

NOTICE
(RFP # 2024-019)

The City of Mercedes is requesting sealed Requests for Proposals (RFP) from qualified individuals/firms to provide **ROOF IMPROVEMENTS TO MERCEDES CITY HALL**. Qualified applicants are invited to submit qualifications and proposals for the provision of these services. In order to be considered, proposals must address each of the requests for information included in this document.

All addenda, notices, additional information, etc. will be posted on the City of Mercedes website at www.cityofmercedes.com.

One (1) original copy of the proposal and one (1) electronic copy must be sealed and returned to the City of Mercedes, City Hall, no later than **3:00 p.m. CST on Wednesday, September 11, 2024**, to the attention of:

City Manager
Mercedes City Hall
400 S. Ohio Ave.
Mercedes, TX 78570

All proposals must be clearly marked with **“RFP 2024-019 – City Hall Roofing Improvements.”** Proposer is responsible for delivery of response by the date and time set for the closing of the proposal acceptance. Responses received after the date and time set for the closing will not be considered.

The City of Mercedes reserves the right to reject any and all proposals and waive informalities in proposals received.

All inquiries concerning the RFP must be made in writing and addressed to the address or email address listed below, with e-mail being the preferred method.

City of Mercedes
Joselynn Castillo
City Secretary
400 S. Ohio Ave.
Mercedes, TX 78570
Phone: 956-565-3114
Email: jcastillo@cityofmercedes.com

Joselynn Castillo
City Secretary



Bid Form and Specifications
City Hall Roofing Improvements

400 S. Ohio
Mercedes, Texas

2024-019



Prepared By:

Isael Posadas
8/2/24

SDI ENGINEERING, LLC

FIRM REGISTRATION NO. F-13016

Civil • Utility Systems • Project Management

BID PROPOSAL FORM
City of Mercedes – 2024-019 City Hall Roofing Improvements

MERCEDES, TEXAS

JOSELYNN CASTILLO
CITY SECRETARY
CITY OF MERCEDES
400 S. OHIO AVE.
MERCEDES, TEXAS 78570

The undersigned, as bidder(s), declares that the only person or parties interested in this proposal as principals are those named herein, that this proposal is made without collusion with any other person, firm or corporation; that he has carefully examined the Form of Contract, Notice to Bidders, General Conditions, Special Provisions, Measurement and Basis of Payment, specifications and the plans thereon referred to, and has carefully examined the locations, and conditions and classes of materials of the proposed work; and agrees that he will provide all the necessary labor, machinery, tools, and apparatus, and other items incidental to construction, and will do all the work and furnish all the materials called for in the contract and specifications in the manner prescribed therein and according to the requirements of the Engineer as therein set forth.

It is understood that the following quantities of work to be done at unit prices are approximate only and are intended principally to serve as a guide in evaluating bids.

It is further agreed that the quantities of work to be done at unit price and materials to be furnished, may be increased or diminished as may be considered necessary, in the opinion of the Engineer, to complete the work fully as planned and contemplated, and that all quantities of the work, whether increased or decreased, are to be performed at the unit prices set forth below except as provided for in the specifications.

It is further agreed that lump sum prices may be increased to cover additional work ordered by the Engineer, but not shown on the plans or required by the specifications, in accordance with the provisions of the General Conditions. Similarly, they may be decreased to cover deletion of work so ordered.

The 5% bid security accompanying this proposal shall be returned to the bidder, unless in case of the acceptance of the proposal the bidder shall fail to execute a contract and file a performance bond and payment bond within the ten (10) days after its acceptance, in which case the bid security shall become the property of the OWNER, and shall be considered as payment for damages due to delay and other inconveniences suffered by the Owner on account of such failure of the bidder. It is understood that the Owner reserves the right to reject any or all bids.

ORIGINAL BID PROPOSAL FORM MUST BE SUBMITTED ALONG WITH THE BID AND CONTRACT DOCUMENTS BOOKLET

BIDDERS BOND in the amount of \$_____, (5%) of the greatest amount bid in compliance with the INSTRUCTION TO BIDDERS.

The above Cashiers Check or Bidder's Bond is to become the property of the OWNER, in the event the construction contract (when offered by the Owner) and bonds are not executed within the time set forth.

IMPORTANT NOTES:
For information regarding the method UNIT ITEMS are to be MEASURED AND PAID, please refer to the "MEASUREMENT AND BASIS OF PAYMENT" Section attached and made part of this Proposal.

ESTIMATED QUANTITIES: CITY HALL ROOFING IMPROVEMENTS

Item No.	Estimated Quantity	Unit	Item Description	Unit Price	Total
1.	1	LS	Installation of a re-roofing to existing BUR roof system with a spray polyurethane foam system and fluid applied elastomeric roof coating to approximately 10,850 SF roof , as per plans and specifications, all complete and in place per lump sum (LS) for	\$_____	\$_____
2.	1	LS	Installation of Existing HVAC Units on pre-engineered/manufactured curbs (2 Each) , new galvanized steel manufactured curbs shall be graded and installed to accommodate downdraft or side discharge HVAC units. The finished grade of the top of manufactured curb shall be 8 inches (minimum) above new roof level, as per plans and specifications, all complete and in place per lump sum (LS) for	\$_____	\$_____
3.	1	LS	Gutter and Down Spouts 6" X 6", 24 gauge with Kynar finish , as per plans and specifications, all complete and in place per lump sum (LS) for	\$_____	\$_____

TOTAL IMPROVEMENTS (items 1- 3) \$_____

The undersigned agrees, unless hereinafter stated otherwise, to furnish all materials as shown and specified in the Plans and Specifications.

The Bidder hereby agrees to commence work under this contract within 10 days after "NOTICE TO PROCEED" is issued, and to complete all the work in the Contract within **60 Calendar Days**.

The undersigned bidder acknowledges the receipt of the following addenda:

ADDENDUM NO.	DATE	BY
ADDENDUM No. 1		
ADDENDUM No. 2		
ADDENDUM No. 3		

DATE: _____

BY: _____
(Signature)

(Type or Print Name)

(Title)

(Company)

(Address)

(City, State, Zip)

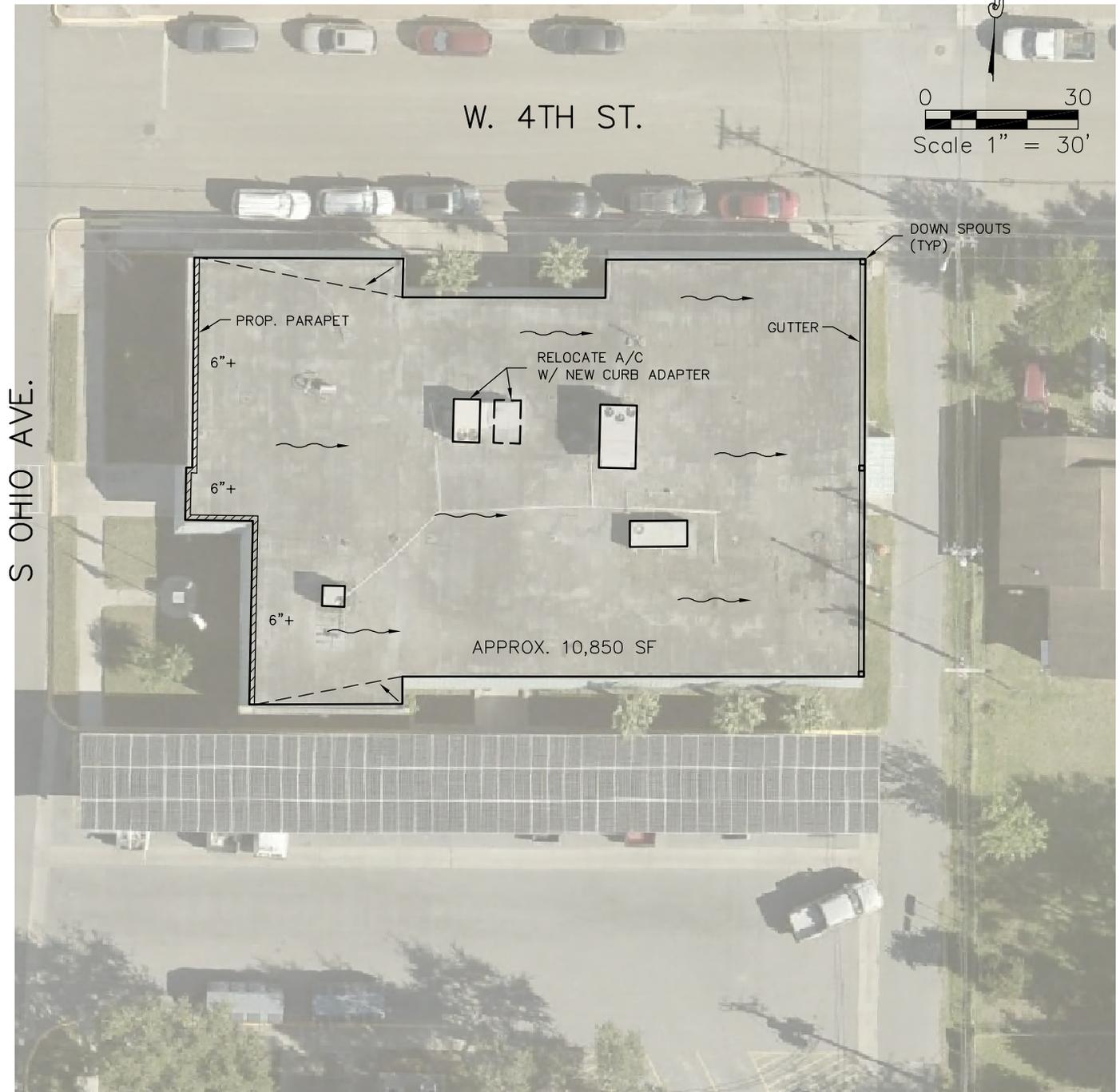
(Phone Number)

