's instructions.
- Lay insulation boards in adhesive and walk into place to ensure full embedment. Entire installation shall be in full compliance with manufacture's requirements.

3.10 Heat Welded Membrane Installation:

- A. Follow material product data sheets and published general requirements for installation instructions.
- B. Ensure environmental conditions are safe and satisfactory, and will remain safe and satisfactory, during the application of the heat-welded membrane and flashings.
- C. Ensure all primers are fully dry before beginning heat-welding operations.
- D. Unroll membrane onto the roof surface and allow time to relax prior to heat welding.
- E. Starting at the low point of the roof, lay out the membrane to ensure the plies are installed perpendicular to the roof slope, shingled to prevent back-water laps.
- F. Ensure all roofing and flashing substrates are prepared and acceptable to receive the heat-welded membrane.
- G. Cut membrane to working lengths and widths to conform to rooftop conditions, and lay out to always work to a selvage edge.
- H. Ensure specified side-laps and end-laps are maintained. End-laps should be staggered 3 ft apart.
- I. Direct roof torch on the roll as necessary to prevent overheating and damaging the membrane and substrates.
- J. As the membrane is unrolled, apply heat to the underside of the membrane until the plastic burn-off film melts away. Continuously move the torch side-to-side across the underside of the roll to melt the bitumen on the underside of the sheet, while continuously unrolling membrane.
- K. While unrolling and heating the sheet, ensure approximately ¼ to 1/2 in of hot bitumen flows ahead of the roll as it is unrolled, and there is 1/8 to 1/4 in bleed out at all laps.
- L. Adjust the application of heat to the underside of the membrane and to substrate as required for varying substrates and environmental conditions.
- M. At the 6 in end-laps, melt the plastic burn-off film from the top surface or embed granules and remove surfacing, where present, using a torch or hot-air welder.
- N. At end-laps where T-Joints exist, cut a 45 degree dog-ear away from the selvage edge, or otherwise ensure the membrane is fully heat-welded watertight at all T-joints.
- O. Each day, physically inspect all side and end-laps, and ensure the membrane is sealed watertight. Where necessary, use a torch or hot-air welder and a clean trowel to ensure all laps are fully sealed.
- P. Inspect the installation each day to ensure the plies are fully adhered. Repair all voids, wrinkles, open laps and all other deficiencies.
- Q. Offset cap sheet side and end-laps away from the base ply laps so that cap sheet laps are not located within 18 in of base ply laps.

3.11 Heat welded Flashing Application:

- A. Refer to SBS manufacturer's membrane application instructions, flashing detail drawings, and follow product data sheets and other published requirements for installation instructions. Refer to manufacturer's membrane flashing detail drawings.
- B. The contractor is responsible for project safety. Refer to NRCA CERTA recommendations and building owner requirements for hot work operations.
- C. Where required to seal substrates for fire safety, install specified adhered, self-adhered or fastened backer ply to the substrate. Ensure backer-ply covers and seals all substrates requiring protection from exposure to torch operations.
- D. Ensure all flashing substrates that require primer are primed, and the primer is fully dry.
- E. Unroll the flashing base ply and flashing cap sheet onto the roof surface to their complete length. Once relaxed, cut the membrane to the required working lengths to accommodate the flashing height, cants and the required over-lap onto the horizontal roof surface.
- F. Cut the flashing membrane from the end of the roll in order to always install flashings to the side-lap line or selvage edge line.
- G. Lay out the flashing base ply and flashing Cap Sheet to offset all side-laps a minimum of 12 inches so that side-laps are never aligned on top of the ply beneath. Shingle the flashing ply laps to prevent back-water laps.
- H. Install non-combustible cant strips at transitions where required.
- I. Ensure correct membrane and flashing sequencing to achieve redundant, multi-ply, watertight flashings.

J. ROOF MEMBRANE BASE PLY:

- 1. Before installing flashings, install the roof membrane base ply in the horizontal field of the roof, and extend the base ply up to the top of the cant, where present, at roof terminations, transitions and penetrations.

K. FLASHING BASE PLY:

- 1. Install the flashing base ply starting at the top leading edge of the vertical flashing substrate, down over the cant and onto the horizontal surface of the roof a minimum of 3 inches beyond the base of the cant onto the roof. Cut the base ply at corners to form 3 inch side-laps. Install gussets to seal corner transitions.
- 2. Install one or more flashing base ply(s) at all roof terminations, transitions and penetrations.

L. ROOF MEMBRANE CAP SHEET:

- 1. Install the roof membrane Cap Sheet in the horizontal field of the roof over the flashing base ply up to the roof termination, transition or penetration, and up to the top of cants where present.
- 2. Using a chalk line, mark a line on the membrane cap sheet a minimum of 4 inches from the base of the cant onto the roof. Where granules are present, embed the cap sheet granules using a torch and trowel or granule embedder to prepare the surface to receive the flashing cap sheet.

M. FLASHING CAP SHEET:

- 1. Install the flashing Cap Sheet starting at the top leading edge on the vertical substrate, over the cant and onto the roof surface 4 inches from the base of the cant onto the roof.
- 2. Install the flashing Cap Sheet to ensure a minimum two (2) ply flashing system is present at all roof terminations, transitions and penetrations.

- N. During the membrane and flashing installation, ensure all plies are completely adhered into place, with no bridging, voids or openings. Ensure bitumen or flashing cement bleed-out is present at all flashing side and end-laps.

- O. Use a damp sponge float or damp rag to press-in the heat-welded flashing plies during installation.

- P. Where sufficient bitumen bleed-out is not present, and for all self-adhered plies, apply specified gun-grade sealant or mastic to seal the membrane termination along all roof terminations, transitions

and penetrations. These include gravel stop edge metal, pipe penetrations, along the top edge of curb and wall flashing, and all other flashing terminations where necessary to seal flashings watertight.

Q. Fasten the top leading edge of the flashing 8 in on-centers with appropriate 1 in metal cap nails or other specified fasteners and plates. Seal fastener penetrations watertight using specified sealant or mastic.

R. Manufacturer's liquid-applied, reinforced flashing systems shall be installed where conditions are not favorable to install SBS modified bitumen flashings. Such conditions include irregular shapes penetrating roof surfaces (I-beams), confined areas and low flashing heights. Manufacturer's liquid-applied, reinforced flashing systems are recommended in lieu of pitch pans and lead pipe flashings.

1. For SBS modified bitumen flashings installed using SOPREMA COLPLY adhesive and/or flashing cement, refer to manufacturer's installation guidelines for SOPREMA ALSAN FLASHING.

3.12 Liquid Applied Flashing System:

1. Refer to manufacturer's details drawings, product data sheets and published general requirements for application rates and specific installation instructions for Soprema Alsan Flashing System.
2. Pre-cut SOPREMA ALSAN POLYFLEECE polyester reinforcing fleece to conform to roof terminations, transitions and penetrations being flashed. Ensure a minimum 2 in overlap of fleece at side and end-laps. Ensure the completed liquid-applied flashing membrane is fully reinforced.
3. Apply the base coat of SOPREMA ALSAN FLASHING liquid-applied flashing resin onto the substrate using a brush or roller, working the material into the surface for complete coverage and full adhesion at 2.0 gallons per square.
4. Immediately apply the SOPREMA ALSAN POLYFLEECE reinforcing into the wet base coat of resin. Using a brush or roller, work the SOPREMA ALSAN POLYFLEECE into the wet resin while applying the second coat of SOPREMA ALSAN FLASHING resin to completely encapsulate the fleece at 2.0 gallons per square, and extend the liquid resin 1 inch beyond the fleece.
5. Apply a finish coat of SOPREMA ALSAN FLASHING resin at 2.0 gallons per square within 2-3 hours. When applying the finish coat more than 24 hours, the surface may need to be cleaned using acetone or MEK to ensure satisfactory adhesion.
6. Broadcast mineral granules into the wet finish coat as required to match the adjacent cap sheet.

3.13 Walkways:

1. At areas outlined on the drawings, and around the perimeter of all rooftop equipment and at all door and stair landings, install walkway protection.
2. Cut walkway from end of rolls. No piece shall be less than 24 in.
3. Spot adhere walkway protection with SOPREMA SOPRAMASTIC SP1.
4. Provide a 2 in space between sheets for drainage.

3.14 Cleanup:

1. Clean-up and properly dispose of waste and debris resulting from these operations each day as required to prevent damages and disruptions to operations.

END OF SECTION

SECTION 076200: FLASHING AND SHEET METAL

PART 1: GENERAL

1.01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1.02: Work Included

This section includes labor, materials, equipment, and related services required to furnish and install flashing and sheet metal items with accessories and specialties, as shown on drawings and specified herein. The following items are included in this section:

- Coping
- Receivers and Counter-flashings
- Gutters
- Misc.Flashing
- Other conditions indicated on drawings.

1.03: Related Work

Related work specified in other sections includes but is not limited to

- PVC clad metal, Section 075419
- Sealants, Sections 075216 & 079000

1-04: Substitutions

For purposes of establishing type and quality of materials required for work included in this section, manufacturer's names and brand names are used. Equal products of other manufacturers will be acceptable, provided that requests for substitutions are accompanied by supporting technical literature, samples, drawings, and performance data for comparative evaluation 10 days prior to receipt of Bids. Prior approved manufacturers include:

Coping:	Metal Roofing Systems, Stanley NC "MRS Secure-Lock Coping, Dual Cleat" Metal Era Engineered Roof Solutions, Waukesha WI "One Coping, Existing Slope"
Fascia:	Metal Roofing Systems, Stanley NC "MRS Secure-Lock Gravel Stop" Metal Era Engineered Roof Solutions, Waukesha WI "One System Gravel Stop"

1.05: Inspection of Surfaces

Surfaces which are to receive flashing or sheet metal, or related accessories, shall be inspected by contractor before work is begun. The installation shall not begin until such surfaces are sound, clean, dry and free from defects which might be deleterious to the work. Report any defects to the Designer for corrective action.

1.06: Coordinating Work

Sheet metal work shall be coordinated with the work of other trades where it is integral or contiguous therewith; instructions shall be given concerning the placement of flashing, cants, nailers, etc.

1.07: Submittals

- a. Submit 6 copies of shop drawings to the Designer for approval showing all materials, dimensions, profiles and fastening systems.
- b. Contractor to provide full size mock up of one coping joint for approval before fabrication begins.

PART 2: PRODUCTS

2.01: Coping:

Coping to be equal in all respects to Metal Roofing Systems inc. "MRS Secure-Lock Coping, Dual Cleat" Fabricated from .050 aluminum, Kynar 500 finish. Sloped to match tapered insulation as indicated on drawings. 12" wide splice plate and standing seam required as indicated on drawings. System to meet requirements of ANSI/SPRI ES-1.

2.01: Fascia:

Fascia to be equal in all respects to Metal Roofing Systems inc. "MRS Secure-Lock Gravel Stop" Fabricated from .050 aluminum, Kynar 500 finish with continuous cleat, 12" wide splice plate as indicated on drawings. System to meet requirements of ANSI/SPRI ES-1.

2.02: Receivers and counter-flashings to be formed to profiles and dimensions as indicated on drawings from .040 aluminum, unless otherwise indicated Kynar 500 finish. Counter-flashings to extend a min. of 8" beyond ends if base flashings unless otherwise noted.

2.03: Gutters and Downspouts and Leader Boxes to be formed to profiles and dimensions as indicated on drawings from .050 aluminum, unless otherwise indicated Kynar 500 finish.

2.04: Fascia Extensions:

Fascia Extensions to be formed to profiles and dimensions as indicated on drawings from .050 aluminum, unless otherwise indicated Kynar 500 finish

2.05: Scuppers:

Scuppers to be formed to profiles and dimensions as indicated on drawings from 22 gage stainless steel with trim plate formed from .040 aluminum, unless otherwise indicated Kynar 500 finish

2.06: Misc. flashings and other conditions to be formed to profiles and dimensions as indicated on drawings from .040 aluminum, unless otherwise indicated Kynar 500 finish.

2.07: General Forming & Finish

Shapes shall be formed as indicated on details. Lengths of sections shall be 10'-0" generally. Breaks shall be straight and true with sharp angles. Flat surfaces shall be free of waves or "oil canning". Finish on all pre-finished metal to be equal Kynar 500 finish with 20 year warranty. Color to be selected from manufacturers standards.

PART 3: EXECUTION

3.01: General

a. Work shall be done in accordance with approved commercial practice, as described in the "Architectural Sheet Metal Manual" published by the Sheet Metal and Air Conditioning Contractors National Association, Inc., and with these specifications. finished work shall be true to line and level, with shop-formed shapes undistorted, not damaged, with properly shaped angles, and with plain surfaces free from waves and buckles. Members shall be of longest practicable lengths to keep the number of joints to a minimum. Flanges of fabricated components, or other members which will be covered upon completion, shall be securely attached to wood nailers. Mastic shall be applied and covering members installed with 1/4" openings.

b. Contractor to provide full size mock up of one coping joint for approval before fabrication begins.

3.02: Preparation of Surfaces

a. All surfaces upon which metal work is to be placed shall be smooth, even and free of small projections and hollows. The surface shall be dry before and during the placing of the metal work. For wood surfaces the treated lumber shall be of good quality, well seasoned, straight and free of knotholes and splits. It shall be laid with all joints true and even and firmly attached with all fasteners heads flush with the top surface.

b. Install rigid tapered perlite insulation on top of treated wood blocking to achieve 1/2"/ft slope top of coping blocking. Installation shall not proceed until any deficiencies in exist wood blocking are corrected, including those that would prevent proper slope of finished coping. Installation of coping shall constitute acceptance of the substrate by the contractor.

3.03: Separation of Dissimilar Metals

Corrosion of copper or other metals caused by contact with dissimilar metals shall be prevented by application of bituminous paint.

3.04: Cleaning

During fabrication and installation, care shall be taken to prevent pickup of iron and steel contaminants which could cause surface stains or discoloration. When construction is complete, metal surfaces shall be thoroughly cleaned with detergent and water to remove dirt. Painted surfaces, such as roof access doors, shall be touch-up as required with matching paint supplied by product manufacturer. Adjacent materials shall be protected from damage or discoloration by cleaning materials and methods.

END OF SECTION

SECTION 077000: ROOF SPECIALTIES & ACCESSORIES

PART 1: GENERAL

1-01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1-02: Work Included

This section includes labor, materials, equipment and related services necessary to furnish and install roof drains, overflow drains, roof access hatches and other products as indicated on drawings, and specified herein.

1-03: Substitutions

For purposes of establishing type and quality of materials required for work included in this section, manufacturer's names and brand names are used. Equal products of other manufacturers will be acceptable, provided that requests for substitutions are accompanied by supporting technical literature, samples, drawings, and performance data for comparative evaluation 10 days prior to receipt of Bids. Prior approved manufacturers include:

Roof Drains:	Jay R Smith Josam Ancon Inc.
Roof Scuttles:	Bilco Milcor Dur-Red Products

1-04: Guarantee

Roof hatch shall be guaranteed against defects in materials and workmanship by the manufacturer for a period of 5 years.

PART 2: PRODUCTS

2-01: Existing Roof Drains: All existing roof drains to remain unless noted otherwise on drawings. Existing drains shall be retrofitted with adjustable extension sleeve equal to Jay R Smith 1015, provided with new cast iron domes and clamping rings and stainless steel bolts, matching existing sump.

2-02: Underdeck clamps to be compatible with existing drains and equal to Jay R Smith series 1015, see allowances.

2-03: Existing Roof Hatches: All existing roof hatches to be replaced with model equal in all respects to Bilco Unit listed below.

a) General

Roof Scuttles shall be equal to Bilco Model "S 50" (30" x 36"). Unit shall have 11 gage aluminum cover.

b) Curbs

Units shall have 12" high aluminum curbs, 11 gage, mill finish with 3 1/2" base flange for securing to the deck. Furnish curbs with integral metal cap flashing, 11 gage, mill finish, fully mitered and welded corners for weather tightness and with 1" rigid fiberboard insulation at exterior.

c) Hardware

Scuttle covers shall be assembled with heavy pintle hinges, compression spring operators in telescopic tubes, positive snap latch with turn handles and padlock hasps inside and outside, and neoprene weatherstripping. All hardware shall be stainless steel.

d) Aluminum Railing System to be by hatch manufacturer and be equal to "Bil-Guard Hatch Railing System RL2-S" meeting requirements of Osha 29 CFR 1910.23, and Bilco "LadderUp" Safety Post.

PART 3: EXECUTION

3-01: Installation of items in this section shall be coordinated with the construction of decks, curbs, roof insulation, and manufacturer's instructions.

END OF SECTIONs

SECTION 079000: SEALANTS

PART 1: GENERAL

1.01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1.02: Work Included

a) This section includes labor, materials, equipment and related services necessary to furnish and install caulking and sealants between metal flashing and masonry or concrete other materials; and other locations called for by drawings, specified herein, or required for weather protection.

b) See Sections 75419 & 075216 for sealants associated with roofing system.

1.03: Substitutions

For purposes of establishing type and quality of materials required for work included in this section, manufacturer's names and brand names are used. Equal products of other manufacturers will be acceptable, provided that requests for substitutions are accompanied by supporting technical literature, samples, drawings, and performance data for comparative evaluation 10 days prior to receipt of Bids.

Approved Manufacturers:

BASF Corporation	Shakopee, MN 800-433-9517
Sika Corp	Lyndhurst, NJ 201-933-8800
Pecora Corp	Harleysville, PA 800-533-6688

1.04: Material Certification

Sealant materials for exterior use shall bear Thiokol Chemical Corporation's "Tested and Approved" label, or, they shall be accompanied by manufacturer's certificate indicating that materials delivered to job site have been tested in compliance with Thiokol Building Trade Performance Specification. Certificate shall be accompanied by a written report from an approved testing laboratory, giving results of required tests.

1.05: Submittals

General Contractor shall submit to Architect copies of product data sheets and manufacturer's installation instructions. If 2 or more different sealants are to be in physical contact with each other, obtain from manufacturer confirmation that its product is compatible with proposed and adjacent products, including any other products which may be used by subcontractors. Primer literature shall be included with submittal documents unless manufacturer's sealant submittal specifically eliminates need for primer. Submit 2 copies of manufacturer's standard color charts; upon request, cured samples of each color chosen shall be submitted for verification of actual color to be installed.

1.06: Quality Assurance

Subcontractors shall have minimum 5 years experience installing sealants. Applicator shall be responsible for verifying that sealants used are compatible with joint substrates. The General Contractor may be required to install sealant in mock-ups prepared by other trades in order to demonstrate appearance and workmanship technique. Such mock-ups should be done by those personnel who will be assigned to the project, using materials and techniques which will be used on the project. Joint width/depth ratios shall be in accordance with manufacturer's recommendations. Manufacturer of sealant shall have been in business of manufacturing specified types of sealant for not less than 10 years.

1.07: Product Delivery and Storage

Deliver products from manufacturer in original unopened container clearly identifying each product specified relating to product literature submitted.

1.08: Guarantee

Sealant joints shall be guaranteed against adhesive and cohesive failure of sealant and against water penetration through sealed joint for 5 years.

PART 2: PRODUCTS

2.01: Exterior Sealant (35% ± movement range)

One-component, high-performance, non-priming, gun-grade, elastomeric polyurethane sealant, equals in all respects to MasterSeal NP 1 (formerly Sonolastic NP 1) by BASF.

2.02: Performance Requirements: Provide sealant complying with the following requirements:

1. Compliances:
 - a. ASTM C920, Type S, Grade NS, Class 35, Use NT, T, M, A, I and O.
 - b. Federal Specification TT-S-00230C, Type II, Class A.
 - c. Corps of Engineers CRD-C-541, Type II, Class A.
 - d. Canadian Specification CAN/CGSB 19.13.M87, Classification MCG-2-25-A-N, No. 81026.
 - e. CFI accepted.
 - f. Underwriters Laboratories Inc.® classified, fire resistance only.
 - g. ISO 11600-F-25LM.
 - h. STC (Sound Transmission Class) Level of 44 as tested by ASTM E90.
2. Service Temperature Range: Minus 40 to 180 degrees F (minus 40 to 82 degrees C).
3. Shrinkage: None.
4. Movement Capability, ASTM C719: Plus or minus 35 percent.
5. Tensile Strength, ASTM D412: 350 psi (2.4 MPa).
6. Tear Strength, ASTM D1004: 50 pli.
7. Ultimate Elongation at Break, ASTM D412: 800 percent.
8. Rheological, ASTM C639, sag in vertical displacement, 120 degrees F (49 degrees C): No sag.
9. Extrudability, ASTM C603, 3 seconds: Passes.
10. Hardness, ASTM C661, Shore A:
 - a. Standard Conditions: 25 to 30.
 - b. After Heat Aging: 25.
11. Weight Loss, ASTM C792, after heat aging: 3 percent.
12. Cracking and Chalking, ASTM C792, after heat aging: None.
13. Tack-Free Time, ASTM C679: Passes.
14. Stain and Color Change, ASTM C510: Passes, no visible stain.
15. Bond Durability, ASTM C719, on glass, aluminum, and concrete: Passes, plus or minus 35 percent movement.
16. Adhesion in Peel, ASTM C794: 30 pli.
17. Adhesion in Peel, after UV radiation through glass, ASTM C794: Passes.
18. Artificial Weathering, ASTM C793, Xenon arc, 250 hours: Passes.
19. Artificial Weathering, ASTM G26, Xenon arc, 3,000 hours: No surface cracking.
20. Water Immersion, ASTM C1247, 122 degrees F (50 degrees C): Passes 10 weeks with movement cycling.
21. Sound Transmission Class, ASTM E90, 44
22. VOC Content: 37 g/L, less water and exempt solvents.

- B. Design Requirements:
1. Design number of joints and joint widths for maximum of plus or minus 25 percent movement.
 2. Design depth of sealant to be 1/2 width of joint.
 - a. Maximum Depth: 1/2 inch (13 mm).
 - b. Minimum Depth: 1/4 inch (6 mm).
- C. Colors: Selected by Architect from manufacturer's full color range.

2.03: Primer

Primer shall be used in accordance with manufacturer's instructions, with all primers being applied prior to installation of any backer rod or bond breaker tape. Manufacturer shall be consulted for all surfaces not specifically covered in submittal application instructions. If a stain type primer is used, apply material in a manner that will prevent exposed stain residue related to application procedures.

2.04: Backer Rod

Backer Rod material shall be open or closed cell polyethylene or polyurethane as recommended by sealant manufacturer.

2.05: Bond Breaker Tape

An acceptable polyethylene or similar type bond breaker tape shall be used to prevent 3-sided adhesion in locations where backer rod cannot be used.

PART 3: EXECUTION

3.01: Inspection

Substrate surface shall be inspected to ensure that no bond breaker materials contaminate the surface to which sealant is to adhere and to ensure that unsound substrates are repaired. Installation of sealant shall be evidence of acceptance of substrate by Contractor and Subcontractor. Joint dimensions shall be verified prior to installation of sealant to ensure that all dimensions are within tolerance established in manufacturer's literature. Unacceptable variations shall be resolved by Architect and Contractor prior to installing any material. Apply sealant in accordance with manufacturer's instructions. Verify that temperature and moisture conditions are within manufacturer's acceptable limits.

3-02: Joint Preparation

Surfaces shall be clean and dry; free of oil, grease, loose materials, frost, etc. Clean white cloths or lintless paper towels shall be used for cleaning; cloths or towels shall be changed frequently during cleaning operation. Cleaning agents or solvents shall not be allowed to dry without wiping. Joints shall be primed as required in accordance with sealant manufacturer's instructions. Surfaces adjacent to joints being sealed shall be masked with tape prior to priming. Tape shall be removed prior to initial set-up of sealant. Back-up materials shall be installed in accordance with recommendations of sealant manufacturers. Extruded foam back-up material shall be installed with care to avoid puncturing the surface skin, or stretching the material longitudinally. Foam backer rods shall be installed by rolling and compressing the material using blunt instruments into joints to a uniform depth. The material shall be compressed to approximately 67% of its original width (diameter) for closed cell and 50% for open cell and so installed that sealant will be a minimum of 1/4" deep and a maximum of 1/2" deep, unless otherwise required by manufacturer. Joints which are more than 1/4" wide shall have a sealant depth as listed below:

- a) For concrete and masonry:
 - 1) Joint width 1/4"; depth 1/4"
 - 2) Joint width 1/4"; to 1/2"; depth same as width

- 3) Joint width 1/2" to 1"; depth 1/2"
- b) For metal, glass, other non-porous surfaces:
 - 1) Joint width 1/4"; depth 1/4"
 - 2) Joint width 1/4" to 1/2"; depth 1/4"
 - 3) Joint width 1/2" to 1"; depth 1/2" width

3-03: Weather Conditions

In so far as possible, sealants shall be applied when temperatures are between 40 and 90 degrees F., and when joints are in a normal (not contracted or expanded) condition. At very low temperatures, faster drying solvents and quick drying, non-moisture sensitive primers shall be used. Sealants shall not be applied at times when expected closure of the joint in warm weather will exceed 25 percent. Sealant manufacturer's specific recommendations regarding use of product in cold or hot weather shall be followed together with proper precautions regarding temperatures for storage and mixing.

3-05: Application

Position of back up material shall be checked before application of sealant; required corrections shall be made. Sealant shall be applied with sufficient pressure to insure complete filling of joints. Joints shall be tooled to provide proper joint contour, to eliminate air pockets, and to provide maximum contact at joint interfaces. Tooling equipment may be of metal, wood or plastic. Tooling solutions to facilitate slip shall be clean water or other solutions specifically recommended by sealant manufacturer. Adjacent surfaces which are soiled shall be cleaned as sealant work progresses; excess material shall be removed before it has cured. Upon completion, joints shall be smoothly and neatly finished, and shall be watertight.

END OF SECTION

DIVISION 8

SECTION 084113: ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1: GENERAL

1-01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1-02: Work Included

This section includes labor, materials, equipment, and related services necessary to furnish and install glazed aluminum curtain wall system with related accessories and specialties as called for by the drawings and specified herein. Related items specified elsewhere:

Section 079000 Sealant

Section 088000 Glazing

1-03: Substitutions

For purposes of establishing type and quality of materials required in this section, manufacturer's names and brand names are used. Equal products of other manufacturers will be acceptable, provided that requests for substitutions are accompanied by supporting technical literature, samples, drawings, and performance data for comparative evaluation within 10 days prior to receipt of Bids.

Manufactures approved for use include:

Kawneer Co. Inc	Atlanta GA
EFCO Corp.	Monett MO
Vistawall	Rutherford NJ
Tubelite	Wausau WI

1-04: Submittals

- a. Submit six (6) copies of the following:
- b. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, hardware, finishes, and installation instructions for each type of aluminum frame storefront system indicated.
- c. Shop Drawings: Include plans, elevations, sections, details, hardware, and attachments to other work, operational clearances and installation details.
- d. Samples for Initial Selection: For units with factory-applied color finishes including samples of hardware and accessories involving color selection.
- e. Samples for Verification: For aluminum framed storefront system and components required.
- f. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for each type, of aluminum framed storefront.
- g. Fabrication Sample: Of each vertical-to-horizontal intersection of aluminum-framed systems, made from 12" (300 mm) lengths of full-size components and showing details of the following:

1. Joinery, including concealed welds.
2. Anchorage.
3. Expansion provisions.
4. Glazing.
5. Flashing and drainage.

1-05: Performance Requirements:

- a. General Performance: Aluminum-framed storefront system shall withstand the effects of the following performance requirements without exceeding performance criteria or failure due to defective manufacture, fabrication, installation, or other defects in construction:

b. Design Wind Loads: Determine design wind loads applicable to the Project from basic wind speed indicated in miles per hour, according to ASCE 7, Section 6.5, "Method 2-Analytical Procedure," based on mean roof heights above grade indicated on Drawings.

1. The storefront system shall include anchorage that is capable of withstanding the following wind load design pressures:
 - a. Inward: () psf or () Pa
 - b. Outward: () psf or () Pa
2. The design pressures are based on the North Carolina Building Code, 2018 Edition

c. Storefront System Performance Requirements:

1. Wind loads: Provide storefront system; include anchorage, capable of withstanding wind load design pressures of NC Building Code; latest Edition.
2. Air Infiltration: The test specimen shall be tested in accordance with ASTM E 283. Air infiltration rate shall not exceed 0.06 cfm/ft² (0.3 l/s • m²) at a static air pressure differential of 6.2 psf (300 Pa).
3. Water Resistance: The test specimen shall be tested in accordance with ASTM E 331. There shall be no leakage at a minimum static air pressure differential of 8 psf (383 Pa) as defined in AAMA 501
4. Uniform Load: A static air design load of 35 psf shall be applied in the positive and negative direction in accordance with ASTM E 330. There shall be no deflection in excess of L/175 of the span of any framing member. At a structural test load equal to 1.5 times the specified design load, no glass breakage or permanent set in the framing members in excess of 0.2% of their clear spans shall occur.

1-06: Quality Assurance:

- a. Installer Qualifications: An installer which has had successful experience with installation of the same or similar units required for the project and other projects of similar size and scope.
- b. Manufacturer Qualifications: A manufacturer capable of providing aluminum framed storefront system that meet or exceed performance requirements indicated and of documenting this performance by inclusion of test reports, and calculations.
- c. Source Limitations: Obtain aluminum framed storefront system through one source from a single manufacturer.
- d. Product Options: Drawings indicate size, profiles, and dimensional requirements of aluminum framed storefront system and are based on the specific system indicated. Do not modify size and dimensional requirements.
- e. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- f. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
- g. Build mockup for type(s) of storefront elevation(s) indicated, in location(s) shown on Drawings.
- h. Pre-installation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."
- i. Structural-Sealant Glazing: Comply with ASTM C 1401, "Guide for Structural Sealant Glazing" for design and installation of structural-sealant-glazed systems.
- j. Structural-Sealant Joints: Design reviewed and approved by structural-sealant manufacturer.

1-07: Warranty:

Manufactures Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty. Warranty Period: Two (2) years from Date of Substantial Completion of the project provided however that the Limited Warranty shall begin in no event later than six months from date of shipment by manufacturer.

PART 2: PRODUCTS

2-01: General

Aluminum storefront shall be equal in all respects to Kawneer Co. Trifab 451T, 2" x 4 1/2", center glazed with properties as listed below:

- a. Aluminum Extrusions: Alloy and temper recommended by aluminum storefront manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" wall thickness at any location for the main frame and complying with ASTM B 221: 6063-T6 alloy and temper.
- b. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum window members, trim hardware, anchors, and other components.
- c. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.
- d. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions or other suitable zinc coating; provide sufficient strength to withstand design pressure indicated.
- e. Sealant: For sealants required within fabricated storefront system, provide permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- f. Tolerances: Reference to tolerances for wall thickness and other cross-sectional dimensions of storefront members are nominal and in compliance with AA Aluminum Standards and Data.
- g. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.
- h. Fasteners and Accessories: Manufacturer's standard corrosion-resistant, nonstaining, nonbleeding fasteners and accessories compatible with adjacent materials. Where exposed shall be stainless steel.
- i. Perimeter Anchors: When steel anchors are used, provide insulation between steel material and aluminum material to prevent galvanic action.
- j. Packing, Shipping, Handling and Unloading: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- k. Storage and Protection: Store materials protected from exposure to harmful weather conditions. Handle storefront material and components to avoid damage. Protect storefront material against damage from elements, construction activities, and other hazards before, during and after storefront installation.
- l. Glazing: As specified in Division 08 Section "Glazing."
- m. Glazing Gaskets: Manufacturer's standard compression types; replaceable, extruded EPDM rubber.
- n. Spacers and Setting Blocks: Manufacturer's standard elastomeric type.
- o. Bond-Breaker Tape: Manufacturer's standard TFE-fluorocarbon or polyethylene material to which sealants will not develop adhesion.
- p. Glazing Sealants: For structural-sealant-glazed systems, as recommended by manufacturer for joint type, and as follows:
- q. Weatherseal Sealant: ASTM C 920 for Type S, Grade NS, Class 25, Uses NT, G, A, and O; single-component neutral-curing formulation that is compatible with structural sealant and other system components with which it comes in contact; recommended by structural-sealant, weatherseal-sealant, and aluminum-framed-system manufacturers for this use.

2-02: Fabrication:

- a. Extrude aluminum shapes before finishing.
- b. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:
 - 1. Profiles that are sharp, straight, and free of defects or deformations
 - 2. Accurately fit joints; make joints flush, hairline and weatherproof.
 - 3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system 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.
 6. Provisions for field replacement of glazing.
 7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- c. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
 - d. Structural-Sealant-Glazed Framing Members: Include accommodations for using temporary support device to retain glazing in place while structural sealant cures.
 - e. Storefront Framing: Fabricate components for assembly using manufactures standard installation instructions.
 - f. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

2-03 Factory Finish:

Kawneer Permanodic® AA-M12C22A44, AAMA 611, Architectural Class I Color Anodic Coating. Color to be selected from manufactures standards.

PART 3: EXECUTION

3.01: Examination:

- a. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weather tight aluminum framed storefront installation.
- b. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
- c. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches (76 mm) of opening.
- d. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
- e. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02: Installation:

- a. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing aluminum framed storefront system, accessories, and other components.
- b. Install aluminum framed storefront system level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- c. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.
- d. Install aluminum framed storefront system and components to drain condensation, water penetrating joints, and moisture migrating within sliding door to the exterior.
- e. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3-03: Quality Control

- a. Field Tests: Architect shall select storefront units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration

and water penetration with manufacturer's representative present. Tests not meeting specified performance requirements and units having deficiencies shall be corrected as part of the contract amount.

- b. Testing: Testing shall be performed by a qualified independent testing agency. Refer to Testing Section for payment of testing and testing requirements. Testing Standard per AAMA 503, including reference to ASTM E 783 for Air Infiltration Test and ASTM E 1105 Water Infiltration Test.
 - a. Air Infiltration Tests: Conduct tests in accordance with ASTM E 783. Allowable air infiltration shall not exceed 1.5 times the amount indicated in the performance requirements or 0.09 cfm/ft², whichever is greater.
 - b. Water Infiltration Tests: Conduct tests in accordance with ASTM E 1105. No uncontrolled water leakage is permitted when tested at a static test pressure of two-thirds the specified water penetration pressure but not less than 6.24 psf (300 Pa).
 - c. Manufacturer's Field Services: Upon Owner's written request, provide periodic site visit by manufacturer's field service representative.

3.04: Adjusting Cleaning and Protection:

- a. Clean aluminum surfaces immediately after installing aluminum framed storefronts. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- b. Clean glass immediately after installation. Comply with glass manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.
- c. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.

END OF SECTION

SECTION 088000: Glazing

PART 1: GENERAL

1-01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1-02: Work Included

This section includes labor, materials, equipment, and related services necessary to furnish and install glass in exterior curtain wall system with related accessories and specialties as called for by the drawings and specified herein.

1-03: Substitutions

For purposes of establishing type and quality of materials required in this section, manufacturer's names and brand names are used. Equal products of other manufacturers will be acceptable, provided that requests for substitutions are accompanied by supporting technical literature, samples, drawings, and performance data for comparative evaluation within 10 days prior to receipt of Bids.

Manufactures approved for use include:

Vitro Architectural Glass
Hordis Co.
Pilkington Glass

1-04: Reference Standards

- 1) ANSI Z97.1 – Safety Performance Specifications and Methods for Test of Safety Glazing Used in Buildings.
- 2) ASTM E84 – Surface Burning Characteristics of Building Materials
- 3) ASTM C1036 – Standard Specifications for Flat Glass
- 4) SIGMA No. 64-7-2 Specification for Sealed Insulating Glass Units.

1-05: Quality Assurance

Conform to Flat Glass Marketing Association (FGMA) Glazing Sealing Systems Manual for glazing installation methods.

1-06: Submittals

Submit six (6) copies of product data for each type of glass, including sealant, gaskets, sealant color charts, and manufacturer's certification that units meet or exceed requirements. Submit one physical sample of each type of glass.

1-07: Warranty

5 year manufacturer's warranty required for sealed units covering seal failure, interplane misting or dusting and replacement of same.

PART 2: PRODUCTS

2-01: General

Glass shall be furnished with label showing strength and quality attached to each piece. Contractor shall submit affidavit stating quality, thickness, type and manufacturer of glass furnished.

2-02: Types

- 1) 1" insulating glass units equal to Vitro Solarban composed of 6mm Starphire® + 1/2 " (12.7 mm) Air + 6mm Solarban® 60 (3) on Starphire®. Properties as follows:

SHGC
VLT

.41
74%

PART 3: EXECUTION

3.01: Installation of Glass

Glazing operation shall be done in full accordance with manufacturer's recommendations. Glazing shall only be done when temperature is 40 degrees or above. Surfaces of glass and metal members shall be clean and dry. Glass shall be accurately cut to size with room for expansion and contraction and sufficient clearance to prevent point loading. At completion glass shall be clean, and free of cracks scratches or other defects. Defective glass shall be replaced.

END OF SECTION

DIVISION 9

SECTION 099100: ELASTOMERIC ROOF COATING (Alternate No. 1)

PART 1: GENERAL

1.01 Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work covered by this section.

1.02 Work Included

This section includes labor, materials, equipment, and related services necessary to provide and apply acrylic elastomeric roof coating to existing metal roof panels and trim as called for by drawings and specified herein.

1.03 Quality Assurance

a) Applicators Qualifications

1. Applicator shall have knowledge and general understanding of metal building design as well as products specified for the project.
2. Applicator shall have business stability and own, or have access to, the equipment necessary for successful completion of the project.
3. Contractor must submit certification from the coating manufacturer that they are an approved installer.

1.04 Submittals

a) Contractor to submit field test data verifying the suitability of their products to the job conditions to achieve the 12 year weathertightness warranty as listed herein.

b) Descriptive literature and technical data on all materials proposed for usage under this Specification will be submitted. The bidder identifying total area to be coated shall submit roof survey, including any repairs to seams and protrusions, details of all new metal shapes/connections and the general conditions of the existing roof. Six copies to be submitted.

1.05 Storage and Handling

a) Storage of Materials:

1. Store materials in accordance with Manufacturer's recommendations.
2. Store acrylic latex materials so that they will not freeze.

b) Handling and Protection of Materials: Meet requirements of Manufacturer's. recommendations for handling and protection of materials during installation. Handle materials so that foreign materials do not contaminate them.

c) Damaged Materials: Contaminated or damaged materials shall not be used in the installation and shall be immediately removed from site upon discovery.

d) Exercise caution when working with solvent based materials within the limitations described by the manufacturer.

e) Materials to be used on project shall be stored in an area approved by Owner and Architect. Storage spaces shall be protected against damage from spilled or carelessly handled materials, and shall be safeguarded against fires. Used rags shall be kept in closed metal containers; paints and other liquids shall be kept covered.

1.06 Inspection of Surfaces

Surfaces to be finished under this section shall be examined before work is begun by contractor to determine if they are in condition to receive finish specified. Report improper conditions to General Contractor and to Architect in writing; work shall not proceed until proper substrate conditions have been obtained. **Application of coating to any surface shall constitute acceptance of substrate conditions for that surface and responsibility for finished product.**

1.07 Approval of Coating Applications

General Contractor shall report to Architect application of each coat. After coat has been applied, it shall be inspected and approved by Architect before application of succeeding coat; failure to comply with this provision may result in Contractor's being required to re-coat any areas not so reported and approved; no additional compensation will be allowed for such re-coating work.

1.08 Warranty

Required weather-tightness warranty 12 years, material and labor from manufacturer and 2 years Contractor Warranty.

PART 2: PRODUCTS

2.01 General

- a) Roof coating to be a water-based, acrylic, elastomeric roof coating formulated to meet and/or exceed the standards as established in ASTM D 6083-05. Equal in all respects to "Solargard 6083 System " by Tremco Inc. **Custom color matching existing roofing required.**
- b) Additional Approved Manufacturers.
Tropical Roof Coatings " #901 High Solids Elastomeric Roof Coating", Hallandale, FL
Everest Systems LLC "Evercoat HT" Houston, TX
- c) Performance Values

Weight per gallon (ASTM D-1475)	12.18 lbs.	Flexibility @ -15°F (ASTM D-522)	Passes 1/2" mandrel after 1000 hrs. accelerated weathering
Specific gravity (ASTM D-1475)	1.46	Tensile Strength @ 73°F (ASTM D-2370)	> 250 psi
Solids by Weight (ASTM D-1644)	> 60%	Dry time (ASTM D-1640)	6 hours to touch Min. 24 hours to recoat
Solids by Volume (ASTM D-2697)	> 50%	Flash point (ASTM D-3278)	None
Elongation @ 73°F (ASTM D-2370)	> 390%	Clean-up	Water
Viscosity (ASTM D-562)	115 K.U. ± 3	VOC	< 50 g/l
Solar Reflectance (White)	0.85 Initial 0.81 Aged	Solar Reflectance Index (SRI) (White)	107 Initial 101 Aged

2.02 Accessory Materials

- a) Seam Sealer shall be a white single component, urethane industrial maintenance coating for

waterproofing metal building seams and sealing fastener heads as approved by the manufacturer. Equal in all respects to "Solargard" by Tremco Inc.

b) Primer: Water-based primer specifically for fluoropolymer/PVDF/Kynar 500 metal surfaces. Equal in all respects to "Fluoro-Primer" by Tremco Inc.

c) Fabric: 100% stitchbonded polyester fabric. Equal in all respects to "Permafab" by Tremco Inc.

PART 3 -- EXECUTION

3.01 Preparation for Coating

a) Roof Panels

1. Loose rust, mill scale, and loose, flaking paint must be removed by any of the following: HAND TOOL CLEANING to include scraping, sanding, and wire brushing; POWER TOOL CLEANING to include power sanding, power wire brushing, or power grinding; WATER BLASTING to include high pressure water blast at not less than 2,000 psi.
2. Prime all areas at a rate of 300 sq. ft./gal (5 mils wet)
3. Severe chalking, if evident, must be removed to ensure adhesion, as must all debris, dust and dirt by using high-pressure power water wash.
4. Roof surfaces containing heavy soot, dirt, chemical contaminants, oil, grease, or wax deposits must be cleaned with a surface cleaner and rinsed thoroughly with high-pressure water blast. Note: New galvanized panels must be weathered a minimum of six months or treated with a phosphoric acid wash to remove factory oil film.
5. Remove all loose existing acrylic and asphalt coatings and all existing sealants and mastics prior to installing seam sealer.
6. Conduct a test application using FLUORO-PRIMER and SOLARGARD 6083. Conduct adhesion test per ASTM D 3359-09.

b) Priming

1. Prime all areas at a rate of 200-250 sq. ft. per gallon (6-8 wet mils) with FLUORO-PRIMER. All primer areas must be top coated within 72 hours, or re-priming may be required as recommended by the manuf. All surfaces, which have been primed, must be clean and free of dirt, grease, oil and other foreign matter, which could prevent proper adhesion of coating.

c) Seams

1. All end-lap (horizontal) and faulty side lap (vertical) seams must be treated with seam sealer back brushed into any open seam areas (min. 1/8" thickness). Seams with openings greater than 1/8", reinforce seam sealer with repair tape in a three course combination, approximate coverage four feet per gallon. Seams with greater than 1/2" openings must be drawn together with a self tapping sheet metal screw and neoprene washer.
2. At vertical seams apply roof coating at a rate of 1 gallon/100 sq. ft. (16 mils wet). Apply using roller, brush or spray equipment.

d) Ridge Caps

1. All seams on and around ridge cap must be sealed using seam sealer and repair tape in three

course combination. Approx. coverage for seam sealer will be 50 linear feet/gallon.

2. All seams around ridge ventilators must be sealed using seam sealer and repair tape in three course combination. Approx. coverage for seam sealer will be 30 - 40 linear feet/gallon.

e) Fasteners

1. All existing fasteners must be checked and tightened.
2. Encapsulate all fasteners with seam sealer.
3. Replace stripped or missing fasteners using an oversize repair type fastener. BUILDEX TRAXX™ or TEKS™, FABCO™, FAB-LOK™, or others. Add additional fasteners, where necessary, to draw uplifted sheets together.

f) Metal Components

1. Damaged fascia, gutters, vents, ridge caps, flashings, etc., must be replaced.

3.02 Coating Application

- a) Coating must be applied within temperature and moisture limits as set by manufacturers instructions.

b) Application

1. Spray Equipment Recommendation Pumps: Grako King 45:1, Grako Bulldog 30:1 or gas powered equivalents. Graco GH733, HydraMax350 or GMax 7900 or other manufacturers' equivalents.
 - a) Set up per manuf. instructions to achieve 2000-3000 at spray tip, or as recommended by the manuf.
 - b) Skill and experience of spray applicator is important to the success of the coating process. Periodic checking of film is required to ensure required mils coverage.
 - c) Do not allow traffic on completed surfaces until after a complete cure.
2. Coverage: Roof Coating is to be applied in two coats at the rate of 1 gallon/100 sq. ft. 16 wet mils, or a total of 32 mils wet, 16 dry mils.

3.03 Clean Up

- a) As work progresses, it is essential to keep equipment in clean, working condition.
- b) Clean equipment daily as per manuf. instructions.
- c) Site to be cleaned and trash removed daily.

4. Protection and Cleaning

Adjacent work and materials shall be protected with suitable covers during coating applications. Splatters or spills of coatings, adjacent coatings, glass and other finishes surfaces shall be carefully removed.

END OF SECTION

DIVISION 32

SECTION 329219: SEEDING

PART 1: GENERAL

1-01: Reference to Other Documents

The General Conditions, Supplementary Conditions and Division 1 contain requirements relevant to work of this section.

1-02: Work Included

This section includes labor, materials, equipment, and related services necessary to repair damaged landscaping as follows:

a) Finish grading, fertilization and seeding of areas disturbed by the construction, and materials storage.

1-03: Notification of Owner

The contractor shall notify the Owner/Architect of the exact time seeding will be done, so that a representative can observe.

1-04: Submittals

a) Product certificates signed by manufacturers certifying that their products comply with specified requirements.

1. Manufacturer's certified analysis for standard products.
2. Label data substantiating that plants, trees, shrubs, and planting materials comply with specified requirements.

b) Certification of grass seed from seed vendor for each grass-seed mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

c) Planting schedule indicating anticipated dates and locations for each type of planting.

d) Maintenance instructions recommending procedures to be established by Owner for maintenance of landscaping during an entire year. Submit before expiration of required maintenance periods.

1-05: QUALITY ASSURANCE

a) Installer Qualifications: Engage an experienced Installer who has completed landscaping work similar in material, design, and extent to that indicated for this Project and with a record of successful landscape establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on the Project site during times that landscaping is in progress.

1-06: DELIVERY, STORAGE, AND HANDLING

a) Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

b) Seed: Deliver seed in original sealed, labeled, and undamaged containers.

1-07: LAWN MAINTENANCE

- A. Begin maintenance of lawns immediately after each area is planted and continue until acceptable lawn is established, but for not less than the following periods:
 - 1. Seeded Lawns: Until final acceptance.
- B. Maintain and establish lawns by watering, fertilizing, weeding, mowing, trimming, replanting, and other operations. Roll, regrade, and replant bare or eroded areas and mulch to produce a uniformly smooth lawn.
- C. Watering: Provide and maintain temporary piping, hoses, and lawn-watering equipment to convey water from sources and to keep lawns uniformly moist to a depth of 4 inches (100 mm). Water source to be provided by Owner as indicated on the drawings.
 - 1. Supplement natural precipitation to provide a net rate of one inch of water per week or as required to maintain lawn in a thriving condition.
 - 2. Watering shall conform to the time, volume and frequency recommendations of applicable governmental water conservation regulations.
- D. Mow lawns as soon as there is enough top growth to cut with mower set at specified height for principal species planted. Repeat mowing as required to maintain specified height without cutting more than 40 percent of the grass height at any mowing. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet.
- E. Postfertilization: Apply fertilizer to lawn after first mowing and when grass is dry. Apply only from August through October.
 - 1. Use fertilizer that will provide actual nitrogen of at least 1 lb per 1000 sq. ft. (0.5 kg per 100 sq. m) of lawn area or as required to maintain lawn in a thriving condition. A minimum of 50% of the nitrogen shall be in a slow release form.

PART 2: PRODUCTS

2-01: GRASS MATERIALS

- A. Grass Seed: Fresh, clean, dry, new-crop seed complying with the Association of Official Seed Analysts' "Rules for Testing Seeds" for purity and germination tolerances.
 - 1. Seed Mixture: Provide seed of grass species and varieties as specified herein.

2-02: Seeding Schedule

a) November 1 to April 15 (Winter Temporary Cover)

Lime	100lbs./1000 sf
10-10-10 Fertilizer	25lbs/1000 sf
Oat Seed	2lbs/1000 sf
Rye Grain Seed	1lbs/1000 sf
Straw Mulch	100 lbs/1000 sf

b) September 15 to October 31 (Fall Temporary Cover)

Lime	100lbs./1000 sf
10-10-10 Fertilizer	15lbs/1000 sf

Browntop Millet Seed	2lbs/1000 sf
Straw Mulch	100 lbs/1000 sf

c) April 15 to September 15 (Spring/Summer Permanent Cover)

Lime	100lbs./1000 sf
10-10-10 Fertilizer	25lbs/1000 sf
100% Turf Type Tall Fescue 3 improved drought resistant	10 lbs/1000 sf
Straw Mulch	100 lbs/1000 sf

PART 3: EXECUTION

3-01: Time of Seeding

Contractor shall begin planting when other work, including placing of necessary topsoil, has been completed. Seeding operations shall be conducted under favorable weather conditions; seeding during unfavorable weather conditions shall be at Contractor's risk.

3-02: Planting Procedures for Repair of Damaged Areas and Seeding

a) Rototill ground cover bed 3-4" deep. Spread soil backfill 2" deep over bed after loosening soil and rototill into bed. Mulch entire bed to minimum depth of 2".

3-03: Seeding

a) General

Sowing of seed shall be done only after the prepared topsoil to which lime and fertilizer have been added as specified above, has been thoroughly settled by rainfall or artificial watering. Lime and fertilizer shall be incorporated in the top 2" of topsoil immediately before any seed is sown, the ground surface shall be scarified as necessary to a depth of not over 1" and shall be raked until the surface is smooth, friable and of uniform fine texture. Cut slopes and compacted areas may require scarification. Seed used shall be labeled to show they are within requirements of the N.C. Department of Agriculture as to purity, germination and presence of restricted or prohibited weeds.

b) Conventional Seeding

Seed on freshly prepared firm seed bed. Use equipment that will apply seed uniformly, such as a cultipacker seeder, drill or cyclone seeder. Cover seed lightly with seeding equipment or cultipack after seeding.

c) Mulching

Mulch all permanent seeding on critical areas immediately after seeding.

d) Repairs

Inspect all seeded areas and make necessary repairs or re-seedings within the planting season, if possible. If stand is over 60% damaged, stand shall be reestablished following original lime, fertilizer and seeding recommendations.

e) Anchor straw mulch by applying an asphalt binder emulsion at a rate of 10 gallons per 1000 sf or install jute, paper, or twine netting or excelsior mat staked to ground according to the manufacturer's instructions

f) Clean-up

Any soil or similar material which has been brought onto paved areas by hauling operations shall be removed promptly within the same working day and not allowed to remain overnight. Upon completion of the seeding, all excess soil, stones and debris which has not previously been cleaned up shall be disposed on site as directed by Owner/Designer. All damage to existing construction caused by lawn operations shall be repaired to satisfaction of Owner/Designer without additional costs.

END OF SECTION

UNION COUNTY SCHOOLS

ROOFING RE-COVER TO:

NEW TOWN ELEMENTARY SCHOOL

CONSTRUCTION DOCUMENT - JANUARY 6, 2025

WAXHAW, NORTH CAROLINA

DRAWING LIST

0.0	COVER SHEET
0.1	DATA SHEET
0.2	INFO SHEET
1.0	DEMO ROOF PLAN
1.1	DEMO ROOF PLAN
2.0	NEW ROOF PLAN
2.1	NEW ROOF PLAN
3.0	DEMO ROOF DETAILS
3.1	DEMO ROOF DETAILS
4.0	NEW ROOF DETAILS
4.1	NEW ROOF DETAILS
4.2	NEW ROOF DETAILS
4.3	NEW ROOF DETAILS ALT. NO. 2

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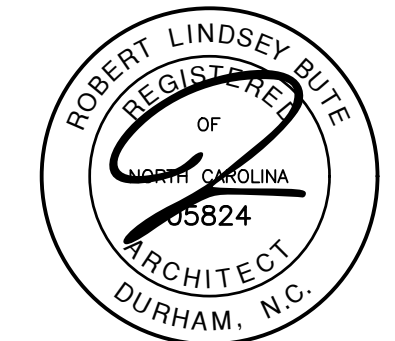
COVER SHEET

Roof
Re-cover

New Town
Elementary
School

Project No: 2401 B

Union
County
Schools



Bute, PLLC

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Date JANUARY 6, 2025

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0.0

General Demolition Notes:

1. Rooftop equipment shown for reference only. Contractor to verify size, location and quantity of all penetrations. See other sheets for detailed information.
2. All edge metal, gravel stops, copings, expansion joint covers, flashings and counter-flashings to be removed unless otherwise noted.
3. All staging and materials storage areas to be enclosed by 6' high chain link fence at all times.
4. Construction parking in designated areas only.
5. Existing damaged wood blocking to be removed and replaced at the bid unit price.
6. See allowances for quantities of wood blocking and metal deck repair to be included in the Base Bid.

EQUIPMENT SCHEDULE		LIFTABLE CURB		NON-LIFTABLE CURB		OTHER		NOTES
EQUIPMENT NUMBER	TYPE	DEMOLITION	NEW CONDITION	DEMOLITION	NEW CONDITION	DEMOLITION	NEW CONDITION	
M1 THRU M10		12 / 3.0	12 / 4.0					
M11, M12					4 / 4.2			
M13 THRU M16		12 / 3.0	12 / 4.0					
M17	FLUE						3 / 4.2	
M18, M19		12 / 3.0	12 / 4.0				10 / 4.1	
M20 THRU M22								RE-COAT ALT. NO. 1
H1 THRU H3							1 / 4.2	
VTR							2 / 4.2	
DRAIN						9 / 3.0	9 / 4.0	

General New Construction Notes:

1. All rooftop equipment / penetrations shown for reference only. Contractor to verify size, location and quantity of all penetrations.
2. Provide new crickets at all rooftop equipment and penetrations other than pipes; minimum slope 1/2" per foot. Crickets/saddles between drains to be formed with insulation sloping minimum 1/2" per foot.
3. All equipment disconnection and reconnection and startup, including controls necessitated by raising existing curbs/units to be by Contractor. Protection of all security systems to be the responsibility of the Contractor. Work to be performed by appropriately licensed sub-contractors. Contractor to protect all existing roof mounted equipment. Throughout project, no fumes shall be allowed to enter thru vents, or other openings during normal business hours. Shut down and restart of all units must be coordinated with the Owner to prevent introduction of fumes into occupied spaces and minimize disruption to the Owner.
4. Provide new metal counter-flashing at existing mechanical equipment as indicated on drawings.
5. Wrap all existing blocking under copings, expansion joints and other conditions as shown on drawings with new 80 MIL PVC, see details.
6. All new fasteners into treated wood to be galvanized or stainless steel; see specifications.
7. Existing roof drains vary in size. Contractor to verify all sizes in field. All existing drains to be provided with new adjustable extension, clamping ring and cast iron dome; see specifications.
8. Material used for pipe extensions to match existing.
9. For anchoring existing wood blocking to existing metal studs use anchor equal in all respects to Simpson Strong Tie TB Wood-To-Steel Screw (TB14755) at 12" o.c. (see details)
10. For anchoring new 2x wood blocking to existing wood blocking use anchor equal in all respects to Simpson Strong Tie SDWS Timber Screw. For blocking up to 6" in width install two(2) 0.219"x3" screws (SDWS 2230 DB) @ 12" O.C. For blocking >6" in width use three(3) 0.219"x3" screws @ 12" O.C.
11. Where damaged deck occurs, replace by nesting a new segment of identically profiled deck, galvanized, min. 22 gage. Overlap decking supports on each side by 3 inches. Attach to deck support member with #10 self-drilling screw at each deck trough.
12. New cover board on vertical face of parapets to be mechanically fastened at 12" o.c. along top edge and 1 fastener per 2 sq. ft. in field. Anchors to be equal in all respects to insulation screws and plates as approved by the membrane manufacturer.
13. Minimum insulation R-value = 30 at areas of structural slope. Thickness of tapered insulation as listed on drawings.
14. Enlarge existing overflow scuppers as required to have a minimum inside clearance of 8" wide x 5" high.
15. New overflow scuppers are required to have a minimum inside clearance of 8" wide x 5" high.
16. Provide new S. S. splash block at all existing downspouts at roof level as shown on drawings.

ROOF SCHEDULE					INSULATION SYSTEM	MEMBRANE	COVER BOARD	TRANSITION SLOPE	CRICKET SLOPE	NOTES
BASE BID	ROOF	APPROX. MAX. HEIGHT	DECK	VAPOR BARRIER						
	1.01	16'	METAL	YES	POLYISOCYANURATE MIN. 30R	MODIFIED BITUMEN 2 PLY (TORCH APPLIED)	1/2"	FLAT STOCK	1/2"	
	1.02	16'	METAL	YES	POLYISOCYANURATE MIN. 30R	MODIFIED BITUMEN 2 PLY (TORCH APPLIED)	1/2"	FLAT STOCK	1/2"	
	1.03	16'	METAL	YES	POLYISOCYANURATE MIN. 30R	MODIFIED BITUMEN 2 PLY (TORCH APPLIED)	1/2"	FLAT STOCK	1/2"	
	1.04	16'	METAL	YES	POLYISOCYANURATE MIN. 30R	MODIFIED BITUMEN 2 PLY (TORCH APPLIED)	1/2"	FLAT STOCK	1/2"	
	1.05	16'	METAL	YES	POLYISOCYANURATE MIN. 30R	MODIFIED BITUMEN 2 PLY (TORCH APPLIED)	1/2"	FLAT STOCK	1/2"	
	1.05A	14'	METAL	YES	POLYISOCYANURATE MIN. 30R	MODIFIED BITUMEN 2 PLY (TORCH APPLIED)	1/2"	1/4" TAPERED	1/2"	
	1.06	16'	METAL	YES	POLYISOCYANURATE MIN. 30R	MODIFIED BITUMEN 2 PLY (TORCH APPLIED)	1/2"	FLAT STOCK	1/2"	
	1.07	16'	METAL	YES	POLYISOCYANURATE MIN. 30R	MODIFIED BITUMEN 2 PLY (TORCH APPLIED)	1/2"	FLAT STOCK	1/2"	
ALT. NO. 1	ROOF	APPROX. MAX. HEIGHT	DECK	EXISTING SURFACE	NEW SYSTEM	SLOPE				
	1.08	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					
	1.09	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					
	1.10	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					
	1.11	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					
	1.12	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					
	1.13	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					
	1.14	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					
	1.15	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					

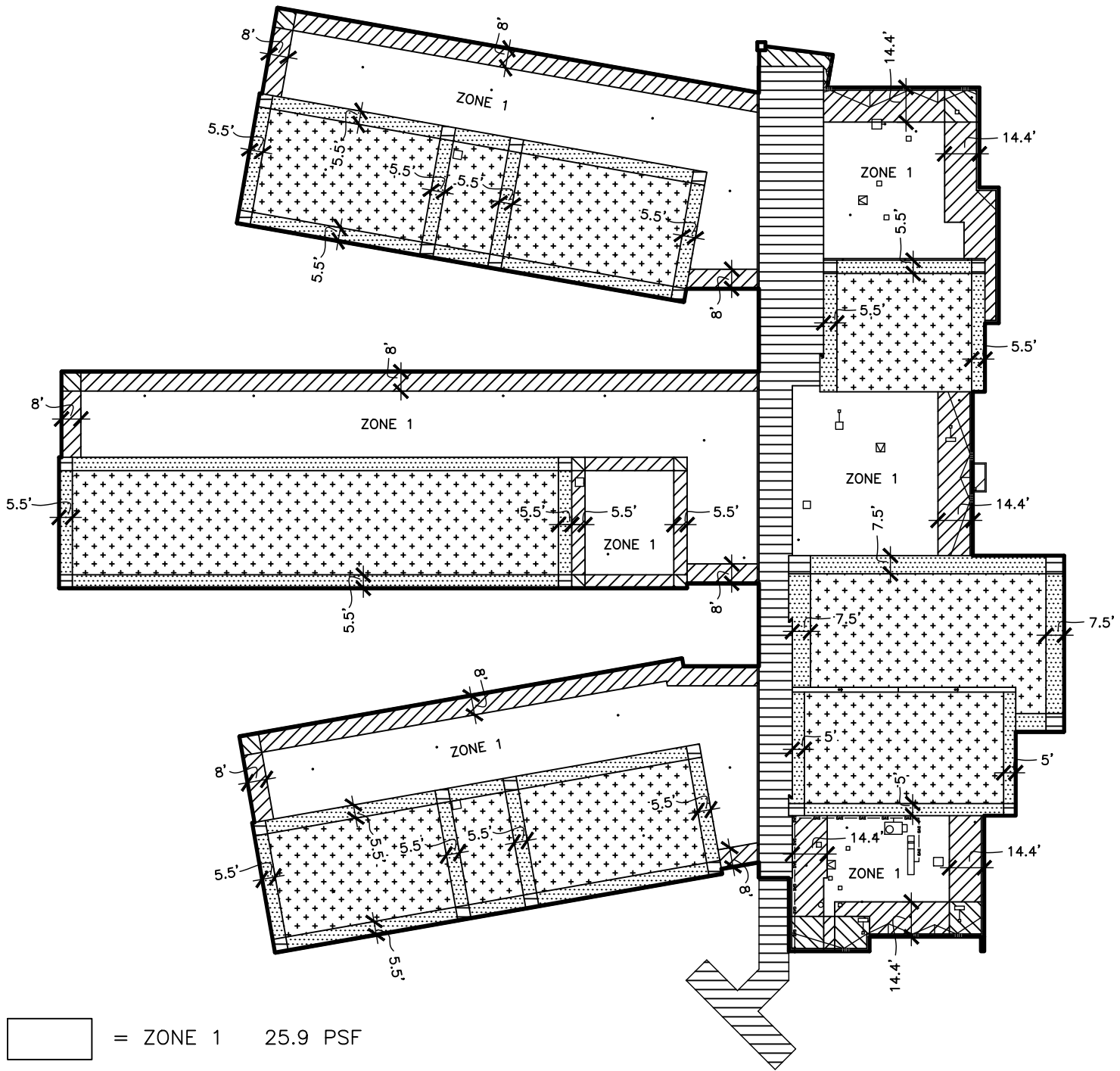
SYSTEM WEIGHTS

EXISTING

TPO MEMBRANE	0.50 LB/SF
3" POLYISOCYANURATE	0.515 LB/SF
TOTAL 1.02 LB/SF	

NEW

MOD. BIT. MEMBRANE	2.0 LB/SF
1/4" COVER BOARD	0.85 LB/SF
5.2" POLYISOCYANURATE	0.90 LB/SF
VAPOR BARRIER	0.14 LB/SF
TOTAL 3.89 LB/SF	



1 ZONE MAP (ULTIMATE LOADS)
SCALE: 1"=60'

[Dotted Pattern]	= ZONE 1	25.9 PSF
[Dotted Pattern]	= ZONE 1A	32.5 PSF
[Diagonal Lines]	= ZONE 2	43.5 PSF
[Cross-hatch Pattern]	= ZONE 2A	39.1 PSF
[Diagonal Lines]	= ZONE 3	65.4 PSF
[Horizontal Lines]	= ZONE 3A	67.6 PSF

LEGEND

○ VTR	PLUMBING VENT
○ RD	ROOF DRAIN
⊞ H (NUMBER)	ROOF HATCH
□ M (NUMBER)	MECHANICAL EQUIPMENT
⊞	WALKWAY, MIN. 30" WIDE
⊞	NEW CRICKET, MIN. 1" PER FOOT SLOPE TO BE INSTALLED BELOW NEW COVER BOARD
⊞ SC	EXISTING SCUPPER, INSTALL NEW LEADER BOX, DOWNSPOUT & SPLASH BLOCK
⊞ OS	NEW OVERFLOW SCUPPER
⊞	INDICATES NEW CRICKET/SADDLE 1/2" PER FT. SLOPE
○ PP	CONDUIT
⊞ DS	EXIST. D.S. TO REMAIN, INSTALL NEW SPLASH BLOCK
⊞ NDS	REPLACE EXIST. DOWNSPOUT, TIE TO EXIST. BOOT BELOW OR PROVIDE NEW CONC. SPLASH BLOCK

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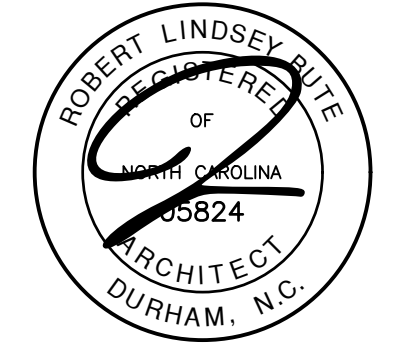
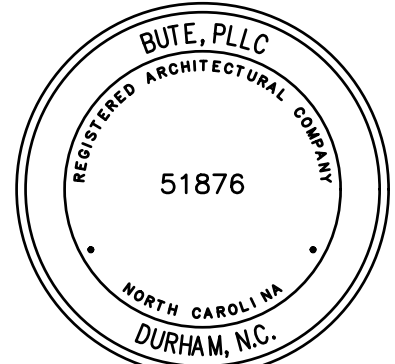
INFO SHEET

Roof
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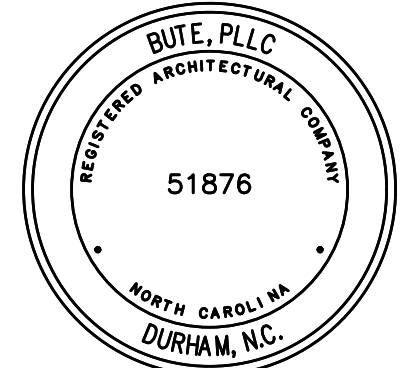
DEMO ROOF PLAN

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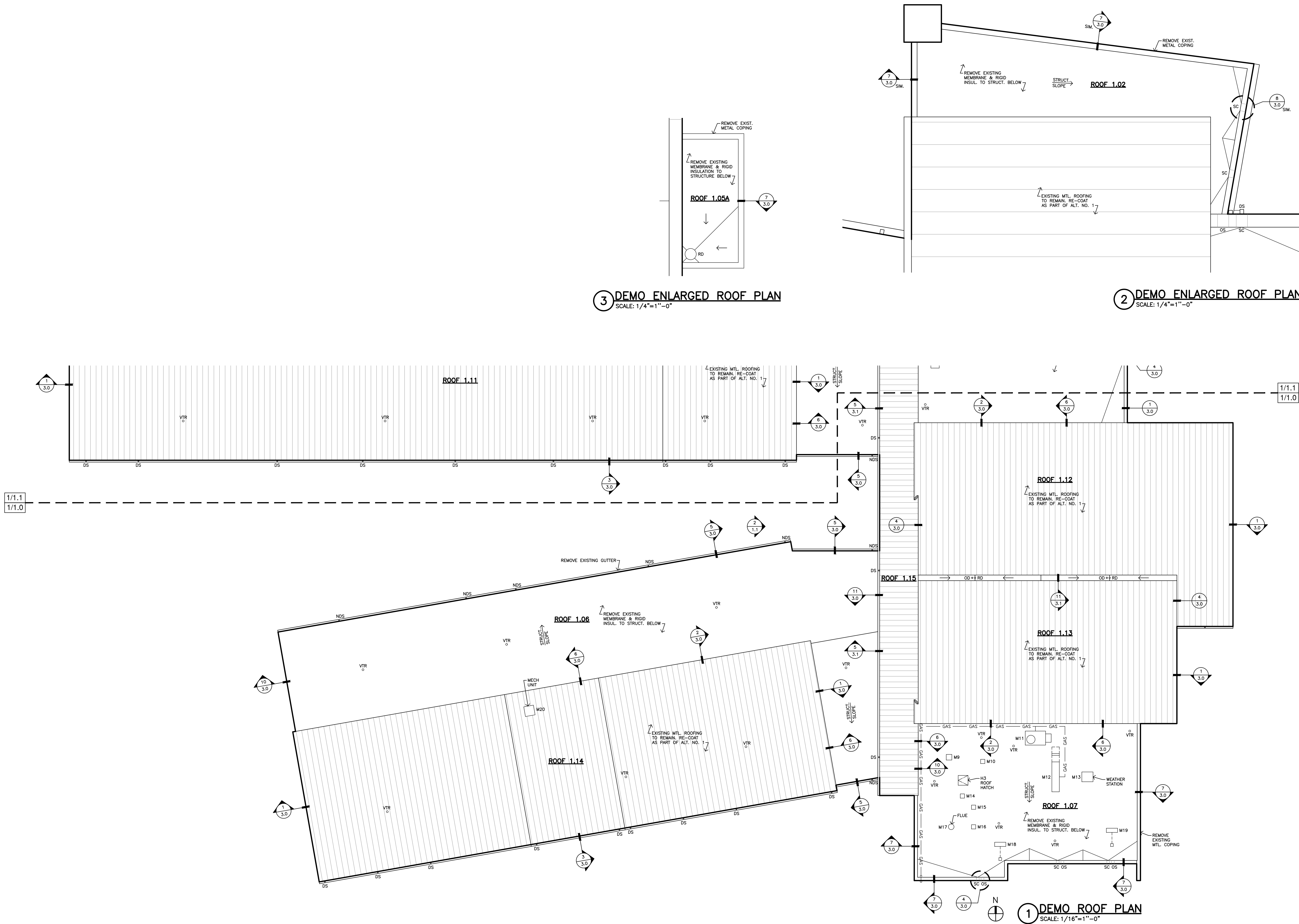
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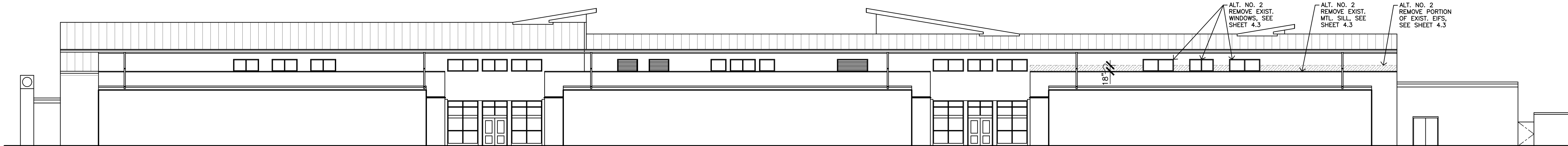
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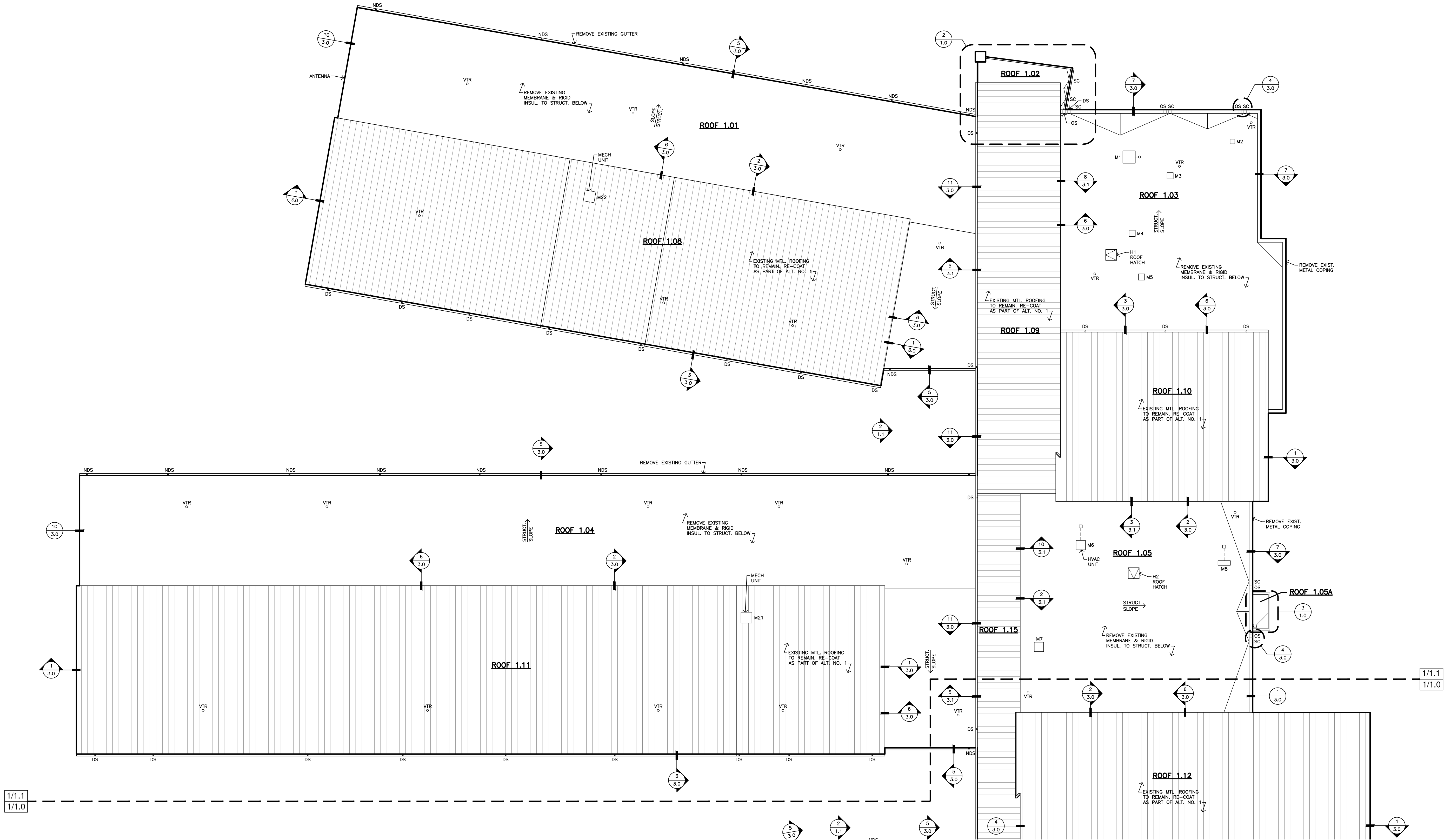
3 DEMO ENLARGED ROOF PLAN
SCALE: 1/4"=1'-0"

2 DEMO ENLARGED ROOF PLAN
SCALE: 1/4"=1'-0"





2 DEMO PARTIAL ELEVATION
SCALE: 1/16"=1'-0"



1 DEMO ROOF PLAN
SCALE: 1/16"=1'-0"

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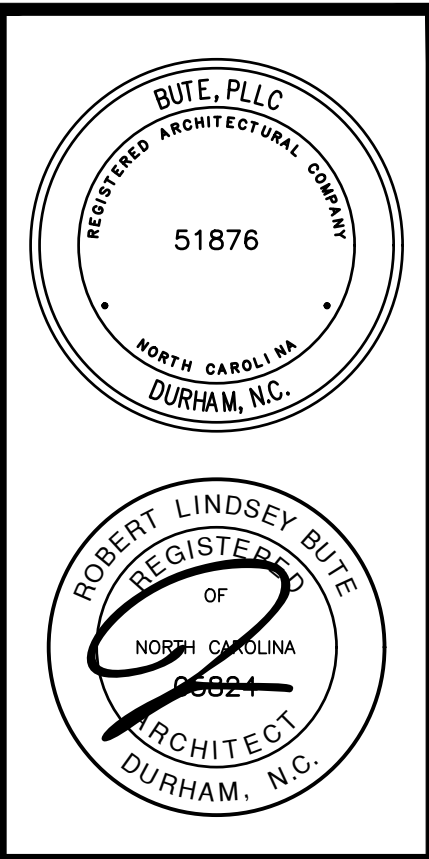
DEMO ROOF PLAN
DEMO PARTIAL ELEVATION

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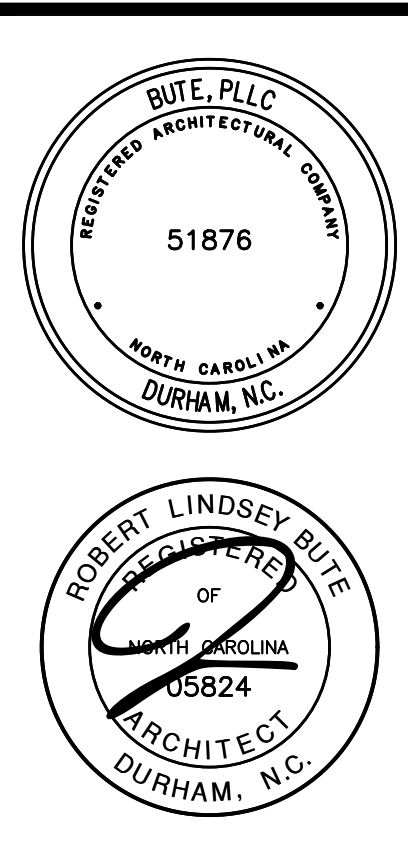
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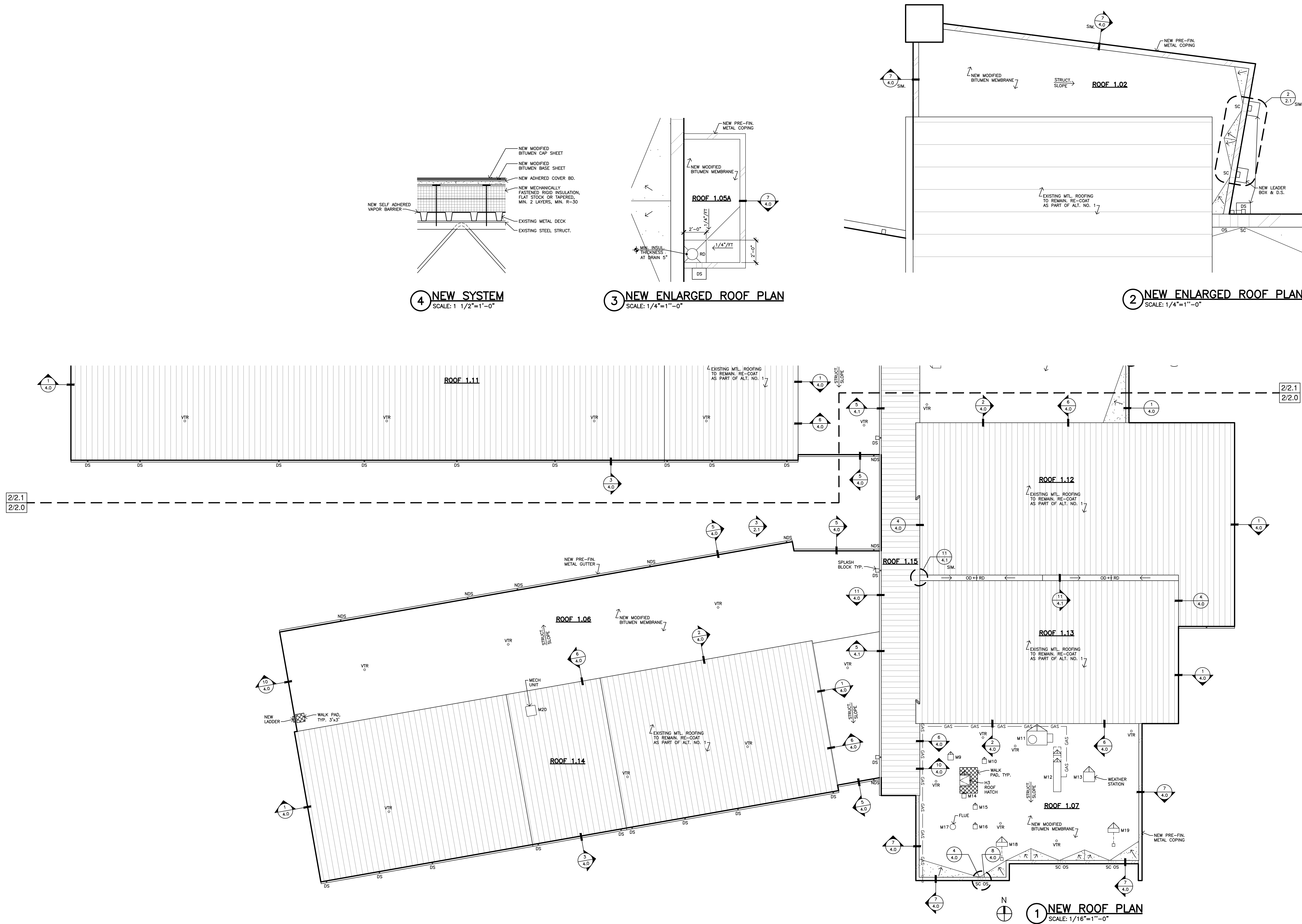
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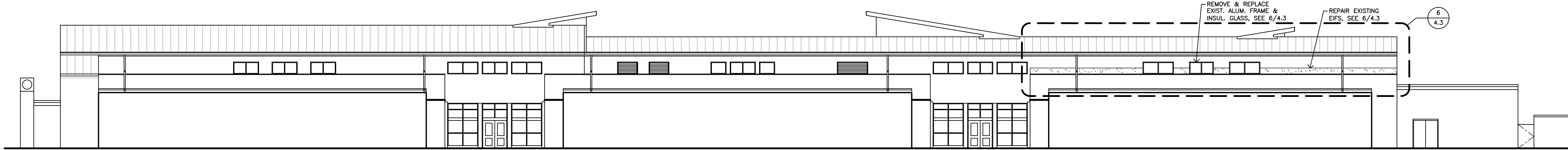
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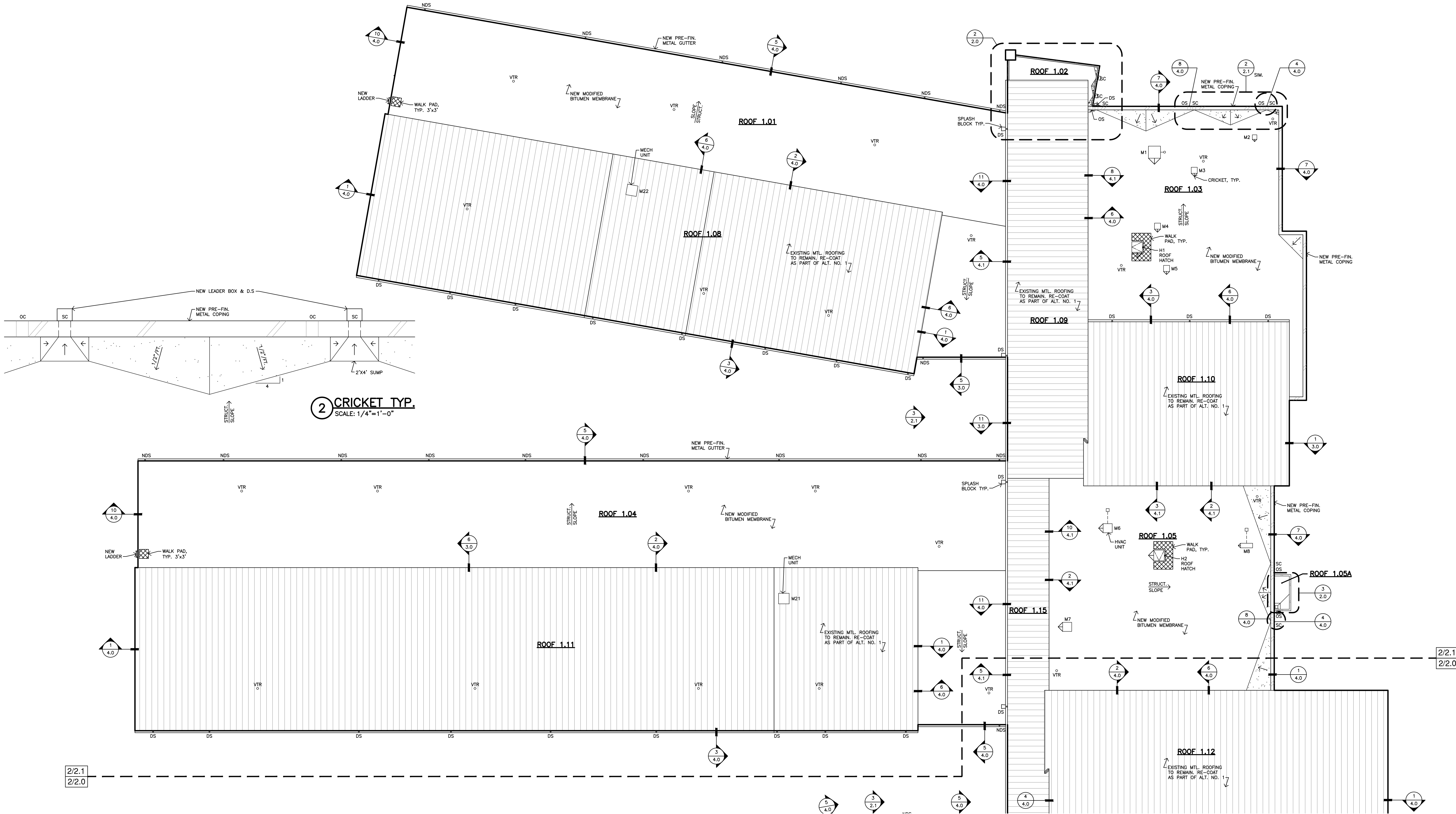
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3 NEW PARTIAL ELEVATION (ALT. NO. 2)
SCALE: 1/16"=1'-0"



1 NEW ROOF PLAN
SCALE: 1/16"=1'-0"

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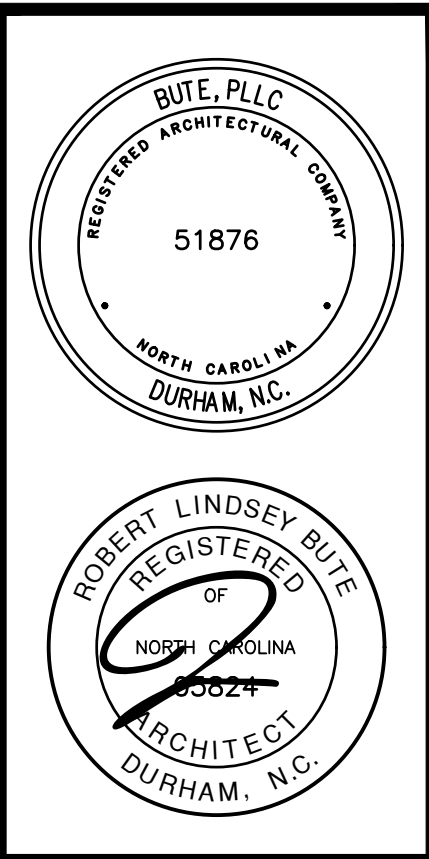
NEW ROOF PLAN
NEW PARTIAL ELEVATION

