



Nevada County
Sheriff's Office Regional Dispatch and
Training Facility
(SORDTF)
Roof Retrofit Bid Specifications

Located at 15434 Hwy 49 Nevada City, CA. 95959

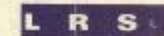




CALIFORNIA STATE FIRE MARSHAL
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ON MAY 10 1964

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In Association with:

CONSULTANTS

COUNTY OF NEVADA REGIONAL
JUVENILE DETENTION HALL
NEVADA CITY, CALIFORNIA
REFERENCE PLAN

PROJECT NAME

DATE 1.11.

CHECK: _____

AS - BUILT DRAWINGS
A2.0

SCOPE OF WORK:

General:

1. Provide temporary fencing to store materials onsite and at staging areas.
2. New roof system will have crickets to direct water around all curb mounted roof penetrations.
3. Remove all solar panels, and solar panel anchors from roof.
4. All single ply to be wrapped up and over parapet walls before installing new coping cap.
5. Raise any curbs as necessary. Install new sleepers and sleeper covers as necessary.
6. Install walkway roll under downspouts that drain onto the roof.
7. All wood blocks will be replaced with new rubber blocks. Install DBR series Durablok or similar with adjustable all-thread. Wide pipe runs with multiple conduit lines will require two blocks with Unistrut in between to support the pipes.
8. Typical edge metal will be 4" with a continuous cleat unless specified differently in the scopes below.
9. Install 24-gauge galvanized skirt metal at HVAC units per typical curb detail.
10. Install new 24-gauge galvanized counterflashing at roof to wall terminations.
11. Retrofit all existing drains on every roof section
12. Do not install walkway roll over seams in single ply roof.
13. Replace all solar panels in same location as removed from.
14. Original solar panel plans attached in bid documents.
15. Include warning lines around all roof edges requiring fall protection, color- bright yellow. Install 6" wide strip of yellow TPO, back 6' from edges, fully adhered around perimeters of all roofs requiring fall protection.

Main:

1. Clean and remove all debris from the existing roof.
2. Remove all solar panels, mounting brackets, and set aside for reinstallation at the end of the project. The contractor will be responsible for taking measurements of the existing location of the solar panel anchors and reinstalling them in the same locations.
3. Remove all solar panel anchors from roof keeping single ply under anchors intact.
4. A certified licensed solar contractor is required for removal and replacement of the solar panels to include, installing new anchors, original brackets, original solar panels, and all related electrical after roofing is completed.
5. Solar contractor will need to certify system is working properly.
6. Install OMG Power Grip Plus roof anchor assemblies with flange membrane to match roof membrane, or approved equal, in same location as original roof anchors.
7. Remove and replace any wet insulation that is marked.
8. Remove and discard all coping caps and counterflashing.
9. Mechanically attach a ¼" dens deck cover board over the existing single ply.
10. Install fully adhered, 60-Mil KEE single ply roof system, color: white (typical) in Trempro KEE FB WBII bonding adhesive and associated components and flashings. All KEE will go up and over all curbs and parapets. See detail "wall flashing with metal cap flashing.
11. Install new 24-gauge counterflashing's at roof to wall terminations and HVAC curbs.
12. Install new Kynar 24-gauge coping caps to match existing color.
9. Reinstall solar panels using the same method that was used to roof them in before.
10. Install approximately 650' (11 rolls) of walk pad for easy access to drains and units.

Nevada County – SORDTF
Roof Retrofit Scope of Work:

Pop-Outs:

1. Clean and remove all debris from the existing roof.
2. Remove and replace any wet insulation that is marked.
3. Remove and discard all edge metal and counterflashing.
4. Mechanically attach a ¼” dens deck cover board over the existing single ply.
5. Install fully adhered, 60-Mil KEE single ply roof system, color: white (typical) in Trempro KEE FB WBII bonding adhesive and associated components and flashings. All KEE will go up and over all curbs and parapets. See detail “wall flashing with metal cap flashing.
6. Install new 24-gauge counterflashing at roof to wall terminations.
7. Install new KEE clad edge metal at each pop-out perimeter.
8. Install approximately 120’ (2 rolls) combined on all the pop-outs.

END OF SCOPE

Disclaimer:

The products and materials specified herein are provided as a basis of quality control and are intended to establish a standard of quality, performance, and design. The use of the specified products is not mandatory, and substitutions are permitted. Any substitutions must be approved by the district, County of Nevada Facilities Department, provided that the substitute products or materials are of equal or better quality, performance, and design, as determined by the district. All substitutions must meet the requirements set forth in the project specifications and be approved in writing prior to their use.

SECTION 075416 - KETONE ETHYLENE ESTER (KEE) ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Install fully adhered, 60-Mil KEE single ply roof system, color: white (typical) in Tremply KEE FB WBII bonding adhesive and associated components and flashings. All KEE will go up and over all curbs and parapets. See detail "wall flashing with metal cap flashing or approved equal, including:
2. Retrofit of existing roof.
3. New cover board.

1.2 DEFINITIONS

- ##### A. Roofing Terminology:
- See 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.

1.3 ACTION SUBMITTALS

- ##### A. Product Data:
- For each type of product indicated.
- ##### B. SDS:
- For each type of product indicated.

1.4 CLOSEOUT SUBMITTALS

- ##### A. Executed copies of warranties.
- ##### B. Maintenance Data:
- To include in maintenance manuals.

1.5 QUALITY ASSURANCE

- ##### A. Installer Qualifications:
- An employer of workers trained and certified by manufacturer, including a full-time on-site supervisor with a minimum of five years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and qualified by the manufacturer to install manufacturer's product and furnish warranty of type specified.
- ##### B. Roofing Inspector Qualifications:
- A technical representative of manufacturer not engaged in the sale of products and experienced in the installation and maintenance of the specified roofing system, qualified to perform roofing observation and inspection specified in Field Quality Control Article, to determine Installer's compliance with the requirements of this Project, and approved by the manufacturer to issue warranty certification. The Roofing Inspector shall be the following:
1. An authorized full-time technical employee of the manufacturer.
- ##### C. Manufacturer's Installation Instructions:
- Obtain and maintain on-site access to manufacturer's written recommendations and instructions for installation of products.

D. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, roofing Installer, roofing system manufacturer's representative, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review drawings and specifications.
3. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
4. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
5. Examine substrate conditions and finishes for compliance with requirements, including flatness and fastening.
6. Review structural loading limitations of roof deck during and after roofing.
7. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
8. Review governing regulations and requirements for insurance and certificates if applicable.
9. Review temporary protection requirements for roofing system during and after installation.
10. Review roof observation and repair procedures after roofing installation.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.7 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Daily Protection: Coordinate installation of roofing so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 - 1. Provide tie-offs at end of each day's work to cover exposed roofing and insulation with a course of roofing sheet securely in place with joints and edges sealed.
 - 2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing.
 - 3. Remove temporary plugs from roof drains at end of each day.
 - 4. Remove and discard temporary seals before beginning work on adjoining roofing.

1.8 WARRANTY

- A. Manufacturer: Manufacturer's standard warranty form, covering work of this Section and extended system components indicated, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period.
 - 1. Warranty Period: 30 years from date of completion.
- B. Installer Warranty: Installer's warranty signed by Installer, covering the Work of this Section, on form acceptable to Roofing Manufacturer and Owner.
 - 1. Warranty Period: 2 years from date of completion.
- C. Manufacturer Inspection Services: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections is included in the Contract Sum.
 - 1. Inspections to occur in following years: 2, 5, 10, 15, 20, 25 following completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.
- B. Basis of Design: Tremco or approved equal.

2.2 MATERIALS, GENERAL

- A. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

2.3 THERMOPLASTIC MEMBRANE MATERIALS

A. KEE Roof Membrane:

1. Thermoplastic Ketone Ethylene Ester (KEE) coated polyester fabric-reinforced roof membrane sheet, ASTM D6754.
 - a. Basis of design product: Tremco, TremPly KEE Single Ply Roof Membrane or approved equal.
 - b. Breaking Strength, minimum, ASTM D751: Machine direction, 500 lbf (87 kN/m); Cross machine direction, 400 lbf (70 kN/m).
 - c. Tear Strength, minimum, ASTM D751: Machine direction, 125 lbf (21 kN/m); Cross machine direction, 145 lbf (25 kN/m).
 - d. Elongation at Break, ASTM D751: 20 percent.
 - e. Dynamic Impact/Puncture Resistance, ASTM D5635: Pass.
 - f. Minimum Membrane Thickness, nominal, less backing, ASTM D751: 60 mils (1.5 mm).
 - g. Thickness over fiber, optical method: 0.014 inches.
 - h. Accelerated Weathering, ASTM G155 and ASTM G154: >5,000 hr., no cracking or crazing.
 - i. Abrasion Resistance, ASTM D3389: >2000 cycles, H-18-wheel, 1,000 g load.
 - j. Color: White.
 - k. Solar Reflectance Index (SRI), ASTM E1980: 110 (White, initial), 86 (White, 3-yr aged).

- B. Sheet Flashing: Manufacturer's standard smooth-backed sheet flashing of same material, type, reinforcement, thickness, and color as KEE sheet membrane.

2.4 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use, and compatible with membrane roofing.
 1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Flashing Membrane Adhesive:

1. Bonding adhesive, solvent based fast drying, VOC-compliant, for bonding KEE smooth-backed single ply membranes and flashings to substrates.
 - a. Basis of design product: Tremco, TremPly KEE LV Bonding Adhesive or equal.
 - b. VOC, maximum, ASTM D 3960: 200 g/L.

C. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 mm by 3 mm) thick; with anchors.

D. Metal Stress Plates: Manufacturer's standard AZ50 Galvalume-coated steel formed plates, 0.047 inch thick, with radial corners and membrane-engaging barbs engineered to enhance wind resistance for mechanically attached KEE membrane roofing systems. FMG approved.

1. Product: TremPly KEE Plus Stress Plates or equal.

E. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening components to substrate, and acceptable to membrane roofing system manufacturer.

F. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

G. 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.

2.5 ROOF INSULATION MATERIALS

A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from insulation manufacturer's standard sizes, suitable for application, and of thicknesses indicated.

B. Cover Board:

1. 1/4" Dens-Deck or approved equal.

2.6 WALKWAY MATERIALS

A. Protection Mat:

1. Protection mat, reinforced KEE membrane mat with serrated slip-resistant surface and enhanced puncture resistance, fabricated for heat welding to compatible KEE membrane surface.
 - a. Basis of design product: Tremco, Walkway Roll
 - b. Mat Size: 36 inches by 60 feet.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 - 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 - 2. Verify that blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove solar panels, brackets, anchors, and all related electrical from roof.
- B. Clean and remove all debris from the existing roof.
- C. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- D. 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.
- E. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 INSTALLATION, GENERAL

- A. Install roofing system in accordance with manufacturer's written instructions and approved details.
- B. NRCA Installation Details: Install roofing system in accordance with applicable NRCA Manual Plates and NRCA recommendations; modify as required to comply with manufacturer's approved details and perimeter fastening requirements of FM Global references if applicable.

3.4 INSULATION INSTALLATION

- A. Cover Boards: Install cover boards over the substrate with long joints in continuous straight lines with end joints staggered between rows 6 inches. Loosely butt cover boards together.
 - 1. Secure cover boards to resist uplift pressure at corners, perimeter, and field of roof.
 - 2. Mechanically fasten cover boards, minimum 8 fasteners per 4' x 8' board.

3.5 MECHANICALLY FASTENED MEMBRANE ROOFING INSTALLATION

- A. Mechanically fasten membrane roofing over area to receive roofing and install according to roofing system manufacturer's written instructions.
 - 1. For in-splice attachment, install membranes roofing with long dimension perpendicular to steel roof deck flutes.
- B. Start installation of membrane roofing in presence of roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Mechanically fasten or adhere membrane roofing securely at terminations, penetrations, and perimeter of roofing.
- E. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- F. In-Seam Attachment: Secure one edge of membrane sheet using fastening plates or metal battens centered within membrane seam and mechanically fasten membrane sheet to roof deck.
- G. Metal Stress Plate Installation:
 - 1. Locate plates in grid pattern in accordance with membrane manufacturer's instructions.
 - 2. Install plates in straight rows in the specified number and spacing to achieve the required wind uplift resistance in the main field, edges and corners of the roof.
 - 3. Install plates and separation pads using fasteners that comply with the applicable building code wind uplift rating and the fastener and membrane manufacturer's requirements. Ensure that all fasteners are properly driven normal to the surface of the sub-structure. Do not over-drive fasteners; plates that are recessed into and/or not flush with the surface of the insulation are not acceptable.
- H. Welded Seams: Clean seam areas, overlap membrane roofing, and hot-air weld side and end laps of membrane roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.
 - 1. Test lap edges with probe to verify seam weld continuity.
 - 2. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
 - 3. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- I. Spread sealant bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.

3.6 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.7 CLAD METAL FLASHING INSTALLATION

- A. New edge metal will be KEE coated metal with a 4" fascia with hemmed drip edge.
 - 1. Fully cleat with 22-gauge galvanized metal.
- B. Install new sheet metal skirting elsewhere as needed to flashing terminations in accordance with warranty requirements.

3.8 COPING CAP INSTALLATION

- A. Remove existing coping cap and discard.
- B. Install new 24-gauge beige coping caps, to match the color of the building.

3.9 WALKWAY INSTALLATION

- A. Protection Mat: Install protection mat walkways from roof access hatches and roof access points to provide clear walkway to and in-between HVAC units.
 - 1. Heat weld perimeter fully.
 - 2. Do not extend over single ply membrane laps.

3.10 FIELD QUALITY CONTROL

- A. Roofing Inspector: Owner will engage a qualified roofing inspector to perform roof tests and inspections and to prepare test reports.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.

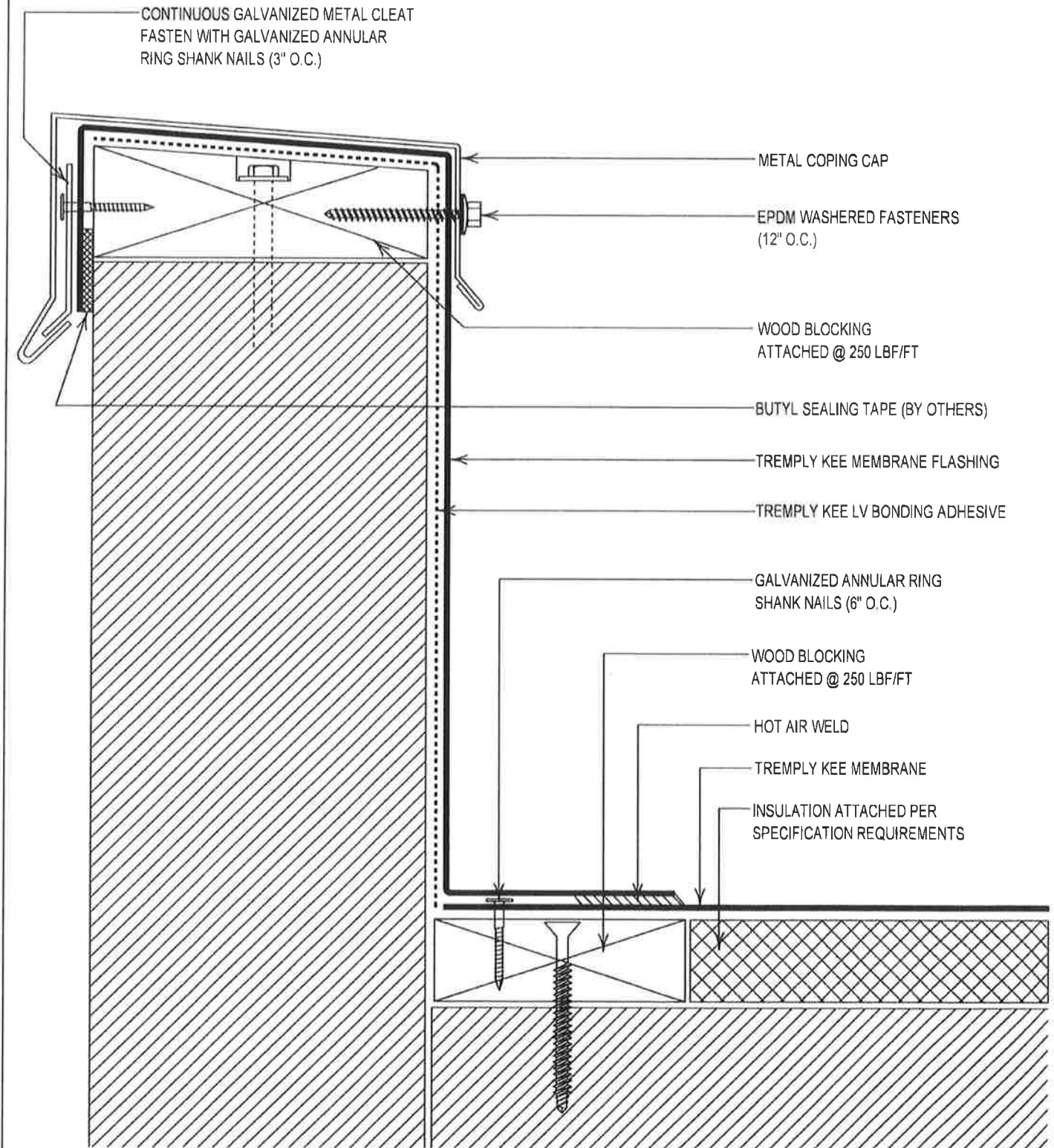
3.11 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to the Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements; repair substrates; and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.12 SOLAR INSTALLATION

- A. Install new OMG Power Grip Plus anchors with flange membrane to match roof membrane in Original location of removed anchors, heat weld anchor membrane to roof membrane, per manufactures specifications.
- B. Install solar panel brackets to roof mounted anchors, ensure all brackets to anchor connections are secure and in their original location.
- C. Install solar panels in their original location, ensure panels are securely mounted.
- D. Reconnect all electrical components, conduits, and solar panels to their original locations, ensure all components are watertight.
- E. All wood blocks will be replaced with new rubber blocks. Install DBR series Durablok or similar with adjustable all-thread. Wide pipe runs with multiple conduit lines will require two blocks with Unistrut in between to support the pipes.
- F. Solar installer will be required to certify in writing that the system is working properly.

END OF SECTION 075416



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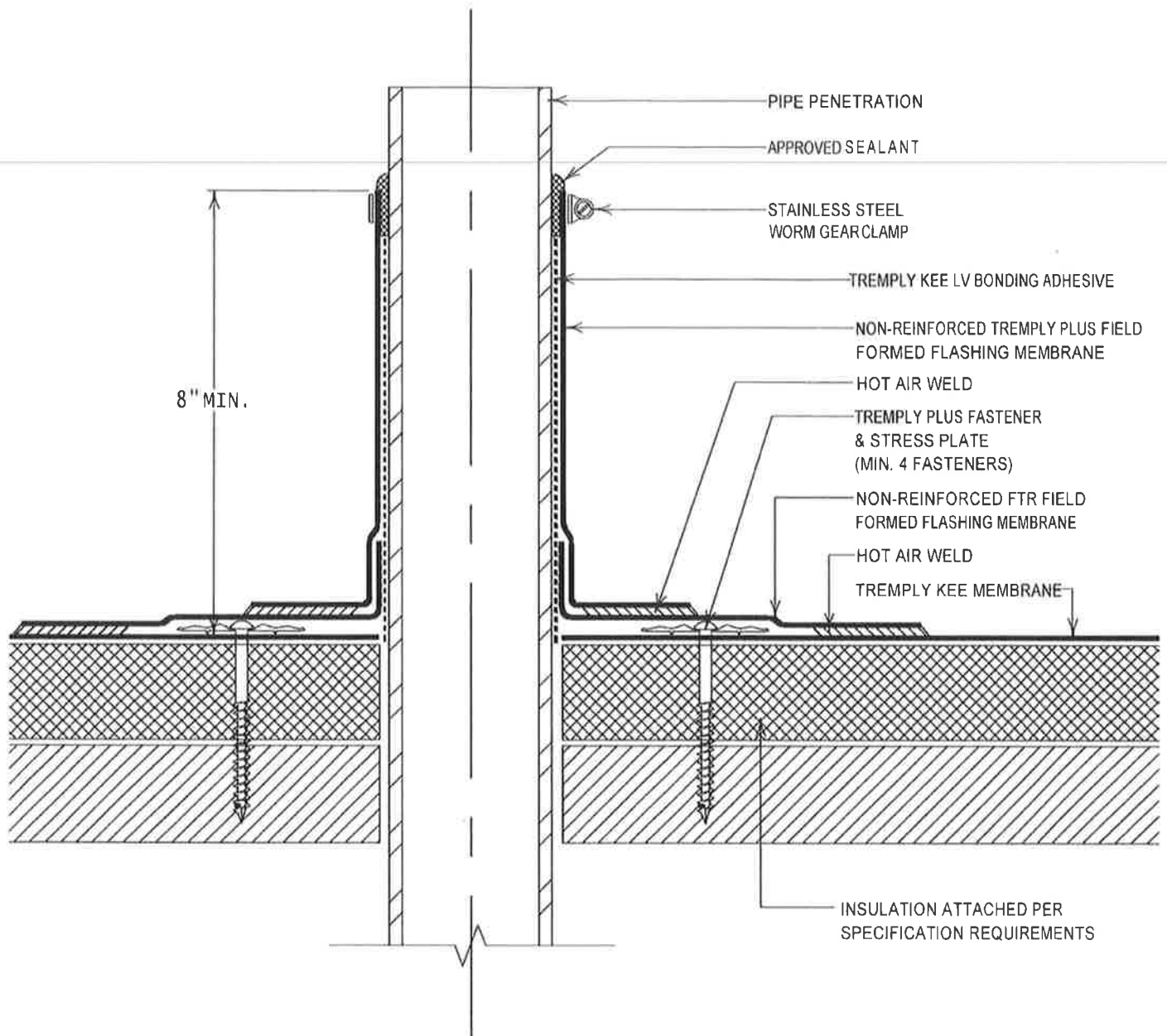
WALL FLASHING WITH
METAL CAP FLASHING

SCALE:

NTS

DRAWING No.:

DWG NO. 130



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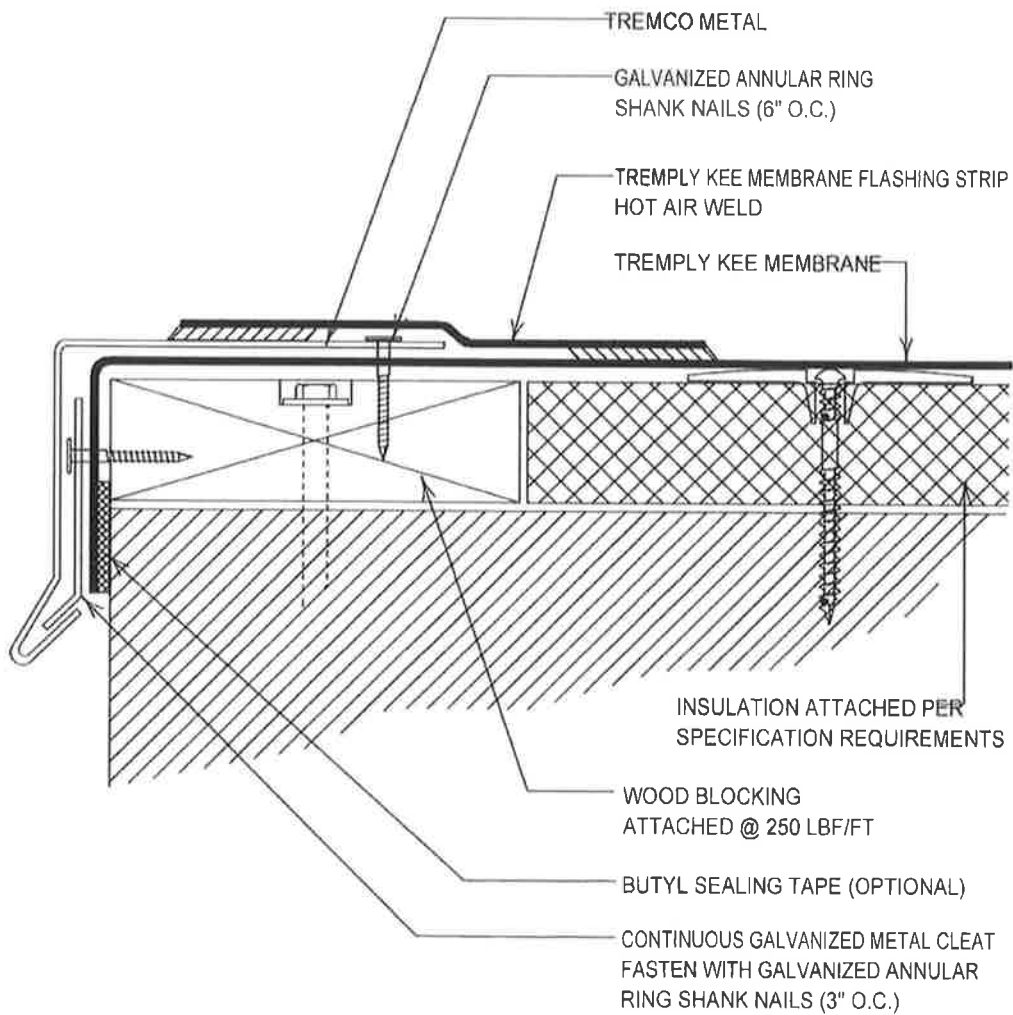
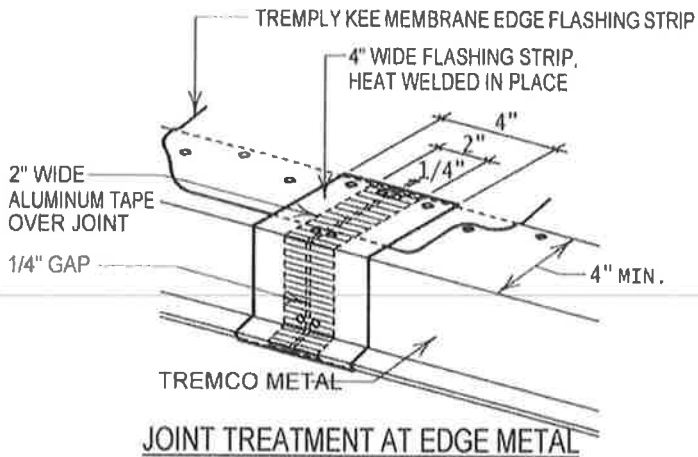
FIELD FABRICATED PIPE FLASHING

SCALE:

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SHEET TITLE:

TYPICAL EDGE FLASHING

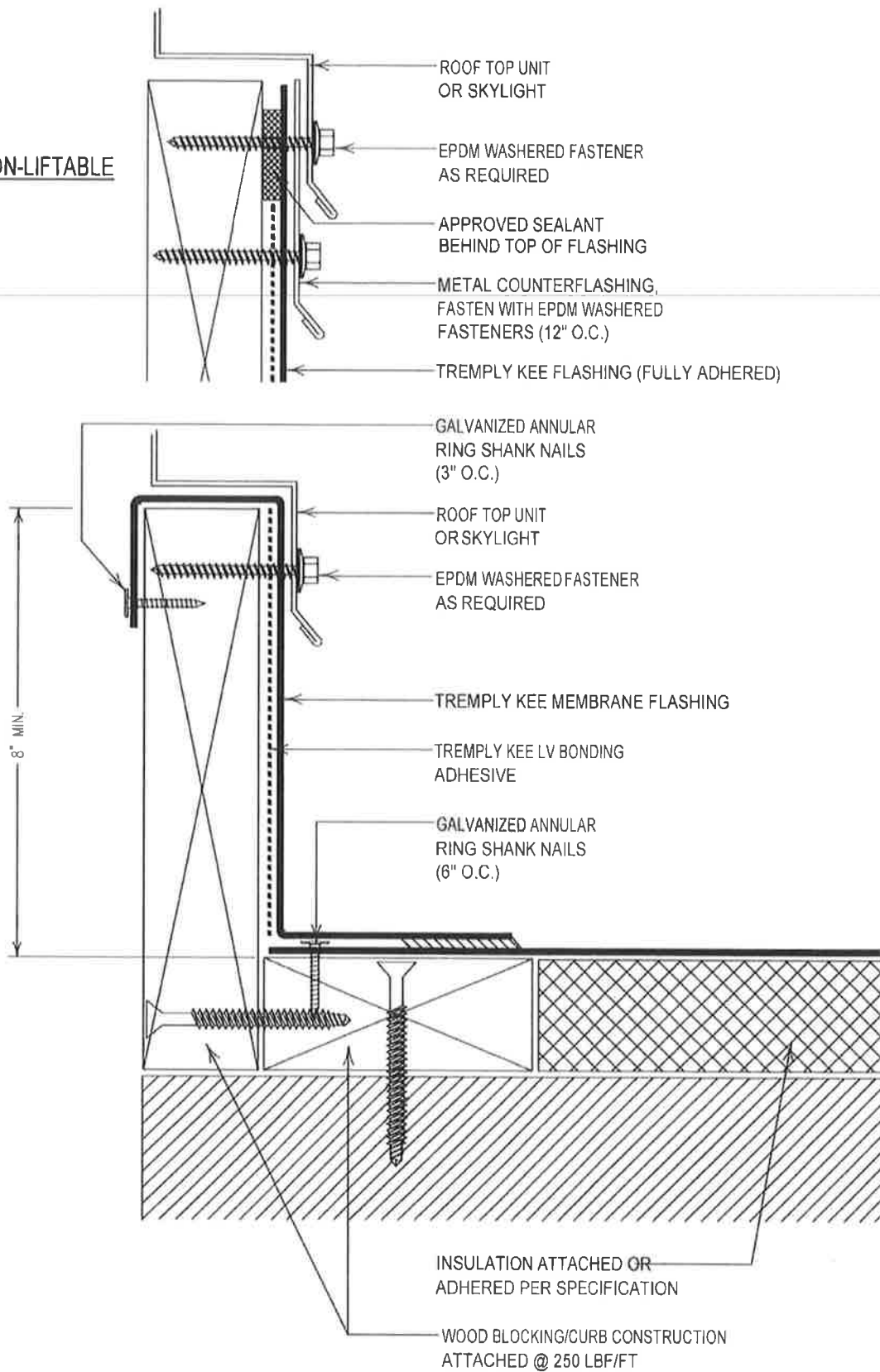
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NON-LIFTABLE



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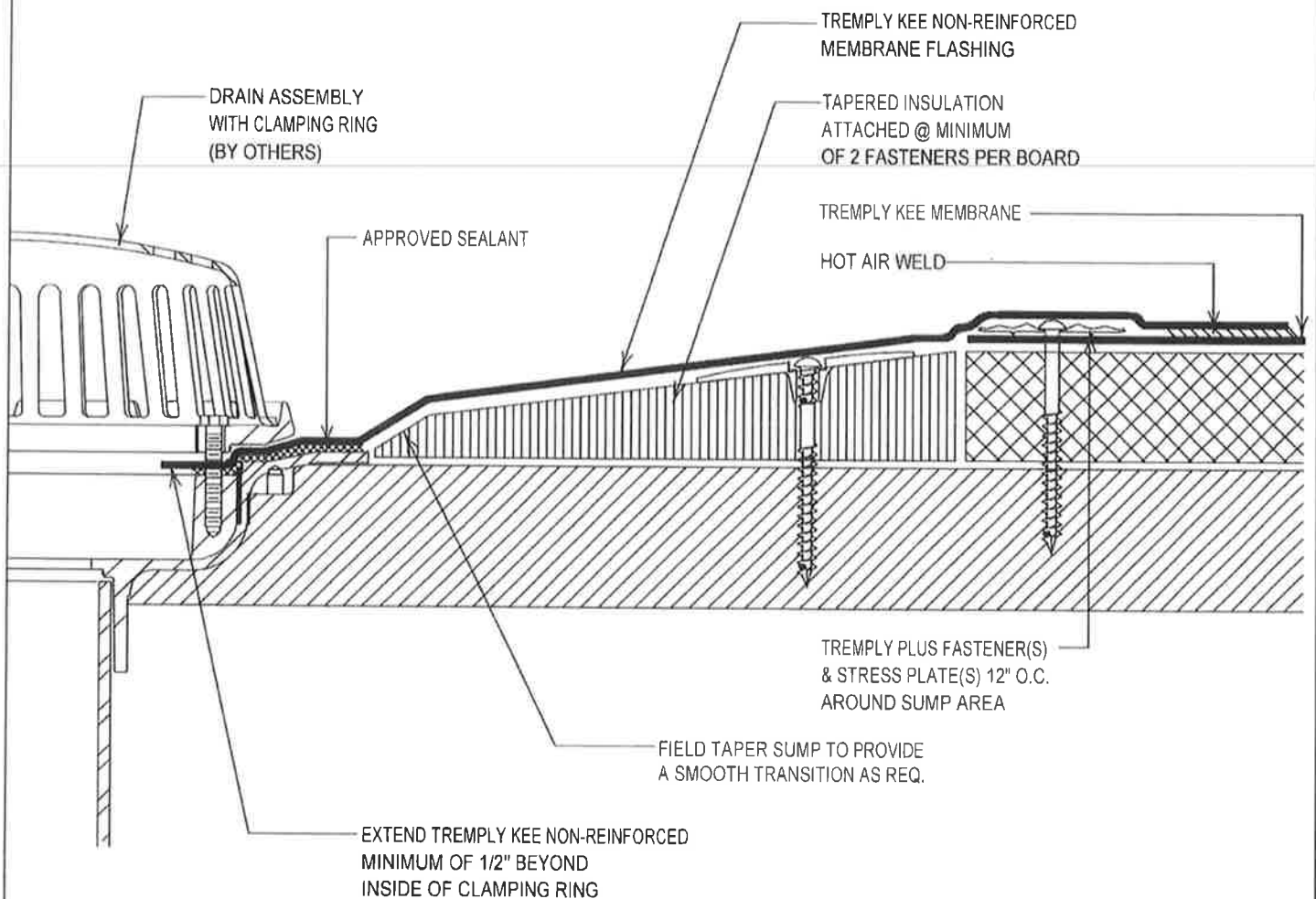
TYPICAL WOOD CURB OR SKYLIGHT

SCALE:

NTS

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NOTES

1. USE TAPERED ROOF INSULATION (EDGE STRIPS) TO CREATE DRAIN SUMP. IF TOTAL INSULATION THICKNESS IS LESS THAN OR EQUAL TO 1 1/2 IN., TAPER 12 IN. FROM THE DRAIN CENTER. IF TOTAL INSULATION THICKNESS IS GREATER THAN 1 1/2 IN., TAPER 18 IN. FROM DRAIN CENTER.

SHEET TITLE:

TYPICAL DRAIN FLASHING

SCALE:

NTS

DRAWING No.:

DWG NO. 113