

SECTION 070150.72 - REHABILITATION OF BUILT-UP ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Roof re-coating preparation.
2. Application of reinforced fluid-applied roof membrane and flashings over existing gravel-surfaced built-up asphalt roofing.

1.2 MATERIALS OWNERSHIP

A. Demolished materials shall become Contractor's property and shall be removed from Project site.

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D1079 "Standard Terminology Relating to Roofing and Waterproofing" and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" for definition of terms related to roofing work in this Section.
- B. Roofing Re-Coating Preparation: Existing roofing that is to remain and be prepared to accept restorative coating application.
- C. 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.
- D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- E. Existing to Remain: Existing items of construction that are not indicated to be removed.
- F. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- G. Demolition Waste: Building and site improvement materials resulting from re-roofing preparation, demolition or selective demolition operations.
- H. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.

1.4 ROOFING CONFERENCES

- A. Roofing Rehabilitation Preinstallation Conference: Conduct conference at Project site. Review methods and procedures related to roofing system.
1. Meet with Owner; roofing re-coating materials manufacturer's representative; roofing re-coating Installer including project manager and foreman; and installers whose work interfaces with or affects re-coating including installers of roof accessories and roof-mounted equipment requiring removal and replacement as part of the Work.
 2. Review methods and procedures related to re-coating preparation, including rehabilitation roofing system manufacturer's written instructions.
 3. Review drawings and specifications.
 4. Procedures for salvaging and recycling of demolition and construction waste.
 5. Review temporary protection requirements for existing roofing system that is to remain, during and after installation.
 6. Review roof drainage during each stage of re-coating and review roof drain plugging and plug removal procedures.
 7. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 8. Review base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect re-coating.
 9. Review HVAC shutdown and sealing of air intakes.
 10. Review shutdown of fire-suppression, -protection, and -alarm and -detection systems.
 11. Review governing regulations and requirements for insurance and certificates if applicable.
 12. Review procedures for asbestos removal or unexpected discovery of asbestos-containing materials.
 13. Review existing conditions that may require notification of Owner before proceeding.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Sustainable Design Submittals:
1. Product Test Reports: For roof coating, indicating that coated roof will comply with solar reflectance index requirement.

2. Indicate Food, Conservation, and Energy Act of 2008 Bio-based material requirement compliance.
 - a. Indicate type of bio-based material in product.
 - b. Indicate the percentage of bio-based content per unit of product.
 - c. Indicate relative dollar value of bio-based content product to total dollar value of product included in project.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer, Manufacturer, and Roofing Inspector.
 1. Letter written for this Project indicating manufacturer approval of Installer to apply specified products and provide specified warranty.
- B. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, and for dust control. Indicate proposed locations and construction of barriers.
- C. Product Test Reports: Upon request, submit reports based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of roofing rehabilitation system.
- D. Contractor's Product Certificate: Submit notarized certificate, indicating products intended for Work of this Section, including product names and numbers and manufacturers' names, with statement indicating that products to be provided meet the requirements of the Contract Documents.
 1. Provide manufacturer's UL listing certificate for roofing system.
- E. Warranties: Unexecuted sample copies of special warranties.
- F. Existing Conditions Photographs: Show existing conditions of adjoining construction and site improvements, including exterior finish surfaces adjacent to the Work, which might be misconstrued as having been damaged by re-coating operations. Submit before Work begins.
- G. Inspection Reports: Reports of Roofing Inspector. Include weather conditions, description of work performed, tests performed, defective work observed, and corrective actions required and carried out.
 1. Submit report within 48 hours after inspection.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: To include in maintenance manuals.
- B. Warranties: Executed copies of approved warranty forms.

1.8 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained by manufacturer, including a full-time on-site supervisor with a minimum of three years' experience installing products comparable to those specified, able to communicate verbally with Contractor, Architect, and employees, and the following:
1. Installer qualified by the manufacturer to install manufacturer's products and furnish warranty of type specified.
- B. Manufacturer Qualifications: Primary product manufacturer, that is UL listed for roofing system identical to that used for this Project, with minimum five years' experience in manufacture of comparable products in successful use in similar applications, and able to furnish warranty with provisions matching specified requirements.
1. Approval of Other Manufacturers and Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
 - a. Product data, including certified independent test data indicating compliance with requirements.
 - b. Samples of each component.
 - c. Sample submittal from similar project.
 - d. Project references: Minimum of five installations of specified products with Owner and contact information.
 - e. Sample warranty.
- C. 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 one of the following:
1. An authorized full-time technical employee of the manufacturer.
- D. Manufacturer's Installation Instructions: Obtain and maintain on-site access to manufacturer's written recommendations and instructions for installation of products.

1.9 PROJECT / FIELD CONDITIONS

- A. Weather Limitations: Proceed with rehabilitation work only when existing and forecasted weather conditions permit Work to proceed without water entering into existing roofing system or building.
1. Store all materials prior to application at temperatures recommended by manufacturer.

2. Apply coatings within range of ambient and substrate temperatures recommended by manufacturer.
 3. Do not apply roofing in snow, rain, fog, or mist.
- B. Protect building to be rehabilitated, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from rehabilitation operations.
 - C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
 - D. 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.
 - E. Owner will occupy portions of building immediately below re-coating area. Conduct re-coating 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.

1.10 WARRANTY

- A. Manufacturer's Warranty: Roof System Manufacturer's standard form in which Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within warranty period, as follows.
 1. Form of Warranty: Manufacturer's standard warranty form.
 2. Scope of Warranty: Work of this Section and including sheet metal details and termination details installed by the roof system Installer and approved by the Roof System Manufacturer.
 3. Warranty Period: 20 years from date of completion.
- B. 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, and 15 following completion.
- C. Installer Warranty: Installer's warranty signed by Installer, as follows.
 1. Form of Warranty: Form acceptable to Roofing Manufacturer and Owner.
 2. Scope of Warranty: Work of this Section.
 3. Warranty Period: 2 years from date of completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: The roof system specified in this Section is based upon products of Tremco, Inc., Beachwood, OH, (800) 562-2728, www.tremcoroofing.com that are named in other Part 2 articles. Provide specified products.
 - 1. Manufacturers of comparable products: Approved by Architect prior to bid.
- B. Source Limitations: Obtain components for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. General Performance: Rehabilitated roofing shall withstand exposure to weather without failure or leaks due to defective manufacture or installation.
 - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
- 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. Exterior Fire-Test Exposure: Roofing system exterior fire-test exposure performance following application of rehabilitation coating shall be not be less than that of the prerehabilitated roof performance when tested in accordance with ASTM E108, based upon manufacturer's tests of identical applications.
- D. Energy Performance: Provide rehabilitated roofing with an initial Solar Reflectance Index of not less than 78 when calculated according to ASTM E1980, based on testing identical products by a qualified testing agency.
- E. Bio-Based Content: Provide roofing rehabilitation coating materials meeting requirements of USDA Bio-based Affirmative Procurement Program, with not less than 20 percent bio-based content.

2.3 MATERIALS

- A. General: Rehabilitative materials recommended by roofing system coating 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.
 - 1. SBS-modified asphalt coated composite polyester / fiberglass/fiberglass mat reinforced high tensile strength base sheet, ASTM D4601 Type II.
 - a. Basis of design product: Tremco, BURmastic Composite Ply HT.