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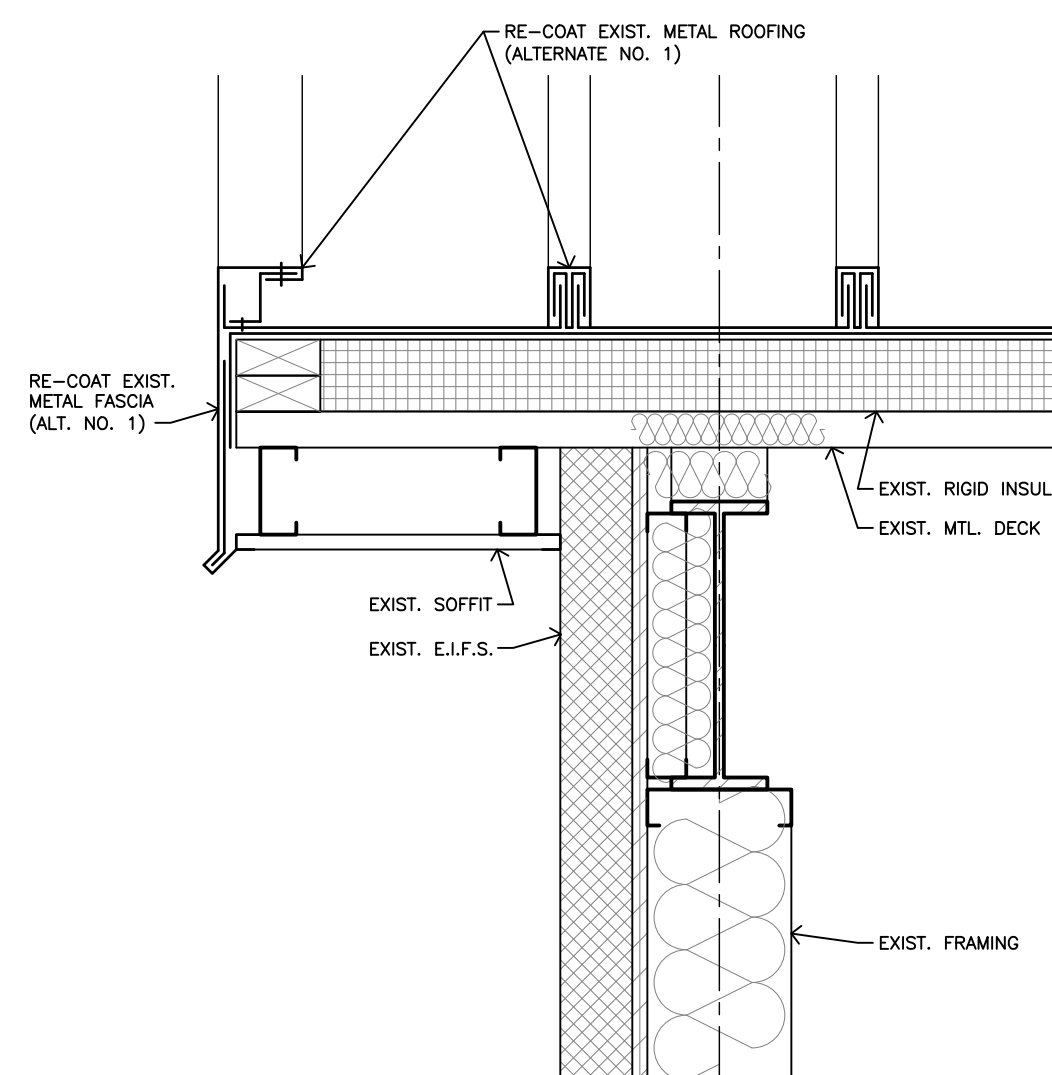
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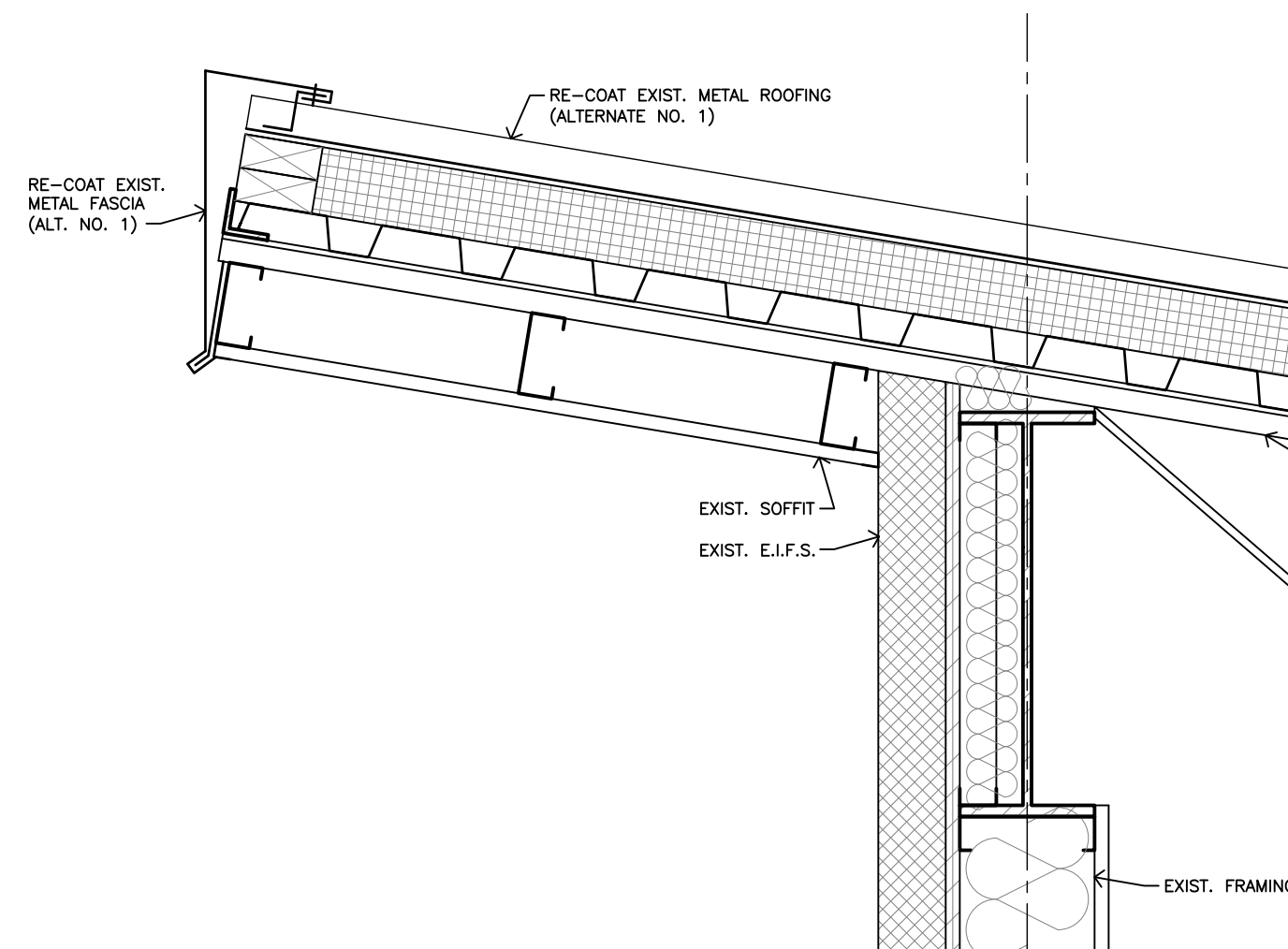
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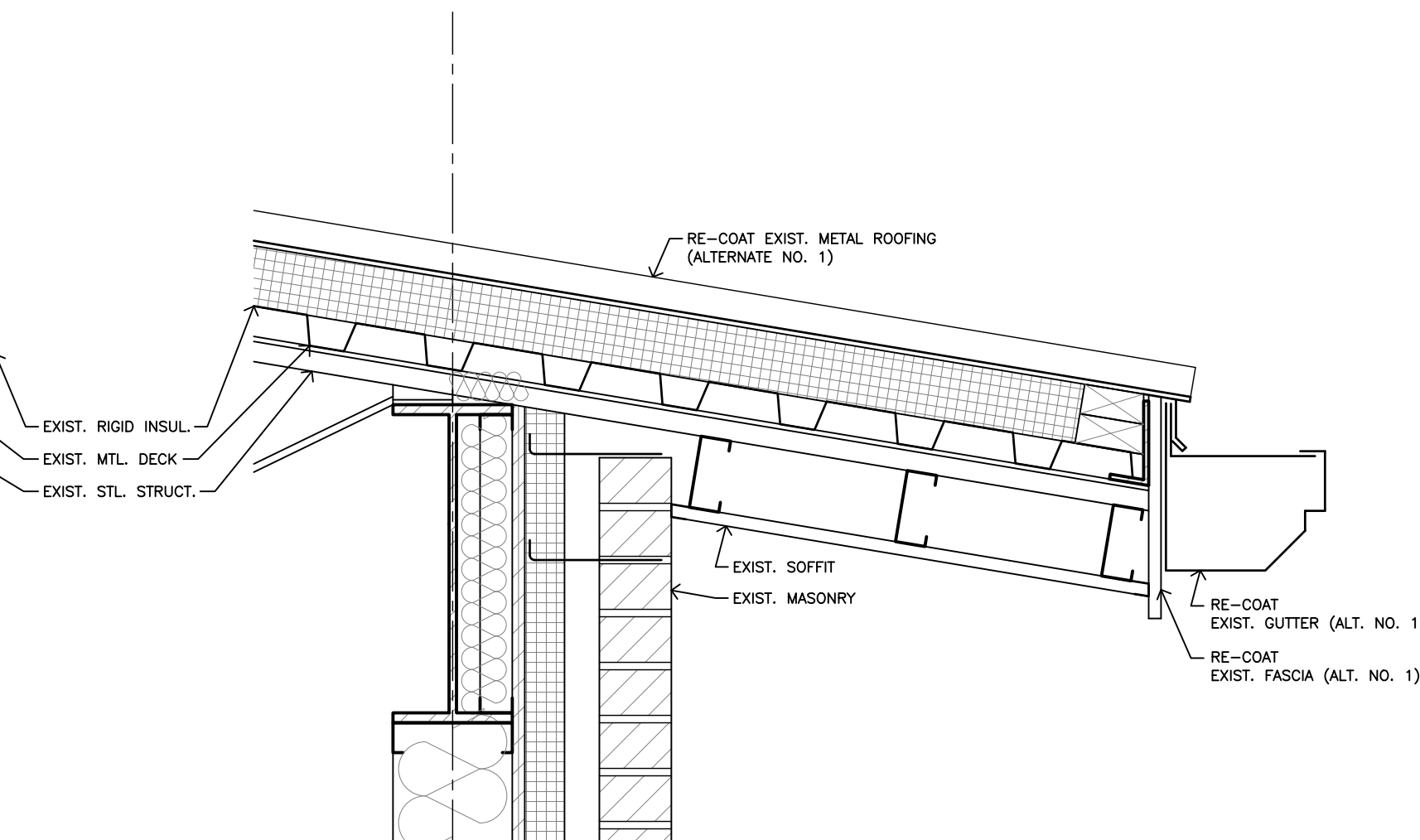
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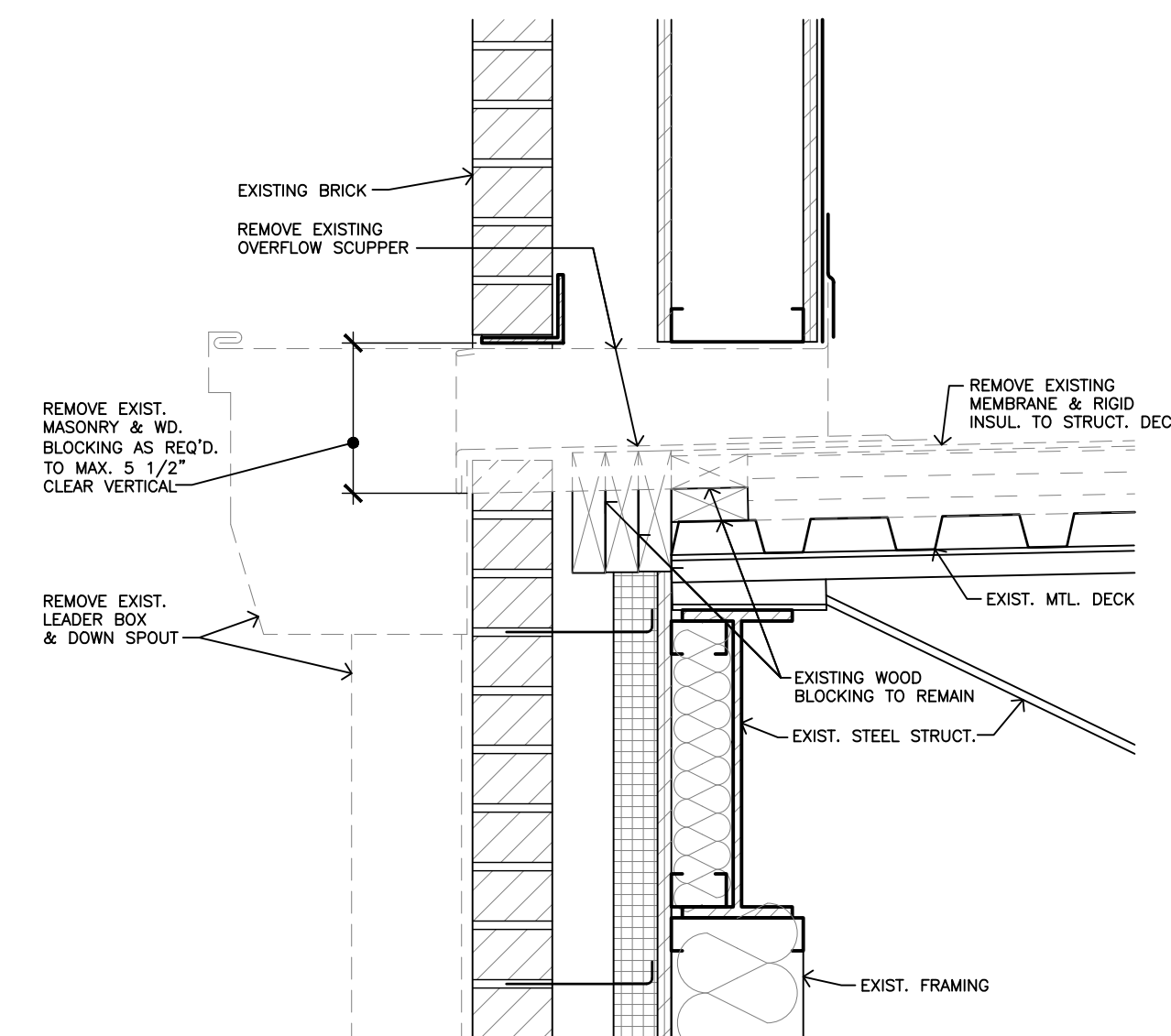
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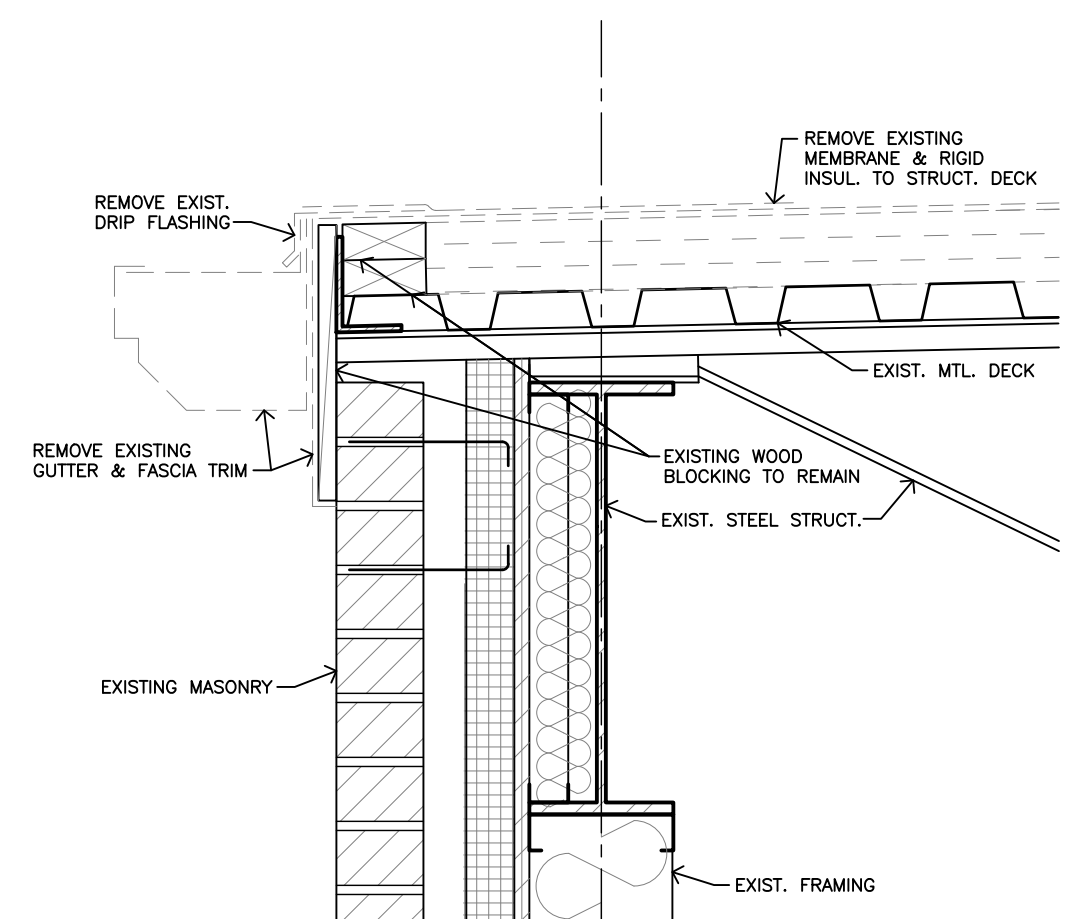
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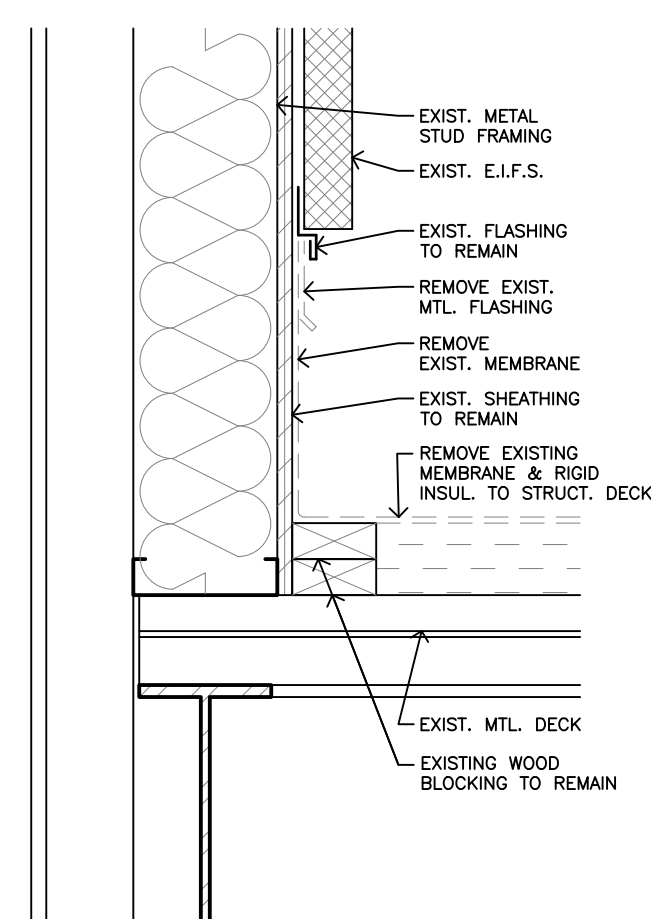
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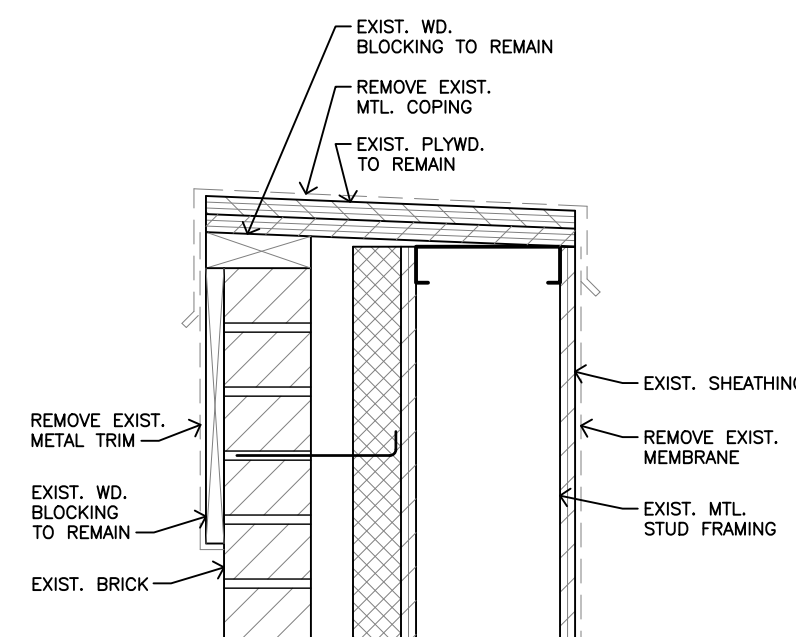
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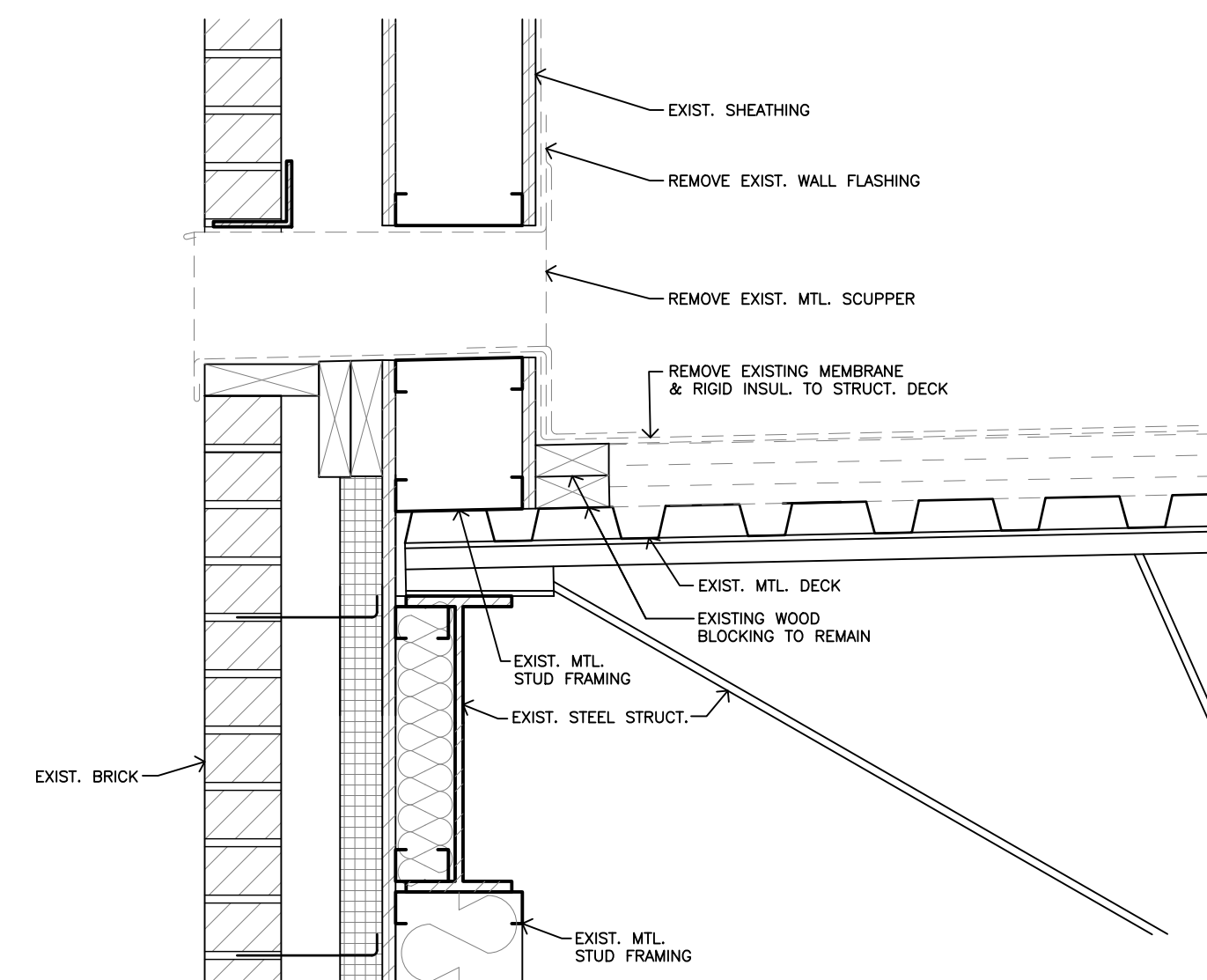
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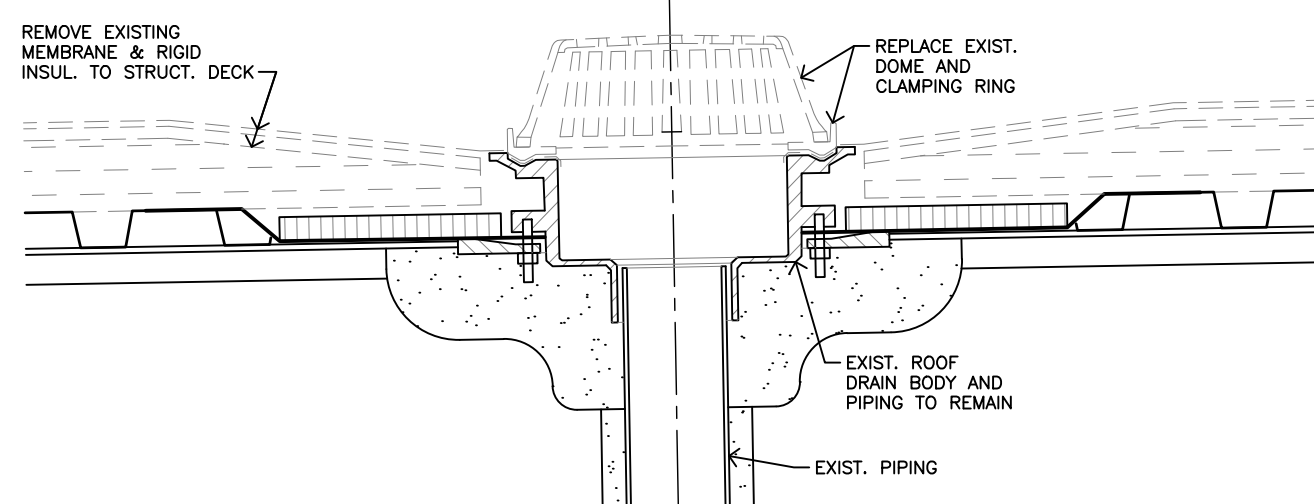
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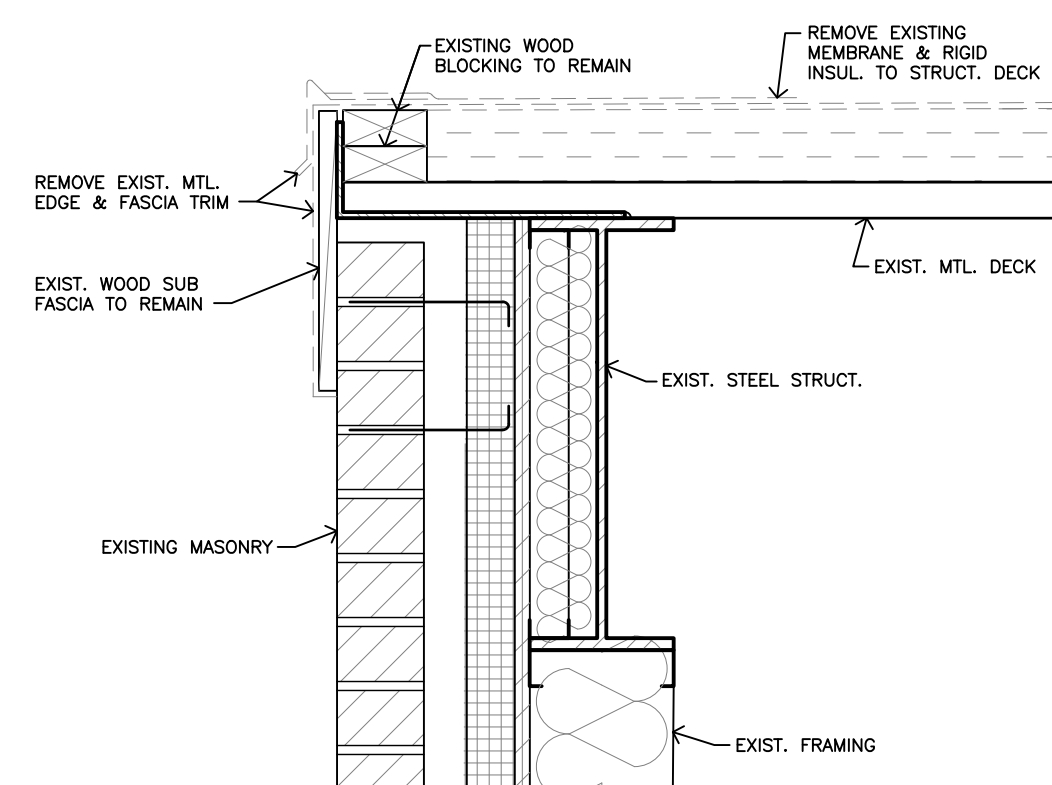
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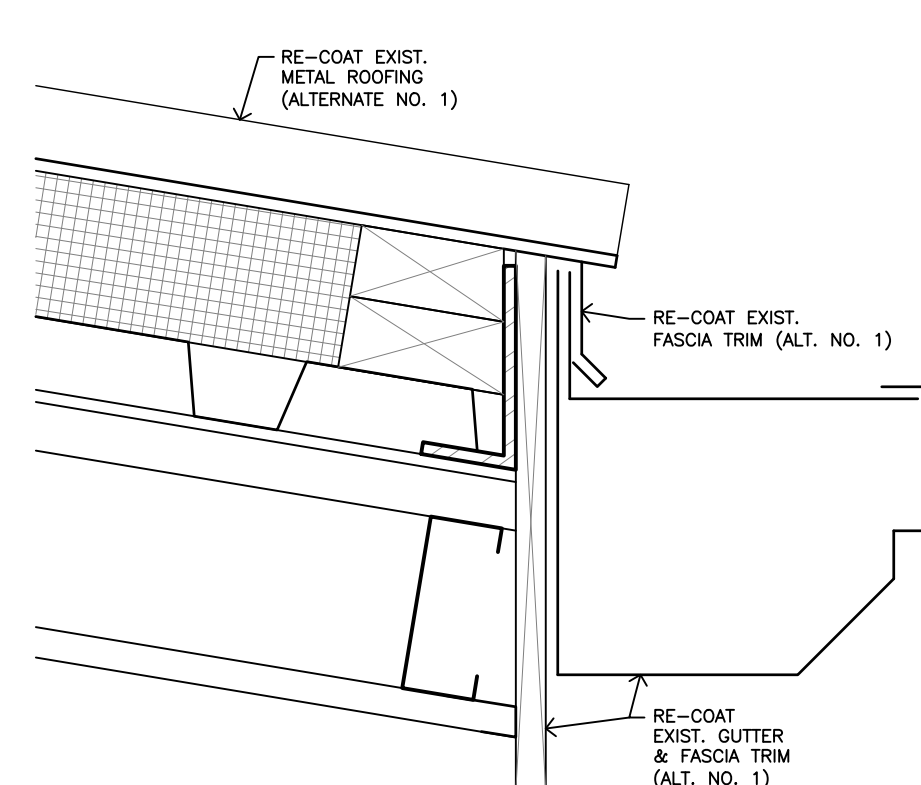
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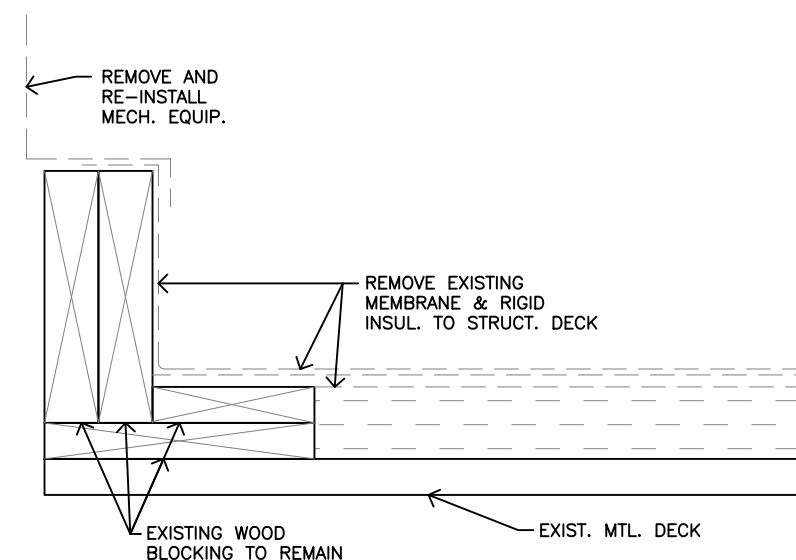
9 ROOF DRAIN DETAIL
SCALE: 1 1/2"=1'-0"



10 FASCIA DETAIL
SCALE: 1 1/2"=1'-0"



11 GUTTER DETAIL
SCALE: 3"=1'-0"



12 ROOF DETAIL
SCALE: 1 1/2"=1'-0"

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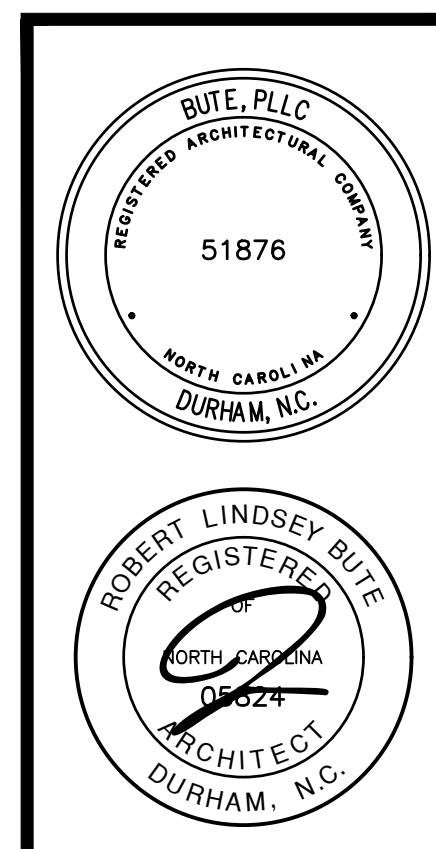
DEMOLITION DETAILS

Roof
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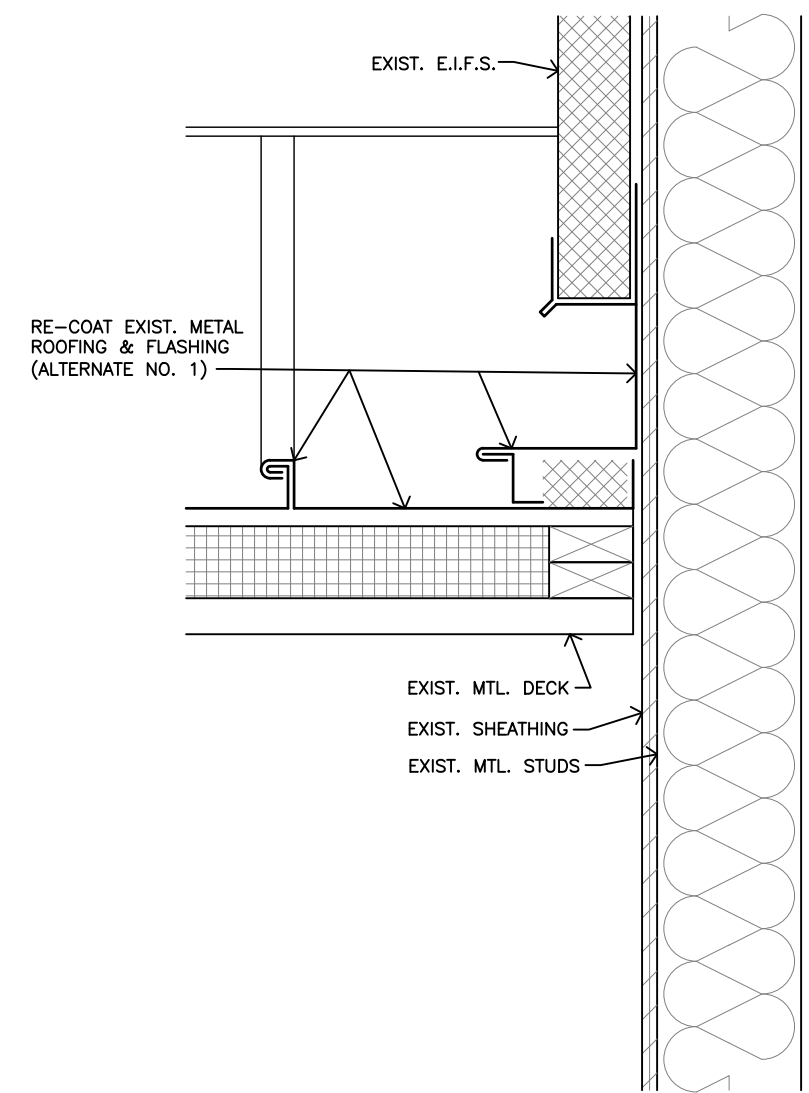
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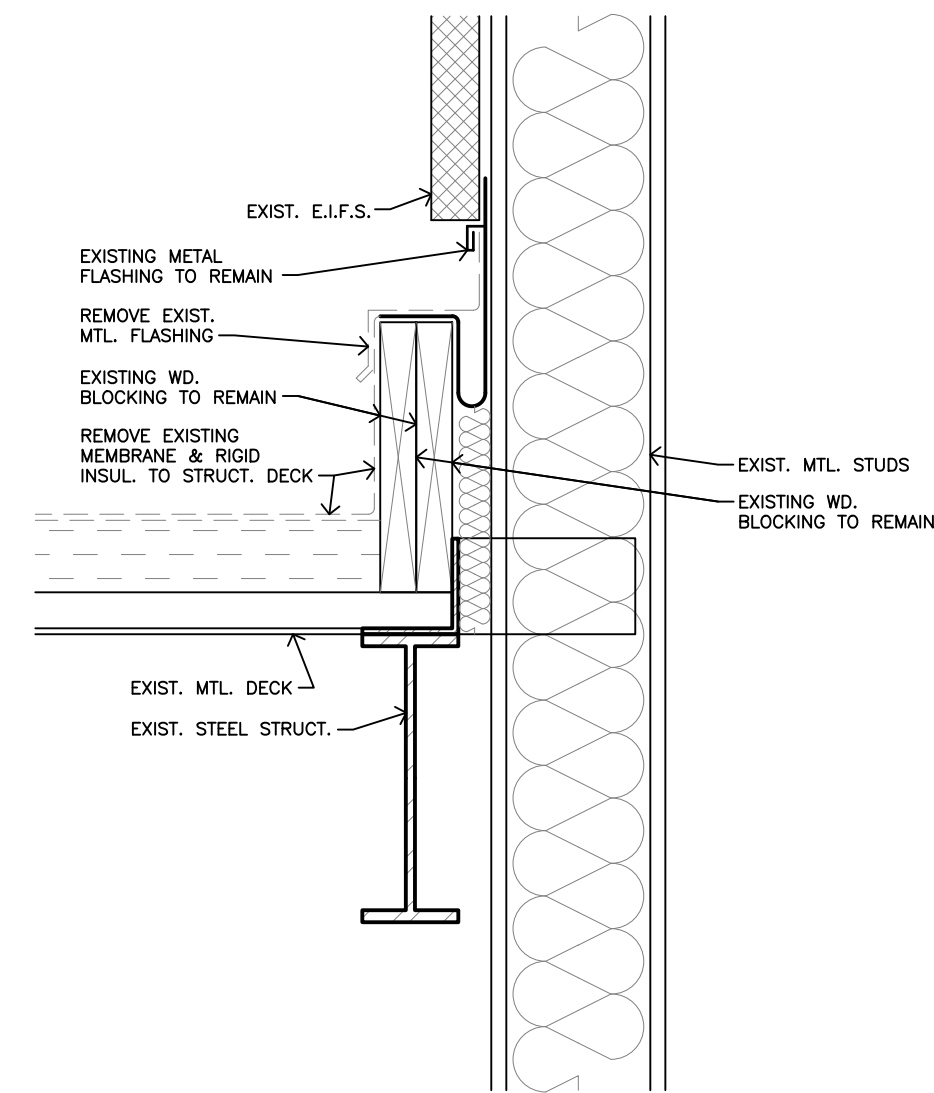
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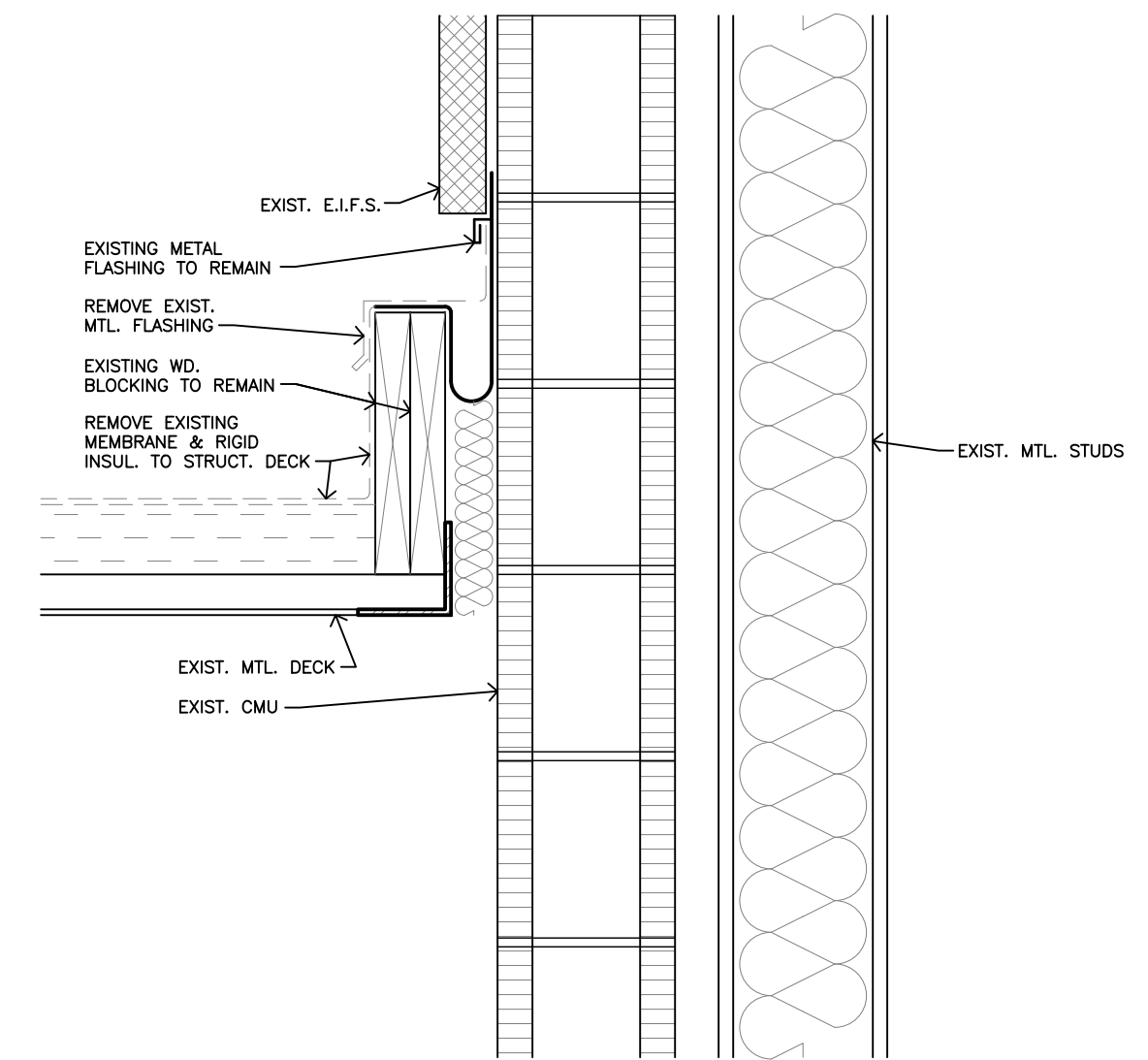
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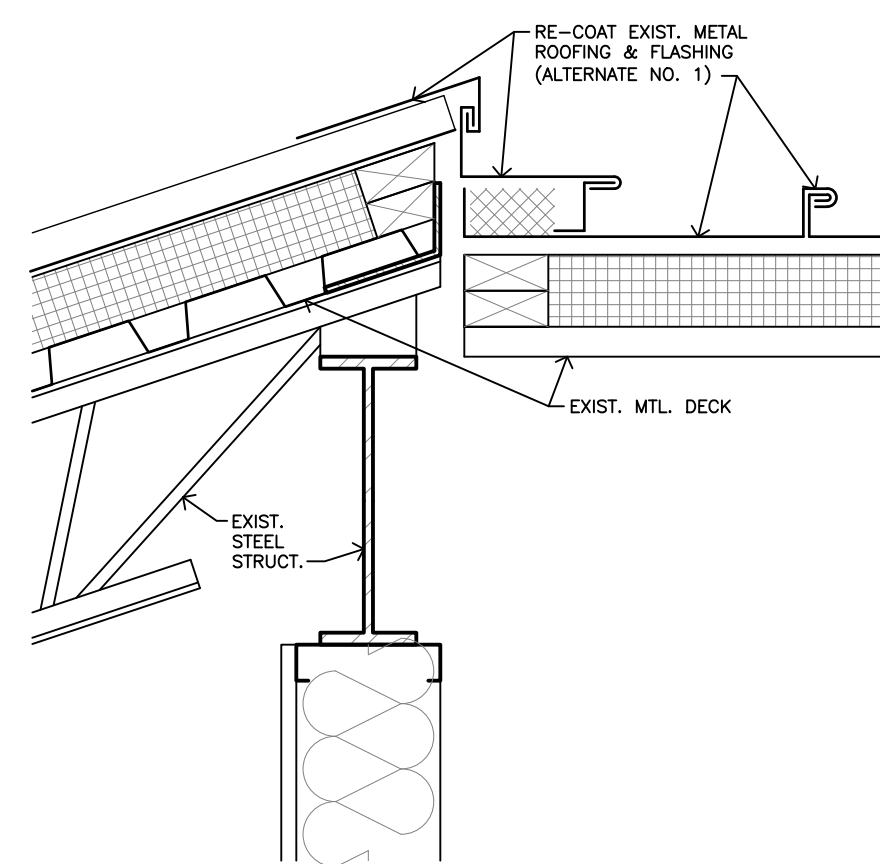
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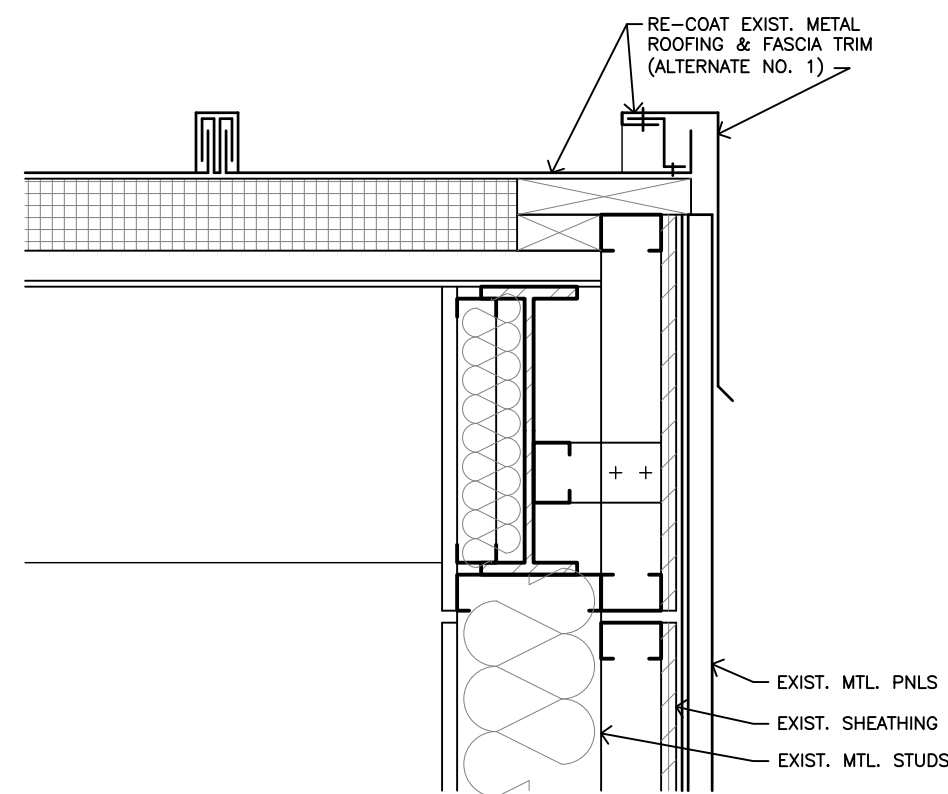
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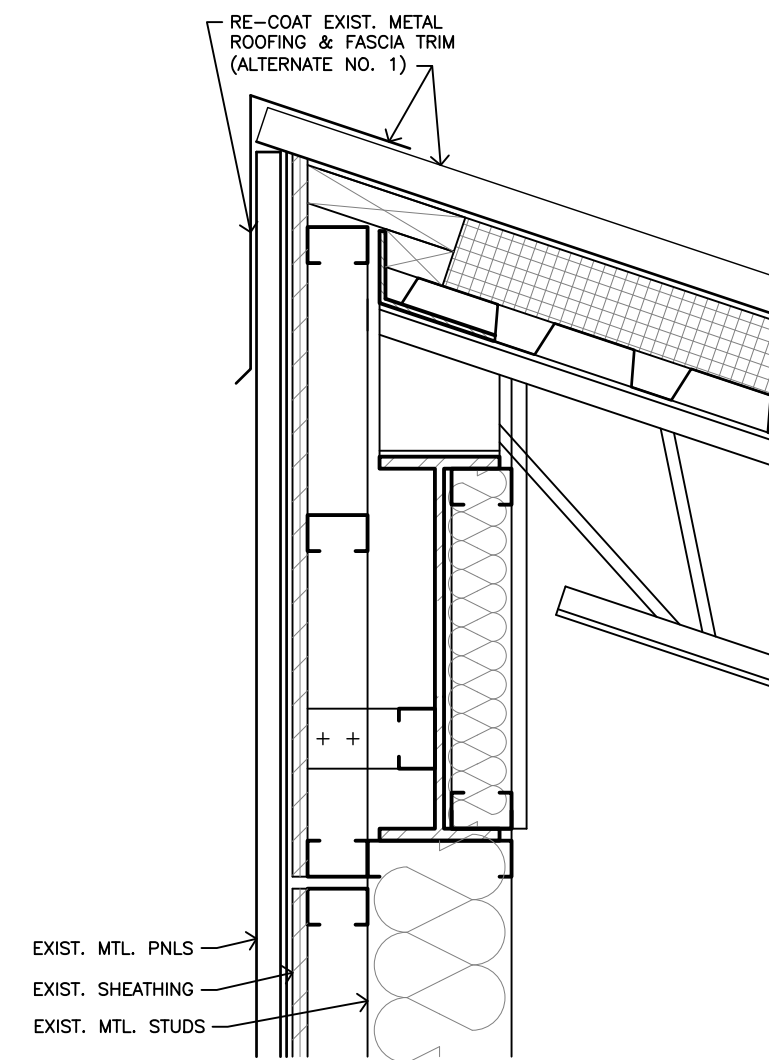
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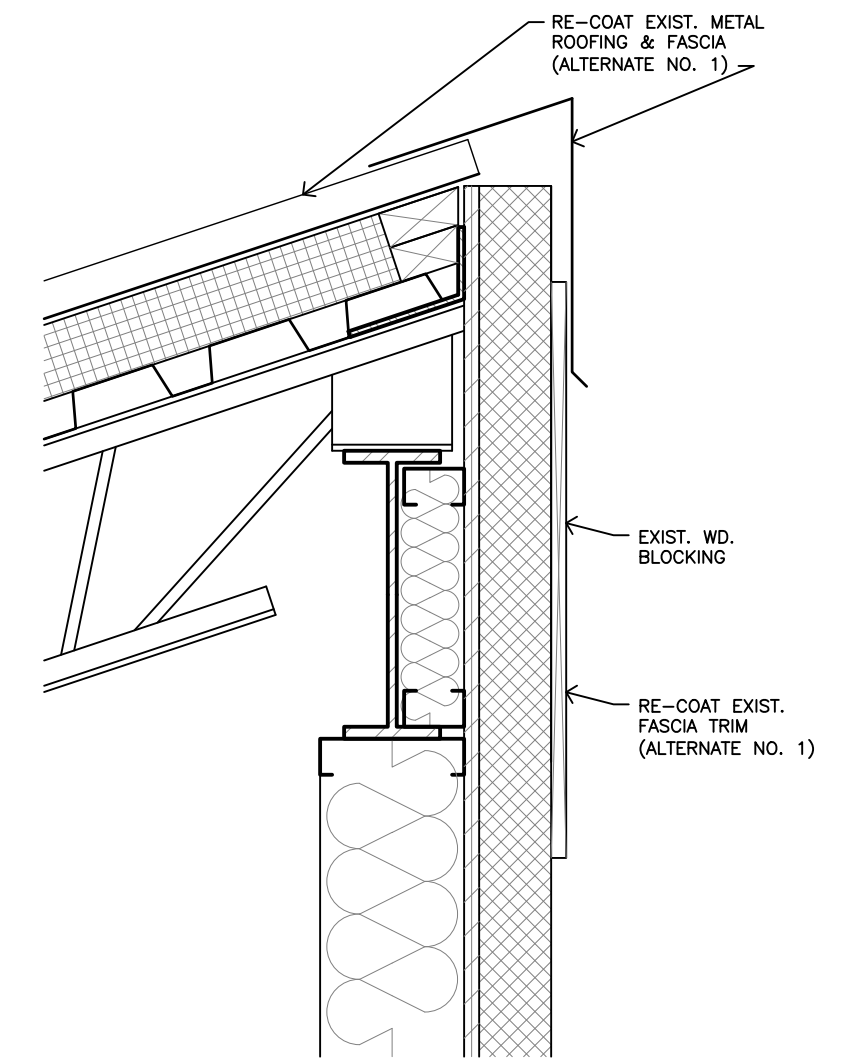
6 ROOF DETAIL
SCALE: 1 1/2"=1'-0"



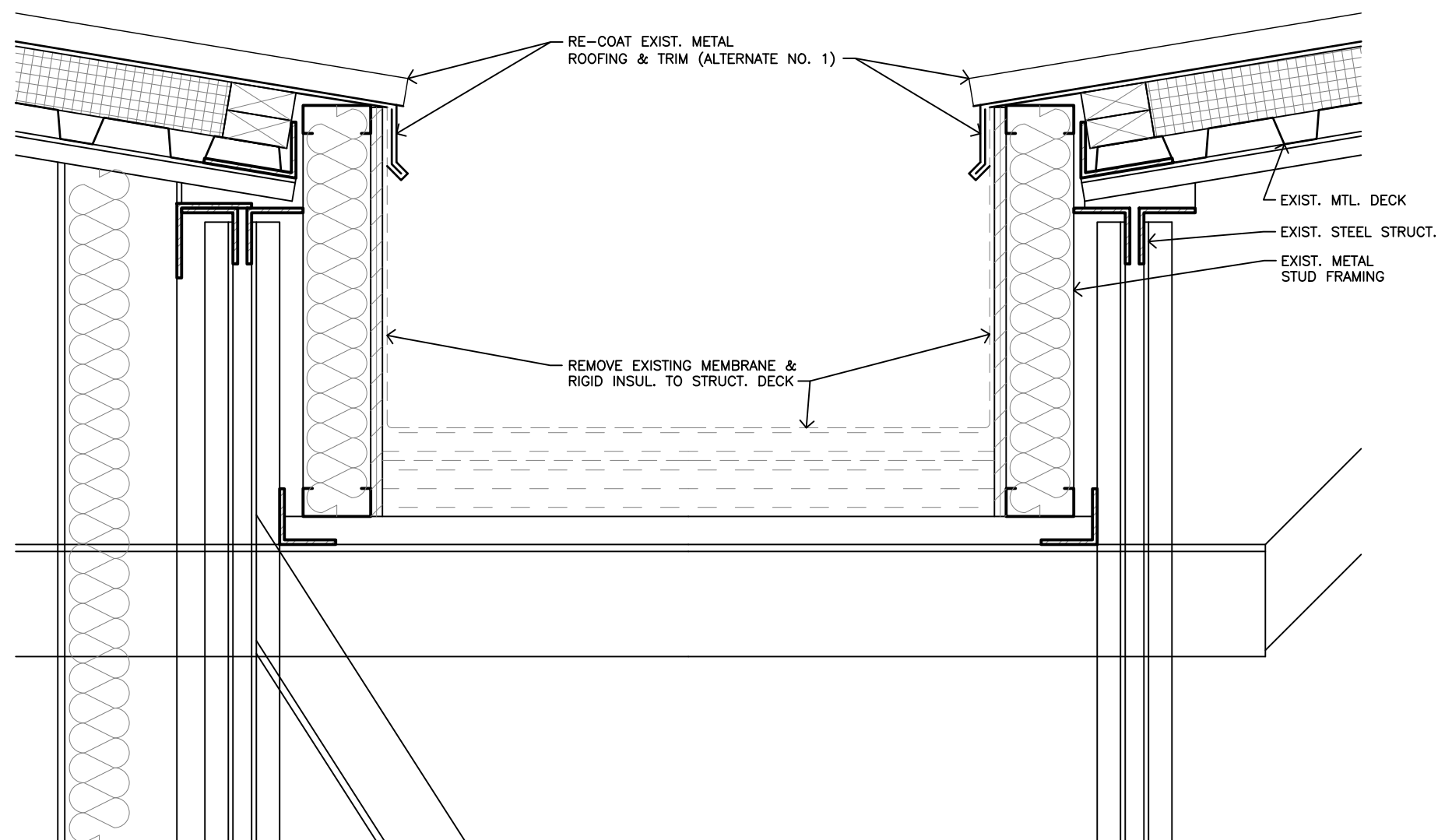
7 ROOF DETAIL
SCALE: 1 1/2"=1'-0"



8 ROOF DETAIL
SCALE: 1 1/2"=1'-0"



10 ROOF DETAIL
SCALE: 1 1/2"=1'-0"



11 ROOF DETAIL
SCALE: 1 1/2"=1'-0"

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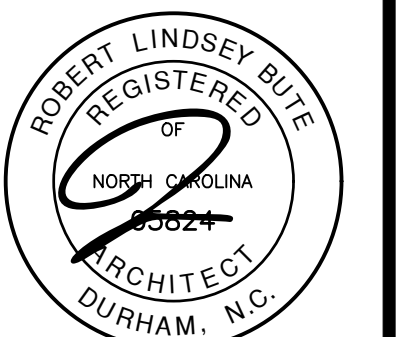
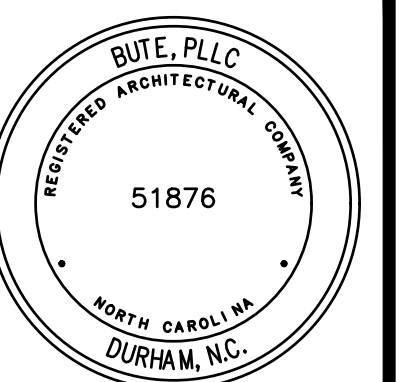
DEMOLITION DETAILS

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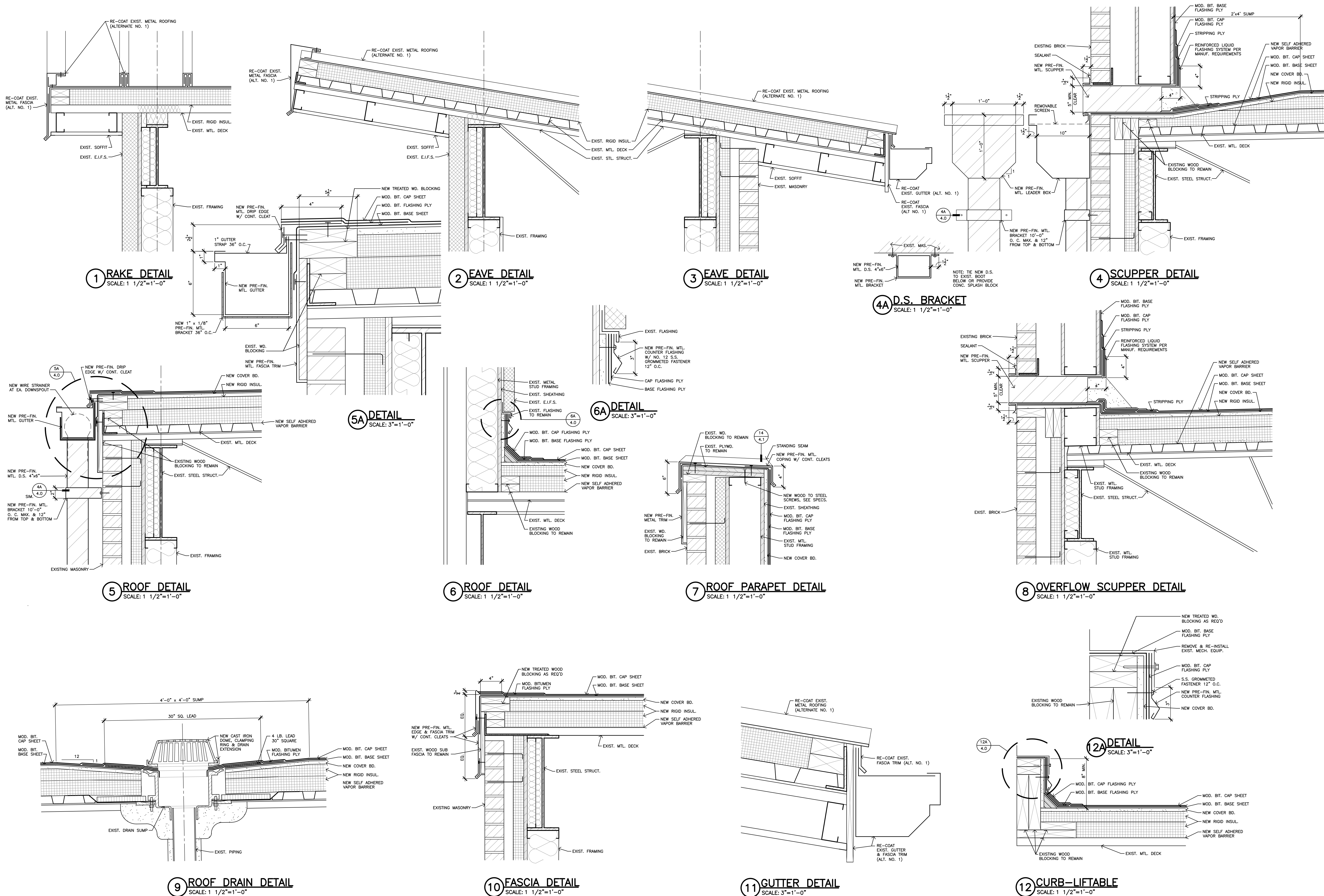
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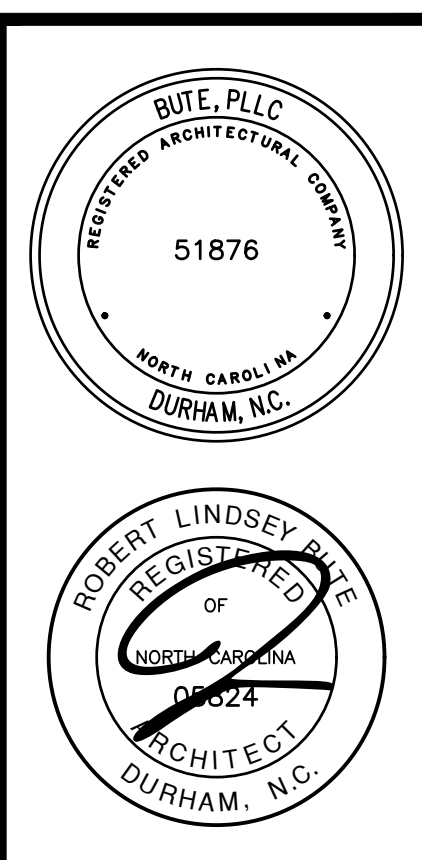
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Lindsey@butepllc.com

