

PUBLIC NOTICE

Notice is hereby given that the County of Webb is accepting Bids for Webb County Jail Roof Project.

Bids must be submitted with one original and eight (8) copies in sealed envelopes to the Office of the Webb County Clerk. Sealed envelopes must be marked with Bid number and name on the front lower left-hand corner of envelopes.

Mark Envelope: Bid 2011- 06 **“Webb County Jail Roof Project”**

Bids must be hand-delivered or mailed to the following location:

Webb County Clerk
Webb County Justice Center
1110 Victoria St., Suite 201
Laredo, Texas 78040

Bids must be delivered no later than **2:00 P.M. on Tuesday, May 5, 2011**, at which time all bids received will be opened and read to the public. Late bids will not be considered.

For any information concerning the submission of bid documents, call the Webb County Purchasing Office, 1110 Washington St., Suite 101, Laredo, TX 78040, (956) 523-4125. For any other information concerning the specifications they are available at Webb County Purchasing Department for an amount of \$50.00 none refundable. Please visit the Purchasing Department website at <http://www.webbcountytx.gov> for a copy of plans and specifications.

The County of Webb reserves the right to reject any or all bids, to waive any or all formalities or technicalities, and to make such awards of contract as may be deemed to be the best interest to Webb County.

Dr. Cecilia May Moreno
Webb County Purchasing Agent

Publish Dates: April 19, 2011
April 26, 2011

THIS FORM MUST BE INCLUDED WITH BID; PLEASE CHECK OFF EACH ITEM THAT APPLIES AND SIGN

“Sealed Bid”

Bid No. 2011-06 “Webb County Jail Roof Project”

- Notice to Bidders**
- System Overview**
- Specifications**
- Roof Plans**
- Detail Drawings**
- Product Data**
- Terms and Conditions of Invitations for Bids**
- Conflicts Disclosure Statement**
- Insurance**
- Bid Bond and Performance Bond**
- Proof of No Delinquent Taxes Owed To Webb County**
- Bidders Information (must be signed)**
- Bid Form (required)**

**Signature of person
Completing this form**

COUNTY OF WEBB

Terms and Conditions of Invitations for Bids

1. GENERAL CONDITIONS:

Bidders are required to submit their proposals upon the following expressed conditions:

- (A) Bidders shall thoroughly examine the drawings, specification schedule, instructions and all other contract documents.
- (B) Bidders shall make all investigations necessary to thoroughly inform themselves regarding plant and facilities for delivery of materials and equipment as required by the bid conditions. No plea of ignorance by the bidder of conditions that exist or that may hereafter exist as a result of failure to fulfill in every detail the requirements of the contract documents of the County or the compensation of the vendor.
- (C) Bidders are advised that all County contracts be subject to all legal requirements provided for in county, state and federal statutes and regulations.

2. PREPARATION OF BIDS:

Bids will be prepared in accordance with the following:

- (A) All information required by the bid form shall be furnished. The bidder shall print or type his name and manually sign the schedule and each continuation sheet on which an entry is made.
- (B) Unit prices shall be shown and where there is an error in extension of prices, the unit price shall govern.
- (C) Alternate bids will not be considered unless authorized by the Invitation for Bids.
- (D) Proposed delivery time must be shown and shall include Sundays and holidays.
- (E) Bidders will not include Federal taxes or State of Texas limited sales excise and use taxes in bid prices since the County of Webb is exempt from payment of such taxes. An exemption certificate will be signed where applicable upon request.

3. DESCRIPTION OF SUPPLIES:

Any catalog or manufacturer's reference used in describing an item is merely descriptive, and not restrictive, unless otherwise noted, and is used only to indicate type and quality of material. Bidders are required to state exactly what they intend to furnish otherwise they shall be required to furnish the items as specified.

4. SUBMISSION OF BIDS:

- (A) Bids and changes thereto shall be enclosed in sealed envelopes addressed to the Webb County Clerk. The name and address of the bidder, the date of the bid opening and the material or service bid on shall be placed on the outside of the envelope.
- (B) Bids must be submitted in the forms furnished. Telegraphic bids will not be considered. Bids, however, may be modified by telegraphic notice provided such notice is received before the time and date set for the bid opening.
- (C) Samples, when required, must be submitted within the time specified, at no expense to the County of Webb. If not destroyed or used up during testing, samples will be returned upon request at the bidder's expense.

5. REJECTION OF BIDS:

- (A) The Purchasing Agent may reject a bid if it is not satisfactory to Commissioners' Court because:
 - (1) The bidder misstates or conceals any material fact in the bid or if,
 - (2) The bid does not strictly conform to the law or the requirements of the bid, or if,
 - (3) The bid is conditional, except that the bidder may qualify his bid for acceptance by the County on an "All or None" basis or a "low item" basis. An "All or None" basis bid must include all items upon which bids are invited.
- (B) No bid submitted herein shall be considered if the bidder owes any delinquent taxes to the County of Webb at the time bids are opened. In the event that the successful bidder herein subsequently becomes delinquent in the payment of his or its County taxes, such fact shall constitute grounds for cancellation of the contract.

- (C) No bid submitted herein shall be considered unless the bidder warrants that upon execution of a contract with the County of Webb, he will not engage in employment practices which have the effect of discriminating against employees or prospective employees because of race, color, sex, creed, or national origin and will submit such report as the County may thereafter require to assure compliance.
- (D) The County may, however, reject all bids whenever it is deemed in the best interest of the County to do so, and may reject any part of a bid unless the bid has been qualified as provided in 5 (a) 3 above. The County may also waive any minor informalities or irregularities in any bid.

6. WITHDRAWAL OF BIDS:

Bids may not be withdrawn after the time set for the bid opening, unless approved by Commissioners' Court.

7. LATE BIDS OR MODIFICATIONS:

Bids and modifications received after the time set for the bid submission will not be considered.

8. CLARIFICATION OR OBJECTION TO BID SPECIFICATIONS:

If any person contemplating submitting a bid for this contract is in doubt as to the true meaning of the specifications, or other bid documents or any part thereof, he may submit to the Purchasing Agent on or before five days prior to scheduled opening a request for clarification. All such requests for information shall be made in writing and the person submitting the request will be responsible for its prompt delivery. Any interpretation of the bid, if made, will be made only by Addendum duly issued. A copy of such Addendum will be mailed or delivered to each person receiving a set of bids. The County will not be responsible for any other explanation or interpretation of the proposed bid made or given prior to the award of the contract. Any objections to the specifications and requirements as set forth in this bid must be filed in writing with the Purchasing Agent on or before five days prior to the scheduled opening.

9. DISCOUNTS:

- (A) Prompt payment discounts will be considered in making the award provided the period of the discount offered is sufficient to permit payment within such period in the regular course of business.

- (B) Concerning any discount offered, time will be computed from the date of receipt of supplies or services or from the date a correct invoice is received, whichever is the later date. Payment is deemed to be made on the date of mailing of the check.

10. AWARD OF CONTRACT:

- (A) The contract will be awarded to the lowest responsible bidder whose bid, conforming to the Invitation for Bids, is most advantageous to the County price and other factors considered.
- (B) The County reserves the right to accept any item or group of items of this bid, unless the bidder qualified his bid by specific limitations. Re Par. 5 (a) 3 above.
- (C) A written award of acceptance mailed or otherwise furnished to the successful bidder results in a binding contract without further action by either party.
- (D) Prices must be quoted F.O.B. Webb County with all transportation charges prepaid, unless otherwise specified in the Invitation for Bids.
- (E) Delivery time and prompt payment discounts, including time allowed for payment, will be considered in breaking of tie bids.

11. PERFORMANCE DEPOSIT:

- (A) The successful bidder(s) must furnish the County of Webb a performance deposit in the amount set forth in the Invitation for Bids. This deposit is not to be submitted with bids, but must be presented to the Purchasing Department upon notification.
- (B) The County of Webb will not enter a contract or issue a purchase order until the successful bidder has complied with the performance deposit provisions.
- (C) The performance deposit shall be in the form of a bond, certified check upon a State or National Bank or Trust Company signed by a duly authorized officer, thereof, or a certificate of deposit from such bank or trust company. All such bonds, checks and certificate of deposit shall be drawn payable to the order to the Webb County Treasurer and submitted to the Purchasing Agent's Office.

- (D) The performance deposit of the successful bidder(s) shall be returned by the County upon completion of the contract and final acceptance of all items in accordance with conditions thereof.
- (E) Failure of vendor to perform any of the services by this contract, within ten days of receipt of written demand for performance from County, or failure of vendor to correct or replace defective goods or products, within ten days from receipt of written demand will therefore, shall constitute a total breach of this contract, and shall be cause for termination. In the event of such termination the performance deposit shall be retained by the County of Webb as liquidated damages, based upon mutual agreement and understanding between vendor and County at the time this bid is solicited, submitted and accepted, that the County of Webb is a governmental agency engaged in public projects, and that the measurement of damages which might result from a breach of the terms and specifications herein is difficult or impossible to determine. Provided, however, that if in the opinion of the Purchasing Agent and the Commissioners' Court the failure of vendor to perform the conditions of this contract is occasioned by or is the result of acts or events over which the vendor has no control, said performance deposit may in whole or in part, as may be determined by the Purchasing Agent and the Commissioners' Court, be returned to the vendor. It is understood that such determination shall be entirely discretionary with the Purchasing Agent and the Commissioners' Court.

12. WORKERS' COMPENSATION INSURANCE COVERAGE:

The Workers' Compensation Commission has adopted Rule 110.110 effective with all bids advertised after September 1, 1994. The TWCC has stated that it is aware that a statutory requirement for workers' compensation insurance coverage is not being met. Therefore, Rule 110.110 requires that all bidders be covered under workers' compensation insurance to achieve compliance from both contractor(s) and governmental entities. **Attachment A** is provided in accordance with the requirements on governmental entities. Please read carefully and prepare your bid in full compliance to TWCC Rule 110.110. Failure to provide the required certificates upon submission of a bid could result in your bid being declared non-responsive.

NOTICE TO ALL BIDDERS

The Texas Workers' Compensation Commission has adopted Rule 110.110 effective with all bids advertised after September 1, 1994 and these changes affect your bid on this project.

The TWCC has stated that it is aware that statutory requirements provided for workers' compensation insurance coverage is not being met. Rule 110.110 is designed to achieve compliance from both contractors and governmental entities... This affects both of us on this project.

Providing false or misleading certificates of coverage, failing to provide or maintain required coverage, or failing to report any change that materially affects the coverage may subject the contractor(s) or other persons providing services on this project to legal penalties. This affects your subcontractors.

Therefore, the attached is provided in accordance with the requirements on governmental entities. Please read carefully and prepare your bid in full compliance to TWCC Rule 110.110. Failure to provide the required certificates upon submission of a bid could result in your bid being declared non-responsive.

According to TWCC, "This rule does not create any duty or burden on anyone which the law does not establish." Therefore, the county should not experience any increase in cost because of the need to comply with the Texas Worker's Compensation laws.

Dr. Cecilia May Moreno
Webb County Purchasing Agent

§110.110. Reporting Requirements for Building or Construction Projects for Governmental Entities.

- (a) The following words and terms, when used in this rule, shall have the following meanings, unless the context clearly indicates otherwise. Terms not defined in this rule shall have the meaning defined in the Texas Labor Code, if so defined.
- (1) Certificate of coverage (certificate) —A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or workers' compensation coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees (including those subject to a coverage agreement) providing services on a project, for the duration of the project.
 - (2) Building or construction—Has the meaning defined in the Texas Labor Code, §406.09(e)(1).
 - (3) Contractor —A person bidding for or awarded a building or construction project by a governmental entity.
 - (4) Coverage—Workers' compensation insurance meeting the statutory requirements of the Texas Labor Code, §401.011(44).
 - (5) Coverage agreement—A written agreement on form TWCC-81, form TWCC-82, form TWCC-83, or form TWCC-84, filed with the Texas Workers' Compensation Commission which establishes a relationship between the parties for purposes of the Texas Workers' Compensation Act, pursuant to the Texas Labor Code, Chapter 406, Subchapter F and G, as one of employer/employee and establishes who will be responsible for providing workers' compensation coverage for persons providing services on the project.
 - (6) Duration of the project—Includes, the time from the beginning of work on the project until the work on the project has been completed and accepted by the governmental entity.
 - (7) Persons providing services on the project ("subcontractor" in §406.096 of the Act)—With the exception of persons excluded under subsection (h) and (i) of this section, includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor

and regardless of whether that person has employees. This includes but is not limited to independent contractors, subcontractors, leasing companies, motor carriers, owner-operators, employees of any such entity, or employees of any entity furnishing persons to perform services on the project. "Services" includes but not limited to providing, hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- (8) Project—Includes the provision of all services related to a building or construction contract for a governmental entity.
- (b) Providing or causing to be provided a certificate of coverage pursuant to this rule is a representation by the insured that all employees of the insured who are providing services on the project are covered by workers' compensation coverage, that the coverage is based on proper reporting of classification codes and payroll amounts, and that all coverage agreements have been filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading certificates of coverage, or failing to provide or maintain required coverage, or failing to report any change that materially affects the provision of coverage may subject the contractor or other person providing services on the project to administrative penalties, criminal penalties, civil penalties, or other civil actions.
- (c) A governmental entity that enters into a building or construction contract on a project shall:
 - (1) include in the bid specifications, all the provisions of paragraph (7) of this subsection, using the language required by paragraph (7) of this subsection;
 - (2) as part of the contract, using the language required by paragraph (7) of this subsection, require the contractor to perform as required in subsection (d) of this section;
 - (3) obtain from the contractor a certificate of coverage for each person providing services on the project, prior to that person beginning work on the project;
 - (4) obtain from the contractor a new certificate of coverage showing extension of coverage:

- (A) before the end of the current coverage period, if the contractor's current certificate of coverage shows that the coverage period ends during the duration of the project; and
 - (B) no later than seven days after the expiration of the coverage for each other person providing services on the project whose current certificate shows that the coverage period ends during the duration of the project; and
- (5) retain certificates of coverage on file for the duration of the project and for three years thereafter,
 - (6) provide a copy of the certificates of coverage to the commission upon request and to any person entitled to them by law; and
 - (7) use the language contained in the following Figure 1 for bid specifications and contracts, without any additional words or changes, except those required to accommodate the specific document in which they are contained or to impose stricter standards of documentation:

Article _____ Workers' Compensation Insurance coverage.

A. Definitions:

Certificate of coverage ("certificate") – A copy of a certificate of insurance, a certificate of authority to self-insure issued by the commission, or a coverage agreement (TWCC-81, TWCC-82, TWCC-83, or TWCC-84), showing statutory workers' compensation insurance coverage for the person's or entity's employees providing services on a project, for the duration of the project.

Duration of the project – includes the time from the beginning of the work on the project until the contractor's/person's work on the project has been completed and accepted by the governmental entity.

Persons providing services on the project ("subcontractor" in §406.096) – includes all persons or entities performing all or part of the services the contractor has undertaken to perform on the project, regardless of whether that person contracted directly with the contractor and regardless of whether that person has employees. This includes, without limitation, independent contractors, subcontractors, leasing companies, motor carriers, owner-operators employees of any such entity, or employees of any entity which furnishes persons to provide services on the project. "Services" include, without limitation, providing,

hauling, or delivering equipment or materials, or providing labor, transportation, or other service related to a project. "Services" does not include activities unrelated to the project, such as food/beverage vendors, office supply deliveries, and delivery of portable toilets.

- B. The contractor shall provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011 (44) for all employees of the contractor providing services on the project, for the duration of the project.*
- C. The Contractor must provide a certificate of coverage to the governmental entity prior to being awarded the contract*
- D. If the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project, the contractor must, prior to the end of the coverage period, file a new certificate of coverage with the governmental entity showing that coverage has been extended.*
- E. The contractor shall obtain from each person providing services on a project, and provide to the governmental entity:*
 - (1) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and*
 - (2) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project.*
- F. The contractor shall retain all required certificates of coverage for the duration of the project and for one year thereafter.*
- G. The contractor shall notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the contractor knew or should have known of any change that materially affects the provision of coverage of any person providing services on the project.*

- H. *The contractor shall post on each project site a notice, in the text, form and manner prescribed by the Texas Workers' Compensation Commission, informing all persons providing services on the project that they are required to be covered, and stating how a person may verify coverage and report lack of coverage.*
- I. *the contractor shall contractually require each person with whom it contracts to provide services on a project, to:*
- (1) *provide coverage, based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements, which meets the statutory requirements of Texas Labor Code, Section 401.011(44) for all of its employees providing services on the project, for the duration of the project;*
 - (2) *provide to the contractor, prior to that person beginning work on the project, a certificate of coverage showing that coverage is being provided for all employees of the person providing services on the project, for the duration of the project;*
 - (3) *provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;*
 - (4) *obtain from each other person with whom it contracts, and provide the contractor;*
 - (A) *a certificate of coverage, prior to the other person beginning work on the project; and*
 - (B) *a new certificate of coverage showing extension of coverage, prior to the end of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;*
 - (5) *retain all required certificates of coverage on file for the duration of the project and for one year thereafter;*
 - (6) *notify the governmental entity in writing by certified mail or personal delivery, within 10 days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and*

- (7) *contractually require each person with whom it contracts, to perform as required by paragraphs (1)-(7), with the certificates of coverage to be provided to the person for whom they are providing services.*
- J. *By signing this contract or providing or causing to be provided a certificate of coverage, the contractor is representing to the governmental entity that all employees of the contractor who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other civil actions.*
- K. *The contractor's failure to comply with any of these provisions is a breach of contract by the contractor which entitles the governmental entity to declare the contract void if the contractor does not remedy the breach within ten days after receipt of notice of breach from the governmental entity.*
- (d) A contractor shall:
- (1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
 - (2) provide a certificate of coverage showing workers' compensation coverage to the governmental entity prior to beginning work on the project;
 - (3) provide the governmental entity, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the contractor's current certificate of coverage ends during the duration of the project;
 - (4) obtain from each person providing services on a project, and provide to the governmental entity:

- (A) a certificate of coverage, prior to that person beginning work on the project, so the governmental entity will have on file certificates of coverage showing coverage for all persons providing services on the project; and
 - (B) no later than seven days after receipt by the contractor, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
- (5) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - (6) notify the governmental entity in writing by certified mail or personal delivery, within ten days after the contractor knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project;
 - (7) post a notice on each project site informing all persons providing services on the project that they are required to be covered, and stating how a person may verify current coverage and report failure to provide coverage. This notice does not satisfy other posting requirements imposed by the Act or other commission rules. This notice must be printed with a title in at least 30 point bold type and text in at least 19 point normal type, and shall be in both English and Spanish and any other language common to the worker population. The text for the notices shall be the following text provided by the commission on the sample notice, without any additional words or changes.

"REQUIRED WORKERS' COMPENSATION COVERAGE"

"The law requires that each person working on this site or providing services related to this construction project must be covered by workers' compensation insurance. This includes persons providing, hauling, or delivering equipment or materials, or providing labor or transportation or other service related to the project, regardless of the identity of their employer or status as an employee."

"Call the Texas Workers' Compensation Commission at 512-440-3789 to receive information on the legal requirement for coverage, to verify whether your employer has provided the required coverage, or to report an employer's failure to provide coverage."

- (8) contractually require each person with whom it contracts to provide services on a project to:
- (A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;
 - (B) provide a certificate of coverage to the contractor prior to that person beginning work on the project;
 - (C) include in all contracts to provide services on the project the language in subsection (e)(3) of this section;
 - (D) provide the contractor, prior to the end of the coverage period, a new certificate of coverage showing extension of coverage, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (E) obtain from each other person with whom it contracts, and provide to the contractor:
 - (i) a certificate of coverage, prior to the other person beginning work on the project; and
 - (ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (F) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
 - (G) notify the governmental entity in writing by certified mail or personal delivery, within ten days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - (H) contractually require each other person with whom it contracts, to perform as required by subparagraph (A)-(H) of this paragraph, with the certificate of coverage to be provided to the person for whom they are providing services.

- (e) A person providing services on a project, other than a contractor, shall:
- (1) provide coverage for its employees providing services on a project, for the duration of the project based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements;
 - (2) provide a certificate of coverage as required by its contract to provide services on the project, prior to beginning work on the project;
 - (3) have the following language in its contract to provide services on the project: "By signing this contract or providing or causing to be provided a certificate of coverage, the person signing this contract is representing to the governmental entity that all employees of the person signing this contract who will provide services on the project will be covered by workers' compensation coverage for the duration of the project, that the coverage will be based on proper reporting of classification codes and payroll amounts, and that all coverage agreements will be filed with the appropriate insurance carrier or, in the case of a self-insured, with the commission's Division of Self-Insurance Regulation. Providing false or misleading information may subject the contractor to administrative penalties, criminal penalties, civil penalties, or other actions."
 - (4) provide the person for whom it is providing services on the project, prior to the end of the coverage period shown on its current certificate of coverage, a new certificate showing extensions of coverage, if the coverage period shown on the certificate of coverage ends during the duration of the project:
 - (5) obtain from each person providing services on a project under contract to it, and provide as required by its contract:
 - (A) a certificate of coverage, prior to the other person beginning work on the project; and
 - (B) prior to the end of the coverage period, a new certificate of coverage showing extensions of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;

- (6) retain all required certificates of coverage on file for the duration of the project and for one year thereafter;
- (7) notify the governmental entity in writing by certified mail or personal delivery, of any change that materially affects the provision of coverage of any person providing services on the project and send the notice within ten days after the person knew or should have known of the change; and
- (8) contractually require each other person with whom it contracts to:
 - (A) provide coverage based on proper reporting of classification codes and payroll amounts and filing of any coverage agreements for all of its employees providing services on the project, for the duration of the project;
 - (B) provide a certificate of coverage to it prior to that other person beginning work on the project;
 - (C) include in all contracts to provide services on the project the language in paragraph (3) of this subsection;
 - (D) provide, prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the project;
 - (E) obtain from each other person under contract to it to provide services on the project, and provide as required by its contract;
 - (i) a certificate of coverage, prior to the other person beginning work on the project; and
 - (ii) prior to the end of the coverage period, a new certificate of coverage showing extension of the coverage period, if the coverage period shown on the current certificate of coverage ends during the duration of the contract;

- (F) retain all required certificates on file for the duration of the project and for one year thereafter;
 - (G) notify the governmental entity in writing by certified mail or personal delivery, within ten days after the person knew or should have known, of any change that materially affects the provision of coverage of any person providing services on the project; and
 - (H) contractually require each person with whom it contracts, to perform as required by this subparagraph and subparagraphs (A)-(G) of this paragraph, with the certificates of coverage to be provided to the person for whom they are providing services.
- (f) If any provision of this rule or its application to any person or circumstance is held invalid, the invalidity does not affect other provisions or applications of this rule that can be given effect without the invalid provision or application, and to this end the provision of this rule declared to be severable.
 - (g) This rule is applicable for building or construction contracts advertised for bid by a governmental entity on or after September 1, 1994. This rule is also applicable for those building or construction contracts entered into on or after September 1, 1994, which are not required by law to be advertised for bid.
 - (h) The coverage requirement in this rule does not apply to motor carriers who are required pursuant to Texas Civil Statutes, Article 667c, to register with the Texas Department of Transportation and who provide accidental insurance coverage pursuant to Texas Civil Statutes 667c, §4(j).
 - (i) The coverage requirement in this rule does not apply to sole proprietors, partners, and corporate officers who meet the requirements of the Act, §406.097(c), and who are explicitly excluded from coverage in accordance with the Act, §406.097(a) (as added by House Bill 1089, 74th Legislature, 1995, §1.20). This subsection applies only to sole proprietors, partners, and corporate executive officers who are excluded from coverage in an insurance policy or certificate of authority to self-insure that is delivered, issued for delivery, or renewed on or after January 1, 1996.

The provisions of this §110.110 adopted to be effective September 1, 1994, 19 TexReg 5715; amended to be effective November 6, 1995, 20 TexReg 8609.

CONFLICT OF INTEREST QUESTIONNAIRE

FORM CIQ

For vendor or other person doing business with local governmental entity

This questionnaire reflects changes made to the law by H.B. 1491, 80th Leg., Regular Session. This questionnaire is being filed in accordance with Chapter 176, Local Government Code by a person who has a business relationship as defined by Section 176.001(1-a) with a local governmental entity and the person meets requirements under Section 176.006(a). By law this questionnaire must be filed with the records administrator of the local governmental entity not later than the 7th business day after the date the person becomes aware of facts that require the statement to be filed. See Section 176.006, Local Government Code. A person commits an offense if the person knowingly violates Section 176.006, Local Government Code. An offense under this section is a Class C misdemeanor.

OFFICE USE ONLY

Date Received

1 Name of person who has a business relationship with local governmental entity.

2 Check this box if you are filing an update to a previously filed questionnaire.

(The law requires that you file an updated completed questionnaire with the appropriate filing authority not later than the 7th business day after the date the originally filed questionnaire becomes incomplete or inaccurate.)

3 Name of local government officer with whom filer has employment or business relationship.

Name of Officer

This section (item 3 including subparts A, B, C & D) must be completed for each officer with whom the filer has an employment or other business relationship as defined by Section 176.001(1-a), Local Government Code. Attach additional pages to this Form CIO as necessary.

A. Is the local government officer named in this section receiving or likely to receive taxable income, other than investment income, from the filer of the questionnaire?

Yes No

B. Is the filer of the questionnaire receiving or likely to receive taxable income, other than investment income, from or at the direction of the local government officer named in this section AND the taxable income is not received from the local governmental entity?

Yes No

C. Is the filer of this questionnaire employed by a corporation or other business entity with respect to which the local government officer serves as an officer or director, or holds an ownership of 10 percent or more?

