

**APPENDIX 1**  
**LIBRARY ROOFING PROJECT**  
**SPECIFICATION NO. 1704-18**  
**THE LOS ANGELES COUNTY LAW LIBRARY**