Date JANUARY 6, 2025

Revisions

Sheet

4.0

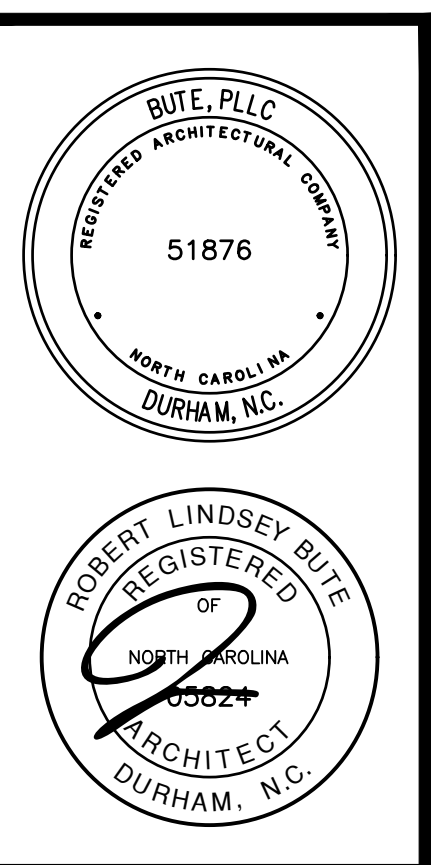
NEW DETAILS

Roof
Re-cover

New Town
Elementary
School

Project No: 2401 B

Union
County
Schools



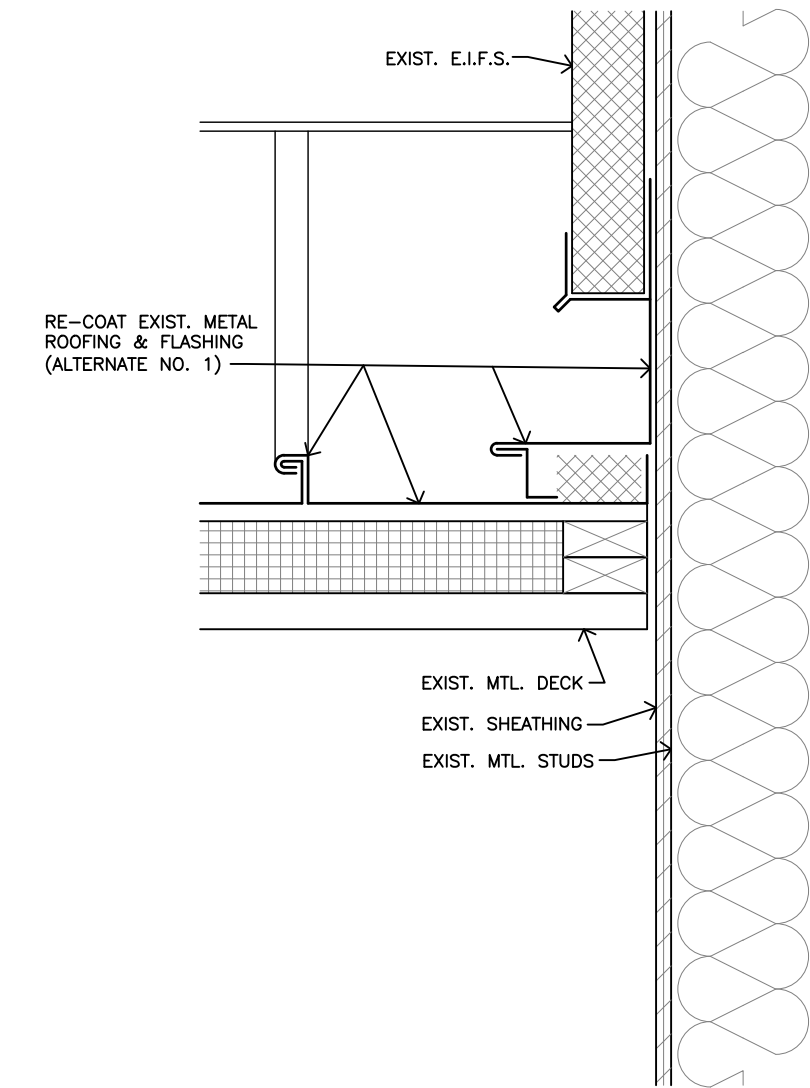
Bute, PLLC

P.O. Box 2833
Durham, NC 27715

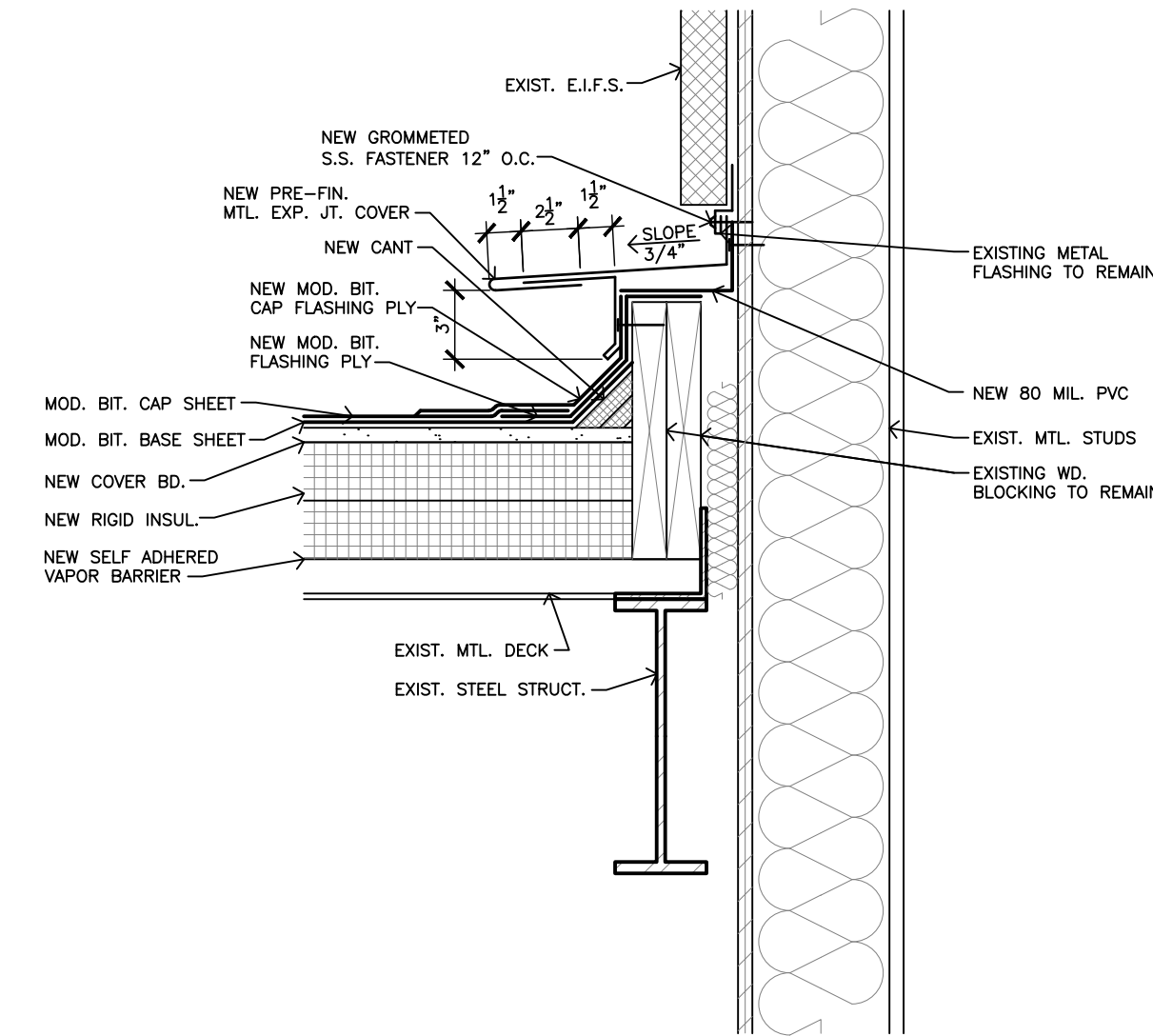
919.491.9105
Lindsey@butepllc.com

Date JANUARY 6, 2025
Revisions
Sheet

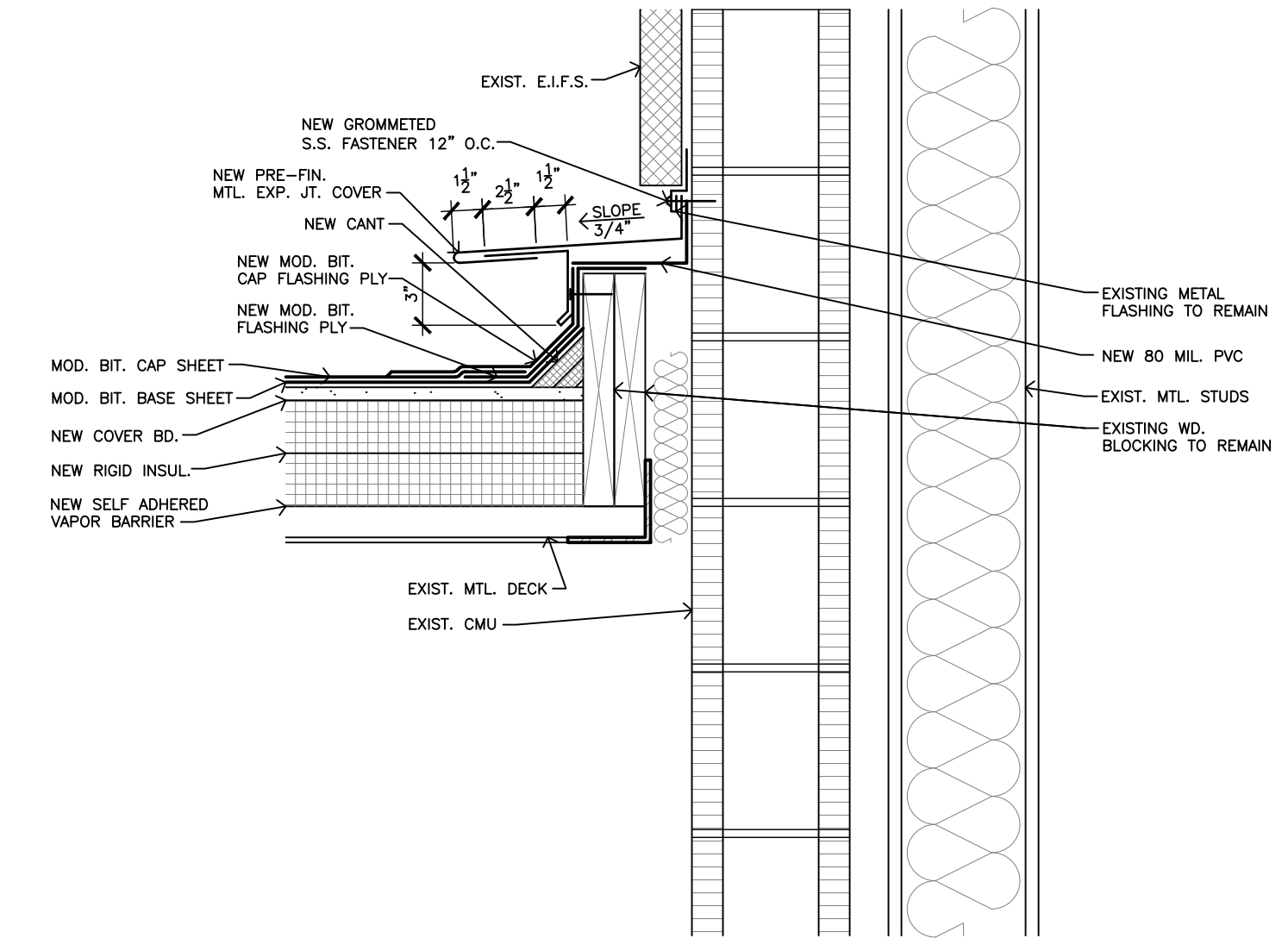
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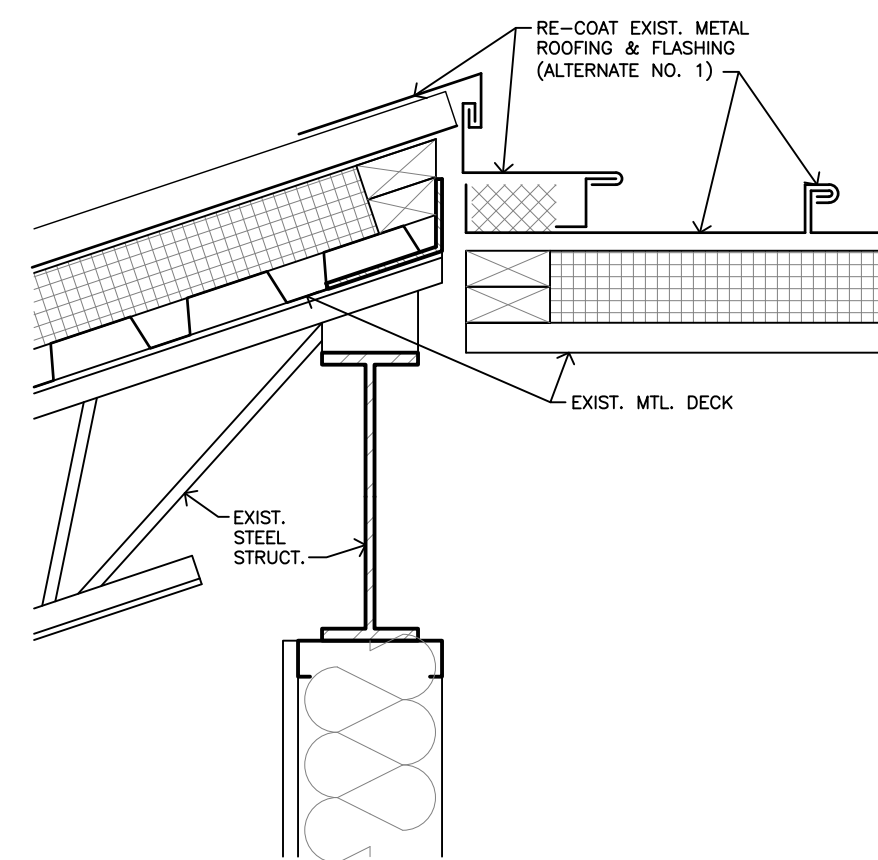
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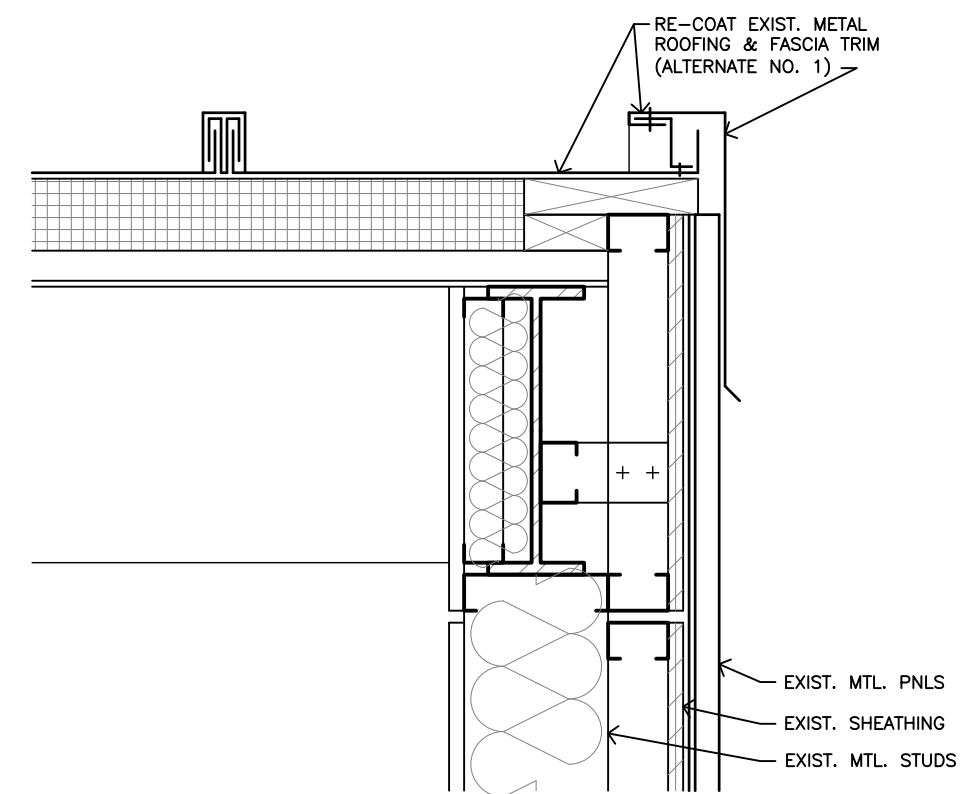
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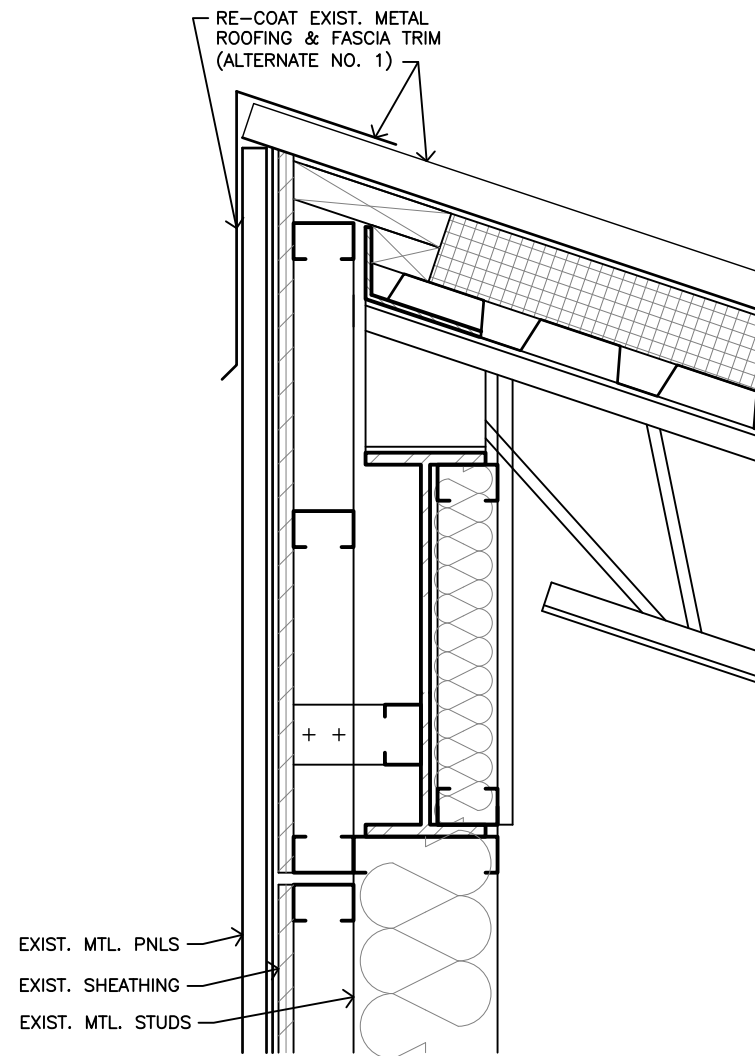
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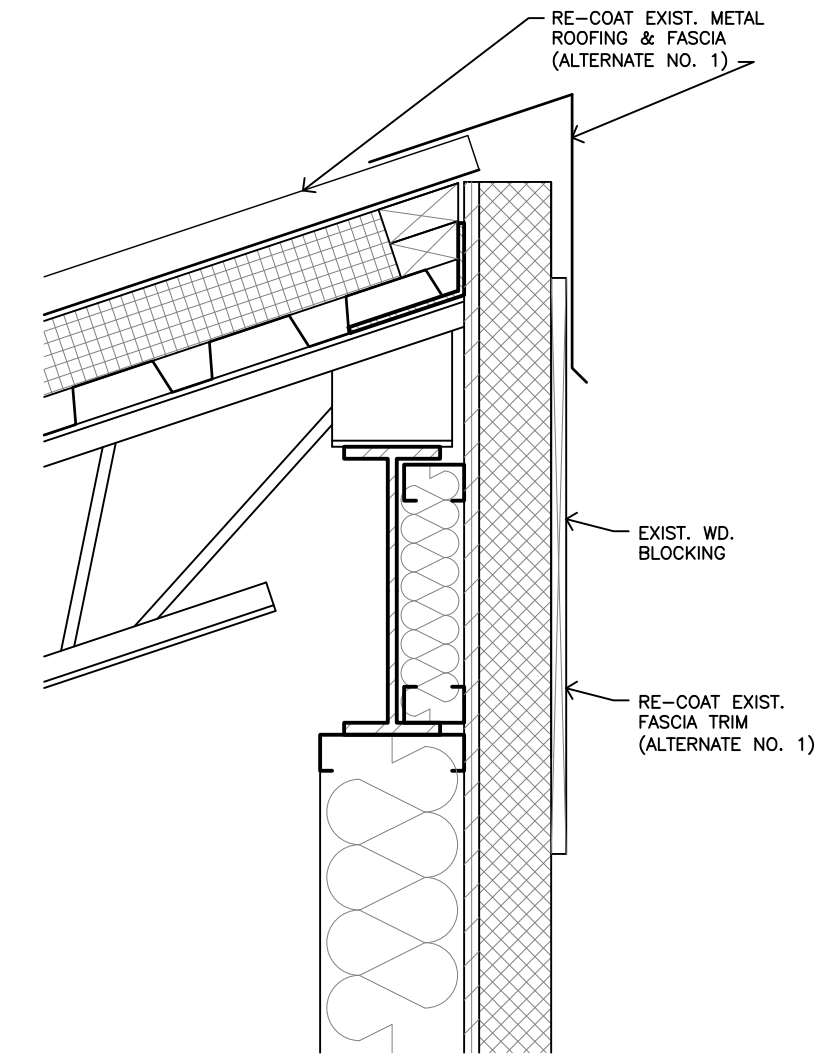
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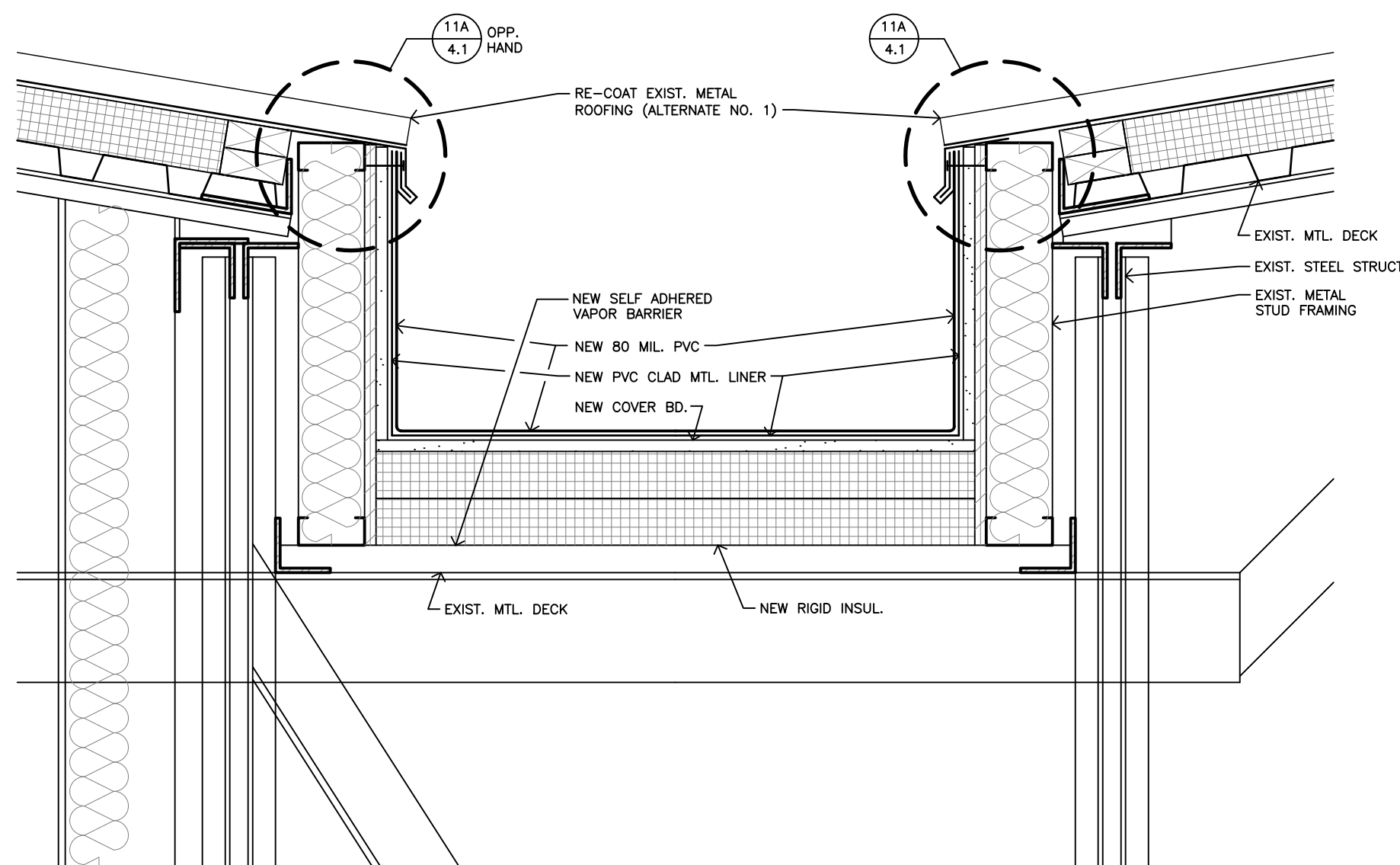
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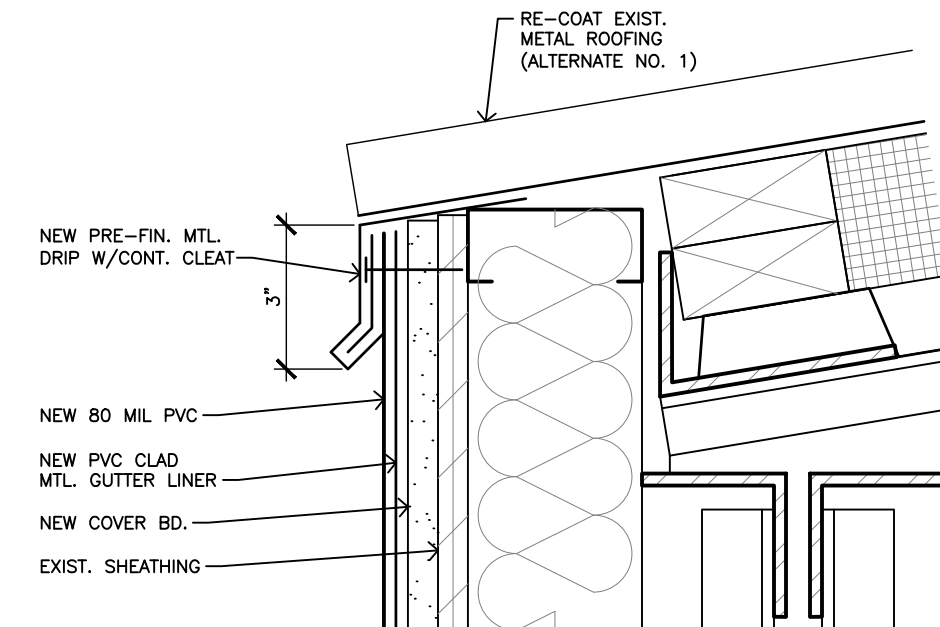
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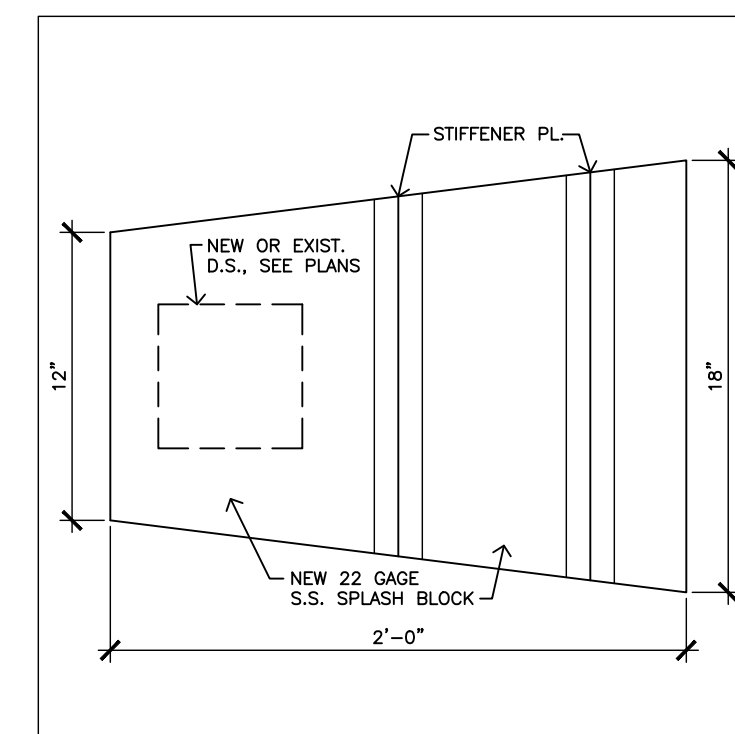
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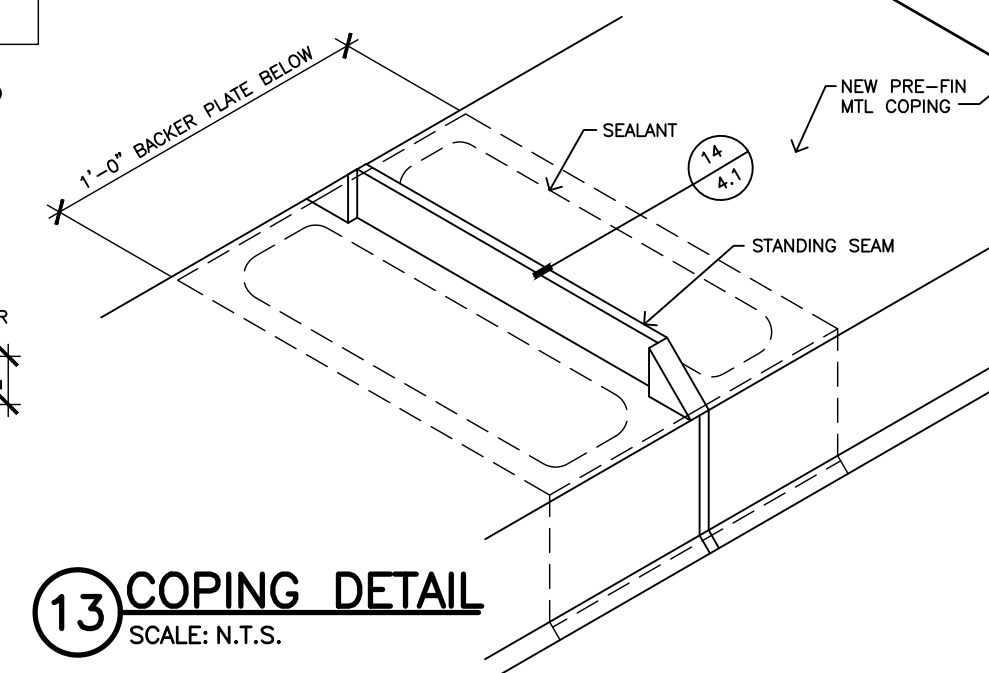
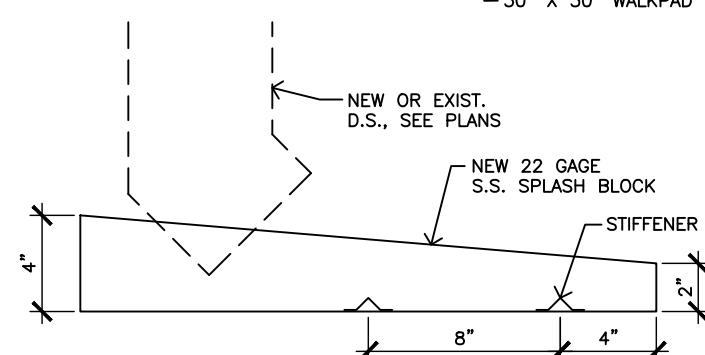
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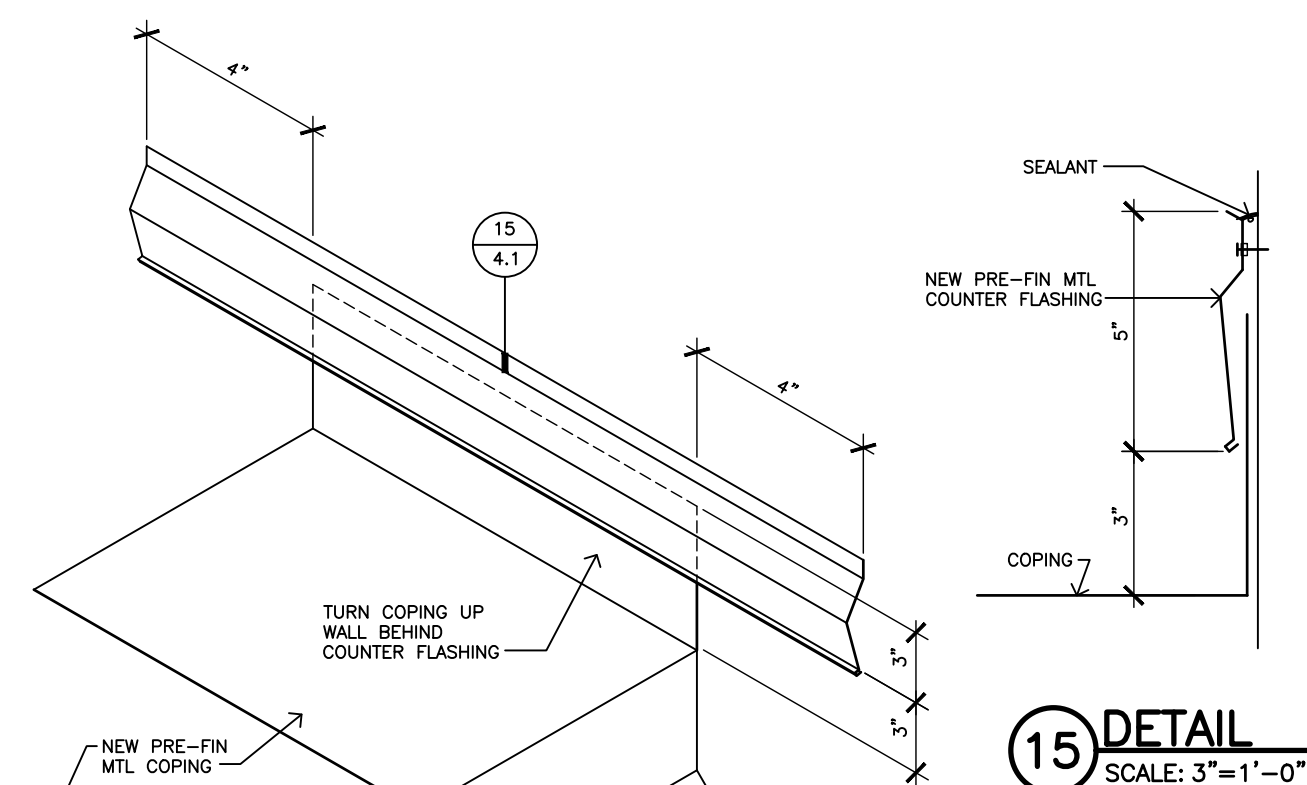
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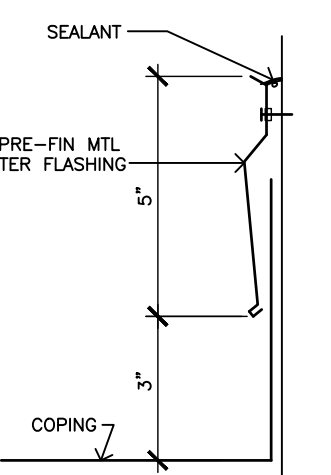
12 SPLASH BLOCK
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13 COPING DETAIL
SCALE: N.T.S.



14 COPING DETAIL
SCALE: 3"=1'-0"



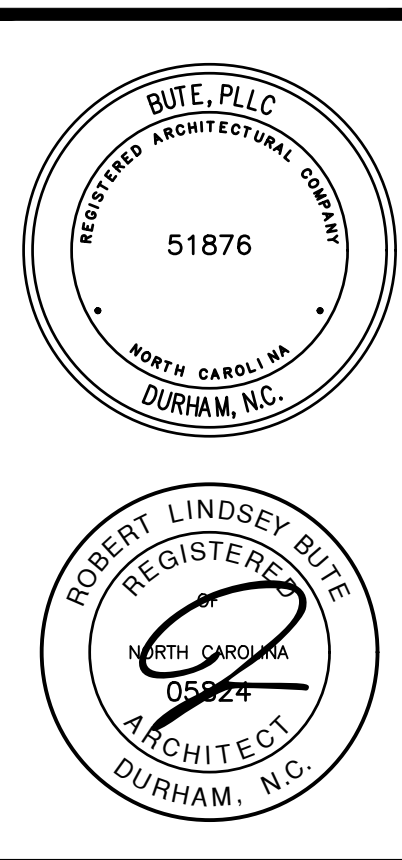
15 DETAIL
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Roof
Re-cover

New Town
Elementary
School

Project No: 2401 B

Union
County
Schools



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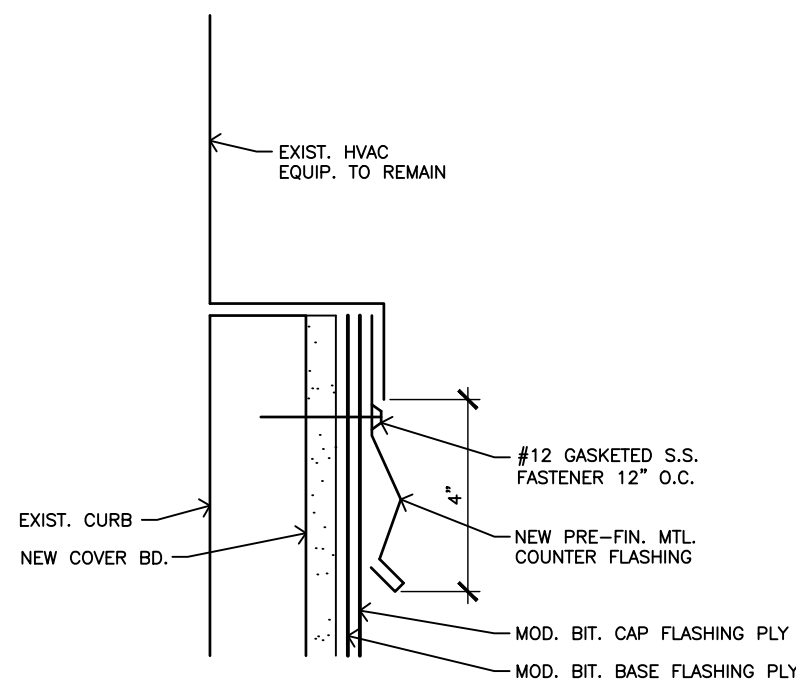
919.491.9105
Lindsey@butepllc.com

Date JANUARY 6, 2025

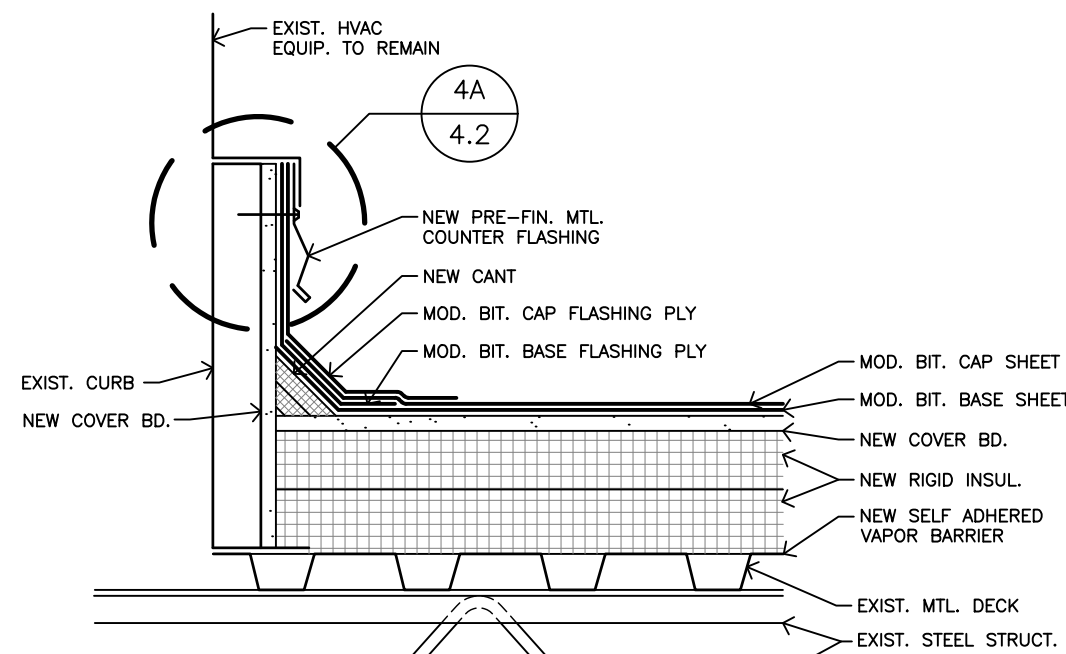
Revisions

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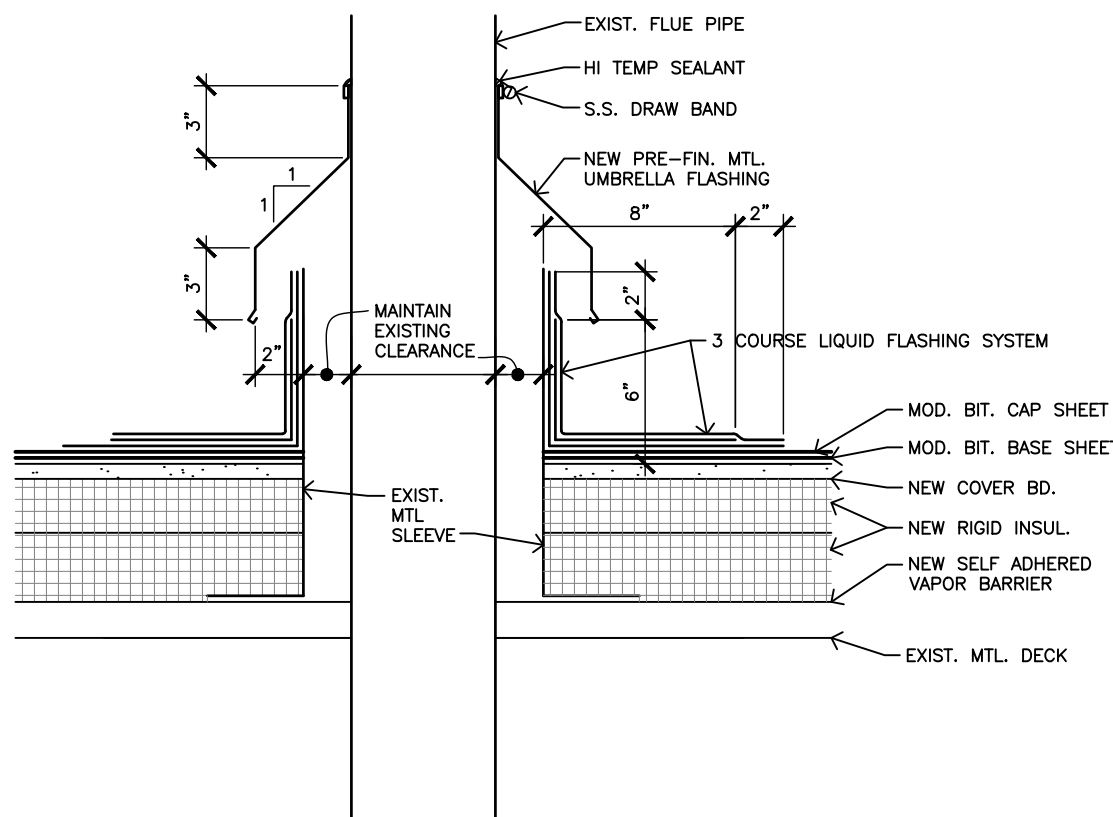
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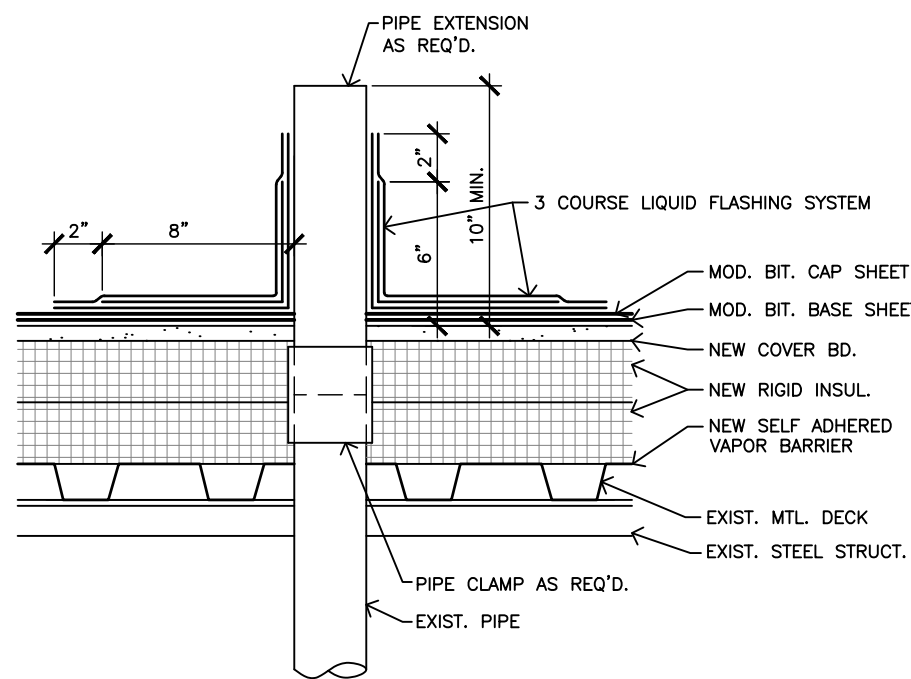
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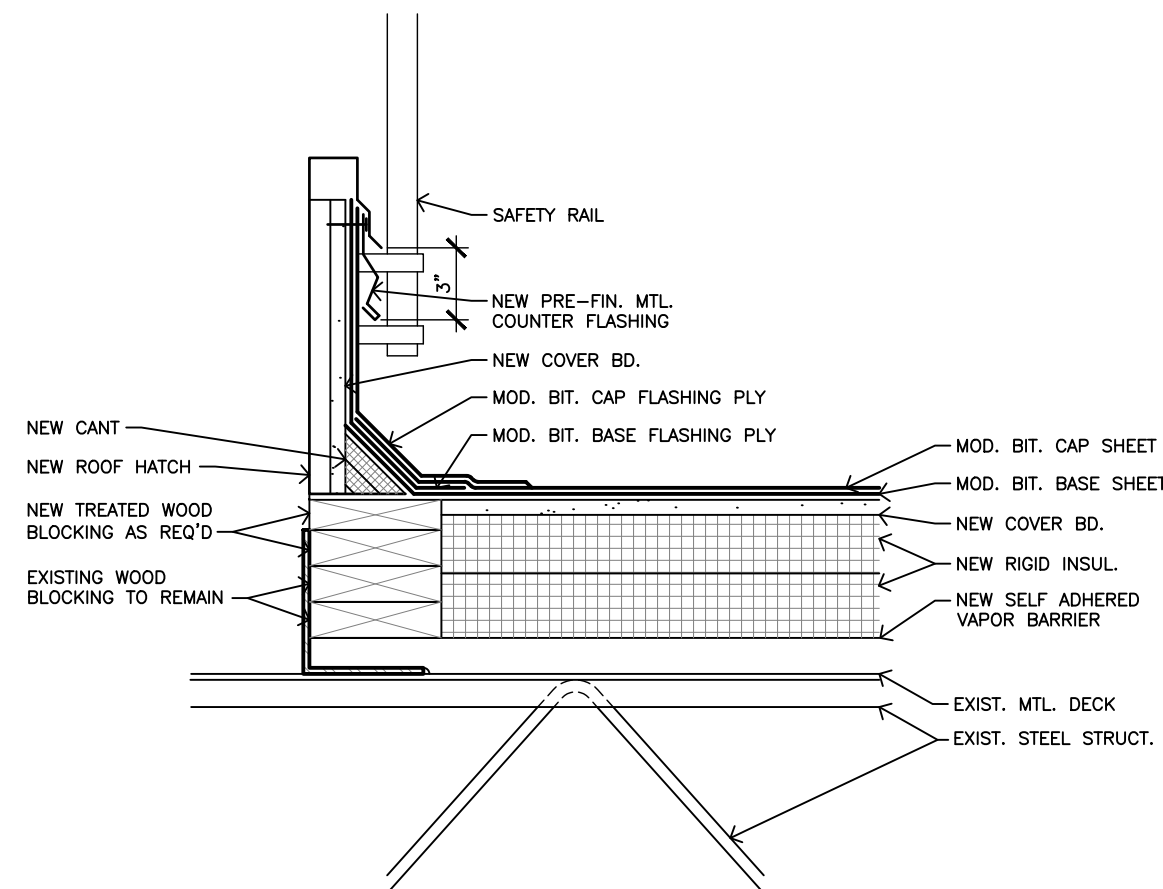
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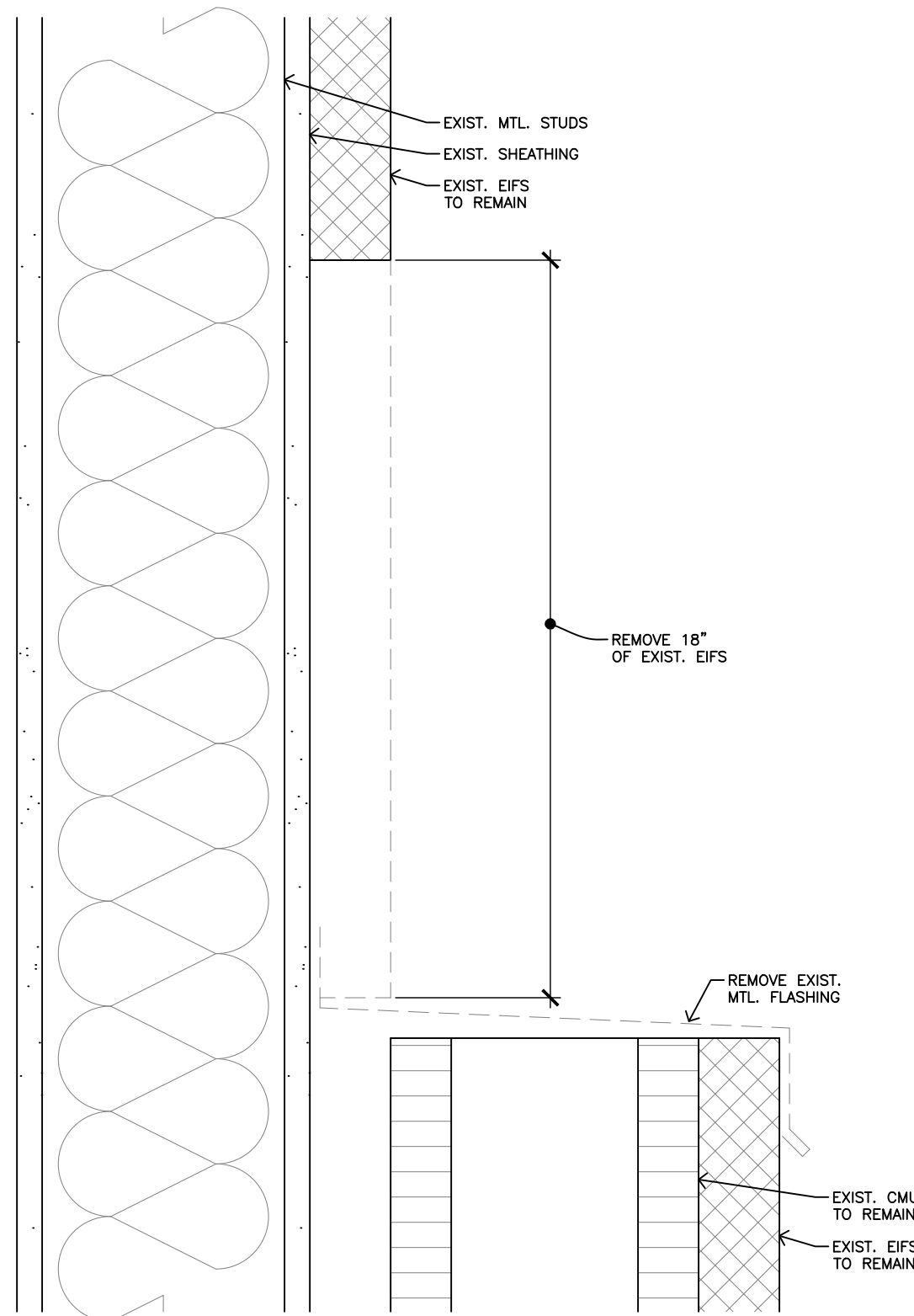
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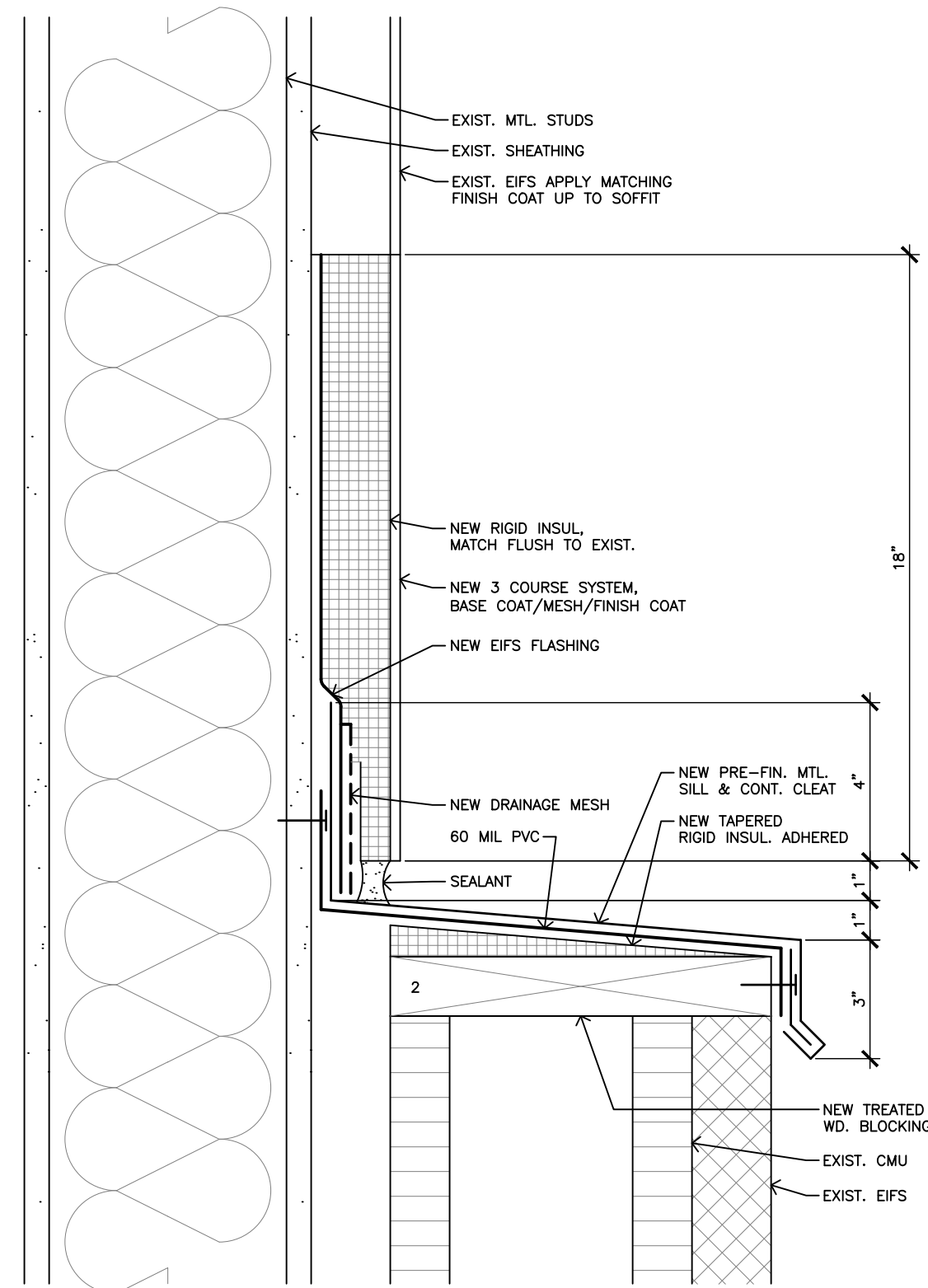
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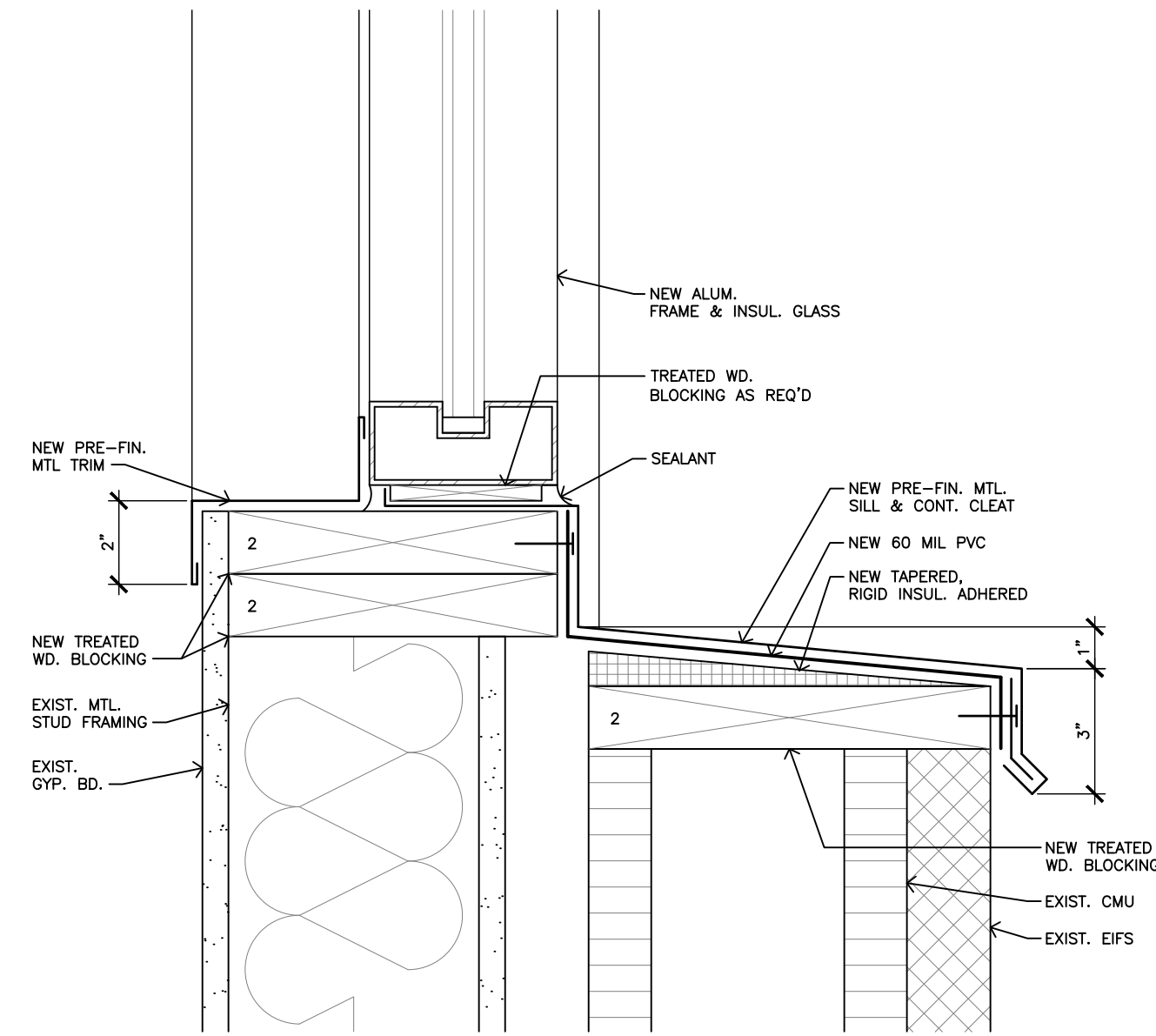
1 ROOF HATCH
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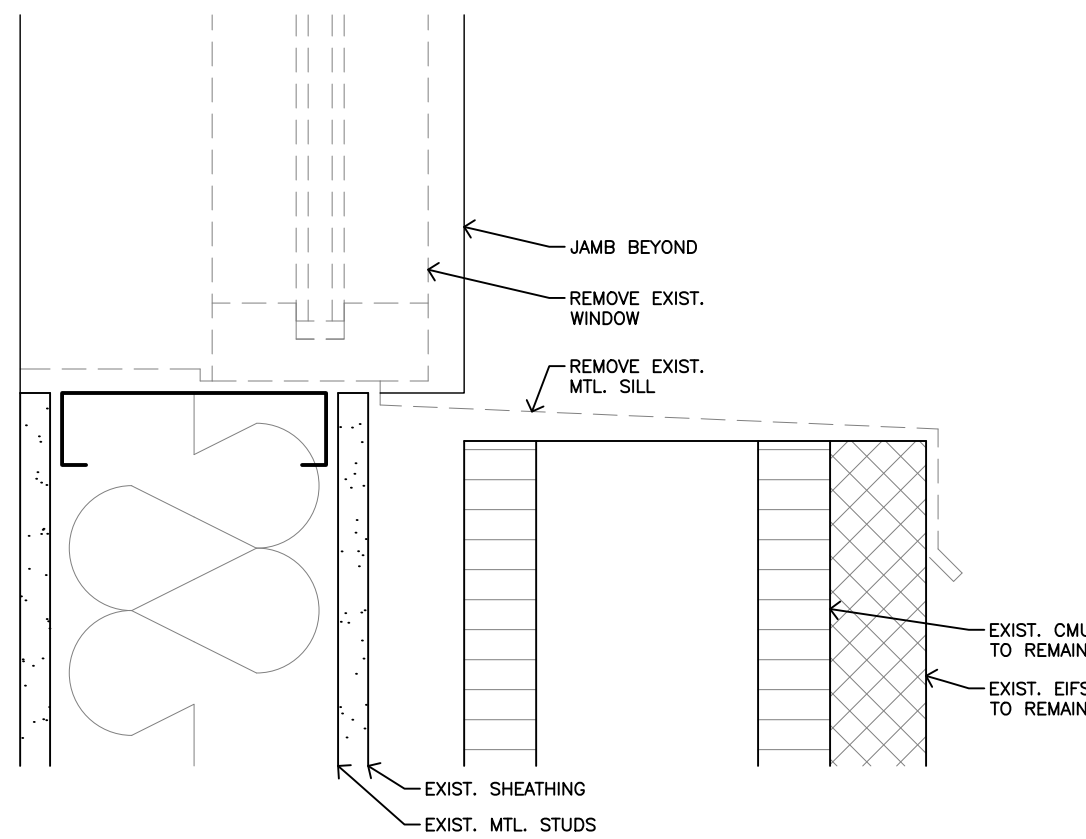
1 DEMO AT SILL (ALT. NO. 2)
SCALE: 3"=1'-0"



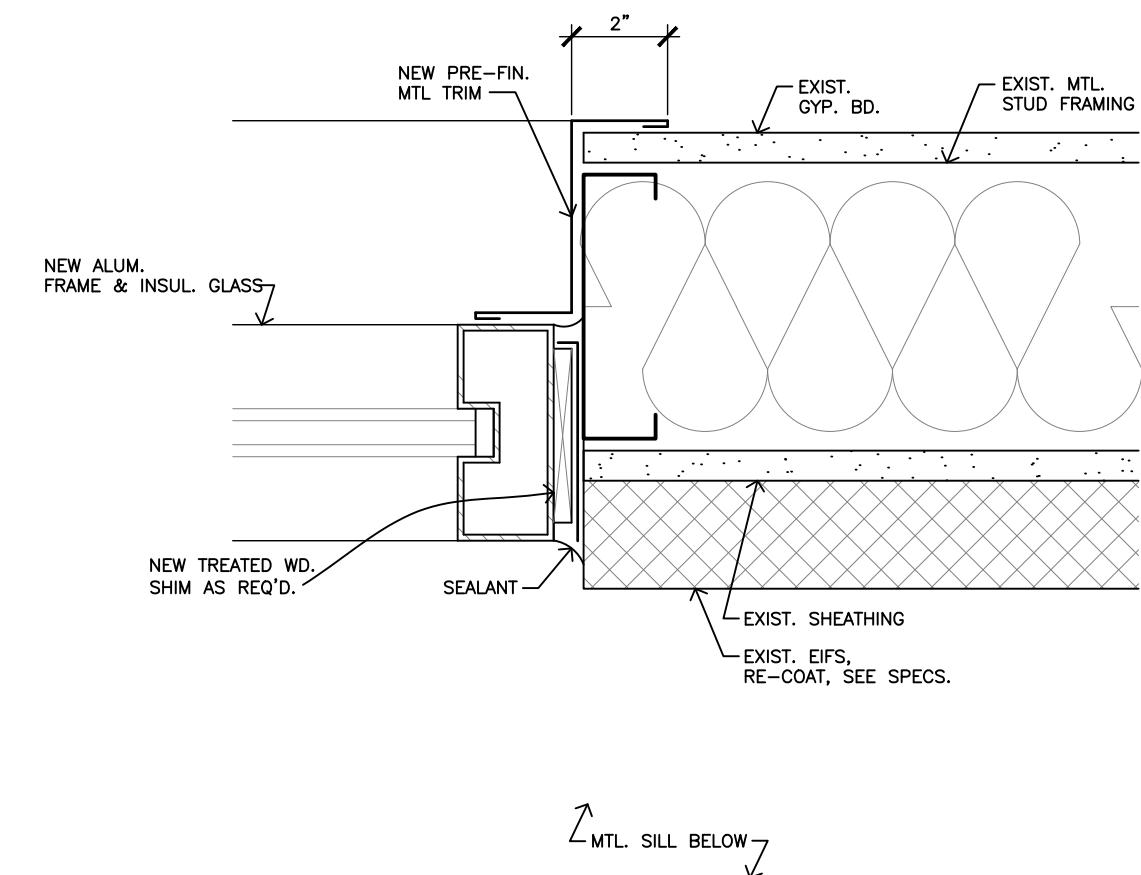
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SCALE: 3"=1'-0"



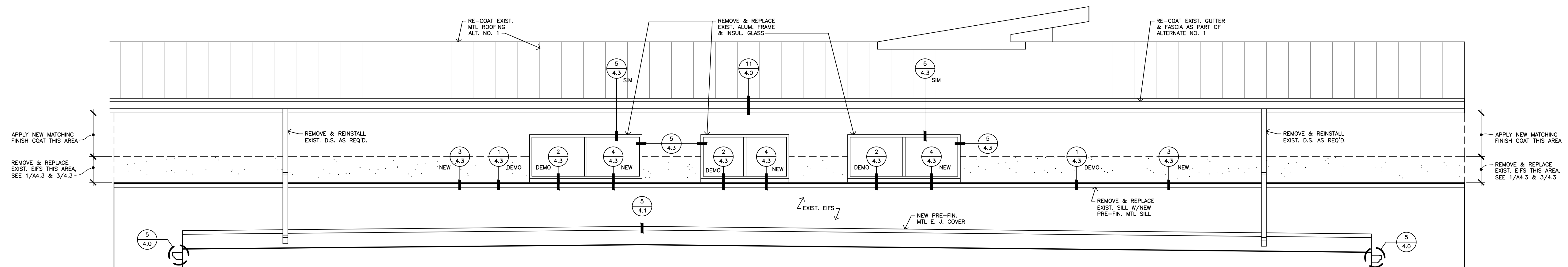
4 SILL - NEW (ALT. NO. 2)
SCALE: 3"=1'-0"



2 DEMO AT WINDOW (ALT. NO. 2)
SCALE: 3"=1'-0"



5 JAMB - NEW (ALT. NO. 2)
SCALE: 3"=1'-0"



6 ELEVATION (ALT. NO. 2)
SCALE: 1/4"=1'-0"

These drawings are instruments of service and as such remain the property of the architect. No copies or reproductions of these drawings are permitted without the consent of the architect. Upon completion of the work all the drawings (except the contract copies) are to be returned to the architect.
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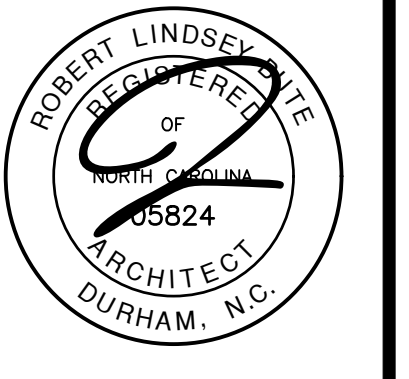
NEW DETAILS - ALT. NO. 2

Roof
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New Town
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Project No: 2401 B

Union
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Date JANUARY 6, 2025
Revisions

Sheet

4.3

Clarification of Specs

PROJECT: Roof Replacement
New Town Elementary School

OWNER: Union County Public Schools
400 N. Church St
Monroe, NC 28112

FROM: Bute, PLLC
PO Box 2833
Durham, NC 27715
919.491.9105

TO: Prime Bidders

This document becomes a part of the Contract Documents and modifies the original Contract Documents dated 1.6.25 as noted below.

This document consists of:

- (2) Sheets Pre-Bid Meeting Notes (8 ½ x 11)
- (1) Sheets Pre-Bid Meeting Sign I Sheet (8 ½ x 11)
- (1) Sheets Changes to Specifications (8 ½ x 11)
- (2) Sheets Changes to Drawings (8 ½ x 11)

I PRE-BID MEETING NOTES

1. Base Bid work includes, but is not limited to the following items as indicated on see drawings.

- Removal of existing membrane roofing and insulation
- Removal of existing coping, gravel stops, gutters and other metal work as indicated on drawings
- Installation of new self-adhered vapor barrier
- Installation of new mechanically fastened rigid insulation system (see plans), both tapered and flat stock
- Installation of new adhered cover board
- Installation of new torch applied (SBS) Modified Bituminous Membrane Roofing
- Installation of new copings, gravel stops, gutters and other metal work as indicated on drawings

2. Alternates ALL ALTERNATES ARE CHANGES TO THE BASE BID

Alternate No 1

Add to include installing a new elastomeric coating to all existing metal roofs as indicated on drawings and specified herein.

Alternate No 2

Add to include EIFS repairs and window and sill replacement as indicated on sheets 2.1 and 4.3 and specified herein.

3. The last day for questions is February 18, 2025 by 2:00 PM
5. Bids are due February 25, 2025 at 10:00 the Owners offices as listed in the advertisement.
6. Bids must have the MBE participation form and either Affidavit A with a minimum of 50 points or Affidavit B (100% self-performed)
7. Bidders need to be sure the Identification of Minority Business Participation form is included
8. Substantial Completion is 150 calendar days from NTP. The Owner estimates a NTP in early April.
9. Note that for the base bid and Alternate No. 1 the existing drains are to be retrofitted with extensions and in all cases new clamping rings and domes are required.

II CHANGES TO SPECIFICATIONS

1. Section 075216 Styrene Butadiene Styrene SBS Modified Membrane Roofing, PART 2, paragraph 2.01, add the following :

Equal products as Manufactured by GAF will be acceptable.

III CHANGES TO DRAWINGS

1. Note new elastomeric coating is included on Roof 1.16 in Alternate No. 1 as shown on the attached sheet.



	1.15	30'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					
	1.15	16'	METAL	PREFINISHED METAL	ELASTOMERIC COATING					

Clarification of Specs

PROJECT: Roof Replacement
New Town Elementary School

OWNER: Union County Public Schools
400 N. Church St
Monroe, NC 28112

FROM: Bute, PLLC
PO Box 2833
Durham, NC 27715
919.491.9105

TO: Prime Bidders

This document becomes a part of the Contract Documents and modifies the original Contract Documents dated 1.6.25 as noted below.

This document consists of:

(1) Sheets Changes to Specifications (8 ½ x 11)

I CHANGES TO SPECIFICATIONS

1. Section 075216 Styrene Butadiene Styrene SBS Modified Membrane Roofing, PART

2, paragraph 2.01, add the following :

Equal products as manufactured by Holcom/Elevate

2. Section 099100 Elastomeric Roof Coating, PART 2, paragraph 2.01, part b, add the following manufacturer:

“Gaco 47Series” as manufactured by Gaco



We
protect
what
matters
most™

January 13, 2025

Subject: Substitution Request

Project: New Town Elementary School Roof Replacement
Waxhaw, NC

To Whom It May Concern:

We respectfully request consideration of the following on the above referenced project.

PROPOSED SUBSTITUTION: GAF® Specification: I02HW30FREC

Products include:

- GAF SA Vapor Retarder XL
- EnergyGuard™ Polyiso
- EnergyGuard™ Tapered Polyiso
- Securock® Gypsum-Fiber Roof Board
- RUBEROID® HW Smooth
- RUBEROID® EnergyCap™ HW 30 Granule FR Membrane
- RUBEROID® EnergyCap™ HW Plus Granule FR Membrane
- Matrix™ 307 Premium Asphalt Primer
- Olybond 500® Insulation Adhesive
- Drill-Tec™ Fasteners and Plates
- GAF PMMA Liquid Flashing System
- RUBEROID®/GAFLAS® Diamond Pledge™ NDL Roof Guarantee

The attached data includes product description, specification performance, test data, and specimen Guarantee as necessary for the evaluation of the request; applicable portions of the data are clearly identified. The undersigned states that the following paragraphs, unless modified on attachments, are correct:

1. This proposed substitution meets or exceeds the architect's specified performance requirements.
2. Maintenance and service products will be available for the proposed substitution.

The undersigned further states that the function, appearance, and quality of the proposed substitution are equal or superior to the specified item. If you have any further questions, please contact GAF Territory Manager Justin Maycher at justin.maycher@gaf.com. Thank you for your consideration, and we look forward to your acknowledgment via email for acceptance.

Sincerely,

Traci Hicks

Traci Hicks

Regional Lead, Design Services

Design Services

GAF SAVaporRetarderXL

Self-Adhered Vapor Retarder



Product Description:

GAF SA Vapor Retarder XL is a self-adhered, vapor-inhibiting membrane designed for use in approved roofing membrane assemblies. It's composed of a tri-laminated woven polyethylene facer combined with an advanced, high-tack butyl rubber adhesive. The under-face is applied with a split silicone release film that is removed during installation. This uniquely durable product exhibiting high-tensile strength can be left exposed for up to 180 days when installed in accordance with published GAF specifications and details.*

Features and Benefits:

ASTM E108 Class A and FM 4470 Class 1 Fire Ratings directly over steel deck.****

Designed to be self-sealing.

Increased adhesion performance provides three times the peel strength compared to self-adhered modified bitumen vapor barriers.

Use of a primer prior to installation is NOT required.

Slip-resistant embossed walking surface.

Extra-large roll size (603 square feet) results in fewer rolls and fewer field seams per job.

Easy-to-peel, split-release film speeds the application process.

Standard thickness is 31 mils; also available in 41 mils (contact your local GAF representative for details).

Direct attachment at curbs and walls on TPO applications (refer to application instructions for approved adhesives).

Applicable Substrates:

GAF SA Vapor Retarder XL is designed to be applied to a variety of properly prepared decks or substrates:

Steel
Plywood/OSB
Gypsum Roof Boards
Concrete

Application:

GAF SA Vapor Retarder XL can be applied at temperatures as low as 25°F (-3.9°C) provided that the product has been stored in a heated area to ensure it is between 50°F - 100°F (10°C - 37.7°C) at time of installation. It is recommended that GAF SA Vapor Retarder XL be installed with minimum 3" (76.2 mm) side laps and 3" (76.2 mm) end laps.

Applicable Standards:

ASTM D5147, ASTM E2178, ASTM E96

* Refer to the appropriate application and specifications manual for the system being installed. Available at gaf.com.

** Values stated are approximate and subject to normal manufacturing variation. These values are not guaranteed and are provided solely as a guide.

*** Thicker/heavier product available by special request only and sold as SA Vapor Retarder XL40.

**** Refer to www.RoofNav.com for actual assemblies.

Product Specifications (approximate**)

	STANDARD XL ROLL	XL (41 MILS)
THICKNESS	31 mils	41 mils
ROLL WEIGHT	97 lb.	129 lb.
ROLLS SIZE	6 squares	
ROLL LENGTH	105'	
ROLL WIDTH	69"	
SHELF LIFE	18 months from the date of manufacture when stored properly	

Product Specifications (approximate**)

PROPERTY	MD VALUE	XMD VALUE	TEST METHOD
Thickness, mils (mm)	31 (.79)		ASTM D1970
Thickness***, mils (mm)	41 (1.04)		ASTM D1970
Tensile strength, min. lbf/in (kN/m)	70 (12.3)	70 (12.3)	ASTM D5147
Ultimate elongation @ 73.4°F (23°C), min. %	31	31	ASTM D5147
Tear resistance, min. lbf (N)	95 (423)	110 (489)	ASTM D5147
Static puncture, min. lbf (N)	90 (400)	90 (400)	ASTM E154
Lap adhesion, min. lbf/ft (N/m)	24 (350)	24 (350)	ASTM D1876
Water absorption, min. %	0.01	0.01	ASTM D5147
Peel resistance on steel, min. lbf/in (N/m)	25 (4,378)		ASTM D903
Cold bending, max. °F (°C)	-30 (-34.4)		ASTM D5147
Water vapor permeance, max. perm (ng/Pa.s.m²)	0.03 (1.7)		ASTM E96
Air permeability, max. L/s.m²	0.001		ASTM E2178



For additional information, contact GAF Design Services at 1-877-423-7663 or designservices@gaf.com

We protect what matters most™





SA Vapor Retarder XL

Self-Adhered Vapor Retarder

INSTRUCTIONS

Introduction

This guide addresses proper installation of the GAF Self-Adhered Vapor Retarder XL (SA VR XL), including around curb/wall areas and penetrations. This guideline does not address how to tie the vapor retarder into an air barrier system, such as the exterior wall. Determining whether or not to apply a vapor retarder is a matter dictated by roof design, which makes that question outside the scope of this guide.

Preparation

- Ensure substrates are dry, smooth, free of contaminants, and in sound condition to receive SA VR XL application.
- Conducting an adhesion test is required:
 - Prepare five 2" x 12" sections of the SA VR XL.
 - Remove 8" of the silicone release film, leaving 4" intact and unadhered.
 - Place the exposed side onto the roof deck and roll into place with uniform pressure using a 2" silicone hand roller.
 - Let the samples remain in place for a minimum of 2 hours.
 - Use a handheld measuring scale, connected to the middle of the 4" unadhered portion, to pull up on the sample slowly and continuously, lifting 90 degrees from the roof surface until the sample is completely separated from the substrate.
 - Record the weight in pounds, as well as the mode of failure.
 - Favorable adhesion will result in separation within the butyl, which will leave deposits on the substrate and possibly remnants of the substrate.
 - A peel strength minimum of 9 lb. per 2" should be achieved on all installed deck types. If not, contact designservices@gaf.com or 877-423-7663.

Substrate Considerations

Concrete	Structural concrete should cure for at least 28 days prior to installation of the vapor retarder.
	Contact GAF Design Services for additional information for lightweight concrete.
Steel Deck	Minimum 22 ga. sheet metal plates (6" x 66") must be securely fastened to the steel deck at all SA VR XL end lap locations to ensure support and uniform sealing of the vapor retarder lap.
	All side laps need to rest directly on a flute.
Plywood / OSB	Decks must have solid blocking (no H clips) when applying SA VR XL directly to ply/osb roof deck.
	Where seismic bracing is present, considerations must be made to protect application of SA VR XL where seismic straps may create potential for damage.
Gypsum / Cement Boards / GAF EnergyGuard™ HD Iso	Products must be purchased through GAF and acceptable for self-adhered roofing membranes.
Coverboard	Securement of gypsum/cement boards must be with acceptable LRF (low-rise foam) purchased through GAF or with appropriate fasteners and flat insulation plates purchased through GAF.

Installation

Field

- Starting at the low point of the roof, unroll GAF SA VR XL over the prepared substrate and align the material with the correct placement along the roof perimeter. Maintain 3" side laps and 3" end laps. For steel decks, install SA VR XL parallel to flutes, and install a steel plate at all end lap areas. Side laps should be positioned on top of steel flutes.
- While maintaining placement of the SA VR XL material, carefully remove the silicone release film from the backside, keeping the film low and at a 45-degree angle to the length of the sheet. The SA VR XL must lay flat to the substrate and be free of wrinkles or "fishmouth" bubbles.
- Use a soft bristle broom to apply light pressure over the installed SA VR XL and follow up with a minimum 50-lb. weighted roller to firmly secure it to the substrate.
- At curb/wall intersections, carry the SA VR XL up the curb/wall a minimum 3" or to the planned finish height of roof insulation. NOTE: fully wrapping curb/walls may be required by the designer of record.
- Detail areas such as T laps, roof to curb/wall transitions, and penetration areas will require rolling into place with a silicone or steel hand roller. Apply a bead of GAF FlexSeal™ Caulk Grade to the top of all finished T laps and feather into place.
- Ensure the finished application is free of wrinkles, bubbles, or punctures. Cut out any wrinkles or bubbles, clean the SA VR XL surface with EverGuard® TPO Seam Cleaner, and apply an SA VR XL patch for a minimum 3" extension past the damaged area in all directions. Apply a bead of GAF FlexSeal™ Caulk Grade to any cut edges.

Curb/Wall

- All laps should create a minimum 3" overlap, including curb/walls. All curb/wall bases and corners must create a minimum 3" overlap.
- Ensure the finished application is free of wrinkles, bubbles, or punctures. Cut out any wrinkles or bubbles, clean the SA VR XL surface with appropriate GAF TPO Cleaner, and apply an SA VR XL patch for a minimum 3" extension past the damaged area in all directions. Apply a bead of GAF FlexSeal™ Caulk Grade to any cut edges.

Penetrations

- Carry the SA VR XL a minimum 3" up the penetration.

Best Practices for Extended Exposure

- **GAF SA VR XL may be left in place during construction for a maximum period of 180 days.** If SA VR XL is being exposed, considerations need to be made in regards to foot traffic, weather, drainage, and other variables that might affect the SA VR XL prior to installation of the final roof assembly. The GAF SA VR XL must be evaluated for any damage and properly cleaned prior to installation of the roofing assembly. Undertaking such evaluation and repair is extremely important for the product to perform as a vapor retarder.
- Repair — a physical items must be identified and marked for repair. Clean the SA VR XL surface with appropriate GAF TPO Cleaner, permit time to flash

off/dry, and apply a minimum 3" overlapping patch repair of SA VR XL overlapping damaged areas in all directions. If damage is extensive in an area, installation of a new SA VR XL sheet staggered from existing sheet laps may be required.

- Once all repairs have been made, clean the entire roof surface prior to installation of one of the following manners of roofing system:
 - Base layer of roofing system or insulation mechanically fastened through SA VR XL to deck
 - Adhered base layer of roofing system or insulation (Shovel method adhesion test required if using LRF adhesives)

Compatible Adhesives for Field of Roof Insulation Installation

- Only LRF adhesives distributed by GAF and noted as acceptable for insulation attachment may be applied over the SA VR XL surfacing. They include:
 - Olybond500® Roofing System Equipment-Free Canister System
 - GAF LRF Adhesive
 - GAF LRF Adhesive XF
 - Olybond500® Spot Shot

Note: Refer to the appropriate GAF Roofing Systems Overview and General Requirements Manual for adhesive application rate and installation procedures.

- Only insulation may be adhered directly to the GAF SA VR XL surfacing. Attachment of roofing plies/membrane with hot asphalt, SBS adhesive, solvent, or water-based bonding adhesive is not acceptable.

Compatible Adhesives for Curb/Wall Flashing

- GAF Everguard® TPO smooth and fleeceback membranes may be installed directly over SA VR XL at curbs/walls using the bonding adhesives located in the table below.
- GAF Everguard® PVC smooth and fleeceback membranes over SA VR XL at curbs/walls is not acceptable. An approved substrate (HD Polyiso, Gypsum/Cement Board, Plywood/OSB) must be mechanically fastened prior to adhesion of PVC/PVC KEE Membrane.

Everguard® TPO (Smooth)	Everguard® TPO Quick-Spray Bonding Adhesive
	Everguard® TPO Quick-Spray Bonding Adhesive LV50
	Everguard® TPO SBA 1121 Bonding Adhesive
	Everguard® Low VOC Bonding Adhesive
Everguard® TPO (Fleeceback)	Everguard® 3sq Low VOC Bonding Adhesive
	Olybond 500® Canisters
Asphaltic Roofing Systems	Requires installation of acceptable substrate fastened through SA VR XL prior to installation of asphaltic flashing

Note: Refer to the appropriate GAF Roofing Systems Overview and General Requirements Manual for adhesive application rate and installation procedures. Positive Slope is required on Extended Exposure installations. Contact GAF Design Services at designservices@gaf.com for code requirement assistance if necessary.

We protect what matters most™



Flat Polyiso with GRF Facers



Description:

EnergyGuard™ Polyiso Insulation made of glass fiber reinforced cellulosic facers (GRF) bonded to a core of polyisocyanurate foam.

Features and Benefits:

- Versatile — approved component in single ply, BUR and modified bitumen systems, with a variety of attachment methods: mechanically attached, fully adhered, loose laid and ballasted
- Approved for direct application to steel decks
- High insulation value — polyiso insulation has the highest R-value per inch compared to any other type of non-polyiso insulation of equivalent thickness
- Because of its light weight, this material is easy to handle on the jobsite and installs quickly. Easy cutting in the field provides the installer with simplified fabricating on the roof deck
- Excellent dimensional stability, high moisture resistance and low water permeability

Panel Characteristics:

- Available in a variety of thicknesses from 1.0" (25.4 mm) to 4.6" (116 mm) to best suit your specifications
- Available in 4' x 4' (1.22 m x 1.22 m) and 4' x 8' (1.22 m x 2.44 m) boards
- Flute Fill and other special sizes are available upon request
- Other EnergyGuard™ products available — tapered, CGF facer and non-halogenated. See individual data sheets for more information

Codes & Compliance:

- Meets the requirements of ASTM C1289 Type II, Class 1, Grade 2 (20 psi) and also available in Grade 3 (25 psi)
- FM Approved - refer to RoofNav.com for approved assemblies
- Classified by UL in accordance with ANSI/UL 1256, 790 and 263. Refer to UL Product iQ for specific assemblies
- UL Evaluation Report UL ER1306-03
- Miami-Dade County Product Control Approved
- State of Florida Approved
- Meets the requirements of CAN/ULC 704.1, Type 2, Class 3 or Type 3, Class 3†
- UL (Canada) Evaluation Report ULC ER 1306†
- For additional information, contact GAF at 1-800-766-3411 or designservices@gaf.com

EnergyGuard™ Polyiso Insulation Thermal Values:

Size*	R-Value**	Max Flute Span (in)
1.0" (25.4 mm)	5.7	2 5/8" (66.7 mm)
1.2" (30.5 mm)	6.8	2 5/8" (66.7 mm)
1.5" (38.1 mm)	8.6	4 3/8" (111 mm)
1.75" (44.5 mm)	10.0	4 3/8" (111 mm)
2.0" (51 mm)	11.4	4 3/8" (111 mm)
2.2" (59 mm)	12.6	4 3/8" (111 mm)
2.3" (58 mm)	13.2	4 3/8" (111 mm)
2.5" (64 mm)	14.4	4 3/8" (111 mm)
2.6" (66 mm)	15.0	4 3/8" (111 mm)
2.8" (71 mm)	16.2	4 3/8" (111 mm)
3.0" (76 mm)	17.4	4 3/8" (111 mm)
3.2" (81 mm)	18.6	4 3/8" (111 mm)
3.5" (89 mm)	20.5	4 3/8" (111 mm)
3.7" (94 mm)	21.7	4 3/8" (111 mm)
4.0" (102 mm)	23.6	4 3/8" (111 mm)
4.3" (109 mm)	25.4	4 3/8" (111 mm)
4.5" (114 mm)	26.6	4 3/8" (111 mm)
4.6" (117 mm)	27.1	4 3/8" (111 mm)

* Other thicknesses available upon request.

** Long Term Thermal Resistance Values provide a 15-year time weighted average in accordance with CAN/ULC 770.

For optimal roof performance and to prevent thermal bridging GAF recommends installing two layers of Polyiso with staggered joints.



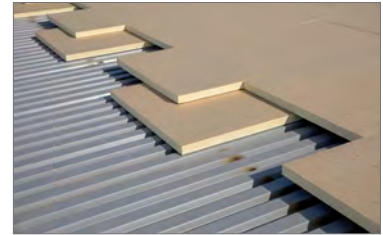
† GAF manufacturing locations in UT and PA.



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Sustainability:

- Manufactured with EPA-compliant blowing agents containing no CFCs or HCFCs; has zero ozone depletion potential (ODP) and negligible global warming potential (GWP)
- GREENGUARD Gold
- Green Circle Certified® for recycled content
- Potential LEED® Credits for Polyiso Use
- Environmental Product Declaration (EPD)



Typical Physical Property Data:

Property	Test Method	Values
Compressive Strength	ASTM D1621	Grade 2 – 20 psi min (138 kPa) Grade 3 – 25 psi min (172 kPa)
Dimensional Stability Change (length + width) ²	ASTM D2126	< 2% linear change
Flexural Strength	ASTM C203	40 psi min (275 kPa)
Tensile Strength	ASTM C209	500 psf min (24 kPa)
Water Absorption (percent by volume)	ASTM C209	1.5% max
Water Vapor Permeance	ASTM E96 Procedure A	< 1.5 perm max (85.8 ng/Pa•s•m²)
Service Temperature		-100° to 250 °F (-73.3° to 121.1 °C)
Flame Spread Index ³	ASTM E84	< 75 ¹
Smoke Developed Index	ASTM E84	< 200 ¹

¹ Foam Core

² Stated dimensional stability tolerance: Board thickness shall not diminish by more than 4% max.

³ These numerical ratings are not intended to reflect hazards presented by these or any other material under actual fire conditions.

Warnings and Limitations:

- EnergyGuard™ Polyiso Insulation is a non-structural, non load-bearing material. It is not designed for direct traffic usage unless adequately protected.
- EnergyGuard™ Polyiso Insulation should be stored protected from the elements. Bundle wrap is not for use as waterproofing for boards. No more insulation should be installed than can be completely covered with roofing on the same day.
- As unprotected polyisocyanurate will burn, fire safety precautions should be observed wherever insulation products are used.
- Direct mopping or torching of modified bitumen roofing or direct mopping of built-up roofing (BUR) to EnergyGuard™ Polyiso Insulation is not approved. A properly installed cover board or base sheet must be used.
- Refer to PIMA Technical Bulletin No. 109 Storage and Handling Recommendations for Polyiso Roof Insulation at www.polyiso.org
- Refer to the application specifications in the current membrane manufacturer's application and specifications manual for proper installation procedures.



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Sloped Polyiso with GRF Facers



Description:

EnergyGuard™ Tapered Polyiso Insulation is a sloped panel made of glass fiber reinforced cellulosic facers (GRF) bonded to a core of polyisocyanurate foam.

Features and Benefits:

- Prevents ponding water when properly installed on a low-slope roof by providing slope via a series of both tapered and flat polyiso fill boards
- Versatile — approved component in single-ply, BUR, and modified bitumen systems, with a variety of attachment methods: mechanically attached, fully adhered, loose laid, ballasted
- Highest R-value per inch of any rigid board insulation
- Easy to install — lightweight, easy to cut, easy to handle

Panel Characteristics:

Sizes: 4' x 4' (1.22 m x 1.22 m) – 4' x 8' (1.22 m x 2.44 m) available upon request

Thickness: 1/2" – 4 1/2" (12.7 mm – 114.3 mm) in a single layer

Slope: 1/16" (1.6 mm), 1/8" (3.2 mm), 3/16" (4.8 mm), 1/4" (6.35 mm), 3/8" (9.5 mm), 1/2" (12.7 mm)

Codes and Compliance:

- Meets the requirements of ASTM C1289 Type II, Class 1, Grade 2 (20 psi) and Grade 3 (25 psi)
- FM Approved — refer to RoofNav.com for approved assemblies
- Classified by UL in accordance with ANSI/UL 1256, 790 and 263. Refer to UL Product iQ for specific assemblies
- UL Evaluation Report UL ER1306-03
- Miami-Dade County Product Control Approved
- State of Florida Approved
- Meets the requirements of CAN/ULC 704.1 Type 2, Class 3 or Type 3, Class 3¹
- UL (Canada) Evaluation Report ULC 1306^{*}
- For additional information contact GAF at 877-423-7663 or designservices@gaf.com



¹ GAF manufacturing facilities in UT and PA

Tapered Design Team:

Our Tapered Design Group specialists are available within your region to assist you in all aspects of preplanning, design, and training. Reach out at tdg@GAF.com.

Our services include:

- Conceptual design assistance
- Quote review and comparison
- Plan and spec review
- Alternate design recommendations
- Job startups, trainings, and presentations

Sustainability:

- Manufactured with EPA-compliant blowing agents containing no CFCs or HCFCs, zero ozone depletion potential (ODP) and negligible global warming potential (GWP)
- Green Circle Certified® for Recycled Content
- Potential LEED® Credits for Polyiso Use
- Health Product Declaration (HPD)
- UL GreenGuard Gold
- Environmental Product Declaration (EPD) (Industry)



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TYPICAL PHYSICAL PROPERTY DATA CHART ²

Property	Test Method	Value
Compressive Strength	ASTM D1621	Grade 2 – 20 psi min (138 kPa) or Grade 3 – 25 psi min (172 kPa)
Dimensional Stability Change (length + width) ³	ASTM D2126	< 2% linear change
Flexural Strength	ASTM C203	40 psi min (275 kPa)
Tensile Strength	ASTM C209	500 psf min (24 kPa)
Water Absorption (percent by volume)	ASTM C209	1.5% max
Water Vapor Permeance	ASTM E96, Procedure A	1.5 perm max (85.8 ng/Pa·s·m ²)
Service Temperature		-100° F to 250° F (-73.3° C to 121.1° C)
Flame Spread Index ⁴	ASTM E84	< 75 ²
Smoke Developed Index	ASTM E84	< 200 ²

² Foam Core ³ Stated dimensional stability tolerance; thickness shall not diminish by more than 4% max.

⁴ These numerical ratings are not intended to reflect hazards presented by these or any other material under actual fire conditions.

TAPERED POLYISO PHYSICAL CHARACTERISTICS AND SHIPPING INFORMATION

Physical Characteristics				Shipping Information (4' x 4') (1.22 m x 1.22 m) 4'x8' (1.22 m x 2.44 m) available upon special request [†]				
Slope	Thickness (Inches/Millimeters)	Size*	Average Thickness (Inches/Millimeters)	Board Feet Per Panel	Boards/ Bundle	Boards/ Truck	Bundle/ Truck	Sq. Ft. Per Truck
1/16" (1.6 mm)	0.5 - 0.75 (12.7 - 19.1)	1	0.625 (15.9)	10	72	3,456	48	55,296 (5,137 sq. m)
	0.75 - 1.0 (19.1 - 25.4)	2	0.875 (22.2)	14	52	2,496	48	39,936 (3,710 sq. m)
	1.0 - 1.25 (25.4 - 31.8)	3	1.125 (28.6)	18	40	1,920	48	30,720 (2,854 sq. m)
	1.25 - 1.5 (31.8 - 38.1)	4	1.375 (34.9)	22	32	1,536	48	24,576 (2,283 sq. m)
	1.5 - 1.75 (38.1 - 44.5)	5	1.625 (41.3)	26	28	1,344	48	21,504 (1,998 sq. m)
	1.75 - 2.0 (44.5 - 51.0)	6	1.875 (47.6)	30	24	1,152	48	18,432 (1,712 sq. m)
	2.0 - 2.25 (51.0 - 57.2)	7	2.125 (54.0)	34	20	960	48	15,360 (1,427 sq. m)
	2.25 - 2.5 (57.2 - 64.0)	8	2.375 (60.3)	38	18	864	48	13,824 (1,284 sq. m)
1/8" (3.2 mm)	0.5 - 1.0 (12.7 - 25.4)	AA [†]	0.75 (19.1)	12	64	3,072	48	49,152 (4,566 sq. m)
	1.0 - 1.5 (25.4 - 38.1)	A [†]	1.25 (31.8)	20	38	1,824	48	29,184 (2,711 sq. m)
	1.5 - 2.0 (38.1 - 51.0)	B [†]	1.75 (44.5)	28	26	1,248	48	19,968 (1,855 sq. m)
	2.0 - 2.5 (51.0 - 64.0)	C [†]	2.25 (57.2)	36	20	960	48	15,360 (1,427 sq. m)
	2.5 - 3.0 (64.0 - 76.2)	D	2.75 (70.0)	44	16	768	48	12,288 (1,142 sq. m)
	3.0 - 3.5 (76.2 - 89.0)	E	3.25 (82.6)	52	14	672	48	10,752 (999 sq. m)
	3.5 - 4.0 (89.0 - 102.0)	F	3.75 (95.3)	60	12	576	48	9,216 (856 sq. m)
	4.0 - 4.5 (102.0 - 114.3)	FF	4.25 (108.0)	68	10	480	48	7,680 (713 sq. m)
3/16" (4.8 mm)	0.5 - 1.25 (12.7 - 31.8)	JJ	0.875 (22.2)	14	50	2,400	48	38,400 (3,567 sq. m)
	1.25 - 2 (31.8 - 51.0)	KK	1.625 (41.3)	26	26	1,248	48	19,968 (1,855 sq. m)
	2.0 - 2.75 (51.0 - 70.0)	LL	2.375 (60.3)	38	20	960	48	15,360 (1,427 sq. m)
	2.75 - 3.5 (70.0 - 89.0)	MM	3.125 (79.4)	50	15	720	48	11,520 (1,070 sq. m)
	1.0 - 1.75 (25.4 - 44.5)	J	1.375 (34.9)	22	34	1,632	48	26,112 (2,426 sq. m)
	1.75 - 2.5 (44.5 - 64.0)	K	2.125 (54.0)	34	22	1,056	48	16,896 (1,570 sq. m)
	2.5 - 3.25 (64.0 - 82.6)	L	2.875 (73.0)	46	16	768	48	12,288 (1,142 sq. m)
	3.25 - 4.0 (82.6 - 102.0)	M	3.625 (92.1)	58	12	576	48	9,216 (856 sq. m)
1/4" (6.35 mm)	0.5 - 1.5 (12.7 - 38.1)	X [†]	1.0 (25.4)	16	48	2,304	48	36,864 (3,425 sq. m)
	1.5 - 2.5 (38.1 - 64.0)	Y [†]	2.0 (51.0)	32	24	1,152	48	18,432 (1,712 sq. m)
	2.5 - 3.5 (64.0 - 89.0)	Z [†]	3.0 (76.2)	48	16	768	48	12,288 (1,142 sq. m)
	3.5 - 4.5 (89.0 - 114.3)	ZZ	4.0 (102.0)	64	12	576	48	9,216 (856 sq. m)
	1.0 - 2.0 (25.4 - 51.0)	G	1.5 (38.1)	24	32	1,536	48	24,576 (2,283 sq. m)
	2.0 - 3.0 (51.0 - 76.2)	H	2.5 (64.0)	40	18	864	48	13,824 (1,284 sq. m)
	3.0 - 4.0 (76.2 - 102.0)	I	3.5 (89.0)	56	12	576	48	9,216 (856 sq. m)
3/8" (9.5 mm)	0.5 - 2.0 (12.7 - 51.0)	SS	1.25 (31.8)	20	38	1,824	48	29,184 (2,711 sq. m)
	2.0 - 3.5 (51.0 - 89.0)	TT	2.75 (69.9)	44	16	768	48	12,288 (1,142 sq. m)
	1.0 - 2.5 (25.4 - 64.0)	S	1.75 (44.5)	28	27	1,296	48	20,736 (1,926 sq. m)
1/2" (12.7 mm)	0.5 - 2.5 (12.7 - 64.0)	Q [†]	1.5 (38.1)	24	32	1,536	48	24,576 (2,283 sq. m)
	2.5 - 4.5 (64.0 - 114.3)	QQ	3.5 (89.0)	56	12	576	48	9,216 (856 sq. m)
	1.0 - 3.0 (25.4 - 76.2)	XX	2.0 (51.0)	32	22	1,056	48	16,896 (1,570 sq. m)

* Availability for these tapered panel systems may vary for each region.

[†] 4' x 8' tapered panels are made upon special request at all GAF Polyiso Manufacturing facilities in all EnergyGuard products. Certain run minimums will apply. The piece count per bundle remains the same as in a 4' x 4' bundle. The boards per truck and bundles per truck would be half the numbers reflected above for.



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USG SECUROCK® BRAND

Gypsum-Fiber Roof Board (1 of 2)

Description

USG Securock® Brand Gypsum-Fiber Roof Board is a high-performance roof board for use in low-slope roofing systems. Its unique fiber-reinforced, homogenous composition gives the panel strength and water resistance through to the core. USG Securock Gypsum-Fiber Roof Board provides exceptional bond and low absorption in adhered systems, and its homogenous composition achieves high wind-uplift ratings with no risk of facer delamination. Made from 97% pre-consumer recycled materials, USG Securock Gypsum-Fiber Roof Board combines superior performance with sustainable design for all types of roofing systems, including single-ply, fluid-applied, built-up, spray foam, metal, and modified bitumen roofing.

Advantages

- Exceptional Strength... Engineered to provide superior wind-uplift performance for a wide variety of roof assemblies. USG Securock Gypsum-Fiber Roof Board has uniform composition, providing enhanced bond strength of membrane systems with reduced risk of facer delamination.
- Fire Performance... Provides excellent fire performance and demonstrates exceptional surface-burning characteristics (ASTM E84 [CAN/ULC-S102] Flame Spread 5, Smoke Developed 0).
- Moisture and Mold... Uniform water-resistant core ensures excellent moisture and mold resistance. Scored a maximum "10" for mold resistance on ASTM D3273.
- Versatile... Can be used as a component in single-ply, fluid-applied, built-up, spray foam, metal, and modified bitumen roofing.
- Sustainability... Made from 97% pre-consumer recycled materials and has earned independent certification from Scientific Certification Systems for this achievement.
- Consult roofing manufacturers for specific instructions on the application of their products to USG Securock Gypsum-Fiber Roof Board.
- Weather conditions, dew, application temperature, installation techniques, and moisture drive can have adverse effects on the performance of the roof system and are beyond the control of USG.
- Keep USG Securock Gypsum-Fiber Roof Board panels dry before, during, and after installation. USG Securock Gypsum-Fiber Roof Board should not be installed during rain, heavy fog, or any other condition that deposits moisture on the surface of the board. Apply only as much USG Securock Gypsum-Fiber Roof Board that can be covered by final roof membrane system in the same day. Avoid exposure to moisture from leaks or condensation.
- For reroof or re-cover applications, existing roofing system must be dry throughout prior to application of USG Securock Gypsum-Fiber Roof Board.
- Plastic or poly packaging applied at the plant to protect board during rail or other transit should be removed upon receipt to prevent condensation or trapping of moisture, which may cause application problems.
- USG Securock Gypsum-Fiber Roof Board should be stored flat and off the ground with protection from the weather. If stored outdoors, a breathable waterproof covering should be used.
- When applying solvent-based adhesives or primers, allow sufficient time for the solvent to evaporate to avoid damage to roofing components.
- USG allows the bonding of cold mastic modified bitumen and torching directly to the surface. Consult with the system manufacturer for recommendations on this application.
- USG recommends maximum asphalt application temperature for Type III asphalt of 455°F (235°C) when using USG Securock Gypsum-Fiber Roof Board. Application temperatures above these recommended temperatures may adversely affect roof system performance.

Limitations

- USG Securock Gypsum-Fiber Roof Board is engineered to perform within a properly designed roof system. The use of USG Securock Gypsum-Fiber Roof Board as a roofing component is the responsibility of the design professional.

Manufactured by:



The trademarks USG, Securock®, the USG logo, the design elements and colors, and related marks are trademarks of USG Corporation or its affiliates.



USG SECUROCK® BRAND

Gypsum-Fiber Roof Board (2 of 2)

Installation

Refer to roof system manufacturer's written instructions, local code requirements, and Factory Mutual Global (FMG) and/or Underwriters Laboratories (UL) requirements for proper installation techniques.

- Use fasteners specified in accordance with above requirements. Install approved fasteners with plates into the USG Securock® Brand Gypsum-Fiber Roof Board, flush with the surface. Fasteners should be installed in strict compliance with the roof system manufacturer's installation recommendations and FMG Loss Prevention Data Sheet 1-29. Proper fastener spacing is essential to achieve wind-uplift performance.

Fire Performance

UL Classified as to Surface Burning Characteristics and Non-Combustibility in accordance with ASTM E84 (CAN/ULC-S102).

- Spread 5 and Smoke Developed 0
- 1/4" (6.35 mm), 3/8" (9.53 mm), 1/2" (12.7 mm), and 5/8" (15.9 mm) thickness — Class A in accordance with UL790 (CAN/ULC-S107). See the UL Building Materials Directory for more information.
- 5/8" (15.9 mm) thickness — Meets requirements of Type X per ASTM C1278 and may be used in P series designs as a thermal barrier.

System Performance

FM Approved

- Complies with requirements of FM 4450 and FM 4470
- Meets FM Class 1

Standards Compliance

USG Securock Gypsum-Fiber Roof Board is manufactured to conform to ASTM C1278, "Standard Specification for Fiber-Reinforced Gypsum Panel."

PHYSICAL PROPERTIES				
	1/4" (6.35 mm)	3/8" (9.53 mm)	1/2" (12.7 mm)	5/8" (15.9 mm)
Width, standard	4' (1.21 m)	4' (1.21 m)	4' (1.21 m)	4' (1.21 m)
Length, standard	4' (1.21 m) 8' (2.44 m)	4' (1.21 m) 8' (2.44 m)	4' (1.21 m) 8' (2.44 m)	4' (1.21 m) 8' (2.44 m)
Pieces per unit for 4' x 8' (1.21 m x 2.44 m) sheets	50	40	30	24
Weight, nom. lbs./unit 4' x 8' (1.21 m x 2.44 m) sheets	2,575 (1,168 kg)	2,575 (1,168 kg)	2,725 (1,236 kg)	2,525 (1,145 kg)
Weight, nom. lbs./sq. ft.	1.57 (7.66 kg/m ²)	1.96 (9.57 kg/m ²)	2.76 (13.47 kg/m ²)	3.20 (15.62 kg/m ²)
Flexural strength, parallel, lbs. min., per ASTM C473	40 (18.14 kg)	70 (31.75 kg)	110 (50 kg)	161 (73 kg)
Compressive strength, psi nominal	1800	1800	1800	1800
Flute spannability per ASTM E661	2 5/8" (66.7 mm)	5" (127 mm)	8" (203 mm)	10" (254 mm)
Permeance, perms, per ASTM E96	30	26	26	24
R-Value per ASTM C518	0.2	0.3	0.5	0.6
Coefficient of thermal expansion, inches/inch • -6°F/-21.1°C, per ASTM E831	8" x 10" (203 mm x 254 mm)	8" x 10" (203 mm x 254 mm)	8" x 10" (203 mm x 254 mm)	8" x 10" (203 mm x 254 mm)
Linear variation with change in moisture, inches/inch • %RH, per ASTM D1037	8" x 10" (203 mm x 254 mm)	8" x 10" (203 mm x 254 mm)	8" x 10" (203 mm x 254 mm)	8" x 10" (203 mm x 254 mm)
Water absorption, % max, per ASTM C473	10	10	10	10
Surface water absorption, nominal grams, per ASTM C473	1.6	1.6	1.6	1.6
Mold resistance per ASTM D3273*	10	10	10	10
Bending Radius	25' (7.62 m)	25' (7.62 m)	25' (7.62 m)	30' (9.14 m)

*ASTM D3273 Mold Resistance Testing – In independent lab tests conducted on USG Securock® Brand Gypsum-Fiber Roof Board and Securock Glass-Mat Roof Board at the time of manufacture per ASTM D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber, both panels scored a 10. The ASTM lab test may not accurately represent the mold performance of building materials in actual use. Given unsuitable project conditions during storage, installation, or after completion, any building material can be overwhelmed by mold. To manage the growth of mold, the best and most cost-effective strategy is to protect building products from water exposure during storage and installation and after completion of the building. This can be accomplished by using good design and construction practices.

Resilient Modified Bitumen Membrane



ITEM CODE: 3754

Description:

RUBEROID® HW Smooth membrane is a tough, resilient modified bitumen membrane manufactured to stringent GAF specifications. Its core is a strong, non-woven polyester mat that is coated with flexible polymer modified asphalt and has a smooth surface. Smooth-surface installations must be protected with surfacing.

Uses:

RUBEROID® HW Smooth membrane is designed for new roofing and re-covering applications, as well as the construction of flashings. RUBEROID® HW Smooth membrane is also a suitable product for repairs of built-up roofing membranes or other modified bitumen systems.

Advantages:

- Lighter weight — installed roof designs weigh less than 2 pounds per square foot.
- Durability — specially formulated modified asphalt gives lasting performance.
- Resilience — the polyester mat core helps resist splits and tears due to its pliability and elongation characteristics.
- Product warranties and system guarantees are available. Contact your local sales representative for requirements, availability, and limitations. See warranties and guarantees on gaf.com for complete coverage and restrictions.

Product Application:



Storage and Handling:

To prevent damage, support rolls on end in an upright position and store in a clean, dry location, covering as necessary to protect from environmental damage. Monitor environmental conditions during storage, handling, and application.

Testing and Approvals:

- Classified by UL in accordance with ANSI/UL 790, including as a component of Class A fire resistance-rated roofing assemblies. Refer to UL Product iQ for specific assemblies.
- FM Approved — refer to roofnav.com for approved assemblies.
- Miami-Dade County Product Control Approved.
- State of Florida Approved.
- UL Evaluation Report UL ER1306-02.
- Meets or exceeds ASTM D6164 Type I, Grade S.
- For additional information, contact GAF Design Services at 1-877-423-7663 or designservices@gaf.com.

Product Specifications:

ASTM D6164 Type I, Grade S	
Roll Size*	107.3 ft. ² (10.0 m ²)
Roll Length	32' 6" (10.0 m)
Roll Width	39.625" (1.0 m)
Roll Weight	85 lb. (38.6 kg)
Roll Thickness	120 mils (3.0 mm)
Rolls per Pallet	30
Full Pallet Weight	2,600 lb. (1,179.3 kg)
Reinforcement	Polyester
Top Side Surfacing	Sand
Bottom Side Surfacing	Film

* Roll size as reported represents actual membrane dimensions and does not calculate installation using side and end lap recommendations.



Physical Properties:

Property	Standard Minimum Value	GAF Value
Thickness, min. mils (mm), Grade S	85 (2.2)	120 (3.0)
Net mass/unit area, min. g/m ² (lb./100 ft. ²)	2,636 (54)	3,661 (75)
Bottom coating thickness, heat-welding application products, min. mm (mils)	1.0 (40)	1.1 (45)
Peak load at -18 +/-2° C (0 +/-3.6° F), MD and CMD, min. before and after heat conditioning, kN/m (lbf/in.)	MD - 12.3 (70) CMD - 12.3 (70)	MD - 21.9 (135) CMD - 16.6 (95)
Elongation at -18 +/-2° C (0 +/-3.6° F), MD and CMD, min. at peak load, before and after heat conditioning, (%)	MD - 20.0 CMD - 20.0	MD - 40.0 CMD - 50.0
Peak load at 23 +/-2° C (73.4 +/-3.6° F), MD and CMD, min. before and after heat conditioning, kN/m (lbf/in.)	MD - 8.8 (50) CMD - 8.8 (50)	MD - 9.5 (54) CMD - 15.8 (90)
Elongation at 23 +/-2° C (73.4 +/-3.6° F), MD and CMD, min. at peak load, before and after heat conditioning, (%)	MD - 35.0 CMD - 35.0	MD - 65.0 CMD - 70.0
Ultimate elongation 23 +/-2° C (73.4 +/-3.6° F), MD and CMD, min. before and after heat conditioning, (%)	MD - 38.0 CMD - 38.0	MD - 75.0 CMD - 90.0
Tear strength at 23 +/-2° C (73.4 +/-3.6° F), min. N (lbf)	246 (55)	578 (130)
Low-temperature flexibility, max. before and after heat conditioning, ° C (° F)	-18 (0)	-18 (0)
Dimensional stability, max. (%)	1.00	0.45
Compound stability at 102° C (215° F)	No Failures	No Failures

Note: Values stated are average values and subject to normal manufacturing variation. These values are not guaranteed and are provided solely as a guide.



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SBS Granulated Bright White Cap Sheet



ITEM CODE: 3785

Description:

RUBEROID® EnergyCap™ HW 30 Granule FR membrane is an SBS-modified bitumen cap sheet manufactured to GAF specifications. It consists of a lightweight random glass fiber mat impregnated and coated with modified bitumen that meets ASTM D6163 Type I specifications. The top surface is covered with an enhanced bright white granule surfacing that offers solar reflectance and the back surface is coated with an SBS-modified bitumen adhesive layer specifically formulated for torch applications with a polyolefin burn-off film bottom surface.

Uses:

RUBEROID® EnergyCap™ HW 30 Granule FR membrane is designed for use in new roofing and recovery applications, as well as the construction of flashings. It is also suitable for repairs of built-up roofing membranes or other SBS-modified bitumen systems.

Advantages:

- Durability — the membrane combines the strength of fiberglass reinforcement with the elongation characteristics of SBS-modified asphalt.
- Product warranties and system guarantees are available. Contact your local sales representative for requirements, availability, and limitations. See warranties and guarantees on gaf.com for complete coverage and restrictions.

Product Application:



Storage and Handling:

To prevent damage, support rolls on end in an upright position and store in a clean, dry location, covering as necessary to protect from environmental damage. Monitor environmental conditions during storage, handling, and application.

	Rated Product ID #: 0676-0163		
	Initial	Aged	
Solar Reflectance	0.74	0.53	
Thermal Emittance	0.91	0.91	
SRI	92	62	

The ratings above are subject to CRRC rating program conditions, requirements, and limitations. Visit coolroofs.org for important information and disclaimers about CRRC rating conditions, requirements, and limitations.

Testing and Approvals:

- Classified by UL in accordance with ANSI/UL 790, including as a component of Class A fire resistance-rated roofing assemblies. Refer to UL Product iQ for specific assemblies.
- FM Approved — refer to roofnav.com for approved assemblies.
- State of Florida Approved.
- Texas Department of Insurance.
- UL Evaluation Report UL ER1306-02.
- Meets or exceeds ASTM D6163 Type I, Grade G.
- For additional information, contact GAF Design Services at 1-877-423-7663 or designservices@gaf.com.



Product Specifications:

ASTM D6163 TYPE I, GRADE G	
Roll Size*	106.7 ft. ² (10.0 m ²)
Roll Length	32' 6" (10.0 m)
Roll Width	39.4" (1.0 m)
Roll Weight	105 lb. (47.6 kg)
Roll Thickness	140 mils (3.5 mm)
Rolls per Pallet	23
Full Pallet Weight	2,465 lbs. (1,118.1 kg)
Reinforcement	Fiberglass
Top Side Surfacing	Bright White Granules
Bottom Side Surfacing	Film

* Roll size as reported represents actual membrane dimensions and does not calculate installation using side and end lap recommendations.

Physical Properties:

Property	Standard Minimum Value	GAF Value
Thickness, min. mils (mm), Grade G	80 (2)	140 (3.5)
Net mass/unit area, min. g/m ² (lb./100 ft. ²)	3,173 (65)	3,173 (65)
Bottom coating thickness, heat-welding application products, min. mm (mils)	1.0 (40)	1.0 (40)
Peak load at -18 +/-2°C (0 +/-3.6°F), MD and CMD, min. before and after heat conditioning, kN/m (lbf/in.)	MD - 12.3 (70) CMD - 12.3 (70)	MD - 20.1 (115) CMD - 17.5 (100)
Elongation at -18 +/-2°C (0 +/-3.6°F), MD and CMD, min. at peak load, before and after heat conditioning, (%)	MD - 1 CMD - 1	MD - 4 CMD - 4
Peak load at 23 +/-2°C (73.4 +/-3.6°F), MD and CMD, min. before and after heat conditioning, kN/m (lbf/in.)	MD - 5.3 (30) CMD - 5.3 (30)	MD - 8.8 (50) CMD - 7.1 (40)
Elongation at 23 +/-2°C (73.4 +/-3.6°F), MD and CMD, min. at peak load, before and after heat conditioning, (%)	MD - 2 CMD - 2	MD - 5 CMD - 5
Ultimate elongation 23 +/-2°C (73.4 +/-3.6°F), MD and CMD, min. before and after heat conditioning, (%) (as manufactured)	MD - 3 CMD - 3	MD - 25 CMD - 35
Tear strength at 23 +/-2°C (73.4 +/-3.6°F), min. N (lbf)	156 (35)	178 (40)
Low-temperature flexibility, max. before and after heat conditioning, °C (°F)	-18 (0)	-18 (0)
Dimensional stability, max. (%)	0.50	0.2
Compound stability at 102°C (215°F)	No Failures	No Failures
Granule embedment, max. (g)	2.0	1.5

Note: Values stated are average values and subject to normal manufacturing variation. These values are not guaranteed and are provided solely as a guide.



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GAF

SBS Granulated Bright White Cap Sheet



RUBEROID® ENERGYCAP™ GAF HWPlusGranuleFR Membrane



ITEM CODE: 375C

Description:

RUBEROID® EnergyCap™ HW Plus Granule FR membrane is a heavy-duty, premium, SBS-modified bitumen membrane that is manufactured to GAF specifications. Its enhanced bright white granule surfacing offers solar reflectance and a strong non-woven polyester core that meets ASTM D6164 Type II, Grade G requirements.

Uses:

RUBEROID® EnergyCap™ HW Plus Granule FR membrane is suitable for new roofing and reroofing applications where long-term roof system performance is specified.

Advantages:

- Resilience — the heavyweight polyester mat core protects against splits and tears due to its pliability and elongation characteristics.
- Performance — specially formulated modified asphalt gives the membrane excellent performance.
- Reflectance — the membrane is available in highly reflective bright white.
- Product warranties and system guarantees are available. Contact your local sales representative for requirements, availability, and limitations. See warranties and guarantees on gaf.com for complete coverage and restrictions.

Product Application:



Storage and Handling:

To prevent damage, support rolls on end in an upright position and store in a clean, dry location, covering as necessary to protect from environmental damage. Monitor environmental conditions during storage, handling, and application.

Testing and Approvals:

- Classified by UL in accordance with ANSI/UL 790, including as component of Class A fire resistance-rated roofing assemblies. Refer to UL Product iQ for specific assemblies.
- FM Approved — refer to roofnav.com for approved assemblies.
- Miami-Dade County Product Control Approved.
- State of Florida Approved.
- Meets or exceeds ASTM D6164 Type II, Grade G.
- For additional information, contact GAF Design Services at 1-877-423-7663 or designservices@gaf.com.



Product Specifications:

ASTM D6164 Type II, Grade G	
Roll Size*	107.3 ft. ² (10.0 m ²)
Roll Length	32' 6" (10.0 m)
Roll Width	39.625" (1.0 m)
Roll Weight	105 lb. (47.6 kg)
Roll Thickness	160 mils (4.1 mm)
Rolls per Pallet	25
Full Pallet Weight	2,675 lb. (1,213.4 kg)
Reinforcement	Polyester
Top Side Surfacing	Bright White Granules
Bottom Side Surfacing	Film

* Roll size as reported represents actual membrane dimensions and does not calculate installation using side and end lap recommendations.

CRRC COOL ROOF RATING COUNCIL	Rated Product ID #: 0676-0163		
		Initial	Aged
	Solar Reflectance	0.74	0.53*
	Thermal Emittance	0.91	0.91*
	SRI	92	62*

*CRRC Rapid Ratings: Interim laboratory-aged values that simulate naturally-aged values and will be replaced by the measured three-year naturally aged values upon completion of the weathering process.

Physical Properties:

Property	Standard Minimum Value	GAF Value
Thickness, min. mils (mm), Grade G	130 (3.3)	160 (4.1)
Net mass/unit area, min. g/m ² (lb./100 ft. ²)	4,394 (90)	4,882 (100)
Bottom coating thickness, heat-welding application products, min. mm (mils)	1.0 (40)	1.3 (50)
Peak load at -18 +/-2° C (0 +/-3.6° F), MD and CMD, min. before and after heat conditioning, kN/m (lbf/in.)	MD - 17.5 (100) CMD - 17.5 (100)	MD - 28.9 (165) CMD - 22.8 (130)
Elongation at -18 +/-2° C (0 +/-3.6° F), MD and CMD, min. at peak load, before and after heat conditioning, (%)	MD - 20.0 CMD - 20.0	MD - 55.0 CMD - 60.0
Peak load at 23 +/-2° C (73.4 +/-3.6° F), MD and CMD, min. before and after heat conditioning, kN/m (lbf/in.)	MD - 12.3 (70) CMD - 12.3 (70)	MD - 21.0 (120) CMD - 16.6 (95)
Elongation at 23 +/-2° C (73.4 +/-3.6° F), MD and CMD, min. at peak load, before and after heat conditioning, (%)	MD - 50.0 CMD - 50.0	MD - 65.0 CMD - 75.0
Ultimate elongation 23 +/-2° C (73.4 +/-3.6° F), MD and CMD, min. before and after heat conditioning, (%)	MD - 60.0 CMD - 60.0	MD - 85.0 CMD - 115.0
Tear strength at 23 +/-2° C (73.4 +/-3.6° F), min. N (lbf)	311 (70)	667 (150)
Low-temperature flexibility, max. before and after heat conditioning, ° C (° F)	-18 (0)	-18 (0)
Dimensional stability, max. (%)	1.00	0.4
Compound stability at 102° C (215° F)	No Failures	No Failures
Granule embedment, max. (g)	2.0	1.66

Note: Values stated are average values and subject to normal manufacturing variation. These values are not guaranteed and are provided solely as a guide.



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MATRIX™ 307

PREMIUM ASPHALT PRIMER (1 OF 2)

Promotes
Excellent
Bond
For Asphalt
Roof
Systems

Description

Matrix™ 307 Premium Asphalt Primer is a general purpose, asbestos-free foundation coating for all types of asphalt-based roofing materials, e.g., hot-mopped or cold-applied asphalt coatings, roof cements, and asphalt-based roof and flooring adhesives.

- Excellent penetration rate—promotes a tough, weather-resistant bond for coating and adhesives
- Strength and flexibility—accommodates temperature-related expansion and contraction of the roof system
- Easy application—sprayer, brush, or roller; maintains excellent low-temperature flexibility

Uses

Matrix™ 307 Premium Asphalt Primer has an excellent penetration rate that promotes a tough, weather-resistant foundation coating for:

- Concrete and masonry roofs, walls, or floors prior to the use of asphalt cutback adhesives
- Metal edging and flashing, asphalt, or weathered composition roofing prior to the application of hot-mopped or cold-applied built-up roofing materials
- Undercoating for LeakBuster™ aluminum roof coatings or asphalt roof coatings and emulsions
- Gypsum surfaces

Approvals & Certification

Matrix™ 307 Premium Asphalt Primer is listed and approved by the following agencies or code bodies: Underwriters Laboratories (UL), Factory Mutual (FM). Meets or exceeds the requirements of ASTM D41 Type 1 Asphalt Primer Used in Roofing, Damp Roofing, and Waterproofing. Approvals may vary by region. Be sure to review pail labels before purchase.

Surface Preparation

All surfaces to be primed must be clean, dry, and free from any foreign matter, such as oil, grease, dirt, or debris that could inhibit the bonding capabilities of the primer. Sweep (or wire-brush metal surfaces) and remove oil, grease, dirt, or other foreign material that could inhibit bonding. On existing roofs, inspect roof deck condition; moisture in old roof may indicate need for roof repair. Contact GAF Technical Services for details on cutting out and repairing blisters, buckles, and raised edges for a smooth surface. Check all flashings, edges, drains, valleys, and vents, and repair as needed.

Application

Application Rate: Typical application rate is 1/2 gallon per square (.2 L/m²); varies with texture of surface to be primed. Drying time is 4–8 hours between coats.

Material Preparation: Stir well before application.

Application Method: Apply primer with a roller, brush, or sprayer, covering the surface at an even 1 gallon per 500 square feet (.08 L/m²).

Spray: A Graco 45:1 pump or equivalent is recommended. Consult equipment manufacturer for optimum psi, spray tip size, length of hose, and number of spray guns to achieve uniform coat.

Brush: Apply smooth, even coat, using parallel strokes for a uniform coat. If first coat is completely absorbed, apply a second coat.

Roller: Apply smooth, heavy coat, using parallel strokes for a uniform coat.

Precautions

Compatibility & Limitations: Do not use on wet or damp surfaces or on surfaces previously covered with coal tar products. On concrete decks, previous use of wax/resin curing compound may inhibit bonding.

Temperature Range: Apply only when temperatures are 45°F (7.2°C) and rising. Cold weather will cause product to stiffen, making application difficult. Store 24 hours at room temperature prior to application. Do not heat container or attempt to thin this product. Not recommended for application on substrates that exceed 140°F (60°C).

Storage/Handling & FIRE WARNING:

Matrix™ 307 Premium Asphalt Primer is COMBUSTIBLE and should always be kept away from heat, open flame, and any source of ignition. Observe normal safeguards for storing and handling of this product prior to and during application. Do not allow primer to freeze.

Important: Repair leaks promptly to avoid adverse effects, including, but not limited to, mold growth.

Clean Up

Keep containers covered when not in use. Clean equipment and overspray with kerosene, mineral spirits, or petroleum naphtha. Clean hands with waterless hand cleaner.



CODE APPROVALS



Cements and coatings for roofing systems as to external fire exposure.

Product Specifications (Nominal)

Weight	7.4 lb (3.36 kg) per gallon
VOC (max)	350 grams/liter
Non-volatile content	85% by weight minimum
Sizes	3 gal/11.4 L or 5 gal/18.9 L or 55 gal/208.2 L



MATRIX™ 307

PREMIUM ASPHALT PRIMER (2 OF 2)

Promotes
Excellent
Bond
For Asphalt
Roof
Systems

Caution

Matrix™ 307 Premium Asphalt Primer contains petroleum distillate. Do not thin.

Ventilation – Use with adequate ventilation and close containers when not in use. If TLV (Threshold Limit Value) is exceeded, respirators are required (NIOSH/OSHA). Inhalation of high vapor concentration may result in headaches and/or dizziness. Remove individual to fresh air and administer oxygen if breathing is difficult. If breathing has stopped administer artificial respiration, keep victim warm, and order emergency medical attention immediately.

Eye Contact – Rinse immediately with water for 15 minutes and seek medical advice.

Personal Protection – Irritation may result from prolonged or repeated contact with skin. Wear chemical-resistant gloves, protective goggles, and protective clothing, if needed.

Fire Protection – Matrix™ 307 Premium Asphalt Primer is COMBUSTIBLE and should always be kept away from heat, open flame, and any source of ignition.

Waste Disposal – Empty containers must be disposed of in an approved landfill in accordance with local, state, and federal regulations.

For Application Questions

Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.



OLYBOND500®

Insulation Adhesive

Description

OlyBond500® is a two-component, low-rise polyurethane adhesive used to adhere a variety of board stocks to many roof substrates in both new and reroof applications. It can also be used to adhere insulation board to insulation board. OlyBond500® is dispensed in ¾" (19.1 mm) to 1" (25.4 mm) wide beads that spread to several inches while rising ¾" (19.1 mm) to 1" (25.4 mm) above the substrate. Place the board stock into the adhesive and walk into place. A chemical cure takes place, securing the board in approximately 4 to 8 minutes after application, depending on temperature and weather conditions. OlyBond500® uses water, not HCFC, as the blowing agent and therefore is low VOC.

Basic Use

- OlyBond500® is included in many approved roof assemblies listed with UL, FM Approvals, and Miami-Dade County. Refer to UL Product iQ, Miami-Dade County, and FM Approvals at RoofNav.com for actual assemblies.
- Ensure that you have the correct OlyBond500® formulation for the surface and ambient temperature.
 - Regular** - All Packaging 40°F+ (4.4°C+)
 - Winter Grade** - Bag In Box/15 Gal (57 L) Drum 25°F - 65°F (13.8°C - 36.1°C)
 - Winter Grade** - SpotShot 0°F - 65°F (-17.8°C - 36.1°C)
- OlyBond500® is available in both Regular (Bag-in-Box, 15 Gal [57 L] Drums, and SpotShot) and Winter Grade OlyBond500® Spot Shot Bag-in-Box for optimum application at various temperatures.
- Lightweight and portable.
- Allows for easy insulation board installation.
- Compatible with most single-ply and some asphaltic systems.
- Quick cure time.
- On retrofit re-cover projects, the existing roof material must be examined. All wet material must be identified and removed prior to the application of the OlyBond500® adhesive to ensure adequate attachment of existing system.
- See pages 3 – 4 for general application recommendations and requirements.

Packaging

- 10-gallon (37.85 liters) Bag-in-Box sets for use with the PaceCart 2® and PaceCart 3™ (5-gallon [18.93 liters] Part 1; 5-gallon [18.93 liters] Part 2). 30-gallon (57 liters) Drum sets for use with PaceCart 3™ with conversion kit 15 gallon (57 liters) Part 1; 15 gallon (57 liters) Part 2

- 1,500-ml SpotShot cartridge sets for use in specially designed applicators.

Compatibility When Properly Prepared and Evaluated

Roof Decks and Substrates:

- Structural concrete
- Gypsum
- Cementitious wood fiber plank
- Lightweight insulating concrete
- Steel (22 gauge or thicker with approved cross section)
- Plywood (¾" [15.9 mm] thick min.)
- Smooth surface BUR
- Smooth and granular-surface modified bitumen (See the GAF published application and specifications manual available at gaf.com for proper preparations or contact GAF Technical Support at 1-800-766-3411.)
- Existing sprayed-in-place polyurethane foam
- Base sheets
- Asphaltic and fleece-top vapor barriers

Roof Insulation and Cover Board:

- Expanded polystyrene
- Polyisocyanurate and HD polyisocyanurate (4 ft. x 4 ft. [1.21 m x 1.21 m] boards)
- High-density wood fiber
- Gypsum cover boards
- Perlite
- Certain extruded polystyrene

Any substrate or insulation not listed must be reviewed by GAF. Call us at 800-766-3411.

Codes and Compliance

OlyBond500®

Physical Property	Test Method	Typical Values
Density	ASTM D1622	5.03 lb/cf
Compressive Strength	ASTM D1621	18.02 psi @ 10% deformation
Tensile Strength	ASTM D1623	2.04 psi
Water Absorption	ASTM D2842	2.75%
Closed Cell Content	ASTM D6226	90% min
VOC Content	EPA Method 24	Regular: 11 g/L Winter: 50 g/L
Weight/Gallon		10.32 lb 8.54 lb

Description	Packaging Type	Weight
OlyBond500® Part 1 (Regular & Winter Grade)	Bag-in-Box 5 Gallon (18.9 L)	53 lb. (24.06 kg)
OlyBond500® Part 2 (Regular & Winter Grade)	Bag-in-Box 5 Gallon (18.9 L)	45 lb. (20.43 kg)
OlyBond500® SpotShot Cartridge (Part 1 & Part 2) (Regular & Winter Grade)	(4) 1500 ml Cartridges /Box	19 lb. (8.62 kg)
OlyBond500® Part 1	15 Gallon (56.78 L) Drum	160 lb. (72.64 kg)
OlyBond500® Part 2	15 Gallon (56.78 L) Drum	135 lb. (61.29 kg)
OlyBond® Classic Part A	15 Gallon (56.78 L) Drum	160 lb. (72.64 kg)
OlyBond® Classic Part B	15 Gallon (56.78 L) Drum	135 lb. (61.29 kg)
OlyBond® Classic Part A	55 Gallon (208.2 L) Drum	591 lb. (268.31 kg)
OlyBond® Classic Part B	55 Gallon (208.2 L) Drum	591 lb. (268.31 kg)

Manufactured by:





OLYBOND500®

Insulation Adhesive

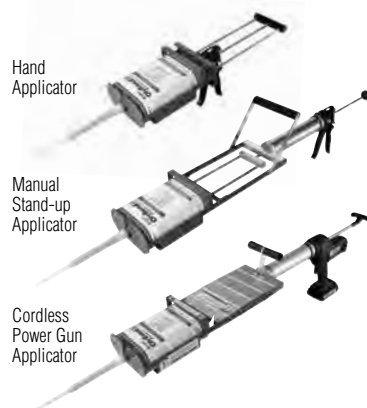
PaceCart 2® and PaceCart 3™ for OlyBond500®

Patented PaceCart 2® and PaceCart 3™ are the exclusive pieces of application equipment for OlyBond500® using patented Bag-in-Box technology.



- Helps with fast adhesive application
- Designed for large roof projects
- Low installed cost method of application
- Can apply up to 60 squares of insulation per hour using the PaceCart 2® and up to 120 squares of insulation per hour using the PaceCart 3™
- Two-component reaction occurs in the disposable mix tips, keeping the gun and hoses clean and free flowing
- 30-ft. (9.14 m) hose allows for easy application around penetrations
- Use OMG PCPreserver™ to keep pumps, hoses, and gun assembly sufficiently lubricated during storage
- Easy to clean and maintain
- Clean, airtight delivery system
- Built-in tool box holds extra mix tips, grease gun, etc.

SpotShot Applicators



Cordless Power Gun Applicator

- All the benefits of the manual stand-up applicator plus a battery-powered mechanical drive system
- Constant pressure provides even and uninterrupted adhesive flow for maximum efficiency
- Easy to operate
- Includes two (2) batteries and a 120-volt charger

Hand Applicator

- Lightweight and easy to use
- Great for repair work or small areas
- Inexpensive

Manual Stand-up Applicator

- Lightweight and portable
- Stand-up application helps reduce worker fatigue as compared with hand applicators

Product Installation

Job Conditions:

- Ensure that you have the correct OlyBond500® formulation for the surface and ambient temperature.
 - **Regular** - All Packaging 40°F+ (4.4°C+)
 - **Winter Grade** - Bag In Box/15 Gal (57 L) Drum 25°F - 65°F (13.8°C - 36.1°C)
 - **Winter Grade** - SpotShot 0°F - 65°F (-17.8°C - 36.1°C)

Roof Deck Criteria

1. OlyBond500® can only be installed on acceptable substrates (i.e., structural concrete, gypsum, cementitious wood fiber plank, lightweight insulating concrete, minimum 22-gauge steel, and minimum 5/8" [15.9 mm] plywood) that have been properly prepared. The structure must be sufficient to withstand normal construction load and live loads.
2. Defects in the deck must be repaired prior to re-roof. The application of OlyBond500® should not proceed unless the defects are corrected.
3. It is the responsibility of the roofing contractor to ensure that the existing roof is adequately attached to the building.

Surface Preparation

- **General:** All surfaces must be clean, dry, and free of any debris, dirt, oil, or grease before applying OlyBond500®.
- **Specific Conditions**
 - **Steel** - The bonding surface of steel decks must be dry and free of debris, dirt, grease, and oil. On new steel, the shop coating/mill oil must be removed. The bonding surface must be free of any cleaner before applying OlyBond500®.
 - **Existing Smooth Asphaltic Surfaces** - The surface must be dry and free of debris, dirt, grease, and oil.
 - **Existing Polyurethane Foam** - The surface of the polyurethane roof, including the coating, should be removed with a scarifier (minimum inch). The bonding surface should be blown clean before applying OlyBond500®.
 - **Metal** - It is recommended that all non-ferrous metals (aluminum, copper, stainless, etc.) be primed to increase adhesion. Acceptable primers include GAF Epoxy Primer, chlorinated rubber, and wash primer. Contact GAF for further requirements and restrictions.
 - **Concrete** - All concrete surfaces must be fully cured prior to applying OlyBond500®.
- For detailed GAF substrate preparation requirements, please refer to the appropriate GAF Application and Specifications Manual or contact GAF at 1-800-766-3411.

Manufactured by:





OLYBOND500®

Insulation Adhesive

Product Installation

• Using PaceCart 2® and PaceCart 3™

- Install Part 1 and Part 2 components following instructions on Bag-in-Box package or 15 gallon conversion kit.
- Open flow valves on the dispenser completely and turn machine on. This allows adhesive to be pumped at a 1:1 ratio through the disposable mix tip and onto the substrate in a semi-liquid state.
- Apply fluid mixture $\frac{3}{4}$ " – 1" (19.1 mm – 25.4 mm) wide wet beads spaced a maximum of 12" (305 mm) on center that spreads in excess of 2" (51 mm) wide while rising to $\frac{3}{4}$ " – 1" (19.1 mm – 25.4 mm).
- Lay insulation board into place and walk-in to ensure complete adhesion. Curing typically occurs in 4 to 8 minutes depending on temperature and weather conditions.
- For detailed GAF substrate preparation requirements, please refer to the appropriate GAF Application and Specifications Manual or contact GAF at 1-800-766-3411.

• Using SpotShot Applicator

- Attach the disposable mix tip to the top of the SpotShot tube. Insert the tube into the SpotShot dispensing tool and dispense onto the substrate. Apply fluid mixture in $\frac{3}{4}$ " – 1" (19.1 mm – 25.4 mm) wide wet beads in rows spaced a maximum of 12" (305 mm) on center that spread in excess of 2" (51 mm) wide while rising to $\frac{3}{4}$ " – 1" (19.1 mm – 25.4 mm).
- Lay insulation board into place and walk-in to ensure complete adhesion. Curing typically occurs in 4 to 8 minutes depending on temperature and weather conditions.
- For detailed GAF installation requirements, please refer to the appropriate GAF Application and Specifications Manuals or contact GAF at 1-800-766-3411.

Typical Coverage Rates

Coverage rates vary depending on surface roughness and absorption rate of the substrate. Typical coverage rates for OlyBond500® dispensed through the PaceCart® are up to 25 squares per 10-gallon (37.85 liters) Bag-in-Box sets and 75 square per 15-gallon (68.19 L) drum sets. Typical coverage rate for OlyBond500® SpotShot dispensed through applicators is 4 – 6 squares per case (4 sets of 1,500-ml cartridges). See chart below for typical coverage rates on specific substrates.

Application Rates (Bag-in-Box Dispensed from PaceCart 2®)	Typical Coverage* Squares/Gallon
Insulation to Concrete	up to 2.5
Insulation to Insulation	up to 2.5
Insulation to Smooth BUR	up to 1.7
Insulation to Modified Bitumen	up to 1.7
Insulation to Gypsum	up to 1.2
Insulation to Lightweight Concrete	up to 1.7
Insulation to Wood	up to 2.5
Insulation to Cementitious Wood Fiber	up to 1.2
Insulation to Steel	up to 1.2

*All coverage rates are based on 12" (305 mm) on center maximum spacing

Reaction Time

It is important to monitor the speed of the reaction in relation to the temperature (substrate and ambient) at the time of application to ensure a complete reaction. Note the charts below for correct 'Part 2' component selection:

Typical Reaction Time Characteristics

A. 5- and 15-Gallon Bag-in-Box Packaging

Temperature	Part 2 Formula	Tack-Free Time (minutes)	Set-Up Time* (minutes)
25°F to 65°F	W	3-4	10-12
40°F+	R	3-5	10-12

B. 1500 ml SpotShot Cartridges

Temperature	Part 2 Formula	Tack-Free Time (minutes)	Set-Up Time (minutes)
0°F – 65°F	W	3-4	10-12
40°F+	R	3-5	10-12

Important: When applying OlyBond500®, board stock must be placed into the adhesive shortly after it had reached its maximum rise while it is still wet and tacky and before it reaches its tack free state. Do not install boards if adhesive is skinned over.

*Time from adhesive application to insulation board installation





OLYBOND500[®]

Insulation Adhesive

Precautions

- **In Case of Fire:** Use water spray, foam, or CO₂. Firefighters should be equipped with self-contained breathing apparatus and turnout gear for protection against PMDI vapors and toxic decomposition products. Avoid water contamination in closed container or confined areas.
- **Do Not Leave Adhesive Exposed or Unprotected.** Polyurethane foam or isocyanurate foam products may present a serious fire hazard if exposed or unprotected. Each person, firm, or corporation engaged in the manufacture, production, application, installation, or use of any of these materials should carefully determine whether there is a potential fire hazard associated with such product in a specific usage and utilize all appropriate precautionary and safety measures as outlined in local, state, and federal regulations. When not in use, keep stored containers closed.

First Aid

In case of contact with eyes, immediately flush eyes with running water for at least 15 minutes. Call a physician immediately. In case of contact with skin, wash affected area with soap and water. Remove all contaminated clothing and shoes and clean before re-use. If swallowed, give large amounts of water to dilute. If vomiting occurs, give more water. Call a physician immediately.

Disposal

Do not discharge into lakes, streams, ponds, or public waters. Spilled material, unused contents, and empty containers should be disposed of in accordance with local, state, and federal regulations.

Patent Notice

The OMG PaceCart[®] dispensing cart and the Bag-in-Box OlyBond500[®] Part 1/Part 2 adhesive system, including the adhesive dispensing method, are covered by one or more of U.S. Patent Nos. 6,220,526; 8,113,385; 8,132,693; 8,167,170; 8,342,372; 8,474,658 and 9,327,308; and Canadian Patent No. 2,591,502, Canadian Parent No. 2,821,451 and U.S. Patent Pending.

Limitations

- OlyBond500[®] is not recommended for use with Polyisocyanurate board stock larger than 4' x 4' (1.21 m x 1.21 m).
- OlyBond500[®] is not recommended for use during wet weather.
- OlyBond500[®] cannot be used on dirty or grease-laden surfaces.
- OlyBond500[®] is not recommended for use on any roof deck that shows signs of deterioration or loss of structural integrity.
- OlyBond500[®] is not recommended for use after the expiration date. Contact OMG at 800-633-3800 for options and instructions.

Storage and Handling

- Store in a cool, dry location at temperatures between 55°F (12.8°C) and 85°F (29.4°C). Protect from freezing at all times. If properly stored, the shelf life for unopened product is 18 months from the date of manufacture.
- Keep containers closed. Contamination by moisture or basic compounds can cause dangerous pressure build-up in a closed container.
- The minimum product temperature before application should be 72°F (22.2°C). The minimum ambient and surface temperatures should be 40°F (4.4°C) and rising unless the SpotShot winter formulation is being used.

Manufactured by:





DRILL-TEC™ #12 FASTENER

Description

Drill-Tec™ #12 Fastener is designed to secure insulation to steel (18 ga. – 24 ga.) and wood. It is available in lengths from 1-5/8" – 8" (41.3 mm – 203 mm). The Drill-Tec™ Standard #12 Roofing Fastener is Factory Mutual and Miami-Dade County Product Control approved.

Application

The Drill-Tec™ #12 Fastener must penetrate steel decks a minimum of 3/4" (19.1 mm), wood plank decks a minimum of 1" (25.4 mm), and 1/2" (12.7 mm) through the underside for plywood decks. Using a screw gun, drive the fastener until the screw head is seated securely; with very rigid insulation boards, watch for the plate to dimple.

Note: Be careful not to overdrive the fastener and fracture the skin of the insulation. Fastener must be tight enough so that the plate doesn't turn.

For steel decks, Factory Mutual requires that the fastener penetrate the deck at the top flute.

To speed installation, this fastener is also available as a labor saving assembled screw and plate. See Drill-Tec ASAP® 3S.

Code Approvals



Advantages

- Heavier shank & thread diameters than most "standard" roofing fasteners.
- Deep buttress thread for high pull-out resistance.
- Extra sharp drill point for quick installation in new or reroof applications.
- Available with Hex Head or #3 Phillips Truss Head.

Plates & Accessories

- Use 3" (76 mm) steel or plastic plates, depending upon the application.
- For best installation results, use a variable speed 0-2500 rpm screw gun.

Specifications

The fastener will be a Drill-Tec™ #12 Fastener with a thread diameter of .220"

(5.58 mm). The fastener must have 12.5 buttress threads per inch (per 25.4 mm) and a 30° drill point. Also, the fastener must be heat treated per specification OMG-1. The Drill-Tec™ #12 Fastener will be used with a Factory Mutual-approved, Drill-Tec™ Round Pressure Plate or Pressure Bar. The fastener must be Factory Mutual approved.

Coating Requirement

The fastener will be coated with the Drill-Tec™ CR-10 corrosion-resistant coating. When subjected to 30 Kesternich cycles (DIN 50018), the fastener must show less than 15% red rust and surpass Factory Mutual Approval Standard 4470.

Note: ASAP® is a registered trademark of OMG.

Product Data

Thread Diameter	.220" (5.58 mm)
Head Diameter	
Truss Head	.435" (11.04 mm)
Hex Head	.390" (9.91 mm)
Head Style	#3 Phillips Truss Head* 1/4" (6.35 mm) Hex Head*
Coating	CR-10

*#3 Phillips bit or Hex Head drive included in each bucket.

Length	Thread Length	Packaging (Bucket)	Weight
1 5/8" (41.3mm)	Full	1,000	12 lb (5.44 kg)
2 1/4" (57.1 mm)	Full	1,000	15 lb (7.71 kg)
3" (76 mm)	Full	1,000	24 lb (10.89 kg)
4" (102 mm)	3" (76 mm)	1,000	28 lb (12.70 kg)
5" (127 mm)	3" (76 mm)	1,000	35 lb (15.88 kg)
6" (152 mm)	4" (102 mm)	1,000	40 lb (18.14 kg)
7" (178 mm)	4" (102 mm)	1,000	48 lb (21.77 kg)
8" (203 mm)	4" (102 mm)	1,000	50 lb (22.68 kg)

Note: All sizes are nominal.

Drill-Tec™
#12 Fastener



Example: Drill-Tec™ #12 Fastener Length Selection Procedure

1. If applicable, determine thickness of existing roofing material.
2. Add thickness of new insulation.
3. Add 3/4" (19.1 mm) minimum fastener penetration.
4. If odd size requirement, always size up in length, not down. See example below.

Example

Existing Roofing:	1 3/4" (44.4 mm)
New Insulation:	+ 1/2" (12.7 mm)
Min. Embedment:	+ 3/4" (19.1 mm)
Total Fastening Range:	= 3" (76 mm)

The proper #12 Fastener for the example is 3 1/4" (82.6 mm).

Use this format to calculate correct fastener size:

Existing Roof:	
New Insulation:	+
Min. Embedment:	+ 3/4" (19.1 mm)
Total Fastening Range:	=

The proper #12 Fastener is:



Flat



Drill-Tec™ 3" (76 mm)
Ribbed Galvalume® Plate (Flat)



Drill-Tec™ 3" (76 mm)
Plastic Locking Plate

Recessed



Drill-Tec™ 3" (76 mm)
Steel Plate



Drill-Tec™ 3" (76 mm)
Standard Steel Plate



Drill-Tec™ 3" (76 mm)
AccuTrac® Flat Plate



Drill-Tec™ 3" (76 mm)
AccuTrac® Recessed Plate

Description:

Drill-Tec™ insulation plates are made of Galvalume®-coated steel for excellent corrosion protection. Also available in a 3" Plastic Locking Plate made of durable polypropylene to be used with the Drill-Tec™ #12 or Drill-Tec™ #14 fasteners. The plates meet the requirements of ASTM D6294, FM Approval Standard 4470, and DIN 50018. They are ideal for attaching both insulation and cover boards.

Round Plates: The round design distributes loads evenly, eliminates sharp corners that can damage the insulation or cover board, and are available in a flat profile, which is ideal for cover boards, as well as recessed profile. These plates are designed to be used with appropriate Drill-Tec™ fasteners, depending on the substrate type. For details on fasteners and substrates

please see the GAF attachment tables for TPO and PVC.

Square Plates: AccuTrac® Plates are designed to be used in the AccuTrac® Stand Up Tool, offering an ergonomic fastening solution for attaching insulation and cover boards. They are available in two designs, recessed and flat. Please refer to GAF-published application instructions for approved substrates and additional information requirements at gaf.com.

For applications not listed or for additional information, contact GAF at 877-423-7663 or designservices@gaf.com.

Galvalume® is a registered trademark of BIEC International Inc. and some of its licensed producers.

AccuTrac® is a registered trademark of OMG.

Codes and Standards:

- FM Approved per Approval Standard 4470. Refer to RoofNav.com for specific assemblies.



State of Florida Approved



GAF Attachment Tables
for TPO and PVC

Product Data

Plate	Drill-Tec™ 3" (76 mm) Standard Steel Plate	Drill-Tec™ 3" (76 mm) Steel Plate	Drill-Tec™ 3" (76 mm) Ribbed Galvalume® Plate (Flat)	Drill-Tec™ 3" (76 mm) AccuTrac® Flat Plate	Drill-Tec™ 3" (76 mm) AccuTrac® Recessed Plate	Drill-Tec™ 3" (76 mm) Plastic Locking Plate
Plate Profile						
Material/ Coating	AZ-55 Galvalume®					Polypropylene
Dimensions (Diam./Width)	3" (76 mm)					
Packaging	500 per box	1,000 per bucket	1,000 per bucket	1,000 per bucket	1,000 per bucket	1,000 per box
Weight	37 lb. (16.7 kg)	37 lb. (16.7 kg)	37 lb. (16.7 kg)	43 lb. (19.5 kg)	43 lb. (19.5 kg)	25 lb. (11.34 kg)
FM Approved	✓	✓	✓	✓	✓	✓
Miami-Dade County Product Control Approved	✓	✓	✓	✓	✓	✓
State of Florida Approved	✓	✓	✓	✓	✓	✓



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For additional information, contact GAF Design Services at 1-877-423-7663 or designservices@gaf.com

We protect what matters most™



GAF PMMA Catalyst Powder



ITEM CODE: 8186



Description:

GAF PMMA Catalyst Powder, a reactive agent used to induce curing of GAF PMMA Flashing Resin, is supplied as a white granular powder in pre-measured packets. GAF PMMA Catalyst Powder is to be mixed with GAF PMMA Resin, Paste, and Primer.

Application:

- Refer to applicable GAF Installation Guide and GAF PMMA Flashing Resin Data Sheets for detailed application information, including mixing ratios for specific products.

Storage and Handling:

- For specific information regarding safe handling of this material, please refer to the appropriate Safety Data Sheet (SDS).
- GAF PMMA Catalyst Powder should be stored in its box at all times until just prior to use.
- Always store in a cool and dry location. Do not store in direct sunlight or in temperatures below 32°F (0°C) or above 77°F (25°C).
- Materials stored on the project site during application should be kept on a pallet in a shaded, well-ventilated area. In unshaded areas, materials should be covered with a white, reflective tarp in a manner that allows for air circulation beneath the tarp.

Precautions:

- GAF PMMA Catalyst Powder is stable if stored and used in accordance with GAF guidelines.
- GAF PMMA Catalyst Powder is heat sensitive and should be stored under controlled conditions to ensure that the reactivity/effectiveness is not compromised as well as for safety reasons.
- GAF PMMA Catalyst Powder should not be exposed to temperatures in excess of 122°F (50°C). Product exposed to temperatures in excess of 122°F (50°C) may experience hazardous self-accelerating decomposition. Self-accelerated decomposition is signaled by the presence of bright white smoke and the process can generate high temperatures, depending on the environmental conditions and quantity of product.
- Shelf life: 6 months from date of manufacture.

Physical Properties:

Application Temperature (Air)*	59°F – 104°F (15°C – 40°C)
Application Temperature (Surface)*	50°F – 122°F (10°C – 50°C)
Color	White

* Reference PMMA Installation Guide for application temperatures

Packaging:

- GAF PMMA Catalyst Powder is available in a specially designed vented box containing 10 pre-measured 0.1 kg (100 g) (3.2 oz) plastic bags (1 kg total). A 1-tablespoon measuring scoop is included in each box.
- For application questions contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.



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For additional information, contact GAF Technical Support at **1-800-766-3411** or technicalquestions@gaf.com

We protect what matters most™





PMMA Cleaner Clear Blended Solvent

ITEM CODE: 8185



Description:

GAF PMMA Cleaner is a clear blended solvent used for preparing the substrate to receive GAF PMMA Flashing.

Advantages:

- Ideal for use on asphaltic BUR (with SBS Cap Target Patch) and SBS-modified bitumen substrates and PVC or PVC KEE membranes
- Specially made for use with GAF PMMA Flashing System
- Can be applied by brush, rag, or cloth

Application:

Substrate Preparation — Substrate must be clean, completely dry, and free from any foreign matter. Pressure-wash to remove all dust and debris, and allow to dry. Check for any damaged roof membranes, including all flashings and penetrations, and repair before coating.

Mixing — GAF PMMA Cleaner is a ready-to-use material; however, some settling of material may occur during shipment and storage. Mix prior to use.

Application — GAF PMMA Cleaner may be applied by rag or cloth. Use only butyl rubber or nitrile gloves when mixing. Apply evenly at a rate of 0.2 gal/100 ft² (0.8 L/10 m²) per coat.

Pot Life & Drying Time — GAF PMMA Cleaner requires approximately 20 minutes drying time.



Visit [gaf.com](https://www.gaf.com)

For additional information, contact GAF Technical Support at **1-800-766-3411** or technicalquestions@gaf.com

Coverage — Consumption will vary depending upon application and use.

Disposal — GAF PMMA Cleaner is considered a hazardous material and must be handled as such, in accordance with local, state, and federal regulations. Refer to the GAF PMMA Cleaner Safety Data Sheet (SDS) and the GAF PMMA Flashing System Guide for additional information, and prior to handling or use.

Refer to GAF PMMA Flashing System Guide for application information.

For application questions — Contact GAF Technical Services at 1-800-766-3411 or visit [gaf.com](https://www.gaf.com).

Limitations & Precautions:

IMPORTANT: Repair leaks promptly to avoid adverse effects, including mold growth.

- Do NOT apply on wet substrates.
- Do NOT heat container.
- Do NOT attempt to thin product.
- Do NOT apply if rain, dew, fog, heavy moisture condensation, or freezing temperatures are in the 24-hour forecast.
- Use butyl rubber or nitrile gloves when handling.

Safety & Handling:

For specific information regarding safe handling of this material, please refer to the Safety Data Sheet (SDS).

Physical Properties:

Unit of Measure	1 Gal (3.8 L)
Application Temperature (Air)	50°F (10°C) and rising (15°C – 40°C)
Application Temperature (Surface)	50°F – 110°F (10°C – 43°C)
Color	Clear
Drying Time	20 minutes

Packaging & Shelf Life:

- GAF PMMA Cleaner is supplied in a 1-gallon (3.8 L) can.
- Shelf life 12 months if stored properly in a clean and well-ventilated area at 50°F – 90°F (10°C – 32°C). Storage for continued periods outside this temperature range may shorten shelf life. Keep containers covered when not in use.
- DO NOT allow cleaner to freeze and store in a cool, dry environment at temperatures between 55°F – 80°F.



PMMA Flashing Resin – Summer Grade

Technical Data Sheet



PRODUCT DESCRIPTION

United Coatings™ PMMA Flashing Resin – Summer Grade is a high-performance, multicomponent flexible PMMA resin for use in the **PMMA Flashing System**. **PMMA Flashing Resin – Summer Grade**, when mixed with **United Coatings™ PMMA Catalyst**, is combined with **United Coatings™ PMMA Fleece** to form a monolithic reinforced flashing membrane.

PACKAGING & SHELF LIFE

10 kg (22 lb.) resealable drums with locking rings.

Shelf life 12 months from date of manufacture in unopened containers, if stored properly in a clean and well-ventilated area at 32°F – 77°F (0°C – 25°C). Storage for continued periods outside this temperature range may shorten shelf life. Keep containers covered when not in use. **DO NOT** allow resin to freeze.

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1 Campus Drive
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gaf.com

GAF Liquid-Applied

December 2017

BASIC USES & ADVANTAGES

United Coatings™ PMMA Flashing Resin – Summer Grade is designed to reinforce areas of BUR and SBS substrates that are heavily alligatored or contain numerous cracks, seams, joints, or splits.

NOTE: **United Coatings™ PMMA Flashing Resin** is available in **Summer** and **Winter Grades**. Care should be taken to ensure that the correct formulation is used for the application based upon the ambient temperature.

Advantages:

- Ideal for repairing penetrations, curbs, and seams
- Good for smoothing and repairing heavy “alligatored” asphalt
- Used in conjunction with **United Coatings™ PMMA Fleece**
- **Summer Grade** formula can be applied at higher temperatures

PHYSICAL PROPERTIES

UNITED COATINGS™ PMMA FLASHING RESIN – SUMMER GRADE	
Solids by Volume	58% (±2) [ASTM D5201]
Tensile Strength	325 psi (2.24 MPa) (±25) [ASTM D412]
Elongation	200% (±25) [ASTM D412]
VOC	<25 g/L

Application Temperature (Air)	59°F – 104°F (15°C – 40°C)
Application Temperature (Surface)	59°F – 122°F (15°C – 50°C)
Colors	White

APPLICATION INSTRUCTIONS

Substrate Preparation: Roof must have positive drainage with no moisture trapped in the roof assemblies. Clean applicable area with **United Coatings™ PMMA Cleaner**. Roof substrate must be clean, completely dry, and free from any foreign matter. Check for any damaged roof membranes, including all flashings and penetrations, and repair before coating application commences. See gaf.com for more information.

Mixing: **United Coatings™ PMMA Flashing Resin – Summer Grade** is a two-part system which must be mixed with **United Coatings™ PMMA Catalyst**. If batch mixing, thoroughly mix the entire drum of resin for 2 to 3 minutes prior to pouring resin into a second container. Catalyze only the amount of resin that can be used within the anticipated pot life. Add premeasured catalyst to the resin, stir for 2 minutes using a slow-speed mechanical agitator or mixing stick, and apply to the substrate. The amount of catalyst needed is based on the weight of the resin used, and varies with the ambient temperature as shown in the chart below. Pot life is approximately 15 minutes at 68°F (20°C).

Pot life will be reduced if the resin is at higher temperatures. Pot life can be maximized by storing product under controlled conditions and ensuring that the resin is at the lower end of storage temperature range during/following the addition of catalyst and prior to application.

Application: **United Coatings™ PMMA Flashing Resin – Summer Grade** may be applied by brush or roller. Workers must use only butyl rubber or nitrile gloves when mixing or applying this product. For smooth substrates, apply at a rate of 0.19 kg/sq. ft. (2.0 kg/m²) for base coat and 0.12 kg/sq. ft. (1.3 kg/m²) for top coat. For granulated substrates, apply at a rate of 0.28 kg/sq. ft. (3.0 kg/m²) for base coat and 0.12 kg/sq. ft. (1.3 kg/m²) for top coat. A minimum of 2 coats should be applied and reinforced with fabric. Total coverage should be 0.31 kg/sq. ft. (3.3 kg/m²) for smooth and 0.40 kg/sq. ft. (4.3 kg/m²) for granulated and is dependent on the substrate. See gaf.com for details.

For Application Questions: Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.



PMMA Flashing Resin – Summer Grade

Technical Data Sheet

Page 2 of 2

MIXING CHART

United Coatings™ PMMA Flashing Resin – Summer Grade Mixing Chart								
The amount of United Coatings™ PMMA Catalyst used with United Coatings™ PMMA Flashing Resin – Summer Grade varies from a minimum of 2% to 4% maximum by weight, depending upon the ambient temperatures as indicated in the following chart:								
Resin Quantity	2% Catalyst 68°F to 104°F (20°C to 40°C)				4% Catalyst 59°F to 68°F (15°C to 20°C)			
	g	kg	Tbsp.	0.1 kg Bag	g	kg	Tbsp.	0.1 kg Bag
1.0 kg (0.72 liter)	20	.02	2	n/a	40	.04	4	n/a
5.0 kg (3.6 liter)	100	0.1	10	1	200	0.2	20	2
10.0 kg (7.2 liter)	200	0.2	20	2	400	0.4	40	4

LIMITATIONS & PRECAUTIONS

IMPORTANT: Repair leaks promptly to avoid adverse effects, including mold growth.

- Do **NOT** apply on wet substrates.
 - Do **NOT** heat container.
 - Do **NOT** attempt to thin product.
- Do **NOT** apply if rain, dew, fog, heavy moisture condensation, or freezing temperatures are in the 24-hour forecast.

SAFETY & HANDLING

For specific information regarding safe handling of this material, please refer to the Safety Data Sheet (SDS).

CLEANUP

When work is interrupted or completed, reusable tools must be thoroughly cleaned with **United Coatings™ PMMA Cleaner** before any catalyzed resin on the tools hardens. If resin has hardened, use mechanical methods.

GAF

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1-800-ROOF-411
gaf.com

See applicable warranties and guarantees for complete coverage and restrictions.



PMMA Fleece

Technical Data Sheet



PRODUCT DESCRIPTION

United Coatings™ PMMA Fleece is a non-woven, needle-punched polyester fabric reinforcement specially designed for use with the **United Coatings™ PMMA Flashing System**.

PACKAGING

United Coatings™ PMMA Fleece is available in:

- 1 ft. (305 mm) by 82 ft (25 m) rolls
- 1 ft. (305 mm) by 164 ft (50 m) rolls
- 3.4 ft. (1.04 m) by 164 ft (50 m) rolls
- 2.1 ft. (655 mm) by 164 ft (50 m) rolls

Shelf life indefinite if stored properly in a cool and dry location. Store flat to avoid deforming rolls and creasing fabric.

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gaf.com

GAF Liquid-Applied

December 2017

BASIC USES & ADVANTAGES

United Coatings™ PMMA Fleece is designed to reinforce areas of BUR and SBS substrates that are heavily alligatored or contain numerous cracks, seams, joints, or splits.

Advantages:

- 100% polyester reinforcement for penetrations
- Easily conforms around penetrations
- Improves strength while maintaining flexibility
- Good for smoothing and repairing “alligatored” asphaltic membranes

PHYSICAL PROPERTIES

UNITED COATINGS™ PMMA FLEECE	
Weight	110 g/m ²
Nominal Thickness	40 mils
Water absorption	<1%
Application Temperature	Refer to limitations of United Coatings™ PMMA Resin

APPLICATION INSTRUCTIONS

Substrate Preparation: As a minimum, clean and prepare existing surfaces to receive **United Coatings™ PMMA Fleece** by removing all loose and flaking particles, grease, and laitance with the use of a stiff-bristle push broom and/or washing. Care should be taken not to inject water into the substrate during washing. In some cases, additional drying time may be required after the cleaning process.

Application: **United Coatings™ PMMA Fleece** should be installed as required after application of any primers or caulk, and prior to application of the coating on the field of the roof. Cut the fabric to the desired length. Slit the bottom half of fabric used around vent pipes and other circular protrusions so that it lies flat. Immediately embed fabric into wet coating and work it with a brush so that it is saturated with coating. All reinforcement fabric shall be 100% adhered to the substrate, with no tenting or air pockets.

United Coatings™ PMMA Fleece should be embedded into **United Coatings™ PMMA Flashing Resin – Summer or Winter Grade**.

PMMA Flashing Resin – Summer Grade

For smooth substrates, apply at a rate of 0.19 kg/sq. ft. (2.0 kg/m²) for base coat and 0.12 kg/sq. ft. (1.3 kg/m²) for top coat. For granulated substrates, apply at a rate of 0.28 kg/sq. ft. (3.0 kg/m²) for base coat and 0.12 kg/sq. ft. (1.3 kg/m²) for top coat. A minimum of 2 coats should be applied and reinforced with fabric. Total coverage should be 0.31 kg/sq. ft. (3.3 kg/m²) for smooth and 0.40 kg/sq. ft. (4.3 kg/m²) for granulated and is dependent on the substrate.

PMMA Flashing Resin – Winter Grade

For smooth substrates, apply at a rate of 0.19 kg/sq. ft. (2.0 kg/m²) for base coat and 0.12 kg/sq. ft. (1.3 kg/m²) for top coat. For granulated substrates, apply at a rate of 0.28 kg/sq. ft. (3.0 kg/m²) for base coat and 0.12 kg/sq. ft. (1.3 kg/m²) for top coat. A minimum of 2 coats should be applied and reinforced with fabric. Total coverage should be 0.31 kg/sq. ft. (3.3 kg/m²) for smooth and 0.40 kg/sq. ft. (4.3 kg/m²) for granulated and is dependent on the substrate. See gaf.com for details.

For Application Questions: Contact GAF Technical Services at 1-800-766-3411 or visit gaf.com.

SAFETY & HANDLING

Keep **United Coatings™ PMMA Fleece** in a clean, dry location. For specific information regarding safe handling of this material, please refer to the Safety Data Sheet (SDS).



GAF PMMA Paste Mastic

ITEM CODE: 9419



Description:

GAF PMMA Paste is a multi-component, fast-curing, flexible PMMA paste used for remediation of depressions in substrate surfaces or to remediate surface irregularities prior to application of RUBEROID®, GAFGLAS®, EverGuard® PVC and EverGuard® PVC KEE Roof Membrane Systems and Waterproofing Systems.

Application:

Refer to GAF PMMA Flashing System Guide for detailed mixing and application information, including mixing ratios and application/coverage rates. Product must be catalyzed before application using GAF PMMA Catalyst Powder. See mixing charts that are supplied with GAF PMMA Catalyst Powder products.

Storage and Handling:

Store indoors in well-ventilated, cool, dry area away from heat, open fire, ignition sources, direct sunlight, oxidizing agents, strong acids, and strong alkalis. Do not store below 32°F (0°C). Product may auto-polymerize at temperatures greater than 122°F (50°C). Store jobsite materials on pallets in shaded, well-ventilated area. Cover unshaded areas with reflective tarp that allows air circulation. Standard shelf life is 12 months; shelf life will be reduced when stored at temperatures above 77°F (25°C).

See product packaging and the Safety Data Sheet for specific information on the safe handling of this product.

Specifications:

Colors	Pebble Gray
Density	1.4 kg/liter
Coverage	0.13 kg/sf per 1 mm of thickness
Shelf Life	12 months from date of manufacture
Pot Life	10 – 15 minutes once catalyzed
Maximum Thickness per Lift	3/16 in. (5 mm)
Typical Set/Cure Times at 68°F (20°C)	Rainproof: 30 minutes Ready for Next Coat: 60 minutes Stress Resistant: 3 hours
VOC Content	< 25 g/L (catalyzed) EPA test method 24

Packaging:

Resealable metal pails	10 kg (2.6 Gal.)
Units Per Pallet:	60 Pails

GAF PMMA Catalyst Powder Mixing Chart:

Catalyst Powder Mixing Chart GAF PMMA Paste

The amount of Catalyst Powder used with GAF PMMA Paste varies from a minimum of 2% to 6% maximum by weight, depending upon the ambient temperatures as indicated in the following table:

Resin Quantity	Ambient Temperature 2% Catalyst 77°F to 95°F (25°C to 35°C)				Ambient Temperature 4% Catalyst 41°F to 77°F (5°C to 25°C)				Ambient Temperature 6% Catalyst 32°F to 41°F (0°C to 5°C)			
	g	kg	Tblsp.	0.1-kg Bags	g	kg	Tblsp.	0.1-kg Bags	g	kg	Tblsp.	0.1-kg Bags
1.0 kg (1 liter)	20	0.02	2	n/a	40	0.04	4	n/a	60	0.06	6	n/a
5 kg (5 liters)	100	0.1	n/a	1	200	0.2	n/a	2	300	0.3	n/a	3
10 kg (10 liters)	200	0.2	n/a	2	400	0.4	n/a	4	600	0.6	n/a	6

Substrate temperature range for application of GAF PMMA Paste is 32°F to 95°F (0°C to 35°C).



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For additional information, contact GAF Technical Support at **1-800-766-3411** or technicalquestions@gaf.com

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ITEM CODE: 9421



Description:

GAF PMMA Primer Resin is a multi-component, fast-curing, PMMA resin primer for use over approved substrates and promotes Flashing Resin and Paste adhesion.

Application:

Substrate Preparation — refer to the applicable GAF Installation Manual for detailed application information, including application coverage rates. Product must be catalyzed before application using GAF PMMA Catalyst Powder. See mixing charts that are supplied with GAF PMMA Catalyst products.

Storage and Handling:

Store indoors in well-ventilated, cool, dry area away from heat, open fire, ignition sources, direct sunlight, oxidizing agents, strong acids, and strong alkalis. Do not store below 32°F (0°C). Product may auto-polymerize at temperatures greater than 140°F (60°C). Store jobsite materials on pallets in a shaded, well-ventilated area. Standard shelf life is 12 months; shelf life will be reduced when stored at temperatures above 77°F (25°C).

Refer to GAF PMMA Flashing System Guide for detailed mixing and application information.

See product packaging and the Safety Data Sheet (SDS) for specific information on the safe handling of this product.

Packaging:

Resealable metal drums	10 kg (22 lb.)
Units Per Pallet:	48

Specifications:

Colors	Translucent White
Conditions at Time of Application	Ambient & Substrate Temperatures: 32°F - 95°F (0°C - 35°C)
Typical Set/Cure Times at 68°F (20°C)	Rainproof: 25 Minutes Ready for Next Coat: 45 minutes
Pot Life at 68°F (20°C)	< 10 minutes
VOC Content	< 25 g/L (catalyzed) EPA Test Method 24

GAF PMMA Primer Mixing Chart:

Paste Quantity	Ambient Temperature 77°F to 95°F (25°C to 35°C)			Ambient Temperature 41°F to 77°F (5°C to 25°C)			Ambient Temperature 32°F to 41°F (0°C to 5°C)		
	g	Tblsp.	0.1 kg Bags	g	Tblsp.	0.1 kg Bags	g	Tblsp.	0.1 kg Bags
1.0 kg (1 liter)	20	2	n/a	40	4	n/a	60	6	n/a
10 kg (10 liters)	200	n/a	2	400	n/a	4	600	n/a	6

Substrate temperature range for application of GAF PMMA Primer is 32°F to 95°F (0°C to 35°C).



Visit [gaf.com](https://www.gaf.com)

For additional information, contact GAF Technical Support at **1-800-766-3411** or technicalquestions@gaf.com

We protect what matters most™





RUBEROID®/GAFGLAS® Diamond Pledge™

NDL Roof Guarantee



OWNER OF BUILDING	GUARANTEE NUMBER
NAME OF BUILDING	PERIOD OF COVERAGE
ADDRESS OF BUILDING	DATE OF COMPLETION
AREA OF ROOF (SQUARES)	GUARANTEE EXPIRATION DATE
APPLIED BY	ROOF SPECIFICATION

THE GUARANTEE/SOLE AND EXCLUSIVE REMEDY

GAF guarantees to you, the owner of the building described above, that GAF will provide "Edge To Edge" protection by repairing leaks through the GAF roofing membrane, liquid-applied membrane or coating, base flashing, high wall waterproofing flashing, insulation, expansion joint covers, preflashed accessories, and metal flashings used by the contractor of record that were designed and installed in accordance with an appropriate ES-1 certified edge detail (the "GAF Roofing Materials") resulting from a manufacturing defect, ordinary wear and tear, or workmanship in applying the GAF Roofing Materials. There is no dollar limit on covered repairs. Leaks caused by any non-GAF materials, such as the roof deck or non-GAF insulation, are not covered.

GUARANTEE PERIOD

This guarantee ends on the expiration date listed above. **NOTE:** Lexsuca® and uncoated M-Curb™ flashings are covered by this guarantee **ONLY** for the first ten years.

OWNER RESPONSIBILITIES

Notification of Leaks

In the event of a leak through the GAF Roofing Materials, you **MUST** make sure that GAF is notified directly about the leak, in writing, within **30 days** either online at leakreporting.gaf.com, by email at guaranteeleak@gaf.com, or by postal mail to GAF Warranty Claims Department, 1 Campus Drive, Parsippany, NJ 07054, or GAF will have no responsibility for making repairs. **NOTE:** The roofing contractor is **NOT** an agent of GAF; notice to the roofing contractor is **NOT** notice to GAF.

By notifying GAF, you authorize GAF to investigate the cause of the leak. If the investigation reveals that the leak is not covered by this guarantee, you agree to pay an investigation cost of \$500. This guarantee will be cancelled if you fail to pay this cost within 30 days of receipt of an invoice for it.

Preventative Maintenance and Repairs

- A. You must perform regular inspections and maintenance and keep records of this work.
- B. To keep this guarantee in effect, you must repair any conditions in the building structure or roofing system that are not covered by this guarantee but that GAF concludes may be threatening the integrity of the GAF Roofing Materials. Any such repairs must be performed by a GAF-certified roofing contractor. Failure to make timely repairs may jeopardize guarantee coverage.
- C. You may make temporary repairs to minimize damage to the building or its contents in an emergency, at your sole expense. These repairs will not result in cancellation of the guarantee as long as they are reasonable and customary and do not result in permanent damage to the GAF Roofing Materials.
- D. Any equipment or material that impedes any inspection or repair must be removed at your expense so that GAF can perform inspections or repairs.

EXCLUSIONS FROM COVERAGE

(e.g., items that are not "ordinary wear and tear" or are beyond the control of GAF)

This guarantee does **NOT** cover conditions other than leaks. This guarantee also does **NOT** cover leaks caused by any of the following:

- 1. Inadequate roof maintenance, that is, the failure to follow the Scheduled Maintenance Checklists provided with this guarantee (extra copies available by calling Guarantee Services at 1-877-GAF-ROOF) or the failure to repair owner responsibility items.
 - 2. Unusual weather conditions or natural disasters including, but not limited to, winds in excess of 55 miles per hour, hail, floods, hurricanes, lightning, tornados, and earthquakes, unless specifically covered by an addendum to this guarantee.
 - 3. Impact of foreign objects or physical damage caused by any intentional or negligent acts, accidents, misuse, abuse, or the like.
 - 4. Damage to the roof constructed of the GAF Roofing Materials due to: (a) movement, cracking, or other failure of the roof deck or building; (b) improper installation or failure of any non-GAF insulation or materials; (c) condensation or infiltration of moisture through or around the walls, copings, building structure, or surrounding materials except where high wall GAF waterproofing flashings are installed; (d) chemical attack on the membrane, including, but not limited to, exposure to grease or oil; (e) the
- failure of wood nailers to remain attached to the structure; (f) moisture migration from the building interior or any building component other than the GAF Roofing Materials; (g) use of materials that are incompatible with the GAF Roofing Materials; or (h) architectural, engineering, or design defects or flaws.
 - 5. Traffic of any nature on the roof unless using GAF walkways applied in accordance with GAF published application instructions.
 - 6. Blisters in the GAF Roofing Materials that have not resulted in leaks unless (a) the blister is between the base sheet and insulation and a Stratavent® Venting Base Sheet is installed directly over isocyanurate insulation, or (b) the blister is in a seam and may affect the watertight integrity of the GAF Roofing Materials.
 - 7. Changes in the use of the building or any repairs, installation of any overburden, modifications, or additions to the GAF Roofing Materials after the roof is completed, unless prior written approval is obtained from GAF.
 - 8. Conditions that prevent positive drainage or result from ponding water.

No representative, employee, or agent of GAF, or any other person, has the authority to assume any additional or other liability or responsibility for GAF, unless it is in writing and signed by an authorized GAF Field Services Manager or Director. GAF does not practice engineering or architecture. Neither the issuance of this guarantee, nor any review of the roof constructed of the GAF Roofing Materials (or the plans for the roof), by GAF shall constitute any warranty of such plans, specifications or construction, or the suitability or code compliance of the GAF Roofing Materials for any particular structure. **NOTE:** Any inspections made by GAF are limited to a surface inspection only, are for the sole benefit of GAF, and do not constitute a waiver or extension of any of the terms and conditions of this guarantee.

This guarantee MAY BE SUSPENDED OR CANCELLED IF THE ROOF IS DAMAGED BY any cause listed above as AN EXCLUSION FROM COVERAGE that may affect the integrity or watertightness of the roof.

TRANSFERABILITY

You may transfer or assign this guarantee to a subsequent owner of this building for the remaining term only if: 1) the request is in writing to GAF at the address listed below within 60 days after ownership transfer; 2) you make any repairs to the GAF Roofing Materials or other roofing or building components that are identified by GAF after an inspection as necessary to preserve the integrity of the GAF Roofing Materials; and 3) you pay an assignment fee of \$500. This guarantee is NOT otherwise transferable or assignable by contract or operation of law, either directly or indirectly.

LIMITATION OF DAMAGES; MEDIATION; JURISDICTION; CHOICE OF LAW

THIS GUARANTEE IS EXPRESSLY IN LIEU OF ANY OTHER GUARANTEES OR WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, and of any other obligations or liability of GAF, whether any claim against it is based upon negligence, breach of warranty, or any other theory. In **NO** event shall GAF be liable for any CONSEQUENTIAL OR INCIDENTAL DAMAGES of any kind, including, but not limited to, interior or exterior damages and/or mold growth.

The parties agree that, as a condition precedent to litigation, any controversy or claim relating to this guarantee shall be first submitted to mediation before a mutually acceptable mediator unless GAF, at its sole option, elects to waive said requirement. In the event that mediation is unsuccessful, or is waived by GAF, the parties agree that neither one will commence or prosecute any lawsuit or proceeding other than before the appropriate state or federal court in the State of New Jersey. This guarantee shall be governed by the laws of the State of New Jersey, without regard to principles of conflicts of laws. Each party irrevocably consents to the jurisdiction and venue of the above identified courts.

NOTE: GAF shall have no obligation under this guarantee unless and until all bills for installation and supplies have been paid in full to the roofing contractor and materials suppliers, and the guarantee charge has been paid to GAF.

By: _____
Authorized Signature

GAF
1 CAMPUS DRIVE
PARSIPPANY, NJ 07054

Visit gaf.com



I. READ, REVIEW AND COMPLY

It shall be the Vendor's responsibility to read this entire document; review all enclosures, attachments, and any Addenda; and comply with all requirements specified, whether appearing in these Instructions to Vendors or elsewhere in the Solicitation document. Any gender-specific pronouns used herein, whether masculine or feminine, shall be read and construed as gender neutral, and the singular of any word or phrase shall be read to include the plural and vice versa.

II. REQUEST FOR OFFERS

Vendors are cautioned that this is a request for Offers, not an offer or request to contract, and Union County Public Schools reserves the unqualified right to reject any and all bids at any time if such rejection is deemed to be in the best interest of Union County Public Schools. By submitting Your Bid or Proposal, you are offering to enter into a contract with Union County Public Schools.

The Contract is a separate document that represents the Vendor and Union County Public Schools' entire agreement. If Your bid is accepted and results in a Contract, you will be expected to accept the North Carolina General Terms and Conditions included in the Solicitation document as part of the Contract. Depending upon the good or service being offered, other terms and conditions may apply.

III. DUTY TO INQUIRE

Offeror, by submitting an Offer, represents that it has read and understands the Solicitation and that its Offer is made in compliance with the Solicitation. Offerors are expected to examine the Solicitation thoroughly and should request an explanation for any ambiguities, discrepancies, errors, omissions, or conflicting statements in the Solicitation. Failure to do so will be at the Offeror's risk. All ambiguities, discrepancies, errors, omissions, or conflicting statements in the Solicitation shall be interpreted to require the better quality or greater quantity of work and/or materials, unless otherwise directed by Addendum. Offeror assumes responsibility for any patent ambiguity in the Solicitation that Offeror does not bring to Union County Public Schools' attention.

IV. DEFINITIONS, ACRONYMS AND ABBREVIATIONS

The following definitions, acronyms, and abbreviations may be used within the Solicitation document.

1. **AGENCY SPECIFIC TEAM CONTRACT:** A contract generally intended to cover all normal requirements for a commodity for a specified period of time based on estimated quantities for a single entity.
2. **ADDENDUM:** a document issued to supplement or modify the original Solicitation document. Addenda may be issued following a pre-bid/pre-proposal conference or as a result of a specification or work scope changes to the Solicitation.

3. **BAFO:** Best and Final Offer, submitted by a Vendor to alter its initial bid, made in response to a request by the issuing agency.
4. **BUYER:** The employee of Union County Public Schools or Other Eligible Entity that places an order with the Vendor.
5. **CONTRACT:** A Contract resulting from or arising out of Vendor responses to this Solicitation.
6. **CONTRACT ADMINISTRATOR:** A representative of the Agency who is responsible for the functions that are performed after all parties have signed a contract, including any modifications to the contract.
7. **CONTRACT MANAGER:** A representative of the agency or awarded vendor who ensures compliance with the contract terms and conditions while giving attention to the achievement of the stated output and outcome of the contract.
8. **FOB-DESTINATION:** Title changes hand from Vendor to purchaser at the destination point of the shipment; Vendor owns the commodity in transit and files any claims. Vendor pays all freight and any related transportation charges. A Solicitation may request that a Vendor separately identify freight charges in its bid, but no amount of charge not included as part of the total bid price will be paid.
9. **HUB:** Historically Underutilized Business <https://ncadmin.nc.gov/business/hub>
10. **IFB:** Invitation for Bids (a type of Solicitation document)
11. **LOT:** A grouping of similar products within this Solicitation document.
12. **OFFER:** The bid or proposal submitted in response to this Solicitation. The terms Bid and Proposal are used interchangeably with the term Offer.
13. **OFFEROR:** The single legal entity submitting the Offer. The term Bidder is used interchangeably with the term Offeror. See bidding provisions entitled Signing Your Offer and Bid/Proposal As Offer to Contract.
14. **ON-TIME DELIVERY:** The delivery of all items within a single order to the receiving point designated by the ordering entity within the delivery time required.
15. **QUALIFIED BID/PROPOSAL:** A responsive bid submitted by a responsible Vendor.
16. **RESPONSIBLE:** Refers to a Vendor who demonstrates in its Offer that it has the capability to perform the requirements of the Solicitation.
17. **RESPONSIVE:** Refers to an Offer that conforms to the Requirements of the Solicitation in all respects to be considered by the State for award.
18. **RFI:** Request for Information (an information gathering tool that does not result in a contract)
19. **RFP:** Request for Proposals (a type of Solicitation document)
20. **RFPQ:** Request for Pre-Qualifications (a type of Solicitation document)
21. **RFQ:** Request for Quotes (a type of Solicitation document)
22. **STATE:** The State of North Carolina, including any of its sub-units (Union County Public Schools) recognized under North Carolina law.
23. **STATE AGENCY:** Any of the more than 400 sub-units within the executive branch of the State, including its departments, institutions, boards, commissions, universities, and units of the State.

24. **VENDOR:** The supplier, bidder, proposer, company, firm, corporation, partnership, individual or other entity submitting a response to a Solicitation document. Following award of a contract, the term refers to an entity receiving such an award.
25. **WORK:** All labor, materials, equipment, services, or property of any type, provided or to be provided by the Contractor to fulfill the Contractor's obligations under the Contract.
26. **YOU and YOUR:** Offeror

V. INTERPRETATION OF TERMS AND PHRASES

The Solicitation document serves to advise potential Vendors of the parameters of the solution being sought by Union County Public Schools. The use of phrases such as "shall," "must," and "requirement" are intended to create enforceable contract conditions. In determining whether bids should be evaluated or rejected, Union County Public Schools will take into consideration the degree to which Vendors have proposed or failed to propose solutions that will satisfy Union County Public Schools needs as described in the Solicitation. Except as specifically stated in the Solicitation, no one requirement shall automatically disqualify a Vendor from consideration. However, failure to comply with any single requirement, if determined to be essential under the circumstances then existing, may result in Union County Public Schools exercising its discretion to reject a bid in its entirety.

VI: BID SUBMISSION

1. **VENDOR'S REPRESENTATIVE:** Each Vendor shall submit with its bid the name, address, and telephone number of the person(s) with authority to bind the Vendor and answer questions or provide clarification concerning the Vendor's bid.
2. **SIGNING YOUR OFFER:** Every Offer must be signed by an individual with actual authority to bind the Offeror.
 - a) If the Offeror is an individual, the Offer must be signed by that individual. If the Offeror is an individual doing business as a firm, the Offer must be submitted in the firm name, signed by the individual, and state that the individual is doing business as a firm.
 - b) If the Offeror is a partnership, the Offer must be submitted in the partnership name, followed by the words by its Partner, and signed by a general partner.
 - c) If the Offeror is a corporation, the Offer must be submitted in the corporate name, followed by the signature and title of the person authorized to sign.
 - d) An Offer may be submitted by a joint venture involving any combination of individuals, partnerships, or corporations. If the Offeror is a joint venture, the Offer must be submitted in the name of the Joint Venture and signed by every participant in the joint venture in the manner prescribed in paragraphs (a) through (c) above for each type of participant.
 - e) If any Offer is signed by an agent, other than as stated in subparagraphs (a) through (d) above, the Offer must state that it has been signed by an Agent. Upon request, Offeror must provide proof of the agent's authorization to bind the proposal.

3. **EXECUTION:** Failure to sign the Execution page in the indicated space may render an Offer nonresponsive, and it may be rejected.
4. **BID IN ENGLISH and DOLLARS:** Offers submitted in response to this Solicitation shall be in the English language and in US dollars, unless otherwise permitted by the Solicitation.
5. **LATE BIDS:** Late bids, regardless of cause, will not be opened or considered, and will automatically be disqualified from further consideration. It shall be the Vendor's sole responsibility to ensure delivery at the designated office by the designated time.
6. a) Vendor shall bear the risk for the late submission due to unintended or unanticipated delay – whether submitted electronically, delivered by hand, U.S. Postal Service, courier or other delivery service. **It is the Vendor's sole responsibility to ensure that its bid has been received by this Office by the specified time and date of opening.** The date and time of submission will be marked on each bid when received, and any bid received after the bid submission deadline will be rejected.
b) For proposals submitted via U.S. mail, vendors are cautioned that proposals sent via U.S. Mail, including Express Mail, may not be delivered by the Mail Service Center to the Union County Public Schools facilities office on the due date in time to meet the proposal deadline. All Vendors are urged to take the possibility of delay into account when submitting a proposal by U.S. Postal Service, courier, or other delivery service.
7. **DETERMINATION OF RESPONSIVENESS:** Any Offer which fails to conform to the material requirements of the Solicitation may be rejected as non-responsive. Offers which impose conditions that modify material requirements of the Solicitation may be rejected. If a fixed price is required, an Offer will be rejected if the total possible cost of Union County Public Schools cannot be determined. Offerors will not be given an opportunity to correct any material nonconformity. Any deficiency resulting from a minor informality may be cured or waived at the sole discretion of the Procurement Officer.
8. **CONTENTS OF OFFER:**
 - a) Offers should be complete and carefully worded and should convey all of the information requested.
 - b) Offers should be prepared simply and economically, providing a straightforward, concise description of the Offeror's capabilities to satisfy the requirements of the Solicitation. Emphasis should be on completeness and clarity of content.
 - c) If Your Offer includes any comment over and above the specific information requested in the Solicitation, You are to include this information as a separate appendix to Your Offer. Offers which include either modifications to any of the Solicitation's contractual requirements or an Offeror's standard terms and conditions may be deemed non-responsive and not considered for award at Union County Public Schools discretion.
9. **MULTIPLE OFFERS:** If specifically stated in the Solicitation document, Offerors may submit more than one Offer, provided that each Offer has significant differences other than price. Each separate Offer must satisfy all Solicitation requirements.

10. **CLARIFICATION:** Union County Public Schools may elect to communicate with You after bid opening for the purpose of clarifying either Your Offer or the requirements of the Solicitation. Such communications may be conducted only with Offerors who have submitted an Offer which obviously conforms in all material aspects to the Solicitation. Clarification of an Offer must be documented in writing and included with the Offer. Clarifications may not be used to revise an Offer or the Solicitation.
11. **ACCEPTANCE AND REJECTION:** Union County Public Schools reserves the right to reject any and all bids, to waive any informality in bids and, unless otherwise specified by the Vendor, to accept any item in the bid. If either a unit price or an extended price is obviously in error and the other is obviously correct, the incorrect price will be disregarded. Regardless of error or omission, a Vendor shall not be permitted to increase its pricing after the deadline for submitting bids.
12. **BASIS FOR REJECTION:** Pursuant to 01 NCAC 05B.0501, Union County Public Schools reserves the right to reject any and all Offers, in whole or in part, by deeming the Offer unsatisfactory as to quality or quantity, delivery, price or service offered, noncompliance with the requirements or intent of this Solicitation, lack of competitiveness, error(s) in specifications or indications that revision would be advantageous to Union County Public Schools, cancellation or other changes in the intended project or any other determination that the proposed requirement is no longer needed, limitation or lack of available funds, circumstances that prevent determination of the best offer, or any other determination that rejection would be in the best interest of Union County Public Schools .
12. **INFORMATION AND DESCRIPTIVE LITERATURE:** Vendor shall furnish all information requested in the Solicitation document. Further, if required elsewhere in this bid, each Vendor shall submit with its bid any sketches, descriptive literature, and/or complete specifications covering the goods and services offered. Reference to literature submitted with a previous bid or available elsewhere will not satisfy this provision. Do not submit bid samples or descriptive literature unless expressly requested. Unsolicited bid samples or descriptive literature will not be examined or tested, will not be used to determine responsiveness, and will not be deemed to vary any of the provisions of the Solicitation. Failure comply with these requirements shall constitute sufficient cause to reject a bid without further consideration.
13. **WITHDRAWAL OF BID OR PROPOSAL:** Proposals submitted electronically may be withdrawn at any time prior to the date for bid opening identified on the cover page of this Solicitation document (or such later date included in an Addendum). Proposals that have been delivered by hand, U.S. Postal Service, courier, or other delivery service may be withdrawn only in writing and if receipt is acknowledge by the office issuing the Solicitation document prior to the time for opening identified on the cover page of the Solicitation document (or such later date included in an Addendum). Written withdrawal requests shall be submitted on the Vendor's letterhead and signed by an official of the Vendor authorized to make such request. Any withdrawal request made after bid opening shall be allowed only for good cause shown and in the sole discretion of the Division of Purchase and Contract.

14. **COST FOR BID OR PROPOSAL PREPARATION:** Any costs incurred by Vendor in preparing or submitting Offers are the Vendor's sole responsibility.
15. **INSPECTION AT VENDOR'S SITE:** Union County Public Schools reserves the right to inspect, at a reasonable time, the equipment, item, plant, or other facilities of a prospective Vendor prior to Contract award, and during the Contract term as necessary for Union County Public Schools' determination that such equipment, item, plant, or other facilities conform with the specifications/requirements and are adequate and suitable for the proper and effective performance of the Contract.
16. **RECYCLING AND SOURCE REDUCTION:** It is the policy of Union County Public Schools to encourage and promote the purchase of products with recycled content to the extent economically practicable, and to purchase items which are reusable, refillable, repairable, more durable, and less toxic to the extent that the purchase or use is practicable and cost-effective. We also encourage and promote using minimal packaging and the use of recycled/recyclable products in the packaging of commodities purchased. However, no sacrifice in quality of packaging will be acceptable. The company remains responsible for providing packaging that will adequately protect the commodity and contain it for its intended use. Companies are strongly urged to bring to the attention of purchasers those products or packaging they offer which have recycled content and that are recyclable.
17. **CERTIFICATE TO TRANSACT BUSINESS IN NORTH CAROLINA:** As a condition of Contract award, each out-of-State Vendor that is a corporation, limited liability company, or limited-liability partnership shall have received, and shall maintain throughout the term of The Contract, a Certificate of Authority to Transact Business in North Carolina from the North Carolina Secretary of State, as required by North Carolina law. A State contract requiring only as isolated transaction completed within a period of six months, and not in the course of a number of repeated transactions of like nature, shall not be considered transacting business in North Carolina and shall not require a Certificate of Authority to Transact Business.
18. **SUSTAINABILITY:** To support the sustainability efforts of the State of North Carolina we solicit Your cooperation in this effort. Pursuant to Executive Order 156 (1999), it is desirable that all responses meet the following:
 - a) If paper copies are requested, all copies of the bid are printed double sided. All submittals and copies are printed on recycled paper with a minimum postconsumer content of 30%.
 - b) Unless absolutely necessary, all bids and copies should minimize or eliminate use of non-recycled or non-reusable materials such as plastic report covers, plastic dividers, vinyl sleeves, and GBC binding. Three-ring binders, glued materials, paper clips, and staples are acceptable.
 - c) Materials should be submitted in a format which allows for easy removal, filing and/or recycling of paper and binder materials. Use of oversized paper is strongly discouraged unless necessary for clarity or legibility.

19. **HISTORICALLY UNDERUTILIZED BUSINESS (HUB):** Union County Schools is committed to retaining Vendors from diverse backgrounds, and it invites and encourages participation in the procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non -profit work centers for the blind and severely disabled. In particular, Union County Public Schools encourages participation by Vendors certified by the State Office of Historical Underutilized Businesses, as well as the use of HUB-certified vendors as subcontractors on State contracts.
20. **RECIPROCAL PREFERENCE:** G.S.13-59 establishes a reciprocal preference requirement to discourage other states from favoring their own resident Vendors by applying a percentage increase to the price of any bid from a North Carolina resident Vendor. To the extent another state does so, North Carolina applies the same percentage increase to the bid of a vendor resident in the state. Residency is determined by a Vendor's "Principal Place of Business," defined as the principal place from which the overall trade or business of the Vendor is directed to managed.
21. **INELIGIBLE VENDORS:** As provided in G.S. 147-86.59 and G.S. 147-86.82, the following companies are ineligible to contract with the State of North Carolina or any political subdivision of the State:
 - a) Any company identified as engaging in investment activities in Iran, as determined by appearing on the Final Divestment List created by the State Treasurer pursuant to G.S. 147-86.58, and
 - b) Any company identified as engaged in a boycott of Israel as determined by appearing on the List of restricted companies created by the State Treasurer pursuant to G.S. 147-86.81.

A contract with the State or any of its political subdivisions by any company identified in a) or b) above shall be void ab initio.

22. **VALID TAXPAYER INFORMATION:** All persons or entities desiring to do business with Union County Public Schools must provide correct taxpayer information on North Carolina specified forms.
23. **VENDOR REGISTRATION AND SOLICITATION NOTIFICATION SYSTEM:**
The North Carolina electronic Vendor Portal (eVP) allows Vendors to electronically register free with the State to receive electronic notification of current procurement opportunities available as well as notifications of status changes to those Solicitations. Online registration and other purchasing information is available at the following website: <https://evp.nc.gov>
24. **TABULATIONS:** Bid tabulations can be electronically retrieved at the Union County Public Schools Purchasing Bids and Proposals website. Tabulations will normally be available at this website no later than one working day after the bid opening.
If negotiation is anticipated under 01NCAC05B.0503, pricing may not be public until award. Lengthy or complex tabulations may be summarized, with other details not made available on the Union County Public Schools Purchasing Bids and Proposals

website. Requests for additional details or information concerning such tabulations cannot be honored.

25. **CONFIDENTIAL INFORMATION:** To the extent permitted by applicable statutes and rules, Union County Public Schools will maintain as confidential trade secrets in bids that the Vendor does not wish disclosed. As a condition to confidential treatment, each page containing trade secret information shall be identified in boldface at the top and bottom as "CONFIDENTIAL" by the Vendor, with specific trade secret information enclosed in boxes, marked in a distinctive color or by similar indication. Cost information shall not be deemed confidential under any circumstances. Regardless of what a Vendor may label as a trade secret, the determination whether it is or is not entitled to protection will be determined in accordance with G.S. 132-1.2. Any material labeled confidential constitutes a representation by the Vendor that it has made a reasonable effort in good faith to determine that such material is, in fact, a trade secret under G.S. 132-1.2. Vendors are urged to limit the marking of information as a trade secret or as confidential so far as is possible. If a legal action is brought to require the disclosure of any material so marked confidential, Union County Public Schools will notify Vendor of such action and allow Vendor to defend the confidential status of its information.
26. **COMMUNICATIONS BY VENDORS:** In submitting its bid, the Vendor agrees not to discuss or otherwise reveal the contents of its to any source, government or private, outside of the using or issuing agency until after the award of the Contract or cancellation of this Solicitation. All Vendors are forbidden from having any communications with the using or issuing agency, or any other representative of Union County Public Schools concerning the Solicitation, during the evaluation of the bids. (i.e., after the public opening of the bids and before the award of the contract), unless Union County Public Schools directly contacts the Vendor(s) for purposes of seeking clarification or another reason permitted by the Solicitation. A Vendor shall not: (a) transmit to the issuing and/or using agency any information commenting on the ability or qualifications of any other Vendor to provide the advertised good, equipment, commodity; (b) identify defects, errors and/or omissions in any other Vendor's bid and/or prices at any time during the procurement process; and/or (c) engage in or attempt any other communication or conduct that could influence the evaluation or award of a Contract related to this Solicitation. Failure to comply with this requirement shall constitute sufficient justification to disqualify a Vendor from a Contract award. Only those communications with the using agency or issuing agency authorized by this Solicitation are permitted.
27. **INFORMAL COMMENTS:** Union County Public Schools shall not be bound by informal explanations, instructions, or information given at any time by anyone on behalf of Union County Public Schools during the competitive process or after award. Union County Public Schools is bound only by information provided in writing in this Solicitation document and in formal Addenda.
28. **ORDER OF PRECEDENCE:** In cases of conflict between specific provisions in this Solicitation or those in any resulting Contract documents, the order of precedence shall

be (high to low) (1) any special terms and conditions specific to this Solicitation document, including any negotiated terms, (2) requirements and specifications and administration, (3) North Carolina General Terms and Conditions in North Carolina General Terms and Conditions, (4) Instructions to Vendors, (5) Pricing, and (6) Vendor's Bid.

29. **ADDENDUM:** Critical updated information may be included in Addendum to the Solicitation. It is important that all Vendors bidding on the Solicitation periodically check for any Addendum that may be issued prior to the bid opening date. All Vendors shall be deemed to have read and understood all information in the Solicitation document and all Addendum thereto. Vendors are also responsible for obtaining and complying with all Addendum and other changes that may be issued concerning the Solicitation.
30. **ORAL EXPLANATIONS NON-BIDDING:** Oral explanations or instructions will not be binding. Any information given a prospective Offeror concerning a Solicitation will be furnished promptly to all other prospective Offerors. See clause herein entitled "Duty to Inquire". Union County Public Schools will not identify You in its answer to Your question.
31. **MAXIMUM COMPETITION:** Union County Public Schools seeks to permit the maximum practicable competition. Offerors are urged to advise Union County Public Schools, as soon as possible, regarding any aspect of this procurement, including any aspect of the Solicitation that unnecessarily or inappropriately limits full and open competition. If Union County Public Schools determines that any changes will be made resulting from the questions asked, then such decisions will be communicated in the form of an Addendum.
32. **FIRM OFFER:** Vendor's bid shall constitute a firm offer. By execution and delivery of a bid in response to a Solicitation, the Vendor agrees that any additional or modified terms and conditions, whether submitted purposefully or inadvertently, shall have not force or effect, and will be disregarded. Any bid that contains language that indicates the bid is non-binding or subject to further negotiation before a contractual document may be signed shall be rejected.
Union County Public Schools Form of Proposal

By submitting this proposal, the potential contractor certifies the following: 1) this proposal is signed by an authorized representative of the firm, 2) It can obtain and will submit to Union County Public Schools insurance certificates as required, within five (5) calendar days after the notice to award. 3) all taxes have been determined and are included in the proposed cost 4) the potential contractor has read and understands the conditions set forth in this RFP and agrees to them with no exceptions.

Contractor's Name

Federal ID Number

Address

City

State

Zip Code

Email

Telephone Number

Fax Number

Principal Place of Business if Different from Above

Printed Name

Title

Signature

Date

Attest: (Corporate Seal)

By

License #

Title

End of Proposal Form for RFP 5-97648022

Signature

Date

Printed Name

Title

[This Certification must be signed by an individual authorized to speak for the Vendor]

Attachment: Union County Public Schools Customer Reference Template

RFP #: 5-97648022

Vendor Name: _____

Instructions: Vendor shall use this form to submit three (3) customer references with its offer. If available, one reference should be from a school or school system.

<i>Customer Reference # 1</i>	
Name of Customer Organization:	
Customer Contact Name:	
Customer Address:	
Customer Email:	
Customer Phone Number:	
Project Start Date:	
Project End Date:	
Project Description:	
Project Outcome:	

Attachment: Union County Public Schools Customer Reference Template

RFP #: 5-97648022

Vendor Name: _____

Instructions: Vendor shall use this form to submit three (3) customer references with its offer. If available, one reference should be from a school or school system.

<i>Customer Reference # 2</i>	
Name of Customer Organization:	
Customer Reference Name:	
Customer Reference Address:	
Customer Reference Email:	
Customer Phone Number:	
Project Start Date:	
Project End Date:	
Project Description:	
Project Outcome:	

Attachment: Union County Public Schools Customer Reference Template

RFP #: 5-97648022

Vendor Name: _____

Instructions: Vendor shall use this form to submit three (3) customer references with its offer. If available, one reference should be from a school or school system.

<i>Customer Reference # 3</i>	
Name of Customer Organization:	
Customer Contact Name:	
Customer Address:	
Customer Email:	
Customer Phone Number:	
Project Start Date:	
Project End Date:	
Project Description:	
Project Outcome:	

Historically Underutilized Businesses (HUBs) consist of minority, women, and disabled business firms that are at least fifty-one percent owned and operated by an individual(s) from one of these categories. Also included in this category are disabled enterprises and non-profit work centers for the blind and severely disabled.

Pursuant to G.S. 143B-1361 (a), 143-48 and 143-128.4, the State invites and encourages participation in this procurement process by businesses owned by minorities, women, the disabled, disabled business enterprises, and non-profit work centers for the blind and severely disabled. This includes utilizing individual(s) from these categories as subcontractors to perform the functions required in this Solicitation.

The Vendor shall respond to questions below, as applicable.

PART I: HUB CERTIFICATION

Is Vendor a NC-certified HUB entity? If yes, provide No

Vendor #: _____

If no, does Vendor qualify for certification as HUB? Yes No
Vendors that check "yes" will be referred to the HUB Office for assistance in acquiring certification.

PART II: PROCUREMENT OF GOODS – SUPPLIERS

For *Goods* procurements, are you using Tier 2 supplies? Yes No

If *yes*, then provide the following information:

Attachment: North Carolina HUB Supplemental Vendor Information (Version 09/2021)

Company Name	Company Address	Website Address	Contact Name	Contact Email	Contact Phone	NC HUB Certified?	Percent of Total Bid Price

PART III: PROCUREMENT OF SERVICES – SUBCONTRACTORS

For *Services* procurements, are you using Subcontractors to perform any of the services being procured under this selection? Yes No

If *yes*, then provide the following information:

Company Name	Company Address	Website Address	Contact Name	Contact Email	Contact Phone	NC HUB Certified?	Percent of Total Bid Price

Need more information?

Questions concerning the completion of this form should be presented during the Q&A period through the process defined in the Solicitation document.

Questions concerning NC HUB certification, contact the North Carolina Office of Historically Underutilized Businesses at 984-236-0130 or huboffice.doa@doa.nc.gov

Company Name: _____

Bid No.: 5-97648022

_____ Bid Submittal Form

_____ Affidavit A or B

_____ Identification of Minority Business Form

_____ 5% Bid Bond

_____ General Contractor Licenses

COST PROPOSAL/EXECUTION OF PROPOSAL

By submitting this proposal, the potential contractor certifies the proposal is signed by an authorized representative of the firm. The cost and availability of all equipment, materials, supplies, taxes, etc. associated with performing the services described herein have been determined and included in the proposed cost. All labor costs, direct and indirect (including sales tax), have been determined and included in the proposed cost. The offeror is aware of prevailing conditions associated with performing these services. The potential contractor has read and understands the conditions set forth in this bid and agrees to them with no exceptions.

Therefore, in compliance with this Request for Proposals, and subject to all conditions herein, the undersigned offers and agrees, if this proposal is accepted within **60** days from the date of the opening, to furnish the subject services for a cost not to exceed:

BASE BID: \$ _____
BID Allowance \$ _____ Allowance Amount 10% of BID
ALL INCLUSIVE TOTAL \$ _____ (discount may be included)

Consecutive calendar days required to achieve Final Completion from issuance of Notice to Proceed:
- _____ calendar days.