Yes No

D. Describe each employment or business relationship with the local government officer named in this section.

4

Signature of person doing business with the governmental entity

Date

Insurance

The Contractor shall not commence work under this contract until he has obtained all the insurance required under the paragraph and such insurance has been approved by owner.

- a. Compensation Insurance: The Contractor shall procure and shall maintain during the life of this contract Worker's Compensation Insurance as required by the State of Texas for all of his employees to be engaged in work at the site of the project under this contract and, in case of any such work sublet, the Contractor shall require the subcontractor similarly to provide Worker's Compensation Insurance for all of the employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Worker's Compensation Insurance.
- b. Contractor's Public Liability and Property Damage Insurance and Vehicle Liability Insurance: The Contractor shall procure and shall maintain during the life of this contract Contractor's Public Liability Insurance, Contractor's Property Damage Insurance and Vehicle Liability Insurance in the following amounts:
 1. Contractor's Public Liability Insurance: \$1,000,000.00
 2. Contractor's Property Damage Insurance: \$1,000,000.00
 3. Vehicle Liability Insurance: \$1,000,000.00
- c. Proof of Insurance: The Contractor shall furnish the Owner with certificates showing the type, amount, class of operations covered, effective dates and date of expiration of policies. Such certificates shall also contain substantially the following statement: "The insurance covered by this certificated will not be canceled or materially altered, except after ten (10) days written notice has been received by the Owner."

Bid Bond

A bid bond requirement in the amount of 5% of the bid issued by an acceptable surety shall be submitted with each bid. A certified check of Bank draft payable to Grant Recipient or negotiable U.S. Government Bonds may be submitted in lieu of Bid Bond.

Performance and Payment Bond

Performance and Payment Bonds, or Letter of Credit requires all prime contractors which enter into a formal contract in excess of \$25,000 with the State, any department, board, agency, municipality, county, school district or any division or subdivision thereof, to obtain a Payment Bond in the amount of the contract before commencing with work and performance bond for public works contracts in excess of \$100,000.

The failure of the successful bidder to execute the agreement and supply the required bonds within ten (10) days after the prescribed forms are presented for signature, or within such extended period as the Grant Recipient may grant, shall constitute a default and the Grant Recipient may, at its option either award the contract to next lowest responsible bidder, or re-advertise for bids. In either case, the Grant Recipient may charge against the bidder the difference between the amount of the bid, and the amount for which a contract is subsequently executed irrespective of whether this difference exceeds the amount of the bid bond. If a more favorable bid is received through re-advertisement, the defaulting bidder shall have no claim against the Grant Recipient for a refund.

PROOF OF NO DELINQUENT TAXES OWED TO WEBB COUNTY

This is to certify that _____ owes no delinquent property taxes to Webb County.

_____ owes no property taxes as a business in Webb County.
(Business Name)

_____ owes no property taxes as a resident of Webb County.
(Business Owner)

Person who can attest to the above information

*** SIGNED DOCUMENT AND PROOF OF NO DELINQUENT OR OWED TAXES TO WEBB COUNTY.**

Bid Form

A.) Total Product listing price: \$ _____
B.) Total Installation and Labor: \$ _____
C.) 2 year contractor's Warranty: \$ _____
Total Project Costs (A+B+C) \$ _____

CONTRACT TIME:

The number of calendar days required to complete this Project after
NOTICE TO PROCEED is _____ days.

Bidder to enter total number of days.

Bidder Signature

BIDDER INFORMATION

Name of Company _____

Address: _____

Phone: _____

Email Address: _____

Signature of Person Authorized to Sign Bid:

(Signature)

(Print Name)

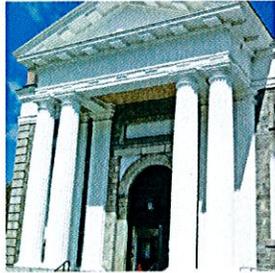
(Title)

Bidder to indicate status, as to "Partnership", "Corporation", "Sole Proprietorship", etc

Date: _____

Bidder must complete this bid document in its entirety in order for it to be valid.

Webb County Jail Roof Replacement Specification



**1001 Washington Street
Laredo, TX 78251**

Building Life. Managed.
www.tremcoroofing.com

TREMCO

System Overview

Cold Applied Built-up Roofing Systems

Built-up roof systems are composed of six basic components that can be assembled in a number of combinations.

Insulation – Provides “R” value and stable substrate for roof system.

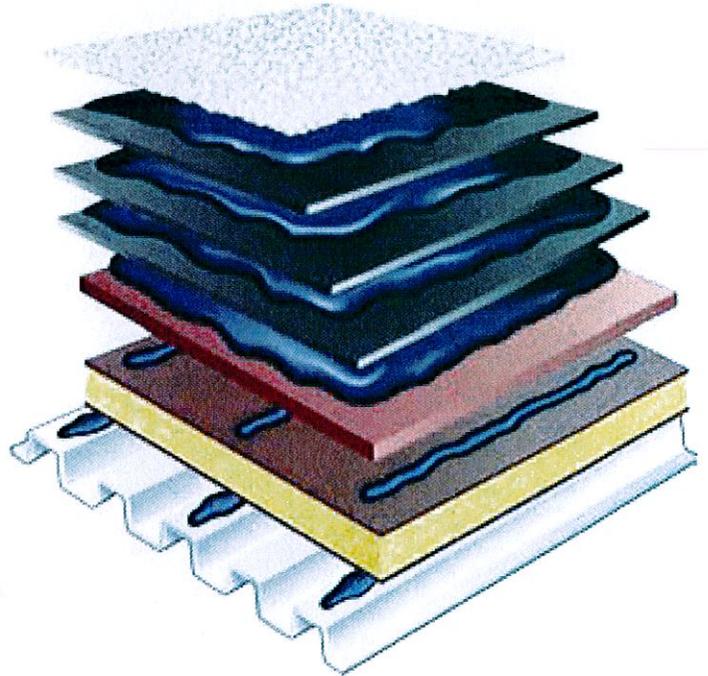
Base Plies – A ply that covers the entire substrate.

Ply sheets – Multiple layers of plies that make up the BUR.

Adhesive – Waterproofing that bonds the plies together.

Surfacing – Top layer that protects the BUR.

Flashings - Provide waterproofing around roof perimeter, equipment and projections.



Features:

- No kettle required
- Tar and asbestos-free
- No flame required
- Reduced odor
- High tensile strength
- Superior puncture resistance
- Trilaminate reinforcement
- Multi-ply system offers redundancy

Benefits:

- Reduces fumes and pollution
- Environmentally friendly
- Eliminates danger of fire and smoke pollution
- Better for use on occupied buildings
- Excellent thermal movement performance
- Improved resistance to abuse
- Longer life
- Successive levels provide extra protection and long-term performance

Tensile Strength:

What is tensile strength?

The resistance to lengthwise stress. The greatest amount of load in the direction of length that a given substance can bear without tearing.

Why is tensile strength important?

Superior tensile strength has a direct correlation to the long-term performance of the roof membrane. The greater the tensile strength, the more resistance the membrane has to splitting.

What is the difference between tensile strength and elongation?

Tensile strength is measured as a force (lbf), whereas elongation is measured as a percentage. The difference is tensile strength is measuring the force the sample can withstand before it breaks, whereas elongation is measuring how far the sample can stretch.



Cold Applied Built-up Roofing Systems

BURmastic 100

These systems feature ply sheets reinforced with a fiber-glass carrier. The ply sheets used are:

- BURmastic 28 lb. Glass*
- BURmastic Glass Ply*

A variety of high tensile base sheets can be utilized with BURmastic 100 roof systems.

BURmastic 200

These systems feature ply sheets reinforced with a composite carrier. The ply sheets either can be modified or unmodified. The ply sheets used are:

- BURmastic Composite Ply*
- Modified BURmastic Composite Ply*

Higher tensile base sheets can be utilized with the BURmastic 200 roof systems.

BURmastic 300

These systems are unique in that they feature ply sheets reinforced with a polyester carrier which provides the system with greater elongation. The ply sheet used is:

- BURmastic 300 Ply Sheet*

To maintain a high elongation system, it is recommended to always use a polyester base sheet such as Tremco's BURmastic 300 Ply Sheet.

BURmastic 400

These systems feature ply sheets reinforced with a high tensile composite carrier. The ply sheets either can be modified or unmodified. The ply sheets used are:

- Premium Composite Ply*
- Modified Premium Composite Ply*

Tremco's highest performing and strongest base sheet can be utilized with the BURmastic 400 roof systems.

BURmastic 500

These systems feature ply sheets reinforced with the highest tensile carrier available on the market today. The ply sheets either can be modified or unmodified. The ply sheets used are:

- Supreme Composite Ply*
- Modified Supreme Composite Ply*

An optional base sheet of either Supreme Composite Ply or Modified Supreme Composite Ply can be used under the BURmastic 500 system.

Cold Applied Components:

COLD BASE PLIES AND PLY SHEETS

BURmastic Glass Ply
BURmastic Glass Ply 28
BURmastic 300 Ply Sheet
Composite Ply
Premium Composite Ply
Supreme Composite Ply
Modified Composite Ply
Modified Premium Composite Ply
Modified Supreme Composite Ply

FLASHINGS

Hypalon Elastomeric Sheeting
TremLock Coping
TremLock Fascia
TRA Flashing Membrane

FLASHING ADHESIVES

Brush Grade Mastic
Polyroof SF
Sheeting Bond

COLD APPLIED ADHESIVES

BURmastic Adhesive
BURmastic LV Adhesive
BURmastic SF Adhesive
BURmastic Base Sheet Adhesive
Rubberized BURmastic Adhesive
Fas-n-Free Insulation Adhesive

COATINGS

BURmastic FR
Double Duty Aluminum LV
High Build Reflective Coating
Polarcote FR
One Coat Aluminum
One Coat Aluminum FR

SURFACING

BURmastic/Gravel
Tremlastic/Polarcote FR
Tremlastic/One Coat Aluminum
One Coat Aluminum FR
Tremlastic/Double Duty Aluminum
BURmastic FR/Granules
High Build Reflective Coating

SEE PRODUCT PAGES for a detailed description of each product listed above.

System performance and cost can be adjusted easily to fit your project requirements.

*See product pages for more information



System Details

Cold Applied Built-up Roofing Systems

3 Ply System – Base + 2

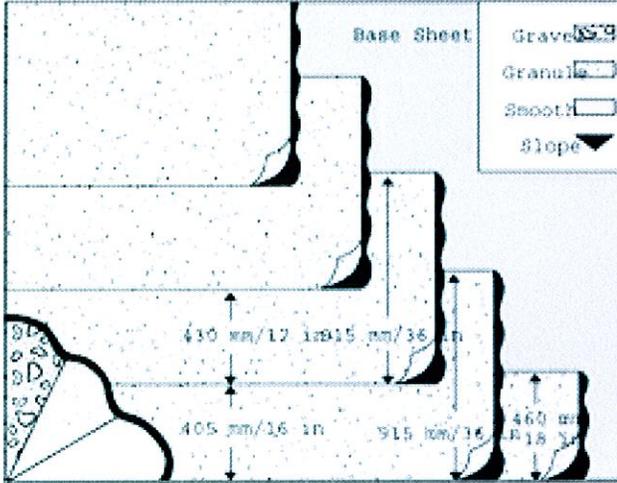
CONFIGURATION:

BURmastic 100 Base + 2 Ply

SUBSTRATE OPTIONS:

2 Course Insulation or
1 Course Insulation

(Zones 1, 2 and 3)



Slope: Positive drainage up to 33.3% (4:12)

Material Requirements	Quantity	
	/m ²	/100 ft ²
Base Sheets		
See Product List: Cold Base Plies/Base Sheets	1 ply	1 ply
Base Sheet Adhesive		
BURmastic Base Sheet Adhesive	1.2 L	3 gal
Ply Sheets		
See Product List: Cold Base Plies/Base Sheets	3 plies	3 plies
Interply Adhesive		
BURmastic Adhesive	2.5 L	7.5 gal
BURmastic LV Adhesive		7.5 gal
BURmastic SF Adhesive		6 gal
BURmastic Base Sheet Adhesive		
Rubberized BURmastic Adhesive Surfacing		
Gravel		
Flood coat (BURmastic Adhesive)	2 L	6 gal
Gravel	19.5 kg	500 lb
Granule		
Flood coat (BURmastic FR)	1.4 L	3.5 gal
Granules	2.9 kg	60 lb
Smooth		
Surfacing emulsion	1.6 L	4 gal
Reflective coating		As specified for coating

*Note: All coverage rates represent the required average application rate. Tolerances are ±20% for any point on the roof.

4 Ply System – Base + 3

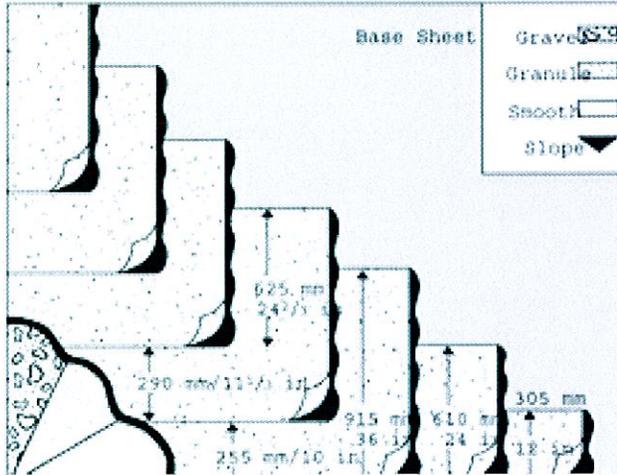
CONFIGURATION:

BURmastic 100 Base + 3 Ply

SUBSTRATE OPTIONS:

2 Course Insulation or
1 Course Insulation

(Zones 1, 2 and 3)



Slope: Positive drainage up to 33.3% (4:12)

Material Requirements	Quantity	
	/m ²	/100 ft ²
Base Sheets		
See Product List: Cold Base Plies/Base Sheets	1 ply	1 ply
Base Sheet Adhesive		
BURmastic Base Sheet Adhesive	1.2 L	3 gal
Ply Sheets		
See Product List: Cold Base Plies/Base Sheets	2 plies	2 plies
Interply Adhesive		
BURmastic Adhesive	2.5 L	10 gal
BURmastic LV Adhesive		10 gal
BURmastic SF Adhesive		8 gal
BURmastic Base Sheet Adhesive		10 gal
Rubberized BURmastic Adhesive Surfacing		
Gravel		
Flood coat (BURmastic Adhesive)	2 L	5 gal
Gravel	19.5 kg	400 lb
Granule		
Flood coat (BURmastic FR)	1.4 L	3.5 gal
Granules	2.9 kg	60 lb
Smooth		
Surfacing emulsion	1.6 L	4 gal
Reflective coating		As specified for coating

*Note: All coverage rates represent the required average application rate. Tolerances are ±20% for any point on the roof.

continued on next page

Cold Applied Built-up Roofing Systems

continued from previous page

3 Ply Straight

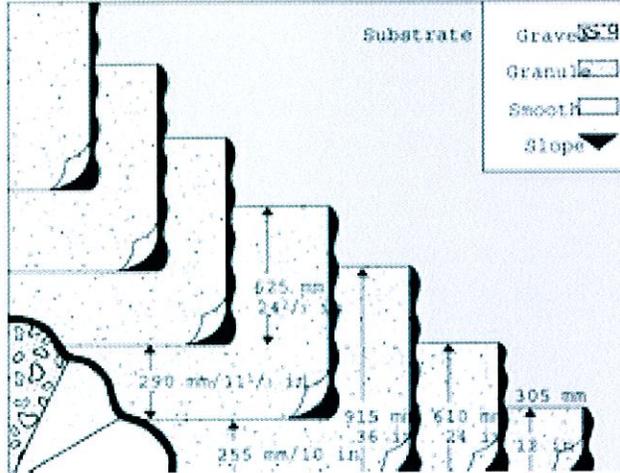
CONFIGURATION:

BURmastic 100 - 3 Ply

SUBSTRATE OPTIONS:

2 Course Insulation or
1 Course Insulation

(Zones 1, 2 and 3)



Slope: Positive drainage up to 33.3% (4:12)

Material Requirements	Quantity	
	/m ²	/100 ft ²
Ply Sheets		
See Product List: Cold Base Plies/Base Sheets	2 plies	2 plies
Interply Adhesive		
BURmastic Adhesive	2.5 L	7.5 gal
BURmastic LV Adhesive		6 gal
BURmastic SF Adhesive		7.5 gal
BURmastic Base Sheet Adhesive		7.5 gal
Rubberized BURmastic Adhesive		
Surfacing		
Gravel		
Flood coat (BURmastic Adhesive)	2 L	5 gal
Gravel	19.5 kg	400 lb
Granule		
Flood coat (BURmastic FR)	1.4 L	3.5 gal
Granules	2.9 kg	60 lb
Smooth		
Surfacing emulsion	1.6 L	4 gal
Reflective coating		As specified for coating

*Note: All coverage rates represent the required average application rate. Tolerances are ±20% for any point on the roof.

4 Ply Straight

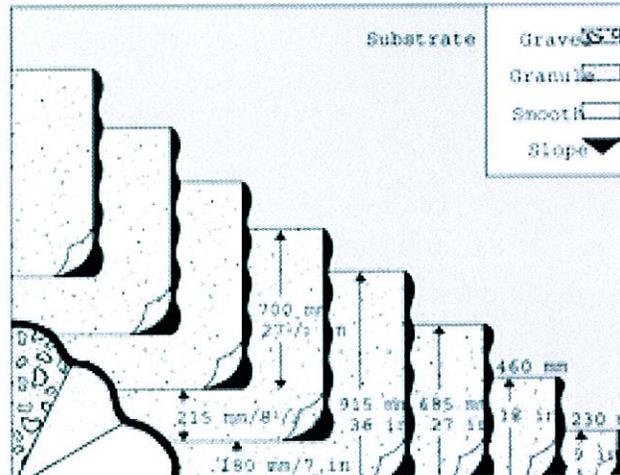
CONFIGURATION:

BURmastic 100 - 4 Ply

SUBSTRATE OPTIONS:

2 Course Insulation or
1 Course Insulation

(Zones 1, 2 and 3)



Slope: Positive drainage up to 33.3% (4:12)

Material Requirements	Quantity	
	/m ²	/100 ft ²
Base Sheets		
See Product List: Cold Base Plies/Base Sheets	1 ply	1 ply
Base Sheet Adhesive		
BURmastic Base Sheet Adhesive	1.2 L	3 gal
Ply Sheets		
See Product List: Cold Base Plies/Base Sheets	4 plies	4 plies
Interply Adhesive		
BURmastic Adhesive	2.5 L	10 gal
BURmastic LV Adhesive		8 gal
BURmastic SF Adhesive		
BURmastic Base Sheet Adhesive		
Rubberized BURmastic Adhesive		
Surfacing		
Gravel		
Flood coat (BURmastic Adhesive)	2 L	6 gal
Gravel	19.5 kg	500 lb
Granule		
Flood coat (BURmastic FR)	1.4 L	3.5 gal
Granules	2.9 kg	60 lb
Smooth		
Surfacing emulsion	1.6 L	4 gal
Reflective coating		As specified for coating

*Note: All coverage rates represent the required average application rate. Tolerances are ±20% for any point on the roof.

Specification

DOCUMENT 00211 - REQUEST FOR SUBSTITUTION FORM

Project: _____ Project No.: _____
 To: _____ Specification Section #: _____
 Contractor: _____
 Attn.: _____ Requested by: _____
 Phone: _____ Phone: _____
 Fax: _____ Fax: _____
 Email: _____ Email: _____

Reason for not providing specified roofing system item: _____

Savings to Owner for accepting substitution: (applies to substitutions following award only, if allowed) _____

Specified Product/Fabrication Method
 (List name/description; model no.; manufacturer): _____

Required Information for <i>Specified</i> Product:	Attached:
Point by Point Comparative Product Data	<input type="checkbox"/>
Tests	<input type="checkbox"/>
Reports	<input type="checkbox"/>
Fabrication Drawings	<input type="checkbox"/>
Samples (Where Applicable)	<input type="checkbox"/>

Proposed Product/Fabrication Method
 (List trade name/description; model no.; manufacturer) : _____

Required Information for <i>Proposed</i> Product:	Attached:
Point by Point Comparative Product Data	<input type="checkbox"/> (Required)
Tests	<input type="checkbox"/>
Reports	<input type="checkbox"/>
Fabrication Drawings	<input type="checkbox"/>
Samples (Where Applicable)	<input type="checkbox"/>

List of Related Changes/Modifications: _____

Differences between proposed substitution and specified product: _____

Proposed product/fabrication method affects other parts of the Work No Yes: Explain _____

Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product as utilized for this project, except as noted herein.
- Qualifications of manufacturer, installer, and other specified parties meet the specified qualifications.
- Same manufacturer's warranty will be furnished for proposed substitution as for specified product.
- Proposed substitution does not affect dimensions and functional clearances, except as noted herein.

For the Bidder:

Submitted by: _____
Signed: _____
Firm: _____
Telephone: _____
Fax: _____
Email: _____

For the Manufacturer:

Submitted by: _____
Signed: _____
Firm: _____
Telephone: _____
Fax: _____
Email: _____

END OF DOCUMENT 00211

SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 SUBMITTALS

- A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
 2. Completed List: Within 7 days after date of Notice of Award, submit 3 copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
 3. Owner's Action: Owner will respond in writing to Contractor within 7 days of receipt of completed product list. Owner's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Owner's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- B. Substitution Requests: Submit 3 copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use CSI Form 13.1A or Document 00211 – Request for Substitution Form provided herein.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
 - g. Material test reports from a qualified independent testing agency indicating and interpreting test results for compliance with requirements indicated.
 - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
 - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
 - j. Cost information, including a proposal of change, if any, in the Contract Sum.

- k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
 - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
 - 3. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within 7 days of receipt of a request for substitution. Owner will notify Contractor of acceptance or rejection of proposed substitution within 7 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Acceptance: Change Order.
 - b. Use product specified if Owner cannot make a decision on use of a proposed substitution within time allocated.
- C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Owner's Action: If necessary, Owner will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Owner will notify Contractor of approval or rejection of proposed comparable product request within 7 days of receipt of request, or 7 days of receipt of additional information or documentation, whichever is later.
 - a. Form of Approval: As specified in Division 1 Section "Submittal Procedures."
 - b. Use product specified if Owner cannot make a decision on use of a comparable product request within time allocated.
- D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 1 Section "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

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

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

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

1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
1. **Manufacturer's Warranty:** Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
 2. **Special Warranty:** Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.
 2. **Specified Form:** When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
- C. **Submittal Time:** Comply with requirements in Division 1 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Owner will make selection.
 5. Where products are accompanied by the term "match sample," sample to be matched is Owner's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
 2. Manufacturer/Source: Where Specifications name a manufacturer or source, provide a product by the named manufacturers or sources that complies with requirements.

2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Owner will consider requests for substitution if received within 14 prior to the Bid date. Requests received after that time may be considered or rejected at discretion of Owner.
- B. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Owner for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 2. Requested substitution does not require extensive revisions to the Contract Documents.
 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 4. Substitution request is fully documented and properly submitted.
 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 7. Requested substitution is compatible with other portions of the Work.

8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.
10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

2.3 COMPARABLE PRODUCTS

- A. Conditions: Owner will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require extensive revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
 5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01600

SECTION 01732 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition and removal of existing roofing and all related components.

1.3 DEFINITIONS

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

1.4 SUBMITTALS

- A. Pre-demolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations.
- B. Submit name of demolition sub-contractor(s), if any, along with any other information required by the Owner concerning the subcontractor.
 - 1. Submit per AIA Document A201, General Conditions.

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.
- C. Pre-demolition Conference: Conduct conference at Project site.

1.6 PROJECT CONDITIONS

- A. Move or otherwise relocate any electrical or mechanical items that might have an impact on the successful demolition.
- B. Owner will occupy portions of building immediately below the selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- C. Notify Owner of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.
 - 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Owner. Owner will remove hazardous materials under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities affected by the Work have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Owner.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
 - 1. Comply with requirements for existing services/systems interruptions specified in Division 1 Section "Summary."
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection specified in Division 1.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 - 2. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
 - 3. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 - 4. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 - 5. Dispose of demolished items and materials promptly.

- B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition including but not limited to:
 - 1. Rooftop equipment
 - 2. Rooftop piping
 - 3. Utility equipment
 - 4. Roof Hatch

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Existing Roofing: Remove existing roofing down to structural concrete deck or lightweight concrete deck. Existing roofing must be removed from all equipment, piping, walls and other surfaces.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials to accumulate on-site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 01732

SECTION 06105 - MISCELLANEOUS CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Wood blocking, cants, and nailers.

1.3 DEFINITIONS

- A. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. SPIB - Southern Pine Inspection Bureau.
 - 2. WWPA - Western Wood Products Association.

1.4 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
 - 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels; place spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of lumber grading agencies certified by the American Lumber Standards Committee Board of Review.
1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece.
 3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 4. Provide dressed lumber, S4S, unless otherwise indicated.
 5. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal (38-mm actual) thickness or less, unless otherwise indicated.
 6. Thickness: As needed to comply with requirements specified but not less than thickness indicated.
 7. Factory mark panels according to indicated standard.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWWA C2 (lumber) and AWWA C9 (plywood), except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWWA C31 with inorganic boron (SBX).
1. Preservative Chemicals: Acceptable to authorities having jurisdiction and one of the following:
 - a. Ammoniacal copper zinc arsenate (ACZA).
- B. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece.
- D. Application: Treat items indicated on Drawings, and the following:
1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 2. Wood sills, blocking, and similar concealed members in contact with masonry or concrete.
 3. Wood framing members less than 18 inches (460 mm) above grade.

2.3 MISCELLANEOUS LUMBER

- A. General: Provide lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Cants.
 - 3. Nailers.
- B. For items of dimension lumber size, provide Construction, Stud, or No. 2 grade lumber with 15 percent maximum moisture content and any of the following species:
 - 1. Mixed southern pine; SPIB.
- C. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine, No. 2 grade; SPIB.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
- B. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.
- C. Lag Bolts: ASME B18.2.1. (ASME B18.2.3.8M).

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- C. Apply field treatment complying with AWWA M4 to cut surfaces of preservative-treated lumber and plywood.
- D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.
- E. Countersink fastener heads on exposed carpentry work and fill holes with wood filler.

- F. Use fasteners of appropriate type and length. Predrill members when necessary to avoid splitting wood.

3.2 WOOD BLOCKING, AND NAILER INSTALLATION

- A. Install 1" x 6" vertical nailer at outside roof perimeter prior to installing new gutter system. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

END OF SECTION 06105

SECTION 07511 - COLD PROCESS BUILT-UP ASPHALT ROOFING

PART 1 - GENERAL

1 RELATED DOCUMENTS

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

2 SUMMARY

- A This Section includes the following:

1. Over structural concrete (MB Roof & Elevator Penthouses):
 - a. Remove and properly dispose all existing membrane, insulation and flashings down to and exposing the structural concrete deck.
 - b. Over swept deck, prime with a quick drying water based asphalt primer; allow to dry tack-free.
 - c. Using a one part solvent free, moisture curing, asphaltic urethane insulation adhesive, adhere one course 1" thick six-sided high-density wood fiber recovery board.
 - 1) Install in ribbon pattern one (1) to one and half (1.5) gallon(s) per square.
 - d. Over wood fiber board, install three (3) plies of polyester/glass/polyester trilaminate reinforcement coated with waterproofing asphalt, fully adhered in asbestos free fibrated cold process asphalt adhesive.
 - 1) Adhere plies at two (2.5) gallons per square, per ply.
 - e. Install CSPE Elastomeric Flashings set in a white one part elastomer at all curbs and at transition between existing roof level and new construction.
 - f. Install CSPE Elastomeric Flashing where new roof meets outside parapet wall. Seal tie-in using a five (5) course of 6" wide fiberglass reinforcing membrane sandwiched between alternate courses of a single component elastomeric mastic.
 - g. Provide and install 24 gauge galvanized steel counterflashings and metal edge/gravel guard as required. Provide and install 24 gauge stainless steel pitch pans and bonnets as required.
 - h. Over finished roof surface, install a white, cold applied, Energy Star flood coat and Fire White marble system.
 - 1) White flood coat adhesive coverage rate: 5 gallons per square; Fire White Marble coverage rate: no more than 200# per square.
 - j. Coat all exposed black mastic, flashings and penetrations with two (2) coats of a white intumescent, fire retardant, styrenated acrylic latex roof coating at 100 SF per gallon, per coat.
2. Over lightweight insulating concrete deck (Main roof level, Sally Port, Cafeteria & Generator Room)

- a. Removal of all roofing and flashings to substrate; repair decking if required to make sound.
- b. Over prepared decking, mechanically fasten one (1) ply polyester/glass/polyester trilaminate reinforcement coated with waterproofing asphalt using specified base sheet fasteners installed at one (1) fastener per every two (2) square feet. Increase quantities at perimeters and corners as required to meet or exceed FM 1-90 wind uplift resistance.
- c. Provide new treated wood cant strips as required for base flashings.
- d. Over nailed base sheet, provide and install three (3) plies polyester/glass/polyester trilaminate reinforcement coated with waterproofing asphalt, fully adhered in asbestos free fibrated cold process asphalt adhesive.
- e. Provide and install CSPE elastomeric base flashings set in a white one part elastomer.
- f. Provide and install lead flashings (4 pound) at soil stacks and drain bowls.
 - 1) Provide and install cast iron drain strainers at project completion in lieu of plastic.
- g. Provide and install pipe hangers and appropriate support systems for the existing HVAC conduit leading from the chillers.
- h. Fabricate and install new 24 gauge stainless steel pitch pans and bonnets as required.
- i. Fabricate and install new 24 gauge galvanized steel gravel guards/metal edge assembly.
- j. Clean all coping joints; prime and reseal using premium gun grade, moisture cured, one-component polyurethane sealant.
- k. Over finished roof surface, install a white, cold applied, Energy Star flood coat and Fire White marble system.
 - 1) White flood coat adhesive coverage rate: 5 gallons per square; Fire White Marble coverage rate: no more than 200# per square.
- l. Coat all exposed black mastic, flashings and penetrations with two (2) coats of a white intumescent, fire retardant, styrenated acrylic latex roof coating at 100 SF per gallon, per coat.

B Related Sections include the following:

- 1 Division 6 Section "Miscellaneous Carpentry" for wood nailers, cants, curbs, and blocking.
- 2 Division 7 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.

3 DEFINITIONS

- A** Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B** Cold Applied Built Up Roofing – An asbestos free formulation of asphalt, solvent, thixotrope, mineral stabilizer and reinforcing fibers used as an interply adhesive and flood coat.

4 PERFORMANCE REQUIREMENTS

- A General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.
- B Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.
- C Roofing System Design: Provide a roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE 7.
- D Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations in FMG 1-49 Loss Prevention Data Sheet for Perimeter Flashings; FMG 1-29 Loss Prevention Data Sheet for Above Deck Roof Components; NRCA Roofing and Waterproofing Manual (Fifth Edition) for Construction Details and SMACNA Architectural Sheet Metal Manual (Fifth Edition) for Construction Details, as applicable.
- E FMG Listing: Provide roofing membrane, base flashings, and component materials that comply with requirements in FMG 4450 and FMG 4470 as part of a roofing system and that are listed in FMG's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.
 - 1 Fire/Windstorm Classification: Class 1A-90.
 - 2 Hail Resistance: **SH**.

5 SUBMITTALS

- A Product Data: For each type of product indicated.
- B Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other Work.
 - 1 Base flashings, cants, and membrane terminations.
 - 2 Tapered insulation, including slopes.
 - 3 Crickets, saddles, and tapered edge strips, including slopes.
 - 4 Insulation fastening patterns.
- C Qualification Data: For Installer and manufacturer.
- D Research/Evaluation Reports: For components of roofing system.
- E Maintenance Data: For roofing system to include in maintenance manuals.
- F Warranties: Special warranties specified in this Section.

- G Technical Inspectors Approval: Evidence of roofing system manufacturer's compliance with technical inspector qualifications.
- H Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.

6 QUALITY ASSURANCE

- A Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's warranty.
- B Technical Inspector Qualifications: Contractor will engage a qualified manufacturer's technical representative to perform roof tests and inspections and to prepare test reports. If the technical inspector is not provided by the roofing system manufacturer, an outside qualified inspector can be employed along with a letter from the roof system manufacturer that they will comply with all decisions from the technical inspector and compliance with outside technical inspector will not affect roof system manufacturer's warranty.
- C Manufacturer Qualifications: A qualified manufacturer that has **UL listing** for roofing system identical to that used for this Project.
- D Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.
- E Source Limitations: Obtain components for roofing system **approved by** roofing system manufacturer.
- F Fire-Test-Response Characteristics: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, FMG, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.
 - 1 Exterior Fire-Test Exposure: Class A; ASTM E 108, for application and roof slopes indicated.
 - 2 Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof assemblies of which roofing system is a part.
- G Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site. Comply with requirements for pre-installation conferences in Division 1 Section "Project Management and Coordination." Review methods and procedures related to roof deck construction and roofing system including, but not limited to, the following:
 - 1 Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.

- 2 Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3 Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4 Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5 Review structural loading limitations of roof deck during and after roofing.
 - 6 Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 - 7 Review governing regulations and requirements for insurance and certificates if applicable.
 - 8 Review temporary protection requirements for roofing system during and after installation.
 - 9 Review roof observation and repair procedures after roofing installation.
- H Pre-installation Conference: Conduct conference at Project site. Comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to roofing system including, but not limited to, the following:
- 1 Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing including installers of roof accessories and roof-mounted equipment.
 - 2 Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 - 3 Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4 Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 - 5 Review structural loading limitations of roof deck during and after roofing.
 - 6 Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 - 7 Review governing regulations and requirements for insurance and certificates if applicable.
 - 8 Review temporary protection requirements for roofing system during and after installation.
 - 9 Review roof observation and repair procedures after roofing installation.
- 7 DELIVERY, STORAGE, AND HANDLING
- A Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.
 - B Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1 Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

8 PROJECT CONDITIONS

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

9 WARRANTY

A. Warranty, General: Warranties specified shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

B. The Integrated System Warranty shall include the performance of all traditional roof systems as specified in this Section.

C. Upon project completion, Manufacturer acceptance, and once complete payment has been received; the contractor shall deliver to the Owner a twenty (20) year Quality Assurance Warranty and Owner's Manual.

D. The Manufacturer's Warranty must include labor & material coverage against leakage on all components; including those manufactured by others. Included are the following:

1. Base sheet and fasteners.
2. All roof membrane components and adhesives.
3. All wood blocking and fastening components.
4. All perimeter flashing metal components.
5. All cant strips.
6. All existing or new counter flashing.
7. All surface mastics, coatings, stripping ply, etc.
8. Any leaks or other problems caused by substrate movement, excluding the deck.
9. Cover against damages from wind speeds up to hurricane force winds as outlined within the Beaufort Scale.

E. Special Project Warranty:

1. Submit Installer's Warranty signed by the Installer, covering the work of this Section, including membrane roofing, base flashing, roofing insulation, fasteners, sheet metal components, and vapor retarders, if any, for the following warranty period. Roofing

contractor shall provide a letter to the architect stating that the roofing contractor will agree to participate in allowances and adjustments for 2 years of the warranty period. It must be determined by the architect and the roof system manufacturer that the defects in the roofing assembly are a result of application and workmanship errors. The roof contractor at their expense will correct all defects noted during this time period.

2. Roof Installers Warranty Period: 2 years from the date of substantial completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A Basis-of-Design Product: The system specified in this section is based upon Tremco, Inc. products named in other Part 2 articles. Subject to compliance with requirements, provide the named product or an approved comparable product.
 1. Tremco Incorporated, Josh Murphy (210) 557-2172
- B Approved comparable products and manufacturers are the sole determination of the Owner or Owner's Rep and must be pre-approved prior to bid.
- C In other Part 2 articles where titles below introduce lists, the following requirements apply for product selection:
 - 1 Products: Subject to compliance with requirements, provide one of the products specified.
 - 2 Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

2.2 PRODUCT SUBSTITUTIONS

- A Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
 1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Owner for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 2. Requested substitution does not require extensive revisions to the Contract Documents.
 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 4. Substitution request is fully documented and properly submitted.
 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 7. Requested substitution is compatible with other portions of the Work.
 8. Requested substitution has been coordinated with other portions of the Work.
 9. Requested substitution provides specified warranty.

10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B Substitution Requests: Submit 3 copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Substitution Request Form: Use CSI Form 13.1A. or document 00211 - REQUEST FOR SUBSTITUTION FORM, these documents.
2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a. Statement indicating why specified material or product cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

2.3 ROOFING MEMBRANE PLIES

A Ply Sheet/Base Sheet: Tremco Burmastic Modified Composite Ply: Trilaminate reinforced ply sheet, complying with ASTM D 4601-91; ASTM 228-90A and ASTM 146-90 with the following properties:

1. Thickness: 1.2 mm
2. Tensile strength: 161 lbf/in(38.5 kN/M) MD. 137 lbf/in (41.1 kN/m) XMD.
3. Elongation: 5.54% MD/XMD.
4. Tear Strength: 265 lbf (1534 N) MD. 212 lbf (1467 N) XMD minimum.
5. Mass of desaturated polyester/glass/polyester mat, min.: 3.5 lb/100ft (172 g/m²)
6. Asphalt: 10.0 lb/100 ft (485g/m²) minimum.

B Base Sheet Fasteners: Tremco Base Sheet Fasteners

1. 1.75" in length
2. 2.75" plate width

2.4 FLASHING MATERIALS

A Flashing Membrane: Tremco Hypalon Elastomeric Sheeting: Reinforced CSPE, 0.045 inches thick complying with ASTM D 5019. Color: black.

B Cold Applied Flashing Adhesive: Tremco White Sheeting Bond: Roofing system manufacturer's standard 1 part asbestos free, cold-applied adhesive specially formulated for compatibility and use with CSPE reinforced flashing membrane.

- C Glass-Fiber Fabric: Tremco Burmesh: Woven glass cloth, treated with asphalt, complying with ASTM D 1668, Type I.

2.5 ASPHALT MATERIALS

- A Asphalt Primer: Tremco Tremprime WB: A water based polymer modified asphalt primer
- B Cold-Applied Adhesive and Surfacing: Tremco Burmastic Adhesive: Roofing system manufacturer's standard asphalt-based, 1-part asbestos-free, cold-applied adhesive specially formulated for compatibility and use with built-up roofing membranes and flashings. Each container labeled with UL and FM logos indicating material was manufactured under the specified UL and FM quality assurance programs.
 1. Nonvolatile Content: 72%
 2. Asphalt Content, min: 50%
 3. Flash Point > 100 F
 4. VOC: 270 g/L

2.6 AUXILIARY ROOFING MEMBRANE MATERIALS

- A General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with built-up roofing.
- B Asphalt Roofing Cement: Tremco ELS Mastic: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.
- C Elastomeric Mastic Sealant: Tremco Poyroof LV: a single component roof elastomer.
 1. Elongation: 1000% at 35 C
- D Metal Flashing Sheet: Metal flashing sheet is specified in Division 7 Section "Sheet Metal Flashing and Trim."
- E Urethane Sealant: Tremco Tremseal D: premium gun grade 1 component polyurethane sealant.
- F Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.
- G White Roof Coating: Tremco, Polarcote FR: Intumescent, fire-retardant, Energy Star Certified, CRRC Certified, elastomeric, acrylic latex roof coating formulated for use on bituminous roof surfaces, with the following physical properties:
 1. Asbestos Content, EPA/600/R-93/116: None.
 2. Non-Volatile Content (by weight), minimum, ASTM D 1644: 67 percent.
 3. Reflectance, minimum, ASTM E 903: 82 percent.
 4. Volatile Organic Compounds (VOC), maximum, ASTM D 3960: 155 g/L.
- H Termination Bar: Extruded aluminum, pre-punched 8" o.c.

2.7 Metal Flashing:

- A Metal flashings, counter flashings, pitch pans, scuppers, and like applications shall be in accordance with:
 - 1. Architectural Sheet Metal Manual, as issued by Sheet Metal and Air Conditioning Contractors' National Association, Inc., (SMACNA).
 - 2. National Roofing Contractors Association Manual (NRCA).
- B Collector head, downspout and other visible sheet metal flashing:
 - 1. Galvanized: Twenty-four (24) gage minimum, galvanized steel; commercial quality, Fed. Spec. QQ-S-775, Type I, Class D or ASTM A 526 or lock forming quality ASTM A 527, G90 coating in accordance with ASTM A 525.
- C Counter flashing, Slip flashing, Pitch pans with hood, etcetera:
 - 1. Galvanized Steel: ASTM A 526-85, sheet steel with 1.25 oz./sq. (3.82 g/m²) galvanized coating.
 - a. Gage: Twenty-four (24).
 - b. Solder: ASTM B32-89, alloy grade 50A. Neutralize flux after soldering.
- D Lead Flashings:
 - 1. ASTM B 29-79(1984), 4 lb. (1.82 kg) sheet lead.
 - 2. Use prefabricated plumbing vent flashings with factory welded and sealed joints at all plumbing vents.
 - a. Flange: 4" minimum.
 - 1. Use a single piece of sheet lead flashing at roof drains.
 - a. Minimum 30" x 30"

2.8 ROOF INSULATION

- A General: Provide preformed roof insulation boards that comply with requirements and referenced standards, selected from manufacturer's standard sizes and of thickness indicated.
- B Provide preformed isocyanurate saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.
- C Wood Fiber Board: Tremco Temple Fiber Base HD: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
 - 1. Nominal 1" thickness
 - 2. Asphalt coated on six sides

2.9 INSULATION ACCESSORIES

- A General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatible with membrane roofing.
- B Cold Fluid-Applied Adhesive: Solvent free, bituminous urethane adhesive
 - 1. Fas-n-Free Adhesive by Tremco.
 - a. Installed at 1.5 gallon per square
 - b. Density: 8.5 lbs/gal
 - c. Elongation: 1200%

- C Cants: Wood cants are specified in Division 6 Section "**Misc Carpentry.**"
- D Wood Nailer Strips: Comply with requirements in Division 6 Section "**Misc Carpentry.**"
- E Tapered Edge Strips: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board.
- F Cover Board: ASTM C 208, Type II, Grade 1, cellulosic-fiber insulation board, 1 inch (26 mm) thick.

2.10 MECHANICAL FASTENERS

- A Base sheet/rosin sheet to cement wood fiber deck:
 - 1. Tremco/ES Twin Loc-Nail with 2.7" diameter disc.
 - 2. Length: Sufficient to penetrate deck 1".
- B Wood to wood:
 - 1. Galvanized, common, annular ring nail.
 - 2. Length: Sufficient to penetrate underlay blocking 1-1/4".
- C Sheet steel to wood blocking (if required):
 - 1. FS FF-N-105B Type II, Style 20, roofing nails galvanized and stainless steel, flat head, diamond point, round, barbed shank.
 - 2. Length: Sufficient to penetrate wood blocking 1 1/4".
- D Termination bar to masonry or concrete:
 - 1. Lead masonry anchors.
 - 2. Length: Sufficient to provide 1 1/4" embedment minimum.
- E Drawband:
 - 1. Gold Seal stainless worm gear clamp by Murray Corporation, Cockeysville MD.
 - 2. Power-Seal stainless steel worm drive clamps by Breeze Clamp Co, Saltsburg PA.

2.11 COLD-APPLIED AGGREGATE SURFACING

- A Cold-Applied Surfacing Adhesive: Rock-It Adhesive by Tremco. One-part, white, highly reflective polymeric, surfacing adhesive, that when combined with Lucas Fire White Gravel, meets the requirements of the Cool Roof Rating Council, CRRC, with the following physical properties:
 - 1. Asbestos Content, EPA 600 R-93/116: None.
 - 2. Volatile Organic Compounds (VOC), maximum, ASTM D 6511: 250 g/L
 - 3. Nonvolatile Matter, minimum ASTM 6511: 54%
 - 4. Flash Point, minimum, ASTM D 93: 120 deg. F (49 deg. C)
 - 5. Reflectance (adhesive & aggregate), ASTM C 1549: 71%
 - 6. Thermal emittance (adhesive & aggregate), ASTM C 1371: 85%
 - 7. Basis of Design: Tremco's Rock-It Adhesive.
- B Aggregate Surfacing: Crushed marble.

1. Basis of Design: Tremco/Lucas Fire White Marble aggregate.

PART 3 - EXECUTION

3.1 EXAMINATION

- A Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1 Verify that roof openings and penetrations are in place and set and braced and that roof drains are securely clamped in place.
 - 2 Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thickness of insulation.
 - 3 Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.
 - 4 Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
 - 5 Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C Prime surface of concrete deck with specified asphalt primer at a rate of 0.5-0.25 gal./100 sq. ft. and allow primer to dry. Surface must be re-primed if exposed for more than 24 hours.

3.3 INSULATION INSTALLATION

- A Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B Comply with roofing system manufacturer's written instructions for installing roof insulation.
- C Wood Cants: Install and secure preformed 45-degree wood cants at junctures of built-up roofing membrane system with vertical surfaces or angle changes greater than 45 degrees.
- D Install insulation under area of roofing to conform to slopes indicated.
- E Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch (6 mm) with insulation.

- 1 Cut and fit insulation within 1/4 inch (6 mm) of nailers, projections, and penetrations.
- F Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
- G Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
- H Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1 Set each layer of insulation in a cold fluid-applied adhesive.
 - 2 Adhere insulation according to requirements in FMG's "Approval Guide" for specified Windstorm Resistance Classification.
 - 3 Adhere insulation to resist uplift pressure at corners, perimeter, and field of roof.
- I Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Stagger joints from joints in insulation below a minimum of 6 inches (150 mm) in each direction. Loosely butt cover boards together and fasten to roof deck. Tape joints if required by roofing system manufacturer.
 - 1 Adhere according to requirements in FMG's "Approval Guide" for specified Windstorm Resistance Classification.
 - 2 Adhere to resist uplift pressure at corners, perimeter, and field of roof.
 - 3 Adhere layer of cover board in a cold fluid-applied adhesive.

3.4 ROOFING MEMBRANE INSTALLATION, GENERAL

- A Install built-up roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing."
- B Start installation of built-up roofing membrane in presence of roofing system manufacturer's technical personnel.
- C Cooperate with testing and inspecting agencies engaged or required to perform services for installing built-up roofing system.
- D Coordinate installing roofing system components so insulation and roofing membrane sheets are not exposed to precipitation or left exposed at the end of the workday or when rain is forecast.
 - 1 Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt with joints and edges sealed.
 - 2 Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
 - 3 Remove and discard temporary seals before beginning work on adjoining roofing.
- E Cold Process Asphalt Heating:
 - 1 An in-line heat exchange unit may be used to facilitate application as follows:

- a. Maximum adhesive temperature: 100° F. Do not exceed the flash point of the adhesive.
2. Heat exchange unit: Filled with heat transfer oil approved by equipment manufacturer.
3. Follow operation procedures as recommended by equipment manufacturer.

3.5 ROOFING MEMBRANE INSTALLATION

- A. Over original roof area, install Composite Ply base sheet using Tremco base sheet fasteners as required to meet FM 1-90 wind uplift resistance.
- B. Install three (3) ply sheets starting at low point of roofing system. Align ply sheets without stretching. Shingle side laps of ply sheets uniformly to achieve required number of plies throughout thickness of roofing membrane. Shingle in direction to shed water. Extend ply sheets over and terminate beyond cants.
 - 1 Application: Adhere each ply felt in cold adhesive, applied within temperature range and at rate required by roofing system manufacturer, to form a uniform membrane without ply felts touching each other.
- C. Surfacing Application:
 - 1 Prior to application of flood coat, contractor shall inspect roof with manufacturer's technical representative and repair any deficiencies.
 - 2 Over entire roof surface apply uniform and continuous flood coat of surfacing adhesive at a rate of 5 gallons per 100 sq. ft.
- D. Aggregate Surfacing: While flood coat is fluid, cast the following average weight of aggregate in a uniform course:
 - 1 Aggregate Weight: **200-lb/100 sq. ft. (20 kg/sq. m).**

3.6 FLASHING AND STRIPPING INSTALLATION

- A. Install reinforced CSPE base flashing over cant strips and other sloping and vertical surfaces, at roof edges, and at penetrations through roof, and secure to substrates according to roofing system manufacturer's written instructions and as follows.
- B. Prime substrates with asphalt primer if required by roofing system manufacturer.
 - 2 Base Flashing Application: Adhere reinforced CSPE base flashing to substrate in cold adhesive, applied within temperature range and at rate required by roofing system manufacturer.
- C. Extend base flashing up the wall a minimum of 8 inches (200 mm) above roof membrane and 6 inches (150 mm) onto field of roof membrane.
- D. Mechanically fasten top of reinforced CSPE base flashing securely at terminations and perimeter of roofing.
 1. Seal top termination of base flashing.

- E. Roof Drains: Refer to NRCA Construction Detail BUR-23 and BUR-23S.
- F. Plumbing Vent: Refer to NRCA Construction Detail BUR-21 and BUR-21S.
- G. Pitch Pocket: Refer to NRCA Construction Detail BUR-22 and BUR 22-S.
- H. Coping Cap: Refer to SMACNA Plate 76.

3.7 COATING INSTALLATION

- A Apply coatings to **base flashings** laps according to manufacturer's written instructions, by spray, roller, or other suitable application method.

3.8 FIELD QUALITY CONTROL

- A Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform roof tests and inspections and to prepare test reports.
- B Test Cuts: Before flood coating and surfacing built-up roofing membrane, test specimens will be removed to evaluate problems observed during quality-assurance inspections of roofing membrane as follows:
 - 1 Approximate quantities of components within roofing membrane will be determined according to ASTM D 3617.
 - 2 Test specimens will be examined for interply voids according to ASTM D 3617 and to comply with criteria established in Appendix 3 of ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing."
- C Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.
 - 1 Notify Architect or Owner 48 hours in advance of date and time of inspection.
- D Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.
- E Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.9 PROTECTING AND CLEANING

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

- B Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 07511

SECTION 07591 - MEMBRANE REROOFING PREPARATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Roof tear-off.
 - 2. Removal of base flashings.
- B. Unit Prices: Refer to Division 1 Section "Unit Prices" for description of Work in this Section affected by unit prices.

1.3 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site and disposed of legally.

1.4 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Existing Membrane Roofing System: Built-up asphalt and Built-up coal-tar roofing membrane, surfacing, and components and accessories between deck and roofing membrane.
- C. Roof Tear-Off: Removal of existing membrane roofing system from deck.
- D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of new membrane roofing system approved by warrantor of existing roofing system to work on existing roofing.

- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Reroofing Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to roofing system including, but not limited to, the following:
 - 1. Meet with Owner, Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to reroofing preparation, including membrane roofing system manufacturer's written instructions.
 - 3. Review temporary protection requirements for existing roofing system that is to remain, during and after installation.
 - 4. Review roof drainage during each stage of reroofing and review roof drain plugging and plug removal procedures.
 - 5. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 6. Review existing deck removal procedures and Owner notifications.
 - 7. Review procedures to determine condition and acceptance of existing deck for reuse.
 - 8. Review structural loading limitations of deck during reroofing.
 - 9. Review base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.
 - 10. Review HVAC shutdown and sealing of air intakes.
 - 11. Review shutdown of fire-suppression, -protection, and -alarm and -detection systems.
 - 12. Review governing regulations and requirements for insurance and certificates if applicable.
 - 13. Review existing conditions that may require notification of Owner before proceeding.

