



Township Archives

Township of Brick, NJ

401 Chambers Bridge Rd, Brick, NJ 08723

This File Contains Personal Identifiable Information of Private Citizen(s).

Certain information contained in this file is *Exempt from Release* under the Open Public Records Act (OPRA) (Public Law 2001, CHAPTER 404 (N.J.S.A. 47:1A-1 et seq.)) and Executive Orders issued by the Governor of New Jersey. The following information *MUST* be redacted prior to release:

- Social Security Numbers
- Drivers' License Numbers
- Unlisted Phone Numbers
- Credit Card Numbers
- Bank Account Numbers and Balances

For further information, consult with the Township Clerk, Township Archivist or Township Attorney prior to release.

A handwritten signature in black ink, appearing to read "Bryan J. Dickerson".

Bryan J. Dickerson, CA, CMR
Township Archivist

Issued: 8 January 2020



CONSTRUCTION PERMIT APPLICATION

CD1-002284

Applicant Completes: Sections I, II, III (optional), IV, VI, and VII

I. IDENTIFICATION

1. Proposed Work Site at: Herbertsville ES - 2282 Lanes Mill Rd. brick, NJ. 08724

2. Name of Owner in Fee: Brick Twp. SD
 Tel. (732) 785-3000 e-mail _____

Address 101 Hendrickson Ave. Brick NJ. 08724

3. Ownership in Fee: Public ☒ Private _____
street municipality zip code

4. Principal Contractor: Weatherproofing Technologies Tel. (216) 551-8432
 Address 3735 Green Rd. e-mail _____
Beachwood, OH. 44122

License No. OR, if new home, Builder Reg. No. _____ Exp. Date _____

Home Improvement Contractor Registration No. or Exemption Reason _____

Federal Emp. ID No. 340930570 FAX: _____

5. Architect or Engineer N/A Contact _____
 Address _____ e-mail _____
 Tel. _____ FAX: _____

6. Responsible Person in Charge once Work has Begun Joe King
 Tel. (216) 551-8432 FAX: _____

V. FEE SUMMARY (for office use only)

		Update	Update
1. Building	\$ <u>0</u>	☒	
2. Electrical			
3. Plumbing			
4. Fire Protection			
5. Elevator Devices			
6. Subtotal			
7. Less 20% for State Plan Review	\$		
8. Subtotal	\$		
9. State Permit Surcharge Fee			
10. Subtotal	\$		
11. Cert. of Occupancy			
12. Other			
13. TOTAL	\$ <u>0</u>		

VI. BUILDING/SITE CHARACTERISTICS

1. Number of Stories _____

2. Height of Structure _____ ft.

3. Area — Largest Floor _____ sq. ft.

4. New Building Area _____ sq. ft.

5. Volume of New Structure _____ cu. ft.

6. Max. Live Load _____

7. Max. Occupancy Load _____

8. If Industrialized Building, State Approved _____ HUD _____

9. Total Land Area Disturbed _____ sq. ft.

10. Flood Hazard Zone _____

11. Base Flood Elevation _____ ft.

12. Wetlands yes _____ no _____

IIa. PROPOSED WORK

- ☐ Minor Work ☐ New Building ☐ Addition ☐ Demolition
- ☐ Repair ☐ Alteration ☐ Renovation ☐ Reconstruction
- ☐ Asbestos Abat. -Subch. 8 ☐ Lead Hazard Abatement ☐ Radon Remediation ☐ Annual Permit

IIb. SUBCODES

(Check all that apply)

- ☒ Building
- ☐ Electrical
- ☐ Plumbing
- ☐ Fire Protection
- ☐ Elevator

FOR OFFICE USE ONLY (Optional)

Est. Cost	Plans Rec'd by	Date Rec'd	Rejection Date	Approval Date	Re-viewer	Resubmission Dates Approval	Rejection	Re-viewer
214,500				06/21/21	WEN			

TOTAL COST \$214,500

VII. DESCRIPTION OF BUILDING USE

A. RESIDENTIAL (primary use)

1. State Specific Use: _____
2. Use Group, Proposed: Select Group _____
3. Change in Use Group, Indicate Present: Select Group _____
4. No. of dwelling units: Total Units Income-restricted
- Gained, Sale _____
- Gained, Rental _____
- Lost, Sale _____
- Lost, Rental _____

B. NON-RESIDENTIAL (primary use)

1. State Specific Use: _____
2. Use Group, Proposed: Select Group _____
3. Change in Use Group, Indicate Present: Select Group _____

C. MIXED USE -List secondary use(s):

- D. Construct. Classification: Present _____
- Proposed _____

III. PLAN REVIEW (optional)

- DO YOU WANT:
1. ☐ Partial Releases
2. ☐ Prototype Processing

IV. DOES OR WILL YOUR BUILDING CONTAIN ANY OF THE FOLLOWING?

1. ☐ Elevators/Escalators/Lifts/ Dumbwaiters/Moving Walks
2. ☐ High Pressure Boilers
3. ☐ Pressure Vessels
4. ☐ Refrigeration Systems
5. ☐ Cross-Connections/Backflow Preventers
6. ☐ Hazardous Uses/Places of Assembly
7. ☐ Sprinklers/Standpipes
8. ☐ Smoke Control Systems in Open Wells
9. ☐ Underground Storage Tanks
10. ☐ Swimming Pools, Spas and Hot Tubs
11. ☐ LPG Tanks
12. ☐ Fire Alarm

CERTIFICATION IN LIEU OF OATH

I. OWNER SECTION (to be completed if the applicant is the owner in fee)

I hereby certify that I am the owner in fee of the property listed on Page 1.

Mark the following applicable boxes:

- A. ☒ I further certify that a new home (private residence) will be constructed on this property for my own use and occupancy. This dwelling is to be occupied by myself and is not to be used for any purpose other than single family residential use. I attest that all construction, plumbing, or electrical work will be done, in whole or in part, by me or by subcontractors under my supervision, in accordance with all applicable laws; and, I further acknowledge that said new home is not covered under the New Home Warranty and Builders Registration Act (N.J.S.A. 46:3B-1 et seq.) and that such fact shall be disclosed to any person purchasing this property within ten years of the date of issuance of a certificate of occupancy.

I UNDERSTAND THAT IN MARKING BOX A, I ACKNOWLEDGE THAT I AM ASSUMING RESPONSIBILITY FOR THE WORK DONE ON SAID PROPERTY, THE CONDITION OF THE PROPERTY PRIOR TO, DURING, AND AFTER ANY WORK PERFORMED, AND FOR THE PERFORMANCE OF THE SUBCONTRACTORS I HIRE, EMPLOY, OR OTHERWISE CONTRACT OR WITH WHOM I MAKE AGREEMENTS TO PERFORM WORK. I AM VOLUNTARILY AND KNOWINGLY ASSUMING THIS RESPONSIBILITY.

- B. ☒ I further certify the following as required by the New Jersey Uniform Construction Code, N.J.A.C. 5:23-2.15(f)1.ix:

I personally prepared the plans submitted for: 1) the new home referred to in A.; or, 2) an addition, alteration, renovation, or repair to an existing single family residence owned and occupied by myself and located on the property listed on Page 1; or, 3) a new structure that will be physically separate from, but that will be deemed part of, an existing single family residence that is owned and occupied by myself and located on the property listed on Page 1.

- C. ☒ I further certify that I will perform or supervise the following work:

C.1. ☒ Building C.2. ☐ Fire Protection

I further certify that I will perform the following work:

C.3. ☐ Electrical C.4. ☐ Plumbing

- D. ☒ I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals, including such certification as the construction official may require, have been given or will be given prior to permit issuance.

I understand that if any of the above statements are willfully false, I am subject to punishment.

Signature

Joe King

Date

6/10/2021

II. AGENT SECTION (to be completed if the applicant is not the owner in fee)

I hereby certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(d): the proposed work is authorized by the owner in fee; and I have been authorized by the owner in fee to make this application as his agent.

I further certify the following as required by the Uniform Construction Code, N.J.A.C. 5:23-2.15(a)5: All required State, county, and local prior approvals, including such certification as the construction official may require, have been given or will be given prior to permit issuance.

I agree to advise all contractors on this project that they are required to be registered with the New Jersey Division of Taxation and to comply with all New Jersey tax laws.

I understand that if any of the above statements are willfully false, I am subject to punishment.

☒ Check if contractor.

Agent Name Weatherproofing Technologies

Address 3735 Green Rd.

Beachwood, OH. 44122

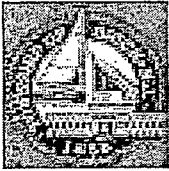
Telephone (216) 551-8432

Signature

Joe King

III. ☐ LEAD HAZARD ABATEMENT: Include Homeowner or Building Owner Affidavit as per N.J.A.C. 5:23-2.15(b)4.

IV. ☐ HOME ELEVATION: Include Home Elevation Contractor Certification as per N.J.S.A. 52:27D-123.16.



Brick Township
401 Chambersbridge Rd
Brick, NJ 08723

Date Issued 01/26/2022
Control Number C-21-002284
Permit Number 21-1631
Permit Issue Date 06/21/2021
Certificate Number 21-1631

Certificate
Construction Code Division
(Certificate of Approval)

Identification

Work Site Location: 2282 LANES MILL RD. Brick Township, NJ Block: 1421 Lot: 14 Qual: _____
Owner in Fee: BRICK TOWNSHIP BOARD OF EDUCATION
Owner Address: 101 HENDRICKSON AVE. BRICK NJ 08724
Telephone: (732) 785-3000
Contractor WEATHER PROOFING TECHNOLOGIES
Address 3735 GREEN RD BEACHWOOD OH 44122
Telephone: (216) 551-8432 Fax: _____ Federal Emp. Number: _____
License Number or Builders Registration Number: _____
Home Warranty Number: _____ Type of Warranty Plan: ☐ State ☐ Private
Use Group: E Construction Classification: _____
Maximum Live Load: 0 Maximum Occupancy Load: 0
Description of Work/Use: ROOFING

Certificate Comments:

☐ **Certificate of Occupancy**

This serves notice that said building or structure has been constructed in accordance with the New Jersey Uniform Construction Code and is approved for occupancy.

☒ **Certificate of Approval**

This serves notice that the work completed has been constructed or installed in accordance with the New Jersey Uniform Construction Code and is approved. If the permit was issued for minor work, this certificate was based upon what was visible at the time of inspection.

☐ **Certificate of Continued Occupancy**

This serves notice that based on a general inspection of the visible parts of the building there are no imminent hazards and the building is approved for continued occupancy.

☐ **Temporary Certificate of Compliance**

The following conditions must be met no later than or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:
Conditions to be met:

☐ **Certificate of Clearance - Lead Abatement 5:17**

This serves notice that based on written certification, lead abatement was performed as per NJAC5:17 to the following extent.

- ☐ Total removal of lead-based paint hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Clearance - Asbestos Abatement**

This serves notice that based on written certification, asbestos abatement was performed to the following extent.

- ☐ Total removal of asbestos hazards in scope of work
☐ Partial or limited time period (years); see file

☐ **Certificate of Compliance**

This serves notice that said potentially hazardous equipment has been installed and/or maintained in accordance with the New Jersey Uniform Construction Code and is approved for use until

☐ **Temporary Certificate of Occupancy**

The following conditions must be met no later than:
or the owner will be subject to fine or order to vacate:
This certificate has an expiration date of:
Conditions to be met:

David Newman Jr.

Construction Official

Date Printed: 01/26/2022

U.C.C. F260 (rev. 08/05)

Fee: \$0.00

Check Number: _____

Collected By: _____

Page 1



Date Issued
Permit #

Block 1421 Lot 14 Qualification Code _____
Work Site Location Herbertsville ES-2282 Lanes Mill Rd. Brick, NJ. 08724

Federal Emp. ID No. **340930570** FAX: _____

D. TECHNICAL SITE DATA

Replace various roof sections on school.

COMMERCIAL

☐ New Building
☐ Addition
☐ Rehabilitation
☒ Roofing
☐ Siding
☐ Fence _____ Height (exceeds 6')
☐ Sign _____ Sq. Ft.
☐ Pool
☐ Retaining Wall _____ Sq. Ft.
☐ Asbestos Abatement Subchapter 8
☐ Lead Haz. Abatement NJAC 5:17
☐ Radon Remediation
☐ Other _____
☐ Demolition

[illegible]**JOB SUMMARY (Office Use Only)**

PLAN REVIEW		Date	Initial	INSPECTIONS	Dates (Month/Day)			
				Type:	Failure	Failure	Approval	Initial
☐	No Plans Required							
☒	All	06/21/21	WCK	Footing				
☐	Footings/Foundations			Footing Bonding				
☐	Structural/Framework			Foundation				
☐	Exterior			Slab				
☐	Interior			Frame				
				Truss Sys./Bracing				
Joint Plan Review Required:				Barrier-Free				
☐	Elec.			Insulation				
☐	Plumb.							
☐	Fire							
☐	Elevator							
SUBCODE APPROVAL for PERMIT				Finishes -Base Layer				
Date:	06/21/21			Finishes -Final				
Approved by:	WCK			Energy				
SUBCODE APPROVAL for CERTIFICATE				Mechanical				
☐	CO			TCO				
☐	CCO			Other				
☒	CA			Final				
Date:	01/20/22							
Approved by:	WCK			Barrier-Free				

B. BUILDING CHARACTERISTICS

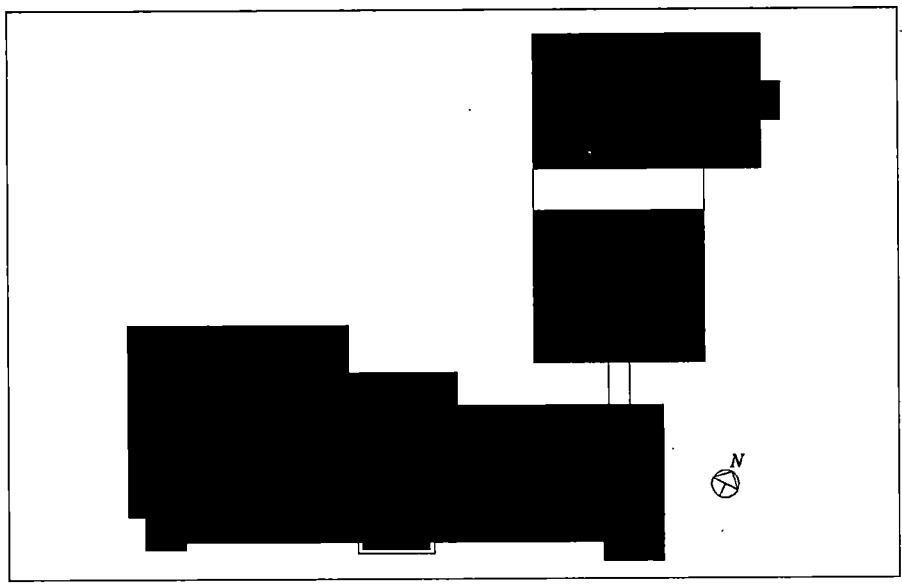
Max. Occupancy Load I.C.C. E110 (rev. 11/09)

Applicant: When submitting this form to your Local Construction Code Enforcement Office, please provide one original plus three photocopies.

Brick Township Board of Education

Herbertsville Elementary School

2282 Lanes Mill Road
Brick, NJ 08724
12 roof(s) - 29,042 sq. ft.

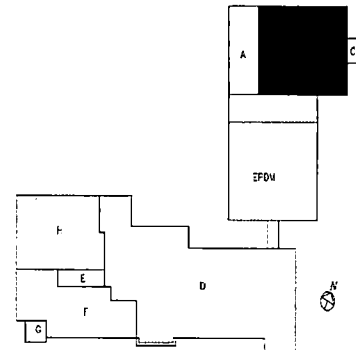


■	Replace Immediately
■	Replace Eventually
■	Restore Immediately
■	Restore Eventually
■	Repairs Required, Major
■	Repairs Required, Minor
■	Good Condition
■	Fair Condition
■	Other
□	No Condition Recorded

Tremco Incorporated

GENERAL INFORMATION

Roof Name Roof B
 Service Activity Type Final Inspection
 Service Activity Date Oct 6 2021
 Job Number 195801
 Information Source Specification
 Year of Installation 2021
 Warranty Issued By: Tremco
 Expiration Date: Nov 20, 2027
 Type: 20 Year QA Plus
 Installing Contractor JDS GENERAL CONTRACTING, INC.
 Roof Leaks No
 Leak Sensitivity High
 Roof Size 4,104 sq. ft.
 # of Stories 1
 Is Ladder Required? No
 Overall Roof Condition Good Condition
 Technician Michael Jones

**ROOF CONSTRUCTION**

Surfacing Smooth
 Roof Type/System Single Ply, TPA Fleece Back
 Ply Info 1 ply TPA, Hot Adhered
 Insulation 1/2" Dens-Deck, Hot Adhered
 Retrofit There is 1 roof under the top roof. 1 still has gravel.
 Deck Type Metal

DRAINAGE AND SLOPE

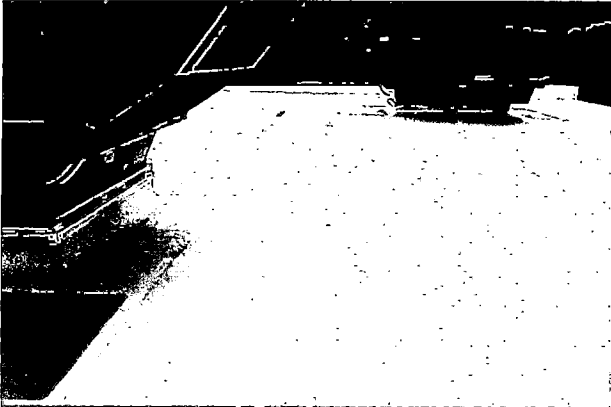
Drainage Gutters
 Slope 1/4 inch(es) per foot, Saddles/Crickets

PERIMETER, WALL AND COPING

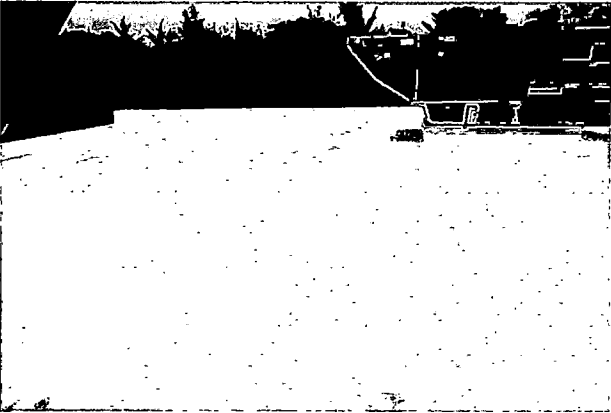
	Type	Condition(s)	Magnitude
Perimeter Type	Gutter	Good Condition	
Perimeter Wall and Flashing Type	Single Ply	Good Condition	

OUTSTANDING BUDGET

Work Beyond Scope of Maintenance Agreement (Customer Responsibility)			
Task	Year	Project \$	Task Description
Recommendation	2021		Punchlist complete.



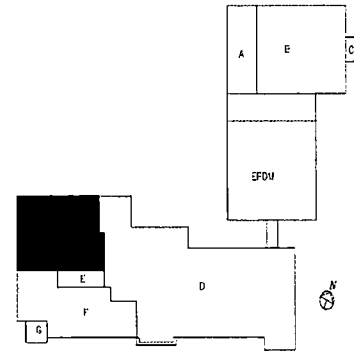
Overview.



Overview.

GENERAL INFORMATION

Roof Name Roof H
 Service Activity Type Final Inspection
 Service Activity Date Oct 6 2021
 Job Number 195801
 Information Source Specification
 Year of Installation 2021 (Estimate)
 Roof Leaks No
 Leak Sensitivity High
 Roof Size 3,007 sq. ft.
 Is Ladder Required? No
 Overall Roof Condition Good Condition
 Technician Michael Jones

**ROOF CONSTRUCTION**

Surfacing Smooth
 Roof Type/System Single Ply, TPA Fleece Back
 Insulation 1/2" Dens-Deck, Hot Adhered
 Retrofit There is 1 roof under the top roof. 1 still has gravel.
 Deck Type Metal

DRAINAGE AND SLOPE

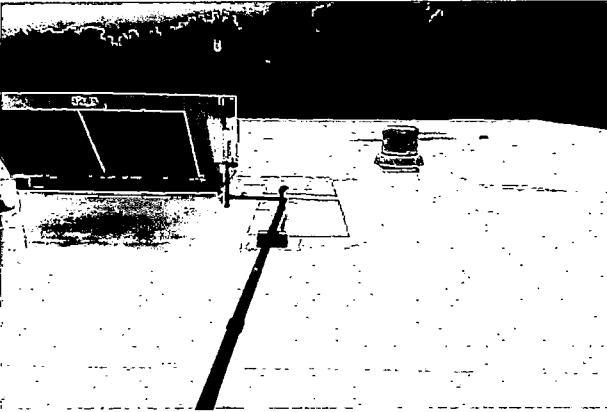
Drainage Internal Drains
 Slope 1/4 inch(es) per foot, Saddles/Crickets

PERIMETER, WALL AND COPING

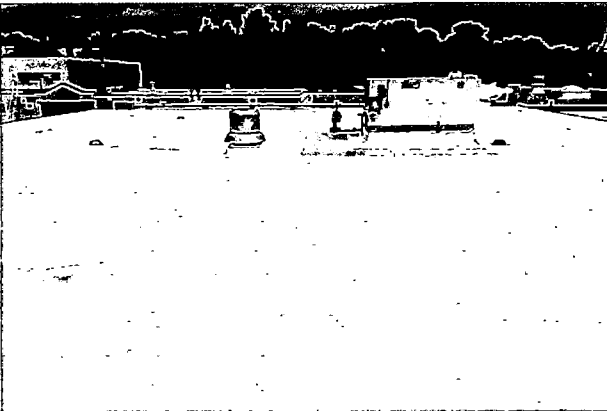
	Type	Condition(s)	Magnitude
Wall Type	Dryvit	Good Condition	
Coping Type	Metal Coping	Fair Condition	
Projection Flashings Type	Hypalon Single Ply	Open Lap(s)	Moderate

MAINTENANCE SUMMARY

Work Performed
TremCare



Overview.



Overview.

Tremco Incorporated

3735 Green Road • Beachwood, Ohio 44122 • 216-292-5000



November 29, 2021

Mr. Tim Piccuiro
Brick Township Board Of Education
101 Hendrickson Avenue
Brick, NJ 08724

Dear Mr. Piccuiro:

Thank you for specifying Tremco for your facility. The roofing system you have purchased consists of high-quality material specified by a highly trained and knowledgeable field advisor and is designed to provide you with *"Roofing and Weatherproofing Peace of Mind"*. With proper maintenance, you can be confident that this roofing system will perform as intended.

Enclosed in this folder you will find the following:

1. Your Tremco Warranty covering the installed roofing system.
2. The Tremco Roofing System "Owner's Manual" outlining maintenance procedures necessary to keep your roofing system in excellent condition and warranty in force.

Please review your Owner's Manual and feel free to contact me if you have any questions.

Sincerely,

TREMCO INCORPORATED

Ed Broderick III
Tremco Representative
Roofing and Building Maintenance Division

Roof Inspection Services do not include:

- a. Inspection for internal or latent water damage or mold growth.
- b. Detection or identification of mold or other latent conditions.
- c. Any core cuts or other testing or analysis beyond visual inspection.
- d. Any other services not expressly set forth under Section A1.

3. Preventive Maintenance Services shall consist of the following minor repairs and maintenance to:

- a. Flashing components and details (such as patching of minor flashing details and penetrations; reinforcement of open flashing laps; and sealing of open metal edge laps, coping joints, expansion joint laps, fasteners, pitch pans, storm collars and similar areas).
- b. Roof membrane (such as repair of incidental splits, tears, open laps, breaks or blisters in the membrane).
- c. Drains, Gutters & Scuppers (such as tightening of accessible drain bolts and clamping rings; advising Owner of missing drain strainers; and drain details, unsecured gutters and open gutter joints).

4. Preventive Maintenance Services do not include:

- a. Repairs or maintenance of any Building component other than the TRS, except as expressly stated above.
- b. Remediation, detection or abatement of mold.
- c. Recoating or other significant repair to, or replacement of, the roof membrane.
- d. Any other services not expressly set forth under Section A3.

5. General Rooftop Housekeeping Services shall consist of the following: Removal of incidental debris (such as leaves, branches, paper and similar items) from the roof membrane and drainage areas. All debris will be disposed of at the Owner's approved on-site location and disposal is the sole responsibility of the Owner.

6. General Rooftop Housekeeping Services do not include:

- a. Removal of items such as obsolete HVAC components, any construction materials left by other trades, or other equipment or tools left on the roof by the Owner or third parties.
- b. Removal of chemical or other manufacturing or industrial pollution and discharge.
- c. Any other services not expressly set forth under Section A5.

B. ROOF INSPECTION REPORTS

Tremco will provide roof inspection reports to the Owner based upon the Roof Inspection Services provided in accordance with Section A. The reports shall become part of the roof database maintained on the TRS. Roof inspection reports will not address the presence of water damage to any building components other than the TRS nor the presence of mold.

C. OWNER'S RESPONSIBILITIES

Tremco does not assume possession or control of any part of the installed TRS or Building identified above through this Warranty or otherwise. Once payment for the TRS and its installation is made in full, control and ownership of the TRS are solely with the Owner, and the Owner is responsible for compliance with all applicable federal, state and local laws, ordinances, rules and regulations. The Owner is solely responsible for all repair, maintenance, rooftop housekeeping and other work with respect to the TRS and the Building, except as expressly stated otherwise in this Warranty. This Warranty and the Leak Response Program, Roof Inspection Services, Preventative Maintenance Services and General Rooftop Housekeeping Services described above do not eliminate or replace the Owner's responsibility for following good roofing practices during the Warranty Period, such as keeping effluent and debris from the roof surface. If scheduled cleaning is insufficient to maintain the roof integrity, the Owner must pay for additional cleaning/inspections or assume responsibility for such cleanings. The Owner agrees that all debris on or removed from the roof is the sole property of the Owner, and it is the sole responsibility of the Owner to properly dispose of said debris.

The Owner shall, at all times, exercise reasonable care in the use and maintenance of the TRS. In order to protect its investment in the TRS, the Owner must fulfill its responsibilities as outlined in the Owner's Manual. Lack of care and maintenance, and the Owner's failure to comply with the care and maintenance guidelines, can have significantly damaging effects on the TRS's overall performance and is cause for cancellation of this Warranty. Tremco shall not be responsible for damages or repairs caused or necessitated by the Owner's failure to perform routine maintenance, necessary repairs or rooftop housekeeping or to fulfill its responsibilities as outlined in the Owner's Manual.

Care and maintenance guidelines include, but are not limited to:

- * Regular ongoing inspection by the Owner between inspections by Tremco - this will facilitate implementation of good rooftop housekeeping practices by the Owner and early detection of problems such as any physical damage.
- * Verification that no alterations, unauthorized repairs, or repairs by anyone other than Tremco have been made to the TRS.

If alterations to the Building's roof (including but not limited to the TRS) are being considered, the Owner must notify Tremco in order for the proper authorized follow-up to be completed. Any alterations, unauthorized repairs or repairs by anyone other than Tremco to the TRS will automatically terminate, cancel and void this Warranty.

As an express condition precedent to any claims under this Warranty, the Owner shall report all leaks which occur in the TRS within the Warranty Period identified above by contacting Tremco at 1-800-422-1195, followed by written notice to Tremco Incorporated at 3735 Green Road, Beachwood, Ohio 44122, as soon as possible (however, in no event more than 30 days), in each case, after leakage is or should have been discovered. In no event is Tremco responsible for any repairs to any part of the Building other than the TRS. The liability and expense for such repair to any part of the Building other than the TRS is with the Owner. If a leak is not within the coverage of this Warranty, Tremco shall advise the Owner, and the Owner shall have repairs performed within 30 days according to Tremco specifications by a Tremco certified or approved applicator and upon written approval of such repairs and applicator by Tremco. The Owner shall notify Tremco prior to the commencement of, and following completion of, such repairs. Tremco reserves the right to charge the Owner in connection with responding to and inspecting building leaks that are not covered by this Warranty, including without limitation building leaks through windows, HVAC units, walls or other building components that are not part of the TRS. Such charges will be at Tremco's standard rates then in effect and the Owner agrees to pay such charges on a net 30-day basis from the date of invoice. The Owner agrees to provide Tremco with unrestricted ready access to the TRS and all areas of the building on which the TRS is located.

D. WARRANTY EXCLUSIONS

This Warranty does not cover any leaks or damage or failure of the TRS or any part thereof caused in whole or in part by any of the following:

1. Natural or accidental disasters including, but not limited to, damage caused by lightning, hailstorms, floods, winds of 74 mph or greater, hurricanes, tornadoes, earthquakes, fire, vandalism, animals, penetration of the membrane, or chemical attack by outside agents.
2. Use of materials not specified by Tremco, or repairs to the TRS that are not approved in advance in writing by Tremco.
3. Any intentional or negligent act on the part of the Owner or any third party including, but not limited to, abuse, misuse, traffic, or storage of or discharge of materials or effluent on the roof.
4. Distortion, expansion, or contraction of the TRS caused by faulty original construction or design of building components or failure of building components such as parapet walls, copings, chimneys, skylights, vents or roof deck.
5. Lack of positive, proper, or adequate roof drainage or ponding water conditions.
6. Change in building usage without prior written approval from Tremco.

Removal of chemical or other manufacturing or industrial pollution and discharge is the sole responsibility of the Owner and is expressly excluded from coverage under this Warranty.

Under no circumstances will Tremco be responsible for removal, repair or replacement of any system or component that is not part of the TRS including, but not limited to, overburden materials of any kind, hardscape, irrigation systems, weather station, lighting, lightning protection systems, walkways, pavers, decorative stone, glass, solar, mechanical or electrical systems, water features, artwork, telecommunications systems, security systems and railings.

This Warranty does not include extensive roof repairs, recoating, restoration or roof replacement unless those steps are determined by Tremco to be necessary in order to maintain compliance with the express terms of this Warranty. The Owner will be advised of any extensive repairs required and whether such repairs are covered under this Warranty prior to those repairs being undertaken. To the extent such repairs are not covered by this Warranty, Tremco will invoice such work at its standard rates then in effect, and the Owner agrees to pay charges for such work on a net 30-day basis from the date of invoice.

E. WARRANTY LIMITATIONS

Tremco shall have no responsibility and/or liability under this Warranty until all bills for installation, supplies and services sold in connection with the TRS and the bill for this Warranty have been paid in full. The Owner's rights under this Warranty are specific to the Owner and are not assignable or transferable without prior written consent of Tremco. Tremco's obligations under this Warranty may be voided by Tremco based on: (i) any of the events described in Section D, (ii) the failure of the Owner to comply with its obligations described in this Warranty such as payment of all bills related to the TRS and its installation, proper TRS care and maintenance, leak reporting and the obligations described in Section C, (iii) repairs, alterations, penetrations of or attachments to the TRS without the prior written approval of Tremco, or (iv) building settlement, deterioration, cracking or failure of the roof deck, coping or parapet walls, or infiltration or condensation of moisture in, through or around walls, copings, underlying structure, hardware or equipment. Tremco will be excused from performing under this Warranty if prevented or delayed by events not within its control, including events such as floods, fires, accidents, riots, acts of terrorism, wars, explosions, governmental order, acts or omissions of contractors or other third parties, inability to access the TRS, etc.

F. EXTENDED OR RENEWED WARRANTY OPTION

The TRS you have purchased may be eligible for warranty extension, or renewal after expiration, beyond the Warranty Period identified above. Often, extension of the existing Warranty Period can be a very cost effective option and may be preferable to allowing the warranty to expire, particularly for Owners with multiple facilities who may not want those buildings coming out of warranty coverage at or about the same time. It is Tremco's practice to contact Owners regarding our warranty and renewal options at or about 60 days prior to warranty expiration. We also invite Owners to contact their Tremco Sales Representative at any time to discuss the applicable terms, conditions and eligibility for such an extension or renewal.

G. OTHER TERMS

THIS WARRANTY IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, OBLIGATIONS OR AGREEMENTS, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, ALL OF WHICH ARE EXPRESSLY EXCLUDED. THIS WARRANTY IS IN LIEU OF ANY AND ALL RIGHTS OR REMEDIES AGAINST ANY PERSON OR ENTITY UNDER THE UNIFORM COMMERCIAL CODE OR OTHERWISE WITH RESPECT TO THE SALE OF GOODS AND/OR SERVICES. THE REMEDIES AND OBLIGATIONS STATED IN THIS WARRANTY ARE THE SOLE AND EXCLUSIVE REMEDIES OF AND OBLIGATIONS TO THE OWNER FOR ANY AND ALL MATTERS ARISING WITH RESPECT TO OR IN ANY WAY CONNECTED WITH THE TRS, OR ITS COMPONENT PRODUCTS, OR ANY GOODS OR SERVICES RELATED THERETO, REGARDLESS OF THE SOURCE OR PROVIDER OF SUCH GOODS OR SERVICES. THE OWNER SHALL PROVIDE WAIVERS OF SUBROGATION UPON REQUEST. NO REPRESENTATIVE OF TREMCO OR ANY EMPLOYEE, AGENT OR AFFILIATED COMPANY ("AFFILIATE") HAS AUTHORITY TO VARY OR ALTER THESE TERMS WITHOUT THE EXPRESS WRITTEN PERMISSION OF A TREMCO OFFICER. IN

NO EVENT SHALL TREMCO OR ANY AFFILIATE BE LIABLE FOR ANY DAMAGE TO THE BUILDING ITSELF (OTHER THAN THE TRS SOLELY TO THE EXTENT EXPRESSLY PROVIDED FOR IN THIS WARRANTY), THE CONTENTS OF THE BUILDING, OR ANY OTHER SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES. NEITHER TREMCO NOR ANY AFFILIATE SHALL BE LIABLE FOR ANY DAMAGES WHICH ARE BASED UPON NEGLIGENCE, BREACH OF WARRANTY, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY OTHER THAN THE EXCLUSIVE LIABILITY SET FORTH IN THIS WARRANTY.

Notwithstanding anything in any surety bond or other applicable contractual documents to the contrary, it is expressly understood and agreed by the parties, and anyone asserting a claim pursuant to this Warranty, that the liability of any surety under any performance, maintenance, warranty or other bond relating to the project involving the Building or the TRS, as well as the obligations and/or liabilities also covered by this Warranty shall be limited to a one-year period, which shall begin when the customer accepts delivery or makes final payment in accordance with the terms of the applicable contract, whichever occurs first. All Warranty claims against any surety are irrevocably waived and released unless all notices are delivered in accordance with the express terms of this Warranty and any applicable bonds, and suit is commenced against the surety in a court or other tribunal of competent jurisdiction within such one-year period. Tremco, its successors and/or assigns shall honor and be solely responsible for the balance of the Warranty Period (if any) in accordance with the terms of this Warranty.

The Owner agrees that this Warranty, and the services and remedies set forth herein, are exclusive, and there are no other warranties between the Owner and Tremco or any of their respective affiliates. Any unresolved issues under this Warranty shall be submitted to the exclusive jurisdiction of the courts of Cuyahoga County, Ohio. The terms, conditions, interpretation and enforcement of this Warranty shall be governed by Ohio law, without regard to any conflict of laws principles.

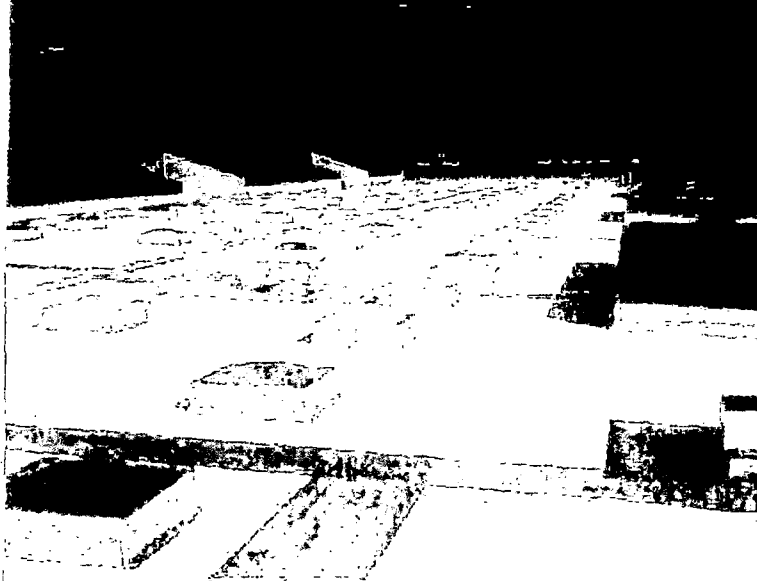
TREMCO INCORPORATED
ROOFING & BUILDING MAINTENANCE DIVISION

By: Ashley Silver

Title: Warranty Administrator

Date: October 27, 2021

TREMCO ROOFING AND BUILDING MAINTENANCE



Thank you for selecting a roofing system from Tremco Roofing and Building Maintenance.

We deeply appreciate your confidence in our solution and in our team, and look forward to supporting you far into the future.

We are always looking for ways to better serve our customers, and would like to ask for your help in understanding what we do well and where we could do better.

As part of our quality assurance and warranty process, a professional interviewer from the respected Arizona State University Performance Based Studies Research Group will call you shortly with a brief survey about your experience during the roofing system selection and installation process. Please take a couple of minutes to answer these few questions during this telephone interview. We are interested in your opinion of the roofing system itself, the applicator who installed it, your field advisor, and the overall value you believe that you have received.

*Providing
Roofing and
Weatherproofing
Peace of Mind*

Thank you again for teaming with us to supply your roofing system, and for completing our survey. Tremco Roofing and Building Maintenance is committed to 100% customer satisfaction, and your honest feedback will help ensure that we continue bringing *Roofing and Weatherproofing Peace of Mind* to our valued customers.

Thank you,

Robb Chauvin

Executive Director of Inspection Services

**Tremco Roofing and
Building Maintenance**

3735 Green Road
Beachwood, Ohio 44122

50 Beth Neilson Drive
Toronto, ON M4H 1M6

1.800.852.6013 (U.S.)
1.800.668.9879 (Canada)
www.tremcoroofing.com

© 2019 Tremco Incorporated

TREMCO
ROOFING & BUILDING MAINTENANCE



CONSTRUCTION PERMIT

Date Issued 6/21/2021
Control # C-21-002284
Permit # 21-1631

IDENTIFICATION Block: 1421 Lot: 14 Qualifier _____
Work Site Location: 2282 LANES MILL RD. Brick Township, NJ Contractor WEATHER PROOFING TECHNOLOGIES
Address 3735 GREEN RD. BEACHWOOD OH 44122
Owner in Fee BRICK TOWNSHIP BOARD OF EDUCATION
101 HENDRICKSON AVE. BRICK NJ 08724 Telephone: (216) 551-8432
Telephone: (732) 785-3000 Lic. No. or Bids. Reg. No. _____
Federal Employee. No. _____

Is hereby granted permission to perform the following work:

- ☒ BUILDING ☐ PLUMBING ☐ LEAD HAZARD ABATEMENT
☐ ELECTRICAL ☐ FIRE PROTECTION ☐ DEMOLITION
☐ ELEVATOR DEVICES ☐ ASBESTOS ABATEMENT (Subchapter 8 only) ☐ OTHER

DESCRIPTION OF WORK:

ROOFING

Note: If construction does not commence within one (1) year of date of issuance, or if construction ceases for a period of six (6) months, this permit is void.

Estimated Cost of Work \$214,500

D. Newman
Construction Official

6/21/21
Date

U.C.C. F170
equiv (rev 1/04)

1 WHITE - INSPECTOR

2 CANARY - OFFICE

3 PINK - TAX ASSESSOR

4 GOLD - APPLICANT

PAYMENTS (Office Use Only)

Building	\$0
Electrical	\$0
Plumbing	\$0
Fire Protection	\$0
Elevator Devices	\$0
Other	\$0.00
DCA Training Fee	\$0
CO Fee	
Other	\$0
Total	\$0
Check No.	
Cash	\$0
Credit	\$0
Collected By	

REQUIRED INSPECTIONS

Construction work must be inspected in accordance with the State Uniform Construction Code Regulations N.J.A.C. 5:23-2.18. This agency will carry out such periodic inspections during the progress of work as are necessary to insure that the work installed conforms with the requirements of the Uniform Construction Code.

The owner or other responsible person in charge of work must notify this agency when work is ready for any required inspections specified below. Requests for inspections must be made at least 24 hours prior to the time the inspection is desired. Inspections will be performed within three business days of the time for which they are requested. The work must not proceed in a manner which will preclude the inspection until it has been made and approval granted.

- ☐ Required inspections for all subcodes for one- and two-family dwellings are as follows:

1. The bottom of footing trenches before placement of footings, except that in cases of pile foundations, inspections shall be made in accordance with the requirements of the building subcode.
2. Foundations and all walls up to grade level prior to back filling.
3. All structural framing, connections, wall and roof sheathing and insulation; electrical rough wiring, panel and service installation; rough plumbing. The framing inspection shall take place after the rough electrical and plumbing inspections and after the installation of the heating, ventilation and/or air conditioning duct system. The insulation inspection shall be performed after all other subcode rough inspections and prior to the installation of any interior finish material.
4. Installation of all finished materials, sealings of exterior joints, plumbing piping, trim and fixtures; electrical wiring, devices and fixtures; mechanical systems equipment.

Additional required inspections for all subcodes of construction, for other than one- and two-family dwellings, are fire suppression systems, heat producing devices and Barrier Free subcode accessibility, if applicable.

- ☐ Required special inspections. The applicant by accepting the permit will be deemed to have consented to these requirements:

- ☒ A final inspection is required for each applicable subcode area before a final Certificate of Occupancy or Approval may be issued. The final inspections include the installation of all interior and exterior finish materials, sealing of exterior joints, mechanical system and other required equipment; electrical wiring, devices and fixtures; plumbing pipes, trim and fixtures; tests required by any provision of the adopted subcodes, Barrier Free accessibility, if applicable; and verification of compliance with NJAC 5:23-3.5, "Posting structures".

- ☒ A complete copy of released plans must be kept on the job site.

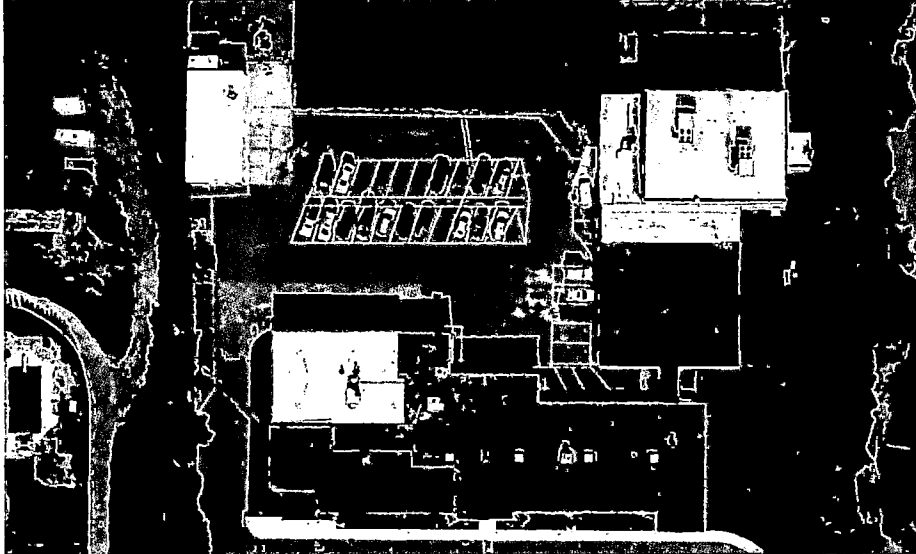
If you do not understand any of this information, please ask.



FILE COPY

TREMCO
ROOFING & BUILDING MAINTENANCE

PROJECT MANUAL



BRICK TOWNSHIP BOARD OF EDUCATION

**HERBERTSVILLE ELEMENTARY SCHOOL
2282 LANES MILL ROAD
BRICK TOWNSHIP, NJ 08724**

2021 ROOFING PROJECT SPECIFICATIONS

WTI PROPOSAL #5045124

**TREMCO INC. REPRESENTATIVES:
ED BRODERICK and BRIAN BRODERICK**

APRIL, 2021

**WEATHERPROOFING TECHNOLOGIES, INC.
3735 Green Rd., Beachwood, Ohio 44122**

FILE COPY

TOWNSHIP OF BRICK

RELEASED FOR PERMIT *INITIALS* *DATE*
Building Subcode _____
Plumbing Subcode _____
Fire Subcode _____
Electrical Subcode _____
Plan Reviewer _____
Plans Released _____
Construction Official _____

SECTION 01010
SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

- A. Drawings and Contract Documents, included in the contract, apply to Work of this Section.

1.02 SECTION INCLUDES

- A. Contract description
- B. Work by subcontractor
- C. Subcontractor use of site (and premises)
- D. Submission of Proposals
- E. Quality Control
- F. Extra Work
- G. Unauthorized Work
- H. Work sequence
- I. Owner Occupancy
- J. Restoration and clean-up
- K. Submittals
- L. Delivery, storage and Handling
- M. Site Conditions
- N. Unit prices
- O. Warranty

1.03 RELATED SECTIONS

- A. Section 01025 Measurement and Payment

- B. Section 01700 Contract Closeout
- C. Section 02060 Demolition
- D. Section 07515 Fluid Applied Roof Restoration System
- E. Section 07540 Thermoplastic Membrane Roofing
- F. Section 13280 Asbestos Abatement

1.04 CONTRACT DESCRIPTION

- A. Contract Type: Stipulated Sum Price and Unit Prices.
 - 1. INTENTION OF PLANS AND SPECIFICATIONS: The intent of the Drawings and Specifications is to describe the Work that the Subcontractor undertakes, in full compliance with the Contract, and it is understood that the Subcontractor will furnish all materials, machinery, equipment, tools, supplies, transportation, labor, permits and all other incidentals necessary to the satisfactory execution and completion of the Work. The plans and specifications are complementary, and what is called for by either is as binding as if called for by both.
- B. Plans and Specifications:
 - 1. Subcontractor must notify WTI of any omissions, contradictions or conflicts. WTI will provide necessary corrections or additions to plans and specifications by addendum. If subcontractor does not so notify WTI of any such condition, it will be assumed that the subcontractor has included the necessary items in his bid to complete this specification.
 - 2. It is the intent that this be a completed project as far as the contract documents set forth. It is not the intent that different phases of work on this project be delegated to various trades and subcontractors by the contract documents. Roofing subcontractor must make their own contracts with various subcontractors, setting forth the work these subcontractors will be held responsible for. Roofing subcontractor alone will be held responsible for the work of his / her subcontractor by WTI for the completed project. The roofing subcontractor is required to have his subcontractor comply with all Owner and WTI safety and security requirements.
 - 3. If the subcontractor feels a conflict exists between what is considered good roofing practice and these specifications subcontractor shall state in writing all objections 7 days prior to submitting quotations.
 - 4. 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, or the effect upon, any structure or building materials. If any questions arise as to the soundness of or the effect upon any structure or building materials, or the structure's ability to support a planned installation properly, the Owner should obtain opinions of competent structural engineers or other qualified design professionals before proceeding.

5. Roofing subcontractor shall have his own supervision on site at all times when his subcontractors are present.
6. Subcontractors of WTI shall have his own supervision on site at all times when his subcontractors are present.

1.05 WORK BY SUB-CONTRACTOR.

- A. Work under this contract includes:
 1. Furnish and install specified roofing and related components to the specified roofs by the roofing subcontractor at the ***Brick Township Board of Education located in Brick, New Jersey.***
 2. Disconnect and re-connection of mechanical equipment by mechanical subcontractor, all electrical work shall be performed by licensed electrical subcontractor.
- B. Protection:
 1. Subcontractor shall be responsible for the full and adequate protection of the Owner's facilities, existing roof systems, personnel, equipment, products and materials, as well as protection of its own employees and equipment. Subcontractor shall comply with all applicable federal, state, and local OSHA, EPA, and NIOSH requirements. Lawns, shrubbery, paved areas, and buildings shall be protected from damage. Repair damage at no extra cost to Owner.
 2. Daily House Keeping:
 - a. Prior to leaving the site daily the roofing subcontractor shall remove all trash from the roofing project and grounds such as paper, insulation or pieces and all other trash/scrap generated by the roofing crew. All subcontractors shall remove all trash generated by their respective work daily.
 - b. The site will be acceptable to the WTI project superintendent prior to the crew departing the site, the WTI project superintendent and the subcontractor foreman shall conduct a daily walk to make sure the roof and grounds are left in a satisfactory condition.
 - c. Roofing subcontractor shall protect existing roof systems by placing temporary plywood walkways in areas of access.
 3. Asphalt Application:
 - a. Roofing subcontractor shall use only fiberglass mop heads for the application of hot applied adhesives. **Cotton mop heads are not permitted on-site.**
 - b. All in use mops shall not be left unattended.
 - c. Hot mops used on the project shall be removed from the roof and lowered to the ground and cooled in the following manner:
 - (1) Once removed from the roof, the mop shall be spun out to a flat configuration (not bunched up as it will hold heat).
 - (2) Mop shall be placed on a non-combustible surface.
 - (3) Mop heads shall be cooled with water (no exceptions).
 - (4) Store mop away from combustible materials.

- (5) Dispose of the mop the next working shift if mop is not to be reused (minimum 24 hours cooled) off the roof.
 - (6) Under no circumstances is a hot uncooled mop head to be placed in a dumpster.
 4. The roofing subcontractor shall perform appropriate inspections and surveys, and file timely notifications to proper authorities prior to starting roof renovation or demolition activities. Inspectors, project planners, project managers, subcontractors and workers involved in the roof project shall have appropriate training, licenses, and registrations.

C. General Project Requirements:

1. All roofing applications shall be in accordance with specifications and details by Tremco Inc.
2. Unless specified to be reused, All products shall be new and delivered to site in manufacturer's original packaging.
3. Perimeter edge metal installation shall meet ES-1 attachment requirements.
4. All flashings shall extend a minimum of 8 inches above finished roof surface unless previously accepted by Owner's representative and an authorized Tremco (Manufacturers) agent.
5. All Flashings shall be removed to sound substrate, prime substrate as required by manufacturer, refer to current product data sheets for requirements.
6. Subcontractor shall verify existing roof construction and measurements.
7. In case of conflict between project construction documents, including details and specifications, the most stringent requirements shall govern.
8. Roofing subcontractor shall provide additional line item proposal costs for the work that is not included in their base proposal cost.
9. Asbestos Testing:
 - a. Refer to *Section 13280 Asbestos Abatement* for detailed information.
10. The roofing subcontractor is responsible for ensuring all roof drains included in the specified roof recover work are free flowing. Flush drains to verify free flowing prior to the project start and at the project completion. Subcontractor shall notify WTI if roof drains are found slow flowing or inoperative prior to the project start.
11. The roofing subcontractor is responsible for damages resulting from failure to maintain the work areas in water tight condition and the costs resulting from this, including time required by the owner's employees, shall be charged to the subcontractor. The work areas include areas under construction, areas of storage, and areas used for access.
12. Subcontractor shall take all precautions needed to prevent damage or breakage of lines/piping while lifting or moving them.
 - a. Provide and install adequate temporary support of all electric, gas and chemical supply lines during roof replacement.
 - b. All energized lines must be locked out and tagged out by owner prior to demolition, all reconnections and re-energizing to be performed by licensed contractors.

13. Prior to demolition work, roofing subcontractor shall furnish and install interior protection where needed to prevent roofing related debris from entering building.
 - a. Subcontractor to provide daily clean up necessary to bring the interior/room to as was condition prior to starting. These areas to be inspected on a daily basis.
14. Adhesion test is required prior to adhering coverboard to existing roof system.
 - a. Submit results.

D. Scope of Work I (Fully Adhered Thermoplastic Membrane Roofing System):

1. Roof Recover Area:
 - a. Roof Sections: B and H.
 - b. Refer to Project Overview Drawing for roof area locations.
2. Supply all labor, transportation, material, apparatus, tools, and permits necessary for retrofit of the existing roof system with a new Hot Applied (60 mil) Tri-Polymer Alloy Fleece Back (TPA FB) Single Ply Roofing System by Tremco Incorporated.
3. Roofing subcontractor shall use only fiberglass mop heads for the application of hot applied adhesives (see above paragraph 1.05 B. Protection #3).
4. Demolition Work:
 - a. Remove and dispose of existing roofing system components including but not limited to, aggregate, flashing membrane, metal flashings, defective wood blocking, and accessories down to the underlying substrate.
 - (1) NOTE:
 - (a) At Section B:
 - (i) Carefully remove and save metal copings for reinstallation.
 - (ii) Existing gutters and downspouts to remain.
 - (b) At Section H: remove and discard metal copings.
 - (c) Existing through-wall flashings at masonry walls to be re-used.
 - b. Remove and replace designated areas of existing wet insulation and related roofing.
 - (1) A Moisture Survey has been performed to locate areas of existing wet insulation, and after physical verification, the wet areas have been identified with paint.
 - (2) Subcontractor shall remove and replace areas of wet insulation and related roofing components where designated by the Infrared Moisture Survey and described during the Pre-Proposal Meeting. Work includes but is not limited to the following:
 - (a) Removal/replacement of additional wet insulation and related roofing components on an additional approved per square foot cost.
 - (b) Replacement or repair existing defective roof decking at an additional approved per square foot cost. Install new decking to match existing decking.
 - (c) Replacement or repair of existing defective wood blocking at an additional approved per linear foot cost.
 - (3) 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 roofing system total height.
- (a) Install new insulation system and compatible roofing membrane patch over roof infill area.
 - (4) During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
 - c. Replace or repair existing defective roof decking at an additional approved per square foot cost.
 - (1) Coordinate deck removal with Owner and cordon-off areas beneath defective roof decking during removal and replacement.
 - (2) Refer to Safety Requirements outlined in Paragraph 1.16 SITE CONDITIONS of this section.
 - d. Replace or repair existing defective wood blocking on an additional approved per linear foot cost basis. Install new pressure treated wood blocking to replace defective wood blocking.
 - e. Remove and dispose of obsolete rooftop curbs, pitch pockets and miscellaneous penetrations. Install new roof decking or metal plating over opening.
 - (1) Install 1/8 inch steel plate over openings less than 2 by 2 feet. and 1/4 inch steel plate over openings larger than 2 by 2 feet.
 - (2) Lap plate over decking a minimum of 6 inches on all sides.
 - (3) Mechanically attach plating to decking a minimum of 12 inches o.c.
 - (4) Owner shall identify items to be removed (See paragraph 1.05 A #2).
 - f. Roof infill insulation system and roofing membrane patch. Attachments shall meet FM 1-90 wind uplift criteria.
 - (1) Mechanically attach first layer insulation at a minimum rate of one (1) fastener per every 2 square feet. Enhance perimeter edge and corner fastening and as follows:
 - (a) Increase fastener density by 50 percent along roof perimeters and 100 percent at roof corners. The width of the roof corner sand perimeters is defined as the smaller of .1 times the building lesser plan dimension or .4 times the building eave height.
 - (2) Install polyisocyanurate insulation, match existing thickness and taper.
 - (3) Install Tremco USG Securock Gypsum Fiber Roof Board, 1/4 inch thickness.
 - (a) Adhere top layer insulation and coverboard using Tremco Low Rise Foam Insulation Adhesive or approved equal.
 - g. Replace existing through-wall scupper assemblies.
 - (1) Raise or lower roof scupper opening to accommodate the new roof system elevation. Adjust scupper heights as required to provide positive drainage. Work shall include masonry work, plumbing connections, and accessories. Replace existing scupper metal flashings, conductor box and downspout with new.

- h. Replace existing roof drain bowl assemblies with new cast iron roof drain bowl, drain strainer, and related accessories.
 - (1) Work shall include plumbing connections.
5. Install sump at existing drain locations.
 - a. Remove flashing membrane and insulation down to deck.
 - b. Install 2 by 2 foot tapered insulation drain sump.
6. Prepare the roof substrate prior to installing the new roof system.
 - a. Remove blisters, ridges, buckles and other substrate irregularities from existing roofing system that would inhibit application of retrofit system.
 - b. Remove and dispose of existing walkway pads.
 - c. Install pressure treated wood blocking as required to match new insulation heights at wall junctions, roof edges, and penetrations and as indicated on detail drawings.
 - d. Install pressure treated wood blocking to top-side of parapet wall to accommodate the attachment of a new metal coping. Attach wood blocking to wall using appropriate fasteners.
 - e. Raise existing roof curbs and plumbing vent stacks to a minimum of 8 inches above the new roof surface.
 - f. Replace existing pitch pockets with membrane coated metal pitch pockets.
 - (1) New pitch pockets to have metal covers.
 - g. Clean substrate and wall surfaces of dust, debris, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
7. Clean roof areas of gravel, dirt, and debris.
 - a. Surface preparation:
 - (1) All work surfaces should be clean, dry, and free of dirt, dust, debris, oils, loose and/or embedded gravel, un-adhered coatings, deteriorated membrane and other contaminants that may result in a surface that is not sound or is uneven.
8. Prime existing roof membrane.
 - a. Sweep roof deck clean prior to primer application.
 - b. Apply Millennium Universal Primer by Royal Adhesives and Sealants at a rate of 150 to 250 square feet per gallon (14 to 23 square meters per 3.8 liters).
 - c. Application of Millennium Universal Primer is not a substitute for proper removal of loose gravel or debris from the substrate by vacuuming and/or power washing.
9. Recover Board Installation.
 - a. General:
 - (1) Sweep roof deck clean prior to roof insulation application.
 - (2) Install 4 by 4 feet by 1/4 inch thick Tremco / USG Securock Gypsum-Fiber Roof Board as re-cover board.
 - b. Adhere re-cover board using Tremco Low Rise Foam Insulation Adhesive or approved equal.
10. Low Rise Foam Insulation Adhesive Application:
 - a. Apply adhesive in accordance with specifications and details by Tremco Inc.

- b. Clean and prime substrate as required by Tremco Inc.
 - c. Decrease field-of-the-roof adhesive spacing between ribbons (rows) in perimeters and corners as defined in FM Loss Prevention Data Sheet 1-29 and noted below (round down to a dimension that is practical with respect to board size and application):
 - (1) In the roof perimeter, not more than 60 percent of the field-of-the-roof adhesive ribbon spacing between rows or area.
 - (2) In the roof corners, not more than 40 percent of the field-of-the-roof adhesive ribbon spacing between rows or area.
 - d. Refer to manufacturer's Product Data sheet for detailed material and application requirements.
11. Install two (2) plies of THERMglass Premium Type VI Fiberglass Ply Sheet.
- a. Install ply felts according to roofing system manufacturer's written instructions, starting at low point of roofing system.
 - b. Install plies in shingle fashion.
 - (1) Use starting/finishing strips; 18 inches and 36 inches (457 and 914 mm) wide plies.
 - (2) Overlap starter strips 20 inches (508 mm) with the first ply then overlap each succeeding ply 19 inches (482 mm).
 - c. Adhere plies to substrate in full mopping of Tremco Premium IV Hot-Melt Asphalt Adhesive at a rate of 25 lbs per 100 square feet at EVT.
12. Install Tremco Inc. Hot Applied Tri-Polymer Alloy Fleece Back (TPA FB) Single Ply Membrane Roofing System including thermoplastic flashing and accessories.
- a. Install (60 mil) Reinforced TPA FB field membrane sheets and (60 mil) Reinforced TPA Perimeter sheets (unfleece) for base flashings.
 - b. Adhere TPA FB Elastomeric Sheeting membrane to substrate in full mopping of Premium IV Hot Melt Asphalt Adhesive at a rate of 25 lbs per 100 square feet at EVT.
 - (1) Do not apply adhesive over membrane in ply lap areas.
 - c. Install succeeding full rolls in same manner. Overlap seams minimum three (3) inches.
 - d. Mechanically attach membrane sheets at roof perimeter and penetrations. Fasteners shall have 2 3/8 inch diameter barbed metal plates. Fasteners shall be placed a minimum of 12 inches on center and 1-1/8 inch from sheet edge in a true and straight.
 - (1) Field membrane sheets may be mechanically attached at vertical walls using a metal termination bar.
 - (a) Run field membrane a minimum of 1-1/2 inches onto the vertical wall substrate and secure sheet to wall using a metal termination bar and appropriate fastener placed a minimum of 12 inches on center. Trim excess membrane from top of termination bar prior to flashing application.
 - (b) Wood blocking installation may be omitted at wall junctions when field membrane is attached to wall.
 - e. Remove and replace all sheets that are not fully bonded.
 - f. Minimize foot traffic on membrane until adhesive is fully cured.

- g. Membrane Seaming:
 - (1) All edge surfaces to be seamed by hot air welding. Surfaces must be wiped with solvent using clean rags.
 - (2) Heat-weld laps with approved welding equipment. Adjust welding speed and temperature base upon ambient conditions and material.
- h. Membrane End Laps.
 - (1) Abutted End Lap Detail
 - (a) Gap width between membrane sheets shall not exceed 1/8 inch.
 - (b) Install 6-inch wide cover strip over end lap. Cut cover strip corners round. Heat-weld cover strip centered over end lap.
- i. Heat-weld a 4 inch round field cut TPA flashing membrane (unreinforced) centered over each T-joint.
- j. Install all new TPA flashing details per Tremco Inc. specifications, recommendations, and details drawings.
 - (1) All flashings shall be installed as shown on the detail drawings and per Tremco Inc. standards. All membrane flashings shall be installed concurrently with the roof membrane as the project progresses.
 - (2) Flashings shall not be applied over existing thru-wall flashings or weep holes. All flashings shall extend a minimum of 8-inches above roof level unless previously accepted by Owner's representative and an authorized Tremco agent. All existing flashings shall be removed before applying a new flashing.
 - (a) Membrane base flashings shall be fully adhered (60 mil) TPA Perimeter Sheet membrane (Unfleece).
 - (b) The flashing membrane shall be fully adhered to a dry, smooth solvent-resistant and compatible substrate using Tremco TPA LV Single Ply Bonding Adhesive. Apply bonding adhesive to both substrate and flashing membrane surfaces at a rate of 1-gallon per every 200 to 240 square feet per side (100 to 120 square feet per gallon net coverage).
 - (c) Secure the top of the installed flashing membrane with a termination bar fastened 6 inches o.c. and covered with metal counterflashing. Install TremFlash (TF) Tape between wall and top edge of TPA flashing membrane prior to fastening.
 - (3) Apply TremSEAL Pro along top of flashing membrane and termination bar to seal.
 - (4) Flash all pipes with TPA Pre-Fabricated Flashing Boots where possible. Field fabricate pipe flashing with TPA Flashing Membrane (unreinforced flashing) per standard Tremco Roofing Systems details when a pre-molded flashing is not feasible.
 - (5) Fabricate all metal flashings with flanges using TPA Membrane Coated Metal.
 - (a) Secure flange to wood blocking as specified.
 - (b) Heat-weld a 6-inch wide (reinforced) TPA cover strip to flashing membrane and coated metal flange.

- (6) Install new curb details.
 - (7) Heat-weld all flashing laps with approved welding equipment.
 - k. Flash area divider on roof section H as follows.
 - (1) TPA membrane to run up and over area divider and onto the existing granule surface modified bitumen membrane.
 - (2) Strip in leading edge of TPA membrane with 3 course application of Rock it Adhesive and Burmesh reinforcing fabric.
 - (3) Broadcast white granules over the top course of Rock it Adhesive.
- 13. Re-install metal copings.
- 14. Re-install gutters and downspouts where removed for roofing application.
- 15. Install all new sheet metal flashing details per NRCA, SMACNA and Tremco Inc. specifications, recommendations and details drawings.
 - a. Install counterflashings and miscellaneous metal flashings.
 - (1) All new sheet metal components (excluding Membrane Coated Metal) to be commercial quality .040 inch mill finish aluminum unless specified otherwise.
 - b. Reuse existing through-wall flashings at masonry walls.
 - c. Install ANSI/SPRI ES-1 Certified snap on fascia metal edge system at perimeters of roof section H.
 - d. Replace damaged or missing fascia metal to match existing at perimeters of all roof sections.
 - e. Where applicable:
 - (1) Install fascia extender as discussed at Pre-Job meeting.
 - (2) Install through-wall scuppers with conductor heads and downspouts.
 - f. Install new metal counterflashings as discussed at Pre-Job meeting.
 - (1) Cut-in new reglet joints as required.
 - g. Install miscellaneous metal flashings and related accessories.
 - (1) Install new Membrane Coated Metal scuppers, pitch pans and miscellaneous metal-flanged details.
 - h. Install new details as indicated on Job walk. Attached detail drawings are to show intent and shall be adjusted for site conditions.
- 16. Install TPA walkway pads at roof access points, to match existing walkway plan, and as directed at Pre-Job walk.
 - a. Color: Gray.
- 17. Install new pre-manufactured supports at all gas lines.
 - a. MIRO type with rollers or approved equal.
- 18. Replace existing wood supports with new pressure treated lumber to match existing.
 - a. Install TPA walkway slip sheet protection under all wood supports.
- 19. Apply Alumanation 301 over designated rusted roof top equipment as discussed at Pre-Job meeting.
 - a. Inspect metal surfaces on which coatings will be applied and notify WTI Superintendent of any detrimental defects.
 - b. Metal Surface Preparation:
 - (1) Inspect metal surfaces on which coatings will be applied and notify WTI Superintendent of any detrimental defects.

- (2) Clean and prepare surface in accordance with coating manufacturer's approved product data sheets and printed label instructions.
 - (a) Surface must be sound, clean, dry and free from dust, oil, chalk, and other contaminants. Prepare surface using SSPC-SP2.
 - (b) Remove loose, peeling, cracked and blistered surfaces by chipping, scraping and sanding.
 - (c) Wire brush, scrape, pressure wash or sand down rust and loose paint. Power tool cleaning is preferred but hand tool cleaning is acceptable.
 - (3) Thoroughly clean surfaces to remove rust, dirt, soot, grease, mildew, chalkiness and stains.
 - (a) Remove any oil or grease from the surface by either high pressure water blast incorporating a biodegradable detergent or TSP, or the use of clean rags soaked in approved solvent. (SSPC-SP1).
 - (4) Surfaces must be dry, free of dust and foreign material.
 - c. Apply ALUMANATION 301 Reflective Aluminum Coating over exposed metal flashing and/or roof top equipment surfaces where specified.
 - (1) Apply reflective coating over the prepared metal surface.
 - (a) Mix well using a power-assisted mixer.
 - (b) Apply coating with brush, roller or spray apply.
 - (c) Install aluminized heat-reflective coating at an approximate rate of 2 gallons per 100 square feet (32 wet mils).
 - (d) Coverage will vary based on texture and porosity of surface.
 - (2) No priming is necessary because of the high amount of rust inhibiting oils in coating.
 20. Clean over spray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
 21. Clean gutters.

E. Scope of Work II (AlphaGuard Roof Restoration Coating System):

1. Specified Roof Restoration Areas:
 - a. Roof Sections: K and L.
 - b. Refer to the Project Overview Drawing for roof area locations.
2. Supply all labor, transportation, material, apparatus, tools and permits necessary for repair of the existing specified Modified Bitumen roof systems and application of a new AlphaGuard BIO Fluid Applied Roof Restoration System by Tremco Inc.
3. Prepare existing roofing system prior to the new roof coating system application:
 - a. Prior to coating application, pressure-wash the entire roof surface and base flashings to remove dust, dirt and containments.
 - b. Clean roof and flashing surfaces of dust, debris, and other substances detrimental to coating installation according to written instructions by Tremco Incorporated. Remove sharp projections.

- c. Work includes complete cleaning of existing roofing system including, field membrane, membrane flashings, field seams and metal flashings.
- d. Remove and dispose of loose debris.
- e. Prior to coating application, pressure-wash and brush agitate the entire roof surface and base flashings to remove dust, dirt and containments. Pressure-wash using biodegradable cleaner and clean water.
- f. Clean the roof and flashing membrane surfaces with a high-pressure power wash of at least 2,500 psi. Allow membrane surface to dry.
- g. Take precautions to prevent debris from entering the roof drainage system.
- h. Allow roof to dry prior to coating application.
- 4. Remove and replace designated areas of existing wet insulation and related roofing.
 - a. A Thermocore Infrared Moisture Survey has been performed to locate areas of existing wet insulation, and after physical verification, the areas have been identified with paint.
 - b. Subcontractor shall remove and replace areas of wet insulation and related roofing components where designated by the Infrared Moisture Survey and described during the Pre-Proposal Meeting. Work includes but is not limited to the following:
 - (1) Removal/replacement of additional wet insulation and related roofing components on an additional approved per square foot cost.
 - (2) Replacement or repair existing defective roof decking at an additional approved per square foot cost. Install new decking to match existing decking.
 - (3) Replacement or repair of existing defective wood blocking at an additional approved per linear foot cost.
 - c. 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 roofing system total height. Install new insulation system and compatible roofing membrane patch over roof infill area.
 - d. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- 5. Perform miscellaneous remedial and preventive roof repairs prior to applying the Restoration Coating System.
 - a. Remove and dispose of existing walkway pads. Repair underlying roof membrane as required.
 - b. Perform miscellaneous remedial roof membrane repairs to repair visible roof defects.
 - (1) Remove and repair blisters, ridges, buckles and other substrate irregularities from existing roofing system that would inhibit application of restoration coating.
 - c. Perform roof membrane repairs with new POWERply Standard Smooth roofing ply sheets adhered in POWERply Endure Bio Adhesive TF.
 - (1) Install same number of plies removed.
 - d. Make minor membrane repairs using Geogard Seam Sealer and Permafab reinforcing membrane.

- e. Perform flashing and sealant repairs.
 - (1) Touch-up open sealant joints on pipe portals, termination bars, counterflashings, drawbands, and copings at perimeters of, and projections on, the restored roof areas.
- f. Flash units / curbs where flashing does not extend to top of curb with new flashing material or specified Fluid Applied Membrane flashings.
- g. Replace defective base flashing membrane.
 - (1) If flashings are damaged beyond repair, flashing must be replaced with material compatible with the existing roof/substrate.
 - (2) Install sheet flashings and preformed flashing accessories and adhere to substrate according to roofing system manufacturer's written instructions. Apply flashing adhesive to substrate and underside of flashing sheet at required rate.
 - (3) Follow manufacturer's typical flashing procedures for wall flashing including metal applications.
 - (4) Terminate and seal top of sheet flashings. Bar terminate top edge of new base flashing and provide slip counter flashing behind existing metal flashings.
- h. Clean existing gutters.
- 6. Reuse existing metal flashings unless specified otherwise.
 - a. Replace defective or missing sheet metal flashings to match existing.
 - b. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish.
- 7. Replace defective or missing sheet metal flashings.
 - a. Install new metal flashings to match existing metal type and profile.
 - b. Metal Flashing fabrication shall comply with Tremco Inc., SMACNA and NRCA recommendations.
 - c. Repair pitch pockets and sealant. Fill pitch pocket as needed and install new storm collars where defective or missing. New collar metal to match pitch pocket metal.
 - d. Install new slip metal flashings where required. Match existing metal flashing type.
 - e. Install miscellaneous metal flashing details and related accessories as required and instructed at Pre-Job Meeting.
- 8. Install a new Tremco AlphaGuard BIO Fluid Applied Roofing System over the prepared existing Modified Bitumen Roof System.
 - a. General Requirements:
 - (1) Apply AlphaGuard coatings to roof surface at the specified coverage rate, using a notched squeegee then a roller to spread the material evenly.
 - (2) Painters tape shall be used to mask detail areas and metal flashings. Remove tape while AlphaGuard coating remains wet.
 - (3) Coverage rates of base coat and top coat must be continuously verified for proper wet film thickness with a wet mil gauge.

- b. Prime substrates prior to the AlphaGuard base coat application.
 - (1) Prior to coating application, WTI will test for Base Coat adhesion and compatibility over any remaining, tightly adhered, existing coated surfaces. Testing shall be performed in accordance with Tremco Inc. requirements.
 - (2) Prior to primer application, clean roof and wall substrates of dust, debris, and other substances detrimental to roofing installation according to written instructions by Tremco Incorporated. Remove and dispose of loose debris.
 - (3) Prime roof membrane and flashing membrane. Field adhesion test results will determine which Primer shall be utilized.
 - (a) Existing membrane with no coating shall be primed with:
 - i) AlphaGuard WB Primer at a rate of approximately 200 to 250 square feet per gallon. Coverage will vary depending upon surface porosity and application conditions.
 - (b) Existing membrane with coated surface shall be primed with:
 - i) Geogard Primer at a rate of approximately 400 square feet per gallon. Coverage will vary depending upon surface porosity and application conditions.
 - (4) Prime asphalt contaminated surfaces with AlphaGuard WB Primer at a rate of approximately 200 to 250 square feet per gallon. Coverage will vary depending upon surface porosity and application conditions.
 - (5) Prime masonry surfaces with AlphaGuard C Primer at a rate of approximately 200 to 250 square feet per gallon.
 - (6) Prime metal surfaces with AlphaGuard M Primer at a rate of approximately 200 to 400 square feet per gallon.
 - (a) Rusted or oxidized areas must be ground to a bright metal surface. Painted surfaces should be tested to verify adhesion.
 - (7) Install primers as specified and in accordance with Tremco application guidelines.
- c. Pre-treat irregular roof surface areas.
 - (1) Allow substrates to dry completely before applying base or top coat.
 - (2) Pre-treat any irregular roof areas with AlphaGuard Base Coat to level surface prior to base coat and reinforcement application (e.g. overdriven insulation fastener plates and ponded areas). Leveling the substrate prior to reinforcement application will prevent pinholes and voids. Coverage rates will increase with pretreating.
- d. Flashing and stripping application:
 - (1) All flashings shall be installed first, before the field of the roof is covered. After base coat and fabric reinforcement have been installed, and before the top coat is installed, a thorough inspection of the surface must be conducted by the manufacturer's technical representative.

- (a) The Permafab fabric reinforcement must be completely encapsulated by the base coat, with no pinholes or voids, at the end of each work day.
- (2) Strip-in gutters.
 - (a) Prime metal gutters as specified.
 - (b) Extend coating system into gutters.
- (3) Coating system to encapsulate existing pitch pockets.
 - (a) Prime metal pitch pockets as specified.
 - (b) Encapsulate pitch pockets with coating system.
 - (c) Install metal cap over pitch pockets where missing.
- e. Install AlphaGuard BIO Base Coat and Permafab polyester reinforcement over flashing and field membrane surfaces.
 - (1) Prime with specified primer and install base coat onto approved substrate, spread coating evenly according to Tremco's written instructions.
 - (2) Apply base coating at a rate of 4.0 gallons per 100 square feet (64 mils wet film thickness).
 - (3) Back roll to achieve a minimum wet mil thickness according to Tremco's written instructions.
 - (4) Install Permafab polyester fabric reinforcement immediately into wet base coat. Roll surface of reinforcement fabric to fully embed into wet base coat. Roll until fully saturated.
 - (5) Lap adjacent rolls of reinforcement fabric no less than 3". End laps shall be no less than 6 inches.
 - (6) Lap onto flashing no less than 3 inches.
 - (7) Roll the surface of the fabric to completely embed into the wet base coat.
 - (8) Allow base coat to cure a before installing top coat.
 - (9) Permafab fabric reinforcement must be fully encapsulated in base coat and not contain pin holes, voids, or openings.
- f. Install AlphaGuard BIO Top Coat over base coating on field of roof and flashings:
 - (1) Priming of the base coat is required if top coat is not applied within 48 to 72 hours of the base coat application. The base coat shall be lightly primed with Geogard Primer in accordance with Tremco application requirements.
 - (2) Install top coating at a rate of 2.0 gallons per 100 square feet (32 mils wet film thickness).
 - (3) Install top coat on flashings first. Extend coating up vertical surfaces a minimum of 8 inches and out onto horizontal surfaces.
 - (4) Install top coat directly over field base coat and spread coating evenly according to manufacturer's written instructions.
 - (5) Back roll to achieve a minimum wet mil thickness according to manufacturer's written instructions.
 - (6) Avoid foot traffic on fluid-applied membrane for 24 hours minimum.

9. Install new pressure treated wood sleepers with Walk pads at existing wood sleeper and conduit/pipe locations. Sleepers to be sized to support conduit /pipe/equipment. Secure and flash existing pipe supports per Tremco Inc. details, standards and as directed by WTI's project superintendent.
 - a. Install TPA Walk Pad under wood sleepers.
10. Clean project related over spray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

1.06 SUB-CONTRACTOR USE OF SITE (AND PREMISES)

- A. Limit use of site (and premises) to allow:
 1. Owner occupancy.
 2. Work by others and work by owner.
 3. Existing Emergency Building Exits shall be usable at all times during Construction.
 4. Construction Operations: Limited to areas as stated in pre-bid meeting.

1.07 SUBMISSION OF PROPOSALS

- A. The enclosed work sheets are to be used for subcontractor's submission of bids. In addition, the subcontractor shall submit with his/her bid the following attachments:
 1. Sample of Certificates of Insurance.
 2. Tremco material list with prices extended and quantity (if unit is in 5-gallon containers - give 5-gallon price).
 - a. The back of the Subcontractor Agreement contains a sample material list.
 - b. Each subcontractor shall use the book price for the project.
 3. Non-Tremco material list with quantity.
 4. Your bid form filled out, signed, and notarized.
 - a. Bid form shall include cost for a 100 percent payment and performance bond for the total value of the project including all labor and material.
 - b. Proposal form shall include all costs associated with prevailing wage rates and fringe benefits. Refer to *Section 01025 Measurement and Payment*.
- B. **Sealed proposal packages shall be submitted to WTI no later than as determined by WTI. Faxed proposals are acceptable but must be followed by the original sealed proposal package within 5 business days after the bid due date.**
- C. WTI reserves the right to reject any or all bids or to waive any informality in the bid. No bidder may withdraw his bid for a period of 90 days after the date set for the opening thereof.

**ORIGINAL SEALED BIDS SHALL CONTAIN WTI PROPOSAL # 5045124
AND BE SUBMITTED TO:**

WEATHERPROOFING TECHNOLOGIES INC.
3735 Green Road, Beachwood, OH 44122

Attn: Al Scheuerman, WTI Construction Manager
Phone: (216) 834-9730 Email: ascheuerman@wtiservices.com

1.08 QUALITY CONTROL

A. Subcontractor Shall:

1. Submit an affidavit attesting the subcontractor has in place and fully implemented a written Health, Safety and Environmental plan and the plan is compliant with all applicable Federal, State, and local regulations.
2. Be experienced in Fully Adhered Thermoplastic Membrane roofing and Built-Up Roofing restoration.
 - a. 5 Year minimum.
3. For portions of this project where asbestos removal and disposal occur, Roofing subcontractor or their subcontractor, shall be State certified for asbestos abatement work.
4. Be acceptable to owner.
5. Be manufacturer certified or approved Subcontractor.
6. Has not been in Chapter 7 during the last Ten (10) years.
7. Provide list of at least 5 projects available for inspection employing the same roof system.

B. Project meetings:

1. Pre-bid meeting:
 - a. Will be held at place and time determined by Weatherproofing Technologies, Inc. and Owner.
 - b. Attendance:
 - (1) WTI Construction Manager
 - (2) WTI Project Superintendent.
 - (3) Roofing Subcontractor / other Subcontractors.
 - (4) Representative of Owner.
 - (5) Tremco Sales Representative.
 - c. Minimum Agenda:
 - (1) Review of contract documents.
 - (2) Review of specification.
 - (3) Walkover inspection.
2. Pre-Construction Meeting:
 - a. Shall be scheduled by Weatherproofing Technologies, Inc. and Owner.
 - b. Attendance:
 - (1) WTI Construction Manager
 - (2) WTI Project Superintendent.
 - (3) Roofing Subcontractor / other subcontractors.
 - (4) Representative of Owner
 - (5) Tremco Sales Representative.
 - c. Minimum Agenda:
 - (1) Designation of responsible personnel-roles and responsibilities.
 - (2) Construction schedule.

- (3) Operational requirements.
 - (4) Site safety plan review.
 - (5) Review of submittals.
 - (6) Walkover inspection.
- 3. Weekly Progress Meetings:
 - a. Shall be scheduled by WTI project superintendent and Owner.
 - b. Attendance:
 - (1) WTI Project Superintendent.
 - (2) Roofing Subcontractor / other subcontractors.
 - (3) Representative of Owner
 - c. Minimum agenda:
 - (1) Review of work progress.
 - (2) Identification of problems, which impede planned progress.
 - (3) Corrective measures to regain projected schedules.
 - (4) Develop punch list of items requiring correction.
- 4. Final Inspection:
 - a. Will be scheduled by WTI Superintendent upon job completion.
 - b. Attendance:
 - (1) WTI Project Superintendent.
 - (2) Roofing Subcontractor / other subcontractors.
 - (3) Representative of Owner
 - (4) Tremco Sales Representative.
 - c. Minimum agenda:
 - (1) Walkover inspection.
 - (2) Identification of problems, which may impede issuance of warranty.
- C. Regulatory requirements:
 - 1. State Adopted International Building Code Requirements
 - 2. Local Building Code Requirements
 - 3. Underwriters Laboratories (UL)
 - (1) UL Classified Fire Rating – UL 790, Class A
 - 4. Factory Mutual
 - a. FM 1-90 Insulation and Base Sheet Attachment Standards
 - b. FM Property Loss Prevention Data Sheets
 - (1) 1-28, 1- 29, 1-49

1.09 EXTRA WORK

- A. Change orders will not be approved for any reason other than items that were totally unforeseen. Any unforeseen items should be immediately brought to the attention of WTI project superintendent.

1.10 UNAUTHORIZED WORK

- A. Work performed which is not provided for in the Contract, and Work done beyond limits shown on the Plans or as directed, or Extra Work done without written authorization will be considered unauthorized, shall be at the expense of the roofing subcontractor, and will not be measured or paid for by the Owner. Work so done maybe ordered, removed, and

replaced at the roofing subcontractor's expense, at the sole discretion of Weatherproofing Technologies, Inc.

1.11 WORK SEQUENCE

- A. Construct Work in phases to accommodate Owner's occupancy requirements during the construction period; coordinate construction schedule and operations with WTI project superintendent.

1.12 OWNER OCCUPANCY

- A. The Owner will occupy the premises (Building) during the entire period of construction.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

1.13 RESTORATION AND CLEAN-UP

- A. During the construction period, the Subcontractor shall, on a daily basis, place all of his waste materials and "non-broomable" debris into containers.
- B. Upon completion of the Work and before acceptance and final payment is made, the Work shall be cleaned of all rubbish, excess materials, false Work, temporary structures, and equipment; and all parts of the Work shall be left in a neat, presentable condition, satisfactory to the Owner. This Work shall be considered incidental to the overall project and no additional compensation will be allowed.

1.14 SUBMITTALS

- A. The subcontractor shall provide the following at Pre-Construction meeting:
 - 1. All approved non-Tremco Materials Specification Data Sheets along with Safety Data Sheet and samples for each product.
 - 2. Tapered saddle/cricket insulation plan per roof section.
- B. The awarded subcontractor shall provide to WTI prior to Pre-Construction meeting:
 - 1. Their Site Specific Safety Plan.
 - 2. OSHA 300 logs.
 - 3. Sub-contractor Roles and Responsibilities signed.
 - 4. Payment and performance bonds for 100% of the Contract Price. The contract price is defined as bid price of the contract. The penal amount of the performance bonds shall be 100% of the bid price including all labor and all material.
 - 5. Insurance certificate with Tremco Inc., Weatherproofing Technologies, Inc., and Owner named as the additionally insured.
 - 6. Properly executed Subcontractor Agreement.
- C. The subcontractor shall provide a Waste Manifest signed by a facility representative and submitted to WTI upon project completion. A Waste Manifest is required when one or

more of the following is included or added to the specified work:

1. Asbestos Abatement.
2. Hazardous material disposal required by federal, state or local codes.

D. The subcontractor shall provide to WTI upon project completion:

1. Fully executed Final Waiver of Lien from Subcontractor, Subcontractor's laborers and material men, and Sub-Subcontractors of Subcontractor.
2. Three year Subcontractor's Warranty.

1.15 DELIVERY, STORAGE AND HANDLING

A. Delivery of materials:

1. Deliver materials to job-site in new, dry, unopened, and well-marked containers showing product and manufacturers name.
2. Deliver materials in sufficient quantity to allow continuity of work.
3. Coordinate delivery with owner.
4. Do not order project materials or start work before receiving written notice to proceed.

B. Storage of materials:

1. Store roll goods on ends only. Discard rolls, which have been flattened, creased, or otherwise damaged. Place materials on pallets. Store roll goods on level pallets. Do not stack pallets.
2. Store materials marked "KEEP FROM FREEZING" in areas where temperatures will remain above 40 degrees F.
3. For insulation, remove plastic packaging shrouds. For felt rolls, slit the top of the plastic shrink-wrap only. Cover top and sides of all stored materials with tarpaulin (not polyethylene). Secure tarpaulin. Canvas tarpaulin only to be used for material protection.
4. Rooftop storage: Disperse material to avoid concentrated loading.
5. Do not store materials in open or in contact with ground or roof surface.
6. Store all materials on a raised platform covered with secured canvas tarpaulin (not polyethylene), top to bottom. Cover all materials when project is not in progress and maintain the ability at all times to cover the materials when required, such as during an unanticipated rain shower.

C. Subcontractor shall assume full responsibility for the protection and safekeeping of products stored on premises.

D. Material handling:

1. Handle materials to avoid bending, tearing, or other damage during transportation and installation.
2. Material handling equipment shall be selected and operated so as not to damage existing construction or applied roofing. Do not operate or locate material handling equipment in areas that will hinder smooth flow of vehicular or pedestrian traffic.

1.16 SITE CONDITIONS

A. Field measurements and material quantities:

1. Subcontractor shall have SOLE responsibility for accuracy of all measurements, estimates of material quantities and sizes, and site conditions that will affect work.
 - a. Field measurements and material quantities.
- B. Existing conditions:
 1. Building space directly under roof area covered by this specification will be utilized by on-going operations.
 2. Access to roof shall be as outlined in pre-construction meeting.
 3. Move air-conditioning units and other equipment as required to install roofing materials complete and in accordance with plans and specifications. When units and equipment are to be moved, they shall be carefully disconnected and removed to a protected area so as not to damage any part or component thereof. Reconnect units in such a way that they are restored to a prior work operating condition. Guard against dust, dirt and odors from entering the building during HVAC equipment relocation by field fabricating temporary covers and/or seals.
 4. A mechanical and/or electrical company licensed to perform such work shall perform all disconnection and re-connection. Subcontractor shall include in his price, cost for adjustments to roof drains to appropriate elevations to conform to new roof specifications. Work including new drain installation shall be performed by licensed plumbing company.
5. All work shall be the responsibility of the roofing subcontractor unless otherwise noted. All work shall be considered that of what is necessary to complete the Scope of Work as written above.
- C. Waste Disposal:
 1. Do not re-use, re-cycle or dispose of material manufacturer's product containers except in accordance with all applicable regulations. The user of manufactured products is responsible for proper use and disposal of product containers.
- D. Safety requirements:
 1. All application, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.
 - a. Subcontractor shall follow WTI and Owner safety programs.
 2. Comply with federal, state, local and Owner fire and safety requirements.
 3. Notify WTI project superintendent whenever work is expected to be hazardous to Owner, employees, and/or operators.
 4. A crewman with two-way communication (i.e., radio, mobile phone) shall be maintained by the subcontractor as a floor area guard whenever tear-off work is being conducted and when roof decking is being repaired or replaced. Isle ways shall have traffic cones and safety tape put up to warn and/or divert personnel from walking beneath areas under construction. Floor guard shall be maintained until base ply is completely installed.
 5. The subcontractor, whenever power tools, roofing kettles, fuels, solvents, torches, and open flames are being used shall maintain fire extinguishers within easy access.
 6. Roofing subcontractor is required to have an OSHA approved fall protection plan in place prior to the start of work. The roofing subcontractor shall include in his bid

all safety railing and barricades to protect his crews. The roofing subcontractor shall present a safety plan prior to the pre-construction meeting. All fall protection shall conform to state and federal regulations as outlined in OSHA CODE OF FEDERAL REGULATION 29 PART 1926.500 SUB PART M. The awarded roofing subcontractor shall submit a safety plan to the subcontractor for submittal to the owner containing to each item listed below as it pertains to the specific project.

- E. Fall Protection: Fall protection is required whenever subcontractor s are working on a surface that has an unprotected side or edge that is six (6) feet or more above a lower level. An unprotected edge is one that has a parapet wall that is less than 39 inches in height. The slope of the roof dictates which fall protection system or systems may be used.
1. Low Slope Roofs
 - a. Slope less than or equal to 4 in 12, employees shall be protected from falling by guardrail systems, personal fall arrest systems, or a combination of warning line system and guardrail system, or warning line system and personal fall arrest system, or warning line system and safety monitoring system. On roofs 50 feet or less in width, the use of a safety monitoring system alone is permitted.
 2. Steep Roofs
 - a. Slope greater than 4 in 12, employees shall be protected from falling by guardrail systems with toe boards or personal fall arrest systems.
 3. Warning Line System
 - a. When mechanical equipment (mechanical equipment meaning all motor or human-propelled, wheeled equipment used for roofing work except wheelbarrows and mop carts) is not being used, the warning line shall be erected no less than six (6) feet from the roof edge.
 - b. When mechanical equipment is being used, the warning line shall be erected not less than six (6) feet from the roof edge that is parallel to the direction of mechanical equipment operation and not less than ten (10) feet from the roof edge, perpendicular to the direction of the mechanical equipment operation.
 - c. Stanchions shall be set not further than 12 feet apart.
 - d. Warning lines shall be a height of 39 inches at the highest point and 34 inches at the lowest point, including sag. They shall be flagged at not more than six (6) foot intervals with high visibility material.
 - e. All employees working outside the warning line and within six (6) feet of the roof edge must wear a full safety harness with the "O" ring located in the rear. A six (6) foot shock-absorbing lanyard with rollout protection also must be used. This lanyard is to be located between the lifeline and the harness. In cases where work outside the warning line is to be performed, a Safety Monitoring System or an approved OSHA fall protection system may be used. (See section below)
- F. Safety Monitoring System
1. A documented competent person monitors the safety of all employees on a roofing or sheet metal crew and warns them when it appears to the monitor that they are

unaware of a hazard or are acting in an unsafe manner. The competent person must be on the same roof as, and within visual sighting distance of, the employees and must be close enough to verbally communicate with the employees.

2. Only used on low slope roofs that are 50 feet or less in width if no other fall prevention system is installed. Can be used on low slope roofs of any width if combined with a warning line system.
3. No mechanical equipment shall be used with this system.
4. Parapet Wall Clamp-On Guardrail System
 - a. Used on roofs where the parapet wall is less than 39 inches.
 - b. Clamp-on posts must be spaced eight (8) feet or less apart.
 - c. Top rail positions 42 inch plus or minus 3 inches high.
 - d. Mid-rail between the top rail and top of the parapet wall at 21 inches.
 - e. If a section of the railing has to be removed to perform work, lifelines, and safety harnesses with six (6) foot lanyards must be used while working in the unprotected area.
 - f. If 1/4 inch steel cable is used at the top and mid-rail, the top cable must be flagged at no more than six (6) foot intervals with a highly visible material.