ADDENDA ACKNOWLEDGEMENT

ADDENDUM 1: _____ ADDENDUM 2: _____ ADDENDUM 3: _____ ADDENDUM 4: _____

EXECUTION

OFFEROR: _____ FEDERAL ID NO. _____

LICENSE DESCRIPTION: _____ LICENSE NO. _____

ADDRESS: _____ CITY, STATE, ZIP _____

TELEPHONE NUMBER: _____ MOBILE: _____ EMAIL: _____

BY: _____ DATE: _____ TITLE: _____

(Signature)

(Typed or printed name)

MINORITY BUSINESS CONTRACT PROVISIONS (CONSTRUCTION)

APPLICATION:

The **Guidelines for Recruitment and Selection of Minority Businesses for Participation in State Construction Contracts** are hereby made a part of these contract documents. These guidelines shall apply to all contractors regardless of ownership. Copies of these guidelines may be obtained from the Department of Administration, State Construction Office, (physical address) 301 North Wilmington Street, Suite 450, NC Education Building, Raleigh, North Carolina, 27601-2827, (mail address) 1307 Mail Service Center, Raleigh, North Carolina, 27699-1307, phone (919) 807-4100, Website: <http://www.nc-sco.com>

MINORITY BUSINESS SUBCONTRACT GOALS:

The goals for participation by minority firms as subcontractors on this project have been set at 10%.

The bidder must identify on its bid, the minority businesses that will be utilized on the project with corresponding total dollar value of the bid and affidavit (Affidavit A) listing good faith efforts **Or** affidavit (Affidavit B) of self-performance of work, if the bidder will perform work under contract by its own workforce, as required by G.S. 143-128.2(c) and G.S. 143-128.2(f).

The lowest responsible, responsive bidder must provide Affidavit C, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, which is equal to or more than the applicable goal.

OR

Provide Affidavit D, that includes a description of the portion of work to be executed by minority businesses, expressed as a percentage of the total contract price, **with documentation of Good Faith Effort, if the percentage is not equal to the applicable goal.**

OR

Provide Affidavit B, which includes sufficient information for the State to determine that the bidder does not customarily subcontract work on this type project.

The above information must be provided as required. Failure to submit these documents is grounds for rejection of the bid.

MINIMUM COMPLIANCE REQUIREMENTS:

All written statements, affidavits or intentions made by the Bidder shall become a part of the agreement between the Contractor and the State for performance of this contract. Failure to comply with any of these statements, affidavits or intentions, or with the minority business Guidelines shall constitute a breach of the contract. A finding by the State that any information submitted either prior to award of the contract or during the performance of the contract is inaccurate, false or incomplete, shall also constitute a breach of the contract. Any such breach may result in termination of the contract in accordance with the termination provisions contained in the contract. It shall be solely at the option of the State whether to terminate the contract for breach.

In determining whether a contractor has made Good Faith Efforts, the State will evaluate all efforts made by the Contractor and will determine compliance in regard to quantity, intensity, and results of these efforts. Good Faith Efforts include:

- (1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government-maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed.
- (2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due.
- (3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation.
- (4) Working with minority trade, community, or contractor organizations identified by the Office for Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- (5) Attending any Prebid meetings scheduled by the public owner.
- (6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors.
- (7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- (8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- (9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- (10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

State of North Carolina AFFIDAVIT A- Listing of Good Faith Efforts

County of _____

(Name of Bidder)

Affidavit of _____

I have made a good faith effort to comply under the following areas checked:

Bidders must earn at least 50 points from the good faith efforts listed for their bid to be considered responsive. (1 NC Administrative Code 30 1.0101)

- D 1 - (10 pis)** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government-maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed.
- D 2 --(10 pis)** Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due.
- 0 3 - (15 pis)** Broken down or combined elements of work into economically feasible units to facilitate minority participation.
- D 4-(10 pis)** Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses.
- D 5-(10 pis)** Attended Prebid meetings scheduled by the public owner.
- 0 6 - (20 pis)** Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors.
- D 7 -(15 pis)** Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing.
- 0 8 - (25 pis)** Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit.
- D 9 - (20 pis)** Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible.
- D 10 - (20 pis)** Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands.

The undersigned, if apparent low bidder, will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon scope of contract to be executed with the Owner. Substitution of contractors must be in accordance with GS143-128.2(d) Failure to abide by this statutory provision will constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date, e"-. _____ Name of Authorized Officer: _____

Signature: _____

Title: _____

SEAL

State of, _____ County of, _____

Subscribed and sworn to before me this _ day of _____ 20__

Notary Public, _____

My commission expires _____

**State of North Carolina --AFFIDAVIT 8-- Intent to Perform Contract
with Own Workforce.**

County of _____

Affidavit of _____ --C:-C-----,--=,.,.,.,.,.,.,-----
(Name of Bidder)

I hereby certify that it is our intent to perform 100% of the work required for the _____
-----,.,.,----- **contract.**
(Name of Project)

In making this certification, the Bidder states that the Bidder does not customarily subcontract elements of this type project, and normally performs and has the capability to perform and will perform .fill elements of the work on this project with his/her own current work forces; and

The Bidder agrees to provide any additional information or documentation requested by the owner in support of the above statement. The Bidder agrees to make a Good Faith Effort to utilize minority suppliers where possible.

The undersigned hereby certifies that he or she has read this certification and is authorized to bind the Bidder to the commitments herein contained.

Date : _____ Name of Authorized Officer: _____

Signature: _____

Title: _____

SEAL

State of _____ County of _____

Subscribed and sworn to before me this _____ day of __ 20__

Notary Public

My commission expires. _____

Do not submit with bid Do not submit with bid Do not submit with bid Do not submit with bid

State of North Carolina - AFFIDAVIT C - Portion of the Work to be Performed by HUB Certified/Minority Businesses
County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the portion of the work to be executed by HUB certified/minority businesses as defined in GS143-128.2(g) and 128.4(a),(b),(e) is equal to or greater than 10% of the bidders total contract price, then the bidder must complete this affidavit.
This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the _____
(Name of Bidder)

(Project Name)
Project ID# c. _____ Amount of Bid \$. _____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below.

Attach additional sheets if required

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American **(B)**, Hispanic **(H)**, Asian American **(A)** American Indian (I), Female **(F)** Socially and Economically Disadvantaged **(D)**

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date: _____ Name of Authorized Officer: _____

Signature: _____

SEAL Title: _____

State of _____ County of _____

Subscribed and sworn to before me this ____ day of ____ 20__

Notary Public. _____

My commission expires, _____

State of North Carolina

AFFIDAVIT D - Good Faith Efforts

County of _____

(Note this form is to be submitted only by the apparent lowest responsible, responsive bidder.)

If the goal of 10% participation by HUB Certified/ minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts:

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

(Project Name)
Project ID# _____ Amount of Bid \$, _____

I will expend a minimum of _____% of the total dollar amount of the contract with HUB certified/ minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. (Attach additional sheets if required)

Name and Phone Number	*Minority Category	**HUB Certified Y/N	Work Description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

**** HUB Certification with the state HUB Office required to be counted toward state participation goals.**

Examples of documentation that TMbe required to demonstrate the Bidder's good faith efforts to meet the goals set forth in these provisions include, but are not necessarily limited to, the following:

- Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.
- Copies of quotes or responses received from each firm responding to the solicitation.
- A telephone log of follow-up calls to each firm sent a solicitation.
- For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.
- Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.
- Copy of pre-bid roster
- Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.
- Letter detailing reasons for rejection of minority business due to lack of qualification.
- Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

Do not submit with the bid Do not submit with the bid Do not submit with the bid Do not submit with the bid Do not submit with the bid

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____ Name of Authorized Officer:_____

Signature:_____

Title:_____



State of _____, County of _____

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

Notary Public _____

My commission expires _____

APPENDIXE

MBE DOCUMENTATION FOR CONTRACT PAYMENTS

Prime Contractor/Architect: _____

Address & Phone: _____

Project Name: _____

Pay Application#: _____ Period: _____

The following is a list of payments made to Minority Business Enterprises on this project for the above-mentioned period.

MBE FIRM NAME	*INDICATE TYPE OF MBE	AMOUNT PAID THIS MONTH	TOTAL PAYMENTS TO DATE	TOTAL AMOUNT COMMITTED

*Minority categories: Black, African American (B), Hispanic (H), Asian American (A), American Indian (I), Female (F), Social and Economically Disadvantage (D)

Date: _____ Approved/Certified By: _____

Name

Title

Signature

SUBMIT WITH EACH PAY REQUEST & FINAL PAYMENT

**DOCUMENT 00 43 13
BID SECURITY FORM**

**Date of Execution of
this bond**

**Name and Address of
Principle (Bidder)**

**Name and Address
of Surety**

**Name and Address of
Contracting Body**

TIIB UNION COUNTY BOARD OF EDUCATION a body corporate of the
State of North Carolina,
201 Venus StreetMomoe, NC 28112

**Amount of Bond
Bid Amount
and Proposal Dated:**

_____ fur _____

KNOW ALL MEN BY TIIBSE PRESENTS, that we the PRINCIPLE above named and SURETY above named who is duly licensed to act as SURETY in the State of North Carolina, are held and firmly bound unto TIIB UNION COUNTY BOARD OF EDUCATION, a body corporate of the State of North Carolina, as Obligee, in the penal sum of five percent (5%) of the amount bid in the bid and proposal described in lawful money of the **United States of America, for the payment of which well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.**

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such, that if the PRINCIPLE shall be **awarded the contract for which the bid and proposal above described is submitted and shall execute the contract,** give bond for the faithful performance of the contract, and give bond for the payment of all persons supplying labor **and materials in the prosecution of the work provided for in said contract, within ten (10) days after the award of the** same to the PRINCIPLE above named, then this obligation shall be null and void; but if the PRINCIPLE above **named fails to so execute such contract and give performance bond and payment bond as required by Section 129 of** Chapter 143 of the General Statutes of North Carolina, as amended, the Article 3 of Chapter 44-A of the General Statutes of North Carolina, as amended, the Surety shall upon demand, forthwith pay the Obligee the amount of this bond set forth above.

IN WITNESS WHEREOF, the Principle above named and the Surety above named have executed this instrument
Under their several seals on the date set forth above.

WITNESS:

(Proprietorship or Partnership)

ATTEST
BY _____
(Corporation)

TITLE, _____
(Corporation Secretary or Assistant Secretary Only)

WITNESS:

COUNTERSIGNED:

N.C, Licensed Resident Agent

Principle (Name of individual, and trade
**Name, partnership, corporation, or joint
venture)**

BY _____:(Seal)

TITLE _____
(Owner, Partner, Office held in
corporation, joint venture)

(Corporate Seal)

Surety (Name of Surety Company)

BY _____

TITLE Attorney in Fact

(Corporate Seal of Surety)

(Address of Attorney in Fact)

FORM OF PERFORMANCE BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal
(Contractor) _____

Name of Surety: _____

Name of Contracting
Body: _____

Amount of Bond: _____

Project _____

KNOW ALL MEN BY THESE PRESENTS, that we, the principal and surety above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind, ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body, identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the contracting body, with or without notice to the surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then, this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

Contractor: (Trade or Corporate Name)

(Proprietorship or Partnership)

By: _____

Attest: (Corporation)

Title: _____
(Owner, Partner, or Corp.
Pres. or Vice Pres. only)

By: _____

Title: _____
(Corp. Sec. or Asst. Sec.. only)

(Corporate Seal)

(Surety Company)

Witness:

By: _____

Title: -----
(Attorney in Fact)

Countersigned:

(Surety Corporate Seal)

(N.C. Licensed Resident Agent)

Name and Address-Surety Agency

Surety Company Name and N.C.
Regional or Branch Office Address

FORM OF PAYMENT BOND

Date of Contract: _____

Date of Execution: _____

Name of Principal
(Contractor) _____

Name of Surety: _____

Name of Contracting
Body: _____

Amount of Bond: _____

Project _____

KNOW ALL MEN BY THESE PRESENTS, that we, the principal and surety above named, are held and firmly bound unto the above named contracting body, hereinafter called the contracting body, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that whereas the principal entered into a certain contract with the contracting body identified as shown above and hereto attached:

NOW, THEREFORE, if the principal shall promptly make payment to all persons supplying labor/material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Executed in _____ counterparts.

Witness:

(Proprietorship or Partnership)

Attest: (Corporation)

By: _____

Title: _____
(Corp. Sec. or Asst. Sec.. only)

(Corporate Seal)

Witness:

Countersigned:

(N.C. Licensed Resident Agent)

Name and Address-Surety Agency

Surety Company Name and N.C.
Regional or Branch Office Address

Contractor: (Trade or Corporate Name)

By: _____

Title: _____
(Owner, Partner, or Corp.
Pres. or Vice Pres. only)

(Surety Company)

By: _____

Title: _____
{Attorney in Fact}

(Surety Corporate Seal)

UNION COUNTY PUBLIC SCHOOLS TAX FORM INSTRUCTIONS

To the tax statement preparer for pay applications for Union County Public Schools:

Please find the attached form for providing sales taxes paid on materials for Union County Public Schools. It is important that you note the following:

Tax paid by contractors on rental equipment, tools or supplies that they use in the process of completing their contract is not refundable. Tax statements from contractors should indicate the **amount of tax paid on materials that become part of the structure only.** Statements should indicate the vendor's name, date of invoice, invoice number, taxable amount, and sales tax amount. The statement must be "certified" by the contractor. Additionally, be sure the county tax is allocated to the correct county. As of January 1, 2002, the county is determined by the "ship to" address; therefore, if the material was shipped to your place of business instead of the job site the county name would reflect the county where your business is located.

Subcontractors performing work should also provide sales tax statements to the general contractor. It is the general contractor's responsibility to secure from the subcontractor the tax statement. (Reference Sales and Use Tax Bulletin Section 31)

If you submit a pay application upon which no sales tax was paid, **please send a blank form indicating "none this period".** Payment may be delayed if proper sales tax accounting is not attached.

If you have any questions regarding the attached form please contact Anna Austin w/UCPS at 704-290-1541 or Chase Simpson at 704-290-1549.

AS OF JULY 1, 2011, THE SALES TAX DISTRIBUTION FOR UNION COUNTY IS 4.75% STATE AND 2.00% COUNTY.

Mecklenburg County has an additional ½% local transit tax. They and Wake County are the only counties with 7 ¼% rate of tax. Other counties local to Union may have 2.25% for the County Rate. For other county rates refer to Form Gen562 on the NC Department of Revenue website www.dor.state.nc.us.

PLEASE USE THE CORRECT DISTRIBUTION (NOTED ABOVE) ON ALL CONTRACTOR STATEMENTS.

STATE COUNTY SALES/USE TAX STATEMENT CERTIFICATION

Contractor: _____

Project Name: _____

Sheet #: _____

For Sales Taxes Paid from _____ to _____

Payment Application #: _____

	Invoice Number	Invoice Date	Vendor	Type of Materials	Taxable Amount of Invoice	County Name	NC Tax 4.75%	County Tax (2%/2.25%)	Transit Tax (1/2%)	Total Taxes
1)										
2)										
3)										
4)										
5)										
6)										
7)										
8)										
9)										
10)										
11)										
12)										
13)										
14)										
15)										
16)										
17)										
18)										
19)										
20)										
21)										
22)										
23)										
24)										
25)										
Total:										

We certify that the above listing includes all materials purchased by us and incorporated into the above referenced project for the period stated, became a permanent part of the project, and that the sales tax shown has been paid. The above represents a complete listing of these sales taxes paid for the pay application number.

Sworn and subscribed before me this _____ day of _____, _____.

By: _____

Notary Public: _____

Title: _____

My Commission Expires: _____

Exhibit 1

SCOPE OF WORK

[INSERT SCOPE OF WORK]

Attachment A

Terms and Conditions

Attachment A

Standard Terms and Conditions

I. Standard Terms and Conditions for All Contracts

1. Acceptance.

Contractor's execution of this Contract and/or acknowledgment of the terms of any applicable purchase order ("Purchase Order"), without timely express written objection, or Contractor's shipment or performance of any part of a Purchase Order, constitutes an agreement to (i) all terms and conditions set forth or referenced herein and on the face of a Purchase Order, (ii) on any attachments hereto, (iii) any applicable solicitation documentation related to hereto (including without limitation any request for proposals or invitation for bids or Contractor's response thereto), and (iv) any other terms and conditions of a written agreement signed by Contractor and UCBOE that deals with the same subject matter (collectively, the "Contract Documents"). The terms and provisions set forth in the Contract Documents shall constitute the entire agreement between Contractor and UCBOE with respect to the purchase by UCBOE of the Services and/or Goods (the "Goods" and/or "Services," as appropriate) provided or work performed as described in the Contract Documents. The agreements set forth in the Contract Documents are sometimes referred to herein as the "Contract." In the event of any conflict between any terms and conditions of the Contract Documents, the terms and conditions most favorable to UCBOE shall control. A Purchase Order constitutes an offer by UCBOE and expressly limits acceptance to the terms and conditions stated therein. No additional or supplemental provision or provisions in variance herewith that may appear in Contractor's quotation, acknowledgment, invoice, or in any other communication from Contractor to UCBOE shall be deemed accepted by or binding on UCBOE. UCBOE hereby expressly rejects all such provisions which supplement, modify or otherwise vary from the terms of the Contract Documents, and such provisions are superseded by the terms and conditions stated in the Contract Documents, unless and until UCBOE's authorized representatives expressly assent, in writing, to such provisions. Stenographic and clerical errors and omissions by UCBOE are subject to correction.

2. Quantities.

Shipments must equal exact amounts ordered unless otherwise agreed in writing by UCBOE. The award of a term contract neither implies nor guarantees any minimum or maximum purchases.

3. Prices.

If Contractor's price or the regular market price of any of the Goods covered hereunder is lower than the price stated in the Contract Documents on the date of shipment of such Goods, Contractor agrees to give UCBOE the benefit of such lower price on any such Goods. In no event shall Contractor's price be higher than the price last quoted or last charged to UCBOE unless otherwise agreed in writing. No charges for transportation, boxing, crating, etc. are allowable unless such charges are included in the Contract Documents.

4. Invoices.

It is understood and agreed that orders will be shipped at the established Contract prices in effect on dates orders are placed. Invoicing at variance with this provision may subject the Contract to cancellation. Applicable North Carolina sales tax shall be invoiced as a separate item. Invoices shall be sent to UCBOE's accounts payable department with a copy to UCBOE Project Coordinator.

5. Freight on Board.

All shipments of Goods are FOB destination unless otherwise stated in the Contract Documents.

6. Taxes.

Taxes are included in the Contract Price. Applicable taxes shall be invoiced as a separate item for UCBOE's records.

7. Payment Terms.

Payment terms are Net 30 days after receipt of correct invoice or acceptance of Goods, whichever is later.

8. Condition and Packaging.

Unless otherwise provided by special terms and conditions or specifications, it is understood and agreed that any item offered or shipped has not been sold or used for any purpose and shall be in first class condition. All containers/packaging shall be suitable for handling, storage or shipment.

9. Delays in Shipment.

Time and date of delivery are of the essence, except when delay is due to causes beyond Contractor's reasonable control and without Contractor's fault or negligence.

10. Risk of Loss.

Contractor shall have the risk of loss of and damage to the Goods subject to the Contract Documents until such Goods are delivered to the destination and accepted by UCBOE or its nominee.

11. Rejection.

All Goods shall be received subject to UCBOE's inspection. Goods that are defective in workmanship or material or otherwise not in conformity with the requirements of the Contract Documents may be rejected and returned at Contractor's expense or may be accepted at a reduced price. UCBOE may require Contractor to promptly replace or correct any rejected Goods Services and, if Contractor fails to do so, UCBOE may contract with a third party to replace such Goods Services and charge Contractor the additional cost.

12. Warranties.

Contractor warrants that all Goods delivered hereunder will be free from defects in materials and workmanship and will conform strictly to the specifications, drawings, or samples specified or furnished. This warranty shall survive any inspection, delivery, acceptance or payment by UCBOE of the Goods and shall run to UCBOE and any user of the Goods. This express warranty is in addition to Contractor's implied warranties of merchantability and fitness for a particular purpose which shall not be disclaimed. In addition to any other rights available at law or equity, UCBOE shall be entitled to all rights and remedies provided by the Uniform Commercial Code, Chapter 25 of the North Carolina General Statutes, for breach of express warranties and implied warranties of merchantability or fitness for a particular purpose, including but not limited to consequential and incidental damages.

13. Compliance with All Laws.

Contractor warrants that all performance hereunder shall be in accordance with all applicable federal, state and local laws, regulations and orders. The right of Contractor to proceed may be terminated immediately by written notice if UCBOE determines that Contractor, its agent or another representative, has violated any provision of law.

14. Use of Federal Funds.

If the source of funds for this Contract is federal funds, the following federal provisions apply pursuant to 2 C.F.R. § 200.326 and 2 C.F.R. Part 200, Appendix II (as applicable): Equal Employment Opportunity (41 C.F.R. Part 60); Davis-Bacon Act (40 U.S.C. 3141-3148); Copeland "Anti-Kickback" Act (40 U.S.C. 3145); Contract Work Hours and Safety Standards Act (40 U.S.C. 3701-3708); Clean Air Act (42 U.S.C. 7401-7671q.) and the Federal Water Pollution Control Act (33

U.S.C. 1251-1387); Debarment and Suspension (Executive Orders 12549 and 12689); Byrd Anti-Lobbying Amendment (31 U.S.C. 1352); Procurement of Recovered Materials (2 C.F.R. § 200.322); and Record Retention Requirements (2 CFR § 200.324).

15. Registered Sex Offenders.

Contractor acknowledges that state law and school policy prohibit anyone registered or required to register as a sex offender from being present on any UCBOE Property for any reason, whether before, during or after school hours, or on or off of UCBOE Property. Contractor expressly agrees that it, and any of its employees, will comply with this policy and acknowledges that any individuals that violate this policy are subject to removal from UCBOE Property by school staff and/or law enforcement officials and may also be subject to criminal prosecution. "UCBOE Property" includes all property owned or operated by UCBOE, including school campuses and buildings, athletic fields, playgrounds, parking lots, bus stops, vehicles, school buses, activity buses and any other properties owned or controlled by UCBOE.

If Contractor, any of Contractor's employees, or any of Contractor's subcontractors or employees of subcontractors will have any direct interaction with students, then Contractor or the subcontractor must (i) on an annual basis conduct a check of the N.C. Sex Offender and Public Protection Registration Program, the N.C. Sexually Violent Predator Registration Program and the National Sex Offender Registry for all such employees; and (ii) prohibit individuals listed on such registries from being on UCBOE Property.

16. Nondiscrimination.

During the performance of the Contract, Contractor shall not discriminate against or deny the Contract's benefits to any person on the basis of sexual orientation, national origin, race, ethnic background, color, religion, gender, age or disability.

17. Conflict of Interest.

Contractor represents and warrants that no member of UCBOE or any of its employees or officers who may obtain a direct benefit, personal gain or advantage for themselves or a relative or associate as a result of the Contract, subcontract or other agreement related to the Contract is in a position to influence or has attempted to influence the making of the Contract, has been involved in making the Contract, or will be involved in administering the Contract. Contractor also represents and warrants that, if the Contract is funded by any amount of federal funds, no violation of 2 C.F.R. § 200.318(c) or any other applicable federal conflict of interest law has occurred or will occur. Contractor shall cause this paragraph to be included in all Contracts, subcontracts and other agreements related to the Contract.

18. Gratuities.

Contractor represents and warrants that no member of UCBOE or any of its employees has been or will be offered or given a gratuity to an official or employee of UCBOE in violation of applicable law or policy.

19. Kickbacks to Contractor.

Contractor shall not permit any kickbacks or gratuities to be provided, directly or indirectly, to itself, its employees, subcontractors or subcontractor employees for the purpose of improperly obtaining or rewarding favorable treatment in connection with a UCBOE Contract or in connection with a subcontract relating to a UCBOE Contract. When Contractor has grounds to believe that a violation of this clause may have occurred, Contractor shall promptly report to UCBOE in writing the possible violation.

20. Iran Divestment Act.

Contractor certifies that, as of the date listed below, it is not on the Final Divestment List, as created by the State Treasurer pursuant to N.C.G.S. § 143-6A-4, in violation of the Iran Divestment Act. In compliance with the requirements of the Iran Divestment Act and N.C.G.S. § 143C-6A-5(b), Contractor shall not utilize in the performance of the contract any subcontractor that is identified on the Final Divestment List. The Final Divestment List can be found on the State Treasurer's website at the address www.nctreasurer.com/Iran and should be updated every 180 days.

21. Divestment from Companies that Boycott Israel.

The Contractor certifies that it has not been designated by the North Carolina State Treasurer as a company engaged in the boycott of Israel pursuant to N.C.G.S. 147-86.81. It is the responsibility of each vendor or contractor to monitor compliance with this restriction. Contracts valued at less than \$1,000.00 are exempt from this restriction.

22. E-Verification.

Contractor shall comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes

23. Indemnification.

Contractor shall indemnify and hold harmless UCBOE, its officers, agents, employees and assigns from and against all claims, losses, costs, damages, expenses, attorneys' fees and liability that any of them may sustain (a) arising out of Contractor's failure to comply with any applicable law, ordinance, regulation, or industry standard or (b) arising directly or indirectly out of Contractor's performance or lack of performance of the terms and conditions of the Contract. In the event that any Services and/or Goods sold and delivered or sold and performed under the Contract Documents shall be defective in any respect whatsoever, Contractor shall indemnify and save harmless UCBOE, its officers, agents, employees and assigns from all loss or the payment of all sums of money by reason of all accidents, injuries or damages to persons or property that shall happen or occur in connection with the use or sale of such Services and/or Goods and are contributed to by said condition. In the event Contractor, its employees, agents, subcontractors and or lower-tier subcontractors enter premises occupied by or under the control of UCBOE in the performance of the Contract Documents, Contractor agrees that it will indemnify and hold harmless UCBOE, its officers, agents, employees and assigns, from any loss, costs, damage, expense or liability by reason of property damage or personal injury of whatsoever nature or kind arising out of, as a result of, or in connection with such entry.

24. Insurance.

Unless such insurance requirements are waived or modified by UCBOE or risk management ("DIRM"), Contractor certifies that it currently has and agrees to purchase and maintain during its performance under the Contract the following insurance from one or more insurance companies acceptable to UCBOE and authorized to do business in the State of North Carolina: Automobile - Contractor shall maintain bodily injury and property damage liability insurance covering all owned, non-owned and hired automobiles. The policy limits of such insurance shall not be less than \$1,000,000 combined single limit each person/each occurrence. Commercial General Liability - Contractor shall maintain commercial general liability insurance that shall protect Contractor from claims of bodily injury or property damage which arise from performance under the Contract. This insurance shall include coverage for contractual liability. The policy limits of such insurance shall not be less than \$1,000,000 combined single limit each occurrence/annual aggregate. Worker's Compensation and Employers' Liability Insurance - If applicable to Contractor, Contractor shall meet the statutory requirements of the State of North Carolina for worker's compensation coverage and employers' liability insurance. Contractor shall

also provide any other insurance or bonding specifically recommended in writing by the DIRM or required by applicable law. Certificates of such insurance shall be furnished by Contractor to UCBOE and shall contain the provision that UCBOE be given 30 days' written notice of any intent to amend or terminate by either Contractor or the insuring company. Failure to furnish insurance certificates or to maintain such insurance shall be a default under the Contract and shall be grounds for immediate termination of the Contract.

25. Termination for Convenience.

In addition to all of the other rights which UCBOE may have to cancel this Contract or an applicable Purchase Order, UCBOE shall have the further right, without assigning any reason therefore, to terminate the Contract (or applicable Purchase Order), in whole or in part, at any time at its complete discretion by providing 10 days' notice in writing from UCBOE to Contractor. If the Contract is terminated by UCBOE in accordance with this paragraph, Contractor will be paid in an amount which bears the same ratio to the total compensation as does the Services and/or Goods actually delivered or performed to the total originally contemplated in the Contract. UCBOE will not be liable to Contractor for any costs for completed Goods, Goods in process or materials acquired or contracted for if such costs were incurred prior to the date of this Contract or an applicable Purchase Order.

26. Termination for Default.

UCBOE may terminate the Contract, in whole or in part, immediately and without prior notice upon breach of the Contract by Contractor. In addition to any other remedies available to UCBOE law or equity, UCBOE may procure upon such terms as UCBOE shall deem appropriate, Services and/or Goods substantially similar to those so terminated, in which case Contractor shall be liable to UCBOE for any excess costs for such similar goods, supplies, or services and any expenses incurred in connection therewith.

27. Contract Funding.

It is understood and agreed between Contractor and UCBOE that UCBOE's obligation under the Contract is contingent upon the availability of appropriated funds from which payment for Contract purposes can be made. No legal liability on the part of UCBOE for any payment may arise until funds are made available to UCBOE's Finance Officer and until Contractor receives notice of such availability. Should such funds not be appropriated or allocated, the Contract shall immediately be terminated. UCBOE shall not be liable to Contractor for damages of any kind (general, special, consequential or exemplary) as a result of such termination.

28. Accounting Procedures.

Contractor shall comply with any accounting and fiscal management procedures prescribed by UCBOE to apply to the Contract and shall assure such fiscal control and accounting procedures as may be necessary for proper disbursement of and accounting for all project funds.

29. Improper Payments.

Contractor shall assume all risks attendant to any improper expenditure of funds under the Contract. Contractor shall refund to UCBOE any payment made pursuant to the Contract if it is subsequently determined by audit that such payment was improper under any applicable law, regulation or procedure. Contractor shall make such refunds within thirty (30) days after UCBOE notifies Contractor in writing that a payment has been determined to be improper.

30. Contract Transfer.

Contractor shall not assign, subcontract or otherwise transfer any interest in the Contract without the prior written approval of UCBOE.

31. Contract Personnel.

Contractor agrees that it has, or will secure at its own expense, all personnel required to provide the Services and/or Goods set forth in the Contract.

32. Key Personnel.

Contractor shall not substitute for key personnel (defined as those individuals identified by name or title in the Contract Documents or in written communication from Contractor) assigned to the performance of the Contract without prior written approval from UCBOE Project Coordinator (the individual at UCBOE responsible for administering the Contract).

33. Contract Modifications.

The Contract may be amended only by written amendment duly executed by both UCBOE and Contractor.

34. Relationship of Parties.

Contractor is an independent contractor and not an employee of UCBOE. The conduct and control of the work will lie solely with Contractor. The Contract shall not be construed as establishing a joint venture, partnership or any principal-agent relationship for any purpose between Contractor and UCBOE. Employees of Contractor shall remain subject to the exclusive control and supervision of Contractor, which is solely responsible for their compensation.

35. Advertisement.

The Contract will not be used in connection with any advertising by Contractor without prior written approval by UCBOE.

36. Monitoring and Evaluation.

Contractor shall cooperate with UCBOE, or with any other person or agency as directed by UCBOE, in monitoring, inspecting, auditing or investigating activities related to the Contract. Contractor shall permit UCBOE to evaluate all activities conducted under the Contract. UCBOE has the right at its sole discretion to require that Contractor remove any employee of Contractor from UCBOE Property and from providing Services and/or Goods under the Contract following provision of notice to Contractor of the reasons for UCBOE's dissatisfaction with the Services and/or Goods of Contractor's employee.

37. Financial Responsibility.

Contractor is financially solvent and able to perform under the Contract. If requested by UCBOE, Contractor agrees to provide a copy of its latest audited annual financial statements or other financial statements as deemed acceptable by UCBOE's Finance Officer. In the event of any proceedings, voluntary or involuntary, in bankruptcy or insolvency by or against Contractor, the inability of Contractor to meet its debts as they become due or in the event of the appointment, with or without Contractor's consent, of an assignee for the benefit of creditors or of a receiver, then UCBOE shall be entitled, at its sole option, to cancel any unfilled part of the Contract without any liability whatsoever.

38. Governmental Restrictions.

In the event any governmental restrictions are imposed which necessitate alteration of the material, quality, workmanship or performance of the items offered prior to their delivery, it shall be the responsibility of the Contractor to notify, in writing, the issuing purchasing office at once, indicating the specific regulation which required such alterations. UCBOE reserves the right to accept any such alterations, including any price adjustments occasioned thereby, or to cancel the Contract.

39. Inspection at Contractor's Site.

UCBOE reserves the right to inspect, at a reasonable time, the equipment/item, plant or other facilities of a prospective contractor prior to Contract award, and during the Contract term as necessary for UCBOE determination that such equipment/item, plant or other facilities conform with the specifications/requirements and are adequate and suitable for the proper and effective performance of the Contract.

40. Confidential Information.

All information about UCBOE provided to the Contractor or its officers, employees, agents, representatives and advisors (the "Contractor Representatives"), and all copies or other full or partial reproductions thereof and notes, memoranda or other writings related thereto created by Contractor or any Contractor Representative, regardless of whether provided before or after the date of the Contract and regardless of the manner or medium in which it is furnished, is referred to as "Confidential Information". Confidential Information does not include any information that (a) is or becomes generally available to the public other than as a result of an impermissible disclosure by Contractor, (b) was known by or available on a non-confidential basis to Contractor before it was disclosed by UCBOE or (c) becomes available to Contractor on a non-confidential basis from a third party whom Contractor does not know to be bound by a confidentiality agreement with, or have an obligation of secrecy to, UCBOE. Except as and to the extent required by law or order or demand of any governmental or regulatory authority, Contractor and Contractor Representatives will (x) keep all Confidential Information confidential and (y) will only disclose or reveal any Confidential Information to Contractor Representatives who must have the information to fulfill Contractor's obligations under the Contract and who agree to observe the terms of this Section. Contractor and Contractor Representatives will not use the Confidential Information for any purpose other than fulfilling Contractor's obligations under the Contract. By way of example and not limitation, Contractor shall not sell, market, or commercialize Confidential Information, create derivative products or applications based on Confidential Information. If Contractor is requested or required, pursuant to applicable law or regulation or by legal process, to disclose any Confidential Information, Contractor will provide UCBOE with prompt and timely notice of the requests or requirements so that UCBOE can seek an appropriate protective order or other remedy and will not be prejudiced by delay. If UCBOE does not obtain a protective order or other remedy, Contractor will only disclose that portion of the Confidential Information which Contractor's legal counsel determines Contractor is required to disclose. Upon termination of the Contract or otherwise upon UCBOE's request, Contractor will promptly deliver to UCBOE all Confidential Information in the possession of Contractor or the Contractor Representatives.

41. Student Information.

If, during the course of Contractor's performance of the Contract, Contractor should obtain any information pertaining to students or students' official records, Contractor agrees to keep any such information confidential and to not disclose or permit it to be disclosed, directly or indirectly, to any person or entity. The Contract shall not be construed by either party to constitute a waiver of or to in any manner diminish the provisions for confidentiality of students' records. Additionally, pursuant to N.C.G.S. 115C-401.1, it is unlawful for a person who enters into a contract with a local board of education to sell personally identifiable information that is obtained from a student as a result of that person's performance under the Contract. Employee Personnel Information: If, during the course of Contractor's performance of the Contract, Contractor should obtain any information pertaining to employees of UCBOE's personnel records, Contractor agrees to keep any such information confidential and to not disclose or

permit it to be disclosed, directly or indirectly, to any person or entity. This section will survive the termination of this Contract. Contractor agrees, at its own expense, to indemnify, defend and save UCBOE harmless from all liability, loss or expense, including costs of settlement and attorney's fees, resulting from any claim that UCBOE's use, possession or sale of the Services and/or Goods infringes any copyright, patent or trademark or is a misappropriation of any trade secret.

42. No Pre-Judgment or Post-Judgment Interest.

In the event of any action by Contractor for breach of contract in connection with the Contract, any amount awarded shall not bear interest either before or after any judgment, and Contractor specifically waives any claim for interest.

43. Background Checks.

At the request of UCBOE's Project Coordinator, Contractor (if an individual) or any individual employees of Contractor shall submit to UCBOE criminal background check and drug testing procedures.

44. Mediation.

If a dispute arises out of or relates to the Contract, or the breach of the Contract, and if the dispute cannot be settled through negotiation, the parties agree to try in good faith to settle the dispute by mediation administered by the American Arbitration Association under its Commercial Mediation Rules before resorting to litigation.

45. No Third-Party Benefits.

The Contract shall not be considered by Contractor to create any benefits on behalf of any third party. Contractor shall include in all contracts, subcontracts or other agreements relating to the - party benefits.

46. Force Majeure.

If UCBOE is unable to perform its obligations or to accept the Services and/or Goods because of Force Majeure (as hereinafter defined), the time for such performance by UCBOE or acceptance of Services and/or Goods will be equitably adjusted by allowing additional time for performance or acceptance of Services and/or Goods equal to any periods of Force Majeure. "Force Majeure" shall mean any delays caused by acts of God, riot, war, terrorism, inclement weather, labor strikes, material shortages and other causes beyond the reasonable control of UCBOE.

47. Ownership of Documents.

Work Product. All documents created pursuant to the Contract shall, unless expressly provided otherwise in writing, be owned by UCBOE. Upon the termination or expiration of the Contract, any and all finished or unfinished documents and other materials produced by Contractor pursuant to the Contract shall, at the request of UCBOE, be turned over to UCBOE. Any technical knowledge or information of Contractor which Contractor shall have disclosed or may hereafter disclose to UCBOE shall not, unless otherwise specifically agreed upon in writing by UCBOE, be deemed to be confidential or proprietary information and shall be acquired by UCBOE free from any restrictions as part of the consideration of the Contract.

48. Strict Compliance.

UCBOE may at any time insist upon strict compliance with these terms and conditions notwithstanding any previous course of dealing or course of performance between the parties to the contrary.

49. General Provisions.

UCBOE's remedies as set forth herein are not exclusive. Any delay or omission in exercising any right hereunder, or any waiver of any single breach or default hereunder, shall not be deemed to be a waiver of such right or of any other right, breach, or default. If action be instituted by Contractor hereunder, UCBOE shall be entitled to recover costs and reasonable attorney's fees.

Contractor may not assign, pledge, or in any manner encumber Contractor's rights under this Contract or applicable Purchase Order or delegate the performance of any of its obligations hereunder, without UCBOE's prior, express written consent.

50. Contract Situs.

All matters, whether sounding in contract or tort relating to the validity, construction, interpretation and enforcement of the Contract, will be determined in Union County, North Carolina. North Carolina law will govern the interpretation and construction of the Contract.

51. Severability.

Any provision of this Contract that is determined by any court of competent jurisdiction to be invalid or unenforceable will not affect the validity or enforceability of any other provision. Any provision of the Contract held invalid or unenforceable only in part or degree will remain in full force and effect to the extent not held invalid or unenforceable.

II. Additional Standard Terms and Conditions for Construction Contracts

1. Supervision and Provision for Labor and Supplies.

The Contractor will supervise and direct the construction work (the "Work") and shall furnish, provide, and pay for all labor, materials, equipment, machinery, utilities, and services reasonably necessary for the execution and completion of the Work.

2. Coordination of Work and Notification of Progress.

The Contractor agrees to coordinate its Work with the work of any other separate contractors or with the work of UCBOE's own forces to avoid delaying or interfering with their work.

Contractor shall enforce good order and discipline among his employees and subcontractors on the Project. The Contractor further agrees to inform UCBOE on a regular basis or at UCBOE's request of the progress of the Work.

3. Provision for all Permits, Licenses, and Inspections.

Unless otherwise provided, the Contractor shall secure and pay for all permits, licenses, and inspections necessary for the proper execution and completion of the Work.

4. Cleanliness.

Contractor shall keep the Project reasonably free from waste materials or rubbish resulting from the Contractor's operations.

5. Additional Warranties.

The Contractor warrants that the Contractor has visited the location of the Project and is familiar with all field conditions bearing upon the Contractor's performance of the Work; that the materials and equipment furnished under the Contract are of good quality and new (unless otherwise permitted); that the Work is non-negligent and meets or exceeds the standards ordinarily observed in the industry; and that the Work conforms to the requirements of the Contract and to all applicable codes, ordinances, laws, or regulations. The Contractor further warrants and promises that the Work shall be free from defects and nonconformities in materials and workmanship for a period of one year from the later of the Date of Completion, which is the date UCBOE accepts the Work or such date as the Contractor actually completes all the Work (the "Date of Completion"). During such period, the Contractor will remedy at Contractor's expense nonconformities or defects in the Work within a reasonable time after receiving notice thereof from UCBOE.

6. Indemnity for Subcontractor Payment.

In addition to the indemnification obligations contained in the attached terms and conditions to this Contract, the Contractor further agrees to defend and indemnify UCBOE from and against

all claims, damages, losses, and expenses, including reasonable attorneys' fees, arising out of the Contractor's failure to pay subcontractors or materials suppliers.

7. Change Orders.

The Contractor agrees that UCBOE may order changes in the general scope of the Work, including additions, deletions, and similar revisions. The parties agree to adjust the Contract Price and Date of Completion to reflect the effects of such changes, which adjustments shall be authorized only upon execution of a written change order (a "Change Order"). In case of emergency or extenuating circumstances or if a construction contingency is provided as stated below, approval of changes may be obtained verbally by telephone or field orders approved by UCBOE Project Coordinator and promptly thereafter substantiated in writing as outlined under normal procedures. The amount of any increase or decrease in the Contract Price shall be by mutual acceptance of a total amount supported by sufficient data and information to substantiate the change. Any decrease in Contract Price for a decrease in the Work will be the reasonable costs of the Work deleted, including a reasonable amount for the decrease in the Contractor's overhead.

8. Performance/Payment Bond.

If required by law and/or the bidding documentation, the Contractor agrees to provide a Performance Bond and Labor and Material Payment Bond for its faithful performance in a form reasonably satisfying to UCBOE.

9. Payments Withheld.

The UCBOE may withhold payment for the following reasons to the extent permitted under N.C. Gen. Stat. § 143-134.1(e): (1) defective Work not remedied; (2) third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to UCBOE is provided by the Contractor; (3) failure of the Contractor to make payments properly to subcontractors or for labor, materials or equipment; (4) reasonable evidence that the Work will not be completed with the time specified, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; (5) failure to carry out the Work in accordance with the Contract Documents; (6) failure to provide sales tax documentation in accordance with subparagraph 9.3.5; (7) failure or refusal of the Contractor to submit the required information on minority business enterprises; and (8) failure of the Contractor to comply with (a) the provisions of the Sedimentation and Pollution Control Act (N.C. Gen. Stat. § 113A-50 *et seq.*), and/or (b) any Notice of Violation issued by the North Carolina Department of Natural Resources.

10. Retainage.

For public construction contracts costing an amount equal to or greater than \$100,000, the UCBOE will retain five percent of the amount of each progress payment on the project for as long as is authorized by N.C. Gen. Stat. § 143-134.1. At all times during the Project, the UCBOE may retain the maximum funds allowed by N.C. Gen. Stat. § 143-134.1. The UCBOE specifically reserves the right to withhold additional funds as authorized by this Contract and N.C. Gen. Stat. § 143-134.1. The Contractor may pay each subcontractor no later than seven days after receipt of payment from the UCBOE and in accordance with N.C. Gen. Stat. § 143-134.1 the amount to which the subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each subcontractor, require each subcontractor to make payments to sub-subcontractors in a similar manner and in accordance with N.C. Gen. Stat. § 143-134.1.

III. Additional Standard Term and Condition for Designer Contracts (which include Architectural, Engineering, Surveying, and Technical Services)

Additional Insurance. In addition to the insurance required pursuant to Section 22 of the Standard Terms and Conditions for All Contracts, the Contractor certifies that it currently has and agrees to purchase and maintain during its performance under the Contract the following insurance from one or more insurance companies acceptable to UCBOE and authorized to do business in the State of North Carolina: Professional liability insurance in commercially reasonable amounts as reasonably determined by UCBOE.

IV. Additional Standard Terms and Conditions for Information Technology Contracts

1. Definitions.

“Hardware” means the hardware the Contractor utilizes in the Hosted Environment for delivery and maintenance of the Hosted Software Services.

“Hosted Environment” means the Hardware, system software, hosting support software, network connectivity, and facility used by Contractor to support the Hosted Software Services.

“Hosted Software Services” means the application, including the Hosted Software and any applicable Third-Party Software, as run on the Hosted Environment.

“Hosted Software” means the software owned and controlled by Contractor or Contractor’s third-party contractor that supports the Hosted Software Services.

“Support Services” means application and technical support required to maintain the performance, uptime and connectivity of the Hosted Software Services for UCBOE access and use, including without limitation, telephone support, error correction, maintenance, and installation of Updates and Upgrades to the Hosted Software.

“Updates” means (i) modifications to or releases of the Hosted Software that (a) add new features, functionality, and/or improved performance, (b) operate on new or other databases, operating systems, or server platforms or (c) extend the Hosted Software functionality to take advantage of advances in coding language, hardware, network or wireless infrastructures; and (ii) deviation corrections, bug or error fixes, patches, workarounds, and maintenance releases.

“Upgrades” means any new version or new release of the Hosted Software typically provided on an annual or bi-annual basis by the Contractor that includes new features, functions, support or service that were not in place with the immediately prior version.

2. Grant of License.

Contractor grants to UCBOE for the term of this Contract a non-exclusive, non-transferable license to access and use over the internet the Hosted Software (the “License”).

3. Updates and Upgrades.

Contractor will make certain limited and applicable Hosted Software Updates and Upgrades available to UCBOE at no additional cost. All such Updates and Upgrades shall automatically become subject to the benefits and terms of this Contract and shall automatically be considered part of the License granted under this Contract.

4. Security.

Contractor’s Hosted Environment shall maintain security measures in place to help protect against the loss, misuse, and alteration of the Hosted Software Services, and specifically the Confidential Information provided to Contractor by UCBOE.

5. Warranties.

Contractor warrants the following: (a) Contractor has the full authority to grant the License; (b) the Hosted Software is free from material defects or viruses; (c) the Hosted Software contains no disabling devices; and (d) the Hosted Software conforms to all material specifications set forth in the documentation and any other written material provided to UCBOE for any purpose. Without limiting any other remedies available to UCBOE under this Contract, at law or in equity, in the event that any Hosted Software does not conform to the warranties set forth for the Hosted Software herein, Contractor shall, at UCBOE's option, promptly correct or replace such Hosted Software and, in either case, Contractor shall perform any Support Services or other work required to restore the Hosted Software to the state that existed prior to any such breach, all at Contractor's expense. UCBOE reserves the right to reject the Hosted Software and to hold Contractor responsible for any loss, direct or indirect, caused by any such breach of warranty. In the event Contractor is or becomes aware of a problem with any item of Hosted Software, Contractor shall notify UCBOE upon such determination. Acceptance or use of the Hosted Software shall not constitute a waiver of any claim under any warranty.

6. Effect of Termination and Orderly Transition.

Upon termination or expiration of this Contract for any reason, Contractor will cooperate in good faith with UCBOE to provide for an orderly transfer of the Goods and Services and Confidential Information to UCBOE or UCBOE's successor vendor ("Orderly Transition") and according to the terms of this section. a. Scope of Work for Orderly Transition. Within thirty (30) days of notification by UCBOE that it will transfer Goods and Services to itself or a successor vendor, the parties will create and execute a scope of work document detailing tasks, the responsible parties for individual tasks, and timeframes for completion of tasks necessary to complete an Orderly Transition. The final, executed Orderly Transition scope of work shall be incorporated into this Contract and become subject to its terms. Contractor's failure to (a) cooperate in developing the Orderly Transition scope of work, (b) execute an Orderly Transition scope of work, or (c) abide by the executed Orderly Transition scope of work shall be deemed a material breach of this Contract.

7. Time Frame.

Unless otherwise mutually agreed in an executed Orderly Transition scope of work, Contractor shall continue to provide Goods and Services while UCBOE migrates its Confidential Information from Contractor's Hosted Software Services in the Orderly Transition process. Contractor agrees that, as part of the Orderly Transition process and within the specified time frame, it will transfer to UCBOE all of the Confidential Information provided to Contractor by UCBOE pursuant to this Contract. Contractor will provide the Confidential Information in commercially reasonable electronic format as agreed in the Orderly Transition scope of work at no additional cost.

8. Time and Material Costs Only. UCBOE will be obligated to pay for time and materials at a reasonable hourly rate of no more than \$75/hour for the Orderly Transition. No other fees will be assessed for the Orderly Transition. Fees shall be agreed upon in advance as part of developing the scope of work referenced in subsection (a) above.

d. Destruction of Confidential Information after Orderly Transition. Unless otherwise mutually agreed in an executed Orderly Transition scope of work, Contractor agrees that after returning all Confidential Information to UCBOE pursuant to subsection (b) above it will destroy all remaining copies of Confidential Information and back-up Confidential Information in its possession, contained in or on any medium (such as a storage area network or "SAN") or as may be stored offsite, within thirty (30) days of completion of Orderly Transition. Contractor shall provide UCBOE with a detailed summary of the destruction process and standards to be utilized

by Contractor with respect to the Confidential Information, and UCBOE shall approve such process and standards prior to Contractor commencing such destruction.

7. Intellectual Property Warranty. In addition to the warranties set forth elsewhere in this Contract with respect to the Goods and Services, Contractor expressly represents, warrants and covenants that neither the furnishing of Hosted Services to UCBOE hereunder, nor does the Hosted Software, violate, in whole or in part, any provision of any law, common law or regulation concerning copyrights, trade secrets, trademarks, tradenames, service marks, patents or other provisions regulating or concerning intellectual property rights.

8. Additional Indemnification. To the fullest extent permitted by law, Contractor shall indemnify, defend and hold harmless UCBOE, its and directors, officers, managers, employees and agents, from all suits, claims, costs, damages and other liabilities, including reasonable attorneys' fees as incurred by counsel of UCBOE's choice, relating to or arising from (a) Contractor's failure to maintain the security and integrity of Confidential Information, the Hosted Software Services and the Hosted Environment; (b) any claim for infringement of any copyright, trade secret, trademark, tradename, service mark, patent, or other law or regulation concerning intellectual and/or proprietary property rights; and (c) any claims by third party interests in the Hosted Software.

9. Data Use. Notwithstanding the foregoing, Contractor acknowledges and agrees that all Confidential Information is proprietary to and owned exclusively by UCBOE, whether provided in tangible or electronic form and whether entered into any software or Hosted Software Services owned or licensed by Contractor (including without limitation the Hosted Software and Hosted Software Services) or otherwise provided in connection with any products provided and services performed by Contractor (including without limitation the Goods and Services) and whether to, by or through a Contractor-affiliated ASP or other Hosted Software Services. Furthermore, Contractor shall not sell, market, or commercialize Confidential Information, create derivative products or applications based on Confidential Information or otherwise use Confidential Information in any manner unrelated to the performance of Contractor's obligations under the Contract. Contractor shall not share Confidential Information with any parent or subsidiary company of Contractor or any other Contractor-affiliated entity without the express prior written consent of UCBOE detailing the scope of allowable disclosure. Contractor agrees that if it breaches this section, UCBOE may, at its option, pursue any or all of the following remedies: (a) immediately terminate this Contract without liability to Contractor; (b) seek an injunction without posting a bond; and (c) pursue whatever other remedies may be available to it at law, in equity or pursuant to this Contract.