1.6 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be disrupted. Provide Owner with not less than 48 hours notice of activities that may affect Owner's operations.
 - 1. Coordinate work activities daily with Owner so Owner can place protective dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below the work area if desired.
 - 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated prior to proceeding with work over the impaired deck area.
- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.

- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not block required exits or path from required exit to public right-of-way. Coordinate with requirements of authorities having jurisdiction.
- D. Owner assumes no responsibility for condition of areas to be reroofed.
- E. Construction Drawings for existing roofing system are available for Contractor's reference. Contractor is responsible for conclusions derived from existing documents.
- F. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.
- G. Hazardous Materials: It is not expected that hazardous materials such as asbestos-containing materials will be encountered in the Work.

PART 2 - PRODUCTS

- 2.1 Not Used

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate with Owner to shut down air intake equipment in the vicinity of the Work. Cover air intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- B. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 1. If roof drains will be temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
- D. Verify that rooftop utilities and service piping have been shut off before commencing Work.

3.2 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed.

- B. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the deck.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of membrane roofing system.
- B. If deck surface is not suitable for receiving new roofing, or if structural integrity of deck is suspect, immediately notify Owner. Do not proceed with installation until directed by Owner.

3.4 INFILL MATERIALS INSTALLATION

- A. Immediately after removal of selected portions of existing membrane roofing system, and inspection and repair, if needed, of deck, fill in the tear-off areas to match existing deck construction.
 - 1. Installation of infill materials is specified in Division 7 Section.
 - 2. Install new roofing membrane patch over roof infill area. If new roofing membrane is installed the same day tear-off is made, roofing membrane patch is not required.

3.5 EXISTING BASE FLASHINGS

- A. Remove existing base flashings around parapets, curbs, walls, and penetrations.
 - 1. Clean substrates of contaminants such as sheet materials, dirt, and debris.

3.6 DISPOSAL

- A. Collect and place demolished materials in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 - 1. Storage or sale of demolished items or materials on-site will not be permitted.
- B. Transport demolished materials off Owner's property and legally dispose of them.

END OF SECTION 07591

SECTION 07620 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following sheet metal flashing and trim:
 - 1. Formed roof drainage system.
 - 2. Formed counterflashing.
 - 3. Formed equipment support flashing.
- B. Related Sections include the following:
 - 1. Division 6 Section "Miscellaneous Carpentry" for wood nailers, curbs, and blocking.
 - 2. Division 7 Section "Cold Process Built-Up Roofing" for installing sheet metal flashing and trim integral with roofing membrane.
 - 3. Division 7 Section "Roof Accessories" for set-on-type curbs, equipment supports, roof hatches, vents, and other manufactured roof accessory units.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing, rattling, leaking, and fastener disengagement.
- B. Fabricate and install roof edge flashing capable of resisting the following forces according to recommendations in FMG Loss Prevention Data Sheet 1-49:
 - 1. Wind Zone 3: For velocity pressures of 46 to 104 lbf/sq. ft. (2.20 to 4.98 kPa): 208-lbf/sq. ft. (9.96-kPa) perimeter uplift force, 312-lbf/sq. ft. (14.94-kPa) corner uplift force, and 104-lbf/sq. ft. (4.98-kPa) outward force.
- C. Thermal Movements: Provide sheet metal flashing and trim that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of sheet metal and trim thermal movements. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

- D. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

1.5 QUALITY ASSURANCE

- A. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.
- B. Preinstallation Conference: Conduct conference at Project site.
 1. Meet with Owner, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
 2. Review methods and procedures related to sheet metal flashing and trim.
 3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
 4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

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

1.7 COORDINATION

- A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leak-proof, secure, and non-corrosive installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 2. Products: Subject to compliance with requirements, provide one of the products specified.
 3. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
 4. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

2.2 SHEET METALS

- A. Prepainted, Metallic-Coated Steel Sheet: Steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 (Z275) coating designation; structural quality.
 2. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40 (Class AZM150 coating designation, Grade 275); structural quality.
 3. Exposed Finishes: Apply the following coil coating:
 - a. Factory Prime Coating: Where painting after installation is indicated, provide pretreatment and white or light-colored, factory-applied, baked-on epoxy primer coat; with a minimum dry film thickness of 0.2 mil (0.005 mm).
 - b. Siliconized-Polyester Coating: Epoxy primer and silicone-modified, polyester-enamel topcoat; with a dry film thickness of not less than 0.2 mil (0.005 mm) for primer and 0.8 mil (0.02 mm) for topcoat.
 - 1) Color: As selected by Owner from manufacturer's full range.
 - c. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
- B. Lead Sheet: ASTM B 749, Type L51121, copper-bearing lead sheet.

2.3 UNDERLAYMENT MATERIALS

- A. Felts: Trilaminare-reinforced sheet provided by the specified manufacturer.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads.
 - 1. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
- C. Solder for Lead: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.
- D. Burning Rod for Lead: Same composition as lead sheet.
- E. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
- F. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- G. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

2.5 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of item indicated. Shop fabricate items where practicable. Obtain field measurements for accurate fit before shop fabrication.
- B. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
- C. Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 - 1. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
 - 2. Seams for Other Than Aluminum: Fabricate nonmoving seams in accessories with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- D. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA recommendations.
- E. Expansion Provisions: Where lapped or bayonet-type expansion provisions in the Work cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.

- F. Conceal fasteners and expansion provisions where possible on exposed-to-view sheet metal flashing and trim, unless otherwise indicated.
- G. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
 - 1. Thickness: As recommended by SMACNA's "Architectural Sheet Metal Manual" and FMG Loss Prevention Data Sheet 1-49 for application but not less than thickness of metal being secured.

2.6 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- (2400-mm-) long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters.
 - 1. Expansion Joints: Butt type.
 - 2. Accessories: Continuous removable leaf screen with sheet metal frame and hardware cloth screen.
 - 3. Gutters with Girth up to 15 Inches (380 mm): Fabricate from the following material:
 - a. Prepainted, Metallic-Coated Steel: 24 gage thick.
 - 4. Gutters with Girth 16 to 20 Inches (410 to 510 mm): Fabricate from the following material:
 - a. Prepainted, Metallic-Coated Steel: 24 gage thick.
- B. Downspouts: Fabricate rectangular downspouts complete with mitered elbows. Furnish with metal hangers, from same material as downspouts, and anchors.
 - 1. Fabricate downspouts every 40' from the following material:
 - a. Prepainted, Metallic-Coated Steel: 24 gage thick.

2.7 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof Edge Flashing (Gravel Stop): Fabricate in minimum 96-inch- (2400-mm-) long, but not exceeding 10-foot- (3-m-) long, sections. Furnish with 6-inch- (150-mm-) wide joint cover plates.
 - 1. Joint Style: Butt, with 6-inch- (150-mm-) wide exposed cover plates.
- B. Roof to coating Expansion-Joint Cover: Fabricate from the following material:
 - 1. Galvanized Steel: 24 gage thick.
- C. Counterflashing: Fabricate from the following material:

1. Galvanized Steel: 24 gage thick.
- D. Roof-Penetration Flashing: Fabricate from the following material:
1. Lead: 4.0 lb/sq. ft. (1.6 mm thick), hard tempered.
 2. Galvanized Steel: 24 gage thick.
- E. Splash Pans and Pitch Pans: Fabricate from the following material:
1. Stainless Steel: 0.0187 inch (0.5 mm) thick.
- F. Roof-Drain Flashing: Fabricate from the following material:
1. Lead: 4.0 lb/sq. ft. (1.6 mm thick), hard tempered.

2.8 FINISHES

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

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 1. Torch cutting of sheet metal flashing and trim is not permitted.

- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by fabricator or manufacturers of dissimilar metals.
1. Coat side of lead sheet and prepainted flashing and trim with bituminous coating where flashing and trim will contact wood, ferrous metal, or cementitious construction.
 2. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of Trilaminare felt underlayment.
 3. Bed flanges in thick coat of asphalt roofing cement where required for waterproof performance.
- C. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
- D. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and elastomeric sealant.
- E. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
1. Space cleats not more than 12 inches (300 mm) apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
- F. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (600 mm) of corner or intersection. Where lapped or bayonet-type expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with elastomeric sealant concealed within joints.
- G. Fasteners: Use fasteners of sizes that will penetrate substrate not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
1. Galvanized or Prepainted, Metallic-Coated Steel: Use stainless-steel fasteners.
 2. Aluminum: Use aluminum or stainless-steel fasteners.
 3. Copper Use copper or stainless-steel fasteners.
 4. Stainless Steel: Use stainless-steel fasteners.
- H. Seal joints with elastomeric sealant as required for watertight construction.
1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement either way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 2. Prepare joints and apply sealants to comply with requirements in Division 7 Section "Joint Sealants."

- I. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches (38 mm) except where pretinned surface would show in finished Work.
 1. Do not solder prepainted, metallic-coated steel sheet.
 2. Do not use open-flame torches for soldering. Heat surfaces to receive solder and flow solder into joints. Fill joints completely. Completely remove flux and spatter from exposed surfaces.

3.3 ROOF DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- B. Hanging Gutters: Join sections with riveted and soldered joints or with lapped joints sealed with elastomeric sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored gutter brackets spaced not more than 36 inches (900 mm) apart. Provide end closures and seal watertight with sealant. Slope to downspouts.
 1. Fasten gutter spacers to front and back of gutter.
 2. Loosely lock straps to front gutter bead and anchor to roof deck.
 3. Anchor and loosely lock back edge of gutter to continuous eave or apron flashing.
 4. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 24 inches (600 mm) apart.
 5. Anchor gutter with spikes and ferrules spaced not more than 24 inches (600 mm) apart.
 6. Install gutter with expansion joints at locations indicated but not exceeding 50 feet (15.24 m) apart. Install expansion joint caps.
 7. Install continuous gutter screens on gutters with noncorrosive fasteners, removable for cleaning gutters.
- C. Downspouts: Join sections with 1-1/2-inch (38-mm) telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch (25 mm) away from walls; locate fasteners at top and bottom and at approximately 60 inches (1500 mm) o.c. in between.
 1. Provide elbows at base of downspout to direct water away from building.
 2. Connect downspouts to underground drainage system indicated.
- D. Expansion-Joint Covers: Install expansion-joint covers at locations and of configuration indicated. Lap joints a minimum of 4 inches (100 mm) in direction of water flow.
- E. Splash Pans: Install where downspouts discharge on low-sloped roofs. Set in asphalt roofing cement compatible with roofing membrane.
- F. Provide and install 1' x 2' concrete splash blocks for ground-draining downspouts.

3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal roof flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight.
- B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in FMG Loss Prevention Data Sheet 1-49 for specified wind zone and as indicated.
 - 1. Interlock bottom edge of roof edge flashing with continuous cleats anchored to substrate at 16-inch (400-mm) centers.
- C. Pipe or pitch pan: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches (100 mm) over base flashing. Install stainless-steel draw band and tighten.
- D. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches (100 mm) over base flashing. Lap counterflashing joints a minimum of 4 inches (100 mm) and bed with elastomeric sealant.
 - 1. Secure in a waterproof manner by means of anchor and washer at 36-inch (900-mm) centers.
- E. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Install flashing as follows:
 - 1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.
 - 2. Seal with elastomeric sealant and clamp flashing to pipes penetrating roof except for lead flashing on vent piping.

3.5 WALL FLASHING INSTALLATION

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

3.6 MISCELLANEOUS FLASHING INSTALLATION

- A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.

3.7 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain in a clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 07620

SECTION 07720 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes the following:

1. Roof curbs.
2. Equipment supports.
3. Roof hatches.
4. Hatch-type heat and smoke vents.
5. Roof supports.
6. Preformed flashings.

- B. Related Sections include the following:

1. Division 6 Section "Miscellaneous Carpentry" for, wood cants, and wood nailers and pressure-treated wood walkways.
2. Division 7 low-slope roofing Sections for roofing accessories.
3. Division 7 Section "Sheet Metal Flashing and Trim" for shop- and field-fabricated metal flashing and counterflashing, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.

1.3 SUBMITTALS

- A. Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- B. Shop Drawings: Show fabrication and installation details for roof accessories. Show layouts of roof accessories including plans and elevations. Indicate dimensions, weights, loadings, required clearances, method of field assembly, and components. Include plans, elevations, sections, details, and attachments to other work.
- C. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
 1. Size and location of roof accessories specified in this Section.
 2. Method of attaching roof accessories to roof or building structure.
 3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.

- D. Warranty: Special warranty specified Division 7.

1.4 QUALITY ASSURANCE

- A. Sheet Metal Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap flashing to coordinate with type of roofing indicated.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Pack, handle, and ship roof accessories properly labeled in heavy-duty packaging to prevent damage.

1.6 PROJECT CONDITIONS

- A. Field Measurements: Verify required openings for each type of roof accessory by field measurements before fabrication and indicate measurements on Shop Drawings.

1.7 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leak-proof, weathertight, secure, and non-corrosive installation.

1.8 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers listed in other Part 2 articles.

- D. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
- E. Roof Curb Installation:
 - 1. Set roof curb so top surface of roof curb is level.
- F. Equipment Support Installation:
 - 1. Set equipment support so top surface of equipment support is level.
- G. Roof Hatch Installation:
 - 1. Check roof hatch for proper operation. Adjust operating mechanism as required. Clean and lubricate joints and hardware.
 - 2. Attach safety railing system to roof hatch curb.
 - 3. Attach ladder safety post according to manufacturer's written instructions.
- H. Heat and Smoke Vent Installation: Locate, install, and test heat and smoke vents according to NFPA 204.
 - 1. Check heat and smoke vent for proper operation. Adjust operating mechanism as required.
- I. Gravity Ventilator Installation:
 - 1. Check relief vents for proper operation and unrestricted airflow.
 - 2. Install security grilles. Weld bar intersections and ends of bars to structural frame or primary curb walls.
- J. Roof Walkway Installation:
 - 1. Verify location of points of access to roof-mounted equipment via use of roof walkways.
 - 2. Remove ballast from top surface of low-slope roofing section surface at the full area of contact surface of roof walkway supports.
 - 3. Verify that roof walkway support isolation pads are in place prior to placement of roof walkway onto low-slope roofing section surface.
- K. Preformed Flashing Installation:
 - 1. Secure to roof membrane according to vent and stack flashing manufacturer's written instructions.
- L. Seal joints with elastomeric sealant as required by manufacturer of roof accessories.

3.3 TOUCH UP

- A. Touch up factory-primed surfaces with compatible primer ready for field painting in accordance with Division 9 painting Sections.

- B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

3.4 CLEANING

- A. Clean exposed surfaces according to manufacturer's written instructions.

END OF SECTION 07720

SECTION 09963 ELASTOMERIC COATING

PART I - GENERAL

1.1 SUMMARY

A. Section includes:

1. Waterproofing of all rooftop penthouses
 - a. Stucco repair
 - b. Crack repair
 - c. Surface preparation and application of elastomeric coatings to exterior stucco surfaces indicated and as specified.

1.2 SUBMITTALS

A. Product Data: Submit complete printed data for each elastomeric coating system specified. Include crack fillers block fillers and primers.

1. Material List: Include an inclusive list of required coating materials. Indicate each material and cross reference the specific coating finish system and application. Identify each material by manufacturers catalog number and general classification.
2. Color Samples: Include color chart of full line of colors for selections by Owner.

1.3 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying elastomeric coating systems similar in material and extent to those indicated for this project whose work has resulted in applications with a record of successful in service performance.
- B. Source Limitations: Obtain all materials require from same manufacturer as finish coats.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label.
- B. Store materials not in use in tightly covered containers in a well ventilated area at a minimum ambient temperature of 45 deg F (7 deg C). Maintain storage containers in a clean condition, free of foreign materials and residue.
 1. Protect materials from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily.

1.5 PROJECT CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and surrounding air temperatures are between 50 and 100 deg F unless otherwise permitted by manufacturers written instructions.
- B. Do not apply coatings in snow, rain, fog, or mist, when relative humidity exceeds 85 percent or at temperatures less than 5 deg F (3 deg C) above the dew point or to damp or wet surfaces.
 - 1. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before starting or continuing coating operation.

1.6 WARRANTY

- A. Elastomeric Coating Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace elastomeric coatings that fail within specified warranty period. Failures include but are not limited to water penetration through the coating.
- B. Warranty Period for Elastomeric Coatings: Five (5) year(s) from date of Preliminary Acceptance or Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design Product: The system specified in this section is based upon Tremco, Inc. products named in other Part 2 articles. Subject to compliance with requirements, provide the named product or an approved comparable product.
 - 1. Tremco Incorporated, Josh Murphy (210) 557-2172
- B. Approved comparable products and manufacturers are the sole determination of the Owner or Owner's Rep and must be pre-approved prior to bid.

2.2 PRODUCT SUBSTITUTIONS

- A. Conditions: Owner will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Owner will return requests without action, except to record noncompliance with these requirements:
 - 1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Owner for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
 - 2. Requested substitution does not require extensive revisions to the Contract Documents.
 - 3. Requested substitution is consistent with the Contract Documents and will produce indicated results.

4. Substitution request is fully documented and properly submitted.
 5. Requested substitution will not adversely affect Contractor's Construction Schedule.
 6. Requested substitution has received necessary approvals of authorities having jurisdiction.
 7. Requested substitution is compatible with other portions of the Work.
 8. Requested substitution has been coordinated with other portions of the Work.
 9. Requested substitution provides specified warranty.
 10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitution Requests: Submit 3 copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Substitution Request Form: Use CSI Form 13.1A. or document 00211 - REQUEST FOR SUBSTITUTION FORM, these documents.
 2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
 - a) Statement indicating why specified material or product cannot be provided.
 - b) Coordination information, including a list of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.
 - c) Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 - d) Product Data, including drawings and descriptions of products and fabrication and installation procedures.

2.3 ELASTOMERIC COATING MATERIALS. GENERAL

- A. Material Compatibility: Provide crack fillers, block fillers, primers, elastomeric finish-coat materials and related materials that are compatible with one another and substrates indicated under conditions of service and application as demonstrated by manufacturer based on testing and field experience.
- B. Elastomeric Wall Coating: Tremco Wall-Tite
1. Nonvolatile content: 70% ASTM D 1644-88
 2. Viscosity @ 77°F: 7,000 cP ASTM D 2196-86
 3. Density @ 77°F: 11.8 lb/gal ASTM D 1475-85
 4. Tensile strength @ 77°F: 150 psi ASTM D 412-87
 5. Elongation @ 77°F 220% ASTM D 412-87
 6. Hardness (Shore A): 65 ASTM D 2240-86
 7. Dry time @ 77°F 50% RH, 20 mils wet : 2 h ASTM D 711-89
 8. Low temperature <-10°F (-23°C) ASTM C 711-72

2.4 CRACK FILLERS

- A. Crack Fillers; Factory-formulated acrylic emulsion crack Fillers compatible with substrate and finish coat materials indicated.
 - 1. Crack Filler for Cracks up to 1/16 Inch (1.5 mm):
 - a) Sonneborn: Hydrocide 750 Brush Grade or Knife Grade Patching Compound
 - b) Or Equal
 - 2. Crack Filler for Cracks More Than 1/16 Inch (1.5 mm):
 - a) Tremco: Tremseal D
 - I. Hardness (Shore A): 40 ASTM C 920-02
 - II. Bond Durability: Pass ASTM C 920-02
 - III. Stain & Color Change: None ASTM C 920-02
 - IV. Accelerated Weathering: Pass ASTM C 920-02
 - V. VOC: 85g/L ASTM D 3960-02
 - VI. VOC: <4% CARB Consumer Product Method 310

2.5 PRIMERS

- A. Urethane porous surface primer
 - 1. Tremco Vulkem Primer # 171 or equal
- B. Exterior Latex Primer for use with Elastomeric Coating
 - 1. Tremco Wall-tite Primer
 - a) Solids by weight 59% ASTM D 1644-88
 - b) Viscosity 77 KU ASTM D 2196-86
 - c) (1991)
 - d) Density 11.7 lb/gal (1.40 kg/L) ASTM D 1475-85
 - e) Asbestos None EPA/600/R-93/11

2.6 STUCCO REPAIR MATERIAL

- A. Dry Mix Stucco Patch
 - 1. Dap Stucco Patch – Dry Mix or equal

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for coating application. Comply with procedures specified in PDCA P4.
 - 1. Proceed with coating application only after unsatisfactory conditions have been corrected and surfaces are thoroughly dry.
 - 2. Start of coating application will be construed as Applicator's acceptance of surface conditions.
- B. Coordination of Work; Review other Sections in which primers are provided to ensure compatibility of total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible printers.

1. Notify Owner about anticipated problems when using coatings specified over substrates primed by others.

3.2 PREPARATION

A. Units and similar items already installed that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface applied protection before surface preparation and coating.

1. After completing coating operations, reinstall items removed, using workers skilled in trades involved.

B. Cleaning: Before applying coatings or other surface treatments, clean substrates of substances that could impair bond of coating systems. Remove oil and grease before cleaning.

1. Schedule cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.

C. Surface Preparation: Clean and prepare surfaces to be coated according to manufacturer's written instructions for particular substrate conditions and as specified.

1. Provide barrier coats over incompatible primers or remove and reprime.
2. Cementitious Surfaces: Prepare brick, concrete, concrete unit masonry, stucco, and similar surfaces to receive elastomeric coatings. Remove efflorescence, chalk, dust, dirt, release agents, grease, oils, and similar impediments to good adhesion by water blasting followed by a clear water rinse.
 - a) Remove mildew and neutralize surfaces according to manufacturer's written instructions before patching materials are applied.
 - b) Roughen as required to remove glaze. Use abrasive blast-cleaning methods if recommended by coating manufacturer.
 - c) If hardeners or sealers have been used to improve concrete curing, use mechanical methods for surface preparation.
 - d) Determine alkalinity and moisture content of surfaces to be coated by performing appropriate tests. If surfaces are sufficiently alkaline to cause finish paint to blister and bum, correct this condition before application. Do not apply coatings over surfaces where moisture content exceeds that permitted in manufacturer's written instructions.
3. Crack Repair: Fill cracks according to manufacturer's written instructions before coating surfaces.
4. Deep Hairline Cracks; Remove dust and dirt from around cracks. Remove mildew by sterilizing before filling, Apply manufacturer's recommended primer to cracks before patching. If shrinkage occurs after applying crack filler, apply additional filler material to cracks before initial application of elastomeric coatings.

- a) Cracks up to 1/16 Inch (1.5 mm): Clean surface around cracks. Apply crack filler primer penetrating cracks as deeply as possible, overflowing crack 2 inches (50 mm) on each side. When crack filler primer is dry, apply manufacturers recommended sealant, forced well into cracks using a brush, putty knife or trowel. Smooth edges of primed area around cracks. Allow for sealant shrinkage when applying.
- b) Cracks up to 3/8 Inch (9.5 mm); Open cracks to 1/4 to 3/8 inch (6 to 9.5 mm) wide and 1/8 inch (3 mm) deep. Clean cracks and surrounding area removing dust. Dirt and other impurities. Apply crack filler primer recommended by manufacturer with a brush to obtain uniform coverage and spread approximately 2 inches (50 mm) on each side of cracks. Fill cracks with manufacturers recommended crack filler applied with a putty knife or trowel. and allow for shrinkage. If excessive shrinkage occurs. reapply crack filler. Use backer rod behind sealant.

D. Material Preparation: Mix and prepare materials according to coating manufacturer's written instructions.

1. Maintain containers used in mixing and applying elastomeric coatings in a clean condition free of foreign materials and residue.
2. Stir materials before application to produce a mixture of uniform density. Stir as required during application. If surface film forms, do not stir film into material. If necessary, remove film and strain coating material before using.
3. If manufacturer permits thinning, use only thinners recommended by manufacturer, and only within recommended limits.

3.3 APPLICATION

A. General: Apply elastomeric coatings according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.

1. Colors, surface treatments and finishes are indicated in coating to be determined by owner.
2. Do not paint over conditions detrimental to formation of a durable coating film such as dirt, rust, scale, grease, moisture, and scuffed surfaces.
3. Provide finish coats compatible with primers used.

B. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

C. Scheduling Coating; Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. Number of coats and film thickness required are same regardless of application method. Do not apply succeeding coats until previous coat has cured as recommended by manufacturer.
2. If undercoats or other conditions show through Final coat, apply additional coats until coating film is of uniform finish, color, and appearance. Ensure that surfaces

including edges, comers, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.

3. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until coating has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat does not cause undercoat to lift or lose adhesion.
- D. Application Procedures: Apply elastomeric coatings by brush, roller, or spray according to manufacturer's written instructions:
1. Brushes: Use brushes best suited for material being applied.
 2. Rollers; Use professional-quality quick-release rollers of carpet, velvet back, or high-pile sheep's wool covers with a 1 to 1-1/4-inch (25.4 to 31.8 mm) nap as recommended by manufacturer for material and texture required.
 3. Spray Equipment: Use airless spray equipment with orifice size as recommended by manufacturer for material and texture required.
- E. Minimum Coating Thickness: Apply each material no thinner than manufacturers recommended spreading rate to achieve dry film thickness indicated. Provide total dry film thickness as recommended by manufacturer.
1. Wherever spray application is used, apply each coat to provide equivalent hiding of brush—applied coats. Do not double back with spray equipment. building up film thickness of two coats in one pass.
- F. Prime Coats: Apply a primer to material being coated before applying finish coats.
- G. Brush Application: Brush out and work brush coats into surfaces in an even film, Eliminate cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness. or other surface imperfections. Neatly draw glass lines and color breaks.
- H. Roller Application; Keep cover wet at all times, do not dry roll. Work in sections. Lay on required amount of material, working material into groves and rough areas; then level material, working it into surface.
- I. Spray Application: Use spray equipment for application only when permitted by manufacturer's written instructions and authorities having jurisdiction.
- J. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or recoat work not complying with specified requirements.

3.4 CLEANING

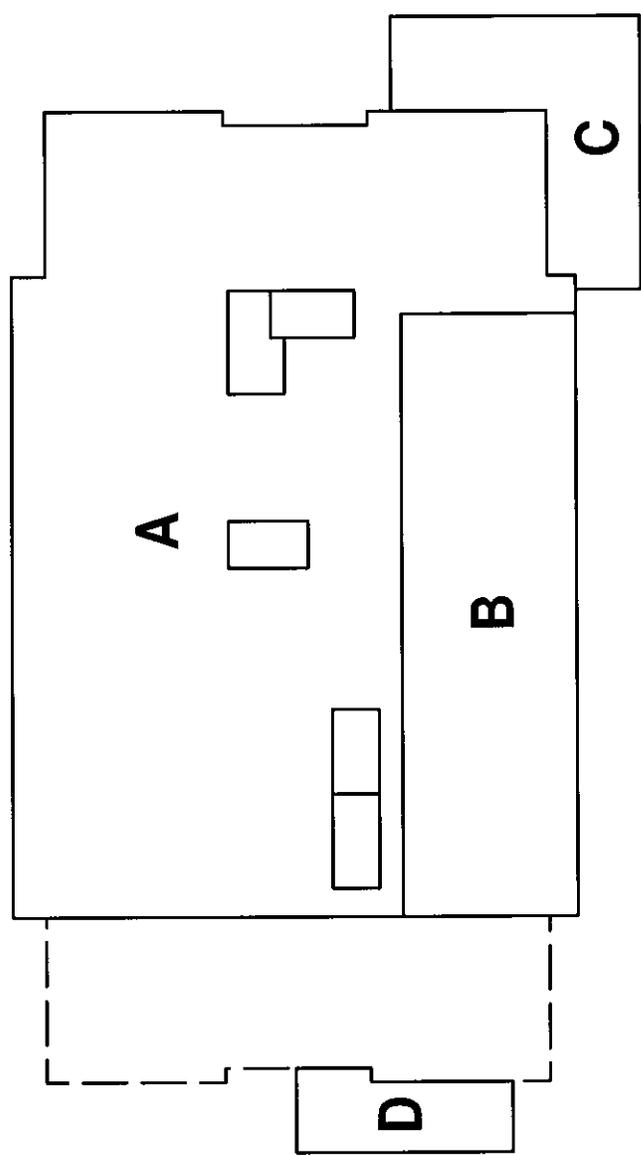
- A. Cleanup: At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
1. After completing coating work, clean glass and spattered surfaces. Remove spattered coatings by washing, scraping, or other methods being careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION

- A. Protect work of other trades from damage whether being coated or not. Correct damage by cleaning, repairing, replacing, and recoating as approved by Architect. Leave in an undamaged condition.
- B. Provide "Wet Paint" signs to protect newly coated finishes. Remove temporary protective wrappings provided by others to protect their work after completing coating operations.
 - 1. After construction activities of other trades are complete, touch up and restore damaged or defaced coated surfaces. Comply with procedures specified in PDCA PI.

END OF SECTION

Roof Plans



GENERAL ROOF NOTES

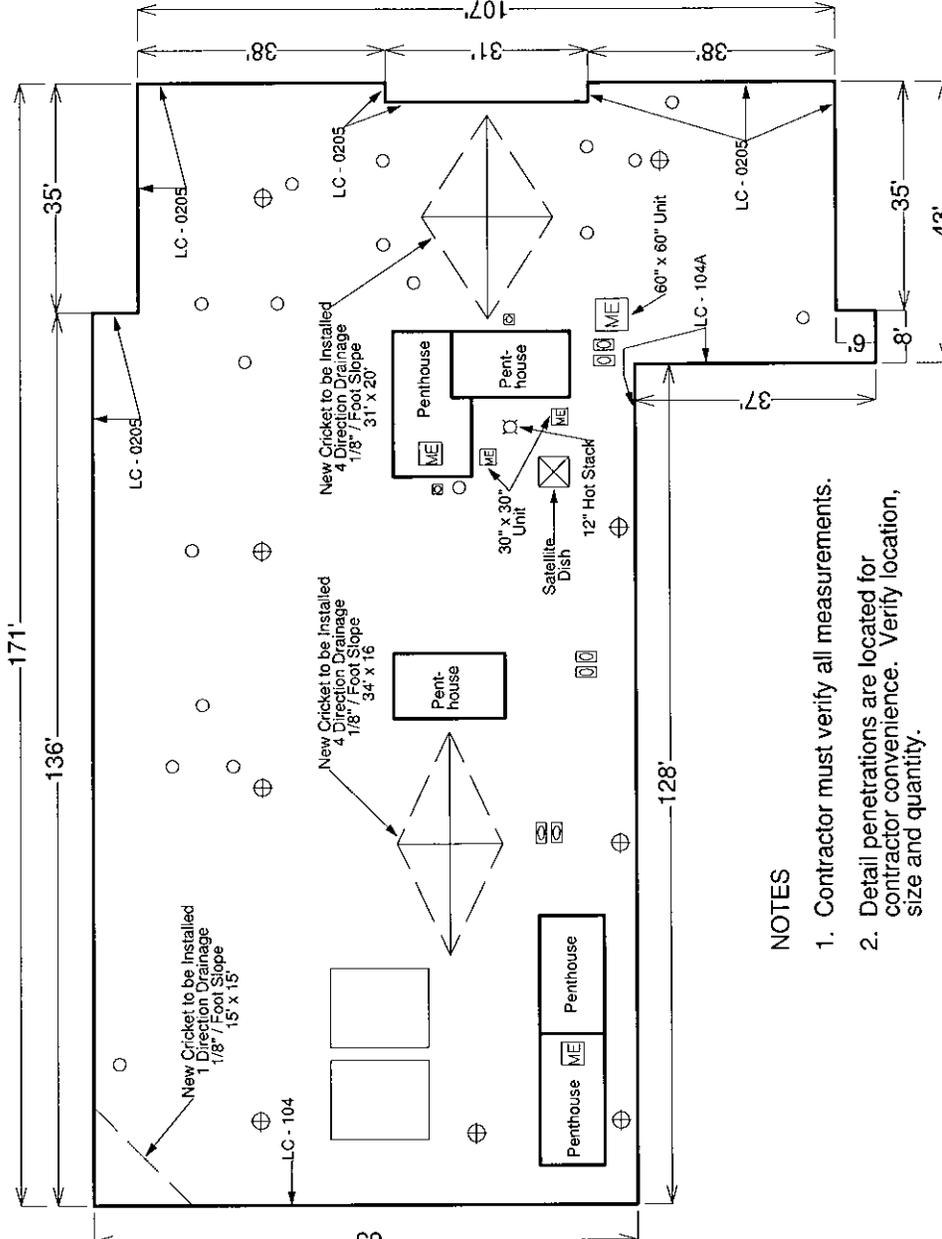
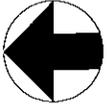
1. Remove and properly dispose of all roofing membrane, flashing materials and other associated roofing materials.
2. Detail penetrations are located for contractor convenience. Verify location, size and quantity.
3. Contractor shall visit site to verify existing conditions and site dimensions.
4. All work shall comply with all applicable local, state or national codes, ordinances and regulations.
5. Any work that may require the interruption of utility services to Owner shall be coordinated with Owner's representative.
6. See attached detail drawings that coordinate with **DETAIL** and **LEGEND**.
7. All roof top equipment shall be reinstalled in like fashion and in proper mechanical working order.
8. Contractor shall ensure that any existing weep holes shall remain open and draining properly.
9. All roofing work shall be in accordance with applicable manufacturer approved standards and details.



WEBB COUNTY JAIL
1001 WASHINGTON STREET, LAREDO, TX 78040

ROOF OVERVIEW
SHEET: A1

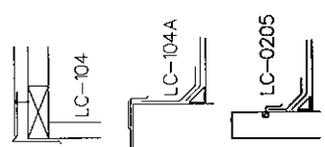
DATE: FEB 2011
SCALE: NTS
DRAWN BY: JDM



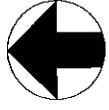
NOTES

1. Contractor must verify all measurements.
2. Detail penetrations are located for contractor convenience. Verify location, size and quantity.
3. All penthouse edge details are LC - 104

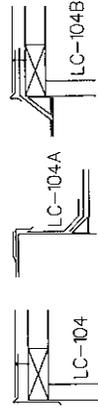
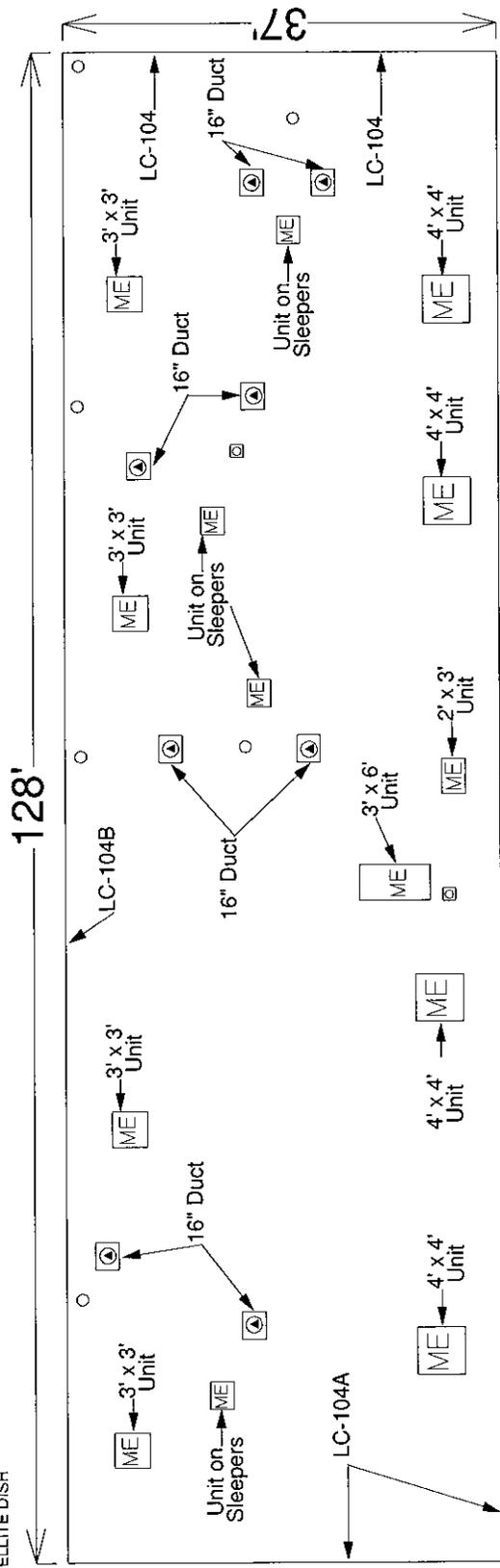
- AC CURB
- AC RAISED
- DRAIN
- MECH UNIT
- PIPE
- PITCH PAN
- POWER UNIT
- POWER VENT
- SOIL STACK
- SATELLITE DISH



	WEBB COUNTY JAIL 1001 WASHINGTON STREET, LAREDO, TX 78040	ROOF A PLAN	DATE: FEB 2011 SCALE: NTS
	SHEET: A2		DRAWN BY: JDM



- ⊕ DRAIN
- ME MECH UNIT
- PIPE
- ▣ PITCH PAN
- ⊙ POWER UNIT
- ⊙ POWER VENT
- SOIL STACK
- ⊗ SATELLITE DISH



TRENGO

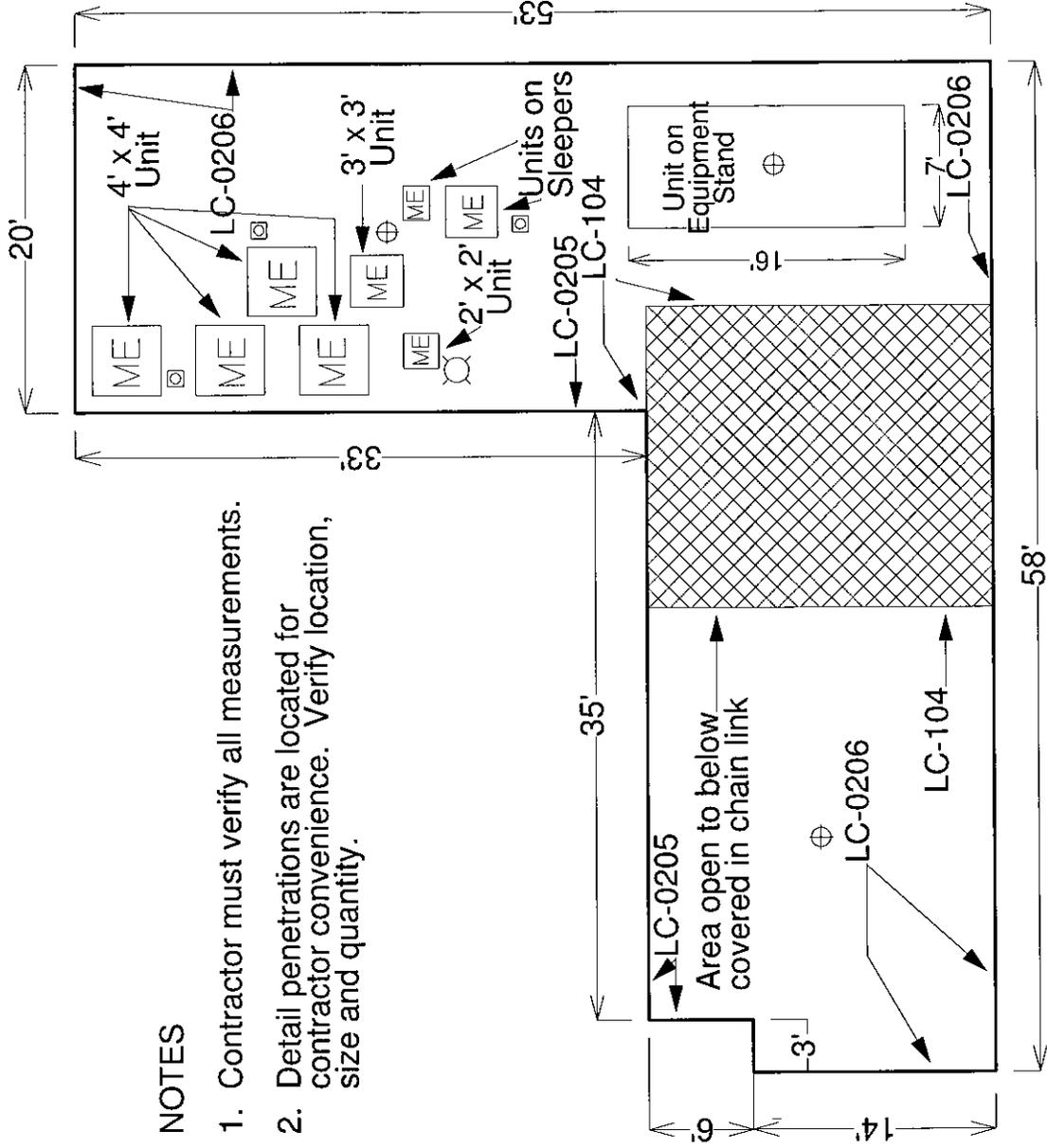
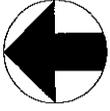
WEBB COUNTY JAIL
1001 WASHINGTON STREET, LAREDO, TX 78040

ROOF B PLAN

SHEET: A3

DATE: FEB 2011
SCALE NTS

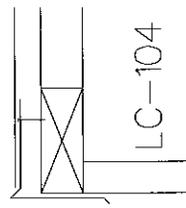
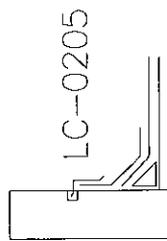
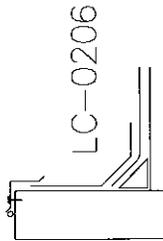
DRAWN BY: JDM

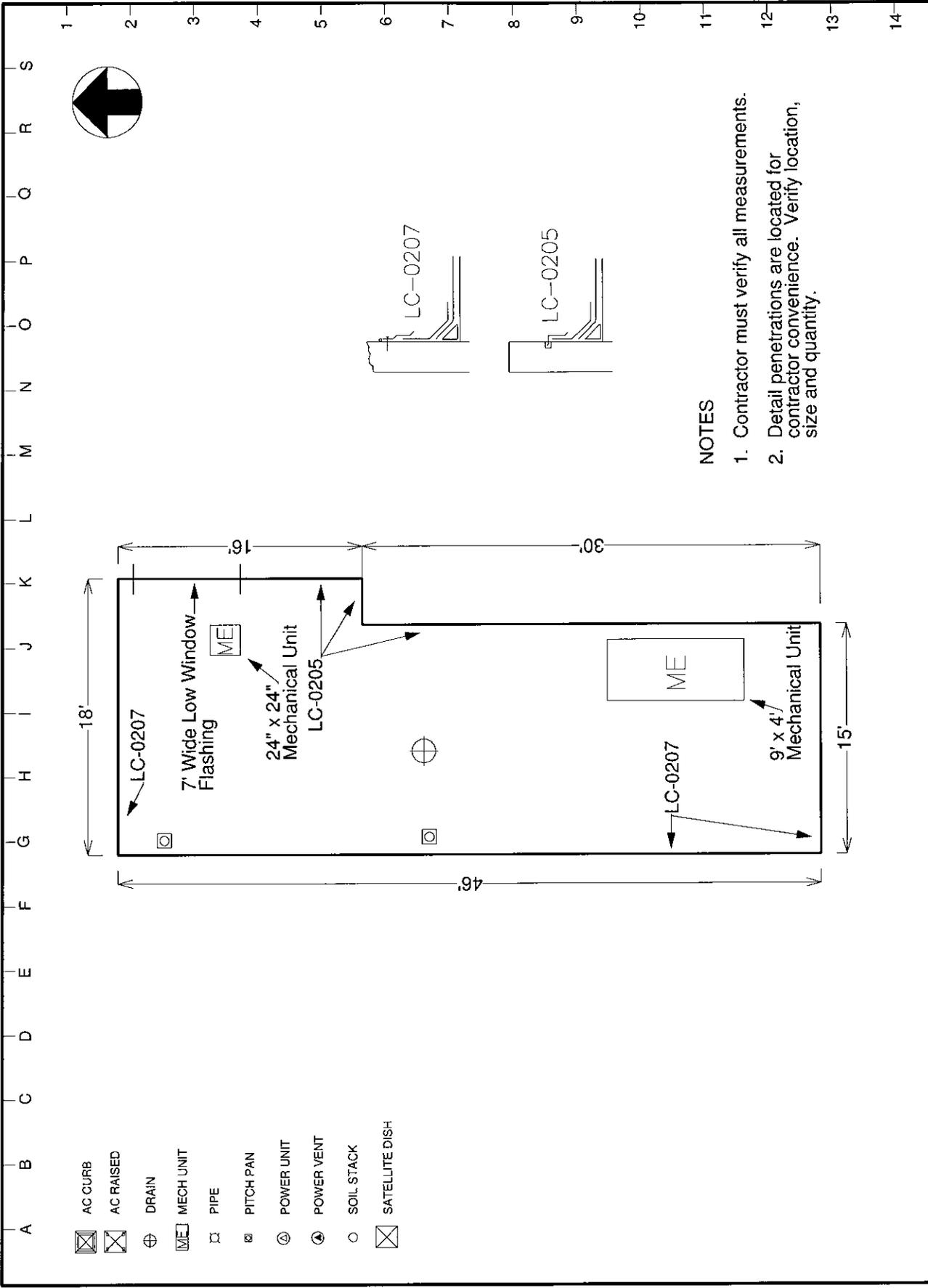


NOTES

1. Contractor must verify all measurements.
2. Detail penetrations are located for contractor convenience. Verify location, size and quantity.

- ⊕ DRAIN
- ME MECH UNIT
- ⊗ PIPE
- ⊠ PITCH PAN
- ⊕ POWER UNIT
- ⊕ POWER VENT
- SOIL STACK
- ⊠ SATELLITE DISH

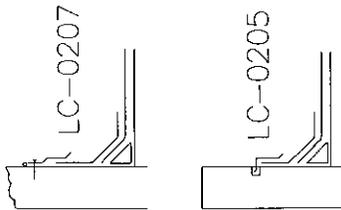




- AC CURB
- AC RAISED
- DRAIN
- MECH UNIT
- PIPE
- PITCH PAN
- POWER UNIT
- POWER VENT
- SOIL STACK
- SATELLITE DISH

NOTES

1. Contractor must verify all measurements.
2. Detail penetrations are located for contractor convenience. Verify location, size and quantity.



	WEBB COUNTY JAIL 1001 WASHINGTON STREET, LAREDO, TX 78040		ROOF D PLAN	DATE: FEB 2011 SCALE: NTS
			SHEET: A5	DRAWN BY: JDM

Detail Drawings

JOINT COVER 4"-6" WIDE
SET IN SPECIFIED MASTIC
AND SECURED USING TWO
FASTENERS THROUGH THE
GAP IN THE FASCIA FLANGE

FASTENERS 3" O.C.
STAGGERED
2 ROWS

FELT
ENVELOPE

1/2" MIN.
10'-0" MAX.

TWO-PLY STRIPPING

GRAVEL SURFACING

METAL SET IN SPECIFIED
MASTIC - PRIME FLANGE
BEFORE STRIPPING

MULTI-PLY ROOFING

SPECIFIED MASTIC

INSULATION

CONCRETE ROOF DECK

CONTINUOUS CLEAT
FASTENED 16" O.C.

ATTACH WOOD NAILER
TO WALL REFER TO
FACTORY MUTUAL DATA
SHEET 1-49

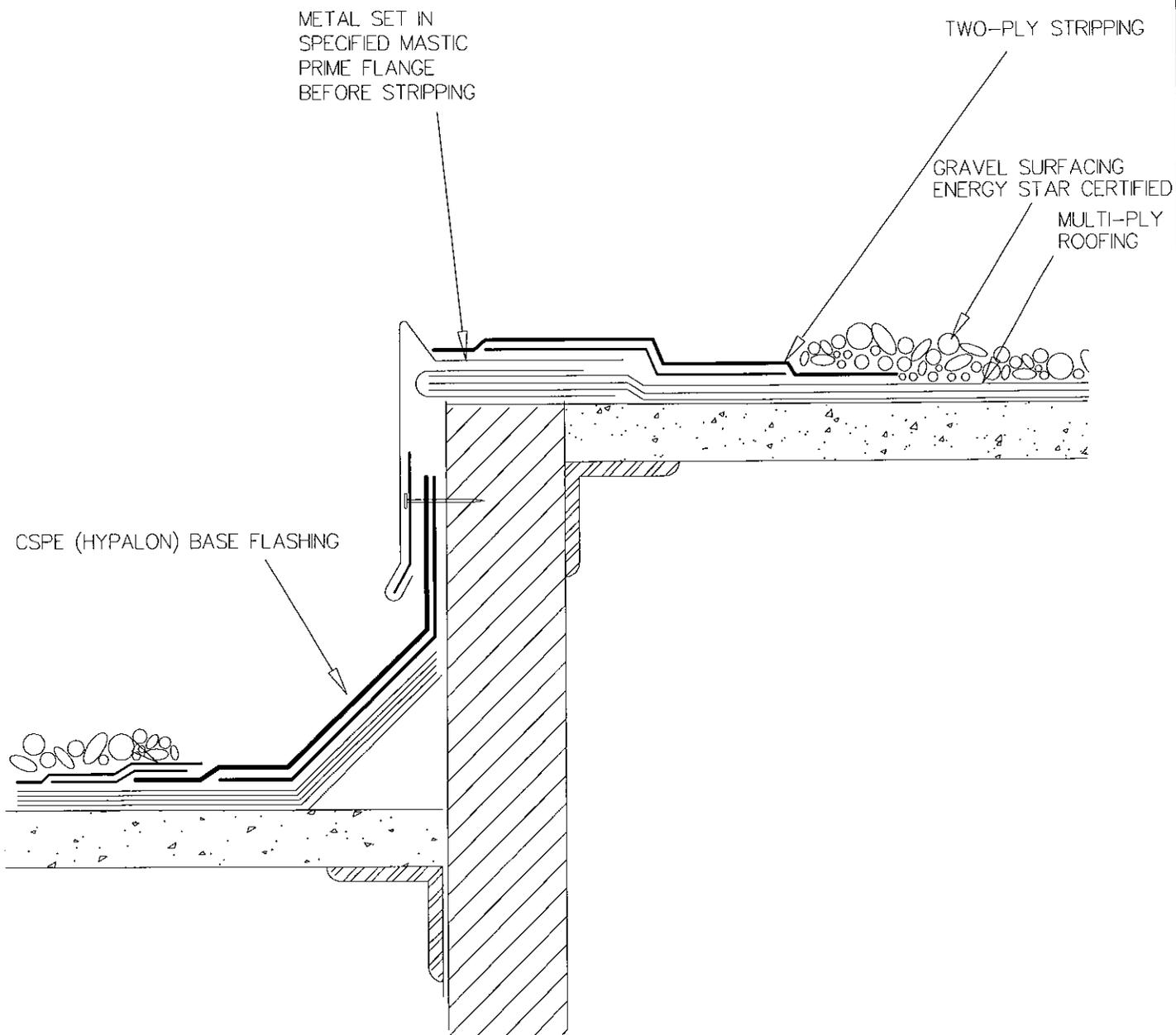
TREMCO[®]

SHEET TITLE:

LIGHT-METAL ROOF EDGE

SCALE: NTS

DRAWING No.:
LC-104

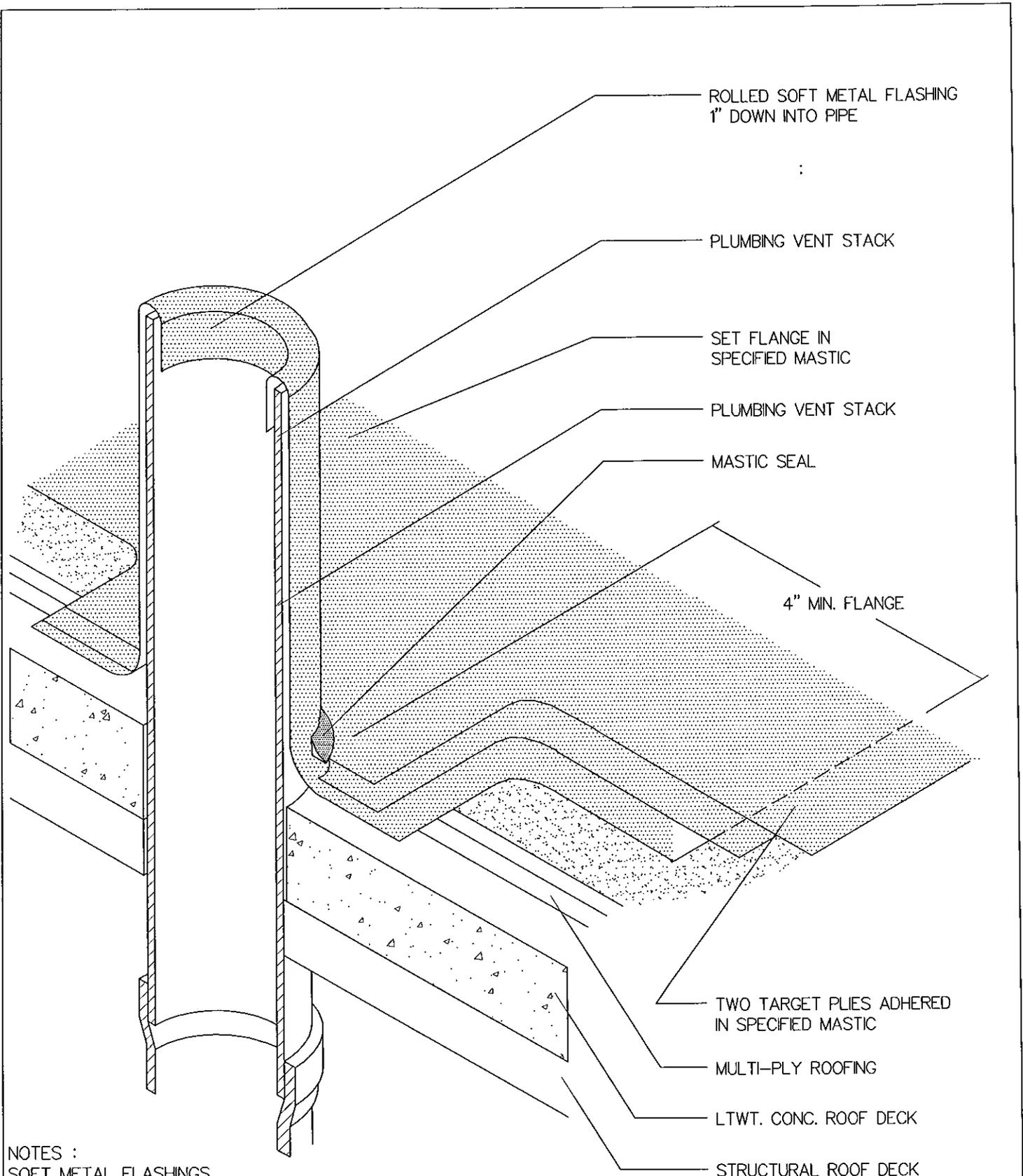


TREMCO®

SHEET TITLE:
INTERMEDIATE WALL DETAIL

SCALE: NTS

DRAWING No.:
LC-104A



NOTES :

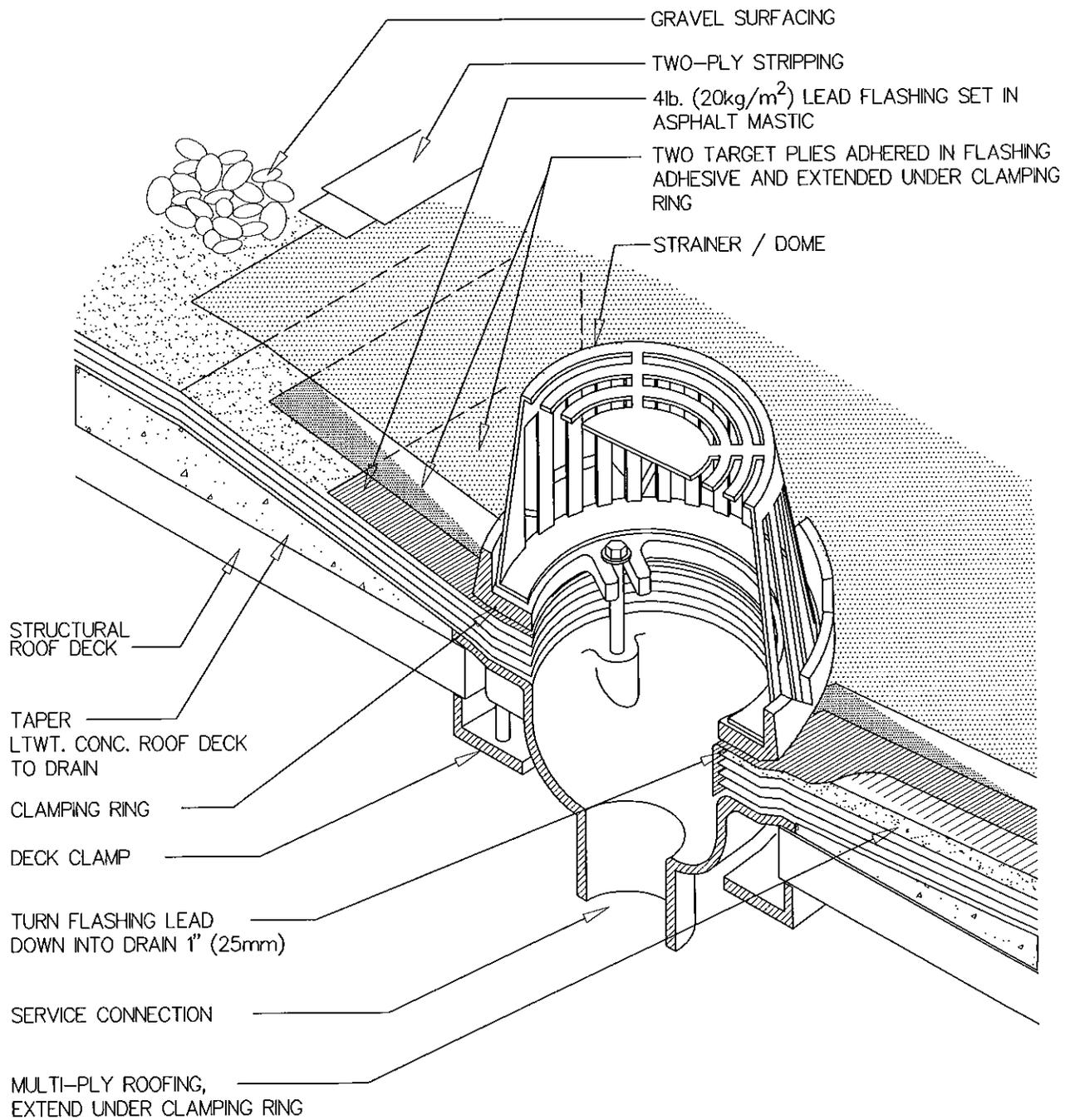
SOFT METAL FLASHINGS

1. SHEET LEAD MINIMUM 4 LB. PER SQ.FT.
2. SHEET COPPER MINIMUM 16 OZ. IF COPPER FLASHING IS INSTALLED OVER AN IRON OR STEEL PIPE, WRAP AN ASPHALT COATED ROOFING FELT TO PREVENT DIRECT CONTACT BETWEEN TWO DISSIMILAR METALS.



DETAIL NAME: PLUMBING VENT FLASHING

SCALE: NTS
 DRAWING No.: LC-0310



NOTES :

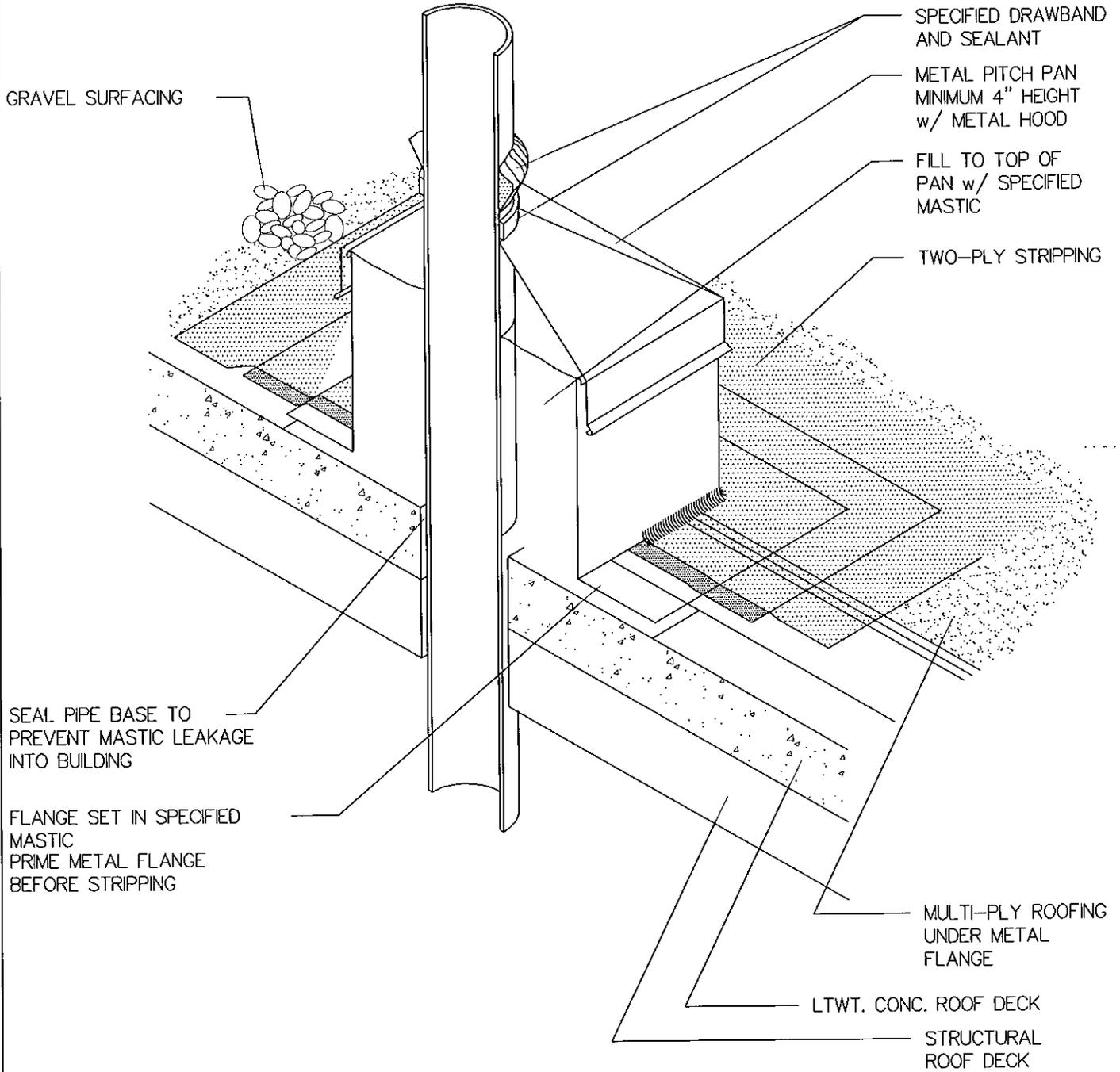
1. OPTIONAL 1"x4" (25mm x 100mm) GRAVEL STOP APPROXIMATELY 36" (914mm) SQUARE.

TREMCO[®]

DETAIL NAME: DRAIN ASSEMBLY DETAIL

SCALE: NTS

DRAWING No.: LC-0314

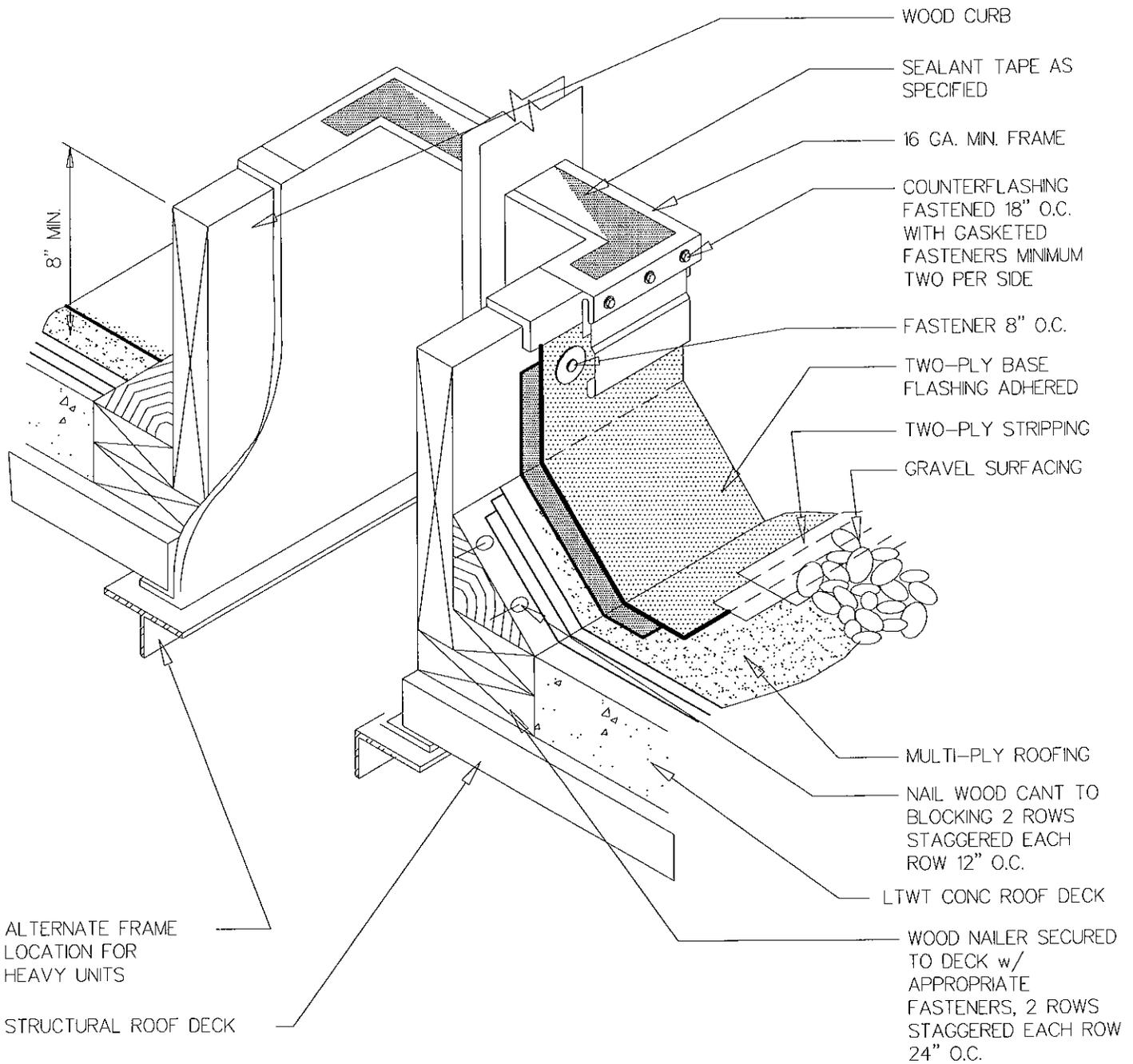


TREMCO®

DETAIL NAME: PITCH PAN

SCALE: NTS

DRAWING No.: LC-0315

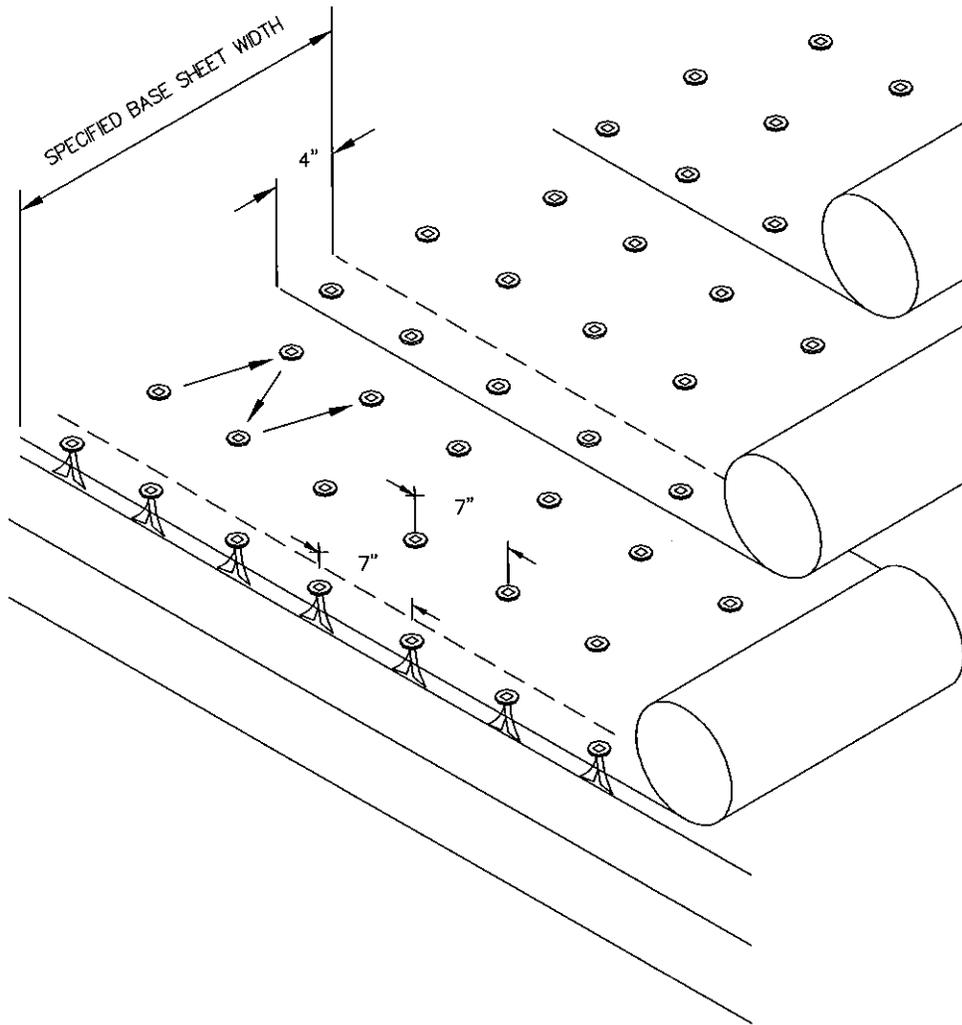


TREMCO[®]

SHEET TITLE:
CURB FOR AIR HANDLING UNIT

SCALE: NTS

DRAWING No:
LC-0330



NOTES :

1. SPECIFIED BASE SHEET IS MECHANICALLY ATTACHED TO THE SUBSTRATE WITH APPROVED FASTENERS AND DISCS SPACED 7 INCHES ON CENTER ALONG THE BASE PLY 4 INCH OVERLAP AND IN TWO ROWS 7 INCHES ON CENTER EQUALLY SPACED AND STAGGERED IN THE FIELD OF THE SHEET.
2. SPECIFIED BASE SHEET WIDTH CAN BE EITHER 3 FEET OR 1 METER.

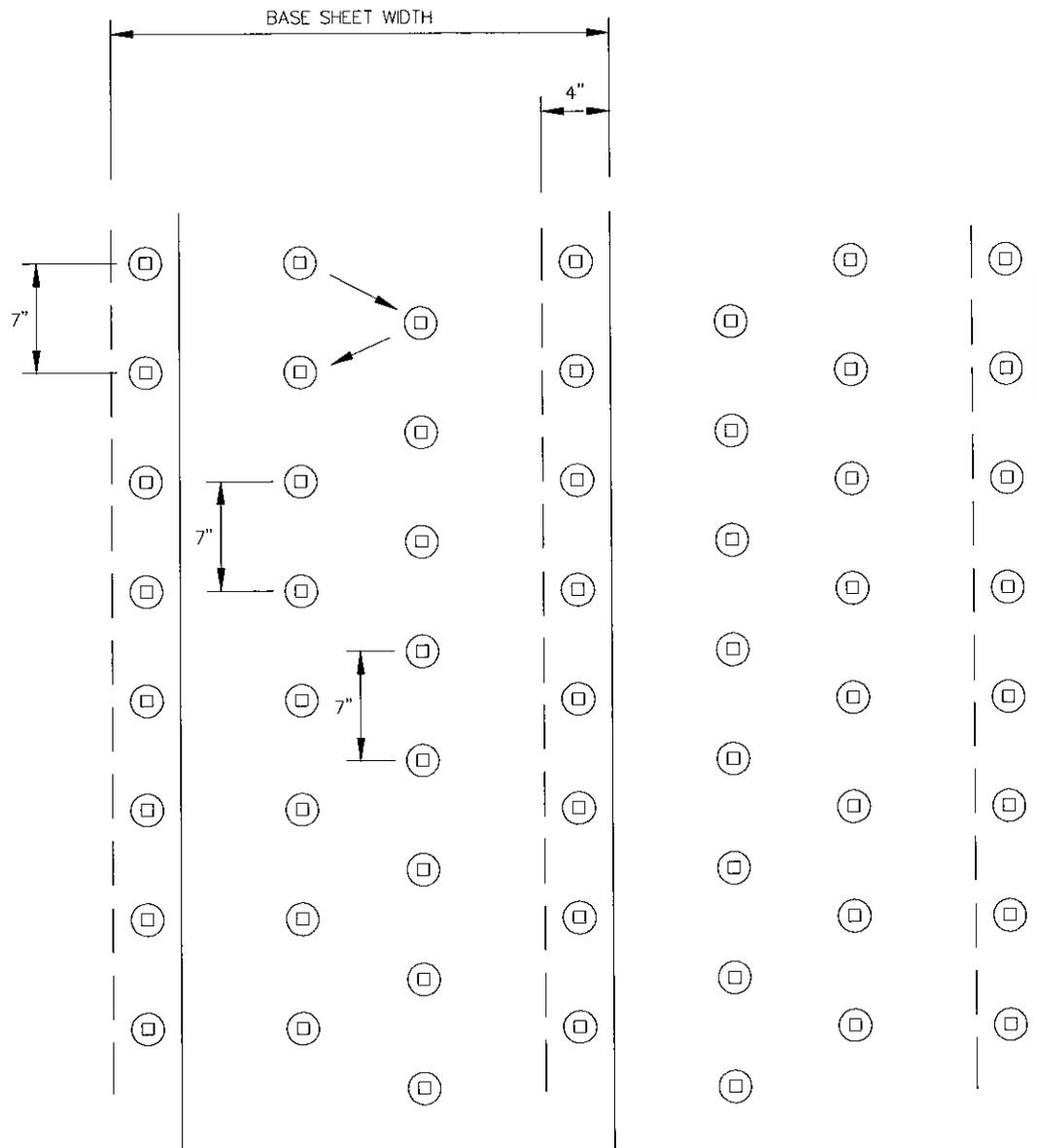
TREMCO®

DETAIL NAME: BASE SHEET ATTACHMENT

SCALE: N.T.S.

DRAWING No.:

L-340



NOTES :

1. SPECIFIED BASE SHEET IS MECHANICALLY ATTACHED TO THE SUBSTRATE WITH APPROVED FASTENERS AND DISCS SPACED 7 INCHES ON CENTER ALONG THE BASE PLY 4 INCH OVERLAP AND IN TWO ROWS 7 INCHES ON CENTER EQUALLY SPACED AND STAGGERED IN THE FIELD OF THE SHEET.
2. SPECIFIED BASE SHEET WIDTH CAN BE EITHER 3 FEET OR 1 METER.

TREMCO[®]

SHEET TITLE:
 BASE SHEET ATTACHMENT
 TO LIGHTWEIGHT CONCRETE

SCALE: N.T.S.

DRAWING No.: L-340-S

Product Data

BURmastic® Adhesive

Cold Applied Adhesive For Use With BURmastic Ply Sheets

Composition: BURmastic® Adhesive is an asbestos free fibrated cold process asphalt interply and surfacing adhesive.

Basic Uses: BURmastic Adhesive is designed for application as a cold process interply adhesive and protective flood coat adhesive with BURmastic Roofing Systems. BURmastic Adhesive can also be used to adhere aggregate to new hot applied built up or modified bitumen roof systems. BURmastic Adhesive is also used as a surfacing to adhere new aggregate in the restoration of existing multi-ply asphalt roof systems.

Limitations:

- Not intended to perform under ponding conditions. Positive drainage required.
- Not to be used as an insulation adhesive.
- Not to be exposed to solvents, oils, or other contaminants harmful to asphaltic materials.

- Not intended for use in adhering cold applied BUR systems directly to isocyanurate insulation; the use of an approved cover board over isocyanurate insulation is recommended.
- Not for use over expanded polystyrene (EPS) or EPS composite insulations installed in any configuration unless EPS is encapsulated within lightweight insulating cellular concrete.
- Not intended for use as smooth roof coating.
- Backnail felts on roofs with slopes 2:12 (2" per foot) or greater. Do not install on roofs with slopes greater than 4:12 (4" per foot).
- Not for use with ASTM D 2178 Type IV or Type VI ply sheets in BUR or MB roof systems.