(Fax Number)

(E-mail Address)

(Seal – If Bidder is a Corporation)

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0 30
Scale 1" = 30'

MERCEDES CITY HALL ROOF IMPROVEMENT

SDI ENGINEERING, LLC

CIVIL TRANSPORTATION • PLANNING • STORMWATER

5602 E. IOWA RD., EDINBURG, TEXAS (956) 287-1818 PH. (956) 287-3697 FAX

INFO@SDI-ENGINEERING.COM

TBPE REG. NO. F-13016

SECTION 0757 – SPRAYED POLYURETHANE ROOFING SYSTEM

PART 1 – GENERAL REQUIREMENTS

1.01 SCOPE

- A.** This guide specification covers the installation of the, Sprayed Polyurethane Roofing System (SPRS) which consists of a seamless sprayed-in-place polyurethane foam insulation covered with an elastomeric coating for use as an insulated roofing system for both new and retrofit (re-roofing) construction. The Coating materials shall be listed in the Energy Star® Roof Products Program.
- B.** Pressure wash the existing roof top area as necessary to ensure optimum adhesion of the new fluid applied system
- C.** Treat all seams and over-laps of the existing BUR roof system with fluid flashing and an embedded reinforcing fabric for a watertight seal on parapet walls only.
- D.** Apply a Bleed Block sealer throughout the entire roof at a rate of 1.5 gallons per every 100 square feet to prevent any bitumen or asphalt biproduct from leaching up into the new roof coating system on parapet wall only.

1.02 QUALITY ASSURANCE

- A.** In the absence of a general contract, the roofing contractor shall be the prime contractor. All subcontractors shall be identified and approved at the time the proposal is submitted.
 - 1. The contractor shall carry a valid state roofing license.
 - 2. Inspections are to occur during the duration of the project and at completion of the project to assure that the detail work at the protrusions, drains, parapets and edges has been completed in conformance with accepted industry practice (including the requirements of the specified manufacturer's warranty).

1.03 SUBMITTALS

- A.** The following submittals shall accompany the bid:
 - 1. The bidders shall submit verification they are an approved roofing contractor for the selected roofing product.

- B.** The following technical data shall be submitted upon selection of the roofing contractor:
1. Manufacturers Literature: Submit a copy of the manufacturers technical data bulletins for specified foam and coating materials.

1.04 APPROVED SUBSTRATES

- A.** Approved substrates include the following:
- Built-up Roofing (Gravel Surfaced or Cap Sheet)
 - Metal decks
 - Structural Concrete
 - Struct I Plywood

1.05 MATERIALS, DELIVERY AND STORAGE

- A.** Materials shall be delivered in the manufacturer's original, unopened containers, clearly labeled with the manufacturer's name, product identification, safety information, batch and lot numbers.
- B.** Containers shall be stored out of the weather and out of direct sunlight at temperatures specified by the manufacturer.

1.06 ENVIRONMENTAL CONDITIONS

- A.** Weather conditions must be within those listed on the manufacturers' technical data bulletins. If weather conditions change during the applications and the stated conditions are not met, the application must be stopped until such time as the specified conditions are met. No application may proceed during inclement weather.

1.07 SCHEDULING

- A.** All other trades such as structural, mechanical, electrical should have completed their work prior to the installation of the SPRS.

1.08 WARRANTY

- A.** The polyurethane and acrylic elastomer system shall carry at a minimum the following warranties:

1. Installing Subcontractor must warranty the system and installation for two (2) years.
 2. Spray Foam and Roof Coating Manufacturer must warranty the system and installation; provide material and labor costs for repair in the event of a leak as a result of faulty material or faulty workmanship for a period of twenty (20) years from the date of substantial completions.
- B.** Warranty terms shall begin upon “essential completion of SPRS construction” or completion of final inspection/punch list items (if any) not to exceed 45 days from the date that manufacturer is notified by the contractor with a written request for warranty.

1.09 INSPECTION

A representative of the material manufacturer shall inspect the roof after completion to assure that all work has been completed in conformance with the specifications and accepted industry practice. All material thickness shall be verified

PART 2 - PRODUCTS

2.01 PRIMER AND INTENDED APPLICATION SUBSTRATE

- A.** Asphalt/BUR, Masonry & Plywood: Primer shall be single-component primer, black in color. The product shall be Enviro-Prime as manufactured.
- B.** New Galvanized Steel and Existing Flashings:
1. Galvanized Metal and Other Non-Ferrous Metals: Pretreatment Primer No. 4860-420 (Reducer 1000-44) as manufactured by Carinal Industrial Finishes, El Monte, CA 213-283-9335.

2.02 BASE SHEET AND FASTENERS

- A.** A base sheet if required shall be 72 lb. fiberglass, mineral surfaced cap sheet as manufactured by Manville, GAF, or equal.
- B.** Nailable decks; The fasteners shall be 1-inch, square head, ring-shank nails as manufactured by Simplex or equal with sufficient length to penetrate sheathing or embed a minimum 1-inch into sheathing.
- C.** Mechanical Fasteners and Plates; Screws shall be No. 12, coated, self-taping screws of sufficient length to penetrate the existing BUR and

insulation with 1 inch penetration (minimum) into the substrate. The plates shall be 2 inch square, coated plates. The screws and plates shall be as manufactured by Olympic, DeckFast or equal.

2.03 RECOVER BOARD/FIRE PROTECTION BOARD

- A.** A recover board or fire protection board between a wood deck using diagonal sheathing or insulation board if required shall be Georgia-Pacific Corporation ¼-inch Dens-Deck 4' X 8' sheets. Dens-Deck may be installed parallel or perpendicular to sheathing, stagger all joints.

2.04 POLYURETHANE INSULATION

Polyurethane insulation shall be a two-component polyurethane insulation system formulated for use through airless equipment. The product shall be Enviroseal as manufactured by Global Polymer Systems, LLC, Edinburg, Texas. The product shall exhibit the following typical physical properties:

Density (sprayed in place) 2.7 – 3.0 pcf
Compressive strength >40 psi (nominal)
Tensile strength 90 psi
Shear strength 45 psi
Closed cell content 90% min.
K factor (aged) 0.156
Flame spread UL-723 (ASTM E-84) <75*
Roof Deck Classification UL 790 (ASTM E-108)
Maintenance and Repair Class A
FMRC 4470

*This numerical flame spread rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

2.05 FLUID APPLIED ELASTOMERIC COATINGS

The elastomeric coating material shall be an acrylic elastomer coating and shall be an Energy Star® Listed Product and meet the Standards for Liquid Applied Coating Used in Roofing ASTM D-6083-97a. The product shall be Enviroshield II as manufactured by Global Polymer Systems, LLC, Edinburg, Texas. The product shall exhibit the following typical physical properties:

Solids Content, by vol: 55 ± 2.0%
Viscosity: 110 ± 10 KU
Weight Per Gallon: 11.1 lbs. per gallon
Flash Point: None
Coverage (miles/100 SF/gal): 8.8 Dry Mils
Drying Time at 24 wet mills:

Dry to Touch 4 hours
Dry – Through 12 hours
Dry-to-Recoat > 6 hours
Total Cure Time (aprx.): 30 days
Permeability: 14 ± 3 (ASTM – D-624)
Tensile Strength: 273 ± 20 psi (EC) or 133 ± 3 psi (HT)
Tear Resistance: 95 ± 3 psi (EC) or 500 ± 50 psi (HT)
Elongation: $233 \pm 20\%$ (EC) or $600 \pm 50\%$ (HT)
Aged, 1000 hrs: $155\% \pm 100$
Adhesion/peel test on foam: 2.4 lbs/in.
Harness Shore A (ASTM D – 2240): 50-55
Low Temperature Flex: Pass
Service Temperature Range: 50° to 200° F
Roof Deck Classification: UL 790 (ASTM E-108)
Maintenance and Repair: Class A
Meets ASTM D6083 – Standard Specification for Liquid Applied Acrylic Coating Used in Roofing
ENERGY STAR® Certified
Cool Roof Rating Council (CRRC) Rated
FM Certified
UL Certified as a component within Class “A” or “B” fire rated roof coverings

The minimum thickness of the acrylic coating shall be 52 dry mils.

2.06 CAULKING OR SEALANTS

Caulking material shall be Enviro-Sil sealant, single component 100% Solids Siliconized Urethane. Caulking of fabricated metal components or lapping metal joints (except equipment pan seams).

2.07 GRANULES

Granules shall be Dust Free White granules and shall be broadcast into the final coating application while it is still wet. (Only if specified for project).

2.08 EQUIPMENT

- A.** Equipment for spraying foam shall be manufactured specifically for the application of polyurethane foam. The equipment shall be airless, capable of maintaining a 1:1 volume ration and have primary and hose heaters (300 feet of material hose maximum allowable to meet mix pressure requirements, Gusmer GX-7 gun with 90 PCD suggested for winter grade foam systems.

- B. Coating equipment shall be an airless type as recommended by Global Polymer Systems.

PART 3 – EXECUTION

3.01 GENERAL

- A. In the absence of a general contract, the roofing contractor is the prime contractor and shall be responsible for additional roof related work which may include but not be limited to the following:
- B. The roof contractor shall be responsible for the verification of all measurements relative to this project.
- C. Raising, repairing, and modifying existing air conditioning systems for the installation of curbs, metal pans and duct work.

3.02 ROOF RELATED CARPENTRY WORK STRUCTURAL CERTIFICATION and SLOPE

- A. Roof related metal work. Note: All metal work to receive insulation directly shall be cleaned and free from oil, dirt, oxidation and shall be primed.
- B. Raising all utility rigid conduit sufficiently for the unobstructed application of roofing insulation materials underneath. The conduit may be raised permanently to temporarily and reset upon new wood sleepers on top of the new SPRS.
- C. Overflow drains or scuppers shall be added to the existing drain system if nonexistent or not in accordance with the local building code. All new drains/scuppers shall comply with the local building code.
- D. Verify that all roof top equipment is in proper working condition at the conclusion of the re-roofing work or before the next facility business day if the roof work is not yet complete.

- E. Before roof construction starts, water test all drain bowls/sumps and associated plumbing to insure that they are water tight and clear to the discharge level.
- F. Roof slope of ¼ inch in 12 inches (approximately 2%) is recommended but not required.

3.03 SURFACE CONDITION

- A. The contractor shall be responsible for determining whether the roof deck is in compliance with applicable building codes.
- B. Owner shall insure that roof top equipment does not discharge liquids onto roof. All blowers shall exhaust into a container or the atmosphere and not onto the roof surface.
- C. The surface shall be free from solvent, grease, dust, sediment, dirt and sticky mastic. All extraneous equipment and equipment supports shall be removed to the roof deck. The contractor shall inspect areas of the roof which have been extensively patched, exhibit weak decking, or saturated roofing material. Suspect areas shall be defined by “bracket core” sampling to determine the extent of the condition. Defective roofing materials shall be torn off and the substrate inspected for water damage. When defective decking (water damaged) is observed, and when authorized by the owner, remove and replace with new materials which comply with local building codes. The cost to replace defective decking shall be shown on the roofing bid as a separate item and priced on a per square foot basis.

3.04 SURFACE PREPARATION (see attached Construction Details)

- A. All blisters in the built-up roofing (BUR) less than 6 inches in diameter shall be slit and fastened to the roof deck using appropriate fasteners and plates. All blisters larger than 6 inches shall be cut and removed from the deck.
- B. Remove loose gravel from all roof surfaces with a power vacuum. Power broom all vacuumed surfaces and vacuum again.
- C. All new metal flashing and existing galvanized steel surfaces shall be primed with 1/3 to ½ gallons per 100 square feet of wash primer.

D. All roof surfaces are to be primed with ½ gallon per 100 square feet of Global Polymer Systems, Enviro-Prime primer.

E. Masking and Clean up

1. All surfaces not to receive foam, such as windows, walls, air conditions and other roof mounted equipment are to be carefully masked with tape and paper to avoid overspray of these surfaces with foam or coating. All coating is to be terminated in clean straight lines.
2. NOTES: When masking A/C equipment, all covering of the air intakes shall be removed at the end of each work shift. No foam shall be allowed to accumulate on fan blades or cooling fins.

F. Perimeter Coping Metal

Option 1: If coping is to remain, lap joints must be cleaned of all mastic and caulk. Prime area, install self-adhering tape and cover with butter grade elastomeric and reinforcement. Coat over dried repair. After parapet walls have been foamed, install a "Z" counterflashing with mechanical fasteners.

Option 2: Remove coping. Install foam stop edge metal over parapet using appropriate fasteners 6" O.C. Foam parapet and new flashing per detail drawing.

G. HVAC and Roof Mounted Equipment

1. Field Assembled HVAC Curbs
 - a. Fully enclosed (boxed) platforms constructed from 2 X 8 (minimum) lumber with ½ inch CDS plywood top shall be fabricated. **The finished grade of the top of the platform shall be 8-inches (minimum) above the new roof level.** A layer of single ply roofing shall be set over the plywood top of the platform and turned down at the edge of once. A new 24 ga. Galvanized, seamless sheet metal cover shall be installed over the platform. Where large platform covers are required all seams shall be soldered or constructed with a 1 1/2 inches minimum standing seam. Caulking of the seams shall not be acceptable. The new metal cover shall be 2 inches larger than the wood curb on all sides with a 2-inch X 60° degree turn down and ¼ inch hem.
 - b. Prior to setting the new platform into place, apply a minimum of 4-inches of polyurethane foam insulation into

the underside of the platform to provide insulation, structural strength, and sound deadening. It may be necessary to foam the vertical sides of the platform prior to setting it into place if clearance on all four sides is not sufficient for proper foaming. Do not foam the sheet metal cover into the roof.

2. Pre-Engineered/Manufactured Curbs
 - a. New galvanized steel manufactured curbs shall be graded and installed by others to accommodate downdraft or side discharge HVAC units. The finished grade of the top of the manufactured curb shall be 8-inches (minimum) above the new roof level. It is important that if the new curb is supplied with a nailer under the mounting flange that it be removed prior to sealing the curb into the roof with polyurethane foam and protective coating. Steel curbs must be primed.
3. Option 1: All duct work shall receive one inch of foam. NOTE: The duct walls at the roof penetration shall receive 1 inch of foam on all four sides with a smooth flashing transition to both the roof and the A/C platform sides. (This may require either disassembly of the duct work or moving the A/C unit prior to foaming.) do not apply foam to canvas connector.

Option 2: HVAC ducts shall be cleaned and primed. Apply in two separate coats in contrasting colors 2.5 gallons per 100 sq. ft. Global Polymer Systems Enviro-Sil. NOTE: The duct walls at the roof penetration shall receive 1 inch of foam on all four sides with a smooth flashing transition to both the roof and the A/C platform sides. (This may require either disassembly of the duct work or moving the A/C unit prior to foaming.) Do not apply foam to canvas connector.

4. If line voltage, low voltage, gas line, and condensate connections are new and only stubbed-out they must be a minimum of 12 inches above the finished grade of the roof and supported at the deck. **NOTE: ALL ELECTRICAL CONNECTIONS AND GAS CONNECTIONS MUST BE DISCONNECTED PRIOR TO RAISING THE UNIT AND RECONNECTED AND TESTED AFTER THE UNIT IS RESET.**
5. All conduit and gas lines must be raised off the roof. After the roof has been foamed, the conduit can be reset on 2 X 4's set on top of the foam. The old conduit supports shall not be reused.

H. Internal Drains

1. All internal roof drains shall be flushed with water to insure that the drains are clear to the discharge level prior to starting the roofing work.
 2. Tear-off all existing roofing at the dropped sump bowl. Remove the clamping ring from the drain bowl. Remove all broken bolts from clamping rings, re-drill and tap holes as necessary for replacement with new bolts. Remove all BUR materials from the drain bowl flange and for a distance. Fasten the edge of the remaining BUR membrane materials to the roof deck with appropriate fasteners. Apply a bead of siliconized urethane caulking to the drain bowl clamping ring contact areas and refasten the clamping ring with new bolts. Remove excess caulking from inside of the drain bowl and clamping ring. Mask the inside of the drain and spray a "water block" from the deck to the top of the clamping ring. Grind excess insulation flush with the top of the clamping ring. The elastomeric coating shall be applied and "back rolled" in a "picture frame" fashion to achieve double the specified thickness of coating around the water entry area. Flush drains (a second time) with water to ensure that the drains are clear to the discharge level after all roofing work is completed. The strainers shall be locked over the drain opening (use existing or new locking rings or install new hardware and fasteners as necessary). All internal drains shall be fitted with appropriate strainers or leaf catchers. If new strainers or catchers are required (or missing), they shall be metal. Plastic strainers and leaf catchers shall not be used.
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- I. Repair or replace all A/C condensate lines and run to a drain or off the roof. Condensate shall not be discharged into soil pipes or other vents.
 - J. Low areas: Low areas over 100 square feet in size and greater than ½ inch dep shall be filled with foam to match the surrounding grade and prior to the application of the specified thickness of foam.
 - K. All soil pipes and other roof vents shall be masked and remain fully open after foaming.
 - L. All "T" tops and other roof vents shall be raised as necessary to remain 2 inches above the new foam line. Two-way roof vents shall be demolished.
 - M. All scuppers shall be opened to comply with local codes regarding the size of the water entry opening. **NOTE: Insure that all existing scuppers are open and have not been covered with other roofing materials.** Remove all BUR materials from the entire scupper and flange. Clean

retained metal components and prime. Rusted metal shall be replaced to match existing or better. Reseal scupper and flash with foam.

- N.** All antennae shall be attached to curbs or antenna mounts and guy wires shall not be secured through the roof.
- O.** Skylights; All skylights shall have appropriate "Fall-Through" protection. The owner may elect to replace the existing skylights with new units or repair.
- P.** Conduit and Piping:
 - 1. All small conduit and gas lines, 1 ½ inch and under must be raised off the roof. After the roof has been foamed, the conduit shall be reset on new redwood 2 X 4's set on top of the foam. The wood blocks shall be caulked to strips of Yellow Spaghetti walk pads which are caulked to the granulated top coated foam roof. The old conduit supports shall not be reused.
 - 2. Large conduit and piping, 1 ¾ inch and larger, shall have new redwood blocks with 24 ga. Galvanized sheet metal boxes fabricated with minimum 6 inch flange on roof with all joints soldered. These boxes with wood blocks shall be nailed over the existing roof membrane, primed, and foamed into place. Piping shall be set onto the blocks and covers and conduit attached with clamps. Note: Conduit and piping which move during use such that the roof system may be damaged shall be set up on appropriate roller saddle supports or other vibration isolating devices.

3.05 APPLICATION OF POLYURETHANE INSULATION

- A.** Environmental conditions
 - 1. Wind velocity shall not exceed 12 miles per hours.
 - 2. Application of spray foam shall not proceed if ambient temperature is less than 50 degrees Fahrenheit or if the substrate temperature is less than 60 degrees Fahrenheit.
- B.** Spray foam is not to be applied over moist substrates or where rain or inclement weather is imminent.
- C.** The field of the polyurethane foam shall be applied in minimum ½-inch lifts to a thickness of 1 1/2 -inches (or as otherwise specified). Polyurethane foam may be gradually tapered to edge metal (1-inch rise metal), roof drains, and scuppers from a distance of up to three feet from edge or drain outlet. Polyurethane foam may be applied to

greater thickness than ½-inch per lift if all other requirements and conditions are met. Low areas over 100 sq. ft. in size and greater than ½-inch deep shall be filled with foam to match the surrounding grade and prior to the application of the specified thickness of foam. All parapet walls shall receive a minimum of 1-inch of foam and the specified protective coating.

Note: Freshly sprayed foam shall be allowed to set for 15 minutes before being walked upon.

- D. Only as much area as can be brought to final thickness should be attempted in a day. Phasing of the foam is strictly forbidden. (Phasing is foam application on one day and coming back the next day or thereafter and applying another layer of foam. This procedure may lead to the development of blister in time.) If additional foam must be added after the 24-hour period, the existing foam must be a minimum of ½ inch of foam in a single pass shall be applied.
- E. The foam shall be free from bumps, pinholes and ridges. The surface shall exhibit a smooth or "orange peel" surface texture. "Popcorn" or "tree bark" surfaces shall be deemed unacceptable.
- F. At the internal drain openings, grind the foam to a smooth slop for ease of water entry. New metal screens shall be provided if the original screens are broken or missing.
- G. The foam thickness shall be checked every 500 square feet prior to coating application.
- H. If "slip-sheets" are needed to waterproof under piping or other obstructions the following method shall be used. The specified foam thickness shall be applied to ¼ inch Dens-Deck and positioned under the obstruction. Full edge attachment shall be accomplished using screws and 2 inch plates, 9 inches on center with screw length sufficient to penetrate the roof deck (Note: Leave a 4 inch gap between the end of the sheets, do not "butt-joint." Foam a "tie-in" in the gap and trim the excess foam). If the roof deck is concrete the "Tub-Loc", "Zonotite", or "Rawl Spike" fasteners shall be used. Foam shall be applied to the edges of the slip sheet and adjoining roof area and the "tie-in" ground smooth if the profile is irregular.

3.06 APPLICATION OF FLUID APPLIED PROTECTIVE COATING

- A. General

1. Sprayed polyurethane foam must be protected from ultraviolet light in order to avoid degradation of the polymer. Spray apply, in two separate coats a minimum of 1.5 gallons per 100 sq. ft. Global Enviro-Shield II Grey Elastomeric Coating (3 Gal. Total) and two separate coats at a minimum of 1.5 gallons per 100 sq. ft. Global Enviro Shield II HT Elastomeric top coat at 1.5 Gal per 100 Sq. Ft. (3 Gal. total).
2. Elastomeric coating shall be applied in a picture frame fashion and back-rolled at the roof perimeter and tops of parapet walls. The coating shall be applied to 1.5 X the specified thickness and finished with a "HEAVY APPLICATION" of roofing granules (if specified). This procedure shall ensure proper sealing of these critical areas.
3. Other areas where the foam has been ground shall also be back rolled and coated to 1.5 X the specified coating thickness

B. Spray Applications

1. The coating is to be applied to the surface of the roofing foam in four uniform passes. The base coats and topcoat shall be of contrasting colors to assure uniformity of coverage. The top coat color shall be white.
2. The specified thickness of coating shall be verified using an optical comparator.

C. Granules (if specified)

1. A total of 40 to 50 lbs. per 100 square feet of Dust Free White granules shall be broadcast into the final white coating application while it is still wet. Complete coverage with granules to the point of "refusal" shall be required. Areas without granule cover "bare spots or "shiners") shall be re-coated and granulated to provide complete coverage.
2. Rooftop landings, the areas surrounding equipment installation, the decks in equipment wells and walkways between equipment shall receive an additional coating application and granule surfacing application
3. Remove all loose granules after the roof coating has cured to prevent them from washing into gutters or onto the ground.

D. Walkways (option)

Areas approximately 4 feet wide around HVAC equipment installations and at the roof access hatchway shall receive the following treatment. After the initial granule finish has completed cured, remove all loose granules and apply an additional 2.0 gallons per 100 square feet of protective top coating and embed

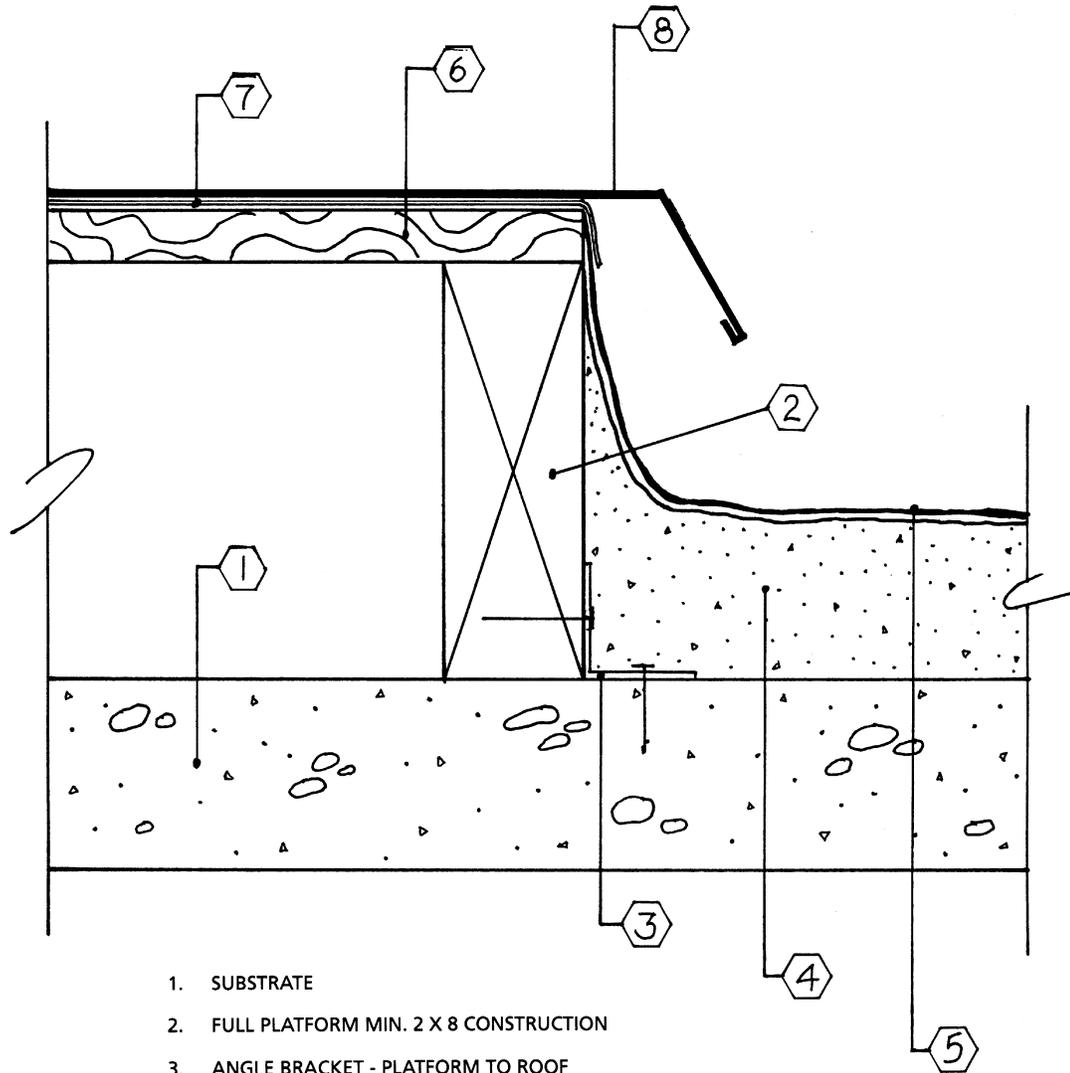
40 to 50 lbs. per 100 square feet of ceramic granules into the wet coating. Walkway granules shall be a contrasting color (white, gray or tan) to those used to finish the roof field.

3.07 CLEANING

- A.** Promptly as the Work proceeds, and upon completion, clean up and remove from the premises all rubbish and surplus materials resulting from the foregoing work.
- B.** Clean soiled surfaces, spatters, and damage caused by work of this section.
- C.** Check area to ensure cleanliness and remove debris, equipment, and excess material from site.

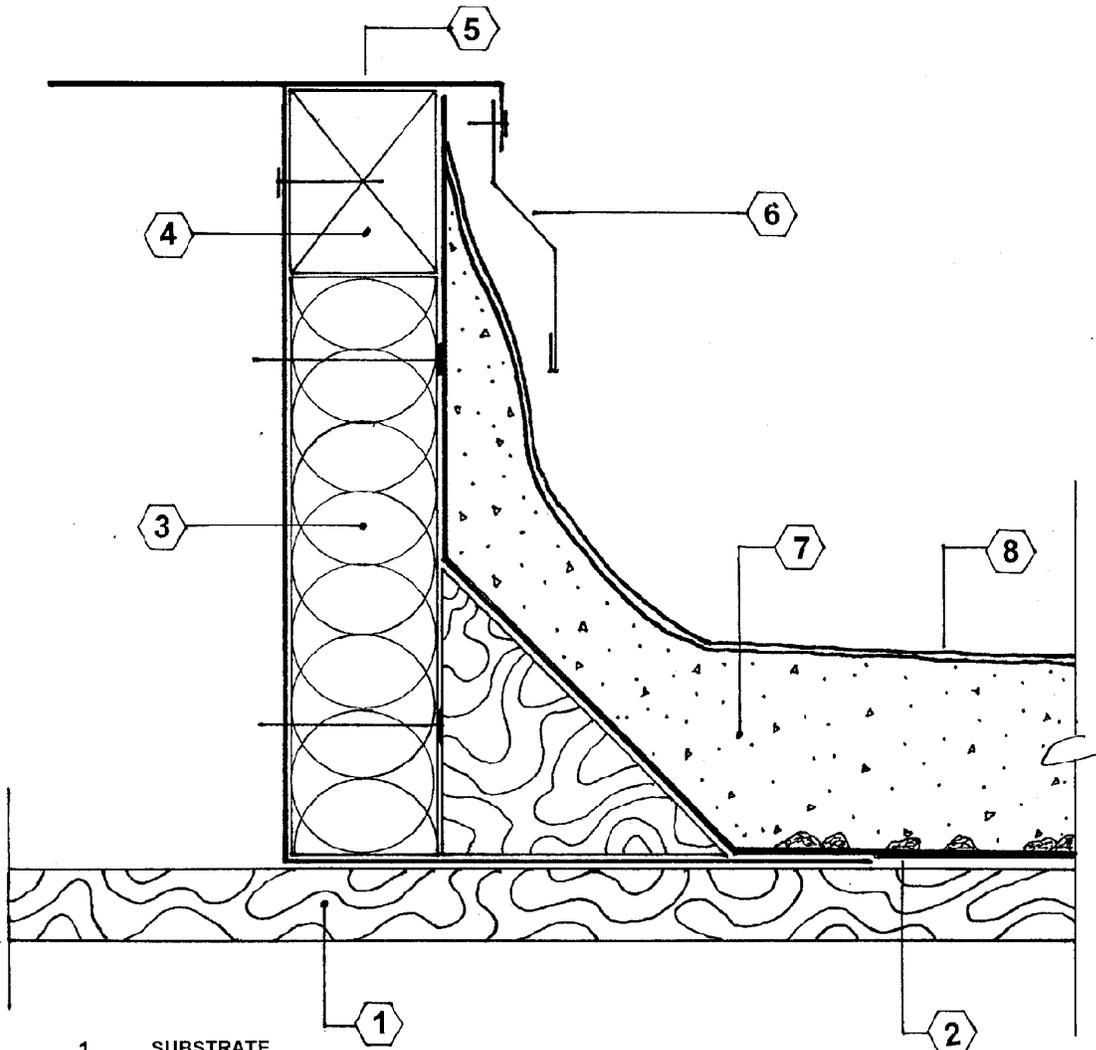
END OF SECTION

DETAIL 1, HVAC / EQUIPMENT PLATFORM



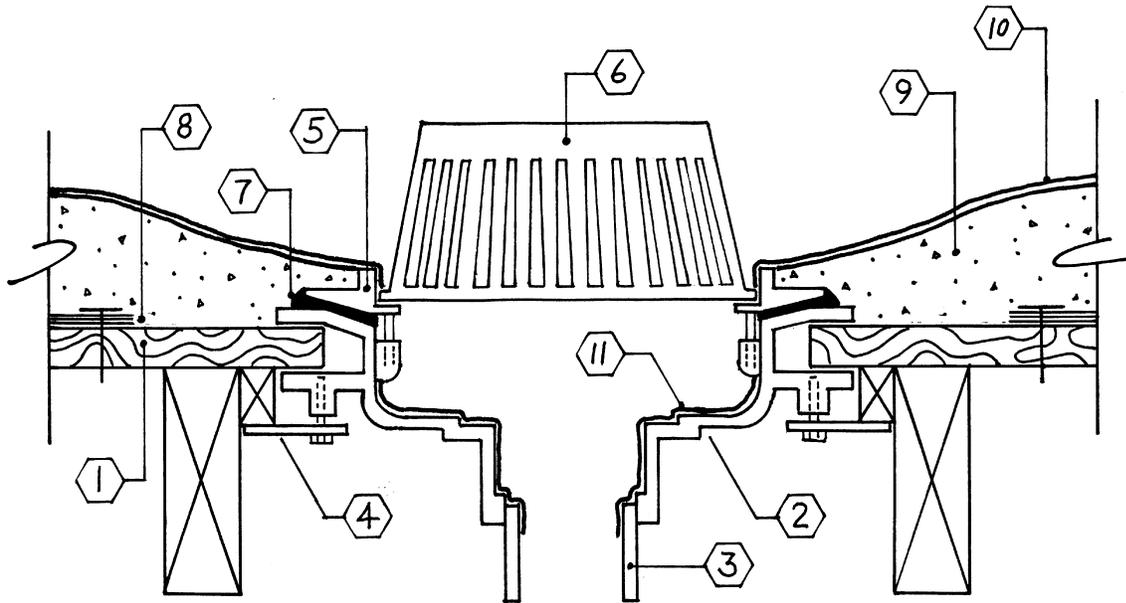
1. SUBSTRATE
2. FULL PLATFORM MIN. 2 X 8 CONSTRUCTION
3. ANGLE BRACKET - PLATFORM TO ROOF
4. SPRAYED POLYURETHANE INSULATION
5. ELASTOMERIC COATING SYSTEM (WITH GRANULE SURFACING)
6. MINIMUM 1/2 INCH PLYWOOD PLATFORM TOP
7. HENRY RUFTAC OR SINGLE PLY MEMBRANE
8. 24 GA. GALVANIZED SEAMLESS OR STANDING SEAM PLATFORM COVER

DETAIL 33, PRE-FAB METAL A/C CURB EXISTING BUR



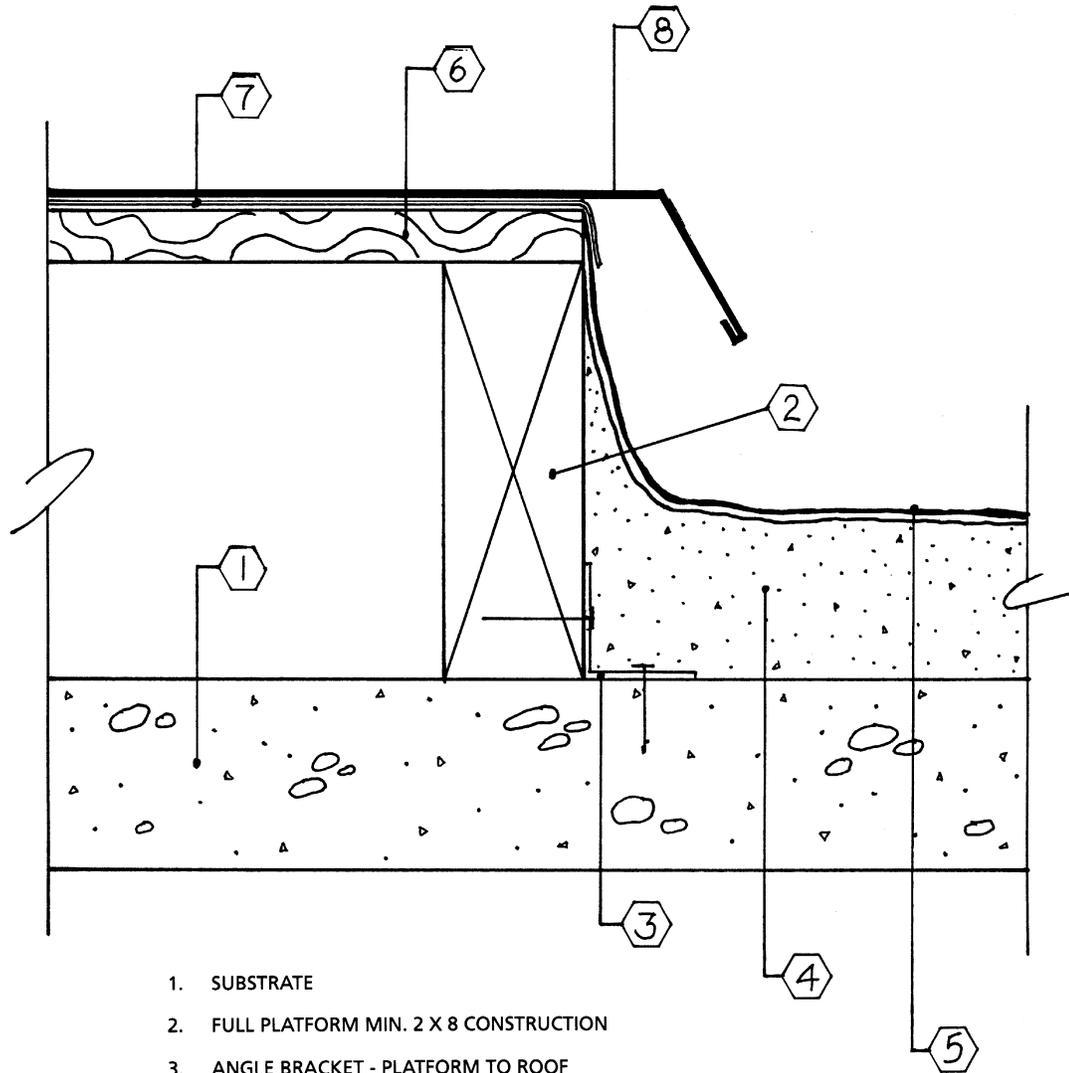
1. SUBSTRATE
2. BUILT-UP ROOF GRAVEL SURFACED
3. RIGID INSULATION
4. NAILER
5. HEAVY GAUGE GALVANIZED PRE-FAB METAL HVAC CURB
6. 24 GA. GALVANIZED 'Z' COUNTERFLASHING MECH. ATTACHED TO EXISTING CURB
7. SPRAY POLYURETHANE INSULATION
8. ELASTOMERIC COATING SYSTEM (WITH GRANULE SURFACING)

DETAIL 2, INTERNAL ROOF DRAIN



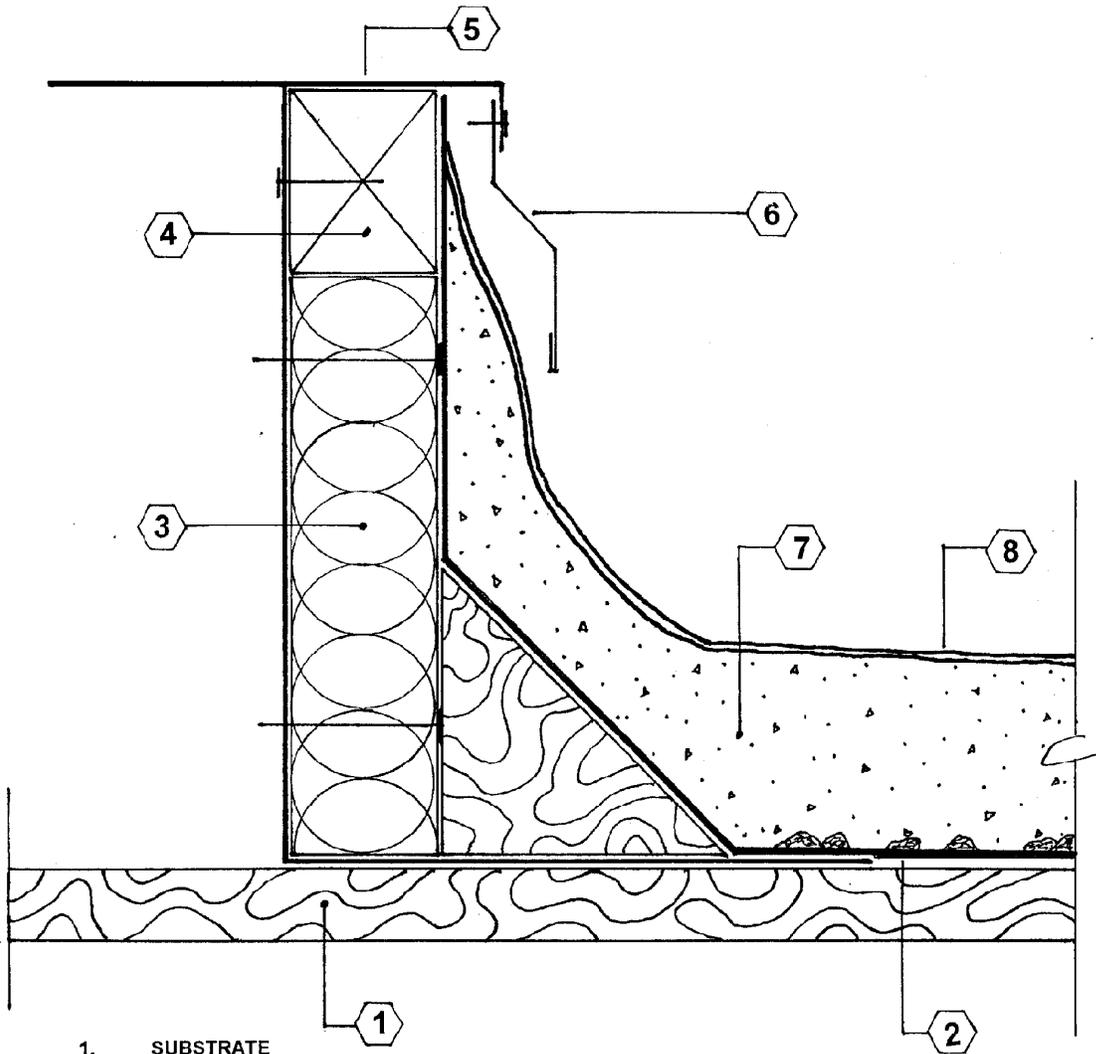
1. SUBSTRATE
2. DRAIN BOWL
3. DRAIN PIPE
4. DECK CLAMP
5. CLAMPING RING
6. STRAINER
7. ELASTOMERIC SEALANT
8. BUILT-UP ROOFING REMOVED MINIMUM 12 INCHES FROM DRAIN BOWL FLANGE. EDGE OF BUR TO BE MECHANICALLY ATTACHED TO SUBSTRATE
9. SPRAYED POLYURETHANE INSULATION
10. ELASTOMERIC COATING SYSTEM WITH GRANULE SURFACING, DOUBLE COATING THICKNESS AROUND DRAIN AREA
11. RUN ELASTOMERIC COATING OVER CLAMPING RING AND INTO DRAIN BOWL

DETAIL 1, HVAC / EQUIPMENT PLATFORM



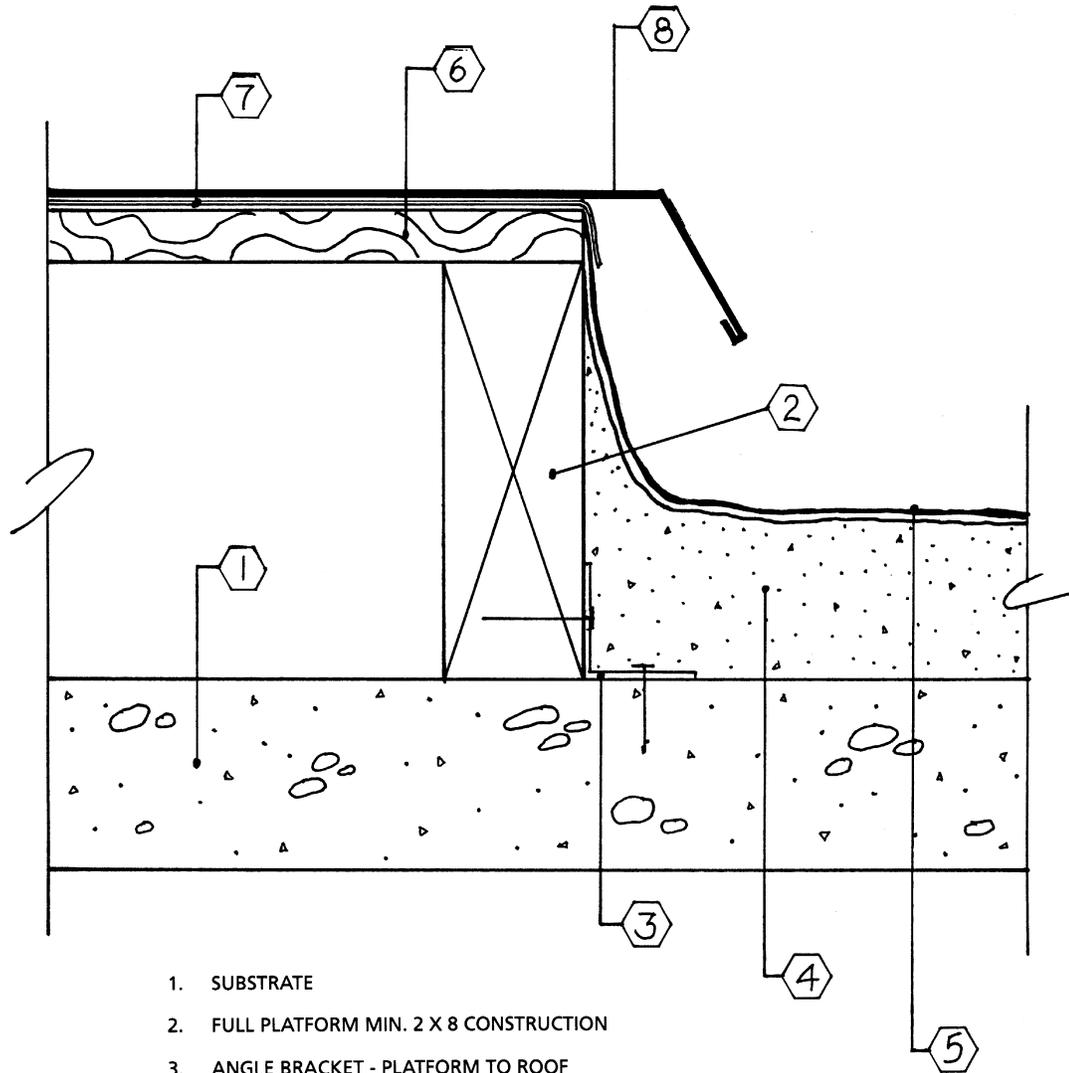
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2. FULL PLATFORM MIN. 2 X 8 CONSTRUCTION
3. ANGLE BRACKET - PLATFORM TO ROOF
4. SPRAYED POLYURETHANE INSULATION
5. ELASTOMERIC COATING SYSTEM (WITH GRANULE SURFACING)
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7. HENRY RUFTAC OR SINGLE PLY MEMBRANE
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DETAIL 33, PRE-FAB METAL A/C CURB EXISTING BUR



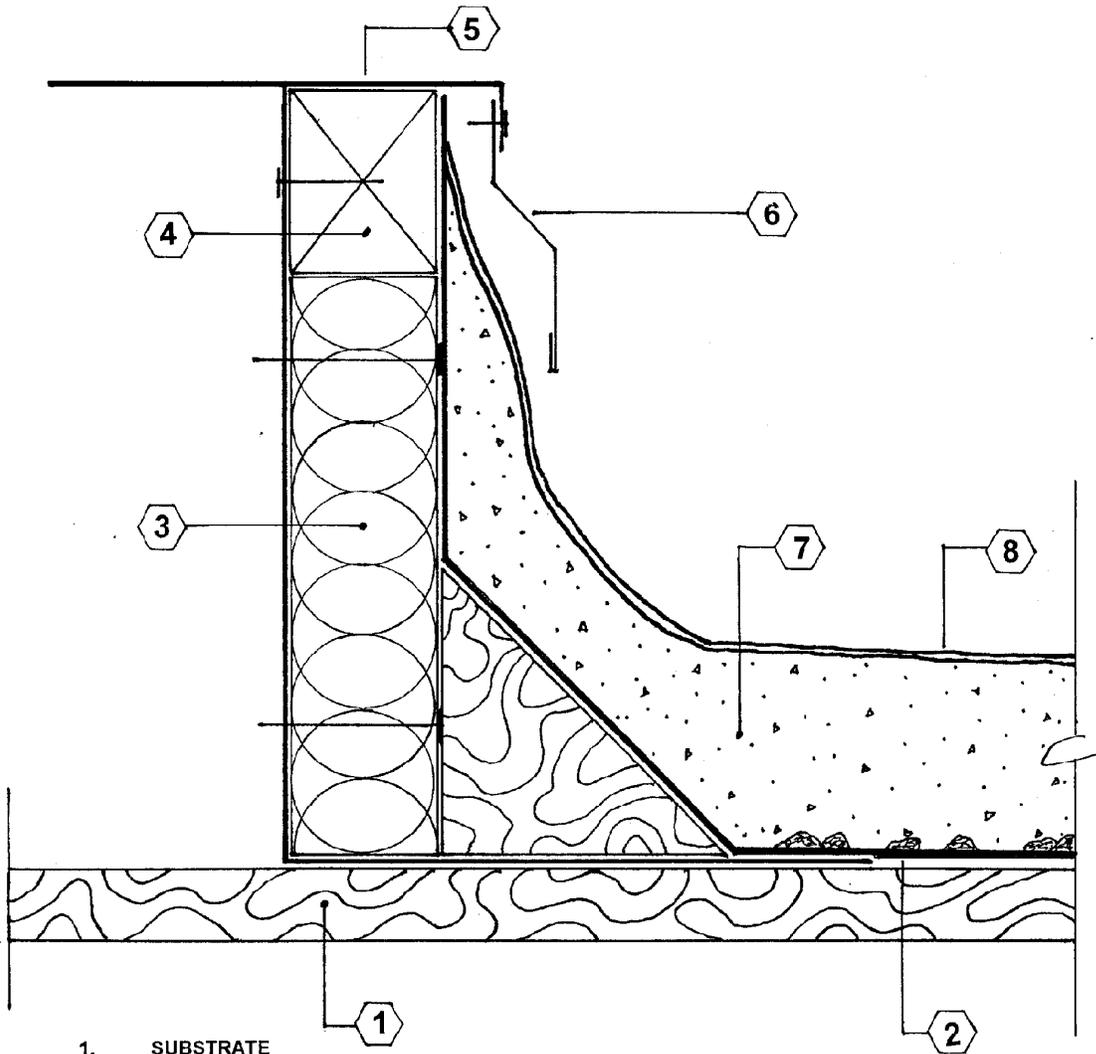
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DETAIL 1, HVAC / EQUIPMENT PLATFORM



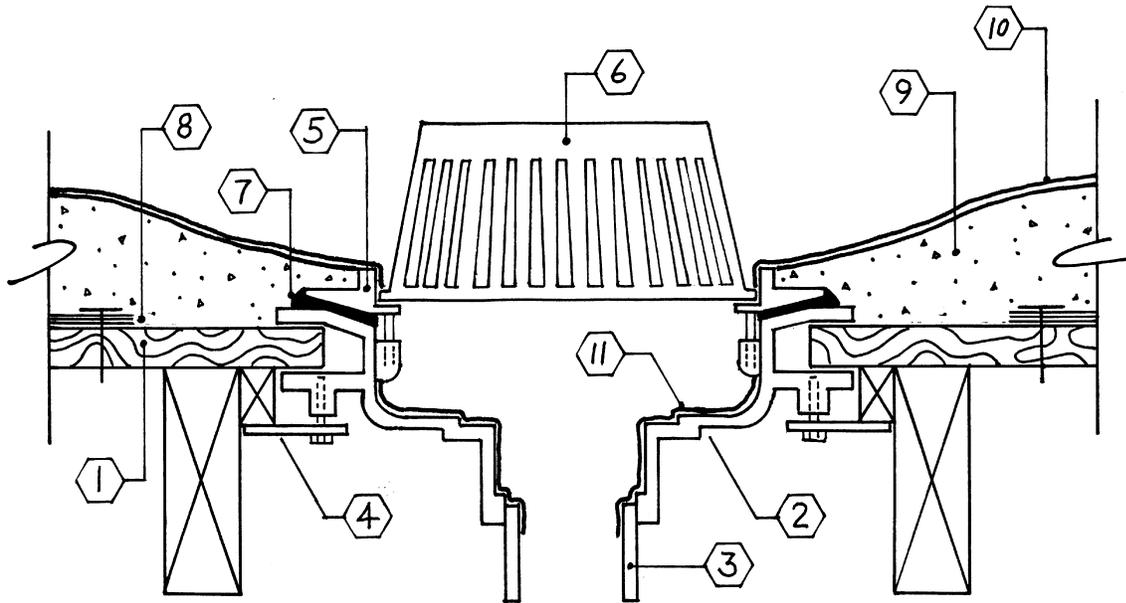
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DETAIL 33, PRE-FAB METAL A/C CURB EXISTING BUR



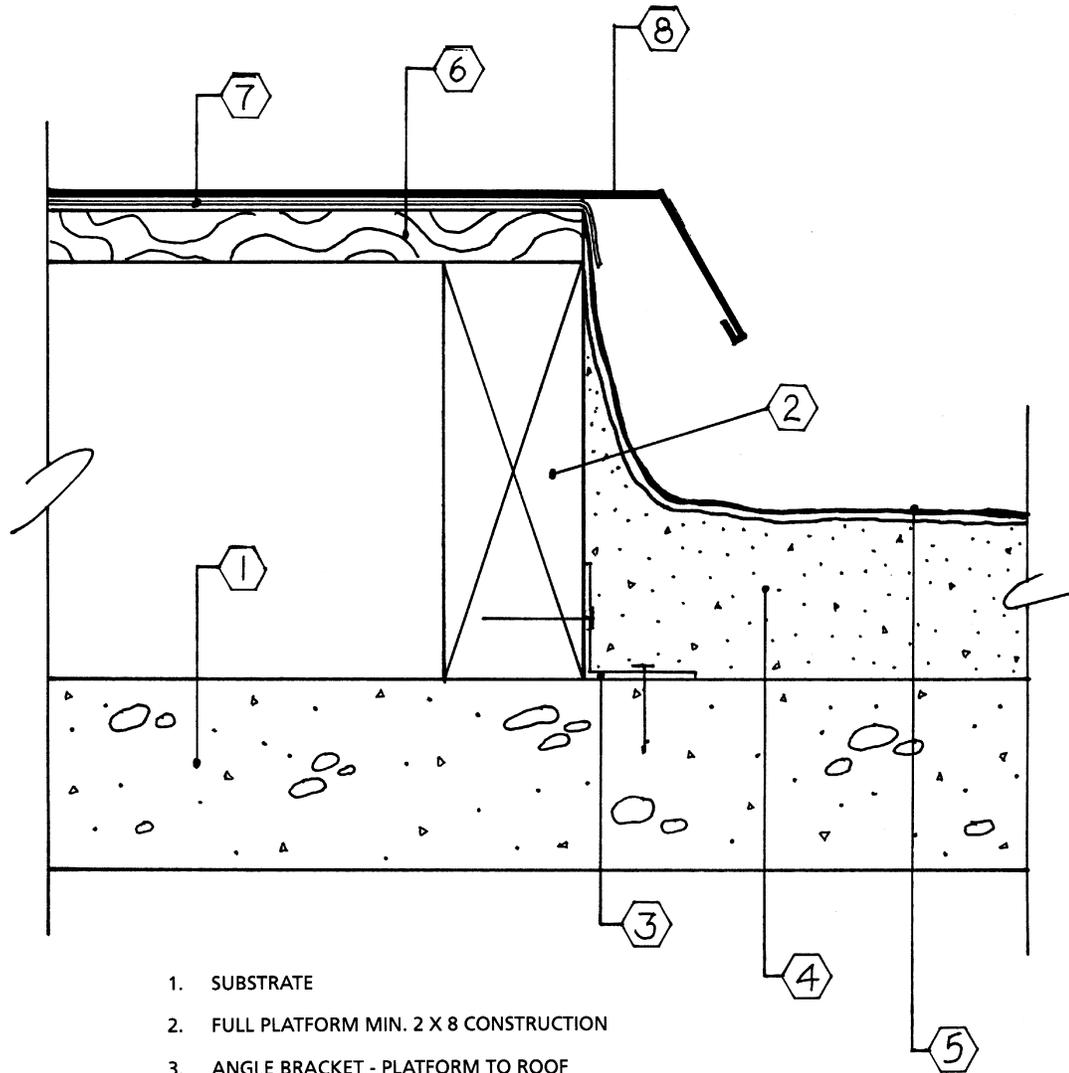
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8. ELASTOMERIC COATING SYSTEM (WITH GRANULE SURFACING)

DETAIL 2, INTERNAL ROOF DRAIN



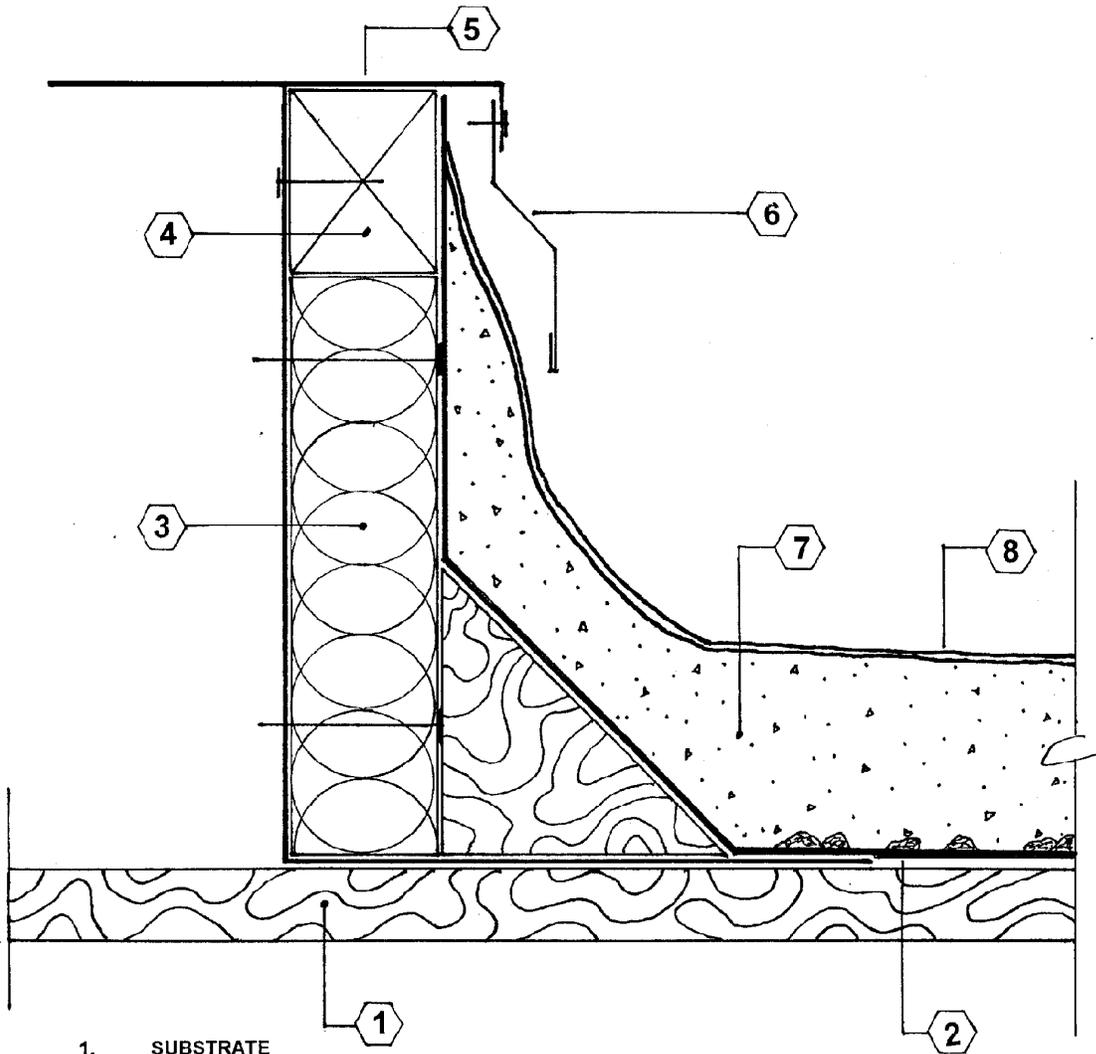
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DETAIL 1, HVAC / EQUIPMENT PLATFORM



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DETAIL 33, PRE-FAB METAL A/C CURB EXISTING BUR



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