- b. Tensile Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction, 165 lbf/in (725 N); Cross machine direction, 150 lbf/in (660 N).
 - c. Tear Strength at 77 deg. F (25 deg. C), minimum, ASTM D5147: Machine direction, 260 lbf (1150 N); Cross machine direction, 230 lbf (1120 N).
 - d. Thickness, minimum, ASTM D5147: 0.060 inch (1.5 mm).
2. Cold-applied bio-based low odor urethane roofing adhesive, two-part, USDA BioPreferred, formulated for compatibility and use with specified roofing membranes and flashings.
- a. Basis of design product: Tremco, POWERply Endure BIO Adhesive TF.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3690: 0 g/L.
 - c. Low Temperature Flexibility, ASTM D2240: Pass at -30 deg F (-34 deg C).
 - d. Solids, by Volume, ASTM D2697: 100 percent.
 - e. Biobase Content, Minimum, ASTM D6866: 70 percent.
- C. Temporary Roof Drainage: Design and selection of materials for temporary roof drainage are responsibilities of the Contractor.

2.4 FLUID-APPLIED LEVELING COAT

- A. Polyurethane Elastomeric Fluid-Applied leveling coat formulated to be applied over gravel surfaced BUR roof systems
1. Fluid-applied roof leveling product consisting of low odor, polyurethane base coat with recycled content for roof coating over existing gravel.
 - a. Basis of design product: Tremco, AlphaGrade.
 - b. Solids, by volume, ASTM D 2697: 100 percent
 - c. Thickness: 256 mils (6.5 mm) applied at rate of 16 gal.s/100 sq. ft. (6.5 L/m²); level with top of aggregate.

2.5 FLUID-APPLIED ROOFING MEMBRANE

- A. Polyurethane Elastomeric Fluid-Applied System: Two-coat fluid-applied roofing membrane formulated for application over prepared existing roofing substrate.
1. Polyurethane Roof Coating System Base Coat: Bio-based, low-odor low-VOC two-part, for use with a compatible top coat.
 - a. Basis of design product: Tremco, AlphaGuard BIO Base Coat.

- b. Combustion Characteristics, UL 790: Maintains combustion characteristics of existing roof system.
 - c. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 1 g/L.
 - d. Accelerated Weathering, 5000 hours, ASTM G154: Pass.
 - e. Hardness, Shore A, minimum, ASTM D2240: 80.
 - f. Solids, by volume, ASTM D2697: 100 percent.
 - g. Bio-Based Content, Minimum: 70 percent.
 - h. Minimum Thickness, Base Coat non-reinforced over Smooth BUR, MB, Concrete, Single-Ply: 32 mils (0.81 mm) wet.
2. Polyurethane roof coating system top coat, bio-based low-odor low-VOC two-part, for application over compatible base coat.
- a. Basis of design product: Tremco, AlphaGuard BIO Top Coat.
 - b. Combustion Characteristics, UL790: Maintains combustion characteristics of existing roof system.
 - c. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 6 g/L.
 - d. Solar Reflectance Index (SRI), ASTM E1980: For white, not less than 103.
 - e. Accelerated Weathering, 5000 hours, ASTM G 154: Pass.
 - f. Hardness, Shore A, minimum, ASTM D2240: 81.
 - g. Solids, by volume, ASTM D2697: 100 percent.
 - h. Bio-Based Content, Minimum: 60 percent.
 - i. Minimum Thickness, non-reinforced system: 16 mils (0.40 mm) wet.
 - j. Minimum Thickness, non-reinforced system: 32 mils (0.81 mm)
 - k. Minimum Thickness, Slip-Resistant Coat: 24 mils (0.60 mm) wet.
 - l. Color: White.
- B. Primers:
1. Primer for Intercoat and Substrate Adhesion: Single-part, quick-drying primer to promote adhesion of urethane products to previous urethane coats and to other approved surfaces.
 - a. Basis of design product: Tremco, Geogard Primer.

- b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 100 g/L.
- c. Coverage Rate, 400 sq. ft/ gal. (10 m²/ L): 4 mils (0.10 mm) wet.

2.6 AUXILIARY 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. Seam Sealer: Waterproof seam and patching material compatible with applied coating.
 - 1. Seam Sealer: Aromatic polyurethane sealer, single-component, high solids, moisture curing, formulated for compatibility and use with a variety of roofing and flashing substrates.
 - a. Basis of design product: Tremco, GEOGARD Seam Sealer.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 189 g/L.
 - c. Tensile Strength, ASTM D412: 270 psi (1860 kPa).
 - d. Tear Strength, ASTM D412: 35 pli (6.13 kNm).
 - e. Elongation, ASTM D412: 220 percent.
 - f. Color: Gray.
- C. Seam, Flashing and Detail Reinforcing Fabric:
 - 1. Polyester Reinforcing and Protection Fabric: 100 percent stitch-bonded mildew-resistant polyester fabric intended for reinforcement of compatible fluid-applied membranes and flashings and as a protection layer under pavers or stone aggregates.
 - a. Basis of design product: Tremco, Permafab.
 - b. Tensile Strength, Minimum, ASTM D1682: 50 lbf (23 kg) avg..
 - c. Elongation, Minimum, ASTM D1682: 60 percent.
 - d. Tear Strength, Minimum, ASTM D1117: 16 lbf (7.3 kg) avg..
 - e. Weight: 3 oz./sq. yd (102 g/sq. m).
- D. Joint Sealant: Elastomeric joint sealant compatible with applied coating, with movement capability appropriate for application.
 - 1. Joint Sealant, Polyurethane: ASTM C920, Type S, Grade NS, Class 50 single-component moisture curing sealant, formulated for compatibility and use in dynamic and static joints; paintable.

- a. Basis of design product: Tremco, TremSEAL Pro.
 - b. Volatile Organic Compounds (VOC), maximum, ASTM D3960: 40 g/L.
 - c. Hardness, Shore A, ASTM C661: 40.
 - d. Adhesion to Concrete, ASTM C794: 35 pli.
 - e. Tensile Strength, ASTM D412: 350 psi (2410 kPa).
 - f. Color: Closest match to substrate.
- E. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine existing roofing substrates, with Installer present, for compliance with requirements and for other conditions affecting application and performance of roof coatings.
1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance.
 2. Verify compatibility of approved re-coating system with and suitability of substrates.
 3. Verify that substrates are visibly dry and free of moisture.
 4. Verify that roofing membrane surfaces have adequately aged to enable proper bond with re-coating system base coat.
 5. Verify that existing roofing membrane is free of blisters, splits, open laps, indications of shrinkage, and puncture damage or other indications of impending roof system failure.
 6. Commencing application of fluid-applied re-coating membrane indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Protect existing roofing system that is indicated not to be rehabilitated, and adjacent portions of building and building equipment.
1. Mask surfaces to be protected. Seal joints subject to infiltration by coating materials.
 2. Limit traffic and material storage to areas of existing roofing membrane that have been protected.
 3. Maintain temporary protection and leave in place until replacement roofing has been completed.

- B. Pollution Control: Comply with environmental regulations of authorities having jurisdiction. Limit spread of dust and debris.
 - 1. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 - 2. Remove debris from building roof by chute, hoist, or other device that will convey debris to grade.
- C. Shut down air intake equipment in the vicinity of the Work in coordination with the Owner. Cover air intake louvers before proceeding with re-coating work that could affect indoor air quality or activate smoke detectors in the ductwork.
 - 1. Verify that rooftop utilities and service piping affected by the Work have been shut off before commencing Work.
- D. 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. Do not permit water to enter into or under existing membrane roofing system components that are to remain.