G. Guardrail Systems

1. Top edge of top rail shall be 42 inches plus or minus 3 inches above the working surface.
2. Mid-rails are required if there is no wall or parapet wall at least 21 inches higher. When used, mid-rails shall be installed at a height midway between the top edge of the guardrail and the working level.
3. Guardrail posts shall be at least two (2) inch by four (4) inch lumber spaced not more than eight (8) feet apart on centers.
4. The top rail shall be at least two (2) by four (4) inch lumber. The intermediate rail shall be at least one (1) inch by six (6) inch lumber.
5. Toe boards shall be a minimum of 3-1/2 inches in vertical heights.
6. When guardrail systems are used at hoisting areas, a chain, gate, or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place. When guardrail systems are used at holes or skylights, they shall be erected on all unprotected sides or edges of the hole.
7. When guardrail systems are used at holes or skylights, they shall be erected on all unprotected sides or edges of the hole.
8. When guardrail systems are used around holes used for ladder access, they shall be provided with a gate or be so offset that a person cannot walk directly into the hole.
9. Manila, plastic or synthetic rope used for top rails or mid-rails shall be inspected as frequently as necessary to ensure that it continues to meet OSHA strength requirements.

H. Catch Platforms

1. Catch platforms consist of ladder jack scaffolding with guardrails, mid-rails and toe boards or welded tube scaffolding with guardrails, mid-rails and toe boards.
2. Both of the above scaffolds must have platform that extend two (2) feet wide or

better beyond the eave with no gap.

I. Personal Fall Arrest System

1. Only full body harnesses with either shock-absorbing lanyard or lifelines, or a combination thereof, shall be used when required. All snap hooks shall be of the locking variety.
2. Personal fall arrest systems shall be rigged such that an employee can neither free-fall more than six (6) feet or contact any lower level.
3. Self-retracting lifelines shall automatically limit free-fall distance to two feet or less.

J. Covers

1. Cover for holes in floors, roofs, and other surfaces shall be capable of supporting, without failure, at least twice the weight of employees, equipment and materials that may be imposed on the cover at any one time.
2. Covers shall be secured when installed to prevent accidental displacement by the wind, equipment or employees.
3. All covers shall be color-coded or marked with the work "HOLE" or "COVER".
4. Covers shall not be stood on, sat on nor have any materials placed upon them.

K. Skylights

1. Skylights shall be protected by either a standard guardrail system or a cover installed in such a way as to resist twice the weight of an employee without deflecting and contacting any portion of the skylight.
2. The roofing subcontractor shall comply with Owner safety program. All roofing subcontractor employees shall attend the safety orientation course prior to the start of work.
3. All safety requirements must be in place prior to each day's work. The WTI project superintendent will conduct a daily safety review. Work shall not start until all safety requirements are in order.

L. Environmental requirements:

1. Do not work in rain, snow, or in presence of water.
2. Do not work in temperatures below 40 degrees F.
3. Do not install materials marked "KEEP FROM FREEZING" when daily temperatures are scheduled to fall below 40 degrees F.
4. Do not perform masonry work below 40 degrees F.
5. Remove any work exposed to freezing.
6. The roofing subcontractor will use some or all of the following methods to minimize disruptions to building occupants and operations due to odor and will be performed at no additional cost to the owner.
 - a. Divert air intake from work area by attaching scoops or temporary ductwork.
 - b. Temporarily shut down or block air intakes.

M. Security requirements:

1. Comply with Owner security requirements.
2. Provide Owner with current list of accredited persons.

N. Temporary sanitary facilities:

1. The roofing subcontractor shall furnish, install, and maintain temporary sanitary facilities for employee use during project construction. The suitable location will be

- determined at the pre-construction meeting. Remove on project completion.
2. Place portable toilets in conformance with applicable laws, codes, and regulations.

1.17 UNIT PRICES

- B. Quote unit prices on:
1. Provide unit prices for items listed on the Proposal Form.
 2. Provide additional unit prices for items listed in the above Scope of Work.

1.18 WARRANTIES:

- A. Refer to *Section 01700 Contract Closeout* for warranty requirements.

PART 2 – PRODUCTS - Not Used

PART 3 – EXECUTION - Not Used

END OF SECTION

SECTION 01025
MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and contract documents, including *Section 01010 SUMMARY OF WORK*, apply to this section.

1.02 SECTION INCLUDES

- A. Measurement and payment criteria applicable to portions of the Work performed under a unit price payment method.
- B. Defect assessment and non-payment for rejected Work.

1.03 RELATED SECTIONS

- A. Section 01010 Summary of Work
- B. Section 01700 Contract Closeout
- C. Section 02060 Demolition
- D. Section 07515 Fluid Applied Roof Restoration System
- E. Section 07540 Thermoplastic Membrane Roofing
- F. Section 13280 Asbestos Abatement

1.04 AUTHORITY

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Total project percentage of completion is based on:
 - 1. Scope of Work I (Roof Replacement)
 - a. 5 Percent - Mobilization.
 - b. 20 Percent - Tear-Off and Disposal.
 - c. 45 Percent - Insulation and Membrane.
 - d. 10 Percent - Flashing.
 - e. 10 Percent - Metal Work.
 - f. 5 Percent - Surfacing and Coatings.
 - g. 5 Percent - Demobilization and Clean-Up.

2. Scope of Work II (Roof Restoration)
 - a. 5 Percent - Mobilization.
 - b. 15 Percent – Roof Cleaning and Preparation.
 - c. 25 Percent – Roof Repairs and Wet Insulation Replacement.
 - d. 50 Percent – Coating Application.
 - e. 5 Percent - Demobilization and Clean-Up.

1.05 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Proposal Form are for proposal and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by WTI.
- B. Subcontractor shall be responsible for any additional material.

1.06 MEASUREMENT OF QUANTITIES

- A. Stipulated Sum/Price Measurement: Items measured by area, linear means or combination of both, as appropriate, as a completed item or unit of the Work and as described in paragraph 1.04 Authority of this section.

1.07 PAYMENT

- A. Per instructions at pre-proposal meeting from WTI.
- B. Refer to attached Subcontractor Agreement

1.08 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.

1.09 NON-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
 1. Products wasted or disposed of in a manner that is not acceptable.
 2. Products determined as unacceptable before or after placement.
 3. Products not completely unloaded from the transporting vehicle.
 4. Products placed beyond the lines and levels of the required Work.
 5. Products remaining on hand after completion of the Work.
 6. Loading, hauling, and disposing of rejected products.

1.10 SCHEDULE OF UNIT PRICES

- A. Refer to Proposal Form.

1.11 TIME FOR COMPLETION

- A. Time is of the essence; subcontractor's proposed working days must accurately reflect the time required for completing the roofing project as specified therein.

1. WTI and the sub-contractor understand and agree that if the work is not completed within the time completion required by the agreement and the pre-proposal documents, WTI will suffer damage. The parties agree that it will be impractical and infeasible to determine the amount of actual damages, therefore it is agreed that the sub-contractor shall pay to WTI as fixed and liquidated damages and not as penalty, the sum of \$800.00 per day for each working day over the stated document days until all work is completed and accepted. The sub-contractor and his/her surety shall be liable for the amount thereof which shall be deducted from any payments due to or become due to the sub-contractor.

1.12 PREVAILING WAGE REQUIREMENTS

- A. Subcontractor's proposal shall include all costs associated with local prevailing wage rates and fringe benefits as defined by the Brick Township Board of Education and Local Department of Labor.

PART 2 - PRODUCTS

- A. Not used

PART 3 - EXECUTION

- A. Not used

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and contract documents, including *Section 01010 SUMMARY OF WORK*, apply to this section.

1.02 SECTION INCLUDES

- A. Closeout procedures
- B. Final cleaning
- C. Adjusting
- D. Project record documents
- E. Operation and maintenance data
- F. Warranties

1.03 RELATED SECTIONS

- A. Section 01010 Summary of Work
- B. Section 01025 Measurement and Payment
- C. Section 02060 Demolition
- D. Section 07515 Fluid Applied Roof Restoration System
- E. Section 07540 Thermoplastic Membrane Roofing
- F. Section 13280 Asbestos Abatement

1.04 CLOSEOUT PROCEDURES

- A. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.05 FINAL CLEANING

- A. Execute final cleaning prior to final project assessment.
- B. Clean debris from roofs, gutters, downspouts, and drainage systems.
- C. Clean site; sweep paved areas, rake clean landscaped surfaces of all roofing related debris.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.06 ADJUSTING

- A. Adjust equipment on the roof top that has been reset and relocated.

1.07 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and MSDS information sheets.
 - 6. Manufacturer's instructions for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
 - 1. Manufacturer's roofing system.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.

1.08 WARRANTIES:

- A. Roofing Subcontractor's Guarantee:
 - 1. Upon project completion and Owner acceptance, effective upon complete payment the Roofing Subcontractor shall issue Weatherproofing Technologies, Inc. a guarantee against defective workmanship and materials for a period of three (3) years.
- B. Tremco Warranty: Scope of Work I
 - 1. Upon project completion, Tremco acceptance, and once complete payment has been received by Tremco, Tremco shall deliver to Owner a Tremco Roofing System Quality Assurance Warranty for a period of Twenty (20) years.
 - a. Roof Sections: B and H.
- C. Tremco Restoration Warranty: Scope of Work II
 - 1. Upon project completion, Tremco acceptance, and once complete payment has been received by Tremco, Tremco shall deliver to Owner a Tremco Roofing System Quality Assurance Warranty for a period of Twenty (20) years.
 - a. Roof Sections: K and L.

PART 2 – PRODUCTS - Not used.

PART 3 – EXECUTION - Not used.

END OF SECTION

SECTION 02060
DEMOLITION

PART 1- GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and Contract Documents, including *Section 01010 Summary of Work*, apply to work of this section.

1.02 SECTION INCLUDES

- A. Existing conditions, demolition by removal and disposal of existing membrane to substrate, remove and dispose all flashings and counter flashings to substrate.

1.03 RELATED SECTIONS

- A. Section 01010 Summary of Work
- B. Section 01025 Measurement and Payment
- C. Section 01700 Contract Closeout
- D. Section 07515 Fluid Applied Roof Restoration System
- E. Section 07540 Thermoplastic Membrane Roofing
- F. Section 13280 Asbestos Abatement

1.04 EXISTING CONDITIONS

- A. The subcontractor shall verify existing roof construction and square footage.

PART 2 – PRODUCTS

- A. Not used

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protection:
 - 1. Roofing subcontractor shall be responsible for protection of property during course of work. Paved areas and building shall be protected from damage. Repair damage at no extra cost to owner.
 - 2. Provide at site prior to commencing removal of debris, a dumpster or dump truck to be located adjacent to the building.

3. Limit preparation to those areas that can be covered with installed roofing material on the same day or before arrival of inclement weather.
4. Arrange work sequence to avoid use of newly constructed roofing, as well as existing roofing for storage, walking surface, and equipment movement. Protect surface with runways constructed of smooth surface plywood over one inch thick insulation board where access is absolutely required. Ensure full protection of new and existing roof surfaces against mechanical damage.
5. Construct an enclosed chute on drops 20 feet or greater from roof for removal of debris. Protect building surfaces at chute/set-up area with tarpaulin. Secure tarpaulin. Remove dumpster from premises when full and empty at approved, legal dumping or refuse area.
6. Clean, power-wash if required any stains or marring caused by demolition.

3.02 GENERAL REQUIREMENTS

A. Demolition as follows:

1. Demolish, remove and dispose of existing roof system to underlying decking.
 - a. Refer to *Section 13280 Asbestos Abatement*.
2. Remove and dispose of all membrane and metal flashings to substrate.
3. Remove and dispose of obsolete or abandoned roof top equipment (as directed by owner). Work includes disconnection and disposal of all related components.
4. Sweep roof deck clean, dry deck if wet; replace if deteriorated.

3.03 CLEANING

A. Clean up:

1. Immediately upon job completion, roof membrane and flashing surfaces shall be clean of debris.
2. Clean drains, gutters, and downspouts.

END OF SECTION

SECTION 07515
FLUID APPLIED ROOF RESTORATION SYSTEM

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and contract documents, including Section 01010 SUMMARY OF WORK, apply to this section.

1.02 SUMMARY

- A. This Section includes the following:
 - 1. Protection of existing roofing systems not included in work.
 - 2. Existing roof preparation including cleaning.
 - 3. Low-odor, cold process fluid-applied roof membrane and flashings.

1.03 RELATED SECTIONS INCLUDE THE FOLLOWING:

- A. Section 01010 Summary of Work
- B. Section 01025 Measurement and Payment
- C. Section 01700 Contract Closeout
- D. Section 02060 Demolition
- E. Section 07540 Thermoplastic Membrane Roofing
- F. Section 13280 Asbestos Abatement

1.04 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 Subcontractor's property and shall be removed from Project site.

1.05 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: Modified Bitumen membrane and components and accessories between the roof deck and roof membrane system.

- C. Roofing Preparation: Existing roofing that is to remain and be prepared to accept restorative fluid-applied membrane application.
- D. Patching: Removal of a portion of existing membrane roofing system from deck or removal of selected components and accessories from existing membrane roofing system and replacement with similar materials.
- E. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- F. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.06 PERFORMANCE REQUIREMENTS

- A. General: Provide recoated 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. Metal Flashings: Provide base flashings, perimeter flashings, detail flashings and component materials that comply with requirements and recommendations of the following:
 - 1. Tremco's construction details and recommendations.
 - 2. SMACNA Architectural Sheet Metal Manual (Fifth Edition) for construction details.
- D. Energy Performance:
 - 1. Provide roof coating with solar reflectance index not less than 78 when calculated according to ASTM E 1980 based on testing identical products by a qualified testing agency.
 - 2. Meets initial solar reflectance not less than 0.70 and emissivity not less than 0.75 when tested according to CRRC-1.
- E. ASTM D7311: Provide roof coating that meets the requirements listed in the Standard Specification for bio- based fluid-applied polyurethane roof membrane system.
- F. Exterior Fire-Test Exposure: ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- G. Fire-Resistance Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1.07 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.08 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below restoration area. Conduct restoration so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
 - 1. Coordinate work activities daily with Owner 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 restored, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from restoration operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Weather Limitations: Proceed with restoration preparation only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Basis-of-Design Manufacturer/Product: The roof system specified in this Section is based upon Tremco, Inc. products. Subject to compliance with requirements, provide the named product or an approved comparable product.
 - 1. AlphaGuard BIO Fluid Applied Roof Restoration System by Tremco Inc.

2.02 MATERIALS, GENERAL

- A. General: Fluid-applied roofing materials recommended by roofing system manufacturer for intended use and compatible with components of existing membrane roofing system.
- B. Infill Materials: Where required to replace test cores and to patch existing roofing, use infill materials matching existing membrane roofing system materials, unless otherwise indicated.

2.03 FLUID APPLIED ROOF RESTORATION MATERIALS

- A. Polyurethane Elastomeric Fluid-Applied System:
 - 1. AlphaGuard BIO Fluid Applied Roofing by Tremco Inc.
 - a. ASTM D 7311, elastomeric, two-coat, bio- based fluid-applied polyurethane roof membrane system.
- B. Aliphatic Urethane Base Coat:
 - 1. AlphaGuard BIO Base Coat by Tremco Inc.
 - a. Two-part, bio- based, polyurethane roof coating used with fiberglass mat or polyester reinforcement.
 - b. Color: Gray.
- C. Aliphatic Urethane Top Coat:
 - 1. AlphaGuard BIO Top Coat by Tremco Inc.
 - a. Two-part, bio-based, polyurethane roof coating.
 - b. Color: White.
- D. Polyester Reinforcement Fabric:
 - 1. Permafab Polyester Fabric by Tremco Inc.
 - a. Stitch-bonded polyester fabric, minimum 3 oz./sq. yd., for fluid-applied membrane and flashing.
- E. AlphaGuard Coating Primer:
 - 1. Geogard Primer by Tremco Inc.
 - a. Single-component, multi-substrate primer to promote adhesion of base coat to top coating.
 - 2. AlphaGuard WB Primer by Tremco Inc.
 - a. Water based, polymer modified, multi-substrate primer to promote adhesion of base coat to top coating.

2.04 AUXILIARY ROOF COATING MATERIALS

- A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with existing roofing system and fluid-applied roofing system.
- B. Field and Flashing Membrane Surface Primer:
 - 1. AlphaGuard WB Primer by Tremco Inc.
 - a. Water based, polymer modified primer which conditions a variety of roofing substrates prior to the application of AlphaGuard systems.
- C. Structural Concrete/Masonry Primer:
 - 1. AlphaGuard C-Prime by Tremco Inc.
 - a. Two-component, 100% solids, epoxy penetrating primer for concrete deck surfaces.
- D. Metal Surface Primer:
 - 1. AlphaGuard M-Prime by Tremco Inc.

- a. Single-component, water based primer to promote adhesion of base coat to metal surfaces.
- E. Polyurethane Mastic:
 - 1. Geogard Seam Sealer by Tremco Inc.
 - a. Single component, high solids, moisture curing, aromatic polyurethane mastic formulated to make repairs on a wide variety of roof and flashing surfaces.
- F. Repair Reinforcement Fabric:
 - 1. Permafab Polyester Fabric by Tremco Inc.
 - a. Stitch-bonded polyester fabric, minimum 3 oz./sq. yd., for fluid-applied membrane and flashing.
- G. Walkways:
 - 1. For finish coat slip resistance: Silica sand aggregate, 20 – 40 mesh.
- H. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Coordinate with Owner to shut down air intake equipment in the vicinity of the Work. Cover air intake louvers before proceeding with restoration 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.
- E. Prior to roof demolition work, roofing subcontractor shall furnish and install interior protection where needed to prevent roofing related debris and asphalt from entering the building.
 - 1. Subcontractor to provide daily clean up necessary to bring the interior/room to as was condition prior to starting. These areas to be inspected on a daily basis.

- F. Clean roof surfaces prior to roof restoration work.
 - 1. Remove and dispose of all dirt, dust, and other debris from the roof area. Area to be coated must be a clean, sound and dry surface.
 - 2. Pressure-wash roof surface to provide clean substrate.
 - 3. Prevent debris from entering roof drain system.
 - 4. Allow roof to dry.
 - 5. Perform roof preparation work as specified.

3.02 ROOF SURFACE PREPARATION

- A. Clean substrate of dust, debris, and other substances detrimental to roofing installation according to written instructions by Tremco Incorporated.
- B. Complete cleaning of the existing roofing system including, field membrane, membrane flashings, field seams and metal flashings.
 - 1. Prior to coating application, pressure-wash and brush agitate the entire roof surface and base flashings to remove dust, dirt and containments. Pressure-wash using bio-degradable cleaner and clean water.
 - 2. Remove and dispose of loose debris.
 - 3. Pressure-wash and brush agitate the entire roof surface and base flashings to remove dust, dirt and containments.
 - a. Clean the roof and flashing membrane surfaces with a high-pressure power wash of at least 2,500 psi. Allow membrane surface to dry.
 - 4. Take precautions as needed to prevent debris from entering the roof drainage system.
 - 5. Allow roof to dry.
- C. Examine existing roofing substrates, with WTI superintendent present, for compliance with requirements and for other conditions affecting application and performance of roof coatings.

3.03 ROOF AND FLASHING MEMBRANE REPAIRS

- A. Perform miscellaneous remedial and preventive roof repairs prior to applying the Restoration Coating System.
 - 1. Remove and dispose of existing walkway pads. Repair underlying roof membrane as required.
 - 2. Perform miscellaneous remedial roof membrane repairs to repair visible roof defects.
 - a. Remove and repair blisters, ridges, buckles and other substrate irregularities from existing roofing system that would inhibit application of restoration coating.
 - b. Perform roof membrane repairs with BURmastic Composite Ply HT and POWERply Endure Bio Adhesive. Install same number of plies removed.
 - c. Make minor membrane repairs using Solarguard Seam Sealer and Permafab reinforcing membrane.
- B. Perform miscellaneous remedial flashing membrane repairs to repair visible roof defects.
 - 1. If flashings are damaged beyond repair, flashing must be replaced with material compatible with the existing roof/substrate.

2. Replace defective flashing membrane.
 3. Remove defective flashing and replace with new modified bitumen flashings to match existing.
 4. Secure top edge of cap flashing membrane with metal termination bar. Seal termination bar with Geogard Seam Sealer and Permafab reinforcing membrane as required to keep flashing system watertight.
- C. If flashings are damaged beyond repair, flashing must be replaced with material compatible with the existing roof/substrate.
1. Replace defective flashing membrane where instructed at Pre-Job Walk.
 2. Reuse existing metal flashings unless specified otherwise.
 3. Replace defective or missing sheet metal flashings to match existing.
- D. Make minor roof and flashing repairs using Geogard Seam Sealer and Permafab reinforcing membrane.
1. Once all repairs have been made, allow to cure for 24 hours before applying AlphaGuard coating system.
- E. Replace defective or missing sheet metal flashings.
1. Install new metal flashings to match existing metal type and profile.
 2. Metal Flashing fabrication shall comply with Tremco Inc., SMACNA and NRCA recommendations.
 3. Repair pitch pockets and sealant. Fill pitch pocket as needed and install new storm collars where defective or missing. New collar metal to match pitch pocket metal.
 4. Existing metal stack flashings and plumbing vent flashings may be left in-place and reused when sound. Remove defective components and replace with new.
 5. Install new slip metal flashings where required.
 6. Perform flashing and sealant repairs.
 7. Touch-up open sealant joints on termination bars, counterflashings, drawbands and copings at perimeters of, and projections on, the restored roof areas.
- F. Perform and sealant repairs.
1. Touch-up open sealant joints on termination bars, counterflashings, drawbands and copings at perimeters of, and projections on, the restored roof areas.

3.04 ROOF DRAIN BOWL REPAIRS

- A. Clean existing drain bowl components.
- B. Prior to applying AlphaGuard to a roof drain detail, inspect the drain bowl for cracks and holes. Grind the bowl to remove any residual roofing products or asphalt residue. The drain should have a clean, rust free surface to apply AlphaGuard.
- C. Make all necessary repairs to the existing drain detail. Ensure that the existing roofing material is adhered tightly to the drain bowl and abutting roofing.

- D. Replace broken roof drain accessories including clamping rings, clamps, bolts and strainers at roof drain bowl locations. Replace broken flashing ring and strainers with new cast iron roof drain rings and strainers.
- E. Replace defective roof drain bowl assemblies. Replace with new cast iron roof drain bowl and related accessories on an additional approved unit cost. Work shall include plumbing connections.

3.05 FLUID APPLIED ROOF RESTORATION SYSTEM APPLICATION

- A. Install AlphaGuard BIO Fluid Applied Roof Maintenance and Restoration System over prepared substrates.
 - 1. General:
 - a. Allow coating surfaces to dry thoroughly. Verify that existing substrate is dry before proceeding with application of fluid applied roofing. Spot check substrates with an electrical capacitance moisture-detection meter.
 - b. Examine existing roofing substrates, with WTI superintendent present, for compliance with requirements and for other conditions affecting application and performance of roof coatings.
 - c. Protect roof areas that are not to receive fluid applied roofing and adjacent portions of building and building equipment.
 - d. Prevent dust, vapors, gases and odors from entering into the building during roof installation. When shutting down or blocking air intakes, provide makeup air or additional intake air from sources away from the work area. Coordinate these procedures with owner's Representative.
 - 1) Shut down air intake equipment in the vicinity of the project in coordination with the owner. Cover air intake louvers before proceeding with coating work that could affect indoor air quality or activate smoke detectors in the duct work.
 - 2) Verify that rooftop utilities and service piping affected by the Work have been shut off before commencing Work.
 - e. Do not apply materials when air temperature is below 50 degrees. Fahrenheit or above 110 degrees. Fahrenheit. Cure times are extended at temperatures below 50 degrees. Fahrenheit. Prevent materials from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.
 - f. Painters tape shall be used to mask detail areas and metal flashings. Remove tape while AlphaGuard coating remains wet.
 - g. Coverage rates of base coat and top coat must be continuously verified for proper wet film thickness with a wet mil gauge.
- B. Prime substrate prior to the Alpha Guard BIO base coat application.
 - 1. Prior to coating application, WTI will test for Base Coat adhesion and compatibility over any remaining, tightly adhered, existing coated surfaces. Testing shall be performed in accordance with Tremco Inc. requirements.

2. Prior to primer application, clean roof and wall substrates of dust, debris, and other substances detrimental to roofing installation according to written instructions by Tremco Incorporated. Remove and dispose of loose debris.
3. Prime roof membrane and flashing membrane. Field adhesion test results will determine which Primer shall be utilized.
 - a. Existing membrane with no coating shall be primed with:
 - 1) AlphaGuard WB Primer at a rate of approximately 200 to 250 square feet per gallon. Coverage will vary depending upon surface porosity and application conditions.
 - 2) AlphaGuard Primer WB is milky white in the container and when first applied but will dry to a clear finish.
 - b. Existing membrane with coated surface shall be primed with:
 - 1) Geogard Primer at a rate of approximately 400 square feet per gallon. Coverage will vary depending upon surface porosity and application conditions.
 - c. Apply primer to clean and completely dry substrates and allow the primer to completely dry prior to applying AlphaGuard. Keep foot traffic to a minimum on primed surfaces.
 - d. Re-prime as required.
 - e. Surfaces primed with AlphaGuard Primer WB must be re-primed if allowed to remain open for more than 24 hours.
4. Prime masonry surfaces with AlphaGuard C Primer at a rate of approximately 200 to 250 square feet per gallon.
 - a. Concrete must be structurally sound, dry, free of grease, oils, coatings, dust, curing compounds and other contaminants. Surface laitance must be removed. Smooth precast and formed concrete surfaces must be cleaned, roughened and made absorptive by mechanical abrasion.
 - b. Apply with a clean brush or roller. Dry time is 3-4 hours at 75°F.
 - c. Do not apply over contaminated or damp surfaces.
 - d. Always allow new concrete to cure a minimum of 28 days. Use the concrete dryness test to ensure concrete is properly cured before use.
5. Prime metal surfaces with AlphaGuard M Primer at a rate of approximately 200 to 400 square feet per gallon.
 - a. All rusted or oxidized areas must be ground to a bright metal surface. Any painted surfaces should be tested to verify adhesion.
 - b. Apply AlphaGuard M-Prime in a continuous film. Normal drying time is approximately 15 minutes. Drying time will be extended under cool weather conditions. AlphaGuard M-Prime must be completely dry before applying sealant or coating.
 - c. Urethane sealants and coatings can be applied up to 8 hours after AlphaGuard M-Prime has been applied. After 8 hours, the surface must be cleaned with MEK or Xylene and re-primed with AlphaGuard M-Prime.
6. Install primers as specified and in accordance with Tremco application guidelines.
7. Refer to product data sheets for detailed application requirements.

C. Prepare and strip-in roof drains.

1. Remove existing clamping ring and clean membrane under surface of clamping ring. Note: Clamping ring must be reinstalled if rain is in the forecast to ensure rainwater does not enter the building below the membrane at the drain.
2. Prior to applying AlphaGuard base coating to a roof drain detail, inspect the drain bowl for cracks and holes. Grind the bowl to remove any residual roofing products or asphalt residue. The drain should have a clean, rust free surface to apply AlphaGuard.
3. Make all necessary repairs to the existing drain detail. Ensure that the existing roofing material is adhered tightly to the drain bowl and abutting roofing.
4. Prime metal drain components.
 - a. Clean existing drain bowl components.
 - b. Prime metal surfaces with AlphaGuard M Primer at a rate of approximately 200 to 400 square feet per gallon.
 - c. All rusted or oxidized areas must be ground to a bright metal surface. Any painted surfaces should be tested to verify adhesion.
 - d. Apply AlphaGuard M-Prime in a continuous film. Normal drying time is approximately 15 minutes. Drying time will be extended under cool weather conditions. AlphaGuard M-Prime must be completely dry before applying sealant or coating.
 - e. Urethane sealants and coatings can be applied up to 8 hours after AlphaGuard M-Prime has been applied. After 8 hours, the surface must be cleaned with MEK or Xylene and re-primed with AlphaGuard M-Prime.
 - f. Install primers as specified and in accordance with Tremco application guidelines
5. Apply AlphaGuard BIO base coat and Permafab polyester fabric reinforcement.
 - a. Apply base coating to inside of roof drain bowl and surrounding roofing at a rate of 4.0 gallons per 100 square feet (64 mils wet film thickness). Coating and reinforcement shall extend into the drain bowl past where the drain ring meets the bowl.
 - b. Back roll to achieve a minimum wet mil thickness according to Tremco's written instructions.
 - c. Install target piece of reinforcement fabric immediately into wet base coat. Roll surface of reinforcement membrane to fully embed into wet base coat. Roll until fully saturated.
 - d. Priming of the base coat is required if top coat is not applied within 48 to 72 hours of the base coat application. The base coat shall be lightly primed with Geogard Primer in accordance with Tremco application requirements.
6. Install AlphaGuard BIO Top Coat over base coating.
 - a. Install top coating at a rate of 2.0 gallons per 100 square feet (32 mils wet film thickness).
 - b. Install top coat directly over field base coat and spread coating evenly according to manufacturer's written instructions.
 - c. Back roll to achieve a minimum wet mil thickness according to manufacturer's written instructions.
 - d. After top coat has been installed, re-install drain clamping ring and strainer once material has completely cured.

- D. Prepare roof penetrations.
 - 1. The base of all roof penetrations, i.e. stacks, vents, pipes, curbs, etc., must be sealed.
 - 2. After priming roof surface, three course roof penetrations with Geogard Seam Sealer and Permafab reinforcement.
 - 3. Let cure before applying base coat and polyester reinforcement.
- E. Pre-treat irregular roof surface areas.
 - 1. Allow substrates to dry completely before applying base or top coat.
 - 2. Pre-treat any irregular roof areas with AlphaGuard Base Coat to level surface prior to base coat and reinforcement application (e.g. overdriven insulation fastener plates and ponded areas). Leveling the substrate prior to reinforcement application will prevent pinholes and voids. Coverage rates will increase with pretreating.
- F. Flashing and stripping application:
 - 1. All flashings shall be installed first, before the field of the roof is covered. After base coat and Permafab polyester fabric reinforcement have been installed, and before the top coat is installed, a thorough inspection of the surface must be conducted by the manufacturer's technical representative. The Permafab fabric reinforcement must be completely encapsulated by the base coat, with no pinholes or voids, at the end of each work day.
- G. AlphaGuard BIO Base Coat and Polyester reinforcement installation:
 - 1. Prime with specified primer and install base coat onto approved substrate, spread coating evenly according to Tremco's written instructions.
 - 2. Apply base coating at a rate of 4.0 gallons per 100 square feet (64 mils wet film thickness).
 - 3. Back roll to achieve a minimum wet mil thickness according to Tremco's written instructions.
 - 4. Install Permafab polyester fabric reinforcement immediately into wet base coat. Roll surface of polyester to fully embed into wet base coat. Roll until fully saturated.
 - 5. Lap adjacent rolls of reinforcement fabric no less than 3 inches. End laps shall be no less than 6 inches.
 - 6. Lap onto flashing no less than 3 inches.
 - 7. Roll the surface of the Permafab fabric to completely embed into the wet base coat.
 - 8. Allow base coat to cure a before installing top coat.
 - 9. Permafab fabric reinforcement must be fully encapsulated in base coat and not contain pin holes, voids, or openings.
- H. AlphaGuard BIO Top Coat installation for field of roof and flashings:
 - 1. Priming of the base coat is required if top coat is not applied within 48 to 72 hours of the base coat application. The base coat shall be lightly primed with Geogard Primer in accordance with Tremco application requirements.
 - 2. Install top coating at a rate of 2.0 gallons per 100 square feet (32 mils wet film thickness) (0.4-0.6 L/m²).
 - 3. Install top coat on flashings first. Extend coating up vertical surfaces a minimum of 8 inches and out onto horizontal surfaces.

4. Install top coat directly over field base coat and spread coating evenly according to manufacturer's written instructions.
5. Back roll to achieve a minimum wet mil thickness according to manufacturer's written instructions.
6. Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.

3.06 WALKWAY APPLICATION

- A. Install walkway at roof access points, mechanical units requiring routine maintenance and where instructed at Pre Job Walk.
 1. For areas where a slip-resistant surface is required, broadcast 20 - 40 mesh silica sand onto an additional layer of Tremco AlphaGuard BIO Top Coat as specified.
- B. Install walkways following application of top coat.
 1. Painters tape shall be used to mask walkway areas. Remove tape while AlphaGuard BIO remains wet.
 - a. Tape off 3-inch wide outline on both sides of walkway.
 - b. Apply Additional lay of AlphaGuard BIO Top Coat at a rate of 1.5 gallons per 100 square feet (24 mils wet film thickness) to taped walkway outline area.
 - c. Color to be chosen by owner.
 2. If walkway application is not applied within 72 hours of the top coat application the top coat must be primed with Geogard Primer at a rate of 400 to 500 square feet per gallon in accordance with Tremco application requirements.
 3. Apply additional layer of AlphaGuard BIO top coating at a rate of 1.5 gallons per 100 square feet (24 mils wet film thickness) to taped walkway area.
 4. Apply additional layer of AlphaGuard MT top coating at a rate of 1.4 gallons per 100
 5. Broadcast approximately 20 lbs. per 100 square feet of 20-40 mesh silica sand or quartz in the wet top coat material.
 6. Immediately back roll sand and top coat, creating an even dispersal of sand. Remove tape outlining walkway immediately.

3.07 CLEANING

- A. Clean project related over spray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION.

SECTION 07540
THERMOPLASTIC MEMBRANE ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and contract documents, including Section 01010 SUMMARY OF WORK, apply to this section.

1.02 SUMMARY

- A. This section includes the materials and application procedures for a Fully Adhered TPA FB (Fleece Back) Single-Ply Thermoplastic Roofing System.

1.03 RELATED SECTIONS INCLUDE THE FOLLOWING:

- A. Section 01010 Summary of Work
- B. Section 01025 Measurement and Payment
- C. Section 01700 Contract Closeout
- D. Section 02060 Demolition
- E. Section 07515 Fluid Applied Roof Restoration System
- F. Section 13280 Asbestos Abatement

1.04 DEFINITIONS

- A. The Tremco Incorporated Tri-Polymer Alloy (TPA) Roof System is a Thermoplastic. High reflective, lightweight, Energy Star and California 24 compliant roof system. The TPA Roof System can be mechanically attached or fully adhered.
- B. TPA Roof Membrane is a white thermoplastic single ply roof membrane that is comprised of an elastomeric tri-polymer alloy based on Elvaloy and blended with CPE and PVC. TPA Roof Membrane is reinforced with a high strength, wick resistant polyester. The TPA roof membrane was designed specifically for mechanically fastened roof system applications.
- C. TPA FB Roof Membrane is a white thermoplastic single ply roof membrane that is comprised of an elastomeric tri-polymer alloy based on Elvaloy and blended with CPE and PVC. TPA FB Roof Membrane is reinforced with a high strength, wick resistant polyester fabric and backed with a wick resistant non-woven polyester fleece. The TPA FB roof membrane was designed specifically for fully adhered roof system applications.

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

1.05 PERFORMANCE REQUIREMENTS

- A. General:
 - 1. Install a watertight, fully adhered single ply thermoplastic roofing system with compatible components that will not permit the passage of liquid water and will withstand wind loads, thermally induced movement, and exposure to weather.

1.06 REFERENCES

- A. ASTM - American Society for Testing and Materials, West Conshohocken, PA.
- B. NRCA - National Roofing Contractors Association, Chicago, IL
- C. UL - Underwriter's Laboratory, Northbrook, IL.
- D. TRC - Tremco Inc. Research Center - Beachwood, OH

1.07 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with roofing work only when existing and forecasted weather conditions permit roofing to be installed. Tremco TPA and TPA FB Single Ply Systems shall not be installed during periods of precipitation.
- B. Applications that involve known, severe exposures require a complete review by Tremco Inc. before their acceptance. This includes, but is not limited to, unusual building exposure to wind, unusual roof slope, unusual roof use, unusual exposure to contaminants, openings in the structure (greater than 10% of the wall surface), which could be left open in a storm, roofs subject to positive pressure conditions and roofs greater than 45 feet in height. For roofs subject to special job conditions, contact an authorized Tremco agent.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Basis-of-Design Manufacturer/Product: The roof system specified in this Section is based upon products of Tremco, Inc., Beachwood, OH, (800) 562-2728, www.tremcoroofing.com.

2.02 INTERPLY MEMBRANE

- A. THERMglass Premium VI by Tremco Inc.
 - 1. Heavy Duty, fiberglass ply sheet that exceeds ASTM D 2178, Type VI and CSA A123.17, Type VI.
 - 2. Two (2) plies.
- B. Field Membrane Adhesive
 - a. Hot Applied Adhesive:
 - 1. Premium IV Hot-Melt Asphalt Adhesive by Tremco Inc.
 - a. Hot melt asphalt adhesive exceeding ASTM D 312 standards.

2.03 SINGLE-PLY THERMOPLASTIC ROOF MEMBRANE MATERIALS

- A. Fully Adhered TPA FB Field Membrane Sheet and Adhesives:
 - 1. Field Membrane
 - a. TPA FB Elastomeric Sheeting by Tremco Incorporated.
 - (1) Elastomeric sheeting comprised of an elastomeric tri-polymer alloy based on Elvaloy, blended with CPE and PVC and reinforced with a high strength, wick resistant polyester fabric. Membrane is backed with a wick resistant non-woven polyester fabric fleece.
 - (2) Exceeds the performance requirement of ASTM D 4434/D4434M-09, Type IV.
 - (3) Surface Color: White
 - 2. Field Membrane Adhesive
 - a. Hot Applied Adhesive:
 - (1) Premium IV Hot-Melt Asphalt Adhesive by Tremco Inc.
 - (a) Hot melt asphalt adhesive exceeding ASTM D 312 standards.

2.04 BASE FLASHING MATERIALS

- A. Base Flashing Sheets:
 - 1. TPA Elastomeric Sheeting by Tremco Incorporated.
 - a. Elastomeric sheeting comprised of an elastomeric tri-polymer alloy based on Elvaloy, blended with CPE and PVC and reinforced with a high strength, wick resistant polyester fabric.
 - b. Exceeds the performance requirement of ASTM D 4434/D4434M-09, Type IV.
 - c. Surface Color: White (gray underside).
 - 2. TPA Perimeter Sheet by Tremco Incorporated.
 - a. Elastomeric sheeting comprised of an elastomeric tri-polymer alloy based on Elvaloy, blended with CPE and PVC and reinforced with a high strength, wick resistant polyester fabric.
 - b. Exceeds the performance requirement of ASTM D 4434/D4434M-09, Type IV.
 - c. Surface Color: White (gray underside).

- B. Base Flashing Adhesives:
1. TPA / LV Single Ply Bonding Adhesive by Tremco Incorporated
 - a. A low VOC asbestos free solvent based adhesive used to adhere TPA flashing membranes (non-fleece only) to approved substrates.
- C. TPA Membrane Coated Metal Flashing:
1. TPA Coated Metal by Tremco Incorporated.
 - a. Manufactured from a flexible non-reinforced Tremco TPA (Tri-Polymer Alloy) membrane factory laminated to hot-dipped galvanized steel. The metal consists of 24 gauge (0.023" minimum) G90 hot dipped galvanized steel with a back wash coat of 0.0001" clear acrylic, laminated on one side with a 20 mil unreinforced TPA Membrane.
 - b. Color: White
 - c. Size: 4' by 10' per sheet
- D. Flashing Accessories:
1. Cover Strip:
 - a. TPA Cover Strip by Tremco Incorporated.
 - (1) White Reinforced TPA Flashing Membrane
 - (2) Roll Size:
 - (a) 6" by 100' by 45 mil thick.
 - (b) 6" by 108' by 45 mil thick.
 2. 2-Piece Drain Flashing Membrane:
 - a. TPA Flashing Membrane by Tremco Incorporated.
 - (1) White Unreinforced TPA membrane
 - (2) Roll Size: 24" by 30" by 55 mil thick.
 3. Vent Pipe Boots:
 - a. TPA Prefabricated Flashing Boots by Tremco Incorporated.
 - (1) White Unreinforced TPA membrane boots.
 - (2) Pipe Size:
 - (a) Small 1 inch to 4 inch O.D.
 - (b) Large 4 inches to 8 inch O.D.
 - b. TPA Field Fabricated Boots
 - (1) TPA Flashing Membrane by Tremco Incorporated.
 - (a) White Unreinforced TPA membrane
 - (b) Roll Size: 24" by 30" by 55 mil thick.
 4. Corners:
 - a. TPA Prefabricated Universal Corners by Tremco Incorporated.
 - (1) White Unreinforced TPA membrane
 - (2) Size: 3-1/2 inches (nominal) to all edges
 5. Drain Sealant:
 - a. Tremco Water Block Sealant.
 - (1) Gray colored, high performance, low VOC, non-curing and nonskinning, permanently flexible gun grade Synthetic Rubber Sealant. *Use only for unexposed applications.*

- b. TremSEAL Pro by Tremco Incorporated.
 - (1) Urethane sealant.
- c. Approved equal by others.

2.05 MEMBRANE FASTENERS AND PLATES

- A. All screw type fasteners shall be a minimum #15 shank diameter for membrane securement. Hex head fasteners are not permitted for insulation or membrane securement.
- B. Membrane to Steel and Wood Decks:
 - 1. Tremco #1510 XHD, Extra Heavy Duty Fasteners and XHD membrane plate.
 - 2. Olympic XHD Fastening System with XHD membrane plate.
 - 3. Tru-Fast EHD fastener and 2.4 inch barbed seam plate.

2.06 ACCESSORY MATERIALS

- A. Metal cleaner:
 - 1. Mineral spirits
- B. TPA Membrane cleaner:
 - 1. Acetone by others.
- C. Termination bar:
 - 1. Aluminum, with caulk receiver:
 - a. 1/4 by 1 inch
 - 2. Primer:
 - a. TremPrime Non-Porous Primer by Tremco Inc.
 - 3. Caulking:
 - a. TremSEAL Pro by Tremco Inc.
 - 4. Compressible tape:
 - a. TremFlash (TF) Tape by Tremco Inc.
- D. Temporary Tie-in Materials.
 - 1. Three ply application of sheeting bond and BURmesh
 - 2. Foam Pack by others.
- E. Pitch Pan Fill:
 - 1. Base fill:
 - a. ASTM C928-92a, rapid hardening non-shrink grout.
 - 2. Top fill:
 - a. POLYroof LV by Tremco Inc.
 - b. Decktite 230SL
 - c. TremSEAL Pitch Pocket Sealer, by Tremco Inc:
 - (1) Two component (1:1 ratio), solvent free, low odor urethane sealant.
 - d. Pourable Sealer by others:
 - (1) Two-part polyurethane, two-color for reliable mixing.

- F. Air Seal:
 - 1. Backer Rod by others:
 - a. Joint backing rod, closed cell polyethylene, non-bleeding neoprene, or butyl.
 - 2. Foam Pack by others.

2.07 WALK PADS

- A. TPA Walkway Roll by Tremco Incorporated
 - 1. A thermoplastic membrane comprised of an elastomeric tri-polymer alloy based on Elvaloy® and blended with CPE and PVC. TPA Walkway Roll is reinforced with a high strength, wick resistant polyester fabric and has a serrated, slip resistant surface. TPA Walkway Roll is asbestos free and exceeds the performance requirements of ASTM D 4434.
 - 2. Color: Gray
 - 3. Roll Size: 3' by 60' by 80 mil thick.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates, areas, and conditions under which roofing will be applied, with installer present, for compliance with requirements.
- B. Verify that roof openings and penetrations are set in place and braced.
- C. Verify that roof drains are properly clamped into position.
- D. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at roof penetrations and terminations and match the thickness of insulation required.

3.02 PREPARATION

- A. Clean substrate of dust, debris, 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.

3.03 JOB CONDITIONS

- A. Prior to the use of any TPA roofing material, consult Material Safety Data Sheets for applicable cautions and warnings.
 - 1. Do not use oil or bituminous base roof cement with TPA materials.

2. Do not install TPA membrane directly in contact with new or resaturated asphalt.
3. Do not expose membrane or accessories to temperatures of 180 degrees Fahrenheit or above.
4. Do not allow waste products (petroleum grease, oil or solvents, etc.) or direct steam venting to come in contact with the TPA roofing system. Any exposures not typical for normal roofing installation must be presented to Tremco Inc. for assessment of any impact on the performance of the roofing system.
5. Do not install TPA membrane directly in contact with coal tar roof surfaces.
 - a. Install polyethylene vapor barrier ply under new insulation layer when mechanically attached TPA membrane system is installed over existing coal tar roofs.
6. Ponding conditions will adversely affect performance of the roofing system. Where positive drainage does not exist, water removal from roof surface should be facilitated by lowering drains, and/or installing additional drains, tapered insulation, or an approved lightweight insulating concrete slope system.

3.04 GENERAL INSTALLATION REQUIREMENTS

- A. Install thermoplastic 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 Thermoplastic Roofing".
- B. Install roofing system per manufacturer's published specifications manual.
- C. Coordinate installation of roofing system components so insulation and roofing plies are not exposed to precipitation or remain exposed at the end of the workday or when rain is forecast.
- D. Provide water cutoffs at end of each day's work to cover exposed ply sheets and insulation. Water tightness of the water cutoffs is the subcontractor's responsibility.
- E. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
- F. Remove and discard temporary seals before beginning work on adjoining roofing.
- G. Substrate-Joint Penetrations: Prevent adhesive from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.
- H. It is the building owner's responsibility or that of its architect, engineer, or subcontractor to determine if the Building Code criteria are met for the particular geographic area where the building is located or the particular construction of the building.

3.05 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 roofing insulation.
- C. Refer to *Section 01010 Summary of Work* for detailed requirements.

3.06 HOT AIR WELDING EQUIPMENT

- A. Tremco TPA seams can only be made by the hot-air welding process. When the membrane is properly fused, the hot-air heat welding process produces seams that are as strong as the TPA membrane itself. The following information is presented as a guide to assist subcontractors in utilizing hot-air heat welding equipment. Prior to actual selection and operation of the hot-air heat welding equipment, refer to the manufacturer's operating instructions. The operation of hot-air heat welding equipment, and the results obtained utilizing this equipment, are the responsibility of the roofing subcontractor.
 - 1. Leister Variant Automatic Welder
 - a. Power Requirements: 220 volts, 30 amp, and 7500 watts single phase.
 - b. Power cord and plugs: #10 wire with 3-prong twist plug. #10 wire may be used up to 150' in length. For longer lengths, consult an electrician for line voltage drop.
 - c. Element: 4500 Watts
 - d. Adjustment Tools: Adjustable wrench, various metric box wrenches, various metric Allen wrenches, screwdrivers, 40mm nozzle only.
 - e. Additional Weight: A 45lb. Supplemental weight is required for the automatic welder. It shall rest on the aluminum housing over the rear wheels when the welder is being used.
 - 2. Leister "Triac" Hand Welder
 - a. Power requirements: 115 volts, 15 amps, and 1800 watts single phase.
 - b. Power cord #12. Check with electrician for line voltage drop for length over 200'.
 - c. Element: 1600 Watt
 - d. Accessories: 40mm nozzle, various silicone and metal rollers.
 - 3. Power Generators
 - a. If a power generator is used only for the automatic welder, a minimum of 220 volts, 30 amps and 7500-watts unit is required. If additional items are used such as hand welder, screw guns or other equipment, increased generator capacity is required. A minimum 220 volt, 30 amp and 1000 watts generator is recommended.

3.07 INTERPLY MEMBRANE INSTALLATION

- A. General:
 - 1. Install roofing plies to roof and all wall, curb and projection bases in a uniform and continuous application of hot asphalt at a rate of 25 lbs. per 100 square feet.
 - 2. Install ply felts according to roofing system manufacturer's written instructions, starting at low point of roofing system.

3. Place ply sheets to ensure water will flow over or parallel to, but never against exposed edges. Shingle side laps of ply felts uniformly to achieve required number of membrane plies throughout. Shingle in direction to shed water.
 4. Extend adhesive past lap edges to ensure complete and uniform adhesion. Extend ply felts over cants
 5. Immediately after installation, broom ply sheet. Do not allow adhesive to flash off. Ensure complete and continuous seal and contact between adhesive and felts, including ends, edges and laps without wrinkles, fish mouths or blisters.
 6. Ply sheet shall never touch underlying sheet ply, even at roof edges, laps, tapered edge strips and cants. Cut out and repair fish mouths/side laps, which are not completely sealed. Replace all sheets that are not fully bonded.
 7. Roofing subcontractor shall use only fiberglass mop heads for the application of hot applied adhesives. All hot mops used on the project shall be removed from the roof and lowered to the ground and cooled as specified in Section 01010 Summary of Work.
- B. Two (2) Ply Application:
1. Install two (2) plies of THERMglass Premium VI Ply parallel to the roof slope. Overlap starter strips 20 inches with first ply, and then overlap each succeeding ply 19 inches. Place ply sheets to ensure water will flow over or parallel to, but never against exposed edges.
 2. Install plies to roof in a uniform and continuous application of ply adhesive.
 3. Use 18 and 36-inch wide plies to start and finish roof membrane along roof edges and terminations.
 4. Lap ply membrane ends 4 inches. Stagger end laps three feet minimum.
 5. Immediately after installation, lightly broom plies from unmopped side to ensure complete adhesion. Do not allow adhesive to flash off. Ensure complete and continuous seal and contact between adhesive and felts, including ends, edges and laps without wrinkles, fish mouths, or blisters. Broom width: 34 inches minimum.
 6. Overlap previous day's work 24 inches.
 7. Embed each ply in a uniform and continuous application of ply adhesive at a rate of 25 lbs. per 100 square feet at EVT.

3.08 ADHERED TPA ROOF MEMBRANE INSTALLATION

- A. Install membrane according to roofing system manufacturer's written instructions, starting at low point of roofing system.
1. Install sheet according to ASTM D 5036.
 2. Install air seal where required at perimeter, curbs and penetration flashings.
 3. Plan the placement of TPA Roof Membrane to facilitate the fabrication of the least number of seams. Ensure that water flows over or along, but not against, the exposed edges.
 4. The Tremco TPA and TPA FB membranes shall be fully adhered to properly installed and prepared substrate surface. The surface shall be clean, dry, smooth, and free from contamination.

5. The roof perimeters and corners may require additional design to develop the necessary resistance for wind conditions in excess of gale force winds. Contact Tremco for additional information if the building is located where winds may exceed standard warranty conditions or special code provisions are required.
6. The membrane shall be cut to fit neatly around all penetrations and roof projections.
7. The roofing membrane shall be unrolled and positioned with a minimum 3-inch overlap as specified. Laps shall be shingled with, or run parallel to, the slope of the roof.
8. Clean roof and wall surfaces of dust, debris, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. TPA FB Field Membrane Application using Hot Asphalt Attachment:

1. Roofing subcontractor shall use only fiberglass mop heads for the application of hot applied adhesives. All hot mops used on the project shall be removed from the roof and lowered to the ground and cooled as specified in *Section 01010 Summary of Work*.
2. Install (60 mil) Reinforced TPA FB field membrane sheets and (60 mil) Reinforced TPA membrane sheets (non-fleeced) for base flashings.
3. Install TPA FB Field Membrane sheets using Type IV hot asphalt:
 - a. Clean roof substrate prior to membrane application.
 - b. Begin membrane installation at low point of deck. Allow sheet to overhang roof edge a minimum of 1-1/2 inches below lower edge of wood nailer.
 - c. Position roll of TPA FB sheeting in a manner, which provides sufficient material to facilitate flashing. The roofing membrane shall be unrolled and positioned square with the roof edge. Laps shall be shingled with, or run parallel to, the slope of the roof. Overlap side laps 3 inches and abut end laps. Install succeeding rolls in same manner. Avoid wrinkles. Reposition sheet when necessary. Do not stretch material unevenly.
4. Fold sheet back so one-half (1/2) of the underside of the sheet is exposed. Ensure the sheet fold is smooth with no wrinkles or buckles.
5. Over the properly installed and prepared surface, apply a uniform and continuous application of hot asphalt at a rate of 25 lb. for every 100 square feet. The adhesive shall be applied to the substrate only.
6. Roll the TPA FB membrane onto the adhesive coated substrate avoiding wrinkles.
 - a. Apply membrane across the continuous joints in top layer of insulation where feasible. Do not allow membrane laps directly over insulation joints. Insure full and continuous seal and contact between asphalt and membrane by mopping uniformly and by full brooming before the asphalt cools. Using a push broom and positive downward pressure, brush down the bonded half of the membrane sheet to achieve maximum contact.
7. Fold back the unbonded half of the sheet and repeat bonding procedure.
8. Apply adjoining sheets in same manner, lapping edges a minimum of 3".

9. Any wrinkles found in the splice area or that impedes the flow of water drainage, must be cut out, laid flat and repaired using TPA membrane and standard hot air seam welding procedures.
10. Adhesive shall not be applied to lap (seam) areas that are to be welded to flashings or adjacent membrane sheets by means of hot air welding procedures. If contamination occurs, remove any contaminates prior to hot air welding seams.
11. Remove and replace all sheets that are not fully bonded. Test cuts shall be made at least daily to ensure 25 lb. mopping. Cut a one square foot sample and weigh.
12. All containers used to heat or hold asphalt shall have attached covers in good condition, operating accurate thermometers, checked at least hourly, to maintain the following temperatures: Kettle temperature: 525°F; Mopping temperature: 450 to 500°F. EVT temperatures may be used if approved by the WTI upon submittal of current, complete data. All asphalt delivered to the site shall have EVT data on packages of a certified delivery ticket for each bulk delivery.
13. Minimize foot traffic on freshly applied TPA membrane until adhesive is fully cooled.
14. Mechanically attach membrane sheets to roof decking at roof perimeters and penetrations using #15 heavy duty fasteners and 2 3/8 inch diameter barbed metal plates. Fasteners shall be spaced a minimum of 12 inches on center with disc centered 1-1/8" from the sheet edge.
 - a. Field membrane sheets may be mechanically attached at vertical walls using a metal termination bar.
 - b. Run field membrane a minimum of 1-1/2 inches onto the vertical wall substrate and secure sheet to wall using a metal termination bar and appropriate fastener placed a minimum of 12 inches on center. Trim excess membrane from top of termination bar prior to flashing application.
15. TPA FB Membrane End Lap Details:
 - a. Continuous End Lap Detail
 - (1) Abut end laps. Gap width between membrane sheets shall not exceed 1/8 inch.
 - (2) Install 6-inch wide cover strip membrane centered over end lap. Cut cover strip corners round. Heat-weld cover strip over end lap.
 - b. Staggered End Lap Detail
 - (1) Offset staggered end laps a minimum of 5 feet.
 - (2) Abut end laps. Gap width between membrane sheets shall not exceed 1/8 inch.
 - (3) Install 6-inch wide cover strip membrane centered over end lap. Cut cover strip corners round. Heat-weld cover strip over end lap.
 - (4) Minimum width of welded lap shall be 1.5 inches.
16. Membrane Seaming:
 - a. All edge surfaces to be seamed by hot air welding as specified. Surfaces must be wiped with solvent using clean rags.
17. Heat-weld a 4 inch round field cut TPA flashing membrane (unreinforced) centered over each T-joint.

C. Perimeter/Projection Attachment:

1. Mechanically attach roofing membrane at roof perimeters, curbs, and pipe/stack penetrations greater than 12 inches in diameter, on both sides of expansion joints and other areas where the membrane must be anchored to prevent movement, stress or damage to the roofing membrane.
2. Provide mechanical attachment at deck angle changes in excess of 2 inch rise per 12 inch run (including drain sump areas).
3. Follow the recommendations of Factory Mutual Loss Prevention Data Sheets 1-28, and 1-29.

D. Roof Drain Detail:

1. Prepare substrate around each roof drain to prevent membrane bridging or distortion and to provide a smooth transition from the roof surface to the drain clamping ring.
2. Remove existing flashing and bituminous materials from drain components down to bare clean metal.
3. Install tapered edge strip around drain to create approximate 48 by 48 inch sump. Miter corners.
4. Install minimum 1/2 inch bead of drain sealant over entire drain bowl rim (approximately 1/2 tube per drain).
5. Install a 2-piece drain flashing detail when using TPA FB field sheets or where drain sump exceeds a 2/12 slope.
 - a. Terminate field membrane along outside edge of sump. Install target patch consisting of unreinforced TPA flashing membrane over drain sump and past drain bowl rim. Extend flashing a minimum of 3" outside of the sump area and heat weld to field sheet.
6. Clamp flashing collar to drain. Fully compress drain sealant between the new membrane and the drain bowl rim forming a solid seal between the two. Evenly compress the assembly to avoid cracking or breaking the clamping ring. Replace cracked or broken drain clamping rings.
 - a. All bolts and/or clamps must be in place in order to provide constant, even compression. Missing drain bolts and clamps shall be replaced.
7. Neatly cut membrane within drain at rim. Membrane to extend 1 inch into bowl.
8. For working drains, remove drain plug upon completion of work each day.
9. Plug new drains to prevent water entry until service connection is completed.

E. Membrane Seaming:

1. Clean seam areas, overlap roofing membrane and hot-air weld side and end laps of roofing membrane according to manufacturer's written instructions to ensure a watertight seam installation.
2. All surfaces shall be clean and dry. Ensure both mating surfaces are free of debris and no moisture is present on the splicing surfaces.
 - a. Using a clean rag saturated with appropriate cleaner, thoroughly clean seam area at least 4 inches wide on both sheets. Change rags frequently to avoid depositing previously removed materials.

3. Using an approved automatic heat welding machine or hand held heat gun and steel roller, continuously weld seams. Minimum width of welded lap shall be 1-1/2 inch when using an automatic welder. Hand welds shall be a minimum of 2-inches wide. Only approved Automatic Walker Welders shall be used to weld seams (see Hot Air Welder Equipment).
4. Special attention must be paid to areas where multiple layers of TPA membrane (3 or more) come together (T-joints).
5. Allow hot air welder to warm up. Insert the nozzle tip of the hot air welder into seam area. Move nozzle at a steady speed along the seam area, immediately applying pressure behind the air nozzle with a neoprene roller or weighted wheel to ensure positive contact of the heated TPA FB roof membrane lap.
6. Test lap edges with probe to verify seam weld continuity.
 - a. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 - b. All welded seams must be manually checked for voids or seal deficiencies by probing the entire seam area with a dull cotter key extractor after the seam has cooled. Properly constructed laps will not separate at the lap interface when tested. In addition, there must be destructive testing performed at the beginning of every workday and every time there is an interruption in the welding process (i.e. Power failure, welder shut down and job site conditions change). All deficiencies must be repaired.
 - c. Repair tears, voids, and lapped seams in roofing membrane that does not meet requirements.
7. Field test heat welded to assure proper construction. Perform field test after lap area cools to ambient temperatures. Properly constructed laps will not separate at the lap interface when tested.

3.09 GENERAL FLASHING REQUIREMENTS AND STRIPPING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Clean seam areas, overlap and firmly roll sheet flashings into the adhesive. Weld side and end laps to ensure a watertight seam installation.
- C. All flashings shall be installed as shown on the detail drawings. All TPA membrane flashings shall be installed concurrently with the roof membrane as the project progresses. No temporary flashings shall be allowed without prior written approval of the authorized Tremco agent. If any water is allowed to enter under the new roofing due to incomplete flashings, the affected area shall be removed and replaced at subcontractor's expense.
- D. Flashings shall not be applied over existing thru-wall flashings or weep holes. All flashings shall extend a minimum of 8-inches above roof level unless previously accepted by Owner's representative and an authorized Tremco agent. All existing flashings shall be removed before applying a new flashing. Install flashings in a neat and uniform manner with a "rounding" of all exposed corners. Care should be taken to ensure that the flashing does not bridge where there is a change of direction.

- E. Flash all pipes with TPA Pre-fabricated Flashing Boots where possible. Field fabricate pipe flashings with TPA Flashing Membrane (unreinforced flashing) per standard Tremco Roofing Systems details when a pre-molded flashing is not feasible.
- F. Fabricate all metal flanged flashings using TPA Membrane Coated Metal. Hot air weld a 6-inch wide TPA cover strip to flashing membrane and coated metal flange.
- G. Mix adhesive vigorously by hand to achieve a homogeneous blend. DO NOT use electrical equipment or open flame near adhesive. Do not thin adhesive with solvents.
- H. Base Flashings Adhered in Tremco TPA / LV Single Ply Bonding Adhesive:
 - 1. Base flashing system shall consist of fully adhered (60 mil) TPA Perimeter Sheet membrane or (60 mil) Reinforced TPA Field membrane (non-fleeced) and adhered in TPA/LV Single Ply Bonding Adhesive.
 - a. Apply TPA/LV Single Ply Bonding Adhesive in full coverage to both the substrate and to the back side of the TPA flashing membrane.
 - b. The TPA base flashing membrane shall be fully adhered to a dry, smooth solvent-resistant and compatible substrate using approved bonding adhesive.
 - c. When the TPA membrane has been cut to correct width and length, embed the flashing into the substrate adhesive, taking care to avoid wrinkles.
 - d. Over properly prepared surface, TPA/LV Single Ply Bonding adhesive shall be applied using approved solvent-resistant roller or power roller equipment.
 - e. The bonding adhesive shall be applied at a rate of 1-gallon per every 120 square feet per surface. The adhesive shall be applied in a smooth even coating with no globs, puddles, voids or similar irregularities. Coverage will vary based on substrate porosity.
 - 2. Position TPA Flashing membrane in intended location and fold back. Apply TPA/LV Single Ply Bonding Adhesive in full coverage to both the vertical substrate and to the back side of the flashing membrane. Allow adhesive to dry to the touch (Until it does not transfer to a dry finger touch (approximately 5 to 10 minutes). Place the flashing membrane into the adhesive avoiding any air entrapment, and apply pressure by means of roller to ensure complete bonding.
 - 3. Bonding adhesive shall not be applied to lap (seam) areas that are to be welded to flashings or adjacent membrane sheets by means of hot air welding procedures. If contamination occurs, remove any contaminates prior to hot air welding seams.
 - 4. Care should be taken to ensure that the flashing does not bridge where there is a change of direction.
 - 5. Apply consistent pressure to entire surface of elastomeric sheeting using a steel hand roller to achieve full adhesion of the sheet to the flashing substrate. Ensure complete bond and continuity without wrinkles or voids.
 - 6. Clean seam areas and weld side and end laps to ensure a watertight seam installation
 - 7. The top of the installed flashing shall be fastened under metal counterflashing, coping cap, or through wall metal reglet. The maximum distance between fasteners

for TPA flashings shall be 8 inches through flat bar or 12 inches through metal reglet. Install TremFlash (TF) Tape between masonry walls and top edge of TPA flashing membrane prior to fastening.

8. Install TPA prefabricated universal corners for sealing all inside and outside corners.

I. TPA Coated Metal Edge Flashing:

1. Fabricate and install Tremco TPA coated metal flashing to comply with details and project drawings and the recommendations of SMACNA Sheet Metal Manuals for fabrication and Factory Mutual Loss Prevention Data Sheet I-49.
2. All metal work shall be completed in conjunction with the roofing and flashing operation to provide a daily watertight condition.
3. Metal shall be installed to provide adequate resistance to bending and to allow for normal thermal expansion and contraction. Allow for minimum 1/4 inches space between metal joints.
4. Metal flashing shall have a minimum 3 inches wide nailing flange and hemmed metal edge. Flange shall be no wider than underlying blocking. Metal flashing shall be fastened to solid wood blocking with annular ring nails, 4 inches o.c. Fasteners shall penetrate the wood a minimum of 1-1/4 inches.
5. Continuous metal hook strips are required on all metal fascias that exceed 4 inches. Each hook strip shall be fastened 12 inches o.c. into wood blocking or masonry wall. Hook strips should be continuous and at least 22-gauge. They should be secured with annular threaded nails long enough to penetrate the wood 1 - 1/4 inches. The nail head should be 3/16 inches minimum. When screws are used, they should be No. 8 minimum long enough to penetrate wood 3/4 inches or metal 3/8 inches. Screws should be 24 inches apart in Zone 1 and 16 inches apart in Zone 2 (refer to FM I-49). Screws should be either corrosion-resistant steel or treated to resist corrosion. When an existing metal panel wall has no hook strip, the fascia metal should be fastened directly to the wall with No. 8 galvanized sheet metal screws, through neoprene washers, spaced 24 inches in Zone 1 and 16 inches in Zone 2.
6. All gravel stops and drip edges with a face larger than 4 inches shall be installed using a continuous 22 gauge hook strip fastened 12 inches o.c. using galvanized annular ring nails.
7. Fasten Tremco TPA coated metal flashings 4 inches o.c. to treated wood nailers using galvanized annular ring nails.
8. Install Tremco TPA membrane coated metal flashings over field membrane. Flange of flashing component shall be at the same level as the insulation or other substrate to which the membrane will be applied.
9. Install adjacent pieces of coated metal flashing with 1/4 inches gap. Apply a 2 inches wide continuous strip of foil tape over the gap to act as a bond breaker. Hot air weld a 6 inches strip of TPA membrane, over the foil tape, to each piece of flashing to form a watertight splice.
10. Hot air weld a 6-inch wide TPA cover strip to field membrane and coated metal edge flashing.

J. Prefabricated Pipe Boots:

1. Remove existing pipe flashing.
2. Install plates and fasteners that secure field sheet as close to the penetration as possible.
3. Each boot is stepped in increments that will fit standard pipes. The top of the boot should be cut around the "step" which allows a stretch fit between the top of the boot over the stack.
4. Place the boot over the vent pipe.
5. Pull the flange down to the roof, stretching the collar portion around the vent pipe.
6. Inside the top of the boot shall be caulked to prevent water entry and a stainless steel hose clamp must be installed to secure the top edge of the boot to the vent pipe.
7. The flange of the boot is pre-scored and shall be cut at the circular score and then heat-welded (minimum 2") onto the TPA field membrane.
8. Do not split the boot. If the boot cannot be installed intact, use field fabricated flashing per Tremco details.
9. Tremco vent pipe boots can only be installed by hot-air heat welding.

K. Prefabricated Universal Corners

1. The Tremco TPA prefabricated corners must be used for sealing the corners of all pitch pans, curbs, and walls. They are uniform in shape and size and provide water tightness at corners formed by TPA coated metal and flashing membrane.
2. The corners shall be cut at the scored lines to form either an inside or outside corner.
3. Use proper heat welding techniques to fully weld the corner to the flashing following published Tremco specifications and details.
4. Universal Corners can only be installed by hot-air heat welding.

L. TPA Scuppers:

1. Install tapered edge strip around scupper to create sump.
2. Fabricate scupper to fit scupper opening using TPA membrane coated metal.
3. Install base flashings over wall and scupper opening.
4. Install 3/8 inch backer rod behind metal scupper to seal.
5. Install TPA coated metal scupper. Attach scupper flanges to wall.
6. Strip-in flanges with a 6-inch wide TPA cover strip heat welded to field membrane, flashing membrane and coated metal edge flashing
7. Install TPA prefabricated corners.

M. TPA Pitch Pans with grout:

1. Fabricate pitch pan using TPA membrane coated metal. Sides: 4 inches high, hemmed to outside at top edge. Flange: 4 inches wide, completely around periphery. Rivet all joints. Clearance between projection and pitch pan: 2 inches on all sides. Set flange in sealant.
2. Pack gap between roof-penetrating element and deck with compressible insulation.
3. Nail flange to wood blocking 3 inches o.c., staggered.

4. Strip-in flange with a 6-inch wide TPA cover strip heat welded to field membrane and coated metal edge flashing.
 5. Install TPA prefabricated corners.
 6. Fill pitch pan to within 1 inch from top with non-shrink grout. Allow to set firm.
 7. Fill pitch pan with pourable sealer. Double fill if necessary.
 8. Fabricate and install storm collar with drawband over pitch pan. Tighten drawband.
 9. Wipe clean top of storm collar and projection with metal cleaner. Prime surface with metal primer.
- N. TPA Metal sleeve with storm collar:
1. Fabricate sleeve flashing using TPA membrane coated metal. Height: 8 inches. Flange width: 4 inches. Flange to extend completely around flashing periphery. Solder all inside joints.
 2. Apply a heavy 3/8 inch bead of sealant to roofing surface receiving metal flange.
 3. Nail flange to wood blocking 3 inches o.c., staggered.
 4. Strip-in flanges with a 6-inch wide TPA cover strip heat welded to field membrane, and coated metal edge flashing
 5. Install TPA prefabricated corners.
 6. Fabricate storm collar with bolted connection. Cover sleeve flashing 3 inches minimum. Tighten bolts.
 7. Wipe clean top of storm collar and projection with metal cleaner. Prime surface with metal primer. Caulk projection/sheet metal interface. Provide watershed. Tool neatly.

3.10 WALKWAY PAD APPLICATION

- A. Install TPA walkway pads at roof access ladders, doors, around maintained mechanical equipment and to match existing walkway.
- B. Heat weld walkway pad to field membrane.
1. Clean, smooth membrane ply surface with soap and water. Allow drying. All surfaces must be clean and dry prior to walkway application.
 2. Spot weld Walkway Roll to roof membrane. Attachment of walkway roll should not impede drainage.
 3. For heat welding, allow the hot air welder to warm up. Insert the nozzle tip of the hot air welder to the attachment area. Move nozzle at a steady speed, immediately applying pressure behind the air nozzle with a neoprene roller or weighted wheel to ensure positive contact of the heated TPA Walkway Roll to the roof membrane.
 - a. Minimum width of welded lap shall be 2.0" and 6.0" long when performing hand welds.
 4. Field test heat welded laps to assure proper construction.
 5. Perform field test after lap area cools to ambient temperatures. Properly constructed heat welds will not separate at the lap interface when tested.

3.11 DAILY WATERSTOP/TIE-INS

- A. Install tie-in.
1. Remove embedded gravel/debris from top ply of felt along termination.
 - a. Width: 24 inches
 2. Remove dirt and debris from tie-in area.
 - a. Width: 24 inches
 3. Adhere 12 and 18-inch wide ply sheets from exposed deck to existing roofing with a continuous 1/16 thick application of tie-off mastic. Glaze cut-off with surfacing mastic. Extend 18 inch wide felt 3 inches either side 12-inch felt.
 4. Install "deadman" insulation filler at insulation staggers.
 5. Extend new roofing membrane at least 24 inches onto prepared area of adjacent existing roofing. Seal edge with 6 inches wide reinforcing membrane embedded between alternate courses of tie-off mastic.
 6. Remove temporary connection at beginning of next workday by cutting membrane evenly along edge of existing roof system. Remove "deadman" insulation fillers.
- B. Alternate Tie-in:
1. Remove embedded gravel/debris from top ply of felt along termination.
 - a. Width: 24 inches
 2. Remove dirt and debris from tie-in area.
 - a. Width: 24 inches
 3. Adhere 12 and 18-inch wide ply sheets from exposed deck to existing roofing with a continuous 1/16 thick application of tie-off mastic. Glaze cut-off with surfacing mastic. Extend 18-inch wide felt 3 inches either side 12-inch felt.
 4. Install "deadman" insulation filler at insulation staggers.
 5. Extend new roofing membrane at least 24 inches onto prepared area of adjacent existing roofing.
 6. Attach TPA membrane ply lap over underlying membrane with adhesive and/or membrane fasteners and seam plates.
 7. Apply spray foam over leading edge of tie-in ply lap and exposed membrane fasteners and seam plates.
 8. Remove temporary connection at beginning of next workday by cutting membrane evenly along edge of existing roof system. Remove "deadman" insulation fillers.

3.12 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

3.13 PROTECTING AND CLEANING

- A. Protect roofing membrane 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 WTI project superintendent.

- B. Prior to performing work on a completed roof area that may cause damage the new roof, the roofing membrane and flashing shall be protected from physical damage. Proper and adequate protection includes installing a slip-sheet in the work area overlaid with plywood or OSB Board in order to dissipate the effects of traffic on the finished roof surface and to prevent impact damage to the system caused by dropped tools and or equipment. If damage does occur to the roof system it must be immediately repaired in order to preserve the integrity of the roof insulation.
- C. Correct deficiencies in or remove roofing that does not comply with requirements, repair substrates, reinstall roofing, and repair base flashings to a condition free of damage and deterioration at the time of Substantial Completion and according to warranty requirements.
- D. Clean over spray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.
- E. Subcontractor shall be responsible for vehicles and other property that is contaminated by cold adhesive over spray or drippage.

3.14 FINAL CLEANING

- A. Remove all project related heavy debris and clear drains and scuppers. Ensure that drains and downspouts are clear.
- B. Using a 2,500 PSI power washer, with or without a rotating head, wash areas to loosen and remove dirt from the surface of the membrane.
- C. If dirt still resides on the surface of the roof, use a mild, biodegradable detergent and scrub pads to further loosen the dirt and lift it from the TPA surface. Ensure that the detergent used complies with local codes and that, if run-off is prohibited, that the water is captured and properly disposed of.
- D. If detergent is used, rinse the surface of the roof to remove residual detergent. Ensure that all runoff has been captured if necessary in your area.
- E. For areas that may still have residual and hard to remove contaminants on the surface, wipe areas with acetone and WHITE RAGS ONLY, then rinse.

END OF SECTION

SECTION 13280
ASBESTOS ABATEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and contract documents, including Section 01010 SUMMARY OF WORK, apply to this section.

1.02 SECTION INCLUDES

- A. Asbestos containing roof material notification, removal and disposal requirements.

1.03 RELATED SECTIONS

- A. Section 01010 Summary of Work
- B. Section 01025 Measurement and Payment
- C. Section 01700 Contract Closeout
- D. Section 02060 Demolition
- E. Section 07515 Fluid Applied Roof Restoration System
- F. Section 07540 Thermoplastic Membrane Roofing

1.04 QUALITY ASSURANCE

- A. The following are requirements throughout this project:
 - 1. Subcontractor shall be licensed by the State. Subcontractor and/or asbestos abatement subcontractor shall be certified as an Asbestos Hazard Abatement Subcontractor whenever friable asbestos is encountered or OSHA action limits are exceeded. Owner and Subcontractor agree to exonerate, indemnify, defend and hold harmless roofing material manufacturer and Weatherproofing Technologies, Inc., from and against all claims, demands, lawsuits, damages, expenses and losses incurred by Subcontractor's removal of asbestos-containing materials from Owner's building and work site. Subcontractor must conduct its operation according to applicable requirements including but not limited to those established by:
 - a. Occupational Safety and Health Administration (OSHA)
 - b. Environmental Protection Agency (EPA)
 - c. Department of Transportation (DOT)
 - d. State or Local Air Pollution Control Authorities/Agencies
 - e. State or Local Solid Waste or Hazardous Waste
 - f. State or Local Health Department(s)

- g. State or Local Building Code Authorities
 - h. Other federal, state or local agencies or authorities.
 - 2. The Roofing subcontractor shall perform appropriate inspections, surveys and file timely notifications to proper authorities prior to starting roof renovation or demolition activities. Inspectors, project planners, project managers, Subcontractors and workers involved in the roof project shall have appropriate training, licenses and registrations. Subcontractor and Owner shall be responsible for determining and implementing regulatory compliance activities, including but not limited to work practices, engineering controls, personal protection, air monitoring, testing, hazard communication, material handling, record retention, and arranging for waste disposal/handling.
 - 3. Subcontractor must file a Uniform Hazardous Waste Manifest from proper landfill site for each load of asbestos containing material removed. Copies shall be submitted to WTI project superintendent. Transportation of waste shall be in accordance with applicable Department of Transportation (DOT) requirements.
- B. Waste Disposal
 - 1. Do not re-use, re-cycle or dispose of material manufacturers product containers except in accordance with all applicable regulations. The user of manufactured products is responsible for proper use and disposal of product containers.

1.05 SITE CONDITIONS

- A. Asbestos Testing:
 - 1. The roofs specified for removal have not been tested for asbestos content and some or all of the removal areas may contain asbestos. WTI will perform roof core sampling and provide core testing for asbestos containing roofing materials (ACRM). Test results will be provided prior to the project start.
 - a. The subcontractor shall provide a line item cost on bid form for the removal and disposal of asbestos containing roofing material on an additional lump sum or per square foot cost.
 - b. The subcontractor is responsible for all mandated federal, state or local requirements.

PART 2 - PRODUCTS

- A. Not Used

PART 3 - EXECUTION

3.01 PREPARATION

- A. Properly notify jurisdictions (including, but not limited to, prior notification to EPA and to Department of Labor) that work exists and when it is expected to take place.
- B. Roofing subcontractor is responsible for verifying field measurements and quantities.

- C. Contract with a recognized and qualified testing laboratory for independent air monitoring by certified technician as required by federal, state or local requirements.
- D. Workers engaged in tear-off activities shall wear protective clothing and respirators approved for asbestos removal per federal, state, local requirements.
- E. Roofing subcontractor shall take materials removed from the roof to a dump site approved for the disposal of the type of material involved. Complete landfill receipts shall be provided to WTI superintendent for all disposals of materials containing asbestos.

3.02 REPLACEMENT AND DISPOSAL

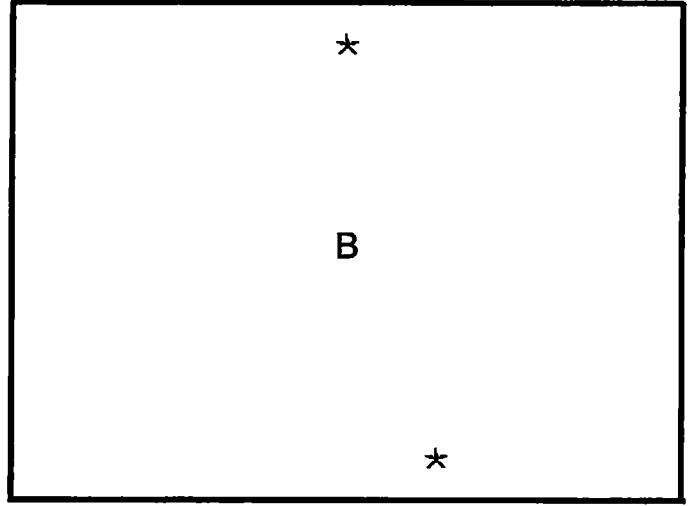
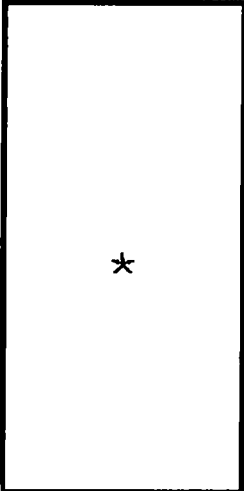
- A. Removal and Disposal of Asbestos Containing Material and Health Hazardous Material:
 - 1. Should the Work included under this Contract include the removal of asbestos containing substances, the roofing subcontractor is responsible for the satisfactory removal and disposal of the materials in an approved manner in accordance with all Federal, State and local codes, laws and regulations as amended.
- B. Landfill Records:
 - 1. Submit evidence of receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

END OF SECTION

Thermal Scan Report

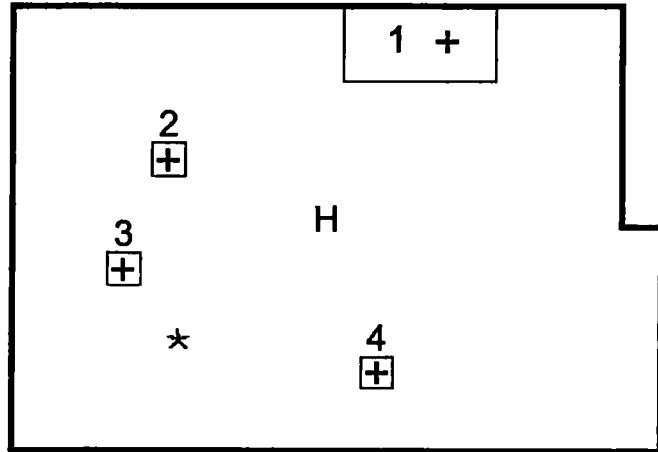


Garage



Herbertsville Elementary School
2282 Lanes Mill Road
Brick Township, NJ 08724

21-3621.1

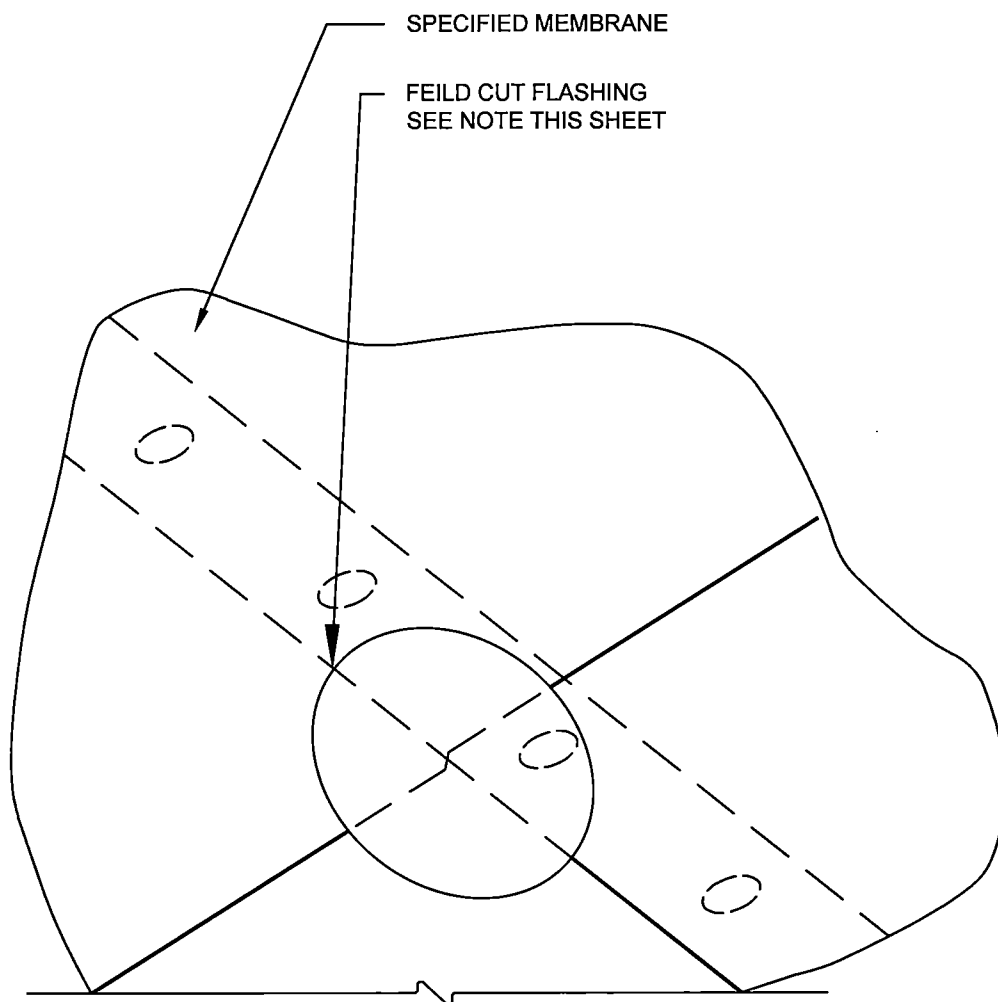


Key
* = Moisture Probe, Dry
+ = Moisture Probe, Wet
□ = Area of Moisture Damage

Scale: 1" = 20'

STANDARD DETAIL DRAWINGS

THE FOLLOWING DETAIL DRAWINGS ARE TO SHOW INTENT AND MAY BE
MODIFIED TO FIT FIELD CONDITIONS AND PROJECT SPECIFICATIONS.



NOTE:
 HEAT-WELD A 4" ROUND FIELD CUT FLASHING MEMBRANE (UNREINFORCED).
 CENTER THE FLASHING OVER EACH T-JOINT ON A 60-MIL THICK OR GREATER MEMBRANE (AS SHOWN).

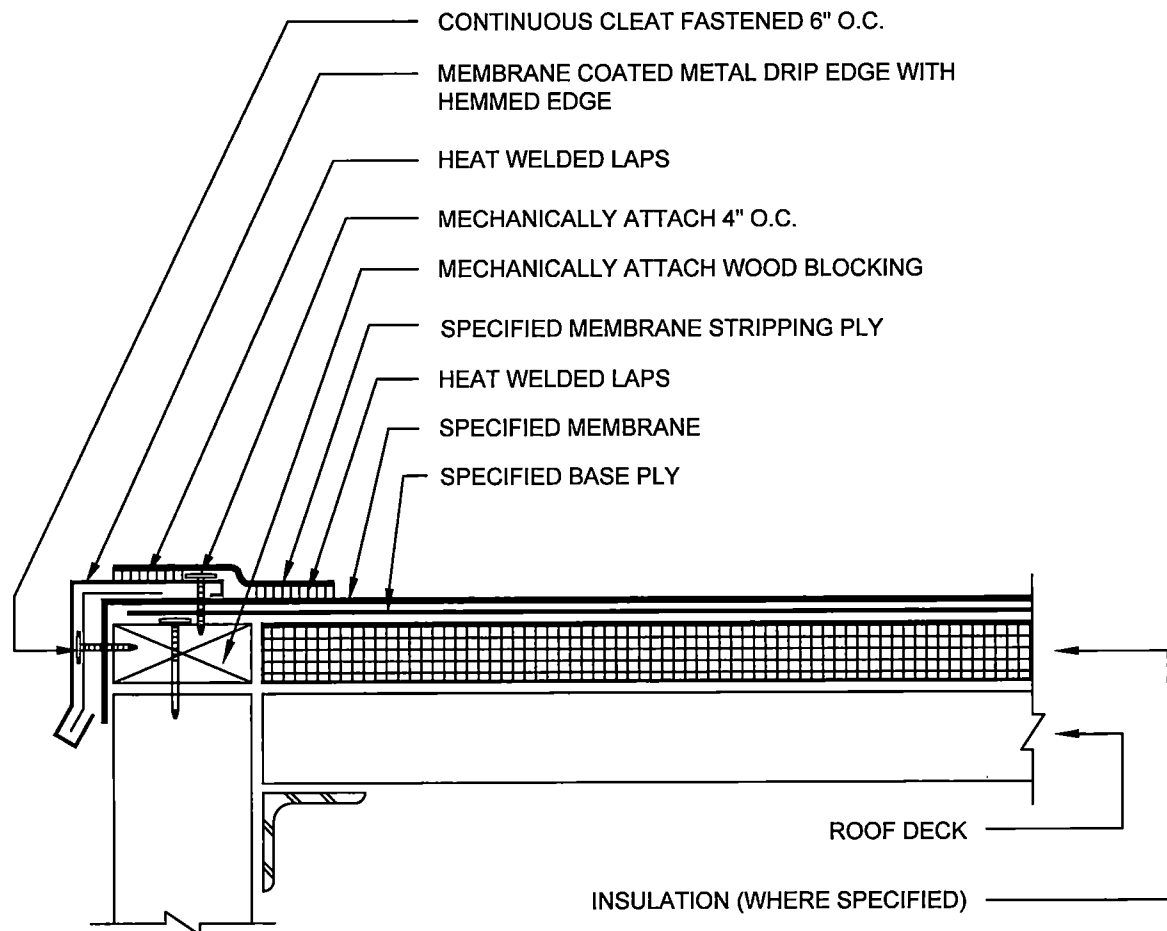
TREMCO®

SHEET TITLE:

T-JOINT DETAIL

SCALE: NTS

DRAWING No.:
 FB-1



NOTES:

- 1) MAX. FACE DIMENSION SHOULD BE 5" TO PREVENT DISTORTION FROM "OIL CANNING." IF SURFACE DISTORTION IS ACCEPTABLE, FACE DIMENSION MAY BE INCREASED TO 8".
- 2) FOR FASCIAS GREATER THAN 8" INSTALL IN TWO SECTIONS.
- 3) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

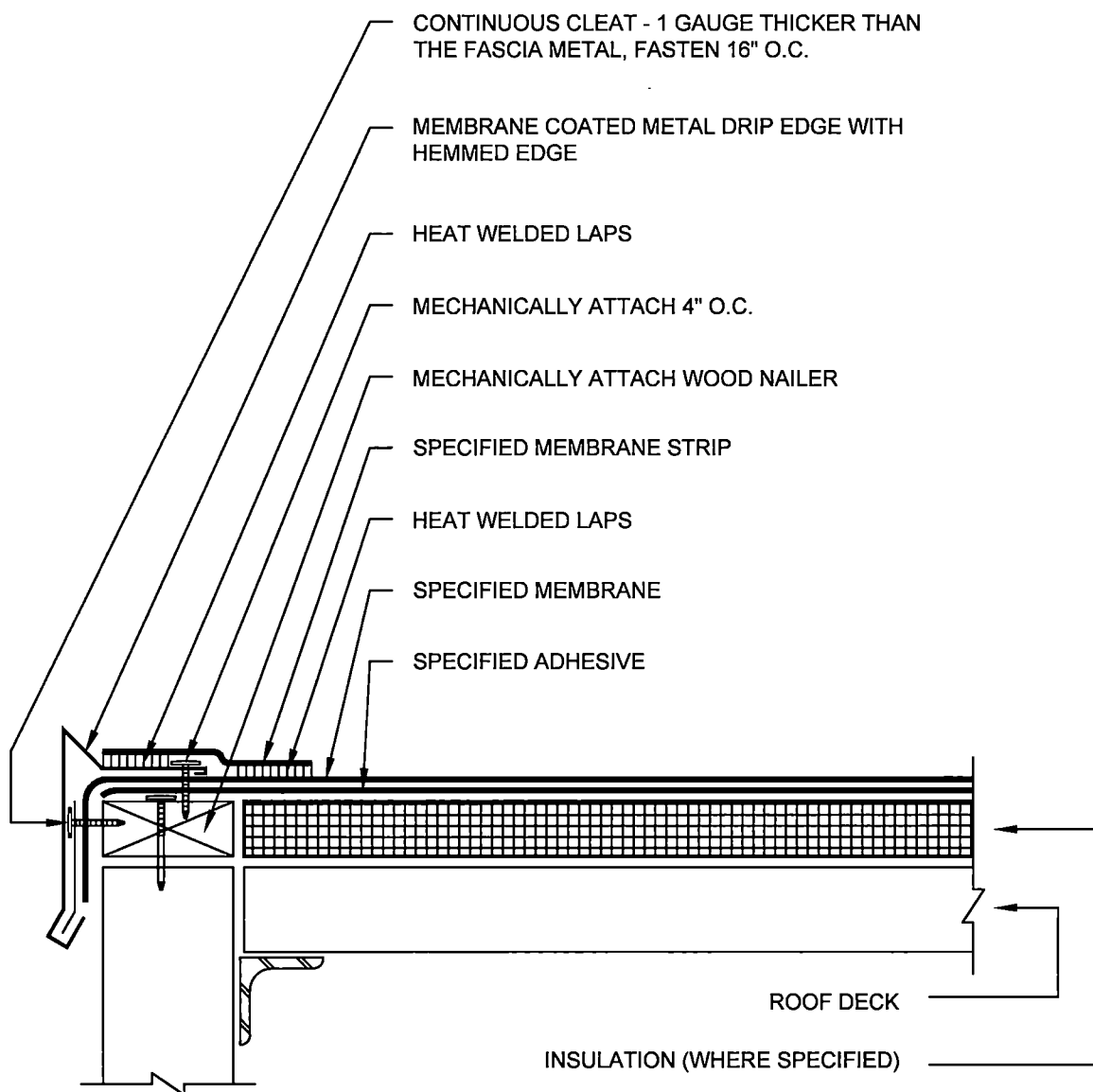
MEMBRANE COATED
METAL ROOF EDGE DETAIL

SCALE:

NTS

DRAWING No.:

FB-2



NOTE:

- 1) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

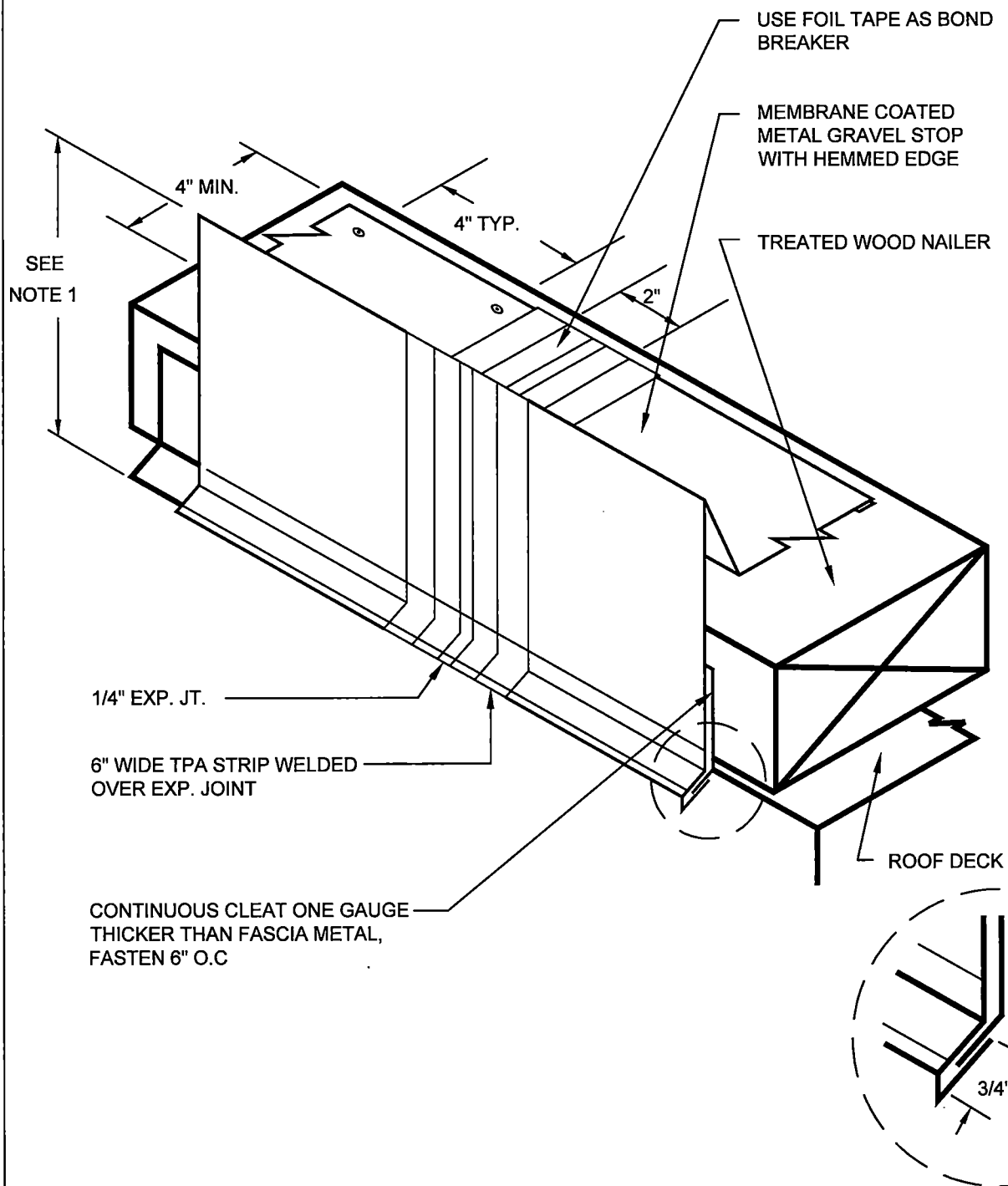
MEMBRANE COATED
METAL GRAVEL STOP EDGE

SCALE:

NTS

DRAWING No.:

FB-3



NOTES:

- 1) MAX FACE DIMENSION SHOULD BE 5" TO PREVENT DISTORTION FROM "OIL CANNING." IF SURFACE DISTORTION IS ACCEPTABLE, FACE DIMENSION MAY BE INCREASED TO 8".
- 2) FOR FASCIAS GREATER THAN 8" INSTALL IN TWO SECTIONS.
- 3) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

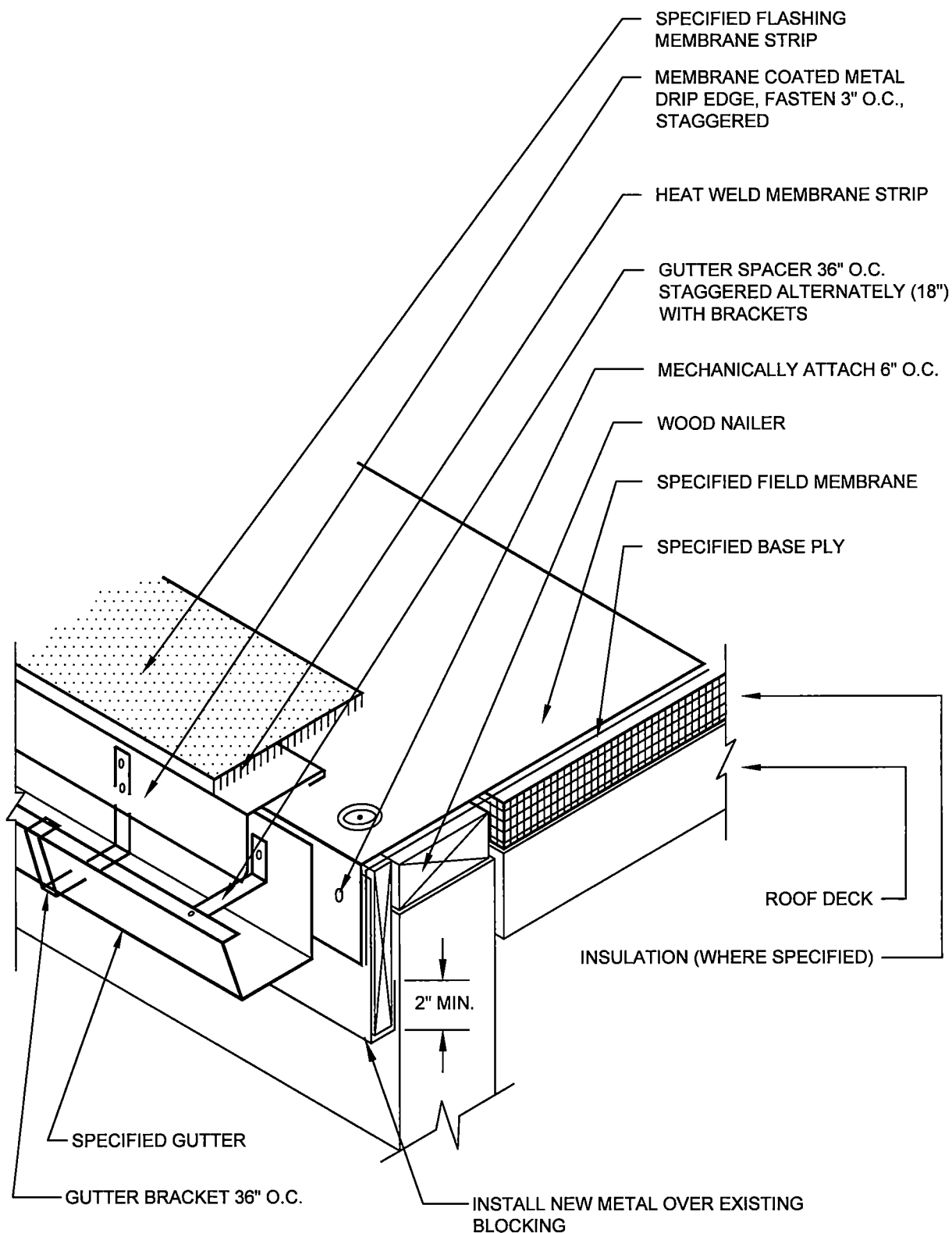
**MEMBRANE COATED
METAL GRAVEL STOP**

SCALE:

NTS

DRAWING No.:

FB-4



NOTES:

- 1) ALL METAL SURFACES SHALL BE PRIMED BEFORE CONTACT WITH ANY ADHESIVE OR MASTIC.
- 2) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

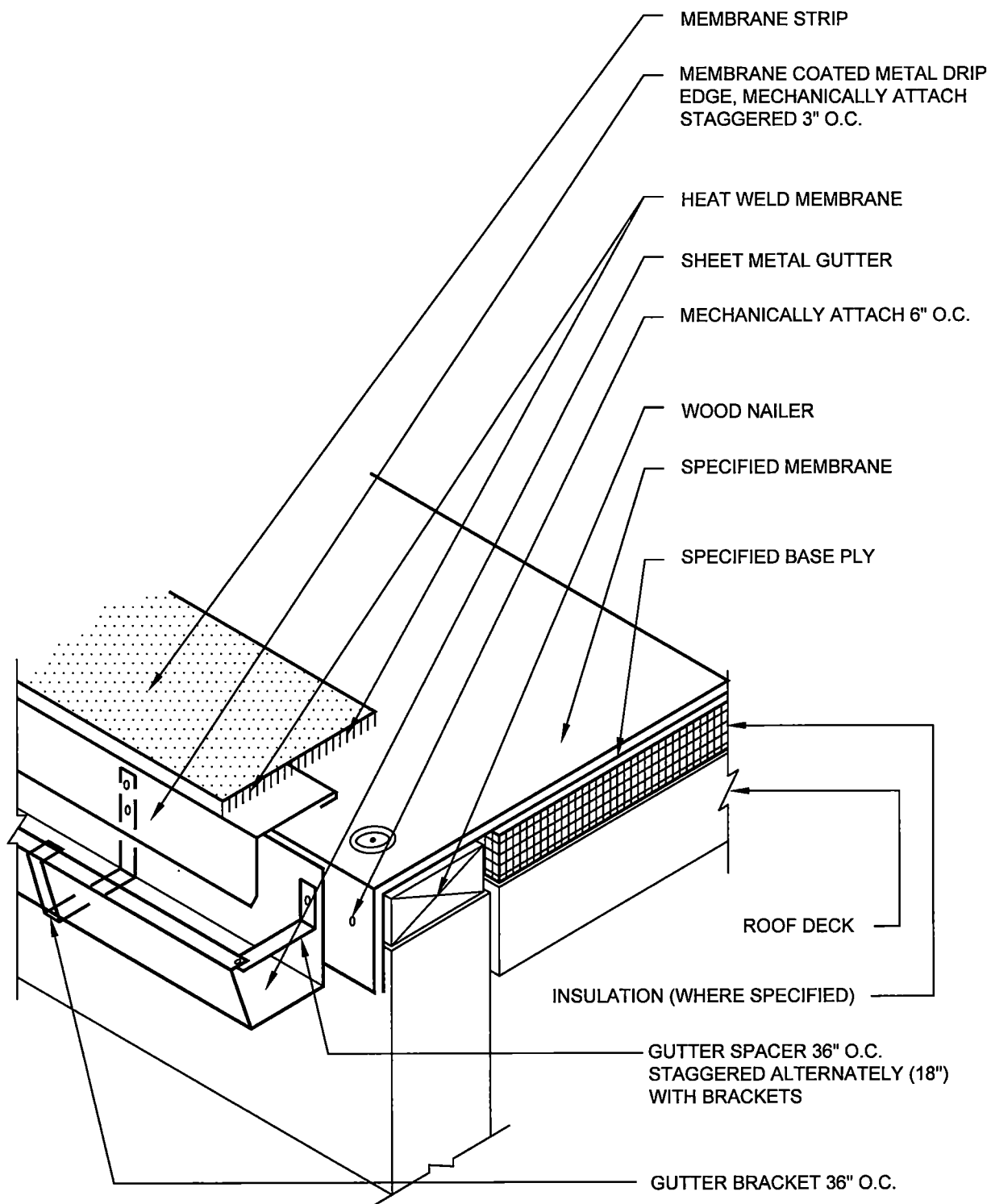
ROOF EDGE WITH GUTTER

SCALE:

NTS

DRAWING No.:

FB-5A



NOTE:

- 1) ALL METAL SURFACES SHALL BE PRIMED BEFORE CONTACT WITH ANY ADHESIVE OR MASTIC.
- 2) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

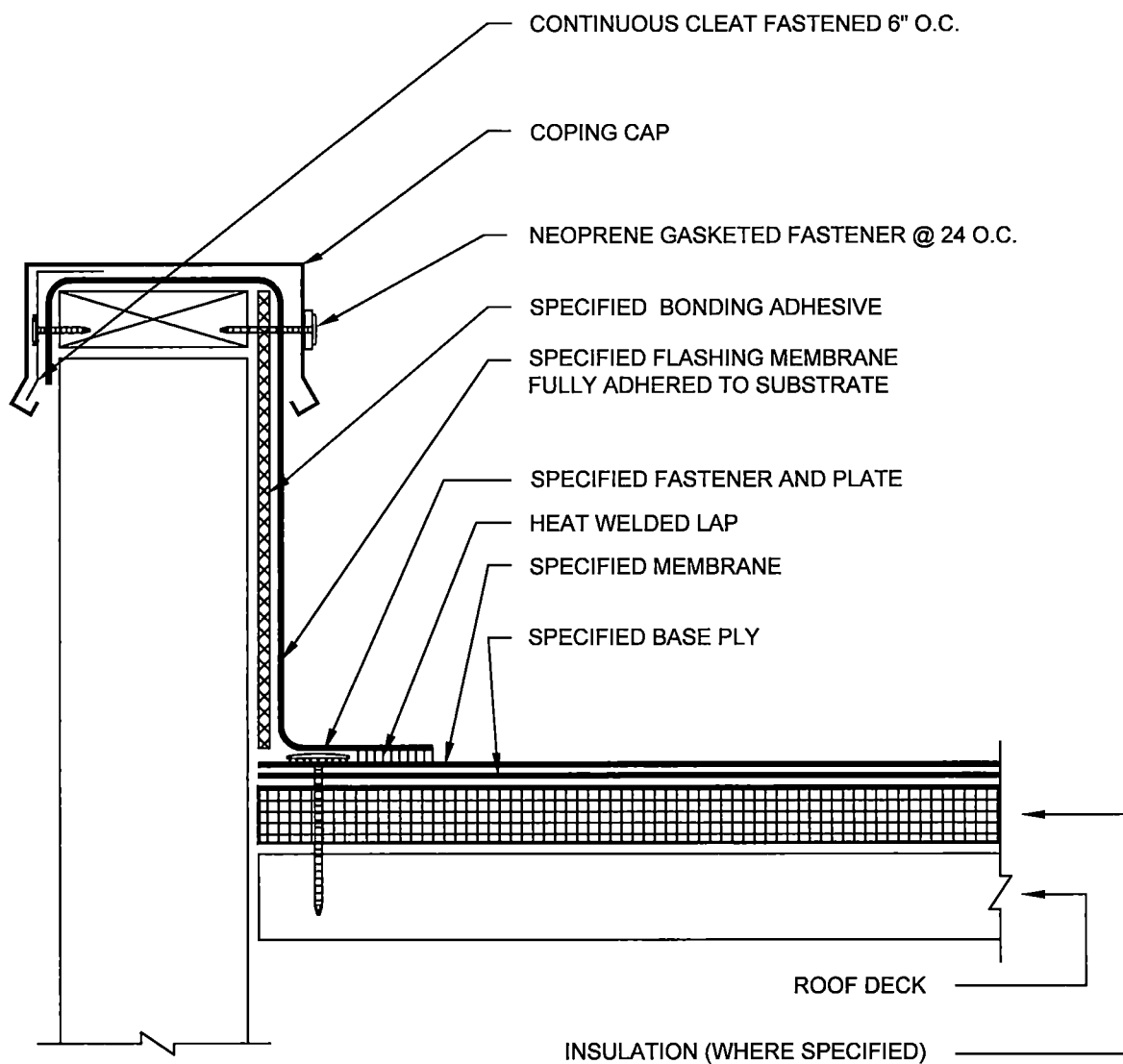
TREMCO®

SHEET TITLE:

ROOF EDGE WITH GUTTER

SCALE: NTS

DRAWING No.:
FB-5



NOTE:

- 1) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

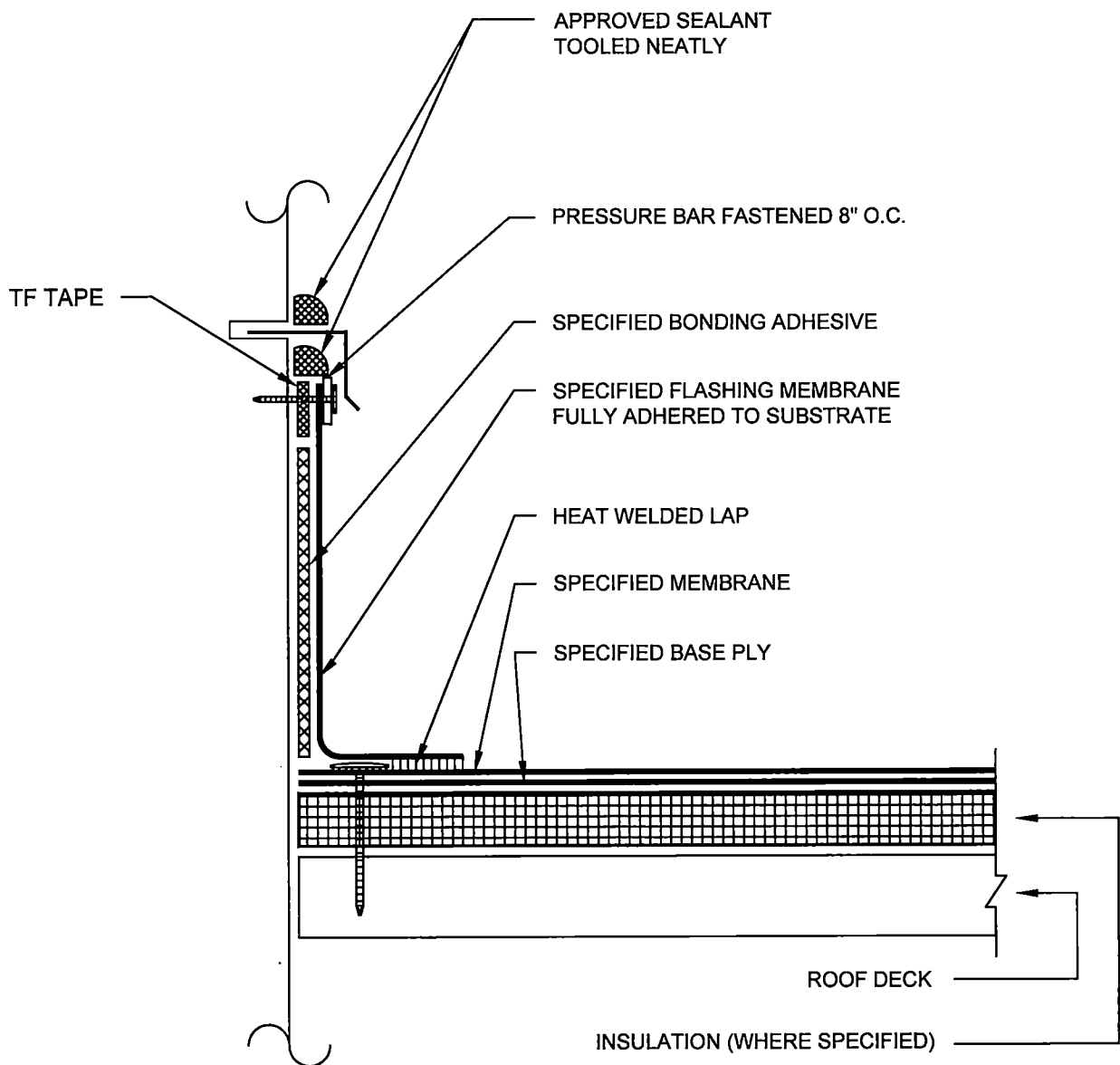
PARAPET WALL FLASHING

SCALE:

NTS

DRAWING No.:

FB-6



NOTE:

- 1) FLASHING MUST BE A MINIMUM OF 8" HIGH. DO NOT COVER OR BLOCK WEEP HOLES WITH FLASHING OR SEALANT.
- 2) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

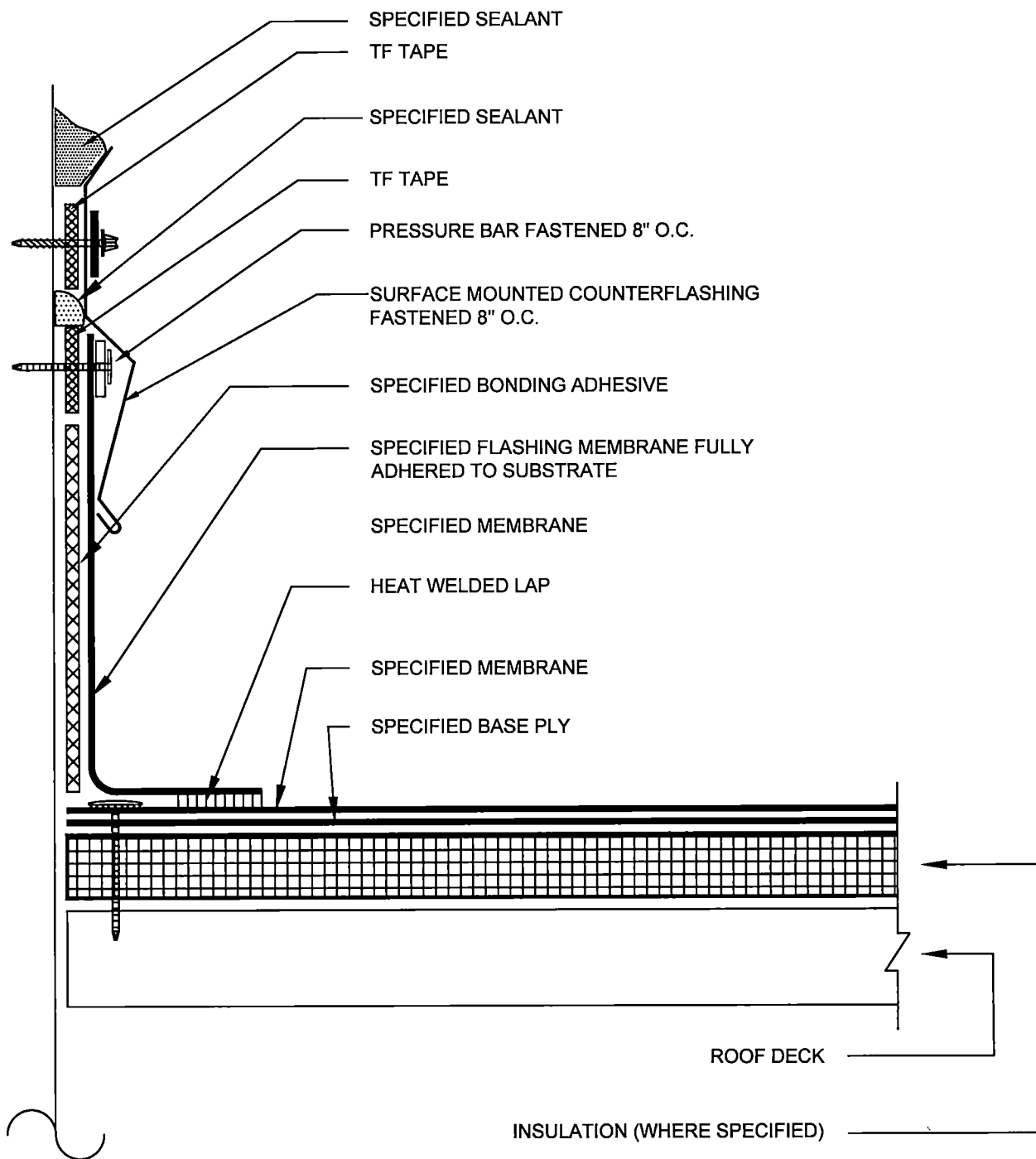
REGLET METAL
COUNTERFLASHING DETAIL

SCALE:

NTS

DRAWING No.:

FB-7



NOTE:

- 1) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

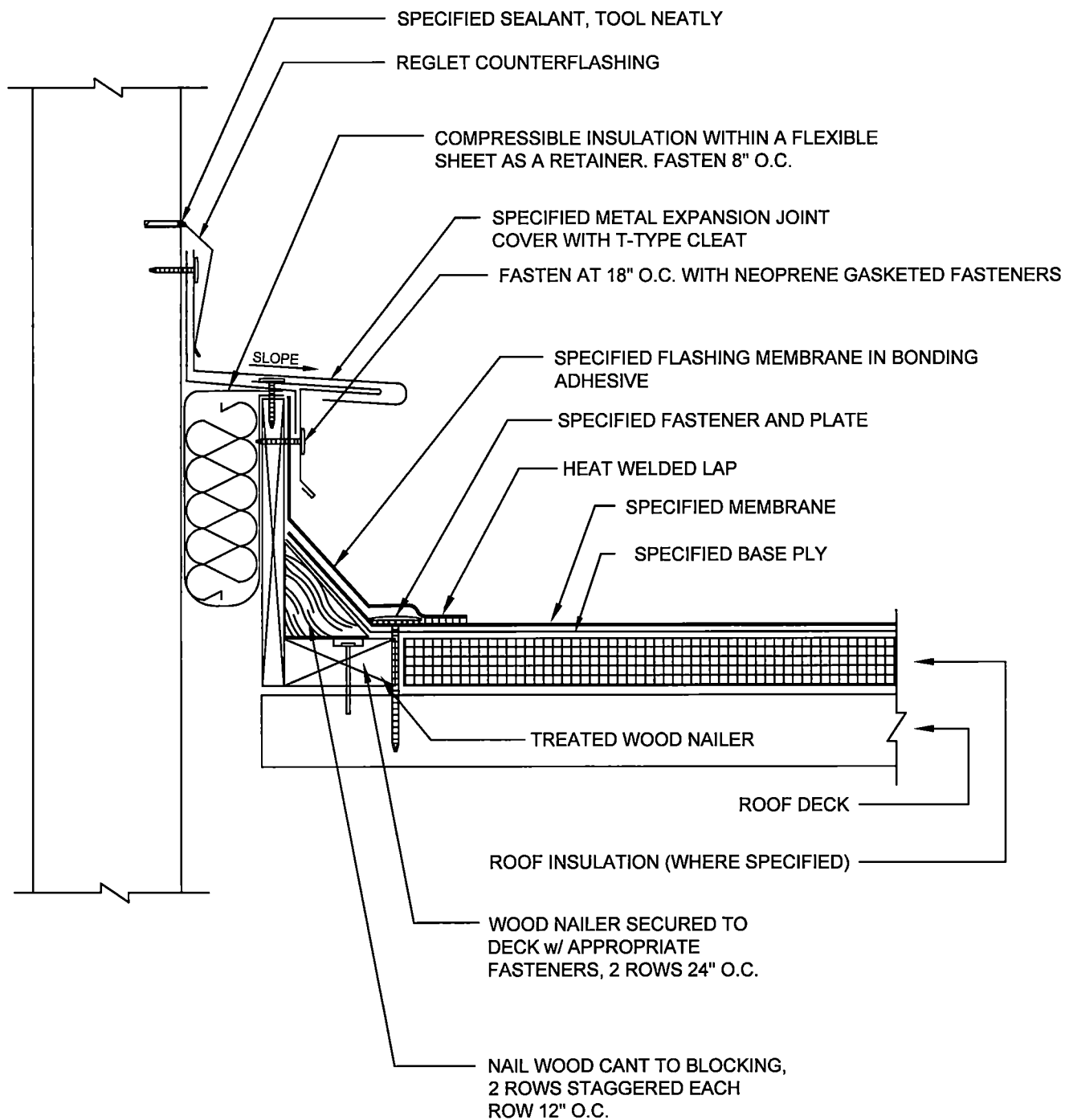
WALL FLASHING FOR CONCRETE
WALLS AND PARAPETS

SCALE:

NTS

DRAWING No.:

FB-8



NOTE:

- 1) WOOD NAILER SECURED TO THE DECK PER FACTORY MUTUAL LOSS PREVENTION DATA I-49.
- 2) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

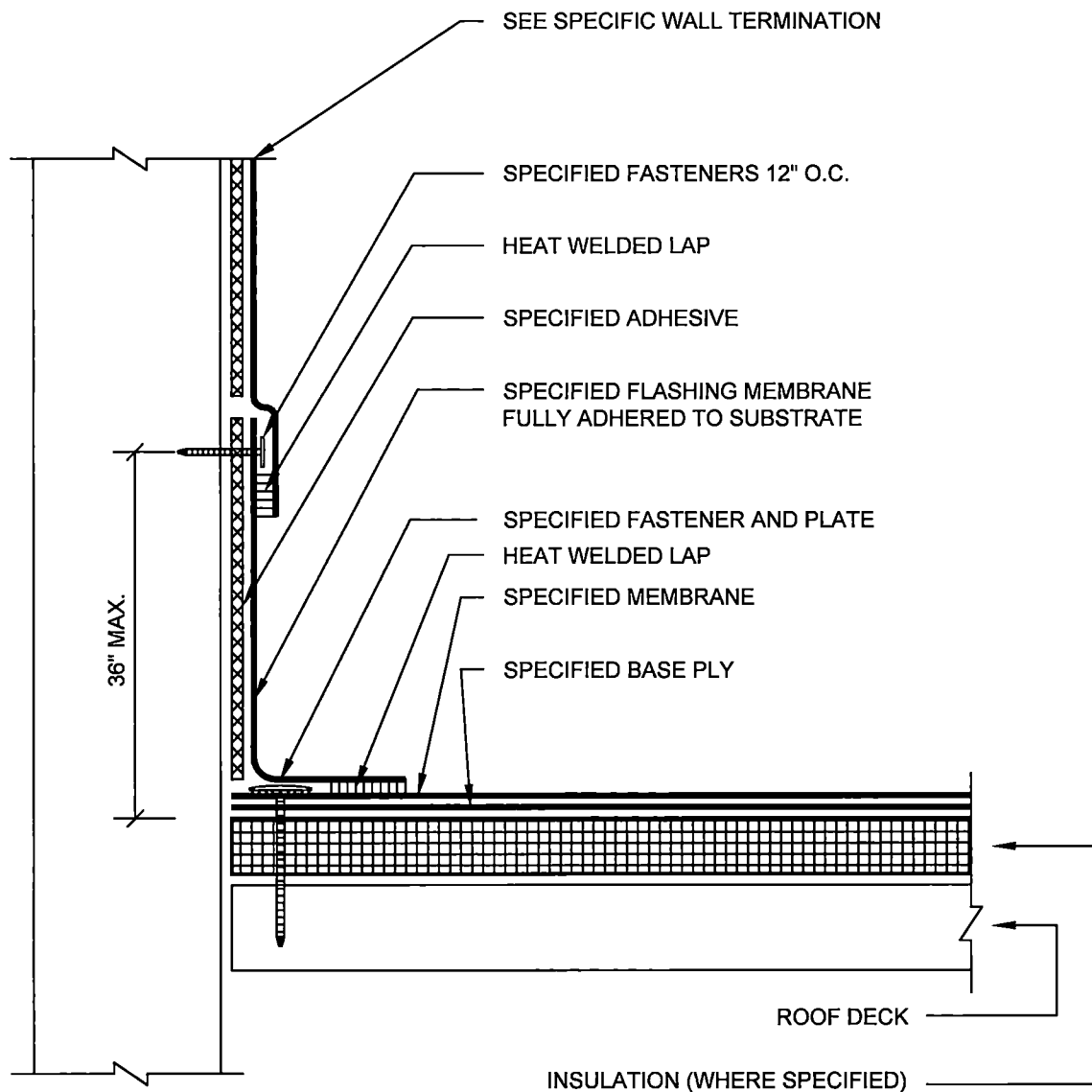
EXPANSION JOINT WALL
FLASHING DETAIL

SCALE:

NTS

DRAWING No.:

FB-9



NOTE:

- 1) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

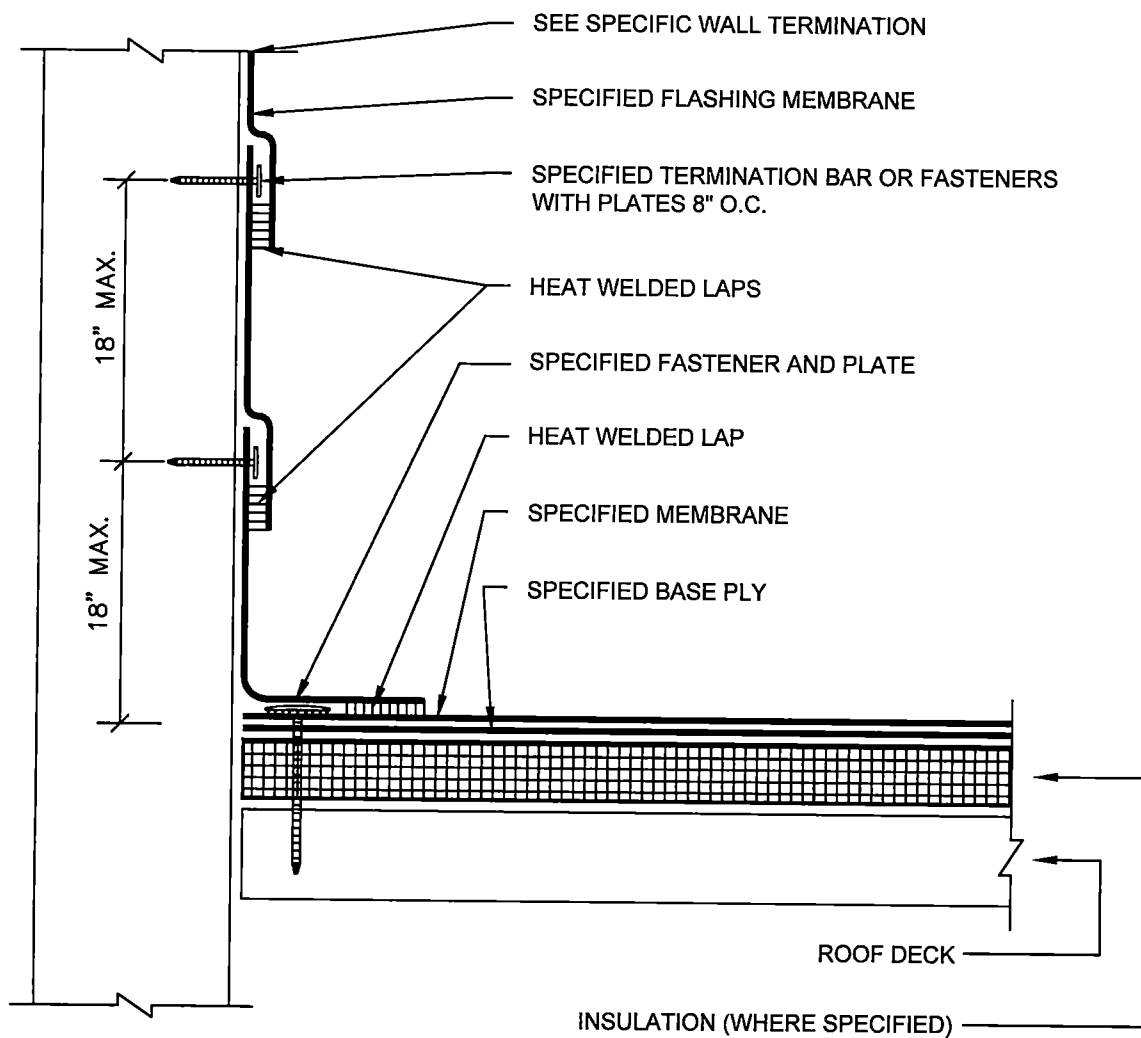
HIGH PARAPET WALL
FLASHING DETAIL

SCALE:

NTS

DRAWING No.:

FB-10



NOTE:

- 1) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

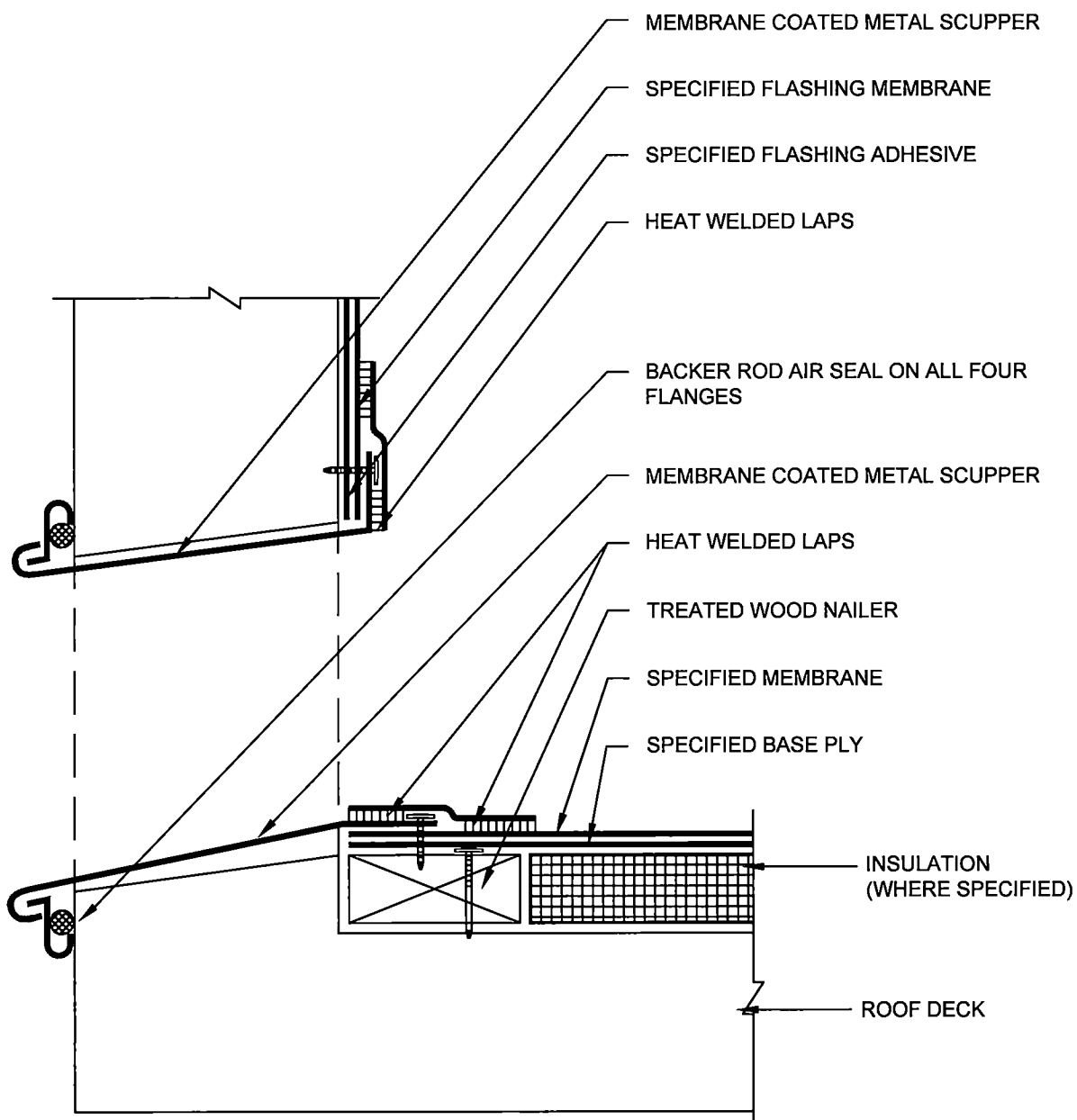
PARAPET WALL FLASHING
DETAIL

SCALE:

NTS

DRAWING No.:

FB-11



NOTE:

- 1) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

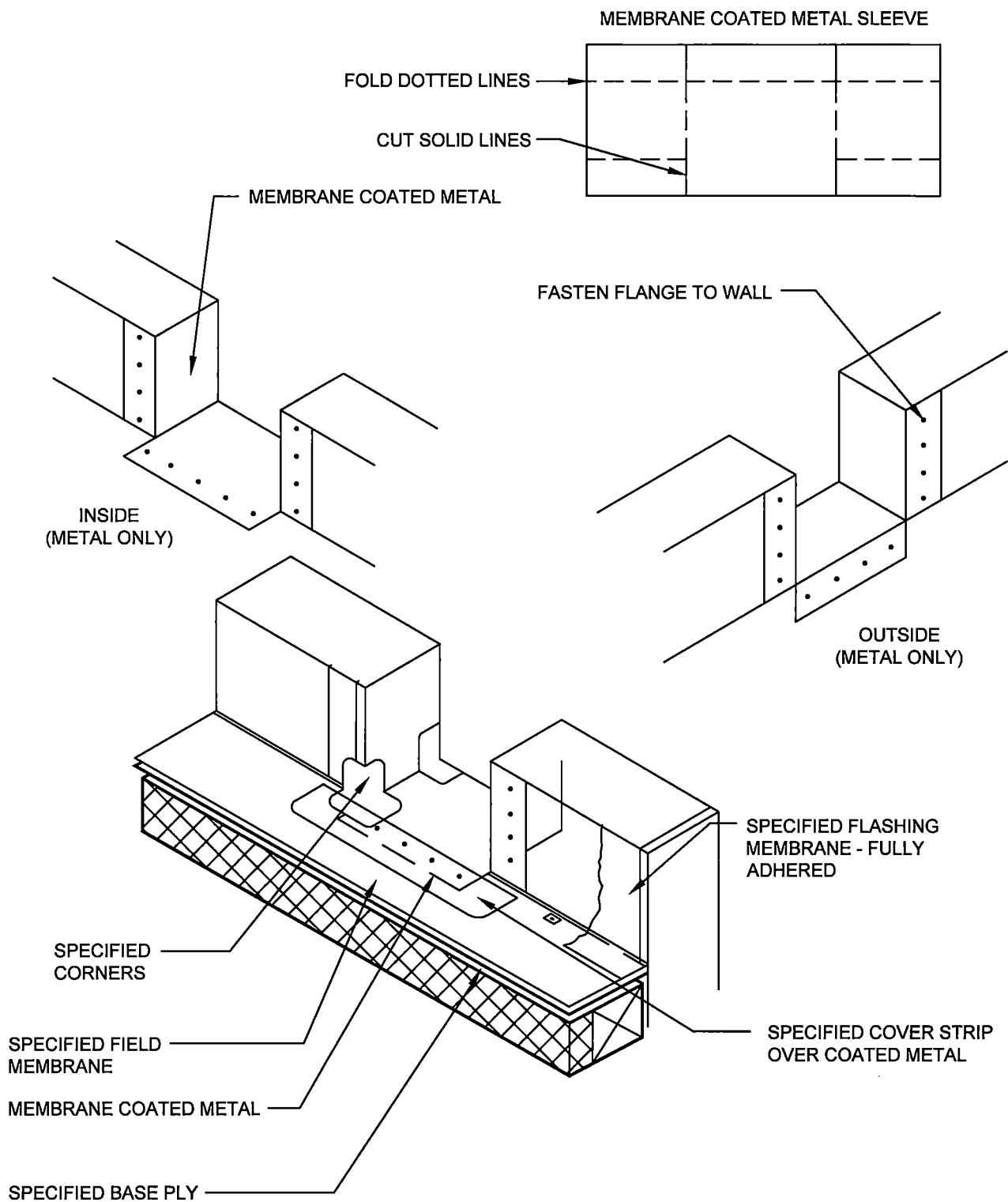
THROUGH WALL SCUPPER
DETAIL

SCALE:

NTS

DRAWING No.:

FB-12



NOTES:

- 1) SEE DETAIL 2
- 2) PERIMETER WOOD NAILER MAY BE OMITTED WHEN FIELD MEMBRANE IS TURNED UP AND SECURED TO WALL WITH FLAT METAL TERMINATION BAR.
- 3) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

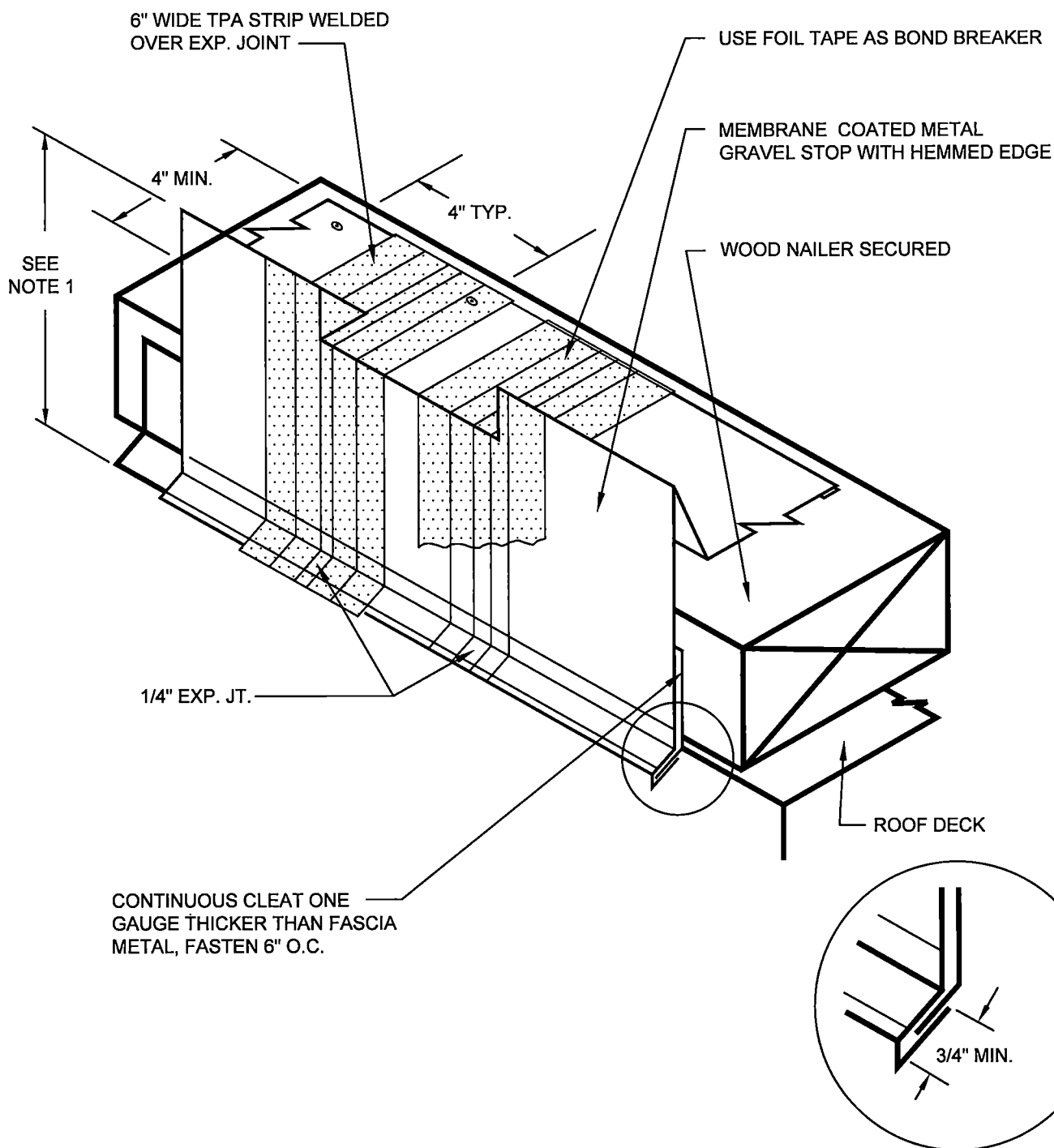
ISOMETRIC VIEW
THROUGH-WALL SCUPPER

SCALE:

NTS

DRAWING No.:

FB-13



NOTES:

- 1) MAXIMUM FACE DIMENSION SHOULD BE 5" TO PREVENT DISTORTION FROM "OIL CANNING." IF SURFACE DISTORTION IS ACCEPTABLE, FACE DIMENSION MAY BE INCREASED TO 8".
- 2) FOR FASCIAS GREATER THAN 8" INSTALL IN TWO SECTIONS
- 3) SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

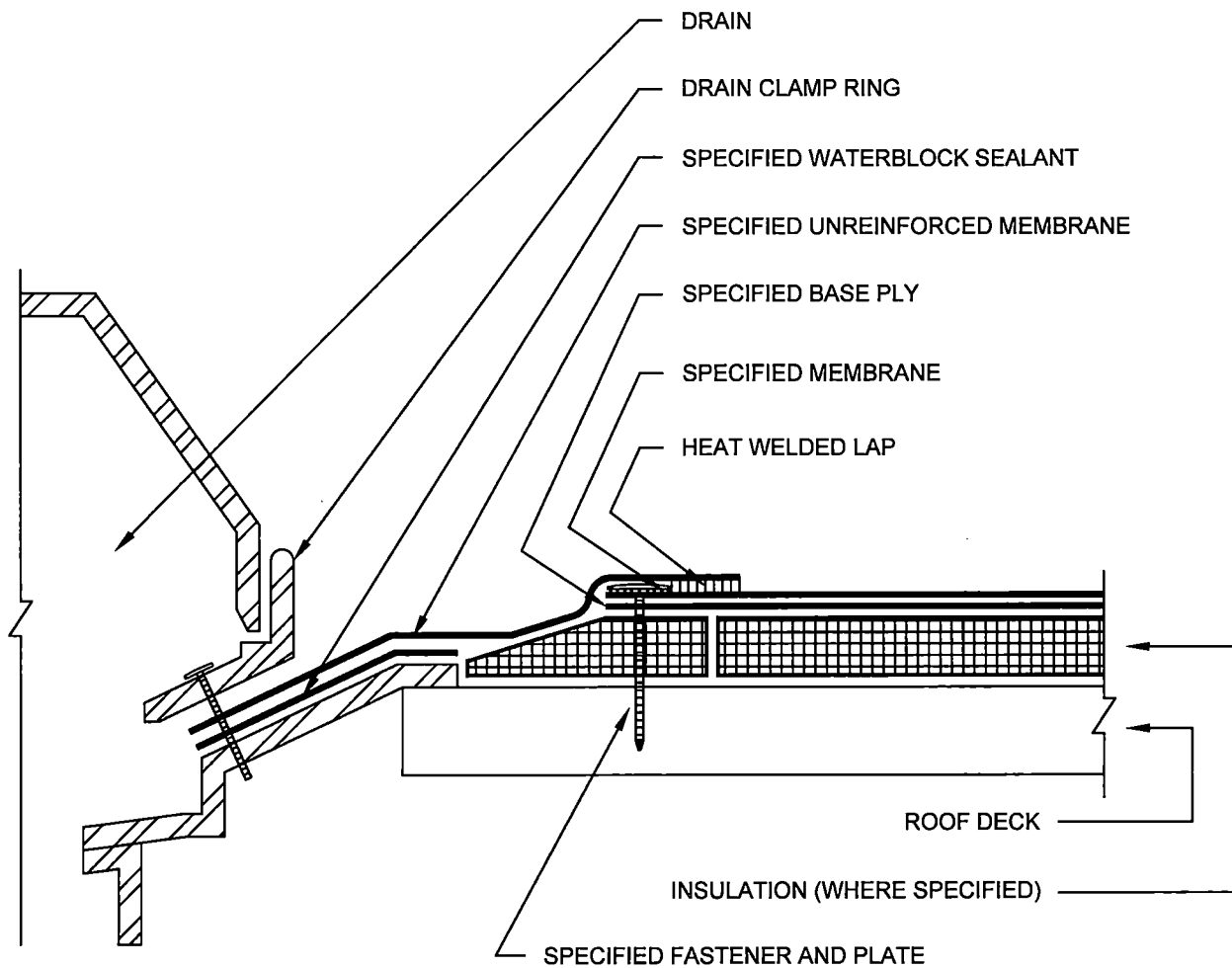
GRAVEL STOP SCUPPER
DETAIL

SCALE:

NTS

DRAWING No.:

FB-14



NOTES:

- 1) THIS TWO PIECE DESIGN MUST BE USED WHEN INSTALLING FLEECE BACKED MEMBRANE.
- 2) MEMBRANE MUST EXTEND MINIMUM 1" BEYOND THE BOLT HOLES.
- 3) FIELD WELD MUST NOT PASS UNDER THE CLAMPING RING.
- 4) ALL METAL SURFACES SHALL BE PRIMED BEFORE CONTACT WITH ANY ADHESIVE OR MASTIC.
- 5) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

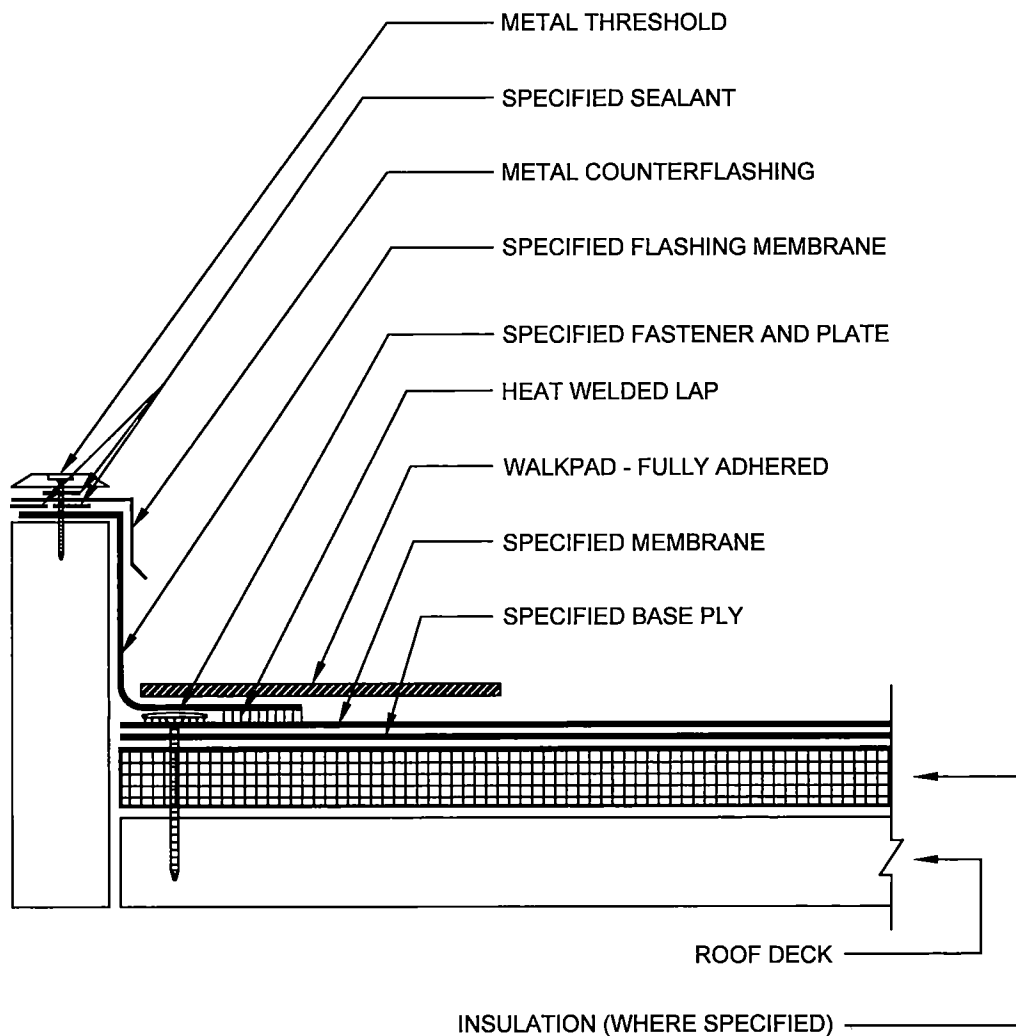
DRAIN DETAIL

SCALE:

NTS

DRAWING No.:

FB-15



NOTES:

- 1) ALL METAL SURFACES SHALL BE PRIMED BEFORE CONTACT WITH ANY ADHESIVE OR MASTIC.
- 2) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

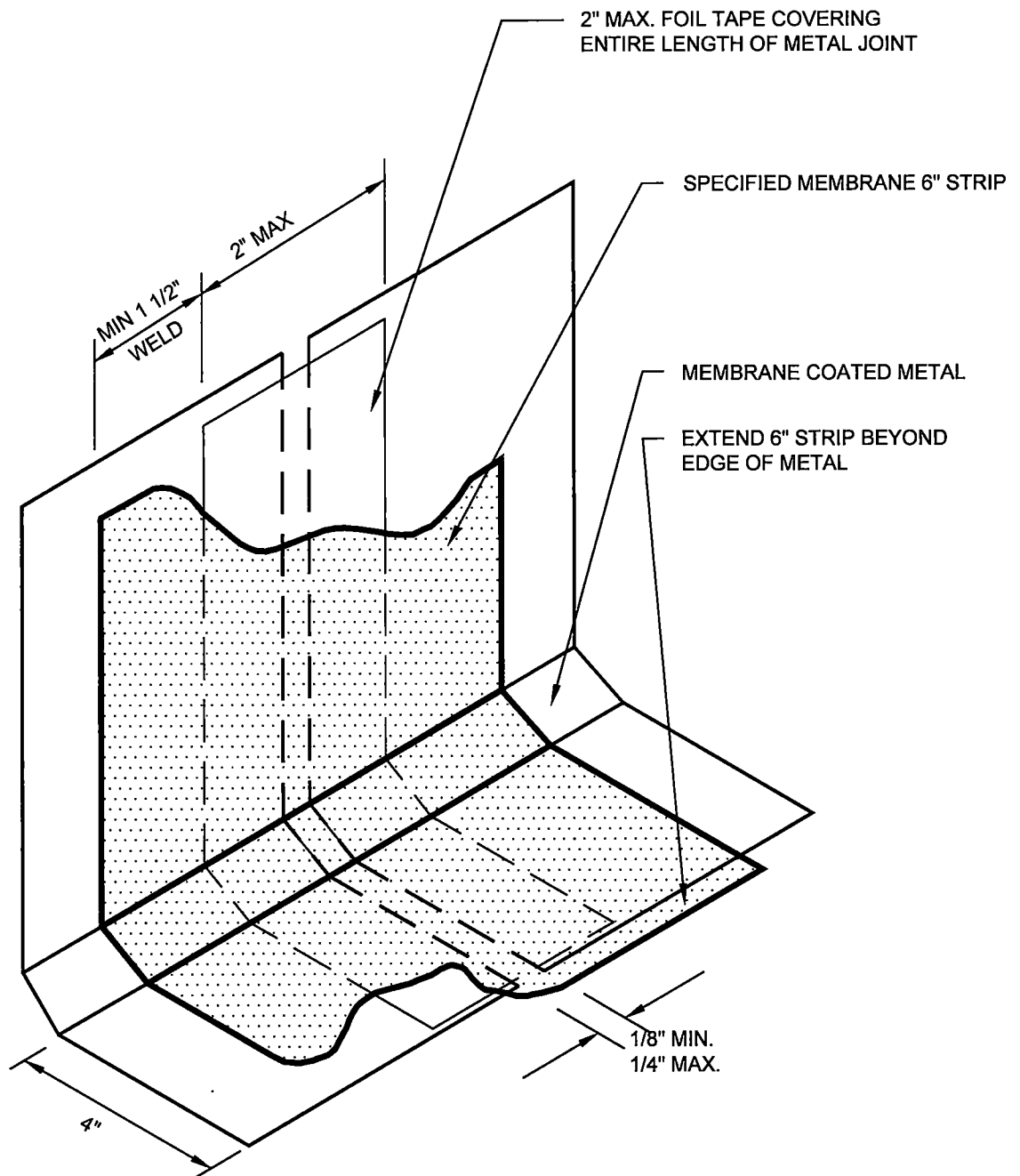
DOOR THRESHOLD
FLASHING DETAIL

SCALE:

NTS

DRAWING No.:

FB-16



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

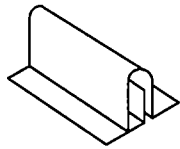
MEMBRANE COATED METAL BASE
FLASHING BUTT JOINT

SCALE:

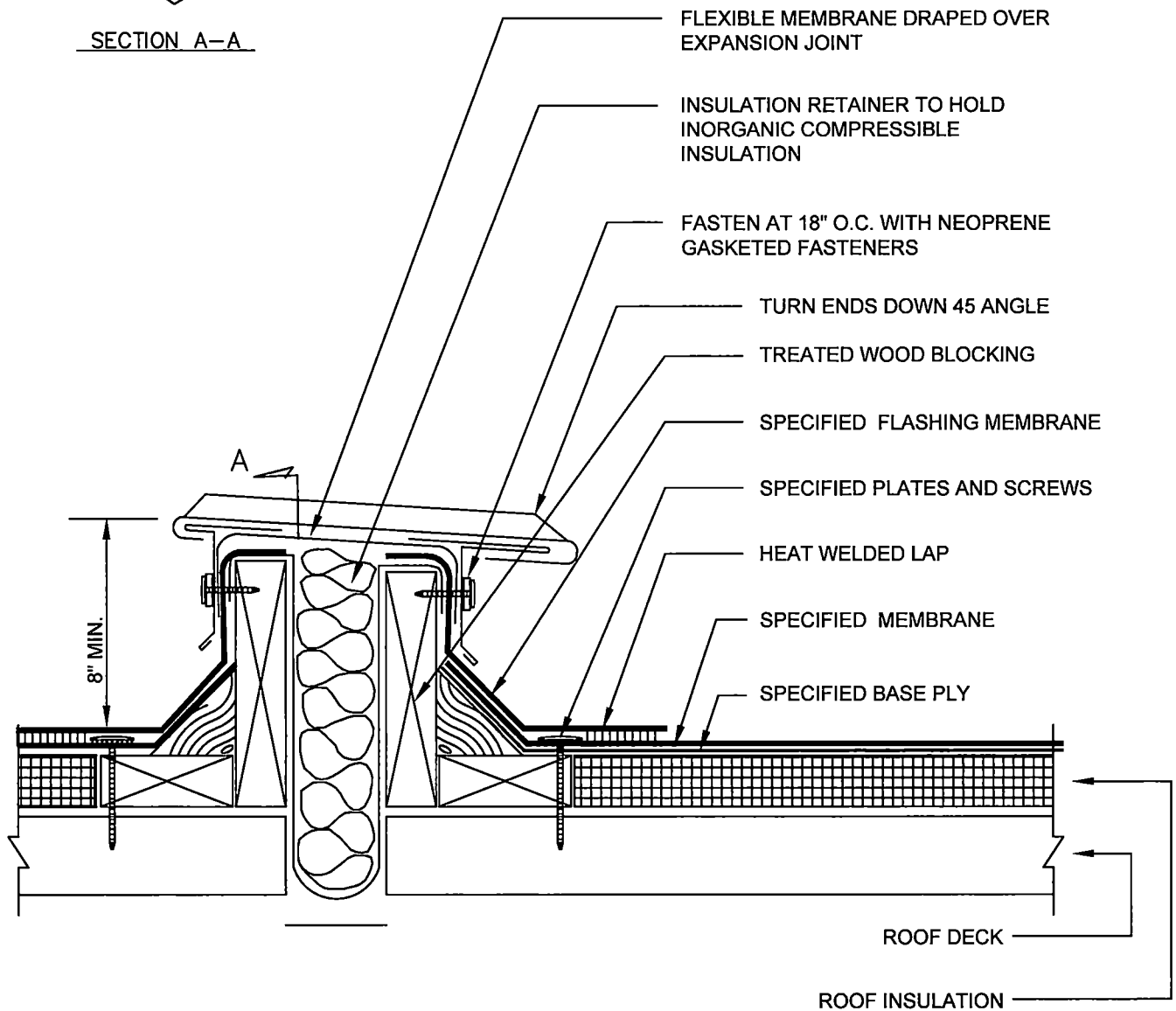
NTS

DRAWING No.:

FB-17



SECTION A-A



NOTES:

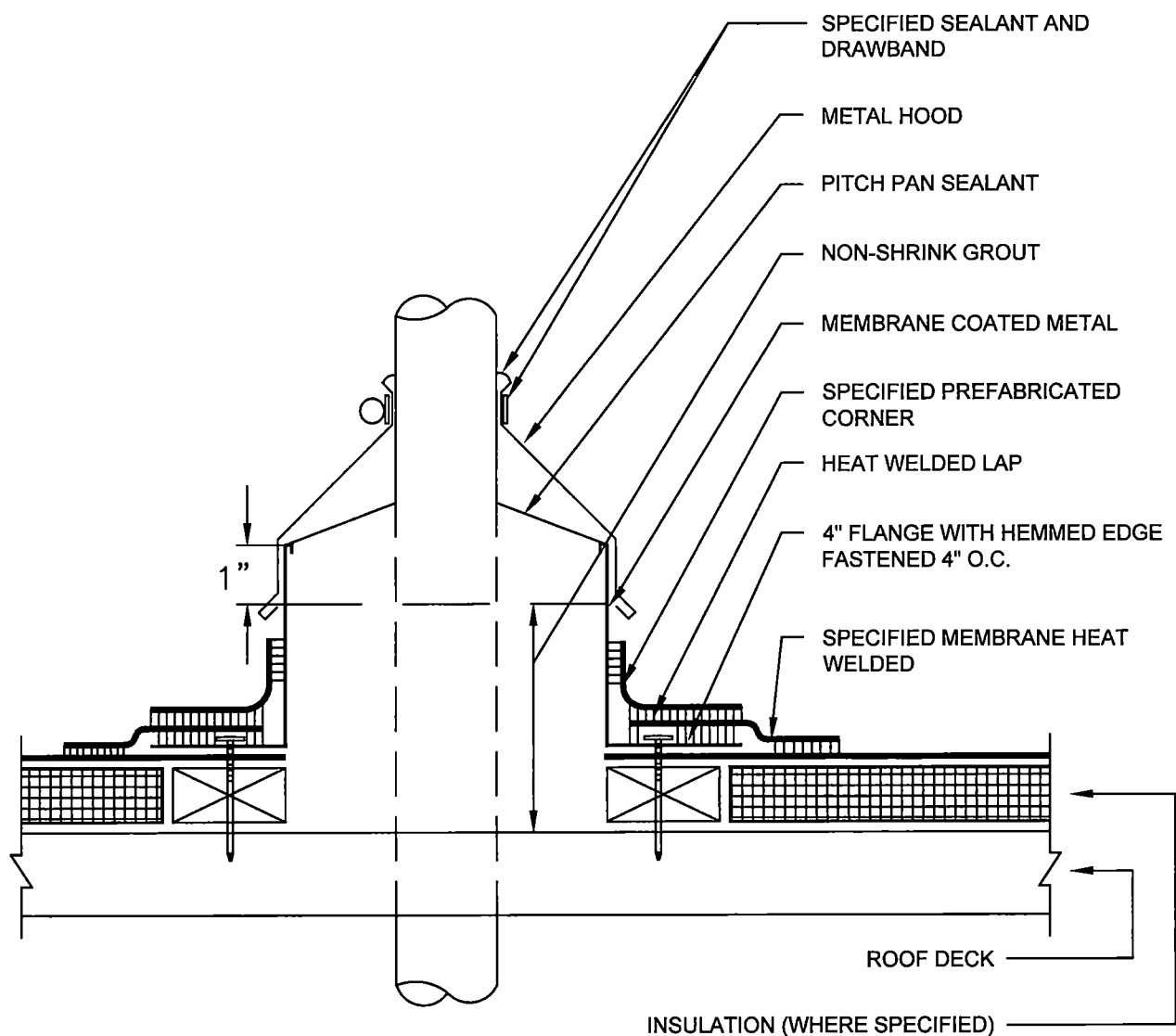
- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:
EXPANSION JOINT CURB

SCALE: NTS

DRAWING No.:
FB-18



NOTES:

- 1) USE MEMBRANE COATED METAL TO FORM PITCH PAN.
- 2) ALLOW 2" MINIMUM CLEARANCE AROUND THE PROJECTION.
- 3) SPECIFIED PREFABRICATED CORNERS MUST BE USED AT ALL 4 CORNERS
- 4) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

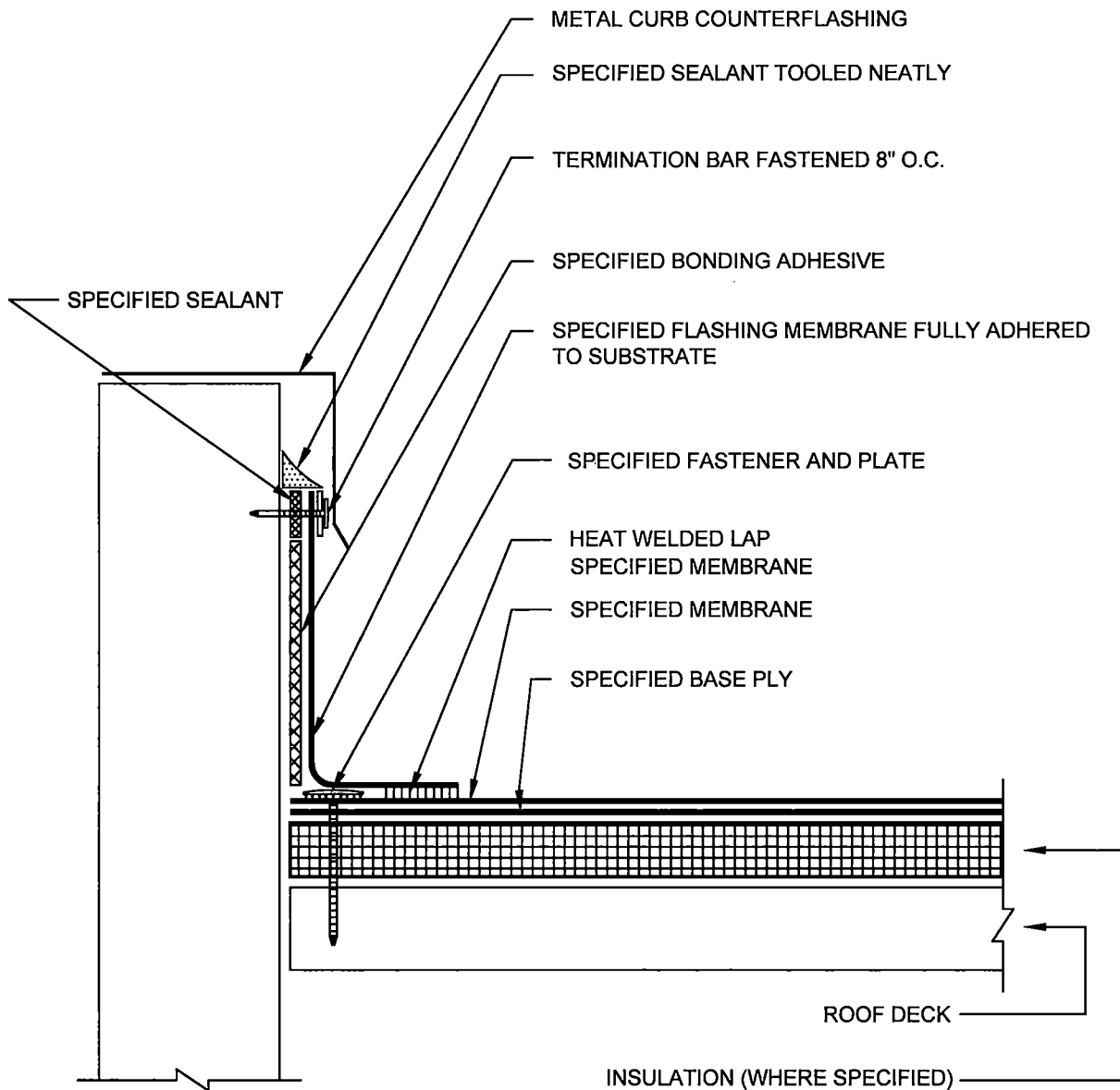
PITCH POCKET
FLASHING DETAIL

SCALE:

NTS

DRAWING No.:

FB-19



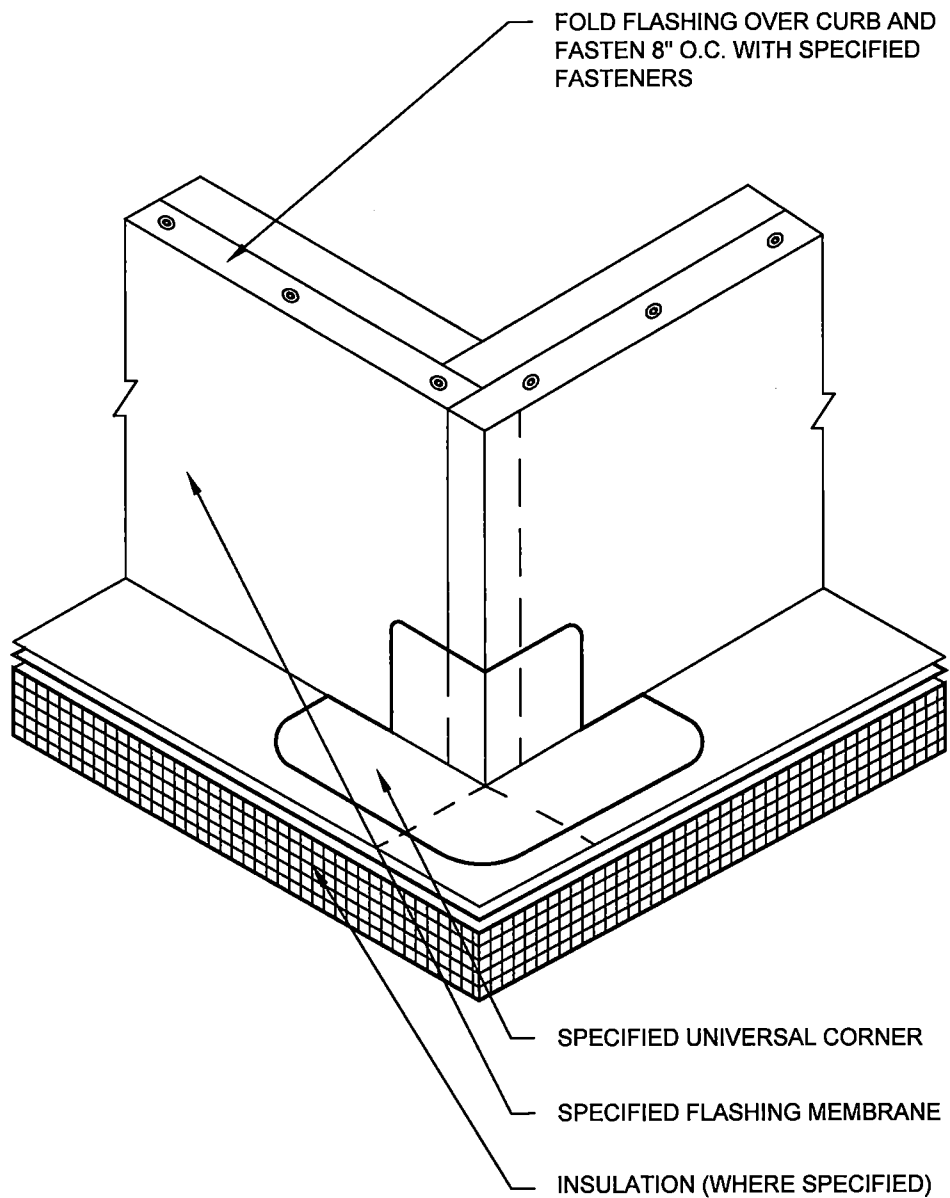
NOTES:

- 1) ALL FLASHING SHALL BE A MINIMUM OF 8" HIGH.
- 2) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:
CURB FLASHING DETAIL

SCALE: NTS
DRAWING No.: FB-20



NOTES:

- 1) USE THIS DETAIL WHEN COUNTERFLASHING IS PART OF THE CURB MOUNTED EQUIPMENT.
- 2) USE THE SPECIFIED FASTENERS AND PLATE AROUND THE CURB PER WRITTEN SPECIFICATIONS.
- 3) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

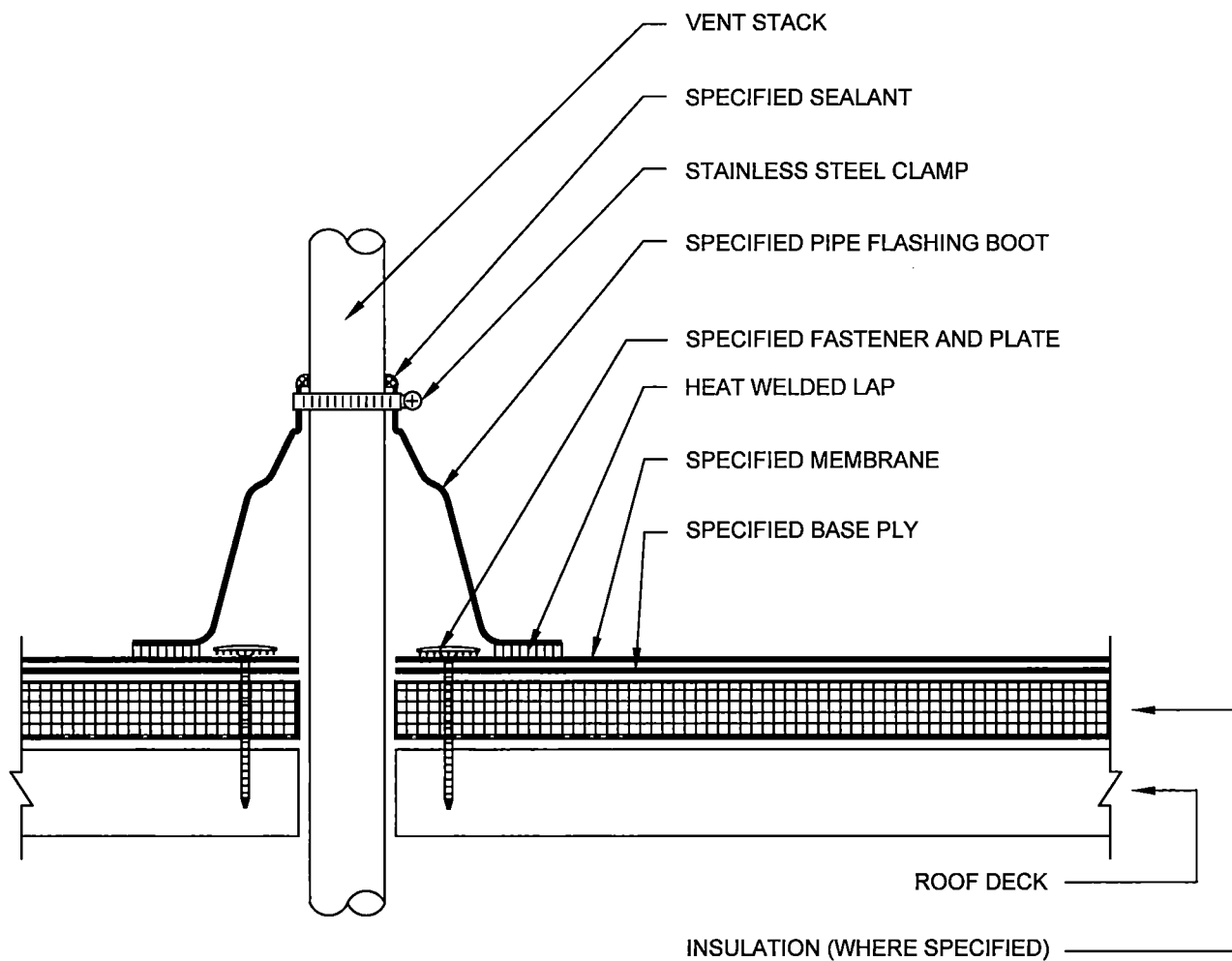
CURB FLASHING DETAIL

SCALE:

NTS

DRAWING No.:

FB-21



NOTES:

- 1) DO NOT CUT PREFABRICATED BOOT. IT MUST BE PULLED OVER VENT PIPE.
- 2) PREFABRICATED BOOTS ARE AVAILABLE IN SMALL & LARGE SIZES, AND MUST BE USED WHENEVER POSSIBLE TO FLASH PIPES 1" TO 8" IN DIAMETER.
- 3) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

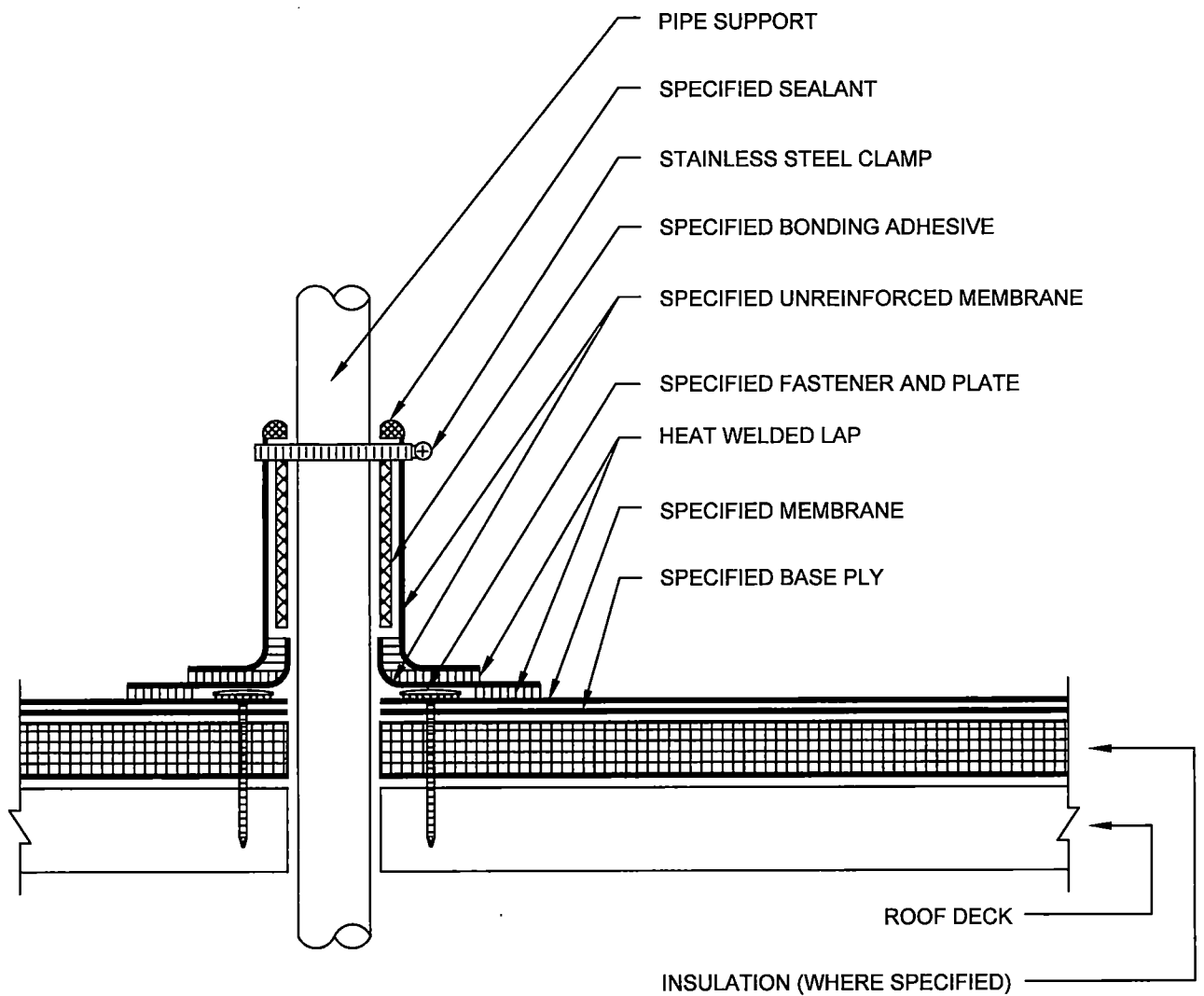
TREMCO®

SHEET TITLE:

**PREFABRICATED
VENT PIPE FLASHING**

SCALE: **NTS**

DRAWING No.:
FB-22



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

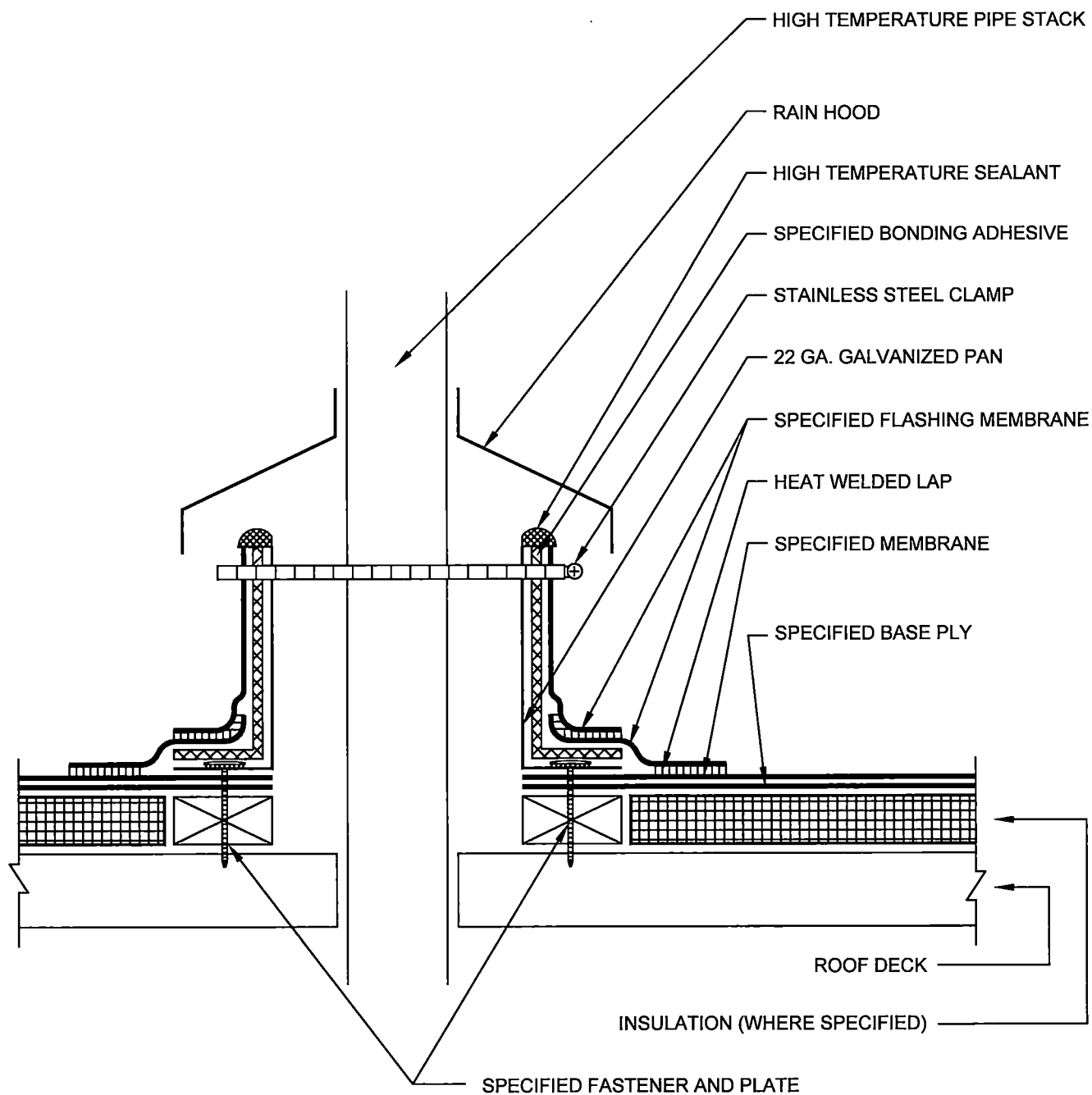
TWO-PIECE
PIPE FLASHING

SCALE:

NTS

DRAWING No.:

FB-23



NOTES:

- 1) THIS DETAIL TO BE USED WHEN TEMPERATURE OF STACK EXCEEDS 140°F.
- 2) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

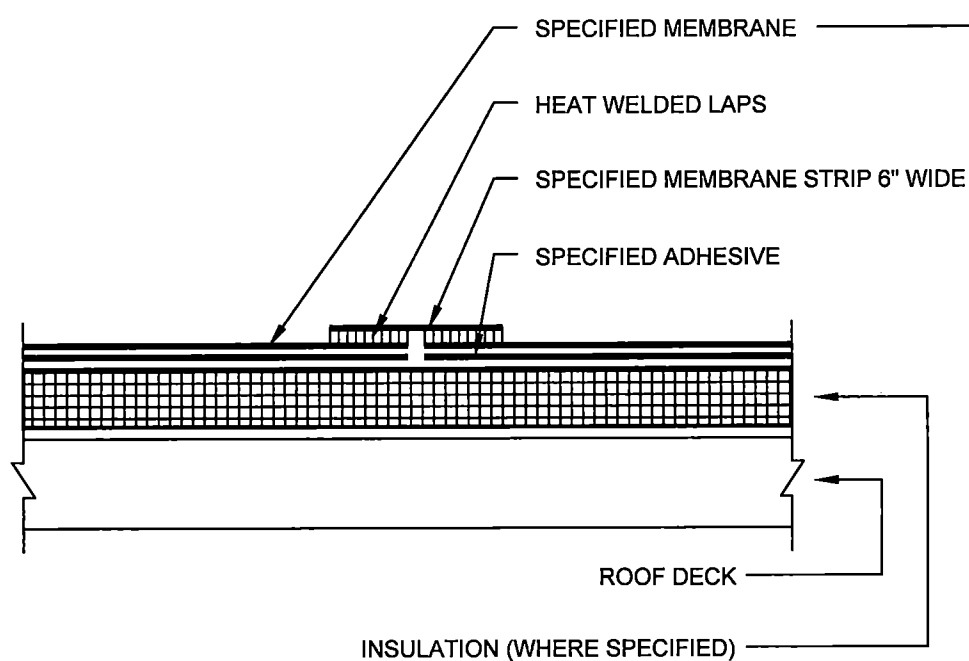
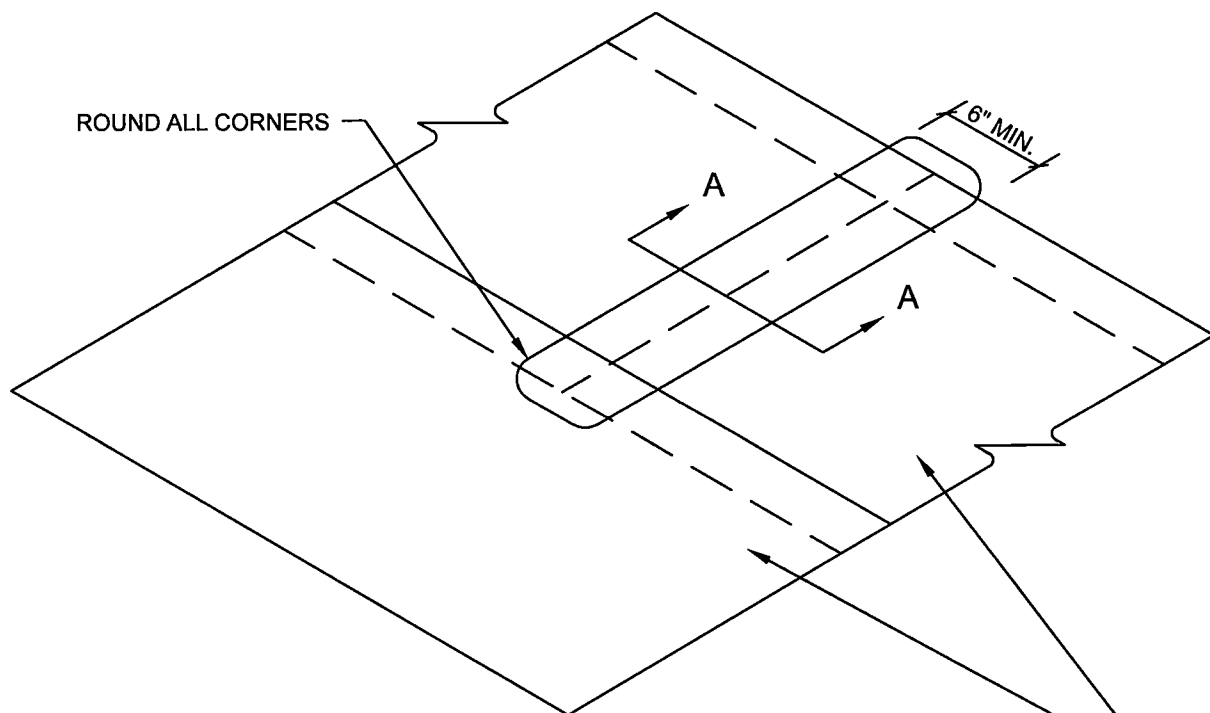
TREMCO®

SHEET TITLE:

HIGH TEMPERATURE
PIPE FLASHING

SCALE: NTS

DRAWING No.:
FB-24



SECTION A-A

NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

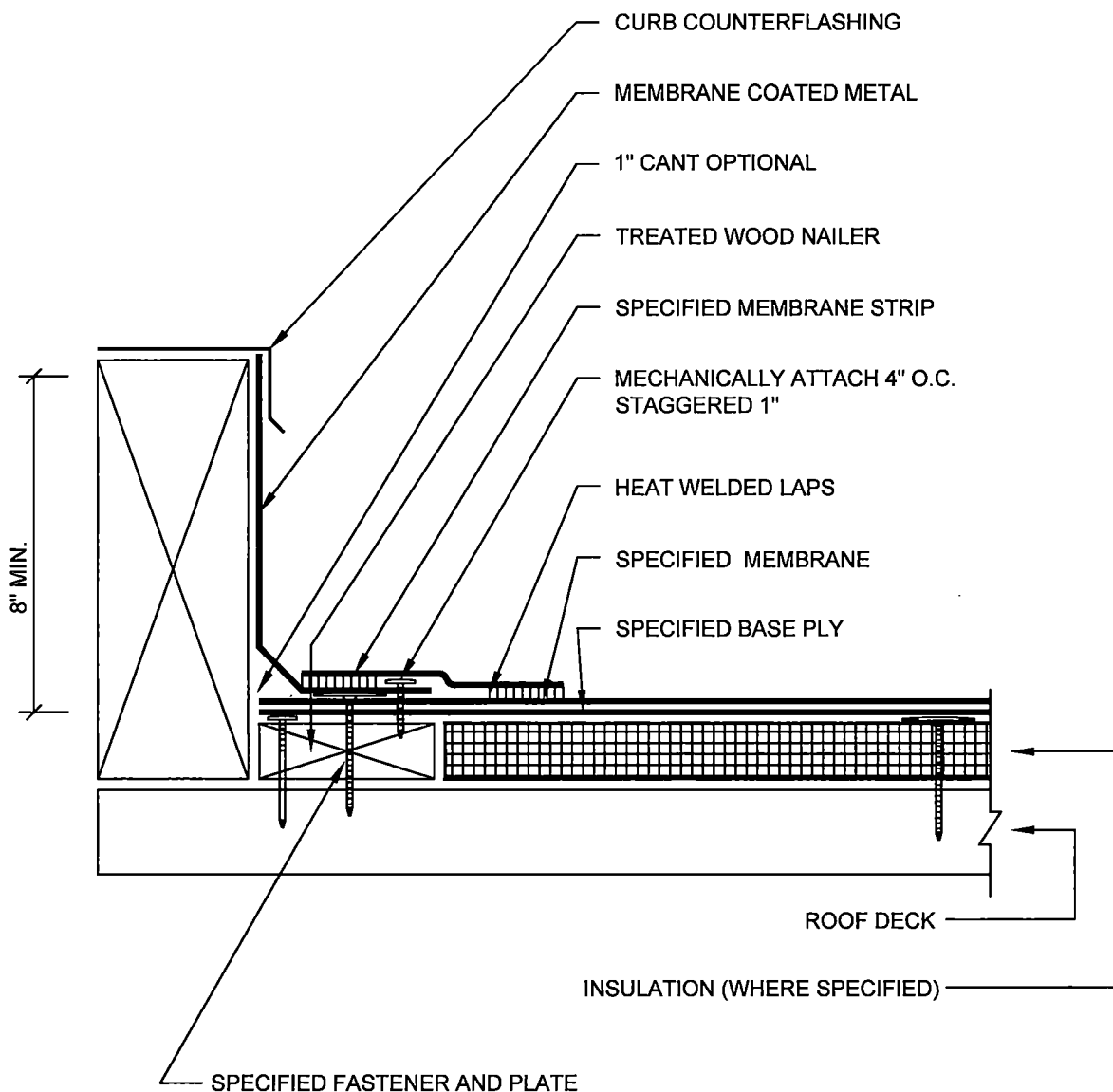
END LAP DETAIL

SCALE:

NTS

DRAWING No.:

FB-25



NOTES:

- 1) SPACING AND FASTENING OF NAILERS SHALL CONFORM TO FACTORY MUTUAL LOSS PREVENTION DATA SHEET I-49.
- 2) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

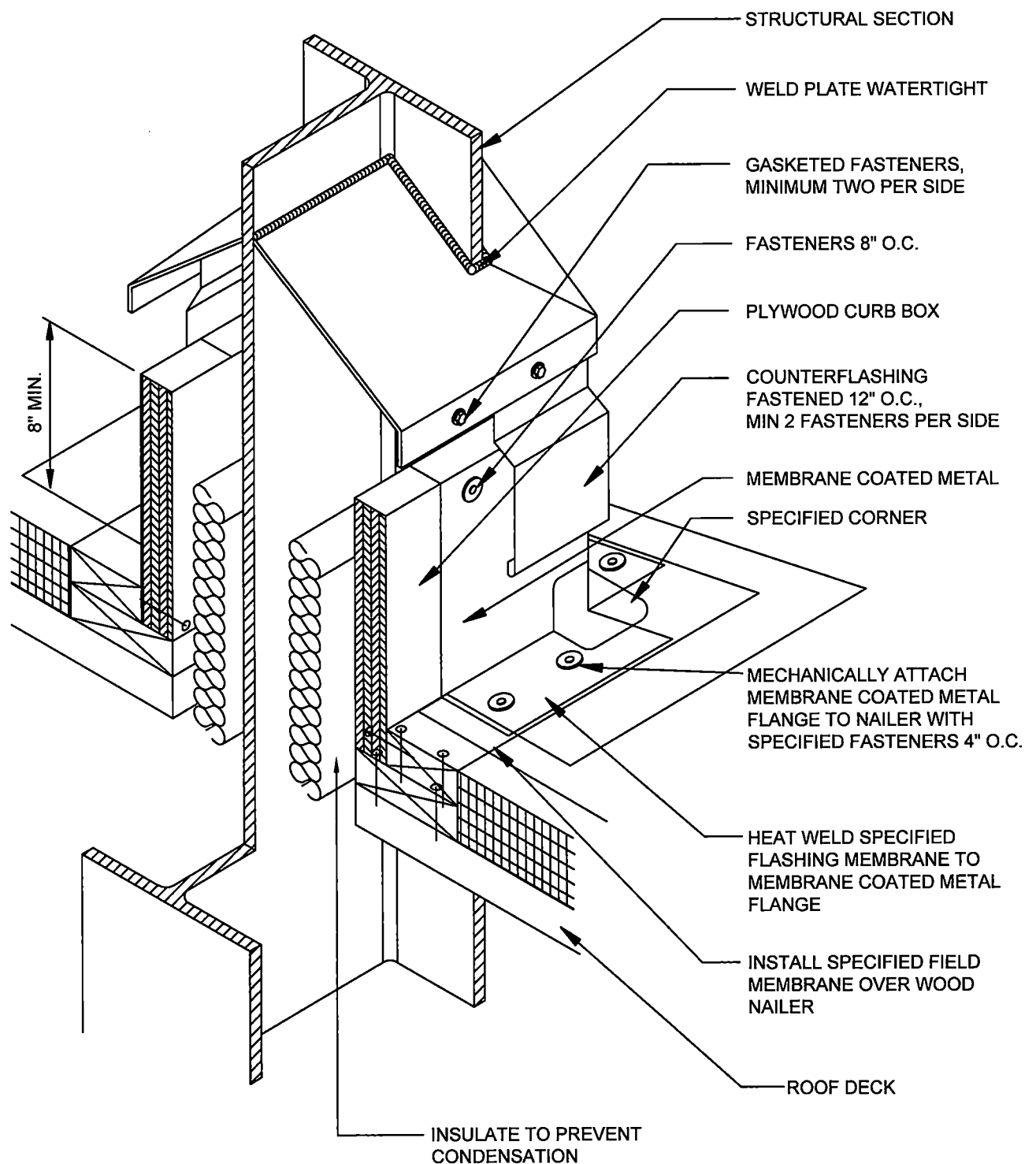
**CURB FLASHING USING
MEMBRANE COATED METAL**

SCALE:

NTS

DRAWING No.:

FB-26



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

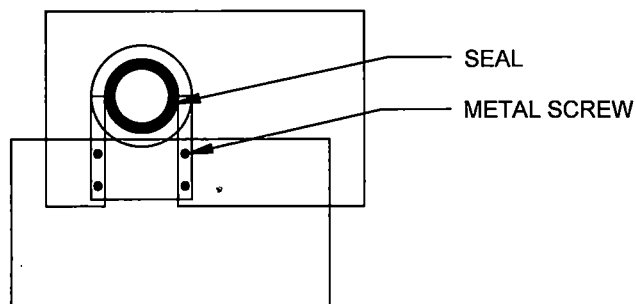
I-BEAM FLASHING DETAIL

SCALE:

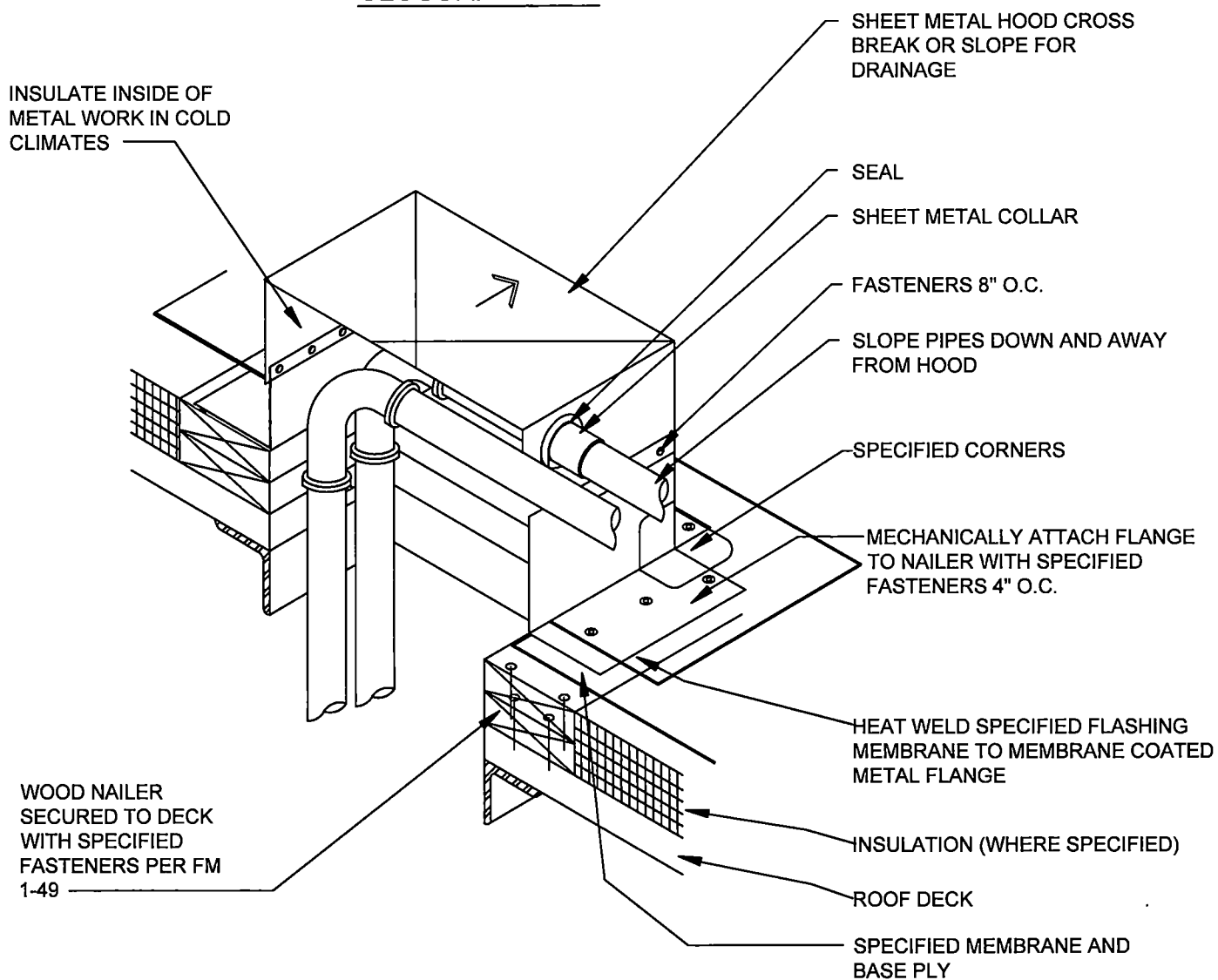
NTS

DRAWING No.:

FB-27



CLOSURE DETAIL



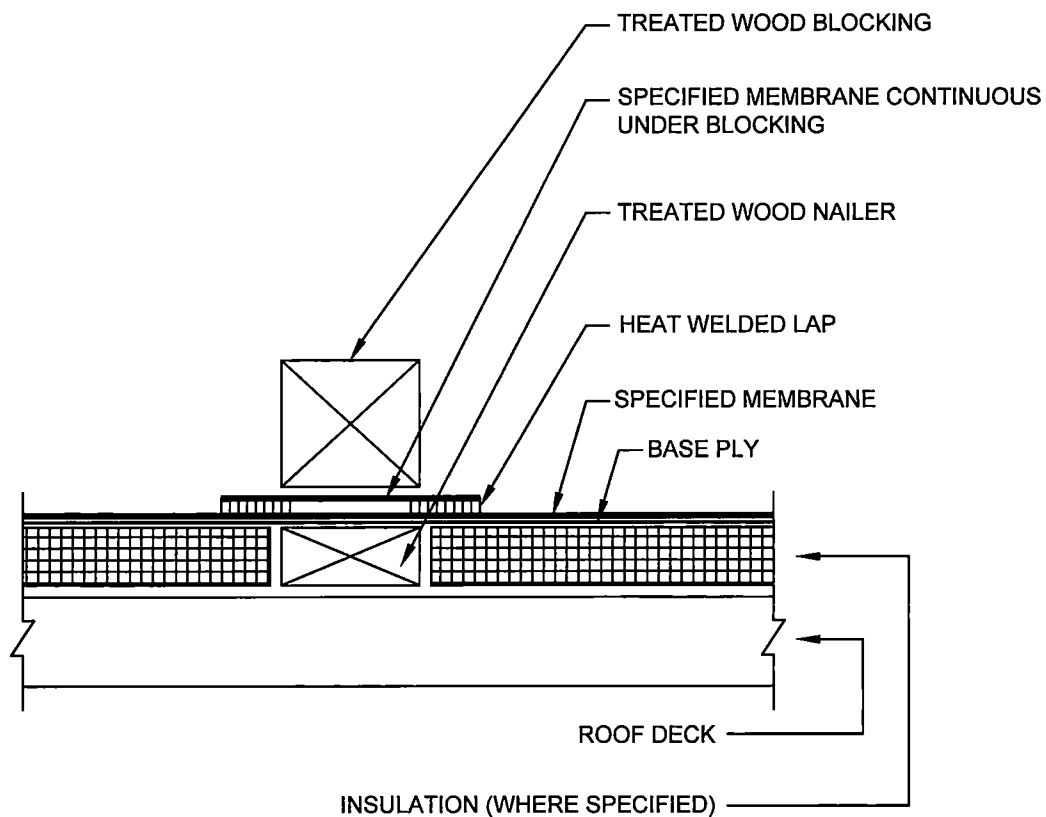
NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:
**MULTIPLE PIPE PENETRATION
DETAIL**

SCALE: **NTS**
DRAWING No.:
FB-28



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

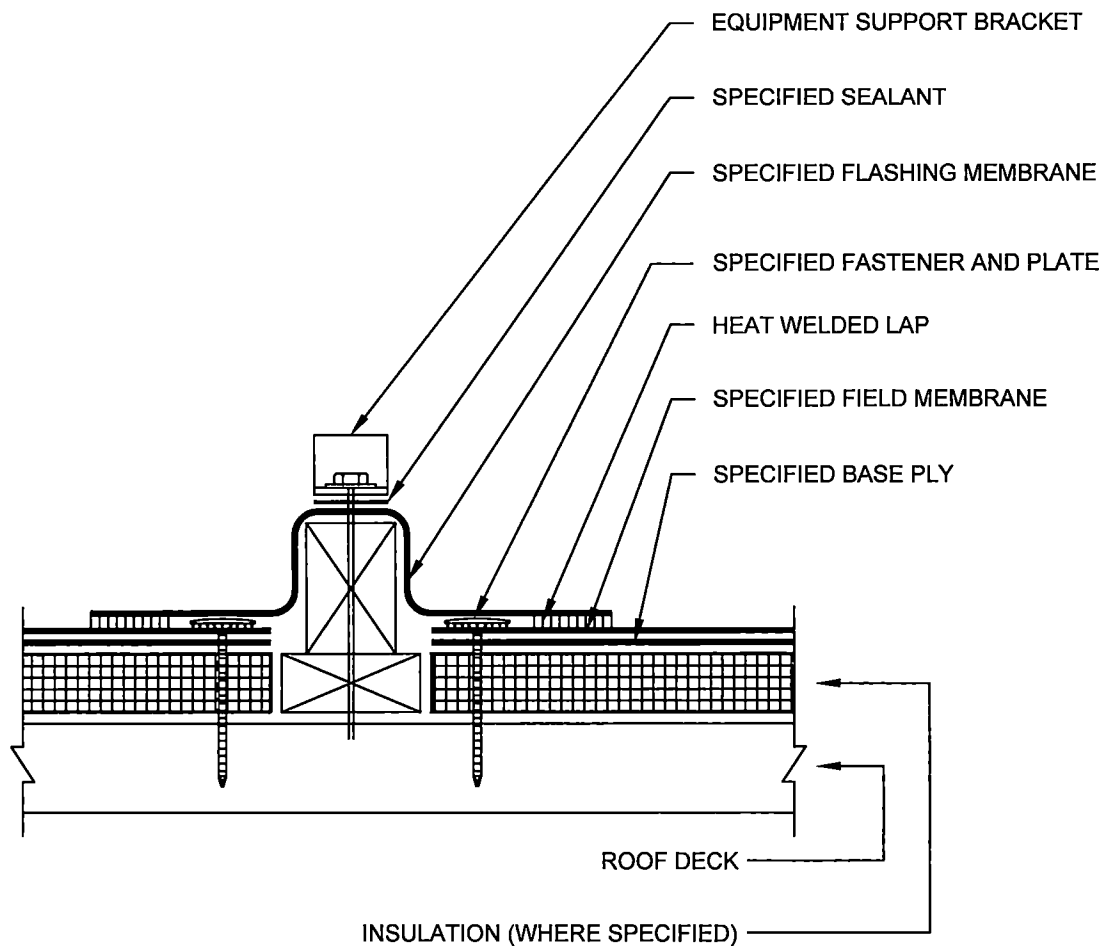
EXPOSED SLEEPER

SCALE:

NTS

DRAWING No.:

FB-29



NOTES:

- 1) SLEEPER HEIGHT SHOULD BE SUFFICIENT TO ELEVATE THE EQUIPMENT SUPPORT BRACKET ABOVE THE WATER LEVEL.
- 2) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

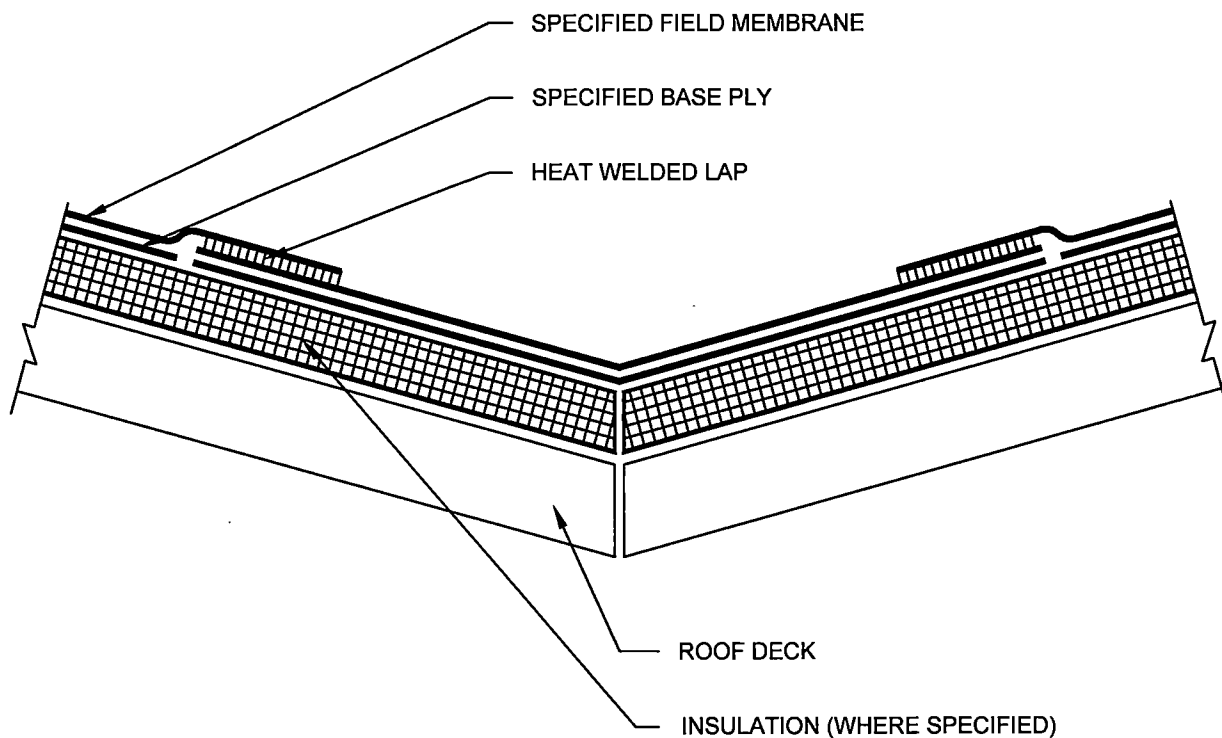
**FIXED EQUIPMENT SUPPORT
DETAIL**

SCALE:

NTS

DRAWING No.:

FB-30



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

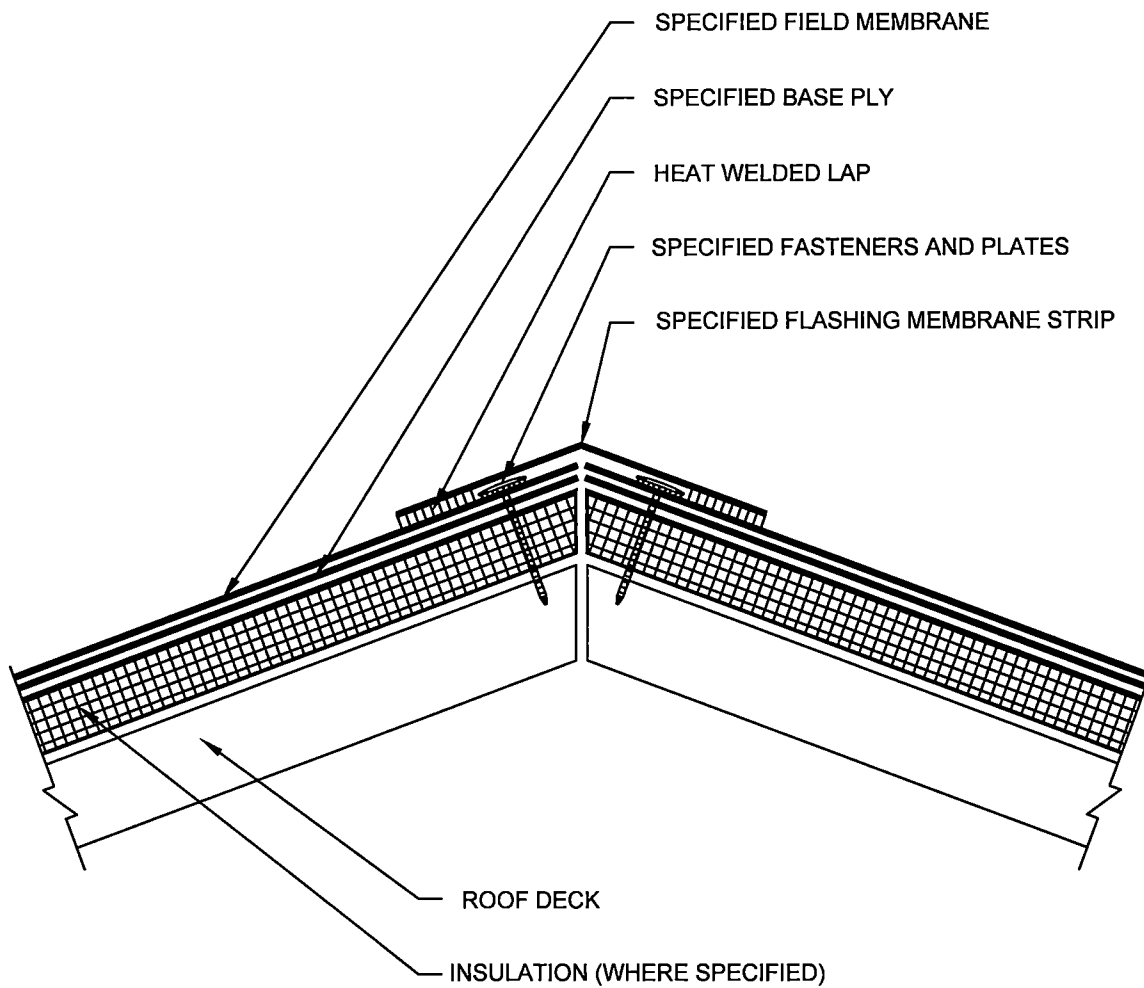
VALLEY FLASHING

SCALE:

NTS

DRAWING No.:

FB-31



NOTES:

- 1) MEMBRANE FASTENER SPACING NOT TO EXCEED 12" O.C.
- 2) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO[®]

SHEET TITLE:

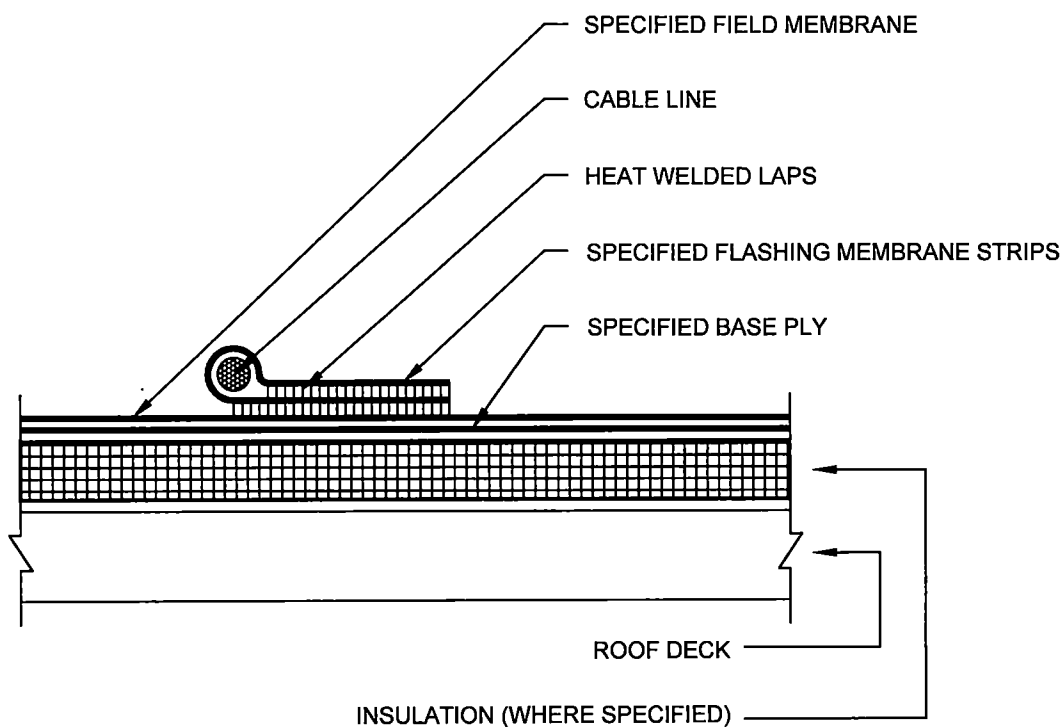
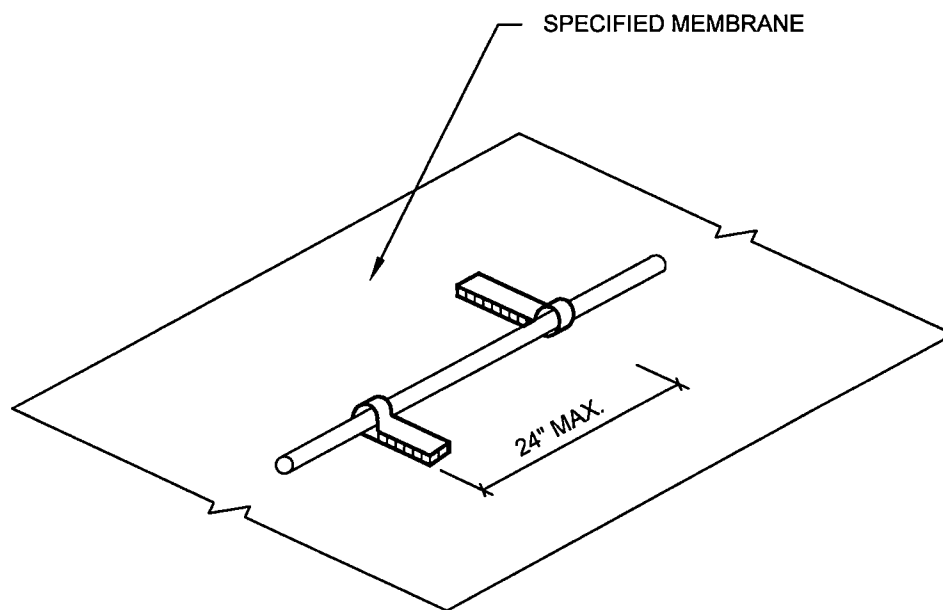
RIDGE FLASHING

SCALE:

NTS

DRAWING No.:

FB-32



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

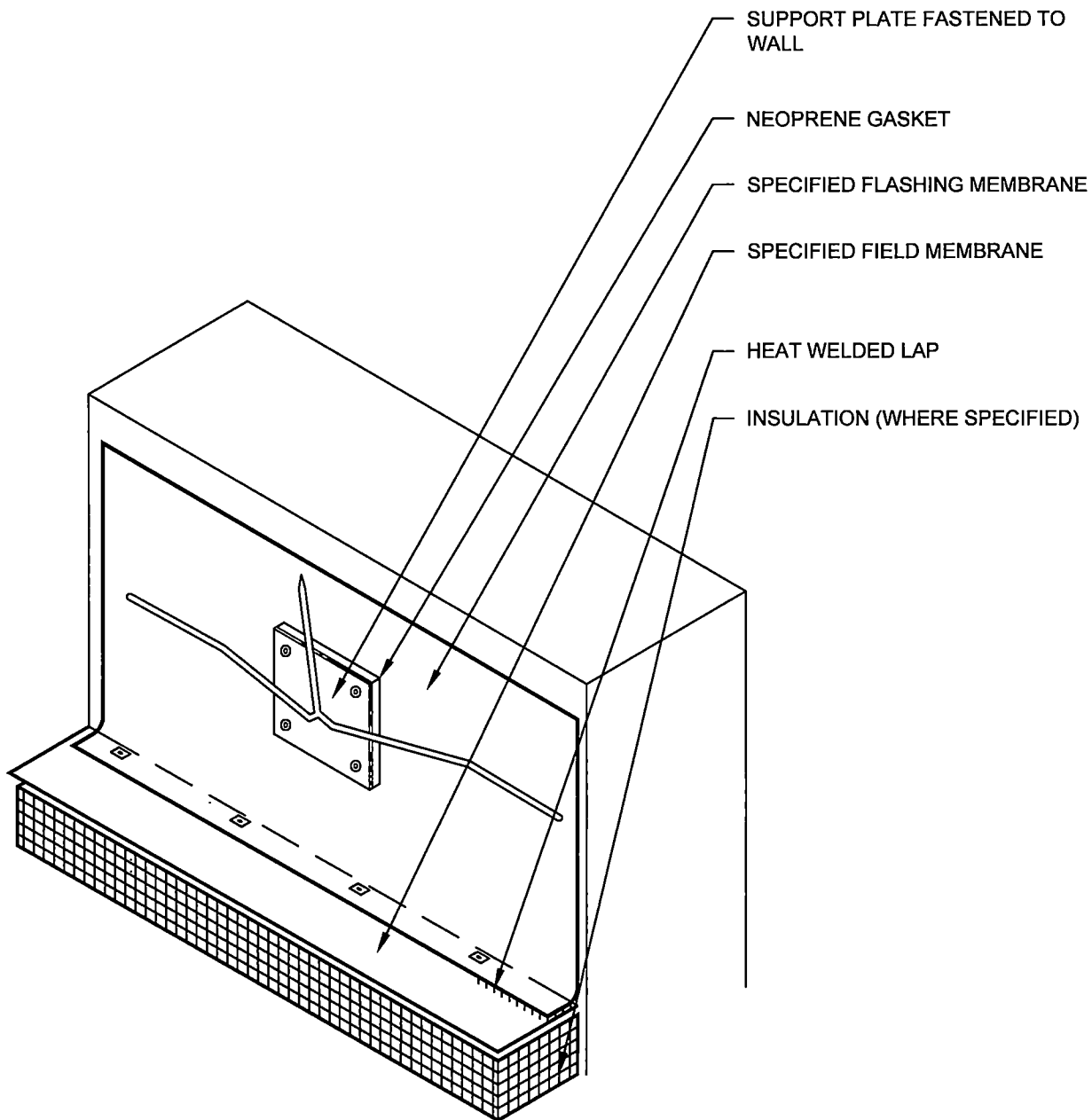
**LIGHTNING CABLE SUPPORT
STRAP**

SCALE:

NTS

DRAWING No.:

FB-33

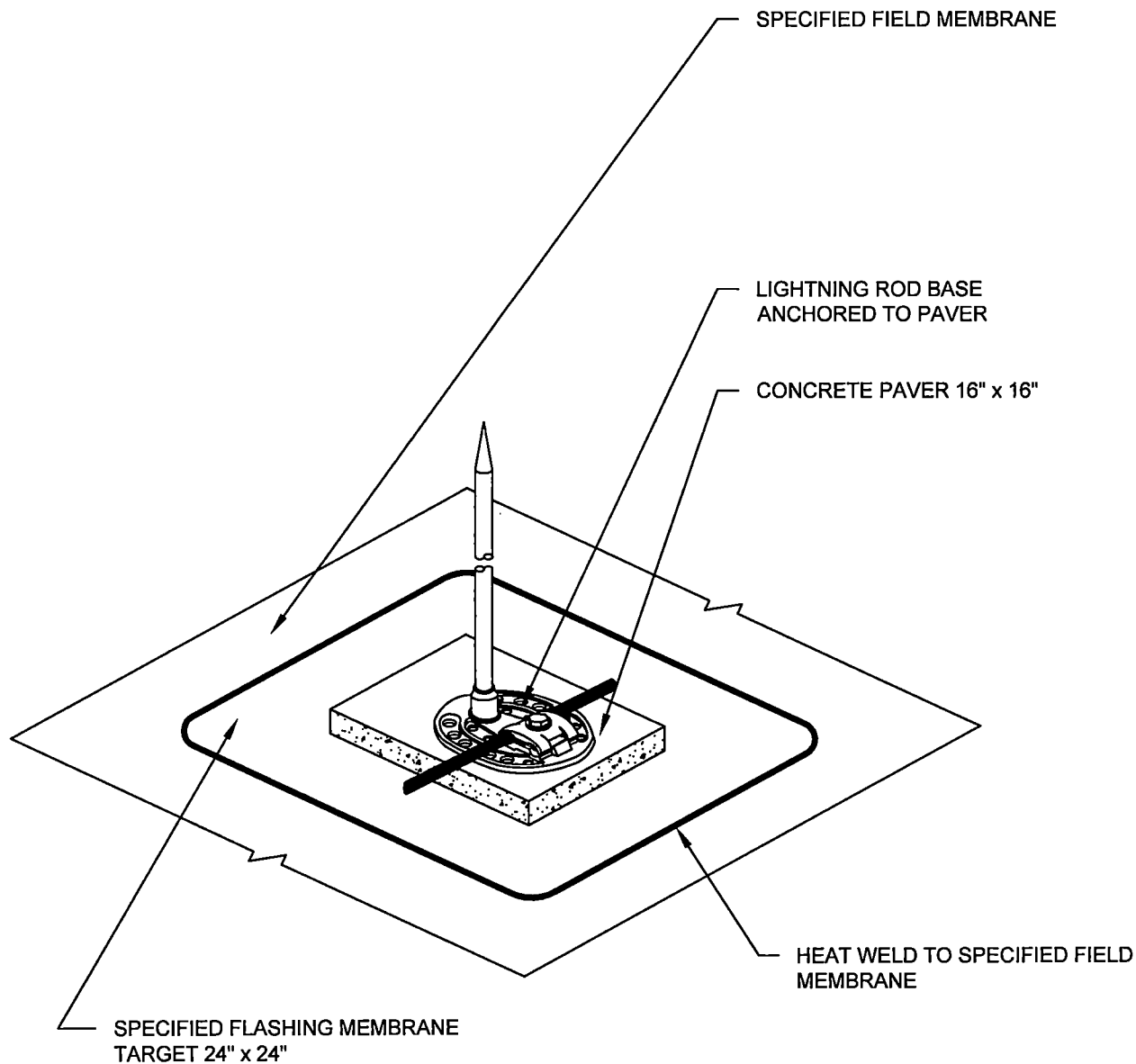


NOTES:
1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:
**WALL MOUNTED LIGHTNING ROD
DETAIL**

SCALE: NTS
DRAWING No.:
FB-34



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

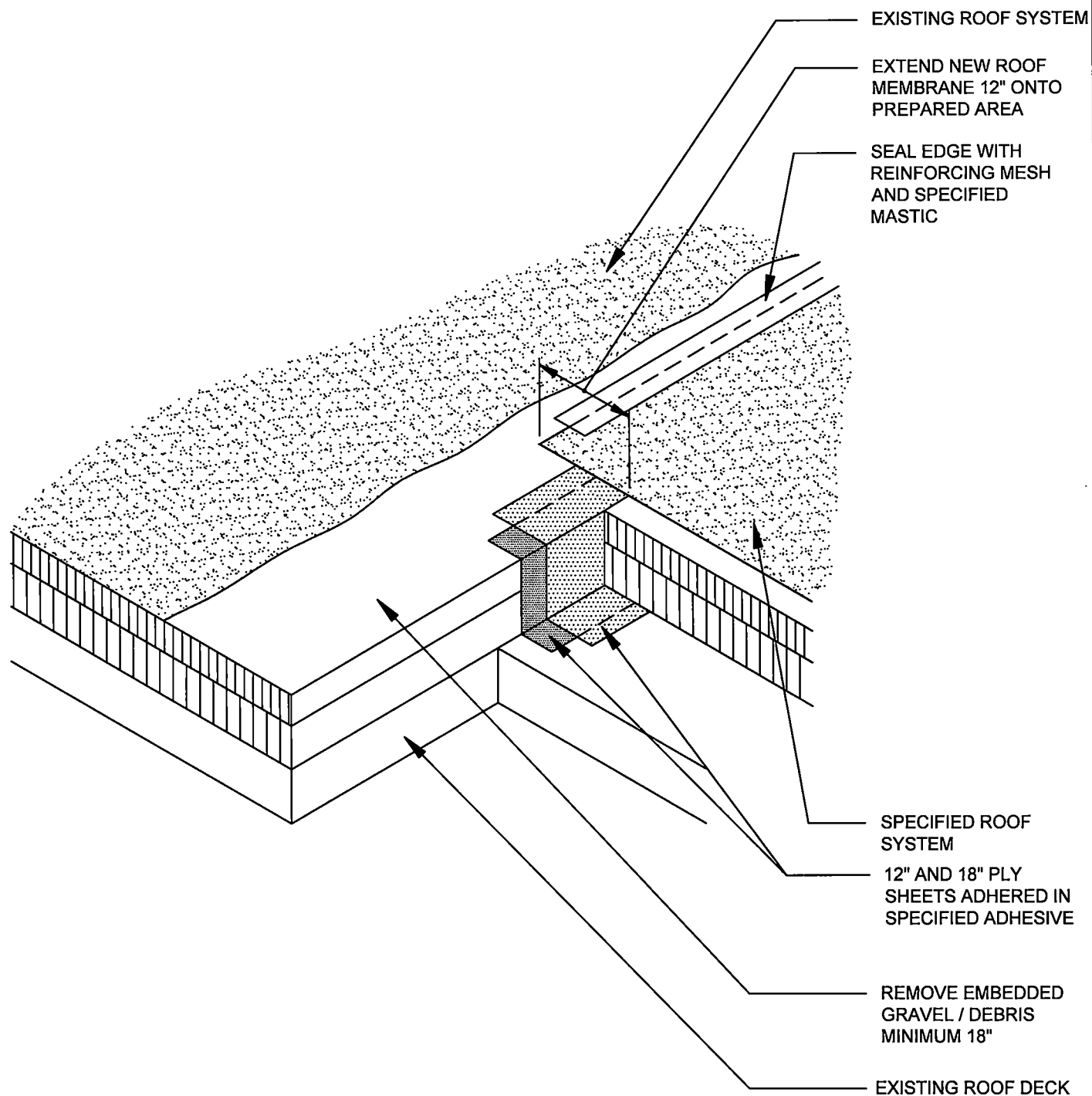
LIGHTNING ROD BASE DETAIL

SCALE:

NTS

DRAWING No.:

FB-35



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

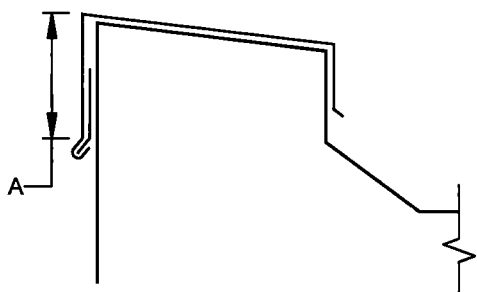
DAILY WATERSTOP / TIE-IN

SCALE:

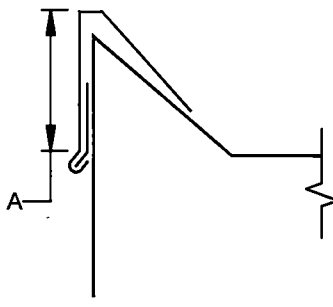
NTS

DRAWING No.:

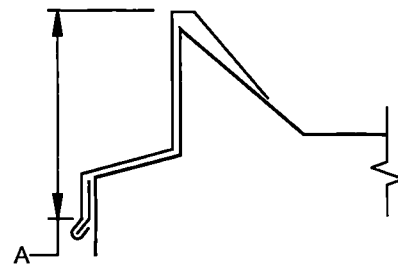
FB-36



COPING



CAP FLASHING
AND FASCIA



VARIATIONS

EXPOSED RFACE WITHOUT BREAKS "A" DIMENSIONS	GALVANIZED IRON	COLD ROLLED COPPER	ALUMINUM 3003-H14
UP TO 6" FACE	24 GA.	16 OZ.	.040" (18 GA.)
6" TO 8" FACE	24 GA.	16 OZ.	.050" (16 GA.)
8" TO 10" FACE	22 GA.	20 OZ.	.064" (14 GA.)
10" TO 15" FACE	20 GA.	ADD BRAKES TO STIFFEN	.080" (12 GA.)

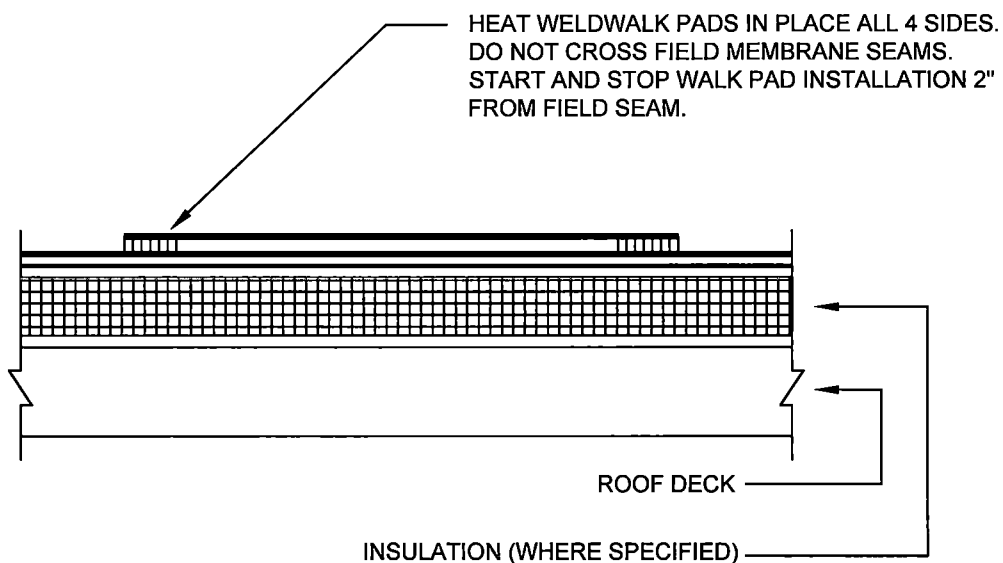
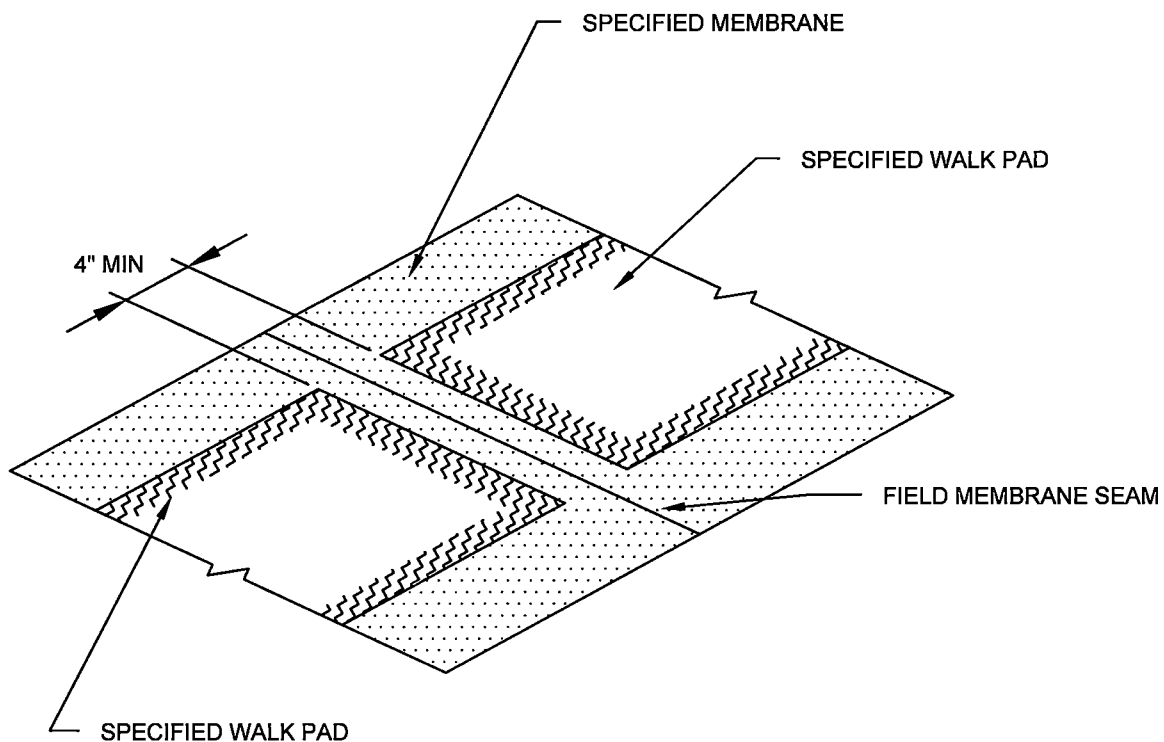
TREMCO®

SHEET TITLE:

GAUGE OR THICKNESS GUIDE
(MINIMUM)

SCALE: NTS

DRAWING No.:
FB-37



NOTES:

- 1) THE SPECIFIED MEMBRANE AND BASE PLY TO BE FULLY ADHERED IN SPECIFIED ADHESIVE.

TREMCO®

SHEET TITLE:

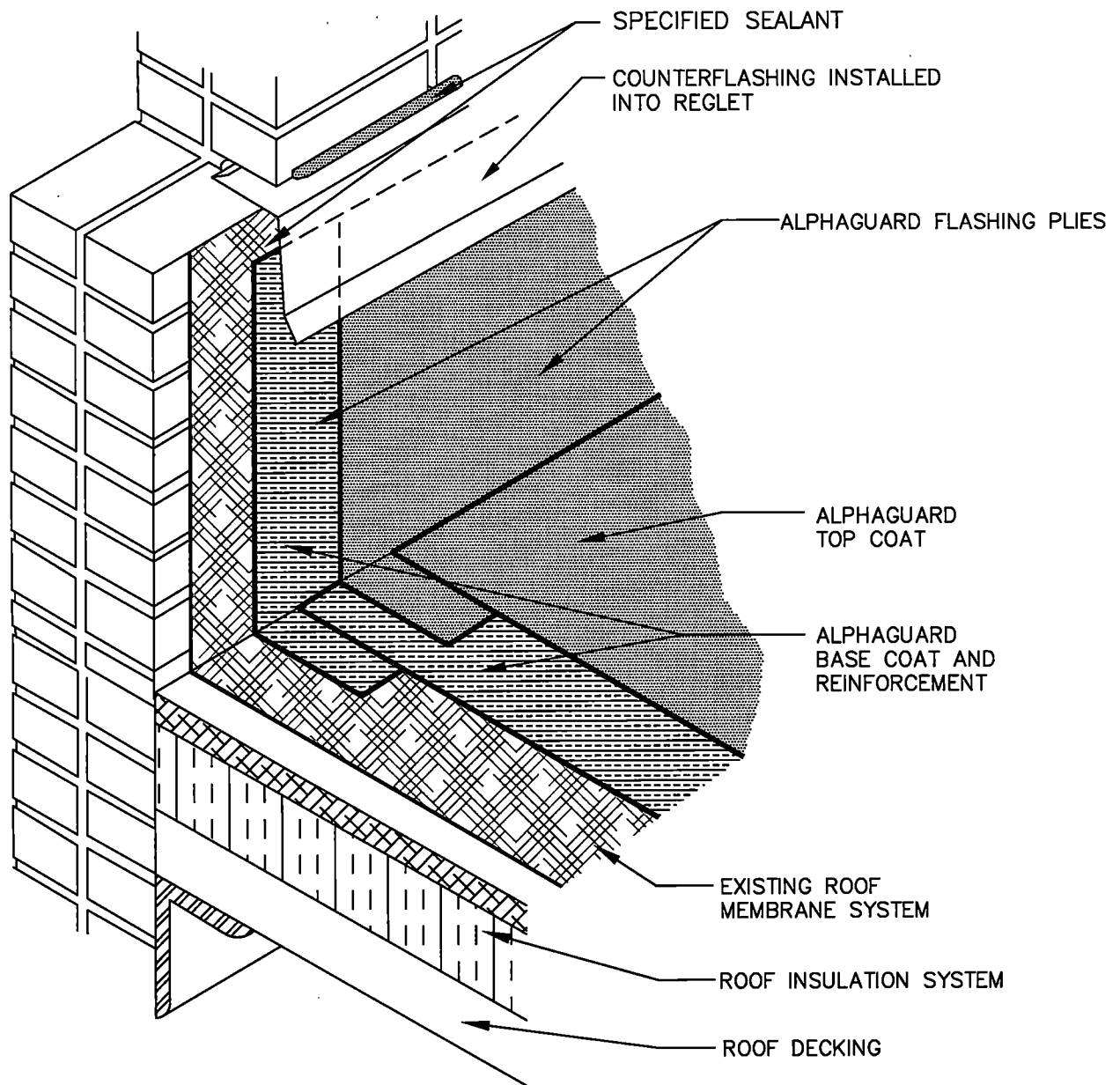
WALK PAD INSTALLATION

SCALE:

NTS

DRAWING No.:

FB-38



NOTE:
PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED. INSTALL SPECIFIED ALPHAGUARD SYSTEM.

TREMCO®

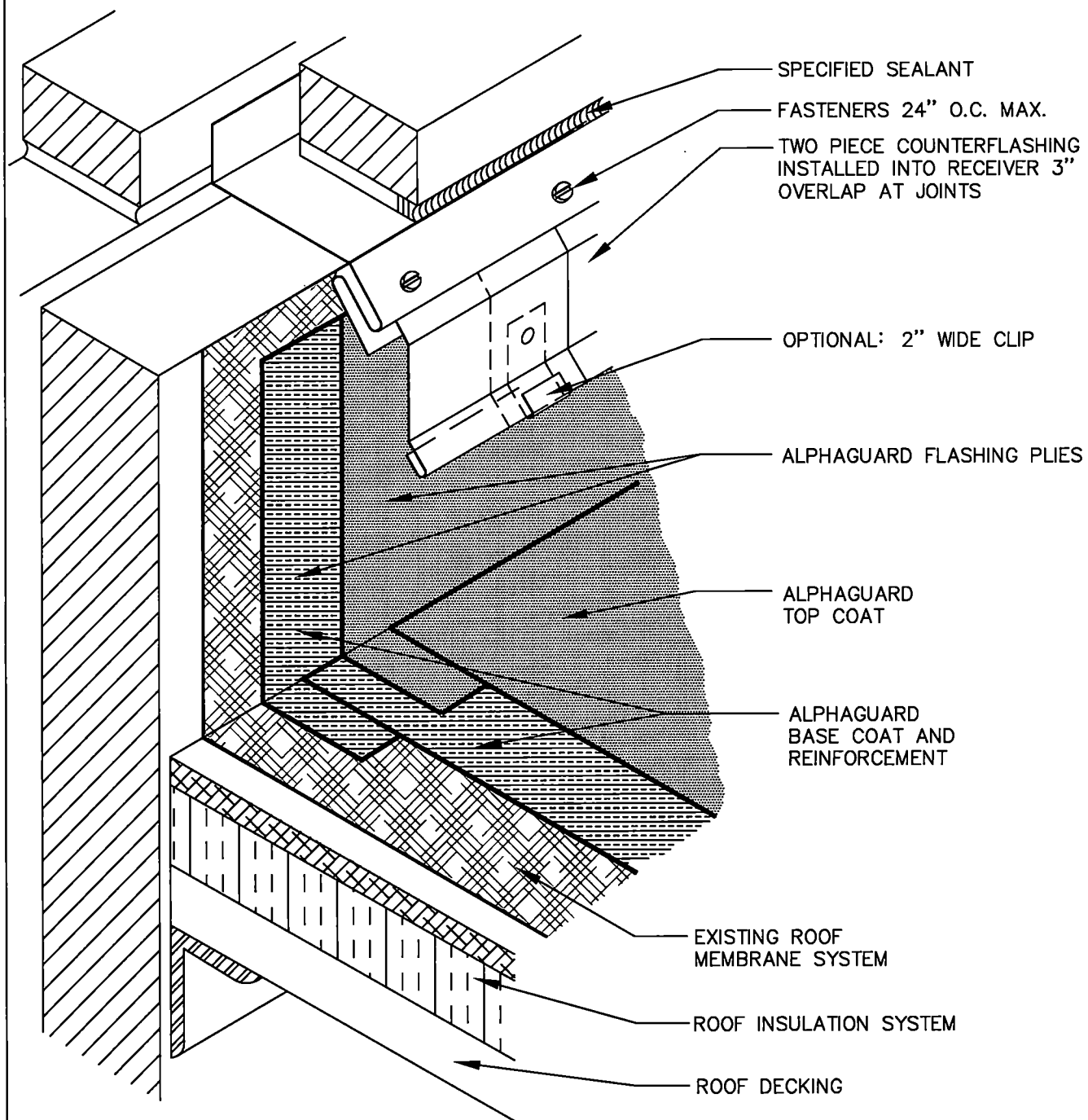
SHEET TITLE:

WALL FLASHING
WALL-SUPPORTED DECK

SCALE: NTS

DRAWING No.:

1



NOTES:
PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED.
INSTALL SPECIFIED ALPHAGUARD SYSTEM.

TREMCO®

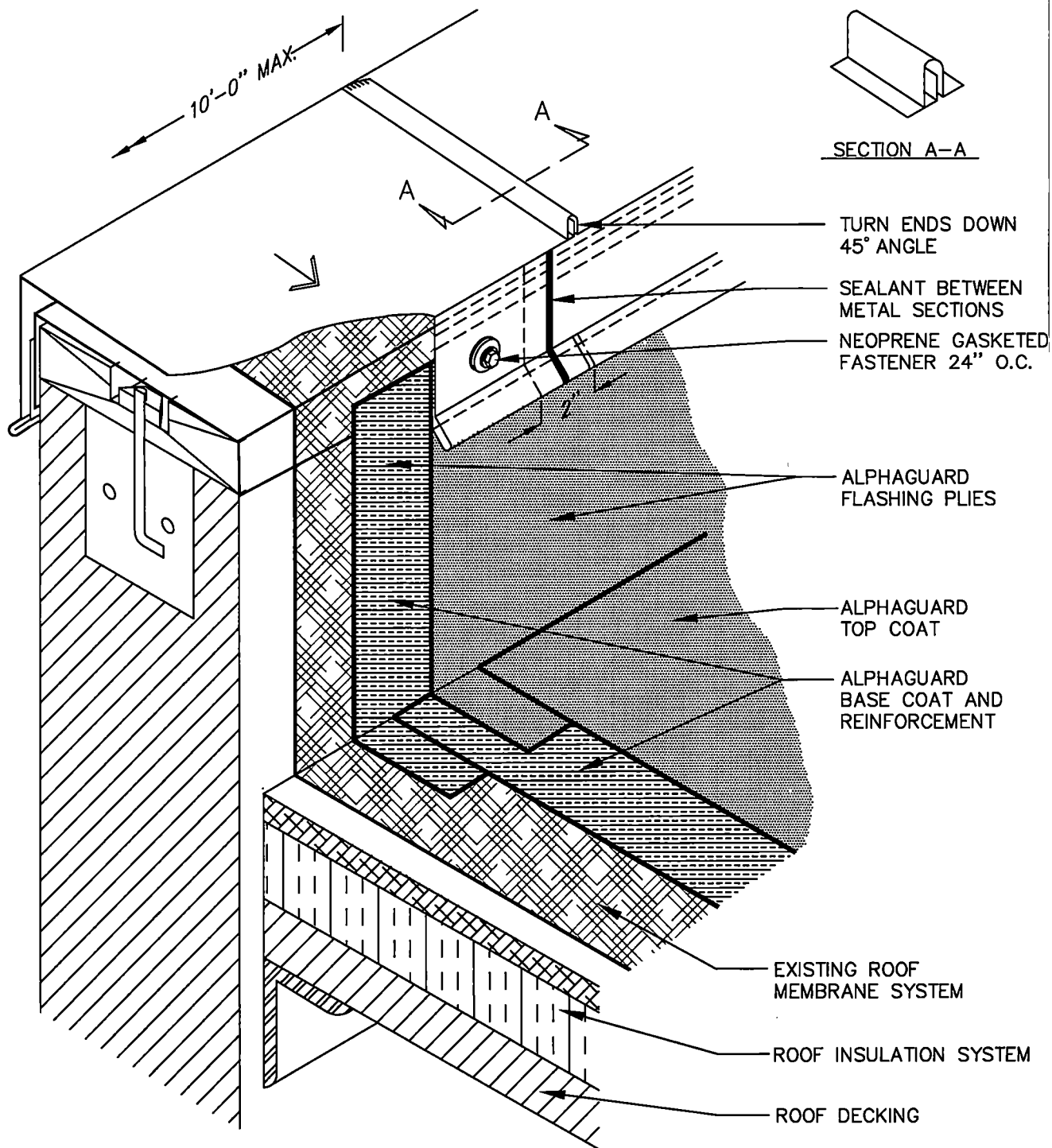
SHEET TITLE:

WALL FLASHING
WALL-SUPPORTED DECK

SCALE: NTS

DRAWING No.:

2



NOTE:

PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED.

TREMCO®

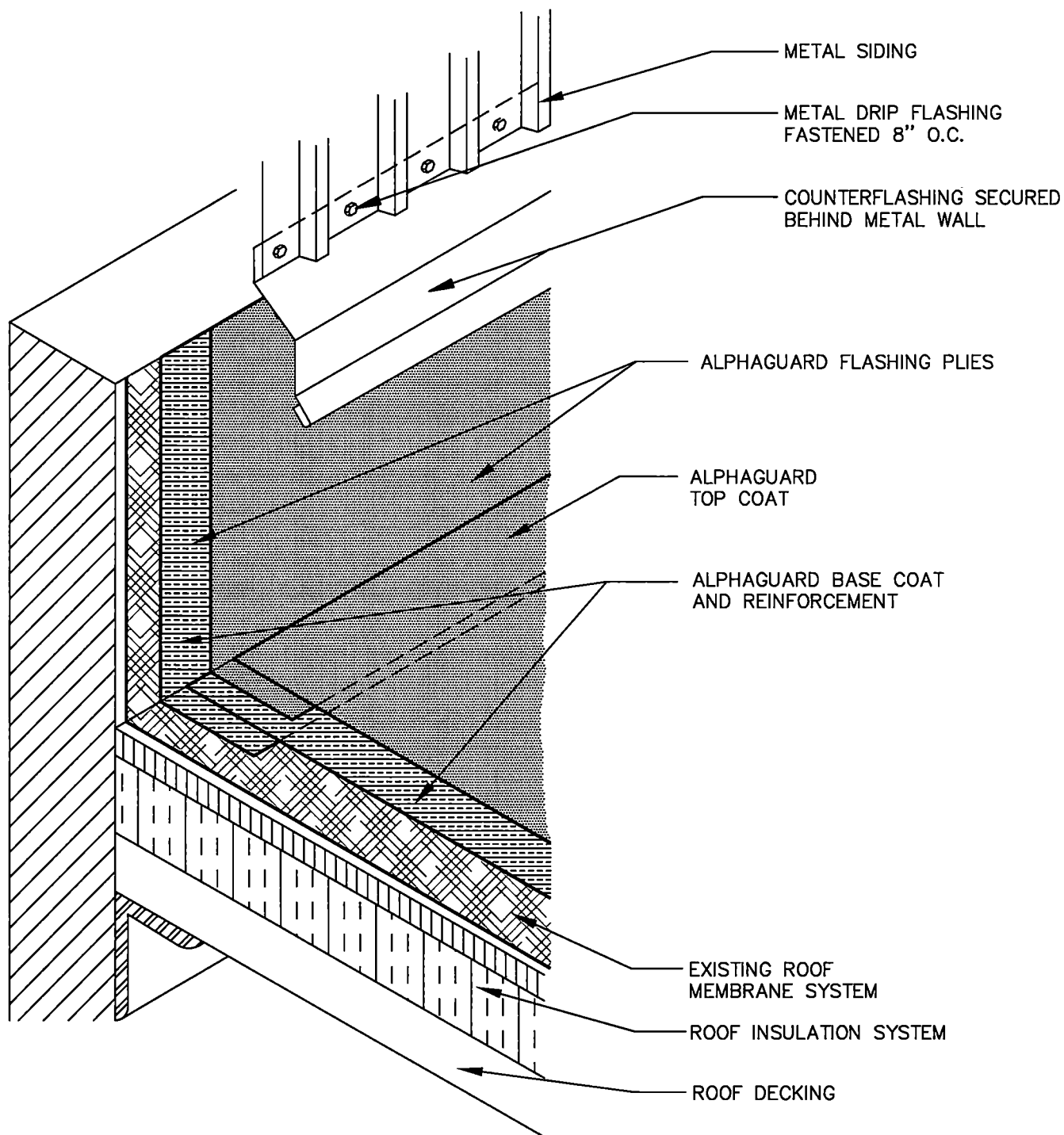
SHEET TITLE:

LIGHT - METAL PARAPET CAP

SCALE: NTS

DRAWING No.:

3



NOTE:
PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED. INSTALL SPECIFIED ALPHAGUARD SYSTEM.

TREMCO®

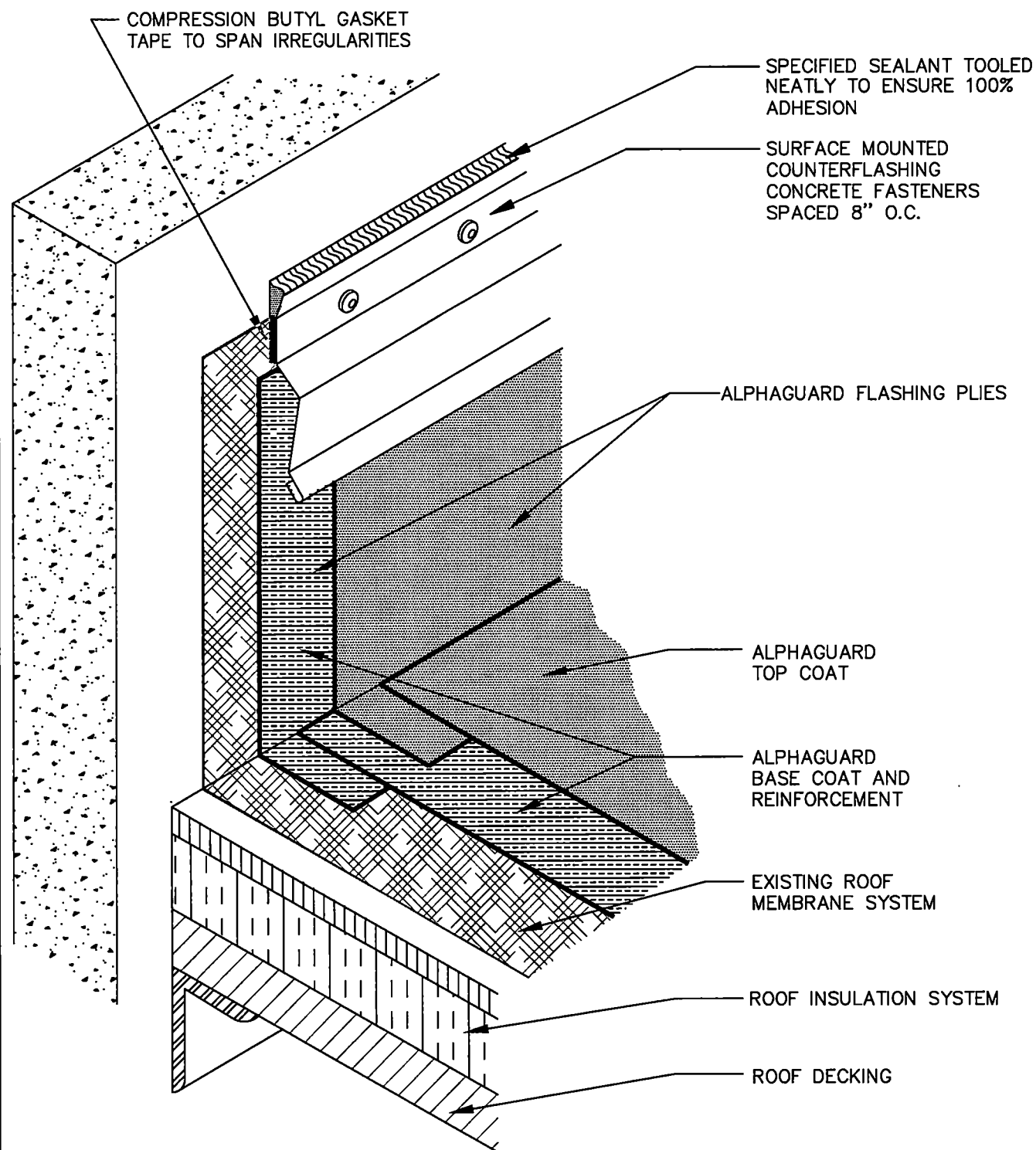
SHEET TITLE:

METAL WALL FLASHING

SCALE: NTS

DRAWING No.:

4



NOTE:

PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED. INSTALL SPECIFIED ALPHAGUARD SYSTEM.

TREMCO®

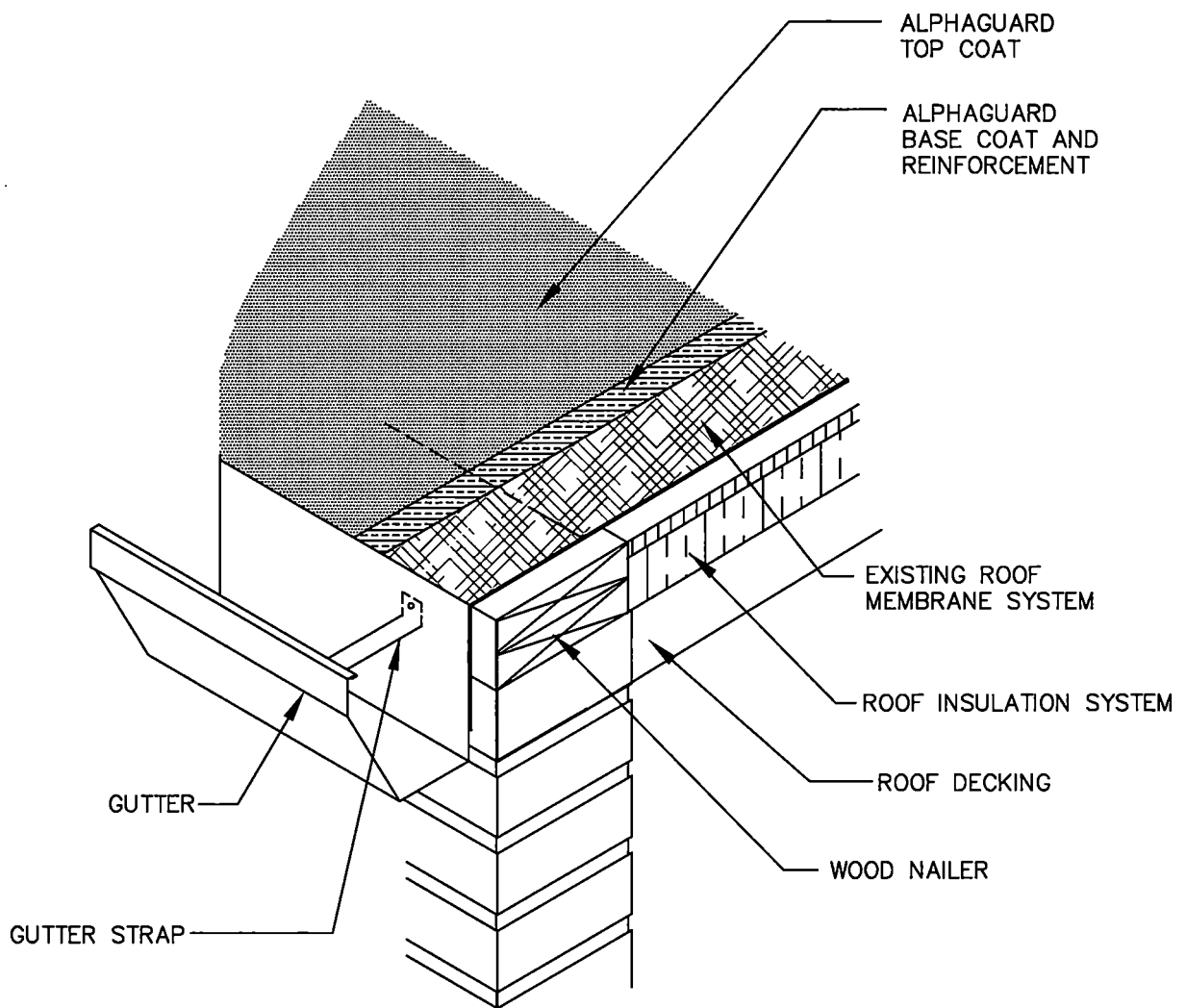
SHEET TITLE:

WALL FLASHING FOR
CONCRETE WALLS AND PARAPETS

SCALE: NTS

DRAWING No.:

5



NOTE:
PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED. INSTALL SPECIFIED ALPHAGUARD SYSTEM.

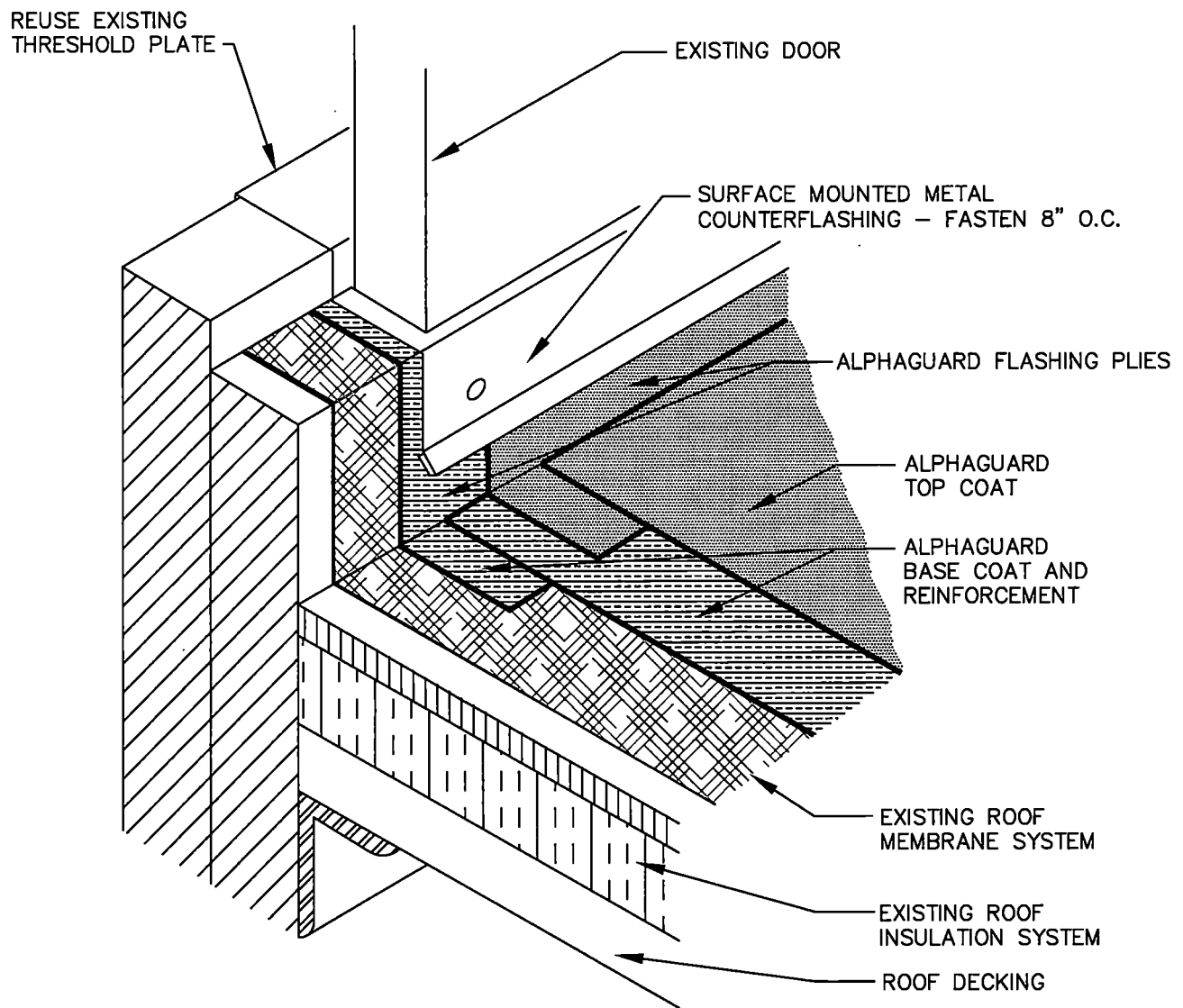
TREMCO®

SHEET TITLE:

ROOF EDGE WITH GUTTER

SCALE: NTS

DRAWING No.:
6



NOTE:

PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED. INSTALL SPECIFIED ALPHAGUARD SYSTEM.

TREMCO®

SHEET TITLE:

DOOR THRESHOLD

SCALE: NTS

DRAWING No.:

7

ALPHAGUARD
TOP COAT

ALPHAGUARD
BASE COAT AND
REINFORCEMENT

CLAMPING RING

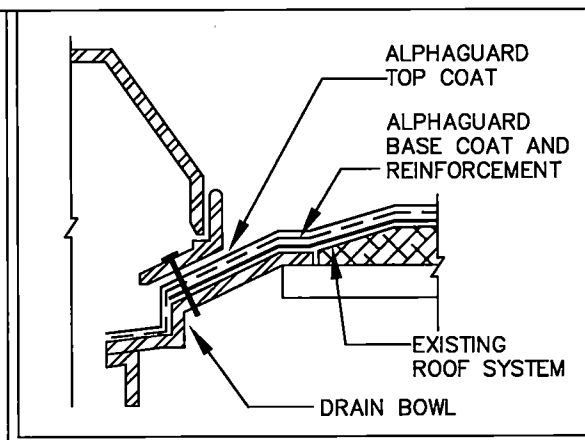
STRAINER/DOME

ROOF INSULATION
SYSTEM

INSTALL COATING SYSTEM
DOWN INTO DRAIN BOWL
(SEE INSERT ABOVE).

ROOF DECKING

EXISTING ROOF
MEMBRANE SYSTEM



NOTES:

1. PRIME ALL METAL SURFACES THAT WILL COME INTO CONTACT WITH ADHESIVES.
2. REMOVE DRAIN CLAMPING RING AND STRAINER PRIOR TO INSTALLING COATINGS.
3. PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED.

TREMCO®

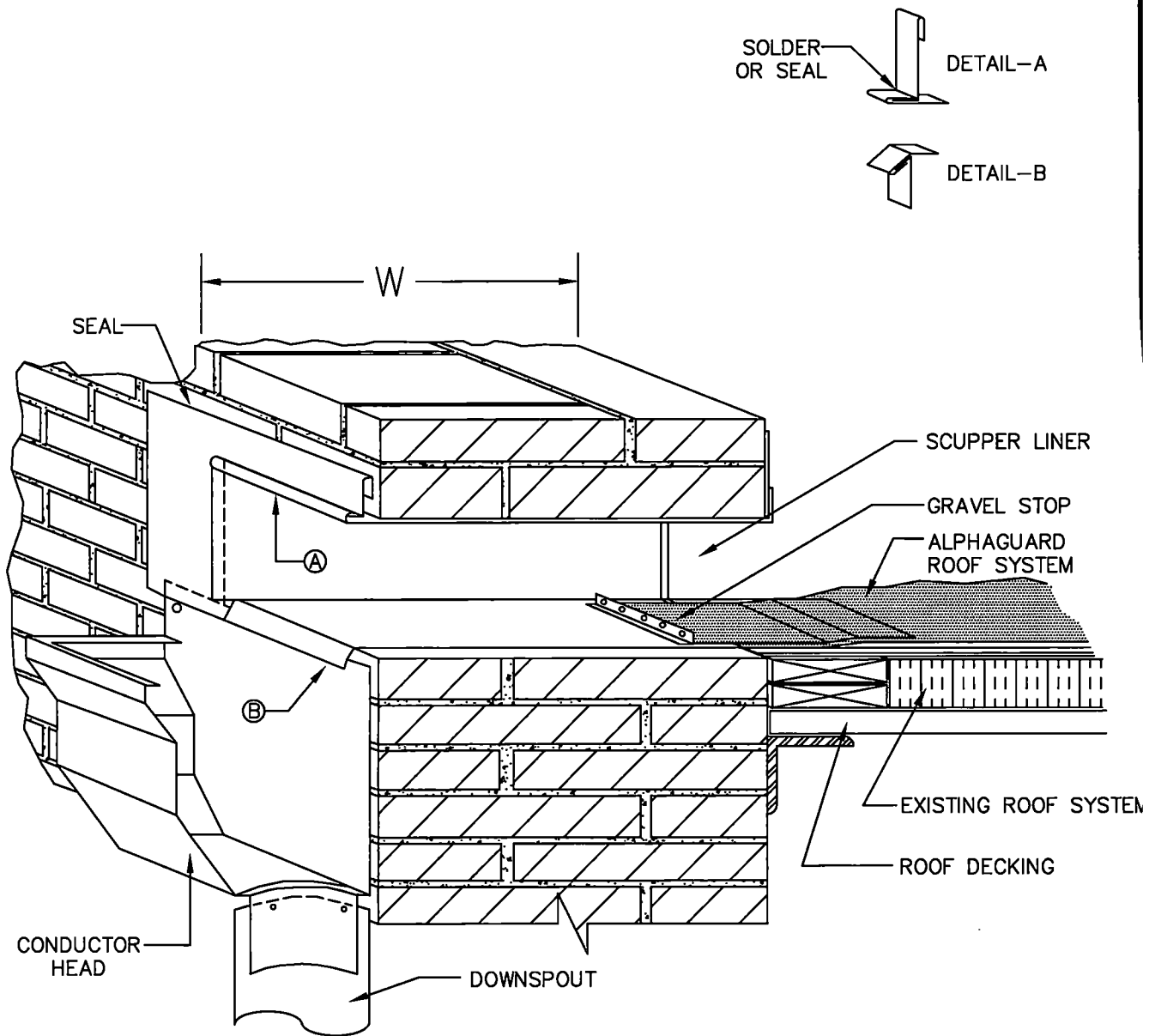
SHEET TITLE:

ROOF DRAIN

SCALE: NTS

DRAWING No.:

8



NOTE:

PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED.

TREMCO®

SHEET TITLE:

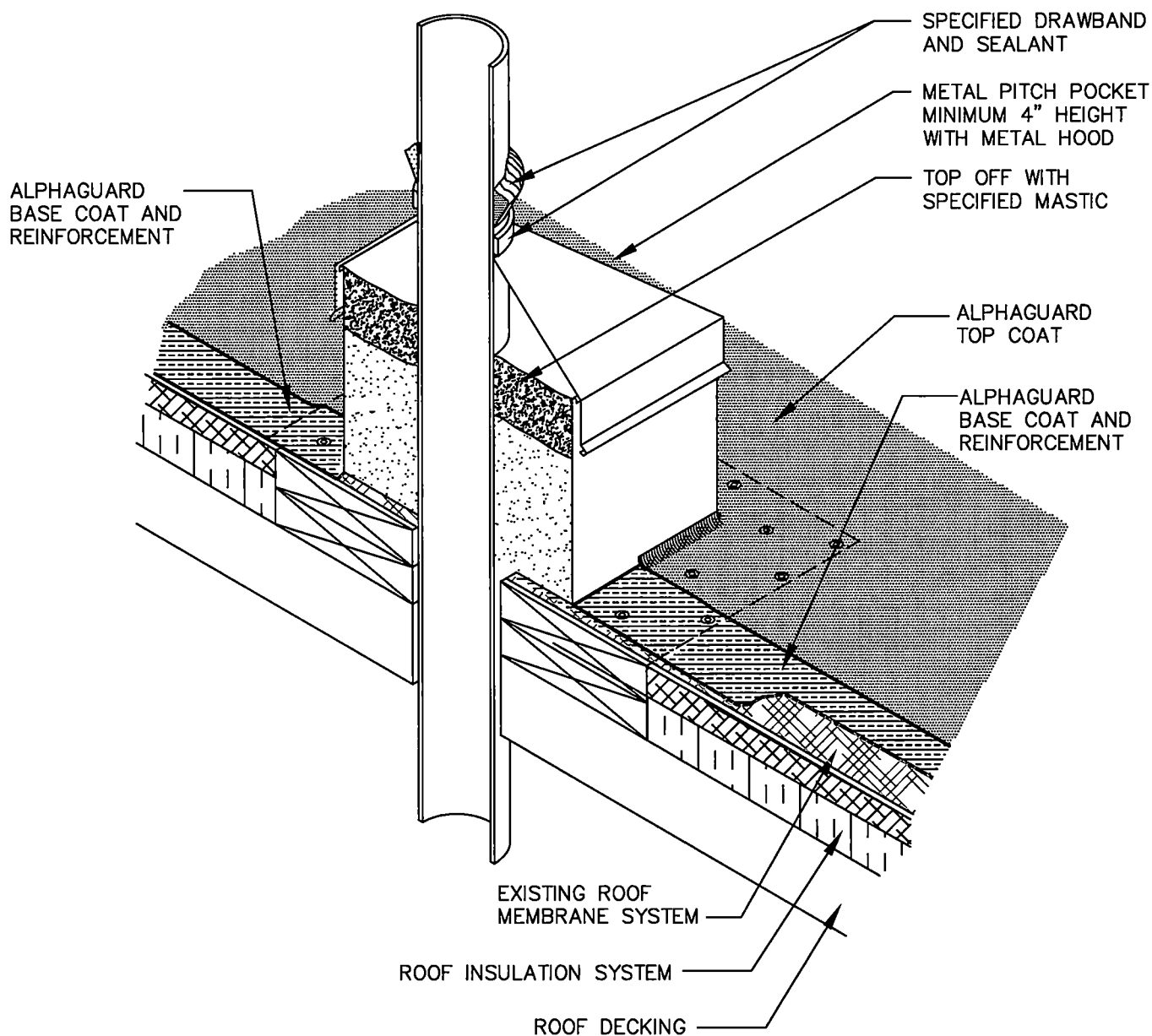
THRU-WALL SCUPPER
WITH CONDUCTOR HEAD

SCALE:

NTS

DRAWING No.:

9



NOTE:

PRIOR TO COATING APPLICATION, CLEAN AND PRIME SUBSTRATES AS SPECIFIED.

TREMCO®

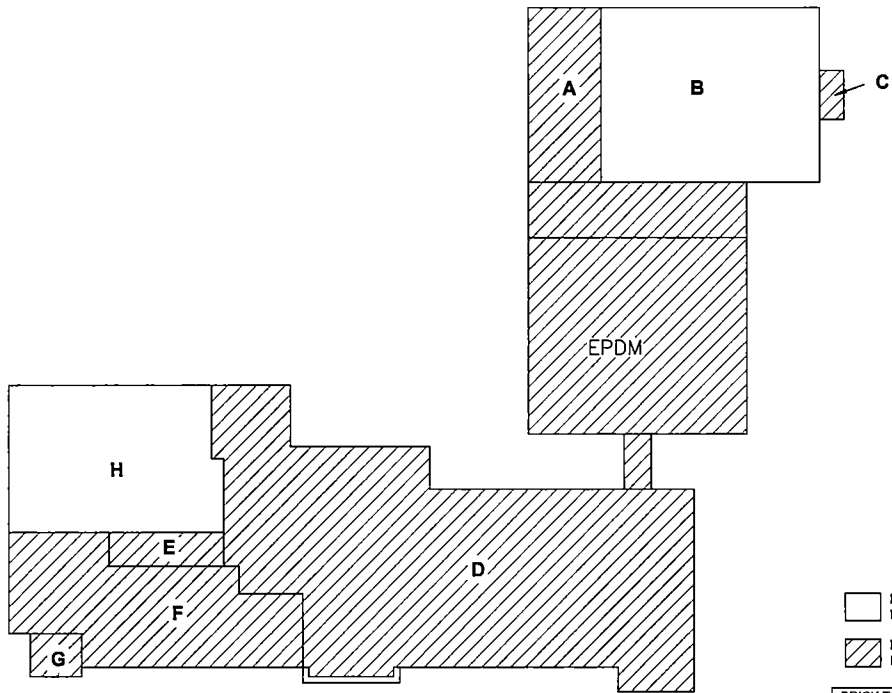
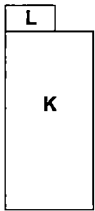
SHEET TITLE:

PITCH POCKET WITH GROUT

SCALE: NTS

DRAWING No.: 10

PROJECT OVERVIEW DRAWING



- INDICATES ROOF AREAS INCLUDED IN PROJECT
- INDICATES ROOF AREAS NOT INCLUDED IN PROJECT

NOTE:
THIS DRAWING IS FOR REFERENCE PURPOSES AND GENERAL INFORMATION ONLY.
SUBCONTRACTORS SHALL FIELD VERIFY EXISTING ROOF CONDITIONS, DIMENSIONS
AND SQUARE FOOTAGES.

BRICK TOWNSHIP BOARD OF EDUCATION HERBERTSVILLE ELEMENTARY SCHOOL BRICK, NEW JERSEY			
		SCALE N.T.S.	REGION NJ
PROJECT OVERVIEW		DATE 4/15/2021	FILE NAME 0040124
			SHEET