Grade: Spray/brush/squeegee. Can be heated to facilitate application by using an oil-jacketed heat exchanger.

Equipment:

Spray:

Pump: Pneumatic or hydraulic pump with a minimum 2200 psi material output pressure. Output flow rate must be 3 GPM (gallons per minute) or greater for efficient production rates.

Spray tip/fluid hose: Reversible spray tip with 0.052" to 0.072" orifice and a 40° to 60° spray fan. Material fluid hose must be properly rated for the maximum working pressure of the pump being used.

Squeegee: Triangular notched to provide 40-50 mil thick uniform application.

Clean-Up: Mineral spirits.

Packaging: Available in 5 (19L) or 52 (196.8L) gallon containers. Also available in Portable Bulk Tanks.

Storage Life: One year in unopened containers.

General Application Data: Roof replacement usually involves more complexities than new construction roofing. Often encountered are situations such as rusted/deteriorated decks, rotted wood components, rooftop equipment which cannot be moved or shut down, and numerous other conditions.

The following application information is designed to serve as a general guide. Your local Tremco Representative will prepare detailed specifications based upon your roof's conditions.

Structural Decks: Must be properly designed and structurally sound.

Product Advantages	
Features	Benefits
Cold-applied	<ul style="list-style-type: none"> • No flames, hot kettles, smoke, or fire risks • Reduces equipment needs and start-up time • Adhesion not temperature dependent
Low odor/asbestos free	<ul style="list-style-type: none"> • Can be readily used in restrictive areas, including schools and hospitals
High performance adhesive	<ul style="list-style-type: none"> • Welds ply sheets, forming monolithic membrane
Multi-ply	<ul style="list-style-type: none"> • Redundant levels of protection and waterproofing
Not red label	<ul style="list-style-type: none"> • Shipping, storage, and handling of adhesive can be completed with few restrictions at lower costs
Versatile/flexible application	<ul style="list-style-type: none"> • Can be used in limited access areas
UL/FM approved	<ul style="list-style-type: none"> • Fire protection

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Drainage: Ponding conditions are unacceptable and will adversely affect performance of any roofing system. If positive drainage does not exist, water removal must be facilitated by lowering drains and/or installing additional drains, tapered insulation, or a Tremco approved cellular concrete slope system.

Insulation: Insulation must be dry and kept dry. No more insulation shall be installed than can be covered that day.

Acceptable Insulations:

Type	Minimum Thickness*	Facer
Wood Fiber	1/2" (13mm)	Asphalt coated
Fibrous glass	3/4" (19mm)	Paper
Gypsum board	1/4" (6mm)	Treated fiberglass

- Insulation board must be designated by the manufacturer as suitable for roofing application.

- Maximum size: 4' x 8' (1219mm x 2438mm)

* Minimum thickness for application of BURmastic Adhesive. Follow insulation manufacturer's instructions to obtain minimum thickness for spanning metal deck ribs.

Installation Procedures: According to particular project specifications, prepare surface to be covered:

- Replace areas of wet insulation, deteriorated deck, and wood components.
- Install roof insulation or base sheet.

Plan placement of BURmastic Roofing System to ensure that water flows over or along, but not against exposed edges.

Starting a low point of roof, embed approved ply sheets in a uniform continuous application of BURmastic Adhesive. Ply shall never touch ply.

Acceptable Ply Sheets and Interply application rate:

Felt	Gal/100 ft ²	L/m ²
BURmastic Composite Ply	2.5	1.0
BURmastic Glass Ply	3	1.2
Approved ASTM D 4601-91 Type II glass base sheet	3	1.2

SURFACING OPTIONS

Gravel: Apply BURmastic Adhesive over new roof surface at 5 gal/100 ft² (2.0 L/m²). For restoration of existing roofs, coverage rate of BURmastic Adhesive is 7 gal/100 ft² (2.8 L/m²) minimum. Immediately broadcast 400-500 lb/100 ft² (19.4-24.4 kg/m²) of new, clean aggregate into adhesive. Aggregate shall conform to ASTM D 1863-93.

Granule: Apply BURmastic FR over roof surface at 3.5 gal/100 ft² (1.4 L/m²). Immediately broadcast 60 lb/100 ft² (2.9 kg/m²) of No. 11 roofing granules into adhesive.

Smooth Surface: Consult with your local Tremco Representative for specific applications suitable for your geographic area.

Precautions: Users must read container labels and Material Safety Date Sheets for health and safety precautions prior to use.

Availability and Cost: Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216/292-5000.

Maintenance: Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Guarantee/Warranty: Tremco Inc. warrants BURmastic Adhesive to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any BURmastic

Physical Performance Characteristics

BURmastic® Adhesive

Property	Typical Value	Test Method
Asbestos content	None	EPA 600/R-93/116
Viscosity @ 77°F (25°C)	25,000-75,000 cP (25-75 Pa*s)	ASTM D 2196-86 (1991)
Density @ 77°F (25°C)	8.6 lbs/gal (1.02 kg/L)	ASTM D 6511-00
Nonvolatile content	72%	ASTM D 6511-00
Asphalt content, min.	50%	ASTM D 6511-00
Flash point	>100°F	ASTM D 93-97
Uniformity	Pass	ASTM D 6511-00
VOC	270 g/L	ASTM D 6511-00

Adhesive product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYER'S SOLE AND EXCLUSIVE REMEDY.

All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product.

This warranty shall be IN LIEU OF any other warranty, express or implied, including but not limited to, any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Technical Services: Your local Tremco Representative, working with the Technical Service Staff, can help analyze conditions and needs to develop recommendations for special applications. The services of the Tremco Research Center, which has earned a unique reputation in weather-proofing technology, complement and extend the services of the Tremco Technical Service staff.

Statement of Policy and Responsibility: Tremco takes responsibility for furnishing quality materials and for providing specifications and recommendations for their proper installation.

As neither Tremco itself nor its Representatives practice architecture or engineering, Tremco offers no opinion on, and expressly disclaims any responsibility for the soundness of any structure on which its products may be applied. If questions arise as to the soundness of a structure or its ability to support a planned installation properly, the Owner should obtain the opinion of competent structural engineers before proceeding. Tremco accepts no liability for any structural failure or for resultant damages, and no Tremco Representative is authorized to vary this disclaimer.



3735 Green Road
Beachwood, OH 44122
216-292-5000



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Toronto, ONT M4H 1G7
416-421-3300

R-751500A Rev. 11/07
Printed in USA

BURmastic® Modified Composite Ply

Coated Trilaminate Reinforced Ply Sheet for Built-Up and Modified Bitumen Roofing Systems Modified with SBS Rubber

COMPOSITION: BURmastic® Modified Composite Ply is a polyester/glass/polyester trilaminate reinforcement coated with waterproofing asphalt. BURmastic Modified Composite Ply has exceptional tensile and tear strength, and is modified with SBS rubber.

BASIC USES: BURmastic Modified Composite Ply is designed as a ply sheet for application in multi-ply configurations over insulation boards and/or base sheets in the BURmastic cold process roof system. BURmastic Modified Composite Ply can also be used as a hot or cold applied base sheet. BURmastic Modified Composite Ply exceeds the requirements of ASTM D 4601-98, Type II.

LIMITATIONS:

- BURmastic Modified Composite Ply is not intended to perform under ponding conditions. Positive drainage is required.
- BURmastic Modified Composite Ply should not be exposed to solvents, oils or other contaminants harmful to asphaltic materials.
- Do not hot apply BURmastic Modified Composite Ply in a multi-layer, shingle application.

PACKAGING: Available in 3'x72' (915mmx21.9m) rolls, 200 ft²/roll (18.6m²/roll). Sold by the pallet (20 rolls/pallet).

Product Advantages	
Features	Benefits
Multi-ply system	<ul style="list-style-type: none"> • Redundant waterproofing
Trilaminate reinforcement	<ul style="list-style-type: none"> • Superior strength and tear resistance for long term performance • Tough, durable protection
Continuous application	<ul style="list-style-type: none"> • Reduced labor costs • Reduced opportunity of application defects • Increases application simplicity
 Polymer modified	<ul style="list-style-type: none"> • Fire protection • Resists thermal shock and splitting

GENERAL APPLICATION DATA: Roof replacement usually involves more complexities than new construction roofing. Often encountered are situations such as rusted/deteriorated decks, rotted wood components, rooftop equipment which cannot be moved or shut down, and numerous other conditions.

The following application information is designed to serve as a general guide. Your local Tremco Representative can prepare detailed specifications based upon your roof's conditions.

STRUCTURAL DECKS: Deck must be properly designed and structurally sound.

DRAINAGE: Ponding conditions are unacceptable and will adversely affect performance of any roofing system. If positive drainage does not exist, water removal must be facilitated by lowering drains and/or installing additional drains, tapered insulation, or lightweight cellular concrete.

INSULATION: Insulation must be dry and kept dry. No more insulation shall be installed than can be covered in that day. The use of FAS-n-FREE® Adhesive for solvent free, fastener free insulation attachment is the preferred method of securement unless otherwise specified.

APPLICATION:

Installation Procedures: According to particular job specification, prepare surface to be covered:

- Replace areas of wet insulation, deteriorated deck and wood components.
- Install roof insulation, protection course, or base sheet.

Plan placement of BURmastic Modified Composite Ply to ensure that water will flow over or along, but not against, exposed ply edges.

Cold Process BUR: Starting at low point of roof, apply a uniform coating of BURmastic Adhesive at 2.5 gal/100 ft² (1L/m²).

Three ply membrane: Start and finish roof membrane along edges, terminations, and projections, use starting/finishing strips — 12, 24, and 36" (305mm, 610mm, and 915mm) wide plies.

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Install BURmastic Modified Composite Ply in shingle fashion. Overlap starter strips 26" (660mm) with first ply, then overlap each succeeding ply 24-2/3" (625mm).

Four ply membrane: Start and finish roof membrane along edges, terminations, and projections, use starting/finishing strips — 9, 18, 27 and 36" (229mm, 457mm, 685mm, and 915mm) wide plies.

Install BURmastic Modified Composite Ply in shingle fashion. Overlap starter strips 29" (750mm) with first ply, then overlap each succeeding ply 27-1/2" (698mm).

Interply adhesive: Embed each ply in uniform and continuous application of BURmastic Adhesive. Interply application rate: 2.5 gal/100 ft² (1L/m²). Ply shall never touch ply.

Base Sheet: Nail or embed a full width of BURmastic Modified Composite Ply in hot-melt adhesive or BURmastic Adhesive. Side laps: 4" (100mm). End laps: 6" (150mm) minimum and staggered. Lightly broom or roll plies to assure complete contact. Extend all plies to top edges of all cants and cut off evenly. Overlap previous work 24" (610mm). Hot-melt adhesive application rate: 25 lb/100 ft² (1.25kg/m²). BURmastic Adhesive application rate: 2.5 gal/100 ft² (1L/m²).

Surfacing Options: Smooth and aggregate surfacing options are available. Consult your local Tremco Representative for specific recommendations.

PRECAUTIONS: Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

AVAILABILITY AND COST: Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216/292-5000.

MAINTENANCE: Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

GUARANTEE/WARRANTY: Tremco Inc. warrants BURmastic Modified Composite Ply to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any BURmastic Modified Composite Ply product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYERS SOLE AND EXCLUSIVE REMEDY.

All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product.

Physical Performance Characteristics

BURmastic® Modified Composite Ply

Property	Typical Value	Test Method
Weight	31.0 lb/100 ft ² (1.5kg/m ²)	ASTM D 228-90a
Tensile strength	161 lb/in 137 lb/in	ASTM D 5147
Elongation	5.54% MD 6.56% XMD	ASTM D 5147
Tear strength	265 lbf 212 lbf	ASTM D 5147
Asphalt	10.0 lb/100 ft ² (485g/m ²)	ASTM D 228-90a

This warranty shall be IN LIEU OF any other warranty, express or implied, including but not limited to, any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

TECHNICAL SERVICES: Your local Tremco Representative, working with the Technical Service Staff, can help analyze conditions and needs to develop recommendations for special applications. The services of the Tremco Research Center, which has earned a unique reputation in weatherproofing technology, complement and extend the services of the Tremco Technical Service staff.

STATEMENT OF POLICY AND RESPONSIBILITY: Tremco takes responsibility for furnishing quality materials and for providing specifications and recommendations for their proper installation.

As neither Tremco itself nor its Representatives practice architecture or engineering, Tremco offers no opinion on, and expressly disclaims any responsibility for the soundness of any structure on which its products may be applied. If questions arise as to the soundness of a structure or its ability to support a planned installation properly, the Owner should obtain the opinion of competent structural engineers before proceeding. Tremco accepts no liability for any structural failure or for resultant damages, and no Tremco Representative is authorized to vary this disclaimer.

TREMCO

An RPM Company

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216-292-5000

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R00-562
Printed in USA

7/02

BURmesh®

Glass Membrane for Reinforcement or Repair of Roof Membranes and Flashings

Composition: BURmesh® is a non-shrinking, non-rotting, vinyl coated, woven glass mesh. The glass filaments are firmly bonded together to prevent strands from unraveling during application.

Basic Uses: BURmesh provides excellent tensile strength for reinforcing flashing seams, membrane laps, or other roof system details. BURmesh can conform to irregular surfaces because of its high degree of flexibility. The open weave design of BURmesh facilitates quick and uniform embedment in POLYroof® elastomer, Tremco asphalt or tar based mastics or asphalt emulsions.

Limitations: Not for application in hot applied asphalt adhesives.

Packaging: BURmesh — Color: Aqua Green
Length: 300 ft (91.4 m)
Width: 4", 6", 12", and 36" (101mm, 152mm, 305mm and 915mm)

Application: Apply a full coverage of the specified roofing mastic or adhesive. Set BURmesh into the freshly applied material and apply pressure with a dry trowel to assure complete adhesion. If specified, apply additional courses of BURmesh and mastic/adhesive. Apply a top course of mastic in a full coverage to completely cover the BURmesh.

When repairing blisters which have been cut open, or when sealing splits which extend through built-up roof membrane, use two plies of BURmesh embedded between applications of Tremco mastics.

Precautions: Use BURmesh Membrane Systems with adequate ventilation. Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

Availability and Cost: Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216/292-5000.

Maintenance: Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Guarantee/Warranty: Tremco, Inc. warrants BURmesh to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYER'S SOLE AND EXCLUSIVE REMEDY.

Product Advantages - BURmesh	
Features	Benefits
Versatile	<ul style="list-style-type: none">• Compatible with elastomers, mastics and emulsions
Excellent Strength	<ul style="list-style-type: none">• Repairs are secure
Open Weave	<ul style="list-style-type: none">• Positive embedment of mastic
Supple	<ul style="list-style-type: none">• Conforms to substrate
Bonded glass mesh	<ul style="list-style-type: none">• Non-rotting mesh remains intact
Green Color	<ul style="list-style-type: none">• Visual contrast to ensure adequate top coating
Non-absorbent	<ul style="list-style-type: none">• Does not wick water into system

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Physical Performance Characteristics		
BURmesh		
Weight	1.32 lb/100 ft ² (65 g/m ²)	ASTM D 146-90
Moisture based on net weight	None	ASTM D 146-90
Average tensile strength at 70°F, min.		
Warp threads	65 lbf/in (289N)	ASTM D 146-90
Filling threads	75 lbf/in (311N)	
Weight	18.7%	ASTM D 579-90
Type	PVC/Acrylic	
Color	Aqua green	

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Rev. 1/99

ELS™

A Heavily Fibrated Asphalt Mastic for General Roof Repair

Composition: ELS™ is an asphalt-based, heavily fibrated mastic blended with penetrating oils and plasticizing agents. ELS is asbestos free and complies with ASTM D 4586-00, Type II, Class I, the Standard Specification for Asphalt Roof Cement, Asbestos-Free.

Basic Uses: ELS is used for repairing and restoring flashings and asphalt built-up roofing defects including blisters, cracks, and punctures. It is also used for adhering new asphalt ply and modified bitumen membrane flashings. Added strength can be obtained by using reinforcing fabrics.

Limitations: Not intended for use as a patching material in wet areas.

Not for use on coal tar membranes.

Packaging: ELS is available in 5 gallon containers.

Grade: Trowel

Storage Life: One year

Application Data: Remove loose gravel, dirt, dust, rotted felts, and foreign matter.

Apply over clean, sound, dry base. Embed a reinforcing fabric or mesh, such as BURmesh, when using ELS to make roof repairs or to strip over the top of flashing laps.

Coverage: 12 sq. ft./gal in a single troweled layer at approximately 1/8" (3 mm) thickness, or 25 ft² per 5 gallon pail in a 3 course (mastic, reinforcement, mastic) application. Rates will vary depending on ambient temperature and actual surface conditions.

Precautions: Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

Availability and Cost: Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216/292-5000.

Maintenance: Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Guarantee/Warranty: Tremco Inc. warrants ELS to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any ELS product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. **THIS IS BUYERS SOLE AND EXCLUSIVE REMEDY.**

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Product Advantages	
Features	Benefits
Sag resistant	• Can be used on vertical repairs
Fibrated	• Increases durability and longevity
Plasticizing agents	• Readily troweled and formed
Asbestos free	• Reduces future asbestos liability
UL classified	• Fire protection

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Physical Performance Characteristics		
ELSTM		
Property	Typical Value	Test Method
Asbestos content	None	ASTM D 276-00
Viscosity @ 77° F (25° C)	480,000-1,000,000 cP (480-1,000 Pa*s)	ASTM D 2196-99
Density @ 77° F (25° C)	9.5 lbs/gal (1.15 kg/L)	ASTM D 1475-90
Non-volatile matter	85%	ASTM D 4586-93
Resistance to sag	1/8 in. (3 mm)	ASTM D 4586-93
Moisture vapor transmission rate	0.10-0.40 g/100 in ² /24 hrs @ 0.020 in. thickness	ASTM E 398-83
VOC	185 g/L	ASTM D 6511-00

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FAS-n-FREE® Adhesive

Solvent Free, Fastener Free, Insulation Attachment

COMPOSITION:

FAS-n-FREE® Adhesive is a one part solvent free, moisture curing, asphaltic urethane adhesive possessing high elastomeric and adhesive characteristics.

BASIC USES:

FAS-n-FREE Adhesive is a high performance adhesive used in roofing systems for bonding approved insulations to base sheets, structural roof decks, and other approved insulations.

LIMITATIONS:

- Do not apply when ambient or material temperatures are below 45°F (7°C).
- Do not use with expanded polystyrene, extruded polystyrene, phenolic, or cellular glass insulation.
- Do not adhere directly to wood, poured in place gypsum, or lightweight insulating concrete decks.
- Do not apply to structural roof deck without a primer.
- Do not use on acoustical metal deck panels unless

steps are taken to avoid the potential for minor drip-page of FAS-n-FREE Adhesive prior to its cure.

- Care must be taken to ensure insulation board quality is not lost due to improper storage or handling.

ACCEPTABLE INSULATIONS

Type	Minimum Thickness *
Wood Fiber	1" ** (25mm)
Fibrous Glass	3/4" (19mm)
Isocyanurate	1.2" (30.5mm)
Maximum Board Size	4' x 4' (1.2m x 1.2m)
Dens Deck	1/4" (6mm)

* Minimum board thickness for application of Fas-n-FREE Adhesive. Consult your local Tremco Representative for acceptable insulation manufacturers.
 ** 25/32" (20mm) and 1/2" (13mm) Tremco/Temple six side asphalt coated 4' x 8' (1.2m x 2.4m) wood fiber is an accepted insulation.
 *** Wood fiber insulation manufactured from factory laminated layers is not accepted for use.

APPROVALS:

UL and FM approved. Consult current directories for specific approvals.

PACKAGING:

Available in 5 gallon (18.9 liter) containers.

STORAGE LIFE:

Six months in unopened containers.

EQUIPMENT:

From the can, roofing ladle, or FAS-n-FREE Applicator. The applicator is required on metal decks.

TREMCO ADHESIVE APPLICATOR:

Variable applicator ports six inch on center (150mm). Consult FAS-n-FREE Adhesive applicator equipment sheet.

SURFACE PREPARATION:

Areas to receive FAS-n-FREE Adhesive must be clean, dry, and free of dust, dirt, oil, and other contaminants which may adversely affect adhesion. All substrates must be primed with Tremprime WB and allowed to dry thoroughly. *Obtain and read Spec Data for directions when applying Tremprime WB.

When applying multiple layers of insulation, the previous insulation course does not require priming.

RIBBON COVERAGE:

Apply to either substrate or insulation board 1/2" to 3/4" (13 to 19mm) diameter beads at required coverage rate. Set insulation board into adhesive immediately. Step board in. Do not allow adhesive to skin over.

Product Advantages	
Features	Benefits
Solvent Free	<ul style="list-style-type: none"> • Not flammable • Can be used in limited access areas • Low odor • No flames or hot kettles • Meets California VOC
Polymer modified	<ul style="list-style-type: none"> • Excellent adhesion • Capable of absorbing stresses
Non-penetrating attachment	<ul style="list-style-type: none"> • No fastener backout causing puncture to the roof • No fastener rusting and wind uplift loss. • Retention of substrate integrity minimizes installation noise • Lower application labor costs
Asbestos free	<ul style="list-style-type: none"> • Meets current regulations
FM Approved	<ul style="list-style-type: none"> • Fire/wind protection • Manufactured under a UL quality assurance inspection program



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Coverage Rates			
Adhesive Rate Gallons Per Square (9.3m ²)			
Substrate	Fiberboard	Isocyanurate	Fiberglass
Concrete (5.7L)	1-1/2 gal (5.7L)	1-1/2 gal (5.7L)	1-1/2 gal (5.7L)
Metal	1 gal (3.8L)	1 gal (3.8L)	2 gal (7.6L)
Base Sheet (5.7L)	1 gal (5.7L)	1 gal (3.8L)	1-1/2 gal (5.7L)
Insulation (Multi-Layer)	1 to 1-1/2 gal (3.8 to 5.7L)	1 to 1-1/2 gal (3.8 to 5.7L)	1 to 1-1/2 gal (3.8 to 5.7L)

Stagger offset joints as specified.

One gallon per square requires four 4 ft. x 1/2" (1.2m x 13mm) diameter beads per 4' x 4' (1.2m x 1.2m) board. One and one half gallon square requires six 4 ft. x 1/2" (1.2m x 13mm) diameter beads per 4' x 4' (1.2m x 1.2m) board. FAS-n-Free applicator is recommended to ensure uniform bead diameter.

On metal roof decks, FAS-n-FREE Adhesive must be applied to the top flange of the decking at the above listed coverage rates.

Increase coverage rate of Fas-N-Free Adhesive in perimeter and corner areas by applying additional ribbons to the substrate. Refer to Factory Mutual Loss Prevention Data Sheet 1-29.

MIXING:

Remove skin from top before using. No need to mix.

CLEAN UP:

Use Xylene to remove FAS-n-Free from equipment before cure.

PRECAUTIONS:

Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

AVAILABILITY AND COST:

Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216/292-5000.

MAINTENANCE:

Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

GUARANTEE/WARRANTY:

Tremco Inc. warrants FAS-n-FREE Adhesive to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, and FAS-n-FREE Adhesive product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYERS SOLE AND EXCLUSIVE REMEDY.

All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of

Physical/Performance Characteristics		
FAS-n-FREE® Insulation Adhesive		
Property	Typical Value	Test Method
Volatile Organic Content	<20 g/L	ASTM D 3960-98
Asbestos Content	None	EPA 600/R-93/116
Viscosity @ 77°F (25°C)	70,000 cP (70Pa-s)	ASTM D 2556-93a
Non-Volatile Content	98%	ASTM D 1644-88 (1993)
Density @ 77°F (25°C)	8.5 lb/gal. (1016g/L)	ASTM D 1875-95
Tensile Strength @ 77°F (25°C)	200 psi (1379kPa)	ASTM D 412-92
Elongation @ 77°F (25°C)	1200%	ASTM D 412-98a
Adhesion Strength in Shear @ 77°F (25°C)	80 psi (552kPa)	ASTM D 816-82 (1993)
Average T-Peel Strength @ 77°F (25°C)	15 lbf. (66N)	ASTM D 1876-95
Low Temp Flexibility	Pass at -60°F (-51°C)	ASTM D 816-82 (1993)

such claims in writing during this period will constitute a waiver of all claims with respect to such product.

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TECHNICAL SERVICES:

Your local Tremco Representative, working with the Technical Service Staff, can help analyze conditions and needs to develop recommendations for special applications. The services of the Tremco Research Center, which has earned a unique reputation in weatherproofing technology, complement and extend the services of the Tremco Technical Service Staff.

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Rev. 6/02

Hypalon® Elastomeric Sheeting

A Durable, Reinforced Flexible Flashing

Composition and Materials: Hypalon® Elastomeric Sheeting is compounded from Hypalon elastomer laminated to a high strength polyester reinforcing scrim.

Basic Use: Hypalon Elastomeric Sheeting is a reinforced flashing membrane used with Tremline Fascia and other types of built up or single ply roof flashing systems.

Limitations:

- Do not install over freshly applied mastics.
- Protect unused roll from sunlight and high temperatures
- Not intended for seaming with heat welding equipment. Contact your local Tremco Representative for recommendations where heat welding is required.
- Where chemicals, exhaust fumes, organic materials, or solvent exposure may be present, contact your local Tremco Representative for recommendations.

Packaging:

Hypalon Elastomeric Sheeting: Available in 152, 291, 483, 635, 965, and 1,536 mm X15.24m rolls (6", 11.5, 19, 25, 38", and 60.5" x 50' rolls).

Tremply Lap Adhesive: Available in 0.9L and 3.7L (1 quart and 1 gallon) containers.

Color: White one side; Black other side.

Storage Life: Up to 6 months with proper storage.

Application/BUR Roof Flashings:

1. Plan installation of Hypalon Elastomeric Sheeting so flashing extends 6" (150mm) from the base of the cant onto the roof system. All vertical overlaps must be a minimum 4" (100mm).
2. Remove embedded gravel, dirt, dust, rotted felt, and foreign matter. Priming is recommended.
3. Apply Sheeting Bond in a uniform and continuous application 1.6mm (1/16") thick to prepared area. Leave Sheeting Bond exposed 15 minutes minimum before membrane application. Adjust open time depending on ambient conditions.
4. Adhere Hypalon Elastomeric Sheeting in Sheeting Bond without wrinkles or voids. Using a steel hand roller, apply consistent pressure to achieve full adhesion of the sheet to the flashing substrate. Sheeting must fully conform to all angle changes, with no bridging or voids.
5. Strip in vertical overlap seams and base of flashing to roof system with BURmesh reinforcing fabric embedded in a base course of Sheeting Bond and covered with a top course of Polyroof LV or Polyroof SF.

Product Advantages	
Features	Benefits
Proprietary adhesive	• Exceptional seam strength
Adhesive Seaming	• No special equipment needed • Detailing readily completed even in confined areas
Compatible	• Used with a variety of Tremco and other systems including asphalt based materials
Grease and oil resistant	• Can be used at equipment flashings
Ozone and weather resistant	• Over 15 years of field service
Polyester reinforced	• Superior tensile and tear strength for high stress applications

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Guarantee/Warranty: Tremco Inc. warrants Improved TREMprime WB to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any Improved TREMprime WB product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYERS SOLE AND EXCLUSIVE REMEDY.

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Physical Performance Characteristics		
Improved TREMprime WB		
Property	Typical Value	Test Method
Asbestos content	None	EPA 600/R-93/116
Viscosity @ 77°F (25°C) (Stormer-Kreb)	50 KU	ASTM D 562-82 (1996)
Density @ 77°F (25°C)	8.5 lb/gal (1018 kg/m ³)	ASTM D 1475-98
Nonvolatile content	32%	ASTM D 2823-90
Flash Point	Not applicable	ASTM D 3278-96
pH	9.2	ASTM E 70-97
VOC	65 g/l	ASTM D 3960-98
Color	Brown/black	

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Polarcote FR

A Highly Reflective, Fire Retardant, Elastomeric Roof Coating Built-Up Roof Membranes

Composition: Polarcote FR is an intumescent, fire retardant, styrenated acrylic latex roof coating. Polarcote FR is highly reflective, elastomeric, and asbestos free.

Basic Uses: Polarcote FR is used as a final surface coat over smooth asphalt emulsions, flashings, and modified bitumen membranes. Polarcote FR will reflect solar radiation, lower surface temperatures, and reduce roof deterioration.

Polarcote FR will intumesce and form a hard char when exposed to flame. This charred surface significantly reduces the potential for spread of flame across the roof surface.

Polarcote FR is certified as a coating for low slope roofs under the ENERGY STAR Roof Products program of the U.S. Environmental Protection Agency.

Limitations: Surfaces must be clean and free of dirt, dust, and other contaminants. Not intended for use in ponded areas.

Do not apply unless temperatures are at least 7°C (45°F) and rising. Do not apply if temperatures are expected to drop below 7°C (45°F) within 48 hours of application.

Do not apply to wet surfaces. Do not apply unless the ambient and surface temperatures are at least 5°F above the dew point.

Do not apply when freezing temperatures are expected within 48 hours after application.

Do not apply if rain is expected within 12 hours. If temperatures drop below 15°C (60°F), do not apply if rain is expected within 24 hours.

Store containers at temperatures above 0°C (32°F). Do not allow containers to freeze. Store containers indoors in a heated area.

Do not apply over hot applied asphalt or coal tar pitch flood or glaze coats.

Packaging: Polarcote FR is available in 19 liter (5 gallon) containers, 208 liters (55 gallon) drums, and 200 liter (53 gallon) plastic lined drums.

Grade: Brush/roll/spray.

Color: White. Custom colors are available.

Storage Life: One year in unopened containers.

RECOMMENDED APPLICATION EQUIPMENT:

Airless Spray: Pneumatic, hydraulic, or electric pump with a minimum 2,000 psi material output pressure. Reversible spray tip with a 0.017" to 0.025" orifice and a 40° to 60° spray fan. Material spray lines must be properly rated for the maximum working pressure of the pump being used.

Roller: Medium nap polyester.

Brush: China bristle, nylon/polyester or nylon.

APPLICATION DATA:

Surface Preparation: All fresh applications of mastics and asphalt coatings require a minimum 30 day cure period prior to application of Polarcote FR.

Product Advantages	
Features	Benefits
Water based	<ul style="list-style-type: none"> Meets VOC regulations Easy cleanup
Fire retardant	<ul style="list-style-type: none"> Increases the fire resistance of existing or newly specified roofing systems
Highly reflective	<ul style="list-style-type: none"> Keeps roof surface temperature down reduces air conditioning loads slows roof aging process
 Rapid cure	<ul style="list-style-type: none"> Energy Star Certified Reduces wash-off potential
Elastomeric properties	<ul style="list-style-type: none"> Flexible film moves with substrate/increases coating life
Durable film	<ul style="list-style-type: none"> Long life with excellent protection for roofing substrates
UL Classified 	<ul style="list-style-type: none"> Fire Protection

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POLYroof® LV

A High Performance One-Part Roof Elastomer

Composition: POLYroof® LV is a single-component roof elastomer formulated from polymers, plasticizers, and selected additives. It is carefully blended to ensure elasticity, weather resistance, and durability with ease of application. POLYroof LV is asbestos free.

Basic Use: POLYroof LV is designed to weather-proof moving elements of a roof assembly such as edge details, metal lap joints, splits, cracks, and projections.

Polyroof LV is suitable for use over both asphalt and tar roof membrane surfaces.

Reinforcing membrane can be incorporated into application.

Limitations:

- Not intended for use as a wet patching material
- Priming required on non-bituminous surfaces.
- Not for use with PVC roof membranes
- Surfaces must be clean and dry.

Product Advantages	
Features	Benefits
Unique blend	• Repair both tar and asphalt roofs
Outstanding elongation and recovery	• Accommodates cyclical movement to reduce likelihood of roof splits/tears
One step application	• Labor and time saving
Excellent workability	• Trowel grade. Can be applied by in-house crews
Tenacious bond	• Repair remains adhered even in difficult applications
UL approved	• Fire protection

Packaging: POLYroof LV is available in 3 and 5 gallon (11.3 and 19 L) containers.

Grade: Trowel.

Storage Life: One year in unopened containers.

Application: Remove loose gravel, dirt, dust, rotted felt, and foreign matter. Apply over clean, sound, dry base. Prime bare metal with TREMprime QD or TREMprime WB.

Coverage: Approximately 0.3 m²/L (11 ft²/gal).

Rates will vary depending on ambient temperature and actual surface conditions.

Precautions: Use POLYroof LV with adequate ventilation. Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

Availability and Cost: Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216/292-5000.

Maintenance: Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Guarantee/Warranty: Tremco Inc. warrants POLYroof LV to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any POLYroof LV product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYERS SOLE AND EXCLUSIVE REMEDY.

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Physical Performance Characteristics		
POLYroof® LV		
Property	Typical Value	Test Method
Asbestos content	None	EPA/600/R-93/116
VOC*	300 g/L, max	ASTM D 3960-89
Viscosity @ 25°C (77°F)	600-2,000 Pa·s (600,000-2,000,000 cP)	ASTM D 2196-86
Density @ 25°C (77°F)	8.1 lb/gal (970 kg/m ³)	ASTM D 1475-85
Nonvolatile matter	70%	ASTM D 4586-86
Tensile strength @ 25°C (77°F)	207-690 kPa (30 - 100 psi) @ 100% elongation	ASTM D 412-87
Elongation @ 25°C (77°F)	1,000%	ASTM D 412-87
Elongation @ -34°C (-30°F)	100%	ASTM D 412-87
Recovery from 500% elongation	90% min.	ASTM D 412-87
Moisture vapor transmission rate	0.42 g/100 in ² /24 hrs	ASTM F-1249-90
Behavior @ 60°C (140°F) (Sag Resistance)	6 mm (max.) (1/4 in. max.)	ASTM D 4586-86
Flexibility @ -40°C (-40°F)	No cracking	ASTM D-3111-88
*VOC — Volatile Organic Compounds (less water, less exempt solvent)		

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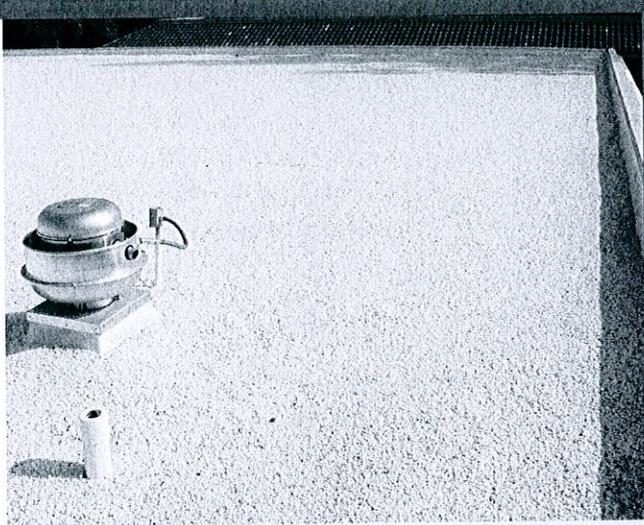
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Printed in USA

Rev. 2/97

Rock-It Adhesive

TREMCO

Cold Applied, Aggregate Surfacing Adhesive used in the Highly Reflective Rock-It Surfacing System



Rock-It Adhesive

Product Description:

A white, highly reflective, low volatile surfacing adhesive.

Basic Uses:

Designed for application as a cold process aggregate surfacing adhesive for most built-up and modified bitumen roof surfaces either in a new roofing application or as a restoration surfacing adhesive for most existing built-up and modified bitumen roof systems.

Rock-It Adhesive and Tremco/Lucas Fire White Marble Roofing Aggregate meets the requirements of California's Title 24 Energy Efficiency Standards.

Limitations:

- Not intended to perform under ponding conditions. Positive drainage is required.
- Not for use as an interply adhesive.
- Not intended for exposure to solvents or oils.
- Not intended for use as a smooth roof coating.
- Not for use over coal tar roof systems.
- Not for use on roofs with slopes greater than 2:12.

Packaging:

5 gallon pails (19 L)
50 gallon drums (189 L)
50 gallon drums (189 L) Lined

Grade:

Spray/Brush Squeegee

Clean-Up:

Toluene or Xylene

Storage Life:

Six months in unopened containers.

Equipment:

PRIOR TO APPLICATION:

Mixing:

Adhesive **MUST** be mixed thoroughly prior to being pumped.

For Barrels:

Use a low speed, long paddle blade mixer such as the 600 Series Drum Mixer from Hennes-Johnson or Garlock.

Product Advantages

Highly Reflective

- Keeps roof surface temperature down.
- Reduces air conditioning loads.
- Slows roof aging process.

Aggregate Surfacing

- Long life with excellent protection
- Superior fire resistance
- Protection from hail
- Resists traffic damage
- Adhesion not temperature dependent

Cold Applied

- Can be used in restrictive areas including schools and hospitals.

Low Odor

- Tested per CRRC Standards.

Title 24 Compliant

- SRI = 86

Can Qualify for LEED point

For 5 gallon pails:

Use a Jiffy mixer attached to a low speed, heavy duty power drill. Do NOT use a propeller type mixer.

SPRAYING THE ADHESIVE:

Heating:

Must be heated by using an oil-jacketed heat exchanger. The recommended output material temperature range is 95 to 115 F. (35 to 46 C)

Air Compressor:

Capacity - 175 to 250 CFM (0.08-0.12 L/s)
Working pressure - 80 to 90 PSI (550-620 kPa)

Output Pressure:

4,000 psi

Spray Tip:

0.052" to 0.072" (1.2-1.8 mm) reversible

Squeegee Application:

Triangular notched to provide 80 mil thick uniform application.

Rock-It Adhesive

Physical Performance Characteristics

PROPERTY	TYPICAL VALUE	TEST METHOD
Asbestos content	None	EPA 600/R-93/116
Viscosity @ 77°F (25°C)	8,000-14,000cP	ASTM D-2196-86 (1991)
Density @ 77°F (25°C)	4.5 lbs/gallon	ASTM D-6511-00
Nonvolatile content	54%	ASTM D-6511-00
Flash Point	100°F (43°C)	ASTM D-93-97
VOC	250 g/l	ASTM D-6511-00
Reflectance Adhesive & aggregate	71%	ASTM C-1549-02
Emittance Adhesive & aggregate	0.85	ASTM C-1371-98
SRI Value	86	ASTM E-1980

APPLICATION:

Surface Preparation:

General:

Remove dirt, dust, and other loose debris from the roof. Area must be clean, sound and dry.

New Hot Applied Roofs:

All fresh applications of hot applied roof systems require a one (1) day cure period prior to application of Rock-It Adhesive.

New Cold Applied Roofs:

All fresh applications of cold process roof systems require a minimum thirty (30) day cure period prior to application of Rock-It Adhesive.

Existing Roofs:

No wait required.

Surfacing:

New Roofs:

Apply Rock-It Adhesive over roof surface at a rate of five (5) gallons per square. Immediately broadcast a minimum of 200 lbs/square of new, clean white aggregate into adhesive.

Existing Roofs: (Restoration)

Apply Rock-It Adhesive over roof surface at a rate of Seven (7) gallons per square. Immediately broadcast a minimum of 200 lbs/square of new, clean white aggregate into adhesive.

Recommended Gravel Sources:

Any type of White Gravel can be adhered in Rock-It Adhesive. However, the CRRC listed Rock-It Roof Surfacing System utilizes the Tremco/Lucas Fire White Marble Roofing Aggregate.

	INITIAL	WEATHERED
	Solar Reflectanc	71%
Thermal Emittance	0.85	Pending
Rated Product ID		0612-0006
Licensed Manufacturer ID		0612
Classification		Production Line

Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary. Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.



Ask About
ENERGY STAR

Availability and Cost:

Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Tremco Roofing Division at 216/292-5000.

Guarantee/Warranty:

Tremco Incorporated warrants Rock-It Adhesive to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any Rock-It Adhesive that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYER'S SOLE AND EXCLUSIVE REMEDY. All claims concerning product defects must be made in writing within twelve months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product. This warranty shall be IN LIEU OF any other warranty, expressed or implied, including but not limited to, any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

TREMCO

3735 Green Road, Beachwood, Ohio 44122
1.800.562.2728 • www.tremcoroofing.com

An **RPM** Company

Sheeting Bond™

An Elastomeric Adhesive for Tremco Hypalon® Elastomeric Sheeting

Composition: Tremco Sheeting Bond is a proprietary one-part elastomer formulated as an adhesive to bond Tremco Hypalon Elastomeric Sheeting to various roof substrates. Sheeting Bond is asbestos free.

Basis Uses: Sheeting Bond is used to adhere Hypalon Elastomeric Sheeting to asphalt and coal-tar built-up roofing membranes.

Vertical substrates are acceptable.

Limitations:

- Not intended for use in ponded conditions.
- Should not be exposed to UV.
- Do not use as seam adhesive.

Packaging:

Available in 19L (5 gallon) containers.

Grade: Trowel

Storage Life: One year in unopened container

Colors: Black, White

Application Data: Remove embedded gravel, dirt, dust, rotted felts, and foreign matter. Apply over clean, sound, dry base. Priming is recommended.

Leave Sheeting Bond exposed 15 minutes minimum before covering. Adjust open time depending on ambient conditions.

Coverage: 0.5 m²/L (20 ft²/gal) using 3 mm (1/8 ") notched trowel. Rates will vary depending on ambient temperature and actual surface conditions.

Precautions: Use Sheeting Bond with adequate ventilation. Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

Availability and Cost: Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216/292-5000.

Maintenance: Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Product Advantages	
Features	Benefits
Tenacious bond	<ul style="list-style-type: none"> • Provides immediate adhesion to bituminous surfaces. Can be used on vertical surfaces. • Bonds to Hypalon, roofing membranes, concrete and most construction materials.
Proprietary elastomer	<ul style="list-style-type: none"> • Can be used on a variety of surfaces. • Outstanding elongation and recovery.
Compatible	<ul style="list-style-type: none"> • Can be used on both tar and asphalt roofs.
One-part	<ul style="list-style-type: none"> • Simple application. Labor saving.

Hypalon is a registered TRADEMARK E.I. DUPONT DE NEMOURS & COMPANY

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Guarantee/Warranty: Tremco Inc. warrants Sheeting Bond to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, we will provide, at no charge, Sheeting Bond in containers to replace any Sheeting Bond proven to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYERS SOLE AND EXCLUSIVE REMEDY.

All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product.

This warranty shall be IN LIEU OF any other warranty, express or implied, including but not limited to, any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Technical Services: Your local Tremco Representative, working with the Technical Service Staff, can help analyze conditions and needs to develop recommendations for special applications. The services of the Tremco Research Center, which has earned a unique reputation in weatherproofing technology, complement and extend the services of the Tremco Technical Service staff.

Statement of Policy and Responsibility: Tremco takes responsibility for furnishing quality materials and for providing specifications and recommendations for their proper installation.

As neither Tremco itself nor its Representatives practice architecture or engineering, Tremco offers no opinion on, and expressly disclaims any responsibility for the soundness of any structure on which its products may be applied. If questions arise as to the soundness of a structure or its ability to support a planned installation properly, the Owner should obtain the opinion of competent structural engineers before proceeding. Tremco accepts no liability for any structural failure or for resultant damages, and no Tremco Representative is authorized to vary this disclaimer.

Physical Performance Characteristics		
Sheeting Bond™		
Property	Typical Value	Test Method
Asbestos content	None	ASTM D 276-87
Viscosity @ 25°C (77°F)	400-1760 Pa·s (400,000-1,760,000 cP)	ASTM D 2196-86
Density @ 25°C (77°F)	1042 kg/m ³ , Black (8.7 lb/gal) 1534 kg/m ³ , White (12.8 lb/gal)	ASTM D 1475-85
Adhesion in peel, min	0.5 N/mm (3 lbf/in)	ASTM D 1876-72 (1983)
Lap shear adhesion, min	124 kPa (18 psi)	ASTM D 816-82
VOC, less water water less exempt solvent	250 g/L	ASTM D 3960-89

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Rev. 6/96

All surfaces such as concrete block, stucco, brick, or concrete should be sprayed with multi-directional spray passes to ensure positive coverage. Wall-Tite must be applied in a minimum of two separate coats to ensure uniform film build and proper cure rate. Allow first coat to cure touch-dry. Apply second coat perpendicular to first coat.

Coverage: Apply Wall-Tite at 1 gal/100 sq ft/coat (0.4 L/m²/coat) maximum. Coverage rate may vary depending on the porosity and texture of the surface being coated. Coverages are provided as guidelines. Variances in surface may require adjustment of recommended rates. Proper coverage entails a continuous film of coating with no material drippage.

Wall-Tite Coverage

Substrate	Gal/100ft ²	Ft ² /gal
Concrete	2.0 (0.8 L/m ²)	50 (1.2 m ² /L)
Concrete block, brick	2.5 (1.0 L/m ²)	40 (1.0 m ² /L)
Lightweight pumice block	3.0 (1.2 L/m ²)	33 (0.8 m ² /L)
Split face, stucco, or coarse textured surfaces	3.5 (1.4 L/m ²)	29 (0.7 m ² /L)

Apply in minimum of two coats. More than 2 coats may be needed to obtain minimum coverage without excessive 1 coat wet film build.

Wall-Tite applied at 1 gal/100ft² (0.4 L/m²), will theoretically yield 9.6 mils (0.24 mm) on a smooth, non-porous surface. Allow approximately 15-30% additional material to each category above for structures with grooved design or recessed mortar joints.

Equipment Clean-Up: Clean equipment with soap and water immediately after use.

Precautions: Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

Availability and Cost: Contact your local Tremco Roofing Representative for pricing and availability. For the name and number of your Representative, call the Roofing Division at 216/292-5000.

Maintenance: Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Guarantee/Warranty: Tremco Inc. warrants Wall-Tite to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, we will provide, at no charge, Wall-Tite in containers to replace any Wall-Tite proven to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYERS SOLE AND EXCLUSIVE REMEDY.

All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product.

This warranty shall be IN LIEU OF any other warranty, express or implied, including but not limited to, any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Physical Performance Characteristics

Wall-Tite		
Property	Typical Value	Test Method
Nonvolatile content	70%	ASTM D 1644-88
Viscosity @ 77°F (25°C)	7,000 cP (7 Pa·s)	ASTM D 2196-86
Density @ 77°F (25°C)	11.8 lb/gal (1414 kg/m ³)	ASTM D 1475-85
Tensile strength @ 77°F (25°C)	150 psi (1,034 kPa)	ASTM D 412-87
Elongation @ 77°F (25°C)	220%	ASTM D 412-87
Hardness (Shore A)	65	ASTM D 2240-86
Permeance, procedure A	2 perms	ASTM E 96-92
Dry time @ 77°F, 50% RH, 20 mils wet (25°C, 50% RH, 0.5 mm wet)	2 h	ASTM D 711-89
Low temperature flexibility	<-10°F (-23°C)	ASTM C 711-72

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Rev. 6/96

Wall-Tite Primer

A High Quality Exterior Latex Primer for the Wall-Tite Coating System

Composition: Wall-Tite Primer is a durable, high quality exterior latex primer. Wall-Tite Primer is formulated with acrylic polymer emulsions to provide a blister and stain resistant, fast drying, flexible base primer for latex paints. Wall-Tite Primer is asbestos and solvent free.

Basic Uses: Wall-Tite Primer was formulated for application to new or unpainted wood and as a primer coat to previously painted exterior surfaces prior to application of Wall-Tite coating. Wall-Tite Primer should be used where optimum performance over chalky aged coatings is desired.

Limitations: Not to be used over cold-storage tanks or buildings where a vapor barrier coating is required.

Not for use in interior applications in place of a thermal barrier.

Requires complete evaporation of water to cure. Cool temperatures and high humidity retard cure. Do not apply if weather conditions will not permit complete cure before rain, dew, or freezing temperatures.

Do not apply in late afternoon if high moisture condensation can appear during night.

Do not store below 32°F (0°). Keep from freezing.

Do not apply at temperatures below 50°F, or when there is a possibility of temperatures falling below 32°F (0°C) within a 24 hour period after application.

Wall-Tite Primer must always be top coated.

Grade: Spray/brush/roll.

Recommended spray equipment: Minimum 30:1 ratio airless with .027" to .031" spray tip.

Packaging: Available in 5 gallon containers.

Storage Life: One year.

Color: White.

APPLICATION DATA

Preparation: Prior to application, existing hair-line cracks should be filled by brushing or spraying Wall-Tite Primer into each crack in sufficient quantity to totally hide crack. All cracks larger than hairline should be considered as "moving" cracks and should be grouted, cleaned, and filled with TremSEAL GP or TremSEAL HP.

Unpainted: Bare concrete, brick, wood, stucco, or masonry must be structurally sound, clean, dry, fully cured, and free from dust, curing agents or from release agents, efflorescence, scale, and other foreign materials.

Previously Painted: All dust, dirt, efflorescence, and loosely-adhered old paint or coating must be removed.

Paints which show failure due to alkalies and moisture recognizable by flaking, peeling, and white deposits must be completely removed. Chalky surfaces must be washed using a Tri-Sodium Phosphate (TSP) or similar solution. Residue must be thoroughly removed with a clean, fresh water rinse before application. Spot tests for adhesion are recommended. If tests indicate poor or marginal adhesion, remove existing paint or coating by sandblasting or other mechanical means.

Product Advantages	
Features	Benefits
Excellent adhesion	<ul style="list-style-type: none"> • Long performance life of coatings. • Minimal surface preparation.
Elastomeric qualities	<ul style="list-style-type: none"> • Accommodates minor movement • Compliments Wall-Tite top coat.

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Application: Stir Wall-Tite Primer thoroughly before application.

May be applied by either conventional or airless spray equipment. Airless spray is the most effective method for obtaining uniform film build. Brush or roller may also be used for touch-up and edging work or for small areas which are not practical for spray application.

Wall-Tite Primer must not be left uncoated. Allow 1-2 hours at 70°F (21°C) before top coating with Wall-Tite Elastomeric coating.

Coverage: 300-400 ft²/gal (7.3-9.8m²/L) depending upon surface porosity.

Equipment Clean-Up: Clean equipment with soap and water immediately after use.

Precautions: Use Wall-Tite Primer with adequate ventilation. Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

Availability and Cost: Contact your local Tremco Representative for pricing and availability. For the name and number of your Representative, call 216/292-5000 - Roofing Division.

Maintenance: Your Tremco Representative can provide effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all sound procedures.

Guarantee/Warranty: Tremco Inc. warrants Wall-Tite Primer to be free of defects and to meet published physical properties when cured and tested according to ASTM and Tremco standards. Under this warranty, we will provide, at no charge, Wall-Tite Primer in containers to replace any Wall-Tite Primer proven to be defective when applied according to our written instructions, and in applications recommended by us as suitable for Wall-Tite Primer. THIS IS BUYER'S SOLE AND EXCLUSIVE REMEDY.

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Physical/Performance Characteristics:		
Wall-Tite Primer		
Property	Typical Value	Test Method
Solids by weight	59%	ASTM D 1644-88
Viscosity	77 KU	ASTM D 2196-86 (1991)
Density	11.7 lb/gal (1.40 kg/L)	ASTM D 1475-85
Asbestos	None	EPA/600/R-93/116
VOC	124 g/L	ASTM D 3960-89

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