3.3 ROOFING COATING PREPARATION

- A. Removal of Wet Insulation: Remove portions of roofing membrane with underlying wet insulation. Remove wet insulation, fill in tear-off areas to match existing insulation and membrane, and prepare patched membrane for application of roof coating specified below.
 - 1. Over wet area infills, patch roofing with three plies of trilaminate reinforced roofing plies adhered in solvent-free cold adhesive at a rate of 2.0 gallons per 100 square feet per ply. Extend patch perimeters onto prepared (spudded) existing built-up roofing and seal with a three-course application of seam sealer and fabric.
- B. Membrane Surface Preparation:
 - 1. Remove gravel surfacing from roofing membrane by means of wet vacuum.
 - 2. Remove walkway pads, pavers and accessories from roofing membrane. Discard damaged pavers. Recycle pavers.
 - 3. Remove blisters, ridges, buckles, roofing membrane fastener buttons projecting above the membrane, and other substrate irregularities from existing roofing membrane that would inhibit application of uniform, waterproof coating.
 - 4. Broom clean existing substrate.

5. Substrate Cleaning: Clean substrate of contaminants such as dirt, debris, oil, and grease that can affect adhesion of coating by power washing at maximum 2,000 psi (13,800 kPa).
 - a. Dispose of waste water in accordance with requirements of authorities having jurisdiction.
 6. Verify that existing substrate is dry before proceeding with application of coating. Spot check substrates with an electrical capacitance moisture-detection meter.
 7. Verify adhesion of new products.
- C. Existing Flashing and Detail Preparation: Repair flashings, gravel stops, copings, and other roof-related sheet metal and trim elements. Reseal joints, replace loose or missing fasteners, and replace components where required to leave in a watertight condition.
1. 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.
 2. Roof Drains: Remove drain strainer and clamping ring. Grind metal surfaces down to clean, bare, metal.
- D. Surface Priming: Prime surfaces to receive fluid-applied coating as recommended by manufacturer for each substrate material. Apply products at rate recommended by manufacturer.
1. Gravel surfaces do not require primer; metal and plastic surfaces must be primed.
 2. Ensure primer does not puddle and substrate has complete coverage.
 3. Allow to cure completely prior to application of coating.
- E. Membrane Repair: Repair membrane at locations with irregularities using seam sealer mastic and reinforcing fabric.
1. Where size of repair necessitates patching, use ply sheet and adhesive materials specified in this section.
- F. Membrane Seam Reinforcement: Reinforce membrane seams using seam sealer mastic and reinforcing fabric overlapping onto a field of existing membrane not less than width required by roof coating manufacturer.
- 3.4 FLUID-APPLIED FLASHING APPLICATION
- A. Prior to application of the leveling coat, remove embedded gravel and install fluid-applied flashings at drains, scuppers and facias. Apply fluid-applied flashings to curbs, walls and penetrations after leveling coat is applied. Ensure finished application is free of pin holes, voids or openings in the fabric reinforcement.

- B. Fluid-Applied Flashing and Detail Base Coat Application: Complete base coat and fabric reinforcement at parapets, curbs, penetrations, and drains prior to application of field of fluid-applied membrane. Apply base coat in accordance with manufacturer's written instructions.
1. Apply base coat on prepared and primed surfaces and spread coating evenly. Extend coating minimum of 8 inches (200 mm) up vertical surfaces and 4 inches (100 mm) onto horizontal surfaces.
 2. Back roll to achieve minimum coating thickness as follows, unless additional thickness is recommended by manufacturer; verify thickness of base coat as work progresses.
 3. Fabric Reinforcement: Embed fabric reinforcement into wet base coat. Lap adjacent flashing pieces of fabric minimum 3 inches (75 mm) along edges and 6 inches (150 mm) at end laps.
 - a. Roll surface of fabric reinforcing to completely embed and saturate fabric. Leave finished base coat with fabric free of pin holes, voids, or openings.
 4. Roof Drains: Install base coat onto surrounding membrane surface and metal drain bowl flange. Install target piece of fabric reinforcement immediately into wet base coat and roll to fully embed and saturate fabric. Reinstall clamping ring and strainer following application of top coat. Replace broken drain ring clamping bolts.
 5. Following curing of base coat, sand raised or exposed edges of fabric reinforcement prior to application of subsequent coatings.

3.5 FLUID-APPLIED LEVELING COAT APPLICATION

- A. Prior to application of the leveling coat, remove embedded gravel and install fluid-applied flashings at drains, scuppers and facias. Apply fluid-applied flashings to curbs, walls and penetrations after leveling coat is applied. Ensure finished application is free of pin holes, voids or openings in the fabric reinforcement.
- B. Apply leveling coat to field of roof in accordance with manufacturer's written instructions.
1. Apply to thickness indicated under Part 2 product listing unless greater thickness is recommended by manufacturer.
 2. Allow leveling coat to cure before applying fluid base coat.

3.6 FLUID-APPLIED MEMBRANE APPLICATION

- A. Prime leveling coat prior to application of base coat if base coat is not applied within 72 hours following the leveling coat application, using manufacturer's recommended primer.
- B. Fluid-Applied Membrane Base Coat Application: Apply base coat to field of membrane in accordance with manufacturer's written instructions.
1. Apply base coat on prepared and primed surfaces and spread coating evenly.

2. Back roll to achieve minimum coating thickness as follows, unless greater thickness is recommended by manufacturer; verify thickness of base coat as work progresses.
- C. Top Coat Application: Apply top coat to field of membrane and flashings uniformly in a complete, continuous installation.
1. Following curing of base coat and prior to application of top coat, sand raised or exposed edges of fabric reinforcement.
 2. Allow base coat to cure prior to application of top coat.
 3. Prime base coat prior to application of top coat if top coat is not applied within 72 hours of the base coat application, using manufacturer's recommended primer.
 4. Apply top coat extending coating up vertical surfaces and out onto horizontal surfaces. Install top coat over field base coat and spread coating evenly.
 5. Apply top coat and back roll to achieve not less than minimum coating thickness indicated in Part 2 product listing, unless greater thickness is recommended by manufacturer. Verify application thickness as work progresses.
 6. Avoid foot traffic on new fluid-applied membrane for a minimum of 24 hours.
- D. Joint Sealant: Apply joint sealant at terminations of coating application and in locations required for complete weathertight application.

3.7 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. Roof Inspection: Engage roofing system manufacturer's technical personnel to inspect roofing installation, and submit report. Notify Owner 48 hours in advance of dates and times of inspections. Inspect work as follows:
1. Upon completion of preparation of roof coating substrate, prior to application of coating materials.
 2. Following application of coating to flashings and application of base coat to field of roof.
 3. Upon completion of coating but prior to re-installation of other roofing components.
- C. Repair fluid-applied membrane where inspections indicate that they do not comply with specified requirements.
- D. Arrange for additional inspections, at Contractor's expense, to verify compliance of replaced or additional work with specified requirements.

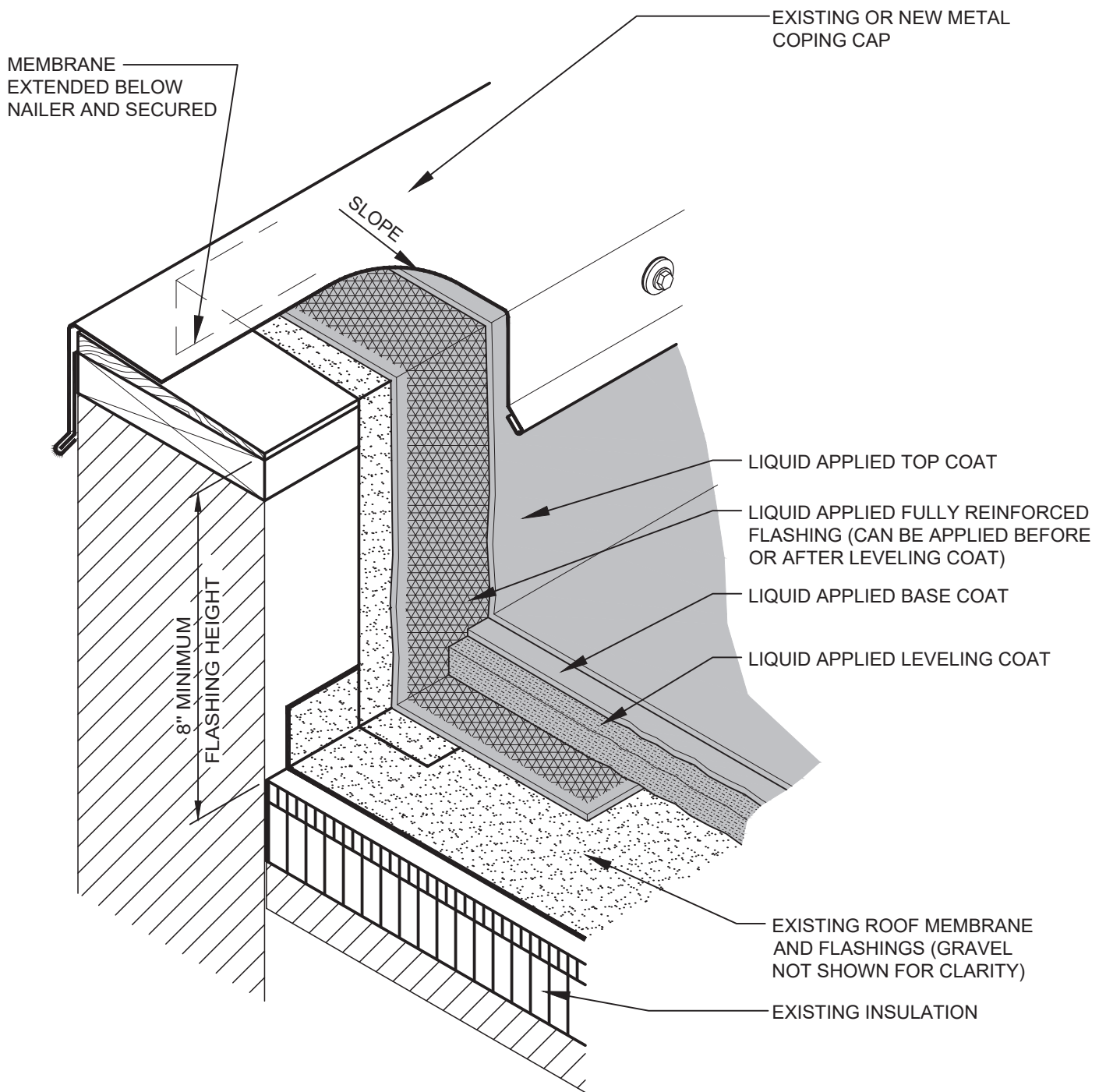
3.8 DISPOSAL

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

3.9 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period.
- B. Correct deficiencies in or remove coating that does not comply with requirements, repair substrates, and reapply coating.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 070150.72



NOTES

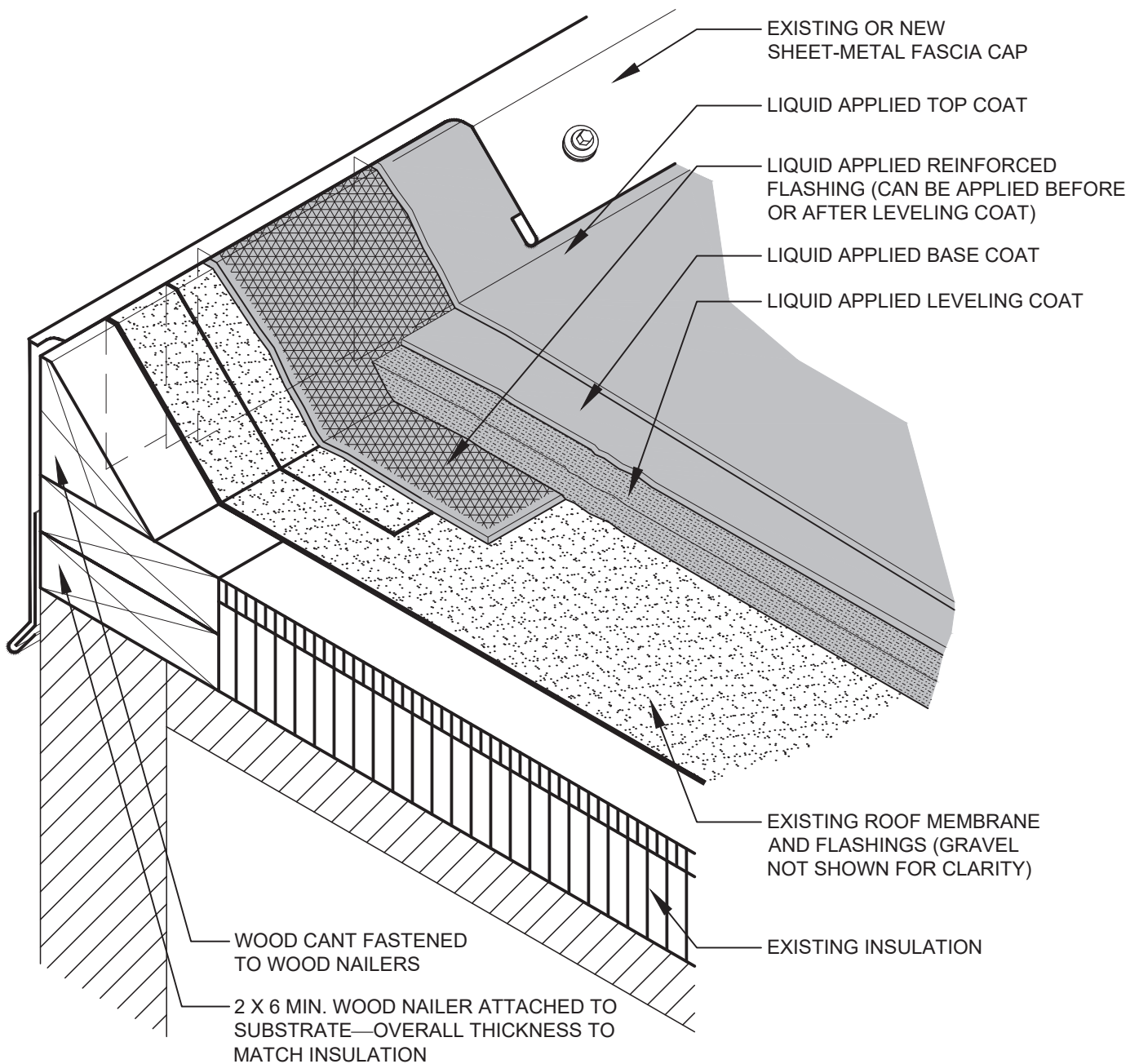
1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

**BASE FLASHING AT PARAPET WALL
WITH METAL COPING
GRAVEL BUR RESTORATION**

LA-GR-1

N.T.S.





NOTES

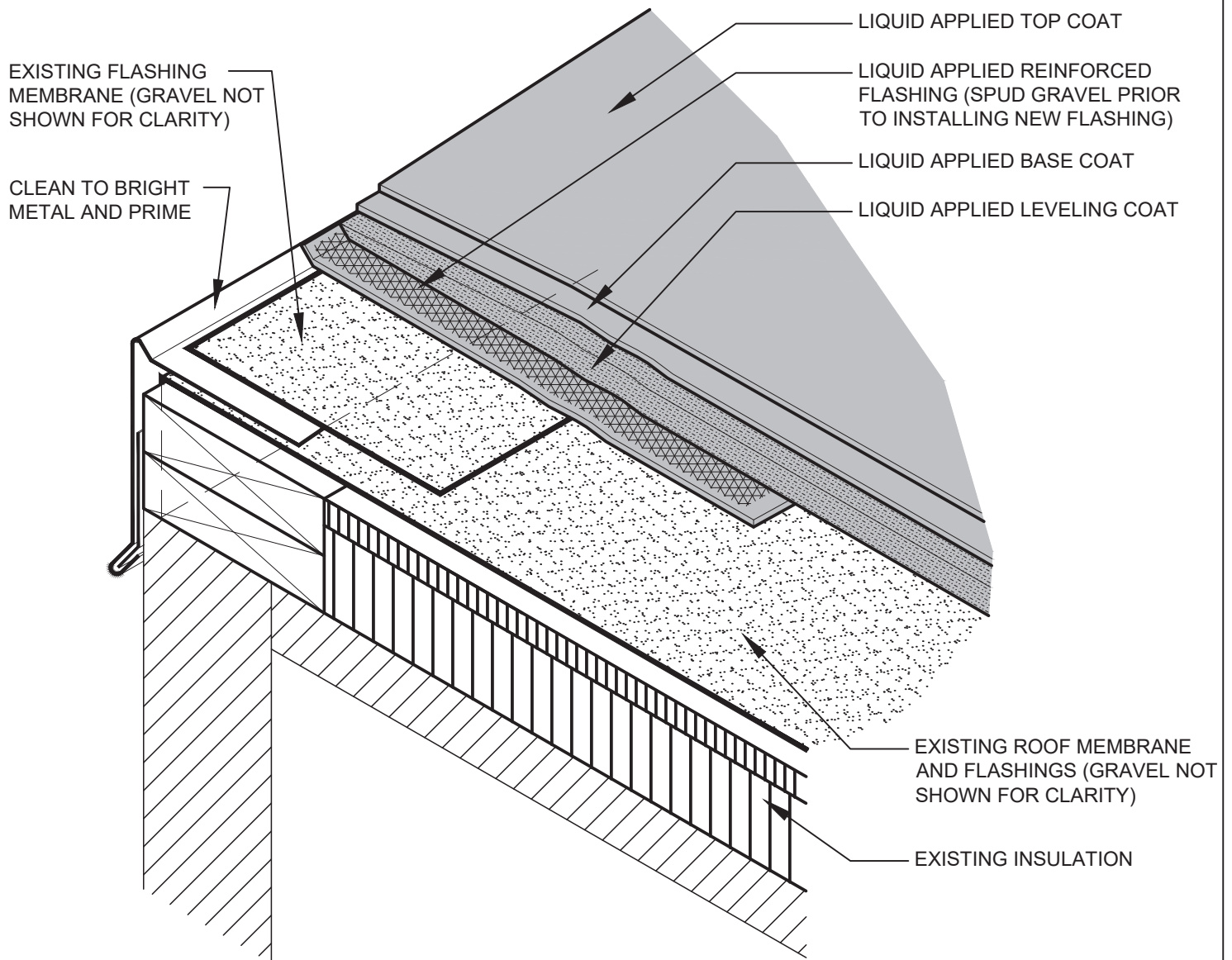
1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

**RAISED PERIMETER EDGE
WITH METAL FLASHING
GRAVEL BUR RESTORATION**

LA-GR-2

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE



NOTES

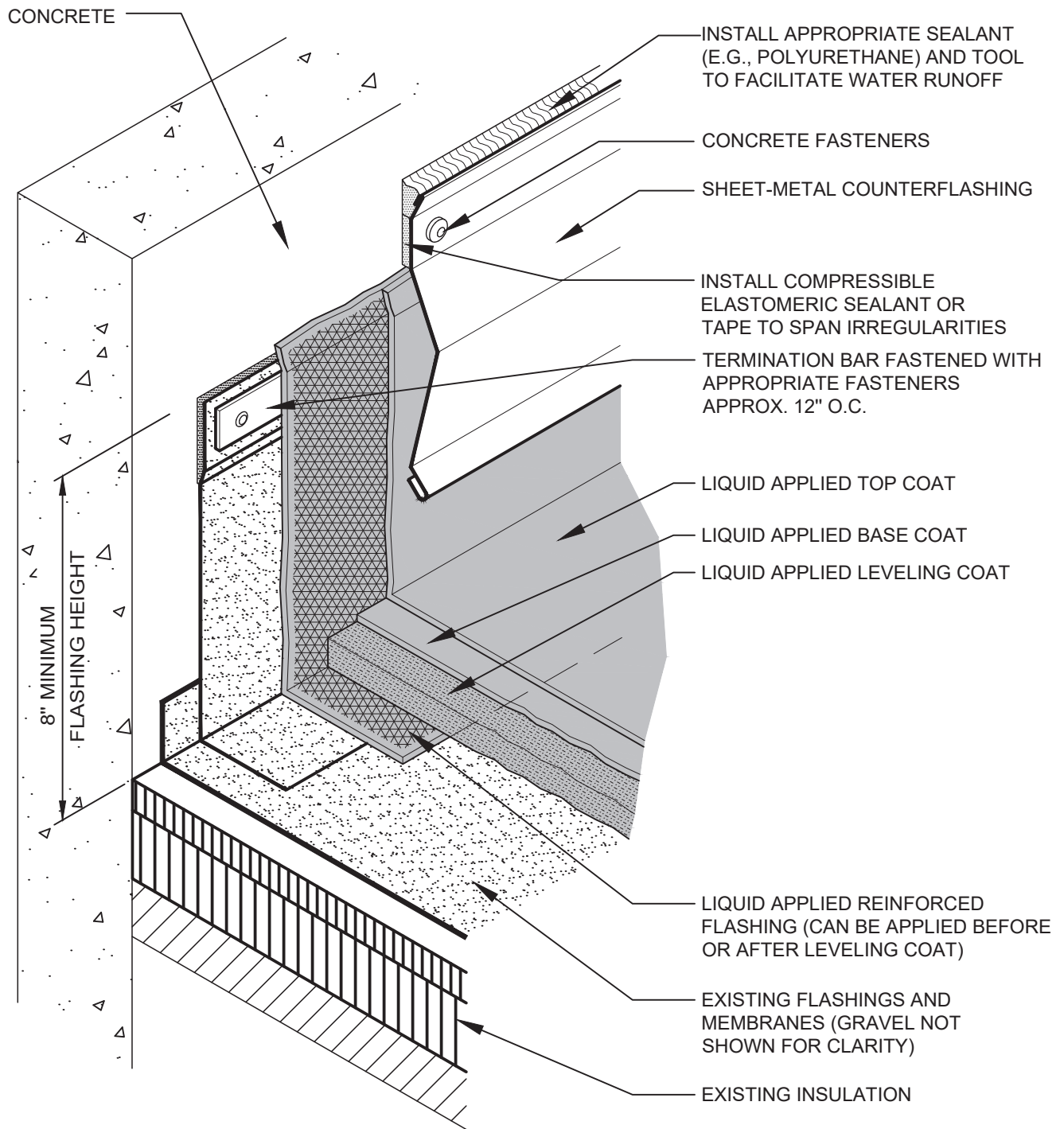
1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

**EMBEDDED EDGE-METAL
FLASHING [GRAVEL STOP]
GRAVEL BUR RESTORATION**

LA-GR-3

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE



NOTES

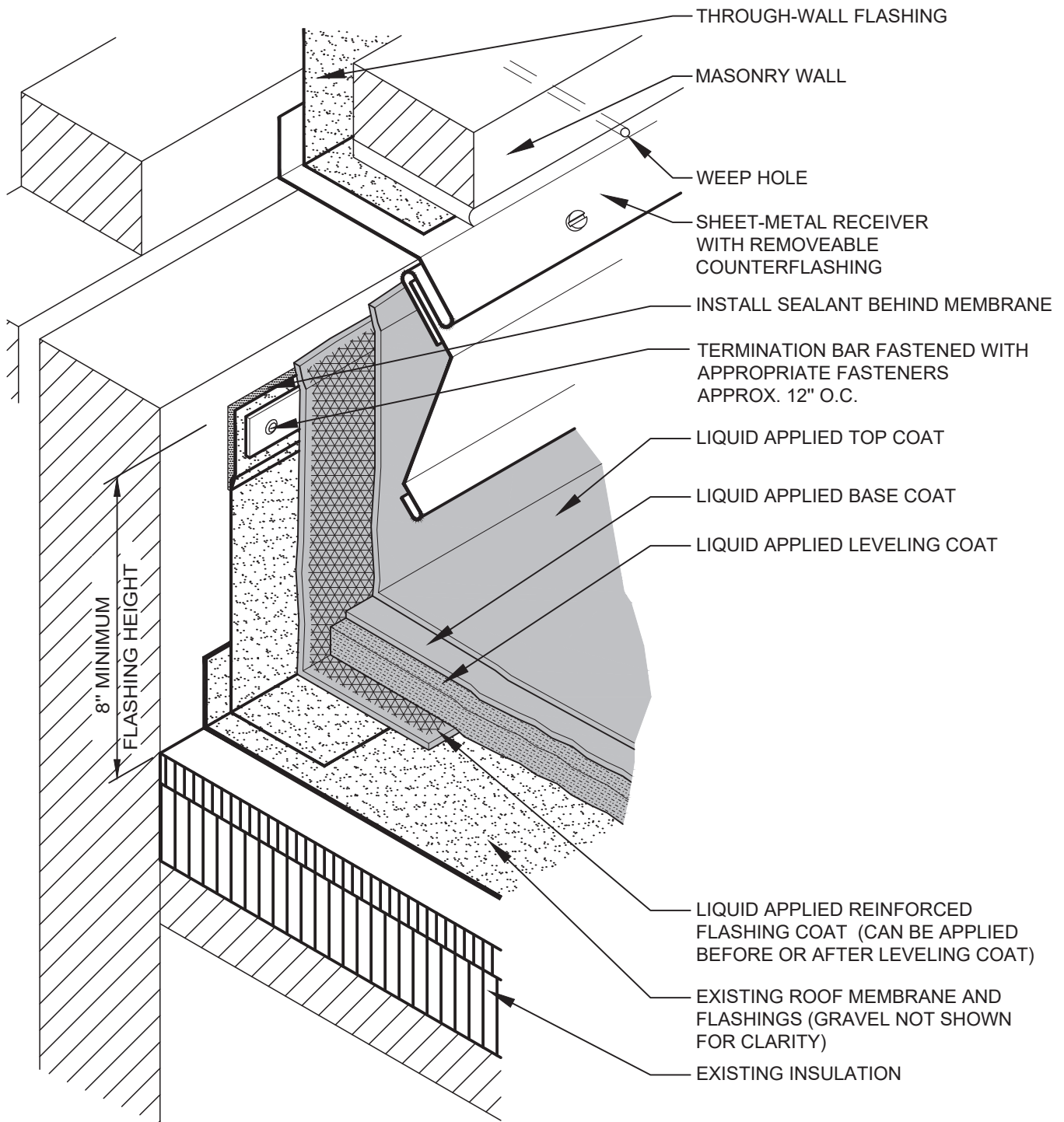
1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

BASE FLASHING WITH SURFACE-MOUNTED COUNTERFLASHING AT CONCRETE WALL GRAVEL BUR RESTORATION

LA-GR-5

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE



NOTES

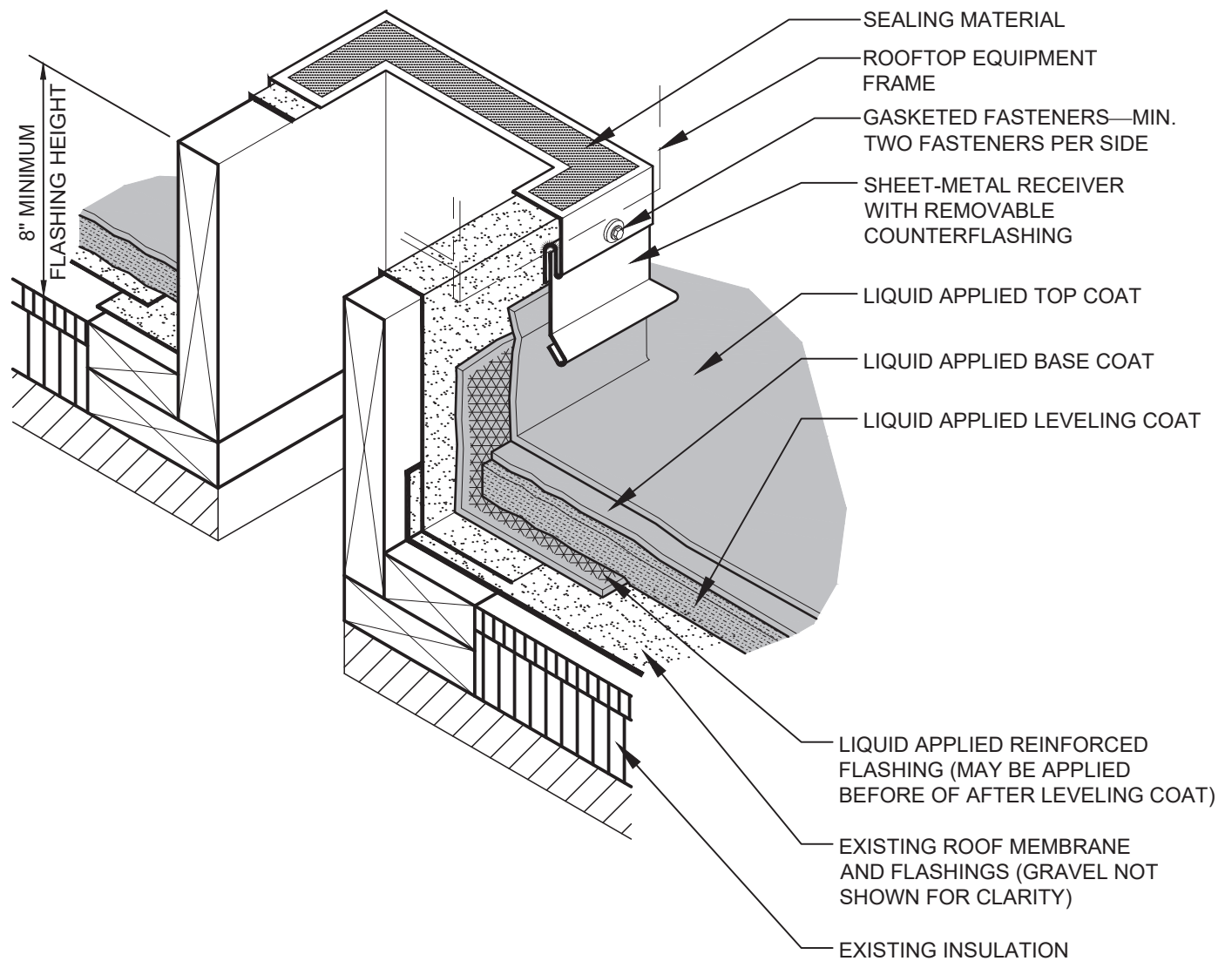
1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

BASE FLASHING WITH TWO-PIECE SHEET-METAL COUNTERFLASHING GRAVEL BUR RESTORATION

LA-GR-6

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE



NOTES

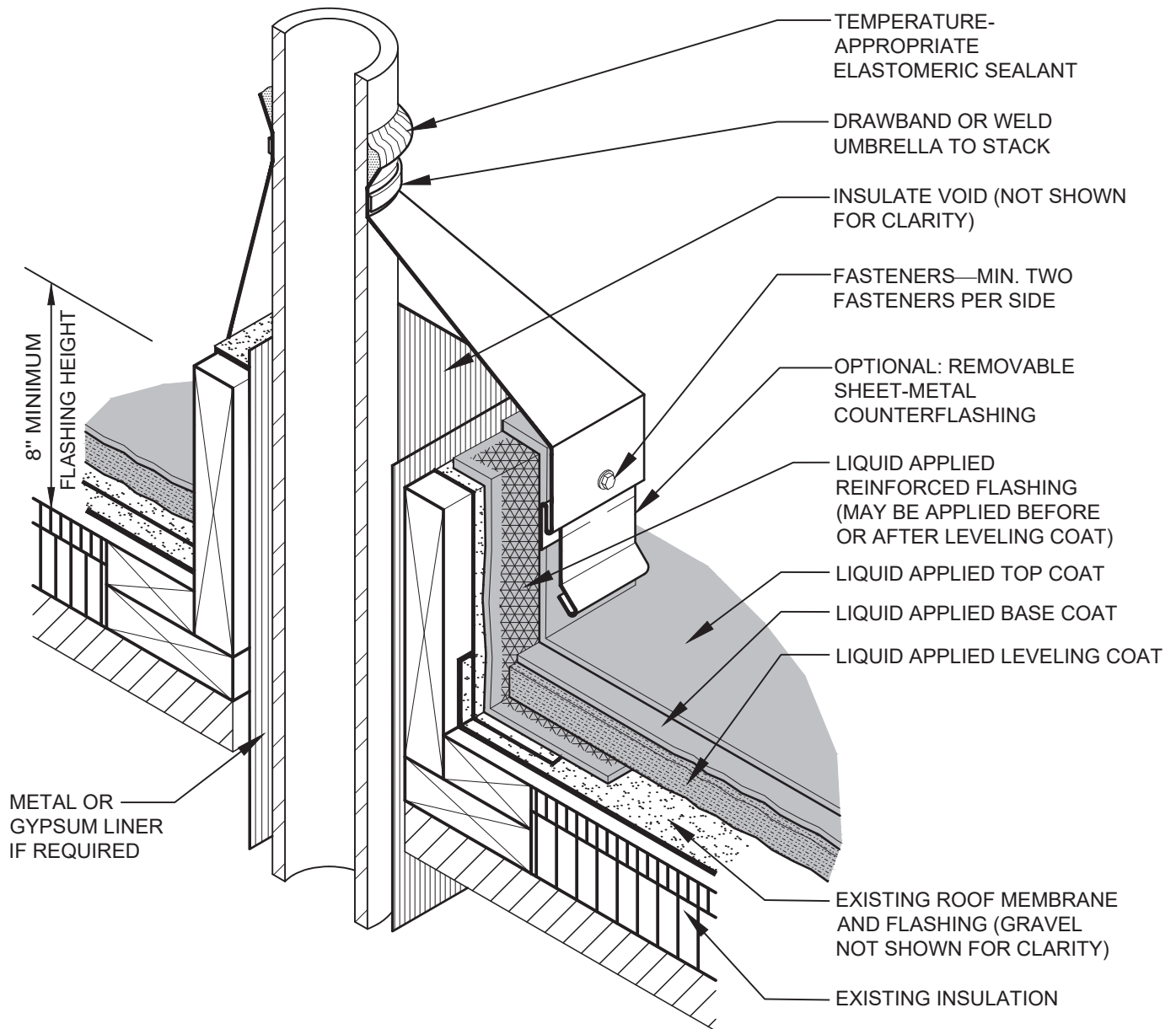
1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

**BASE FLASHING AT WOOD CURB
GRAVEL BUR RESTORATION**

LA-GR-13

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE



NOTES

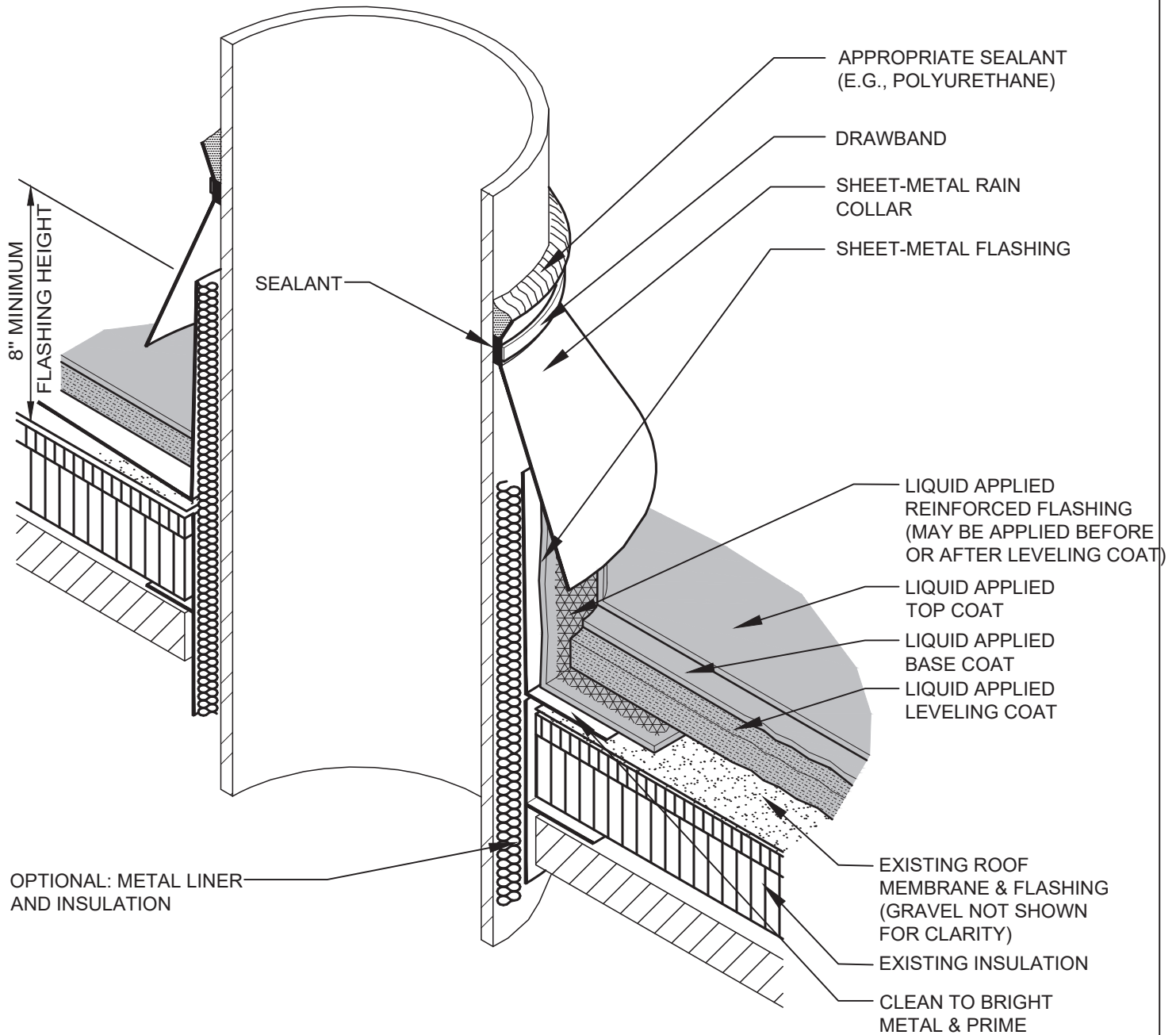
1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

**BASE FLASHING AT STACK
VENT WITH CURB [HOT OR COLD]
GRAVEL BUR RESTORATION**

LA-GR-17

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE



NOTES

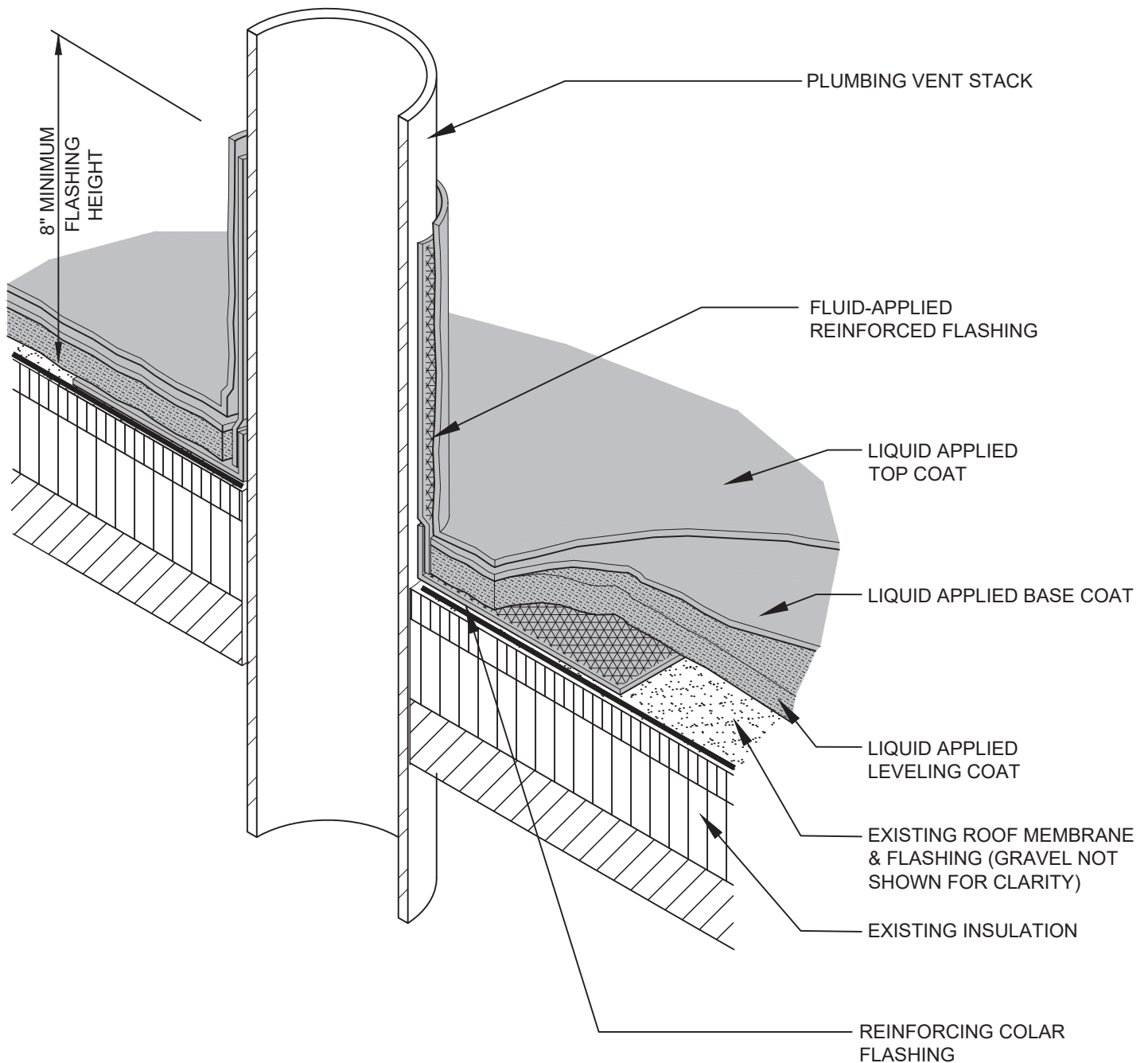
1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

SHEET-METAL STACK VENT [HOT OR COLD]
GRAVEL BUR RESTORATION

LA-GR-18

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE



NOTES

1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

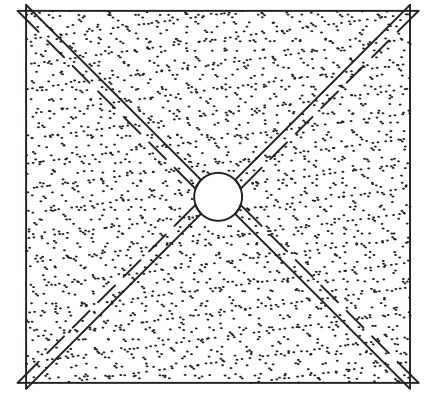
PLUMBING VENT OR PIPE PENETRATION GRAVEL BUR RESTORATION

LA-GR-19

N.T.S.

TREMCO
ROOFING & BUILDING MAINTENANCE

DRAIN STRAINER



CUT REINFORCEMENT INTO TRIANGLES AND OVERLAP INTO BOWL.

CLAMPING RING

TRIM EXISTING FLASHINGS TO WHERE BOWL TURNS DOWN. ENSURE NEW FLASHINGS FULLY ENCAPSULATES OLD FLASHINGS.

DECK CLAMP

EXTEND LIQUID APPLIED SYSTEM INTO DRAIN

CAST-IRON DRAIN BOWL

CLEAN TO BRIGHT METAL AND PRIME

LIQUID APPLIED REINFORCED FLASHING (SPUD GRAVEL PRIOR TO INSTALLING NEW REINFORCED FLASHING)

EXISTING INSULATION SUMP

EXISTING ROOF MEMBRANE (GRAVEL NOT SHOWN FOR CLARITY)

LIQUID APPLIED TOP COAT

LIQUID APPLIED BASE COAT

LIQUID APPLIED LEVELING COAT

NOTES

1. PRIMING OF THE SUBSTRATE MAY BE REQUIRED, FOLLOW SPECIFICATIONS AND MANUFACTURER RECOMMENDATIONS.
2. REINFORCEMENT MUST BE FULLY SATURATED OR ENCAPSULATED IN BASE COAT AS DESCRIBED IN SPECIFICATIONS.
3. REMOVE EXISTING FLASHINGS PRIOR TO INSTALLATION OF NEW FLUID APPLIED SYSTEMS.
4. THE EXISTING LOOSE GRAVEL MUST BE REMOVED AND THE ROOF MUST BE REPAIRED PER MANUFACTURER REQUIREMENTS PRIOR TO APPLICATION OF THE LEVELING COAT.

ROOF DRAIN GRAVEL BUR RESTORATION

LA-GR-24

N.T.S.

