

SUBMIT QUOTATION FOR:
ROOF REMOVAL & REPLACEMENT

**MARSHALL BUILDING
10838 E MARSHALL ST
TULSA, OKLAHOMA 74116
ROOF REPLACEMENT**

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PART I - GENERAL

1.01 RELATED DOCUMENTS

- A. The attached are components of this section:
 - 1. General Conditions.
 - 2. Supplemental Conditions.

1.02 SUMMARY OF WORK

- A. The work included under these specifications shall consist of furnishing all items, materials, operations, or methods listed, mentioned, indicated or scheduled in these specifications, including all labor, materials, equipment, insurance, transportation and incidentals necessary and required for project completion.
- B. Base bid shall consist of a 60 mil Tremply KEE Single-Ply Membrane adhered in KEE LV Bonding Adhesive.
- C. Include alternate for a multi-ply Modified Bitumen Roofing System consisting of a PowerPly Endure 300 Smooth Base Sheet with a PowerPly Endure 200 FR Cap Sheet in PowerPly Standard Cold Adhesive.
- D. Substitutions: Request for material substitution must be received by the Owner no later than seven calendar days before bids are due. Owner will review all requests and provide approval or a rejection of the request no later than 72 hours after receipt of a substitution request. In the event the Owner has not responded to a substitution request, then bidder shall assume the request to be rejected.

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- B. Work includes:
 - 1. Removal of all existing roofing, insulation, flashings, and miscellaneous materials down to the existing steel deck substrate. Clean decking flutes thoroughly.
 - 2. Abolish all non-functioning pitch pans, vent stacks, vertical support pipes, mechanical equipment, etc, where designated by marking paint and re-deck where required.

3. Remove designated skylights and build up perimeter curb with 2X for minimum 8" flashing height. Install wood supports 16" o.c. fastened to perimeter curb. Install ¾" plywood mechanically fastened to top of curb. Install single-ply PVC membrane over top of plywood. Install 24 ga. galvanized metal cap with soldered corners and seams. Fasten metal cap through side of curb with appropriate fastener 12" o.c.
4. Localized steel deck repairs, where required. Verify steel deck panels are secured appropriately. **Reference Section 3.05 (A1) of this specification for steel deck attachment.**
5. Where required, install new wood blocking to equal thickness of new insulation system.
6. Install R-25 Polyisocyanurate insulation system to steel decking. For base bid system, mechanically attach two layers of 2.2" polyisocyanurate insulation as per Zones 1 (field of roof), 2 (perimeters), and 3 (corners) requirements. For alternate system, mechanically fasten the first layer of 2.2" polyisocyanurate insulation as per Zones 1 (field of roof), 2 (perimeters), and 3 (corners) requirements. Adhere the subsequent layer of 2.2" polyisocyanurate insulation in Low Rise Foam Insulation Adhesive as specified. Set ½" Gypsum Fiber cover board in ribbon applications of Low Rise Foam Insulation Adhesive as specified. **Reference Section 3.06 of this specification for the execution of the installation.**
7. For base bid system, install 60 Mil Tremply KEE Single-Ply Membrane in KEE LV Bonding Adhesive as specified at a rate of 50 sq. ft per gallon (45 sq. ft. per ½ gallon to the substrate, 55 sq. ft. per ½ gallon to the membrane). Install flashing system of 60 mil KEE Single-Ply Membrane in Bonding Adhesive as specified. Heat weld side laps and end laps of flashing membrane. Install roof system in strict accordance with manufacturer's Quality Assurance requirements. **Reference Section 3.07 of this specification for the execution of the roof membrane installation.**
8. For Alternate, install a two (2) ply SBS mineral surfaced modified bitumen roofing system consisting of one (1) ply of Tremco Powerply Endure 300 Smooth and one (1) ply of Tremco PowerPly Endure 200 FR modified bitumen membrane set in alternate applications of cold adhesive as specified. For Alternate, install two (2) ply flashing system consisting of Powerply Endure 300 Smooth and PowerPly Endure 200 FR set in flashing adhesive to wall and curb details. Heat weld side laps and cant/membrane transition of flashing membrane. Install roof system in strict accordance with manufacturer's Quality Assurance requirements. Heat weld all selvage and end laps for both base sheet and cap sheet. **Reference Section 3.09 of this specification for the execution of the roof membrane installation.**
9. Install new cants, metal counterflashings, bar terminations, and other sheet metal

fabrications and sealants as required to provide a watertight system.

10. Fabricate and install pitch pans w/hoods around footings of support piping, conduit etc. Seal according to specifications. Fabricate and install new parapet coping covers and install as per the attached detail drawing.
11. Install new roof protection walkway landings along working sides of mechanical equipment and roof access ladders. For base bid, walkway landings shall be TremPly KEE Protection Walkways. For alternate, roof protection landings shall be 3' x 4' x 3/8" walktreds set in asphalt mastic.
12. Where required, install tapered crickets at building corners, in between scuppers, high sides of curbs, etc, to provide positive drainage. Flash according to specifications.
13. Fabricate and install new pre-finished 24 ga. Metal R-Panels along the periphery of the interior walls. Provide all metal hat channels, counterflashing and trim pieces. Extend hat channels out to enclose steel wall bracket plating at anchors. Secure electrical conduit to the interior fascia of new metal coping cap.
14. Remove and replace all scupper inserts with new 24 ga. galvanized scupper inserts with soldered corners and flange. Replace conductor heads and downspouts with new 24 ga. pre-finished conductor heads with overflow outlets and downspouts.
15. For alternate, paint all metal flashing surfaces including galvanized metal components, plumbing vents, walktreds, etc, with aluminum reflective coating.

1.03 QUALITY CONTROL

- A. Roof Contractor shall:
 1. Be experienced in both single-ply roofing and cold processed built-up roofing.
 2. Be acceptable by the Cherokee Nation Entertainment representative.
 3. Be a Manufacturer Certified and Approved roof contractor.
 4. Be registered by the State of Oklahoma as a roofing contractor.
 5. Provide a list of projects available for inspection employing a similar system for both base bid and alternate within a 50-mile radius of the Project.
 6. Installer's field supervision: Installer must maintain full-time supervisor/foreman on jobsite during times that roofing work is in progress. Supervisor must have a minimum of 5 years' experience in roofing work like nature and scope of specified roofing.
 7. Installer shall have in place a formal safety program available for review.
 8. Roof contractor shall provide names of employees with phone numbers available for this project should a problem or leak exist during off-hours, holiday, or weekends.
 9. Roofing contractor shall agree to participate in allowances and adjustments for five (5) years of the warranty period when it is determined by the roof system manufacturer that defects are a result of application and workmanship errors. All defects noted

during this time period will be corrected by the roof contractor at their own expense.

B. Roofing material manufacturer shall:

1. Be Associate Member in good standing with National Roofing Contractors' Association (NRCA) for at least ten (10) years.
2. Be nationally recognized in roofing, waterproofing, and moisture survey industry.
3. Be approved by the Cherokee Nation Entertainment representative.
4. Provide Cherokee Nation Entertainment with names of at least 3 certified and qualified applicators having experience with the specified roofing systems.
5. Provide a local full-time Field Technical Services Representative employee available for monitoring project work on a periodic basis.
6. Employ full-time Field Technical Services Representative available for final roof inspection. Provide point of contact designated for final inspection.
7. Provide copy of roof manufacturer's formal preventative maintenance service agreement, detailing yearly roof inspections, preventative maintenance, and general housekeeping services and 24 hour a day toll free leak response hotline described under warranty section of this specification.
8. The presence and activity of the manufacturer and/or the Cherokee Nation Entertainment representative shall in no way relieve the roof contractor of contractual responsibilities or duties.

1.04 SUBMITTALS

A. Submit the following information to Prior to the Pre-Construction conference:

1. Product compatibility:
 - a. Written verification from roofing material supplier that major roofing components, including (but not limited to) coatings, cold process bitumen, roofing plies, insulation adhesive, TRA sheeting and mastics; and sealants are all compatible with each other.
2. Copy of QA warranty and roof preventative maintenance service agreement for roof Maintenance, inspection, and 24-hour leak response hotline process.
3. Letter from roofing contractor that they agree to participate in allowances and adjustments for five (5) years of the warranty service agreement period when it is determined by the roof system manufacturer that defects in the roofing assembly are a result of application and workmanship errors. All defects noted during this time will be corrected by the roof contractor at their own expense.
4. Letter from the roof system manufacturer that the technical service representative overseeing the project for specification compliance and installation quality is employed by the roof system manufacturer and has been an employee for a minimum of five (5) years. Technical service representative shall be prepared to respond to any problems associated with roofing project within a 2-hour time period.

B. Project meetings:

1. **Pre-Bid Conference**

- a. The pre-bid meeting is mandatory. Only companies who have signed the attendance sheet at the pre-bid will be allowed to bid on the work of this project. A walkover of the roof will be conducted for those qualified roof contractors for the purpose of reviewing the bidding documents and procedures to receive bidder's questions. Response to questions which are not addressed in these bidding documents or require clarification will be included in an addendum issued to all qualified parties. Roof contractors will assemble near the entrance to the Marshall Building and be escorted to the roof area.
- b. Attendance:
 - 1) Roofing material manufacturer.
 - 2) Roof Contractors
 - 3) The Cherokee Nation Entertainment representative.
- c. Agenda:
 - 1) Distribution of contract documents.
 - 2) Review of specification.
 - 3) Walkover inspection.

2. Pre-construction conference:

- a. Will be scheduled by Cherokee Nation Entertainment representative within fifteen (15) days after notice of award to proceed.
- b. Attendance:
 - 1) Roofing Material Manufacturer.
 - 2) Roofing Contractor and project supervisor/foreman.
 - 3) Cherokee Nation Entertainment representative.
- c. Agenda:
 - 1) Submittal of insurance certificates.
 - 2) Payment terms.
 - 3) Execution of the Cherokee Nation Entertainment-Contractor Agreement.
 - 4) Distribution of contract documents.
 - 5) Designation of responsible personnel.
 - 6) Walkover inspection.

3. Progress meetings:

- a. Will be scheduled by the Cherokee Nation Entertainment representative as required.
- b. Attendance:
 - 1) Roofing material manufacturer/roof contractor.
 - 2) Job superintendent.
 - 3) Cherokee Nation Entertainment representative.

- c. Minimum agenda:
 - 1) Review of work progress.
 - 2) Field observations, problems, and decisions.
 - 3) Identification of problems which impede planned progress.
 - 4) Maintenance of progress schedule.
 - 5) Corrective measures to regain projected schedules.
 - 6) Planned progress during succeeding work period.
 - 7) Coordination of projected progress.
 - 8) Maintenance of quality and work standards.
 - 9) Effect of proposed changes on progress schedule and coordination.
 - 10) Other business relating to work.
 - 4. Final inspection:
 - a. Will be scheduled by roofing material manufacturer upon job completion.
 - 1) **NOTE: Roofing project must be completed by January 1st, 2027.**
 - b. Attendance:
 - 1) Roof Contractor.
 - 2) Roofing Material Manufacturer.
 - 3) Cherokee Nation Entertainment representative.
 - c. Minimum agenda:
 - 1) Walkover inspection.
 - 2) Identification of problems which may impede issuance of warranty.
- C. Random sampling:
 - 1. Roofing material:
 - a. During the course of work, the Cherokee Nation Entertainment representative may secure samples according to ASTM D140-88 of materials being used from containers at the job site and submit them to an independent laboratory for comparison to specified material.
 - b. Should test results prove that a material is not functionally equal to specified material:
 - 1) Roof Contractor shall pay for all testing.
 - 2) Roofing installed and found not to comply with the specifications shall be removed and replaced with no change in the contract price.
- D. Regulatory and permit requirements:
 - 1. Underwriters Laboratory (UL)
 - 2. Roof Contractor registration and endorsement with the state of Oklahoma.
- E. Plans and specifications:
 - 1. Roof Contractor must notify the Cherokee Nation Entertainment representative and specifier of any omissions, contradictions, or conflicts before the bid date. The Cherokee Nation Entertainment representative and specifier will provide the necessary

corrections or additions to plans and specifications by addendum. If the contractor does not notify the Cherokee Nation Entertainment representative and specifier of any such condition, it will be assumed that the roof contractor has included the necessary items in the 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. The Roof Contractor must make their own contracts with various subcontractors, setting forth the work these subcontractors will be held responsible for. Roof Contractor alone will be held responsible by the Cherokee Nation Entertainment representative for the completed project.
3. If the contractor feels a conflict exists between what is considered good roofing practice and these specifications, the roof contractor shall state in writing all objections prior to submitting their quotations.
4. It is the contractor's responsibility during the course of the work to bring to the attention of the Cherokee Nation Entertainment representative any defective membrane, insulation or deck discovered where not previously identified.
5. All disconnection and reconnection shall be performed by mechanical and/or electrical personnel provided by the roofing contractor and approved by Cherokee Nation Entertainment. All large units resting on I-beam supports and curbs and are designated to be removed, will be removed and appropriately disposed of by the roofing contractor. The roofing contractor will also be responsible for removing all curbs and support structures, designated by marking paint. Cherokee Nation Entertainment will provide the required information identifying discontinued electrical conduit and power boxes located on the underside of the steel decking. The roofing contractor will be responsible for disconnecting the lighting conduit along the coping of the parapet wall. Roof contractor shall take every precaution necessary not to engage electrical conduit/boxes etc., when it is determined that these electrical components are active.

1.05 REFERENCES

- A. ASTM - American Society for Testing and Materials, Philadelphia, PA.
- B. RIC/TIMA Technical Bulliten 281-1 – Roof Insulation Specimen Conditioning Procedure, The Roof Insulation Committee of the Thermal Insulation Manufacturers Association, Mt. Kisco, NY.
- C. SMACNA - Sheet Metal and Air Conditioning Contractors National Association, Vienna, VA.
- D. NRCA – National Roofing Contractors Association, Chicago, IL.

1.06 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 manufacturer's name.
 2. Deliver materials in sufficient quantity to allow continuity of work.
 3. Coordinate delivery with the Cherokee Nation Entertainment Representative.
- B. Do not order project materials or start work before receiving written approval from the Cherokee Nation Entertainment representative.
- C. Storage of materials:
1. Store roll goods on ends only. Discard rolls which have been flattened, creased, or otherwise damaged. Place materials on pallets. Do not stack pallets.
 2. Stack insulation on pallets.
 3. Store materials marked "keep from freezing" in areas where temperatures will remain above 40 F.
 4. Store metal roof deck on pallets with one end elevated to provide drainage.
 5. Remove plastic packaging shrouds. Cover top and sides of all stored materials with tarpaulin (not polyethylene). Secure tarpaulin.
 6. Rooftop storage: Disperse material to avoid concentrated loading.
 7. No materials may be stored in open or in contact with ground or roof surface.
 8. Should the Roof Contractor be required to quickly cover material temporarily, such as during an unanticipated rain shower, all materials shall be stored on a raised platform covered with secured canvas tarpaulin (not polyethylene), top to bottom.
 9. Roof Contractor 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 situate material handling equipment in locations that will hinder the smooth flow of vehicle or pedestrian traffic.

1.07 SITE CONDITIONS

- A. Field measurements and material quantities:
1. Roof system applicator shall have SOLE responsibility for the accuracy of all measurements, estimates of material quantities and sizes, and site conditions that will affect work.
- B. Existing conditions:
1. Building space directly under the roof area covered by this specification will be utilized by on-going operations. Do not interrupt the Cherokee Nation Entertainment operations unless prior written approval is received from their representative.
 2. Access to the roof shall be from the exterior only.

3. Air-conditioning units and other equipment shall be moved as required to install roofing materials completely 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 and shall be reconnected in such a way that they are restored to prior work operating conditions. Appropriate measures shall be taken to prevent dust, vapor, gases, or odors from entering the building during roof removal, replacement, or repair.
4. All disconnection and reconnection shall be performed by mechanical and/or electrical personnel provided by the roofing contractor.

C. Asbestos:

1. The roof Contractor agrees to exonerate, indemnify, defend, and hold harmless Cherokee Nation Entertainment and roofing material manufacturer from and against all claims, demands, lawsuits, damages, expenses, and losses incurred by roof contractor's removal of asbestos-containing materials from the Cherokee Nation Entertainment building and work site. Roof contractor must conduct its operations according to applicable requirements including but not limited to those established by:
 - a. Occupation 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 Authorities/Agencies.
 - f. State or Local Health Department(s).
 - g. State or Local Building Code Authorities.
 - h. Other federal, state or local agencies or authorities.
2. Roof Contractor 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, contractors and workers involved in the roof project shall have appropriate training, licenses, and registrations. Roof Contractor 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. Roof contractors must file a Uniform Hazardous Waste Manifest from a proper landfill site for each load of asbestos containing material removed. Copies must be sent to the Cherokee Nation Entertainment representative and material manufacturer/specifier. Transportation of waste shall be in accordance with the applicable Department of Transportation (DOT) requirements.

D. Safety requirements:

1. All applications, material handling, and associated equipment shall conform to and be operated in conformance with OSHA safety requirements.
2. Comply with federal, state, local and the Cherokee Nation Entertainment fire and

- safety requirements.
 - 3. Advise the Cherokee Nation Entertainment representative whenever work is expected to be hazardous to employees, and/or operators.
 - 4. Maintain a crewman as a floor area guard whenever roof decking is being repaired or replaced.
 - 5. Maintain fire extinguisher within easy access whenever power tools, roofing kettles, and torches are being used.
- E. Waste Disposal:
- 1. Do not re-use, re-cycle or dispose of product containers except in accordance with all applicable regulations. The user of these products is responsible for proper use and disposal of product containers.
- F. Environmental requirements:
- 1. Do not work in rain, snow, or in the presence of water.
 - 2. Do not work in temperatures below 40 F.
 - 3. Do not install materials marked "keep from freezing" when daily temperatures are scheduled to fall below 40 F.
 - 4. Do not perform masonry work below 40 F.
 - 5. Remove any work exposed to freezing.
 - 6. Advise the Cherokee Nation Entertainment representative when volatile materials are to be used near air ventilation intakes so that they can be shut down or blocked as required.
- G. Security requirements:
- 1. Comply with the Cherokee Nation Entertainment security requirements.
 - 2. Provide the Cherokee Nation Entertainment representative with a current list of accredited persons.
- H. Temporary sanitary facilities:
- 1. Furnish, install, and maintain temporary sanitary facilities for employees' use during the project. Remove on project completion. Sanitary facilities will be off limits to the roofing crews.
 - 2. Place portable toilets in conformance with applicable laws, codes, and regulations.

1.08 PAYMENT SECURITY

- A. Progress payments:
- 1. Roof Contractor shall establish with Cherokee Nation Entertainment the procedure for payment and retainages prior to commencement of work on this project.
 - 2. Partial or progress payments shall not relieve the contractor of performance obligations under this contract, nor shall such payments be viewed as approval or acceptance of work performed.
 - 3. Final payment shall be withheld until all provisions of the specifications are met.

1.09 UNIT PRICES

A. Quote unit prices on Unit Price Sheet provided as follows:

1. Steel Deck replacement - \$/sq. ft.
2. Steel Deck repair (Rust Painting) - \$/sq. ft.
3. Steel Deck overlayment - \$/sq. ft.
4. Service Connections - \$/per lineal foot.
5. Wood Blocking Replacement - \$/lineal foot
2X4
2X6

1.10 WARRANTY/GUARANTEE

A. Warranty:

1. Upon project completion and the Cherokee Nation Entertainment and roof system manufacturers acceptance, roof manufacturer shall provide a Twenty (20) year Full System Quality Assurance Warranty with a Ten (10) year roof maintenance program covering yearly roof inspections, proactive preventative maintenance, and housekeeping of the roofs as well as a 24 hour a day leak reporting response and tracking service. The specific area covered shall be as follows:
 - a. Inspection includes:
 1. Yearly visual inspection of the roof membrane and roof surface conditions.
 2. Inspection of the flashing systems including, the wall and curb flashings, metal counterflashing and termination details, soil stacks and vents, and inspections of rooftop projections and equipment including pitch pans, HVAC equipment and access ladders.
 3. Roof manufacturer shall provide reports from these roof inspections. The reports shall become part of the roof database maintained on the roof system. This database shall be updated as a result of each inspection.
 - b. Preventative Maintenance Services shall include:
 1. Tears and splits in flashing membrane will be repaired with the appropriate repair mastics and membranes. Unsecured rooftop equipment will be secured. Exposed fasteners will be sealed. Termination bars and metal counterflashing's will be sealed.
 2. Roof membrane repairs shall consist of tears, breaks, and splits in the field of roof membrane. All splits and blisters which threaten the roof integrity of the roof membrane will be cleaned, primed, and repaired with the appropriate repair materials. Metal projections (hood and clamps) will be sealed.
 - c. Housekeeping shall include:
 1. Removal of incidental debris (i.e., leaves, branches, paper, and similar items).

2. Removal of debris from roof drains and scuppers.
- d. Leak response service shall include:
 1. 24 hour a day toll free leak response phone number.
 2. List of local and qualified roof contractors who will respond to leaks within the established timelines.
 3. Manufacturer shall provide quarterly leak reports of leak activity in calendar quarters where leaks have occurred.
- e. Web-based Information Management System:
 1. To manage roofing assets, the roof system manufacturer shall provide to Cherokee Nation Entertainment an interactive web-based computerized data management program to assist in monitoring all yearly roof inspections, completed Maintenance, leak reports, review specifications, drawings, and photographs. Data will always be available in a secure, password protected environment.

PART II - PRODUCTS

2.01 GENERAL

- A. Comply with quality control, references, specifications, and manufacturer's data. Products containing asbestos are prohibited on this project. Use only asbestos-free products.
- B. Use products with personal protection. Users must read container labels and material safety data sheets prior to use.

2.02 ROOF DECKING

- A. Metal roof deck:
 1. To match existing steel deck configuration.
- B. Rust inhibitive paint:
 1. Alkyd based paint with primer by Anchor or approved equal.
- C. Steel Deck Overlayment:
 1. 22 ga. Flat galvanized steel.

2.03 CARPENTRY

- A. Wood Blocking:

Southern Pine; No. 2 grade; free from warping and visible decay; pressure treated with alkaline copper quaternary (ACQ) to meet AWPB, LP, 0.40 retention marked.

- B. Cant Strips:
 - 1. Fibered cant.

2.04 INSULATION

- A. Class 1, Polyisocyanurate.
 - 1. Asphalt impregnated with organic/fiberglass facer.
 - 2. Johns Manville ENRGY 3.
 - 3. R-Value: R-25.
- B. Top Layer: Gypsum-Fiber Roof Board
 - 1. High performance, gypsum fiber-reinforced and water resistant overlayment board.
 - 2. Thickness: ½”.
 - 3. DensDeck Prime.
- C. Insulation adhesive:
 - 1. Low Rise Foam insulation adhesive by Tremco or approved equal.

2.05 MECHANICAL FASTENERS

- A. Wood to wood:
 - 1. Galvanized, common, annular ring nails.
 - 2. Length: Sufficient to penetrate underlay blocking 32 mm (1-1/4 inches).
- B. Galvanized sheet steel to wood blocking:
 - 1. Type II, Style 20, roofing nails; galvanized steel wire, flat head, diamond point, round, barbed shank.
 - 2. Length: Sufficient to penetrate wood blocking 32 mm (1-1/4 inches) minimum.
- C. Drawband:
 - 1. Gold Seal stainless steel worm gear clamp by Murray Corporation, Cockeysville, MD.
 - 2. Power-Seal stainless steel worm drive clamps by Breeze Clamp Company, Saltsburg, PA.
- D. Insulation to Steel Decking:
 - 1. JM UltraFast #12 with UltraFast square metal plate or approved equal.
 - 2. Length: Sufficient to provide a minimum of 1” embedment minimum into the steel decking top flange.
- E. Termination Bar to wood/metal:
 - 1. UltraFast #12 fastener.
 - 2. Length: Sufficient to provide a minimum of 1-1/2” embedment minimum.

2.06 ROOFING MATERIALS-BASE BID

- A. KEE Single-Ply Membrane:
 - 1. Thermoplastic Ketone Ethylene Ester (KEE) coated polyester fabric-reinforced sheet.
 - a. TremPly KEE Single-Ply Roof Membrane.
 - b. Color: White
 - c. Membrane Thickness: 60 Mils
 - Breaking Strength: 500 lbf/in MD 400 lbf/in XMD
 - Tear Strength: 120 lbf MD 140 lbf XMD
 - Solar Reflectance Index (SRI): 110 (White, Initial) 86 (White, 3-yr aged)
- B. Membrane Bonding Adhesive:
 - 1. Bonding adhesive, solvent based fast drying, VOC-compliant, for bonding KEE smooth-backed single ply membranes and flashings to substrates.
 - a. TremPly KEE LV Bonding Adhesive or approved equal.
- C. Flashing Sheet:
 - 1. Same as KEE Single-Ply Membrane
- D. Flashing Adhesive:
 - 1. Same as membrane adhesive.
- E. Joint Sealant:
 - 1. Single Component Polyurethane Sealant
 - a. Tremseal Pro
- F. Prefabricated Pipe Flashings:
 - 1. As recommended by roofing manufacturer.
- G. Walkway materials:
 - 1. Protection walkway roll, reinforced KEE membrane roll with diamond-tread, slip-resistant surface, fabricated for heat welding to compatible KEE membrane surface.
 - a. TremPly KEE Protection Walkway Roll.

Miscellaneous accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories, as recommended by roofing manufacturer.

2.07 ROOFING MATERIALS-ALTERNATE

- A. Adhesives:
 - 1. Interply and surfacing adhesive:

- a. Power Ply Standard Cold Adhesive by Tremco or approved equal.
- B. Base Ply Sheet:
1. SBS Urethane modified asphalt coated composite polyester and fiberglass reinforced high tensile strength, smooth surfaced PowerPly Endure 300 Smooth.
 Thickness 100 Mils
 Tensile Strength 405 lbf/in. MD 390 lbf/in. XMD
 Tear Stength 590 lbf MD 590 lbf XMD
- C. Top Cap Sheet Membrane:
1. SBS Urethane modified asphalt coated polyester reinforced sheet with white granular surfaced, fire resistant PowerPly Endure 200 FR.
 Thickness 150 mils
 Tensile Strength 165 lbf/in. MD 140 lbf/in. XMD
 Tear Strength 160 lbf MD 140 lbf XMD
- D. Related materials:
1. Asphalt mastic:
 - a. ASTM D 4586-86 fibrated asphalt mastic.
 2. Water based asphalt primer.
 - a. ASTM D 41-85.
 3. Flashing adhesive:
 - a. Asphalt mastic.
 4. Flashing surfacing:
 - a. Ready-mixed aluminum coating.
 5. TRA expansion joint cover:
 - a. TRA Sheeting.
 - b. Color: black
 6. Expansion Joint Sheeting Adhesive:
 - a. Sheeting bond adhesive.
 7. Base Flashing:
 - a. Powerply Endure 300 Smooth.
 8. Flashing Membrane:
 - a. Powerply Endure 200 FR.
 9. Pitch pan cement:
 - a. ASTM C 928-89, rapid hardening non shrink grout.
 10. Pitch pan sealer:
 - a. Two component, solvent-free urethane pitch pocket sealer.
 11. Sealants:
 - a. Drawband sealant:
 - 1) Single component polyurethane sealant.
 - b. T-bar sealant:
 - 1) Single component polyurethane sealant.
 12. Stripping adhesive for metal flanges:

- a. asphalt adhesive.
- 13. Stripping ply:
 - a. Same as Roof Membrane
- 14. Walkway panels:
 - a. 3 ft. x 4 ft., granule surfaced, fiberglass reinforced protection landings.

2.07 METAL FLASHINGS

- A. Termination bar:
 - 1. Aluminum steel bar:
 - a. 1/8" x 1".
- B. Termination bar sealant:
 - 1. Metal primer: Primer No. 6 by Tremco.
 - 2. Single component, polyurethane sealant.
- C. Counterflashing:
 - 1. Galvanized Steel: ASTM A 526-85, sheet steel with 1.25 oz./sq. galvanized coating with caulking receiver.
 - a. Gage: Twenty-four (24).
- D. Pitch pans with hood:
 - 1. Galvanized Steel: ASTM A 526-85, sheet steel with 1.25 oz./sq. galvanized coating.
 - a. Gage: Twenty-four (24).
- E. Piping through roof box:
 - 1. Galvanized Steel: ASTM A 526-85, sheet steel with 1.25 oz./sq. galvanized coating.
 - a. Gage: Twenty-four (24).
 - b. Solder: ASTM B32-89, alloy grade 50A. Neutralize flux after soldering.
- F. Drains:
 - 1. Roof drains shall be sized and discharged in accordance with local building and plumbing codes.
 - 2. All drain components shall be cast iron. Including drain body, clamping ring, and strainer. 4" minimum diameter.
 - 3. Acceptable manufacturers:
 - a. Donovan Manufacturing Co., North Reading, MA.
 - b. Josam Manufacturing Co., Michigan City, IN.
 - c. Smith Manufacturing Co., Inc., Montgomery, AL.
 - d. Tyler Pipe, Tyler, TX.
 - e. Zurn Industries, Inc., Erie, PA.
- G. Lead Flashings:
 - a. ASTM B 29-79(1984), 1.82 kg (4 lb.) sheet lead.

- H. Parapet Metal Coping Cover, Metal Wall Panels, and Counterflashing along interior Parapet:
 - a. 24 ga. pre-painted galvanized steel: ASTM 526, sheet steel with 1.25 oz./sq., galvanized coating. Roof contractors shall provide color chart displaying metal color options. See attached detail roof drawing for installation.
 - b. Paint finish at exposed sides: Factory baked-on two (2) coat system comprised of One (1) coat of full 70% resin fluorocarbon (polyvinylidene fluoride PV2) by Kynar 500 or Approved equal.
- I. Scupper Inserts:
 - 1. 24 ga., galvanized
 - 2. All seams and joints of scupper inserts shall either be soldered or a hem interlock break installed in accordance with the manufacturer's roof detail drawings.
- J. Work shall be in accordance with the Architectural Sheet Metal Manual, as issued by Sheet Metal and Air Conditioning Contractors' National Association, Inc., (SMACNA).

PART III - EXECUTION

3.01 EXAMINATION

- A. Verify conditions as satisfactory to receive work.
- B. Do not begin roofing until all unsatisfactory conditions are corrected. Beginning work constitutes acceptance of conditions.
- C. Verify that work of other trades penetrating roof deck or requiring men and equipment to traverse roof deck has been approved by Cherokee Nation Entertainment, manufacturer, and roofing contractor.
- D. Check projections, curbs, and deck for inadequate anchorage, foreign material, moisture, or unevenness that would prevent quality and execution of new roofing system.

3.02 GENERAL WORKMANSHIP

- A. Substrate: Free of foreign particles prior to laying roof membrane.
- B. **PHASED APPLICATION:** Not permitted. All plies shall be completed each day.
- C. Traffic and equipment: Kept off completed plies until adhesive has set.

- D. Wrapper and packaging materials: Not to be included in the roofing system.
- E. Entrapped debris: Not permitted within new membrane. Its discovery is sufficient cause for rejection. Ply shall never touch ply, even at roof edges, laps, tapered edge strips, and cants.
- F. Fit plies into roof drain rims; install lead flashing and finishing plies; secure clamping collars; install domes.
- G. Extend roofing membrane to top edge of cant at wall and projection bases.
- H. Cut out fish mouths/side laps which are not completely sealed, patch. Replace all sheets which are not fully and continuously bonded.
- I. Cold Process Tanker: Free of contaminants.
- J. Application rates: Bitumen quantities for waterstop/tie-offs, flashings, miscellaneous detail applications, and minimum canister capacity are not included in application rates. To account for these factors, add approximately twenty-five (25) percent additional bitumen on a total-job average basis.
- K. Mechanical Fasteners:
 - 1. Seated firmly in discs with fastener heads flush or below disc's top surface.
- L. Length: Sufficient to accommodate roof insulation thickness and engage steel deck 1" inch.
- M. Insulation:
 - 1. Install insulation boards in courses parallel to roof edges mopping surface up.
 - a. Firmly butt each insulation board to surrounding boards. Do not jam or deform boards.
 - b. Eliminate open joints and uneven surfaces.
 - 2. Maximum insulation gap: 1/4 inch.
 - 3. Fill insulation board joint gaps larger than 1/4 inch with roof insulation.
 - 4. Maximum elevation variation between boards at joints: 1/8 inch.
 - 5. Cut and fit insulation boards where roof deck intersects vertical surfaces. Cut the board 1/4 inch from vertical surface.
 - 6. Stagger joints at least 6 inches.
 - 7. Filler size: 18 inches in length or width, minimum.
- N. Insulation: Form continuous insulation joints over deck flange. Do not cantilever insulation edges over deck ribs. Minimum bearing surface: 1-1/2 inches.

3.03 PREPARATION

A. Protection:

1. The contractor shall be responsible for the protection of property during the course of work. Lawns, shrubbery, paved areas, building walls shall be protected from damage. Repair contractor damage at no extra cost to Cherokee Nation Entertainment.
2. Provide at site prior to commencing removal of debris, a dumpster or dump truck to be located adjacent to building where directed by Cherokee Nation Entertainment. Where roof elevations extend beyond two stories, roof contractor shall construct an enclosed chute from roof for removal of debris from roof area.
3. Roofing, flashings, membrane repairs, and insulation shall be installed and sealed in a watertight manner on the same day of installation or before arrival of inclement weather.
4. At the start of each workday drains within the daily work area shall be plugged. Plugs have to be removed at the end of each workday or before the arrival of inclement weather.
5. Preparation work shall be limited to those areas that can be covered with installed roofing material on the same day and before the arrival of inclement weather.
6. Arrange work sequence to avoid use of newly constructed roofing for storage, walking surface, and equipment movement. Move equipment and ground storage areas as work progresses.
7. Protect building surfaces at chute/set-up areas with tarpaulin. Secure tarpaulin. Remove dumpsters from premises when full and empty at approved dumping or refuse area. Deliver the empty dumpster to site for further use. Upon job completion, dumpster/chute shall be removed from premises. Spilled or scattered debris shall be cleaned-up immediately. Removed material to be disposed of from roof as it accumulates.
8. At end of each working day, removal areas shall be sealed with water stops along edges to prevent water entry.
9. **Provide clean plywood/foam walkways and take other precautions required to prevent tracking or damaging existing roof areas when crossing over to dispose of roofing debris. Plywood/foam walkways shall be relocated during each day and phase of demolition process. Roof membrane shall be thoroughly inspected for damage on a daily basis and repaired appropriately to ensure roof areas remain watertight throughout roofing process.**
10. Roof Contractor shall instruct and police workmen to ensure that aggregate/debris is not tracked into new work areas on workmen's shoes or equipment wheels. Discovery of entrapped aggregate/debris within new membrane is sufficient cause for its rejection.

B. Surface preparation:

1. Remove: Existing roofing, insulation to roof deck.
2. Sweep clean steel deck and dispose of debris appropriately.

3.04 CARPENTRY/PERIMETER METAL

- A. Parapet Coping Cover:
 - 1. Mechanically attach 2X to match the width of the existing coping. Install wood blocking and secure to the existing substrate with fasteners spaced at twelve (12) inches o.c. Pre-drill into substrate where required prior to installing anchors. At stone coping, taper down where drop down exists utilizing tapered wood blocking.
 - 2. Install nervastral vinyl barrier over wood and secure to the interior and exterior edge of the wood blocking eight (8) inches o.c., with the appropriate roofing nail.
 - 3. Install new 24 ga. Pre-finished metal coping cap. Follow detail drawing for the attachment of the continuous cleat and coping cap installation. Secure electrical conduit to the interior fascia of the new metal coping cap. Where access ladder exists, after installation of new perimeter metal coping, re-install access ladder to exterior side of wall.
- B. Metal Wall Panels:
 - 1. Fabricate and install new pre-finished 24 ga. Metal R-Panels along the periphery of the interior walls. Provide all metal hat channels, counterflashing, and trim pieces. Extend hat channels out to enclose steel wall bracket plating at anchors. Secure electrical conduit to the interior fascia of new metal coping cap.
- C. Scuppers and Downspouts:
 - 1. Remove and replace all scupper inserts with new 24 ga. galvanized scupper inserts with soldered corners and metal flange. Replace conductor heads and downspouts with new 24 ga. pre-finished conductor heads with overflow outlets and downspouts.
- D. Wall and Curbs transitions:
 - 1. Install 45-degree fibered cants.

3.05 ROOF DECK REPAIRS

- A. Metal roof deck repairs:
 - 1. Deck reattachment:
 - a. Mechanically reattach loose sections of deck to steel support members 12 o.c., within the field of the roof and no more than 6 inches o.c., within the roof perimeter and corner zones.
 - b. Side laps: Mechanically fasten 18 inches o.c.
 - 2. Deck replacement:
 - a. Remove defective metal decking. Examine support. If it is unsound, contact the Cherokee Nation Entertainment representative immediately for future action.
 - b. Install new metal decking in accordance with SDI, Design Manual for Roof Decks.
 - 3. Deck protection:
 - a. Remove rust scales and apply rust inhibitive paint at the rate of 150 sq. ft. per

gallon. Allow it to dry.

3.06 THERMAL INSULATION

- A. Base bid system: Mechanically attach two (2) layers of 2.2" Polyisocyanurate insulation as defined as Zone 1 (Field) one (1) fastener every Two (2) sq. ft. (16 fasteners per 4' X 8'), Zone 2 (Perimeter) and Zone 3 (Corners). Zone 2 width should be increased to a minimum of 18 feet wide in the field and Zone 3 should have L-shaped areas with legs that are each 18 feet and 6 feet wide. Ensure any whole or partial component width that falls within the calculated zone dimension has the increased fastener. Zone 2 shall have 50% additional fasteners (8 additional fasteners per 4' X 8') and Zone 3 shall have 1 fastener every 1 sq. ft. (32 total fasteners per 4' X 8').
- B. Alternate system: Mechanically attach first layer of 2.2" Polyisocyanurate insulation as defined as Zone 1 (Field) one (1) fastener every two (2) sq. ft. (16 fasteners per 4' X 8'), Zone 2 (Perimeter) and Zone 3 (Corners). Zone 2 width should be increased to a minimum of 18 feet wide in the field and Zone 3 should have L-shaped areas with legs that are each 18 feet and 6 feet wide. Ensure any whole or partial component width that falls within the calculated zone dimension has the increased fastener. Zone 2 shall have 50% additional fasteners (8 additional fasteners per 4' X 8') and Zone 3 shall have 1 fastener every 1 sq. ft. (32 total fasteners per 4' X 8'). Install subsequent layer of 2.2" Polyisocyanurate insulation adhered in specified insulation adhesive spaced at no more than 12" o.c. within the field of the roof (zone 1), no more than 6" o.c. within the roof perimeter zone (zone 2), and no more than 4" o.c. within all roof corner zones (zone 3). Install insulation boards immediately into wet adhesive. Walk on boards to fully press them into the wet adhesive to ensure complete bond.
- C. Install additional fasteners to ensure insulation is firm under foot.
- D. Filler insulation requires two (2) fasteners per piece.
- E. Ensure the insulation board joint are staggered a minimum of six (6) inches.
- F. Install ½" tapered crickets and saddles at building corners, between scuppers, high sides of curbs, etc, to minimize ponding water conditions.
- G. Install top layer of Gypsum-Fiber Roof Board over insulation ensuring joints are staggered a minimum of six (6) inches. Set cover board in the specified insulation adhesive spaced at no more than 12" o.c. within the field of the roof (zone 1), no more than 6" o.c. within the roof perimeter zone (zone 2), and no more than 4" o.c. within all roof corner zones (zone 3). Install insulation boards immediately into the wet adhesive. Walk on boards to fully press them into the wet adhesive to ensure complete bond.

3.07 ROOF SYSTEM APPLICATION-BASE BID

- A. Adhere KEE Single-Ply Membrane over area to receive roofing and install according to membrane roofing system manufacturer's written instructions. Surface receiving Bonding Adhesive must be clean, dry, and free from oil, grease, or other contaminants. Plan placement of KEE Single-Ply Membrane to ensure that water will flow over or along, but not against, membrane laps or side laps. Mix bonding adhesive thoroughly before use.
- B. Position KEE Membrane in intended location and fold back onto membrane. Apply specified bonding adhesive to both the substrate and back of the membrane. Coverage rate: 45 sq. ft. per ½ gallon to the substrate, and 55 sq. ft. per ½ gallon to the membrane, totaling 50 sq. ft. per gallon.
- C. Offset staggered end laps a minimum of 5'. Overlap the previous course of field membrane a minimum of 2".
- D. Allow bonding adhesive to partially dry to a tacky feel when touched with the backside of a dry finger before bonding membrane to substrate. Do NOT allow bonding adhesive to fully dry before rolling membrane into adhesive. Roll the membrane, using a 75 lb. membrane roller or equivalent, into the adhesive to remove wrinkles and assure positive contact with the substrate.

3.08 FLASHINGS-BASE BID

- A. Position KEE flashing membrane in intended location and fold back onto field of roof. Flashing shall extend 6" onto the field of the roof beyond the toe of the cant or horizontal/vertical transition point. Minimum flashing height: 8".
- B. Prime parapet concrete tilt panel wall prior to applying bonding adhesive with primer as specified. Apply specified bonding adhesive to the back side of the flashing membrane and on to the substrate in a full coverage and allow adhesive to partially dry to the touch. Place flashing membrane onto the vertical surface and pressure roll to assure positive contact.
- C. Do NOT allow bonding adhesive to contaminate lap areas. Remove adhesive from lap area with an approved solvent.
- D. Heat weld overlap seams of flashing membrane to field membrane and vertical flashing laps. Terminate top of flashing membrane with T-bar and seal with specified sealant.
- E. Install curb flashings in accordance with manufacturer's instructions and detail drawings.
- F. Pitch Pans:
 - a. Fabricate new pitch pans from TremPly KEE coated Metal. See detail drawing for installation instructions.

G. Expansion Joint:

- a. Install low profile expansion joint in accordance with manufacturer's instructions and detail drawing.

3.09 ROOF SYSTEM APPLICATION-ALTERNATE

- A. Install One (1) ply of PowerPly Endure 300 Smooth and One (1) PowerPly Endure 200 FR modified bitumen membrane in alternate applications of PowerPly cold process adhesive. Place ply sheets to ensure water will flow over or parallel to; but, never against exposed edges. **All end laps and selvage edges of both base and top membrane are to be heat welded. Follow manufacturer's strict heat welding requirements.**

Application Rates: Base Ply: PP Endure 300 Smooth: 2 gallons per 100 sq. ft.

Top Ply: PP Endure 200 FR Modified Membrane: 2 gallons per 100 sq. ft.

- B. Immediately after installation, broom and/or roll ply sheet. Ensure complete and continuous seal and contact between adhesive and felts, including ends, edges and laps without wrinkles, fish mouths, or blisters. Apply uniform and continuous pressure to exposed edge and end laps to ensure complete adhesion when heat welding.
- C. Avoid walking on plies until adhesive has set.
- D. Overlap previous day's work 24 inches. Provide headers where new roof membrane terminates the previous day's work.
- E. Lap ply membrane ends 4 inches. Stagger end laps 3 feet minimum.
- F. Embed each ply in a uniform and continuous application of interply mastic.
- G. Broom in roofing felt to ensure contact with adhesive. Use 70lb. roller to immediately embed modified membrane into adhesive.

3.10 DAILY WATERSTOP/TIE-INS

- A. Remove embedded dirt /debris from top ply of felt along termination.
- B. Width: 18 inches.
- C. Adhere 12- and 18-inch-wide ply sheets from exposed deck to existing roofing with a continuous 1/16-inch-thick application of tie-off mastic. Glaze cut-off with compatible surfacing mastic. Extend 18 inch wide felt 3 inches either side 12 inch felt.
- D. Install "deadman" insulation filler at insulation staggers.

- E. Extend the roofing system at least 12 inches onto prepared area of adjacent roofing. Seal edge with 6-inch-wide reinforcing membrane embedded between alternate courses of compatible tie-off mastic.
- F. At the beginning of the next day's work remove temporary connection by cutting felts evenly along edge of existing roof system. Remove "deadman" insulation fillers.
- G. Roof contractor is to ensure all tie-ins including wall and curb flashings, projection details, expansion joints etc., are completely sealed prior to leaving project at days end. Flashings are to be sealed with one (1) ply of reinforcing membrane set between alternate applications of the compatible specified mastic. Tie-ins are to remain in place until the appropriate detail is completed.

3.11 FLASHINGS-ALTERNATE

- A. General flashing requirements:
 - 1. Wall and Curb Flashings, including two-ply strip-in:
 - a. Adhere both PowerPly Endure 300 Smooth and PowerPly Endure 200 FR flashing membrane completely by **heat welding**. All bleed out shall have loose granules embedded to flashing surface, cant, and roofing.
 - b. Ensure complete bond and continuity without wrinkles or voids. Lap sheeting ends 4 inches.
 - c. Seal vertical edges and end laps of flashing membrane by heat welding side laps and end laps.
 - d. Secure flashing with T-bar secured at 8" o.c., with the appropriate fastener. Fabricate and install metal R-Panels along the interior periphery of the parapet wall with metal counterflashing. Secure metal channels to the existing wall substrate. Install as per manufacturer's instructions.
- B. At plumbing vents:
 - 1. Wedge plumbing vent tight against deck.
 - 2. Apply 1/16 inch uniformly thick layer of asphalt mastic to surface receiving metal flange.
 - 3. Fabricate and install plumbing vent flashing from lead. Flange: 4 inches wide minimum; extend completely around periphery of vent flashing. Set flange into mastic. Neatly dress flange with wood block.
 - 4. Prime metal flange with asphalt primer.
 - a. Pipe outside diameter greater than 2 inches: Bend lead inside pipe 1 inch minimum with pliers or rubber/plastic mallet; replace cracked lead.
 - b. Pipe outside diameter 2 inches or less: Cut lead at vent top; fabricate and install integral lead cap.
 - 5. Install two (2) ply stripping described in the general flashing requirements section and heat weld both membranes to roofing.

- C. At pitch pockets:
1. Fabricate pitch pans. Sides: 4 inches high, hemmed to outside at top edge. Flange: 4 inches wide, completely around periphery. Clearance between projection and pitch pan: 2 inches. Set flange in mastic.
 2. Pack gap between roof-penetrating element and deck with compressible insulation. Seal with reinforcing membrane embedded between alternate courses of asphalt mastic.
 3. Nail flange to wood blocking 3 inches o.c., staggered.
 4. Prime metal flange, projection, and pitch pan interior with asphalt primer.
 5. Install two ply stripping described in general flashing requirements section.
 6. Fill the pitch pan with pitch pocket sealer. Double fill if necessary.
 7. Fabricate and install umbrella with drawband over pitch pan. Tighten drawband.
 8. Wipe clean top of umbrella and projection with a metal cleaner. Prime surface with metal primer.
 9. Caulk stack/sheet metal interface. Provide watershed. Tool neatly.
- D. At equipment stands (pipe):
1. Apply 1/16 inch uniformly thick layer of asphalt mastic to surface receiving metal flange.
 2. Fabricate and install sleeve flashing. Height: 8 inches. Flange width: 4 inches. Flange to extend completely around flashing periphery. Solder all joints. Double solder vertical joints.
 3. Nail flange to wood blocking 3 inches o.c., staggered.
 4. Prime flange with asphalt primer.
 5. Install two (2) ply stripping described in the general flashing requirements section.
 6. Fabricate umbrella and install drawband; cover sleeve flashing 3 inches minimum. Install immediately above sleeve flashing. Tighten drawband.
 7. Wipe clean top of umbrella and projection with a metal cleaner. Prime surface with metal primer.
 8. Caulk projection/sheet metal interface. Provide watershed. Tool neatly.
- E. At metal sleeve and storm collar(s):
1. Apply 1/16 inch uniformly thick layer of asphalt mastic to surface receiving metal flange.
 2. Fabricate and install sleeve flashing. Height: 8 inches. Flange width: 4 inches. Flange to extend completely around flashing periphery. Solder all joints. Double solder vertical joints.
 3. Nail flange to wood blocking 3 inches o.c., staggered.
 4. Prime flange with asphalt primer.
 5. Install two (2) ply stripping described in the general flashing requirements section.
 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.

F. At piping through roof deck:

1. Fabricate and install a two-piece pipe box. Bottom portion fabricated with 4-inch flange. Top section notched to fit over piping.
2. Set flange in mastic, nail flange to wood blocking 3 inches o.c. Prime flange.
3. Fill the box interior with batt insulation.
4. Fasten top and closure detail to bottom.
5. Wipe the clean metal surfaces of the box and piping with metal cleaner. Prime metal with metal primer. A caulk joint between box and piping. tool neatly.
6. Install two (2) ply stripping described in the general flashing requirements section.

G. At roof drains (if applicable):

1. Install tapered edge strip around drain to create approximate (24"X 24") sump. Miter corners. Seal toe of tapered edge to drain rim with reinforcing membrane embedded between alternate courses of asphalt mastic.
2. Install the roofing system into sump and onto drain rim.
3. Plug drain to prevent debris entry into drainage lines until completed.
4. Apply 1/16 inch uniformly thick layer of asphalt mastic to surface receiving lead flashing.
5. Set a single piece lead flashing in mastic centered over drain; extend lead 150 mm (6 inches) beyond drain rim. Neatly dress lead with wood block.
6. Clamp flashing collar to drain in bed of mastic.
7. Neatly cut lead/felts within drain at rim. extend it to 25 mm (1 inch) into bowl.
8. Prime lead with asphalt primer.
9. Install two-ply stripping described in general flashing requirements section. Stripping shall not extend under clamping ring.

H. At expansion joint:

1. Where expansion joint is to be installed, install Johns Manville EJ-6 expansion joint utilizing 2 X 6 wood blocking to match insulation thickness secured 3" O.C. Follow two-ply stripping described in general flashing requirements section.

- I. At gas lines and equipment runners:
 - 1. All gas lines greater than 3" shall be resting on wood blocking and resting on 1/4" steel plate and protection pad consisting of polyester/walktred set in the specified adhesive. Spacing shall be 4' o.c. Remaining piping smaller than 3" shall be resting on new 4 X 4 redwood runners and installed over polyester/walktred set in the specified adhesive. Rest piping on new block runner and attach galvanized pre-formed strap and secure to blocking with the appropriate fastener.

3.12 SURFACING TREATMENT ON FLASHINGS-ALTERNATE

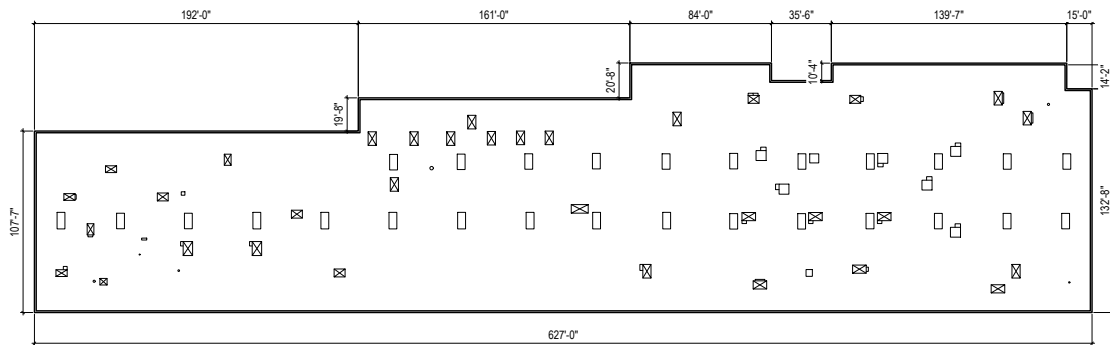
- A. Coat lead, drain screens, galvanized metal, walktreds, etc, with one (1) coat of alumination reflective coating applied at an approximate rate of 130 sq. ft. per gallon. Coat neatly.

3.13 WALKWAYS

- A. Install walkway panels along the working sides of mechanical equipment, access ladders and roof access hatches. For base bid, install TremPly KEE Protection Walkways. For alternate, install 3' x 4' x 3/8" walktreds in spot applications of asphalt mastic.

3.14 ADJUSTING AND CLEANING

- A. Repair of deficiencies:
 - 1. Installations of details noted as deficient during Final inspection must be repaired and corrected by applicator, and made ready for re-inspection, within five (5) working days.
- B. Clean-up:
 - 1. Immediately upon job completion, roof membrane, flashing surfaces and drains shall be cleaned of debris.
 - 2. Remove all loose trash and debris from the staging area and correct all damage to building and grounds that may have occurred during roofing process.
 - 3. Clean gutters/downspouts, drains etc., of all debris and ensure they are freeflowing.



Roof Area = 79,516 Sq. Ft.

Roof Plan

SCALE 1" = 60'-0"



0' 40' 80' 120'



COPYRIGHT TREMCO CPS, INC. 2008
DISTRIBUTION DATE: 09.01.08
DRAWN BY: RLW
LEGEND:
O PENETRATION
OR O CURB
X HVAC UNIT
NOTE: ALL PENETRATIONS ARE APPROXIMATE IN SIZE AND LOCATIONS TO USED AS REFERENCE POINTS ONLY.

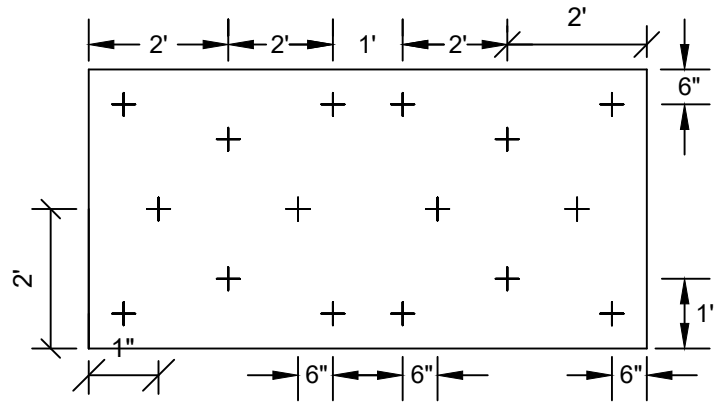
Cherokee Nation Entertainment
Marshall Building
10838 E. Marshall St.
Tulsa, OK
74116

DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR
SHEET NAME

ROOF PLAN
SHEET NO.

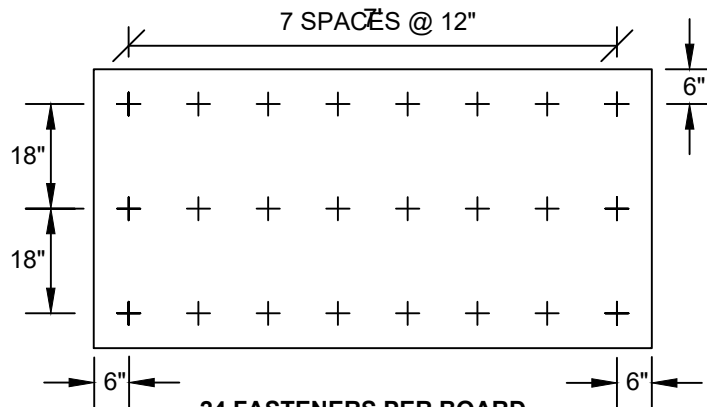
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FIELD FASTENER PLACEMENT



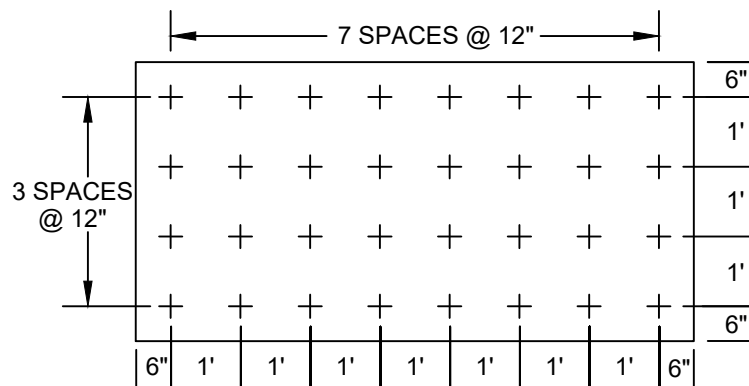
16 FASTENERS PER BOARD

PERIMETER FASTENER PLACEMENT



24 FASTENERS PER BOARD

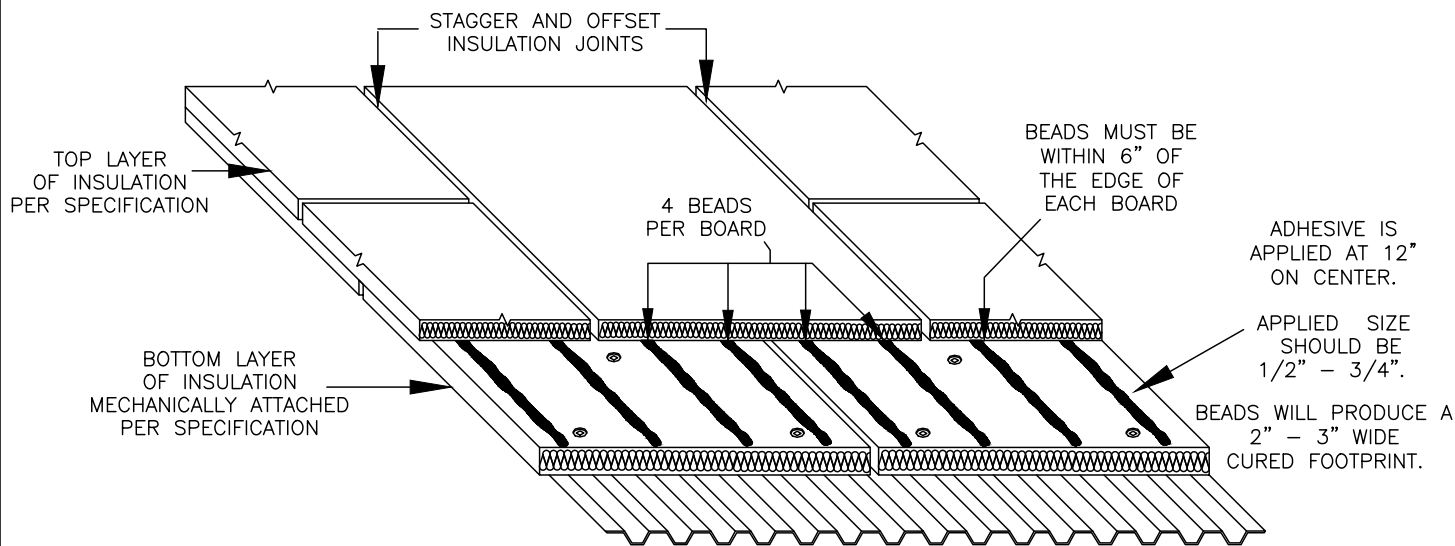
CORNER FASTENER PLACEMENT



32 FASTENERS PER BOARD

THE FOLLOWING GUIDELINES APPLY FOR FASTENER DENSITIES NOT SHOWN:

1. ENSURE EDGE FASTENERS ARE 6 INCHES FROM THE BOARD EDGES, WITH TOLERANCE AS ABOVE.
2. ENSURE FASTENERS ARE EVENLY DISTRIBUTED OVER THE BOARD AREA.
3. ENSURE ALL FASTENERS ENGAGE THE TOP FLANGE OF STEEL DECKING.
4. REFER TO FM GLOBAL PROPERTY LOSS PREVENTION DATA SHEETS 1-29 FOR FASTENER PLACEMENT RECOMMENDATIONS.



NOTE:

1. INSULATION BOARDS MUST BE PLACED INTO THE ADHESIVE AS SOON AS IT STARTS TO FOAM (WITHIN 15 SECONDS). STEP BOARDS INTO PLACE. DO NOT REPOSITION BOARDS ONCE THEY ARE SET. DO NOT PUDDLE OR MOUND THE ADHESIVE AS THIS CAN LEAD TO EXCESSIVE RISE AND BOARD SURFACE UNEVENNESS.
2. IDEAL AMBIENT TEMPERATURE FOR APPLICATION IS 45F AND RISING. MATERIAL TEMPERATURE MUST BE BETWEEN 70F AND 85F.
3. APPLY ADHESIVE AT 12" O.C. AT THE FIELD OF THE ROOF (4 BEADS PER BOARD).
4. APPLY ADHESIVE AT 6" O.C. IN PERIMETER AREAS (8 BEADS PER BOARD) AND 4" O.C IN CORNER AREAS (12 BEADS PER BOARD).



SHEET TITLE:

TREMCO LOW RISE FOAM
INSULATION ADHESIVE

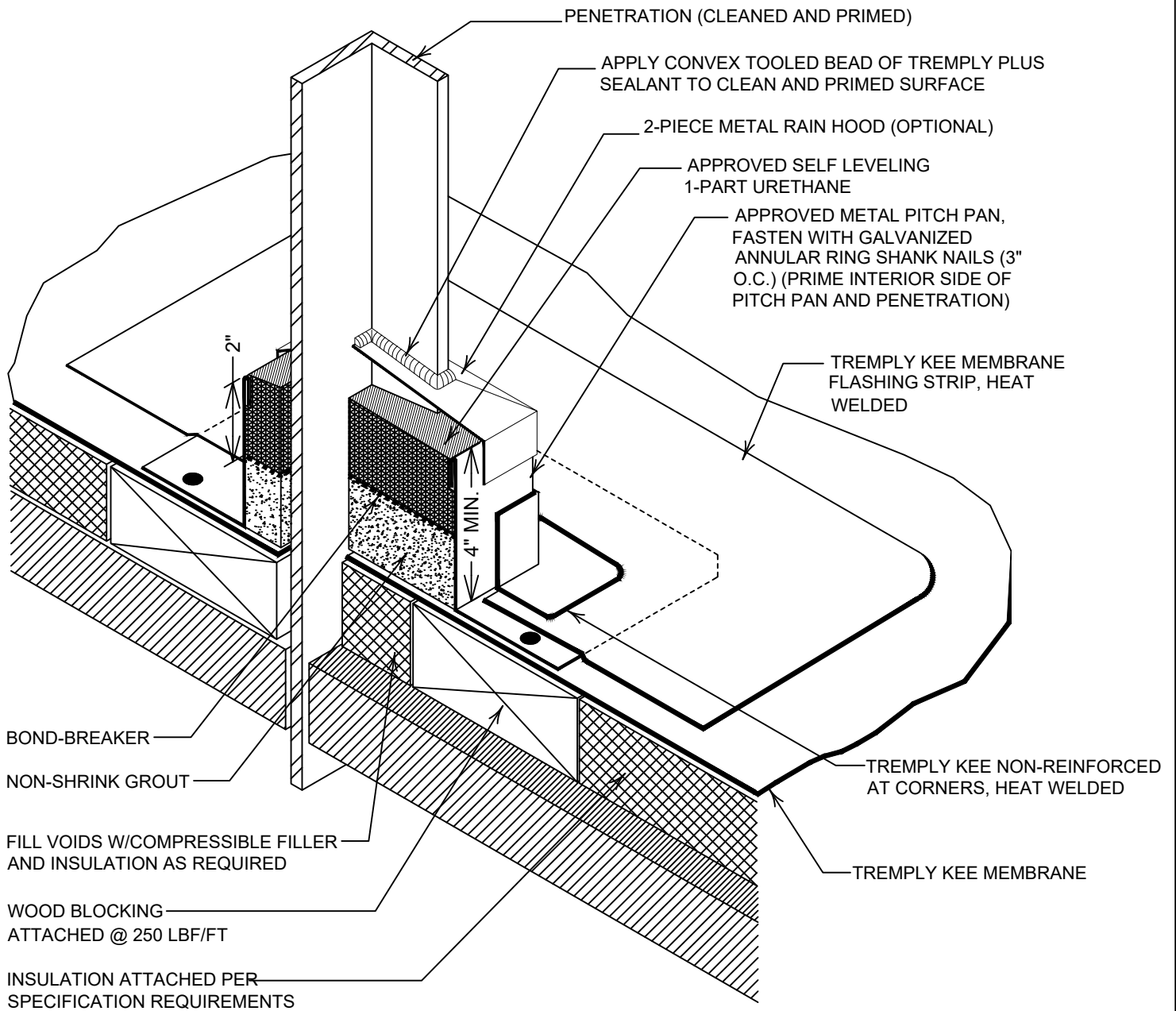
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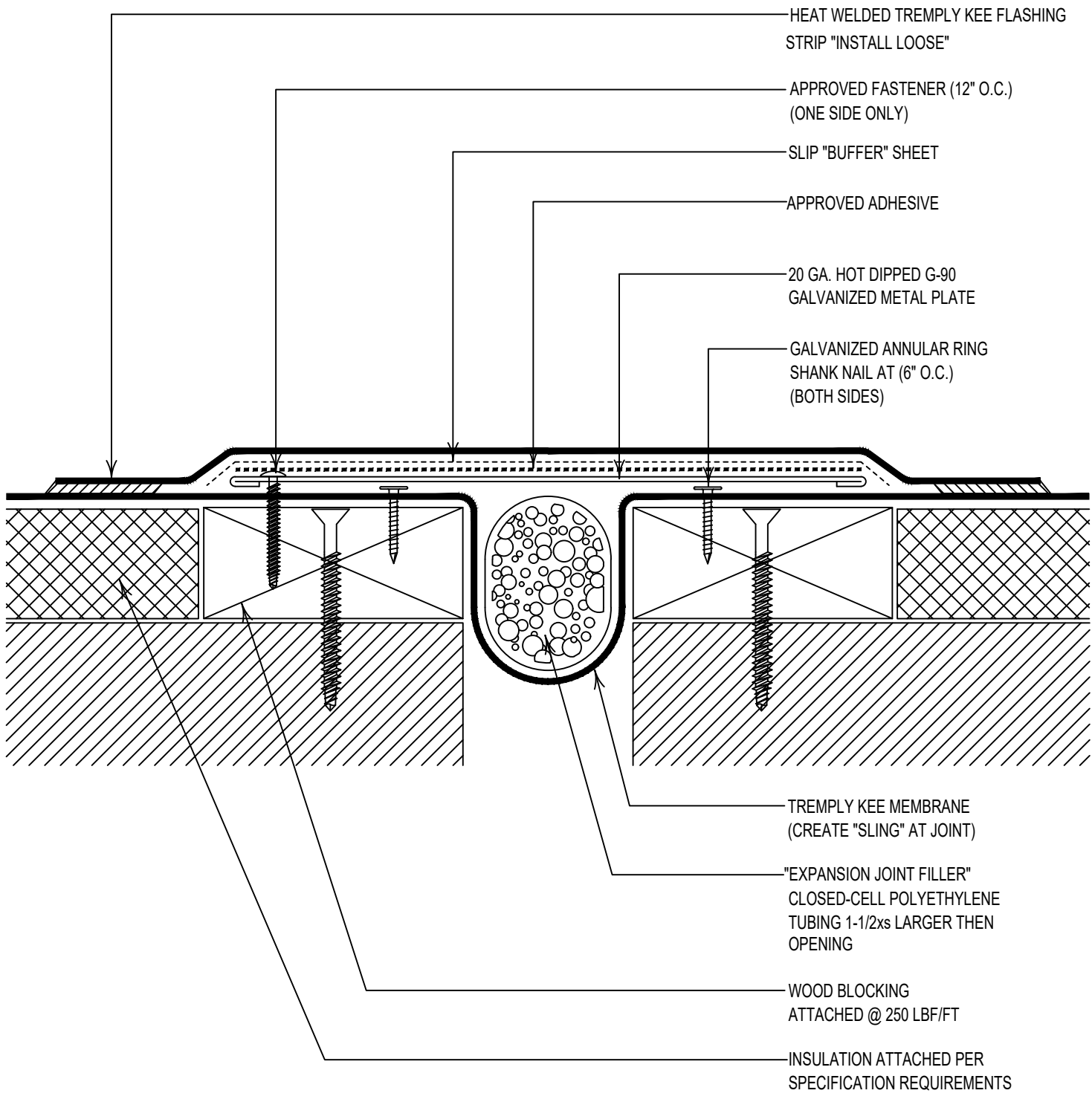
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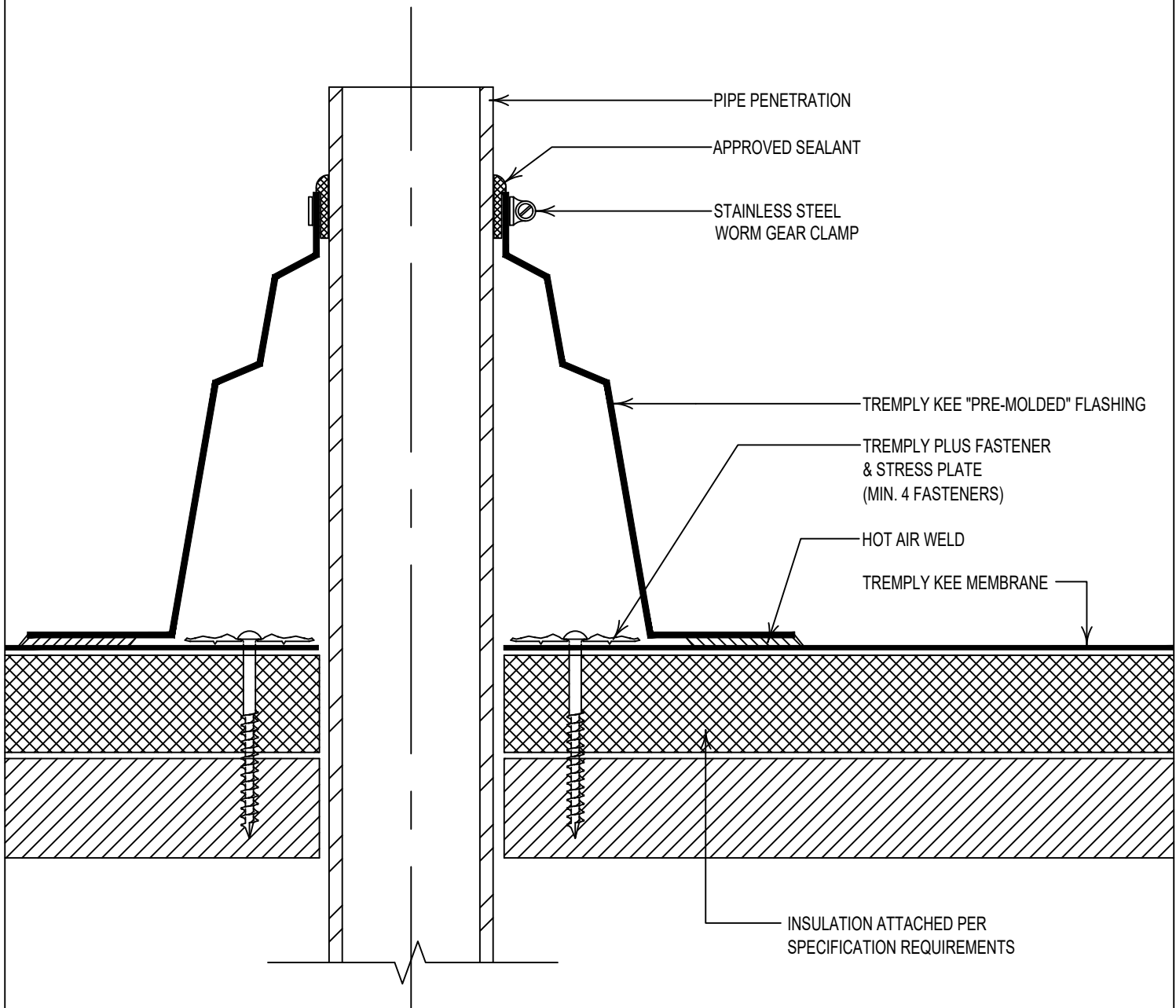
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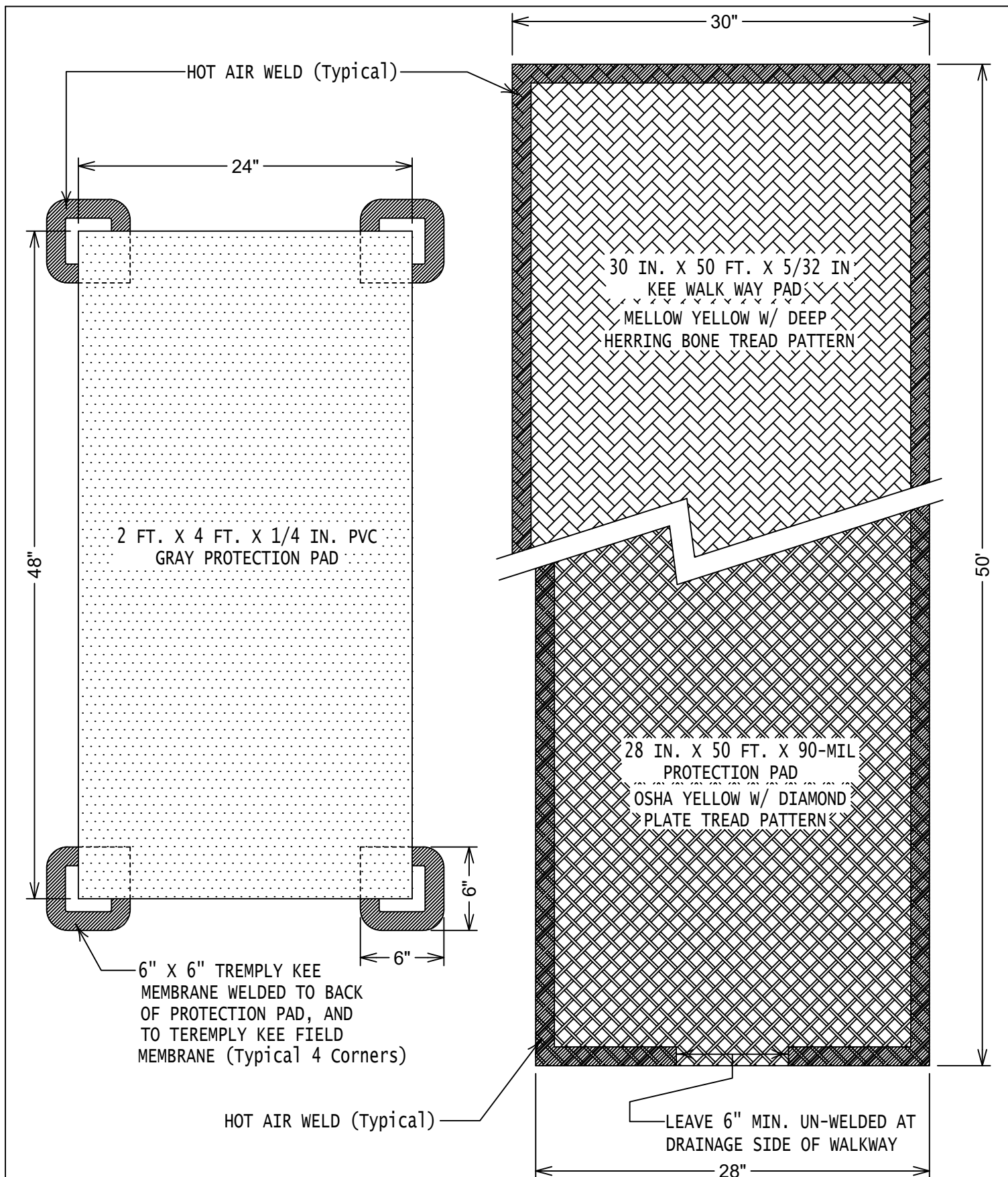


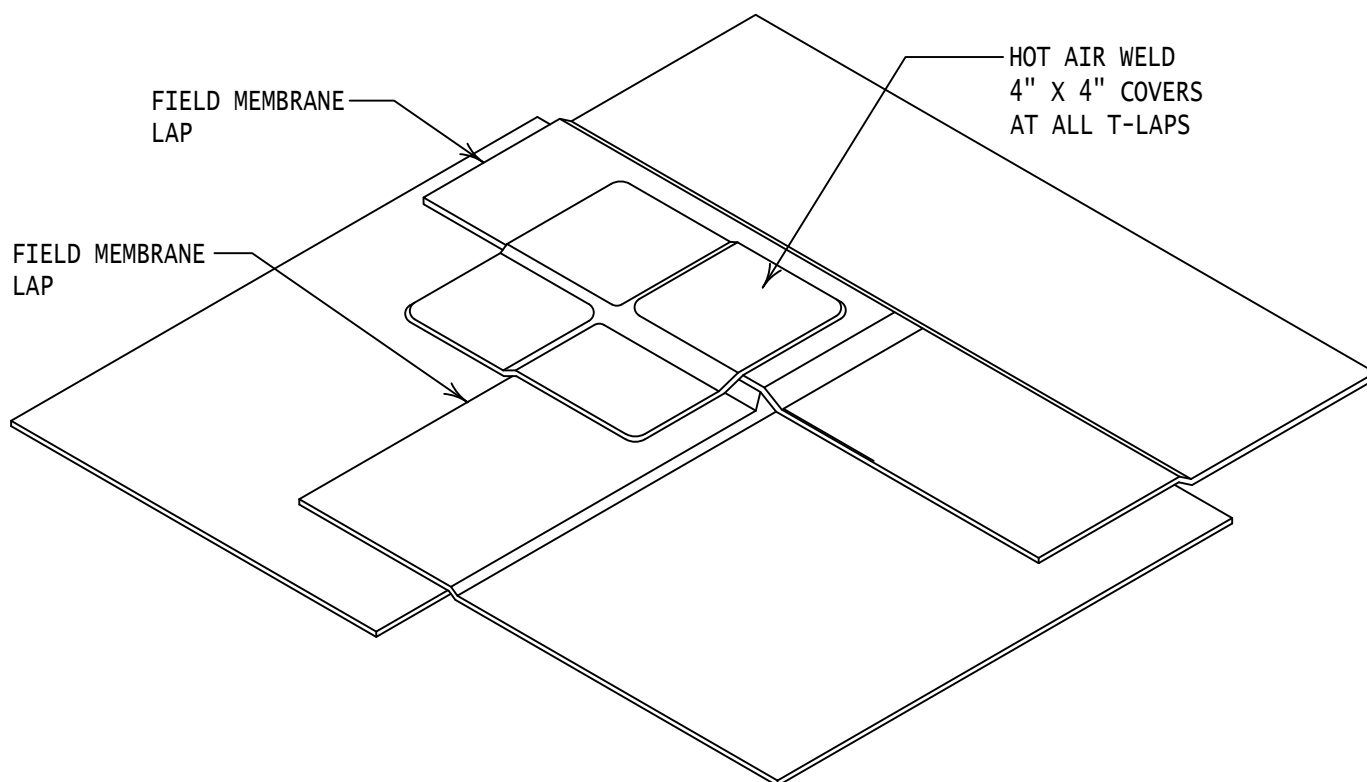
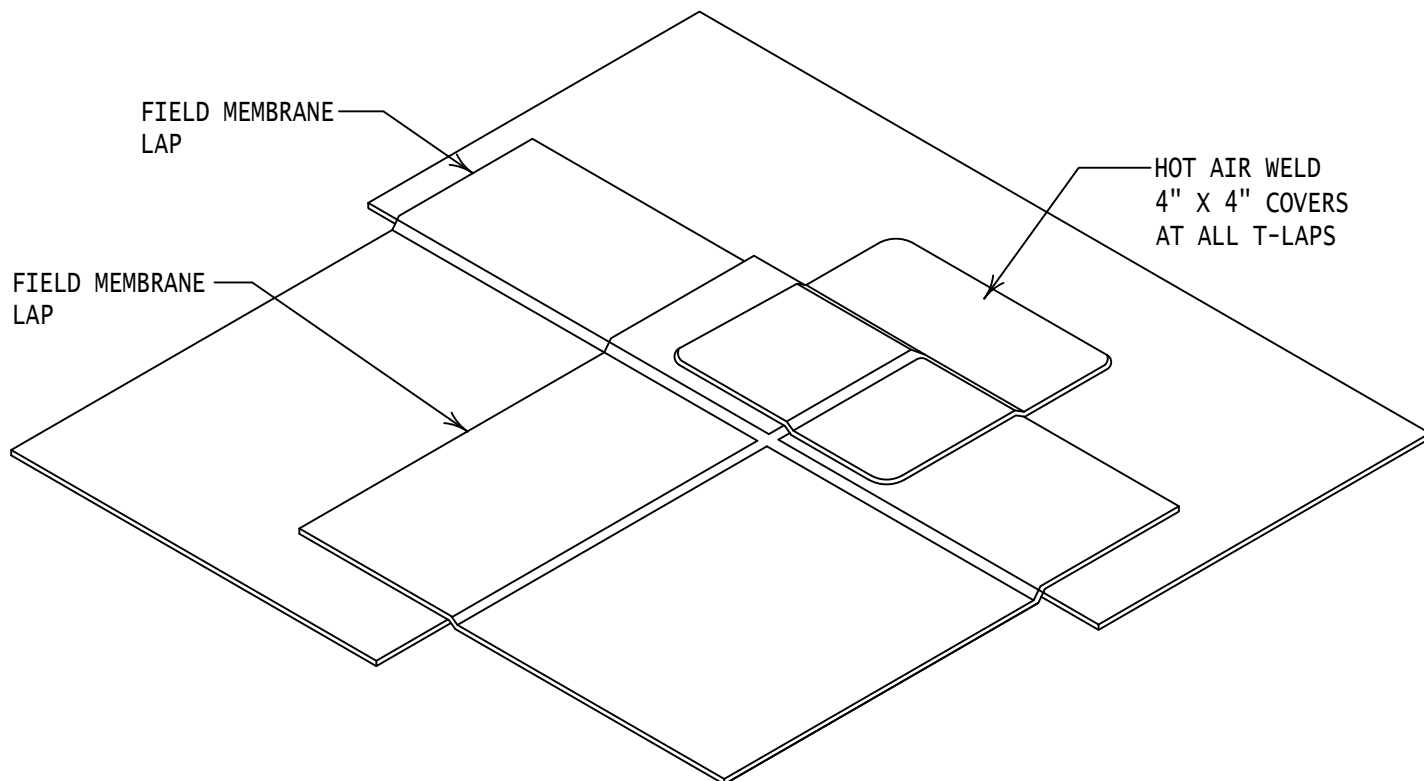


TREMPY KEE
PRE-MOLDED PIPE FLASHING
DWG NO. 08

N.T.S.

TREMPY
ROOFING & BUILDING MAINTENANCE





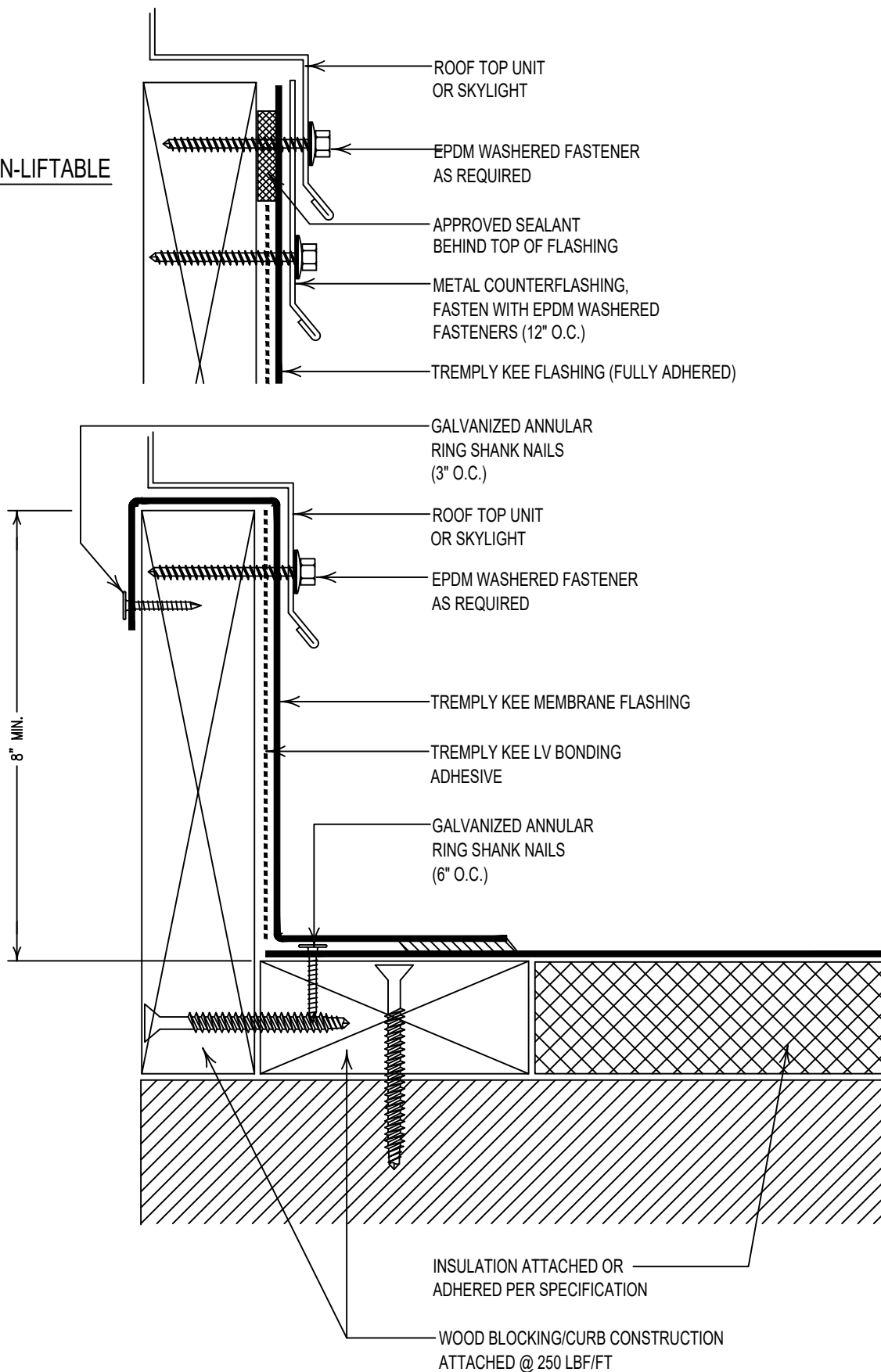
TREMPLY KEE
TYPICAL COVERS AT
MEMBRANE T-LAPS

DWG NO. 6

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE

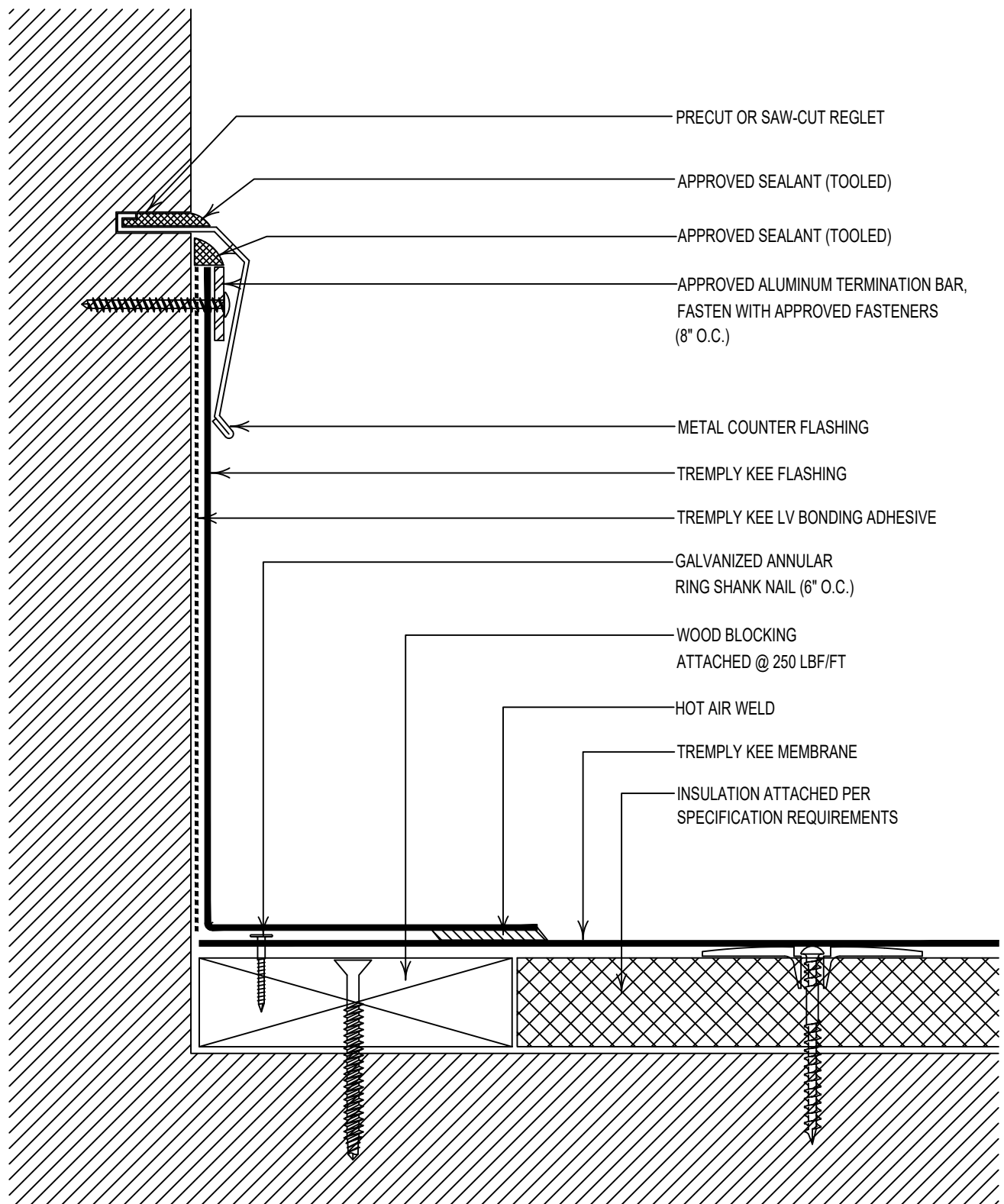
NON-LIFTABLE



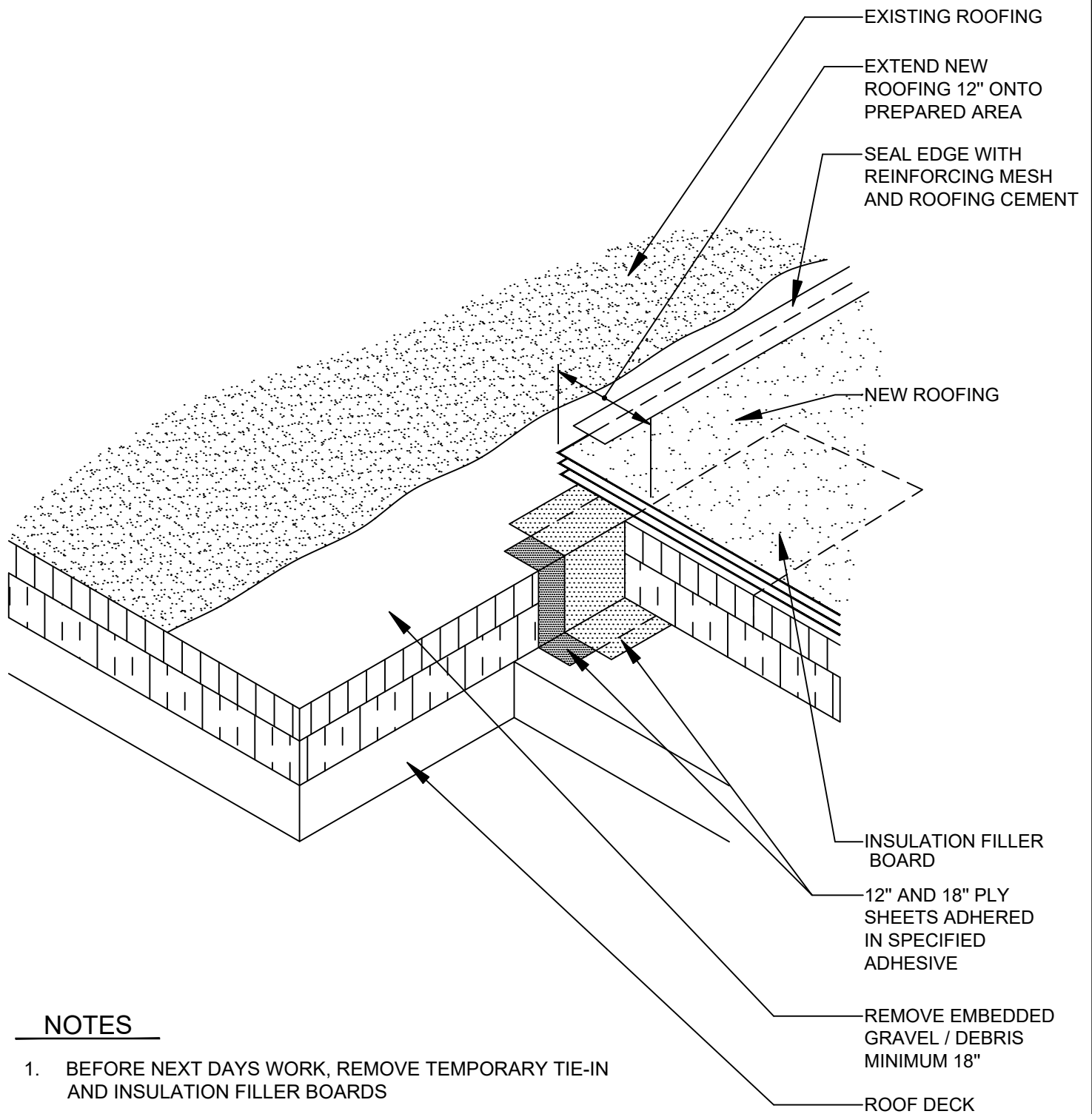
TREMPY KEE
TYPICAL WOOD CURB OR SKYLIGHT
DWG NO. 01

N.T.S.

TREMPY KEE
ROOFING & BUILDING MAINTENANCE

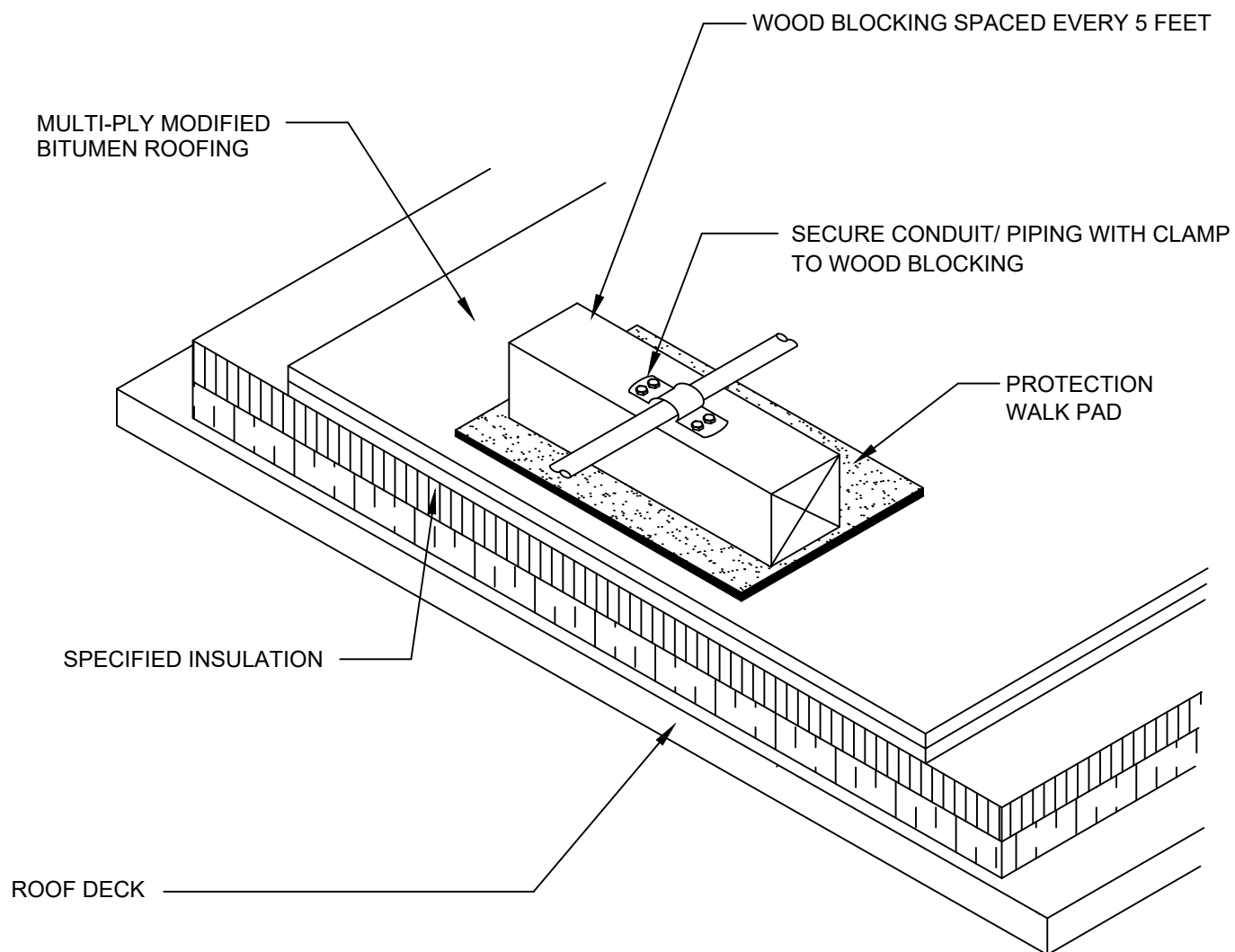


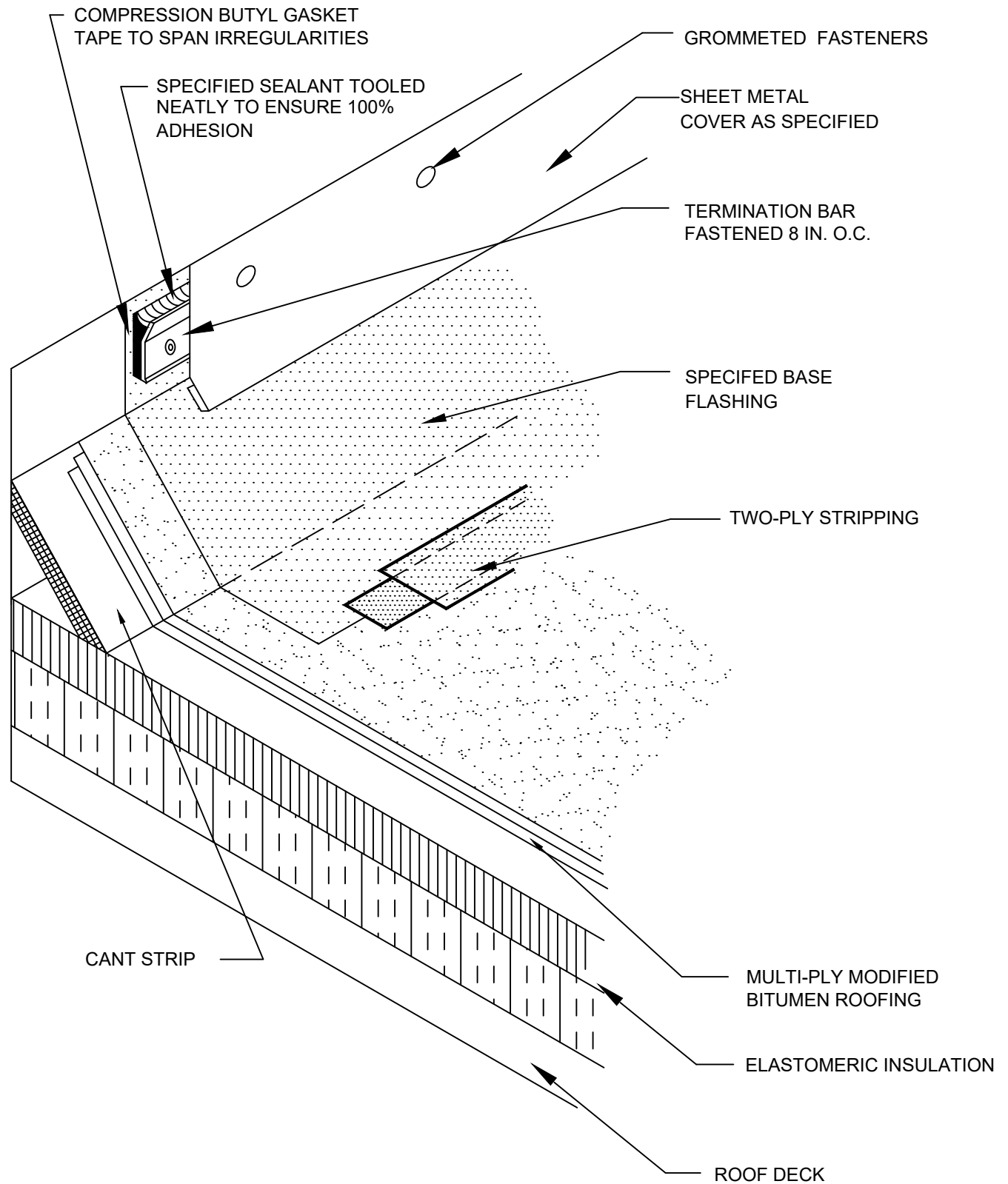
TREMPY KEE
TYPICAL "MEMBRANE" WALL FLASHING
HORIZONTAL BLOCKING WITH SAWCUT REGLET
DWG NO. 01
N.T.S.

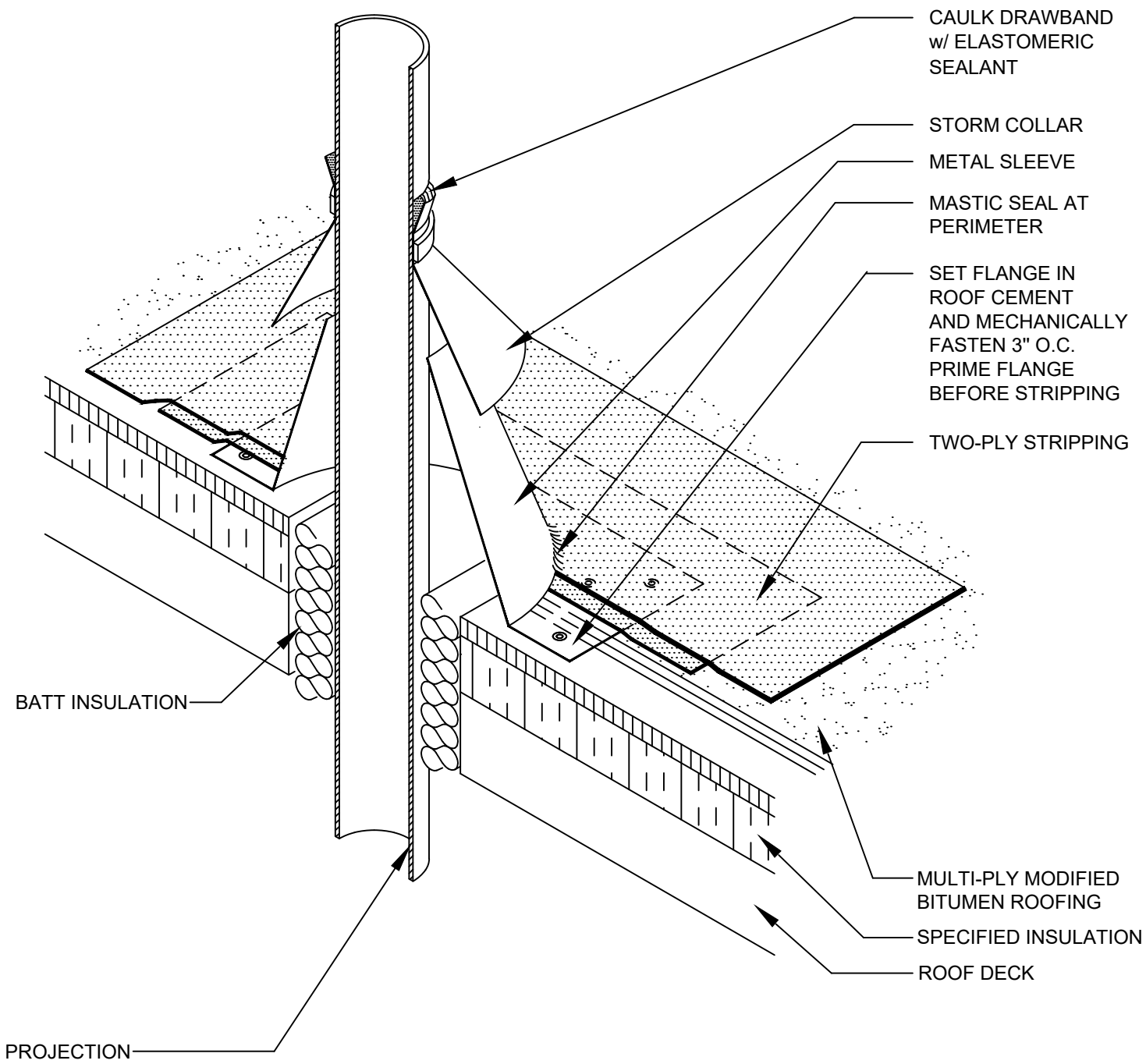


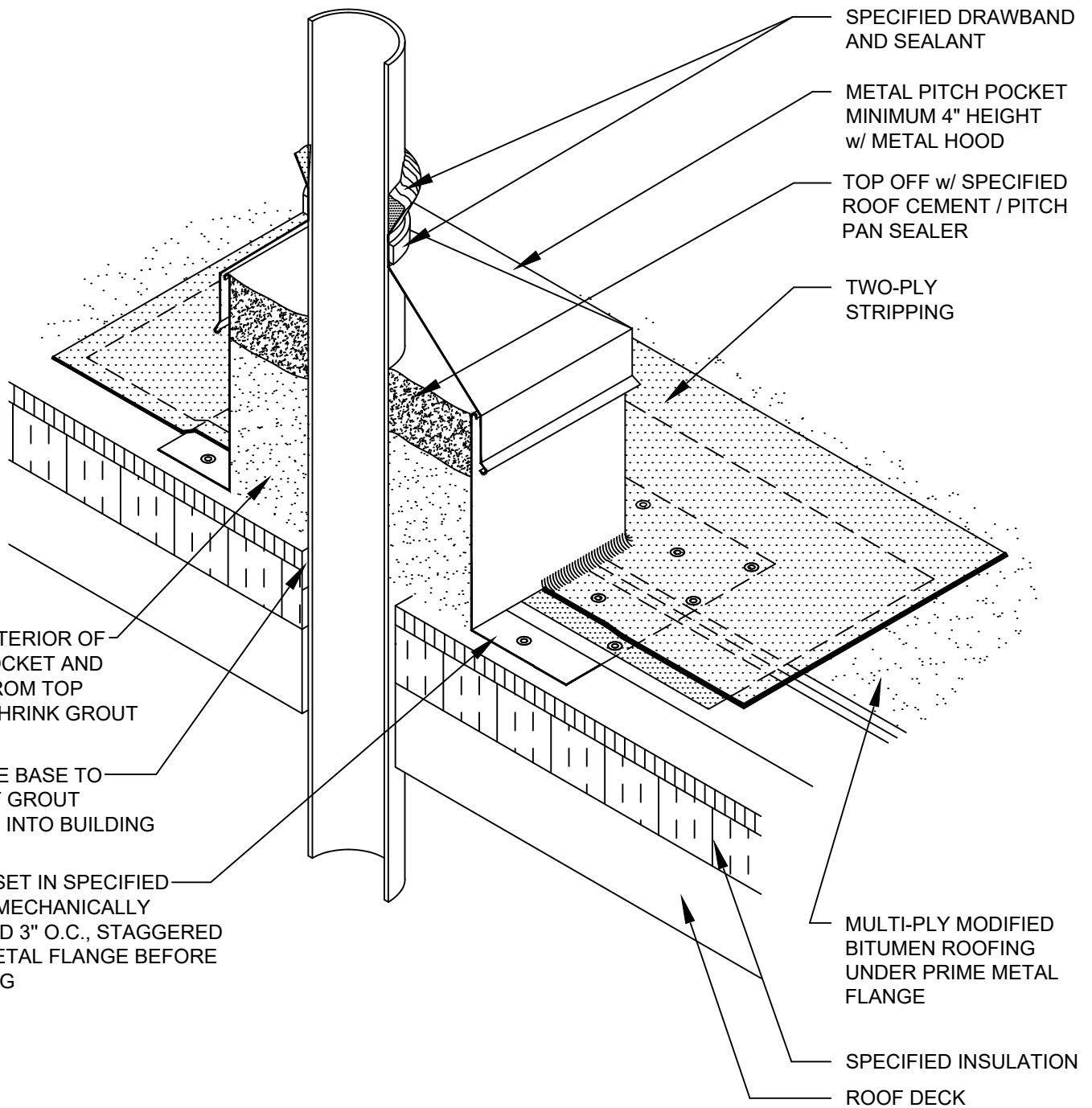
NOTES

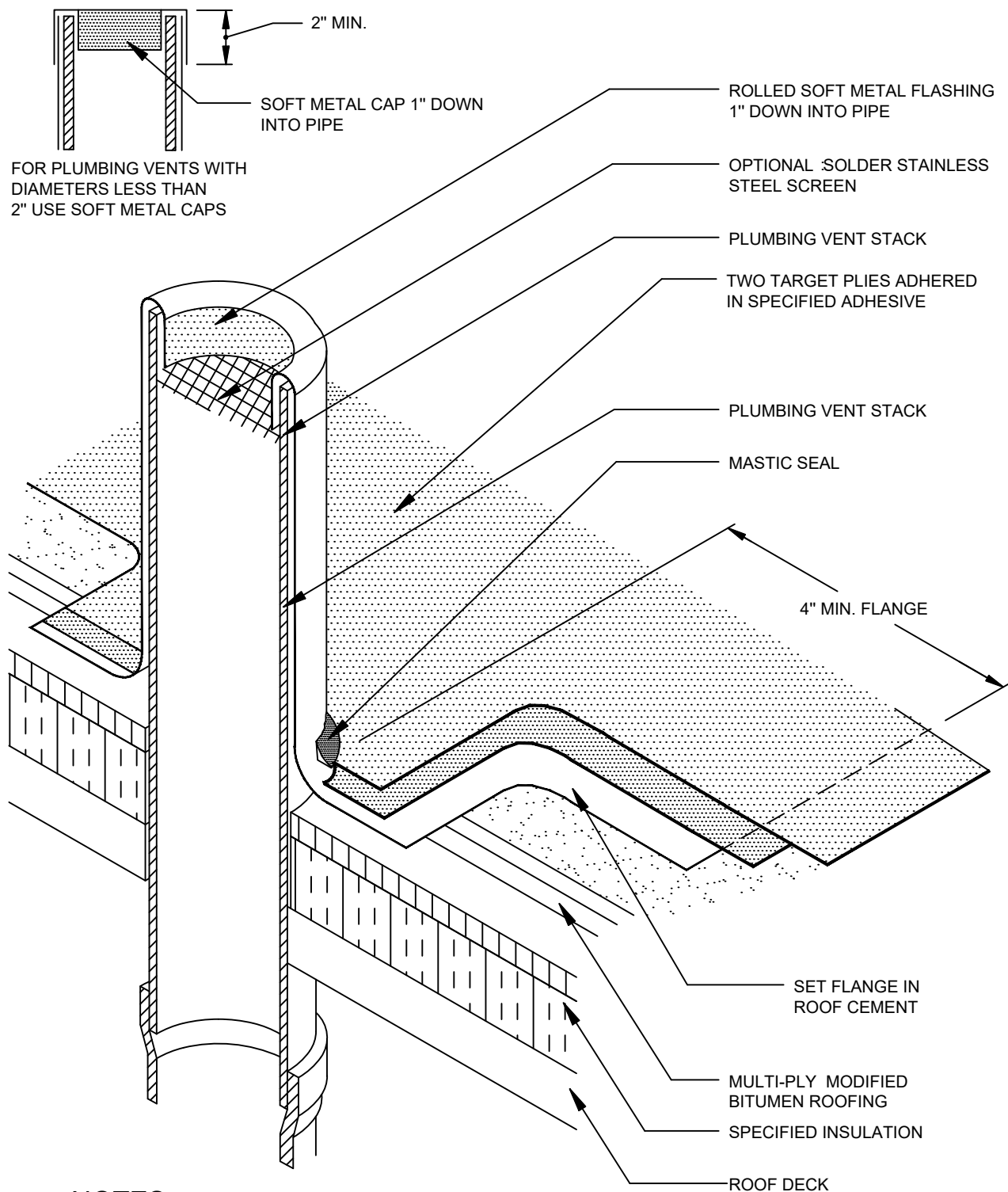
1. BEFORE NEXT DAYS WORK, REMOVE TEMPORARY TIE-IN AND INSULATION FILLER BOARDS







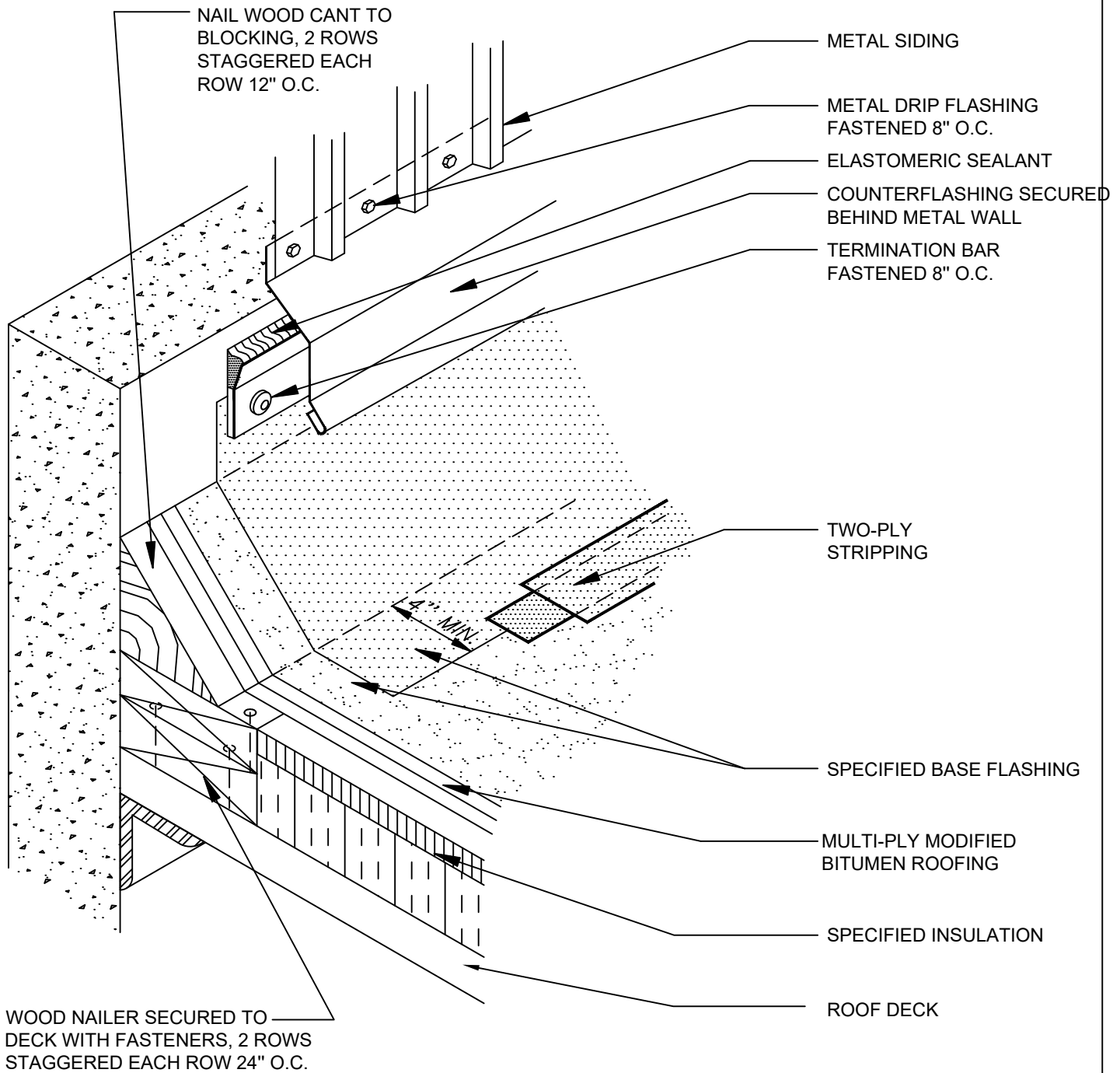




NOTES

SOFT METAL FLASHINGS

1. SHEET LEAD MINIMUM 4 LB. (20kg/m) PER SQ.FT.
2. SHEET COPPER MINIMUM 16 OZ. IF COPPER FLASHING IS INSTALLED OVER AN IRON OR STEEL PIPE, WRAP AN ASPHALT COATED ROOFING FELT TO PREVENT DIRECT CONTACT BETWEEN TWO DISSIMILAR METALS.

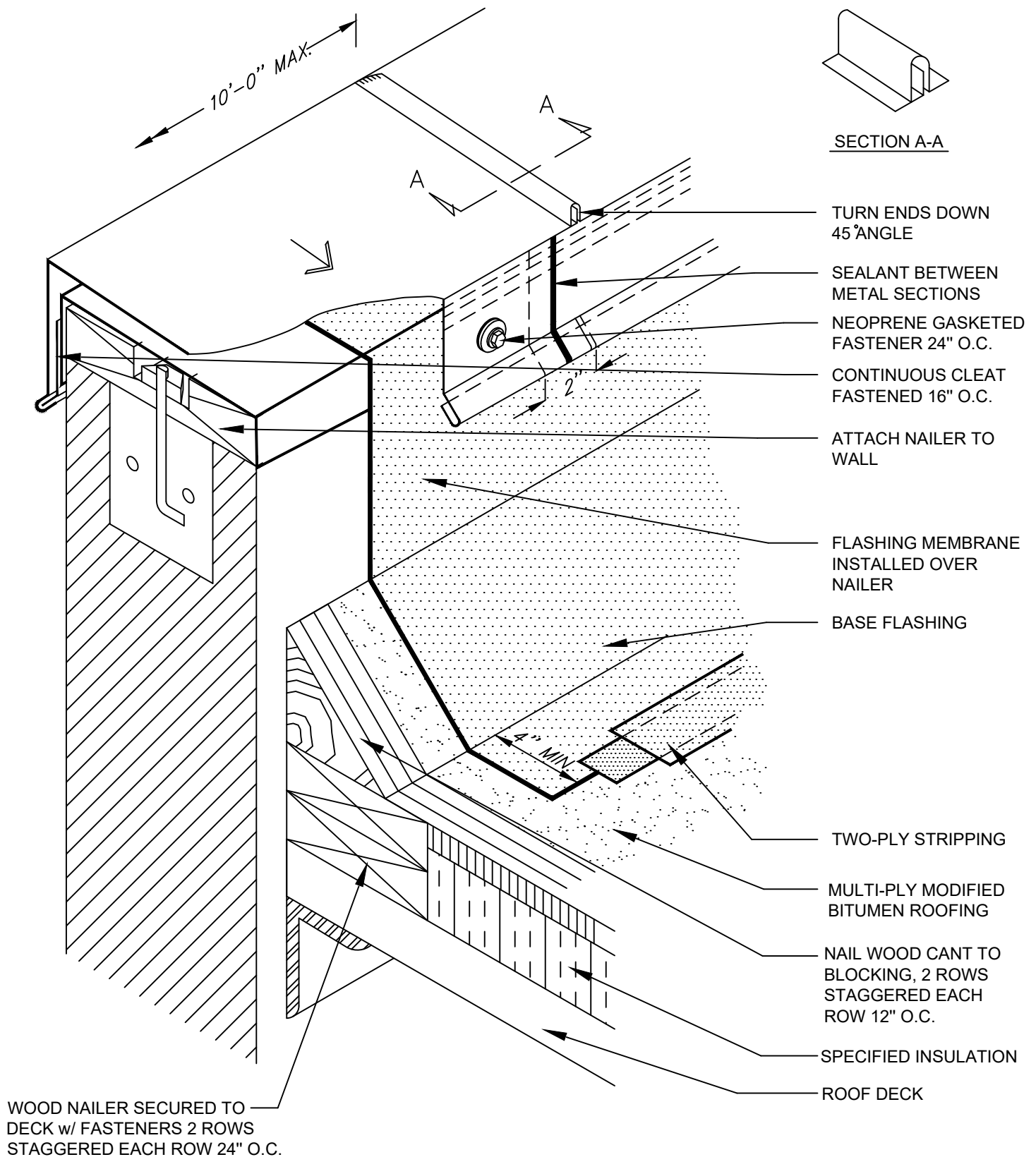


METAL WALL FLASHING

DWG NO. 08

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE



METAL COPING CAP

DWG NO. 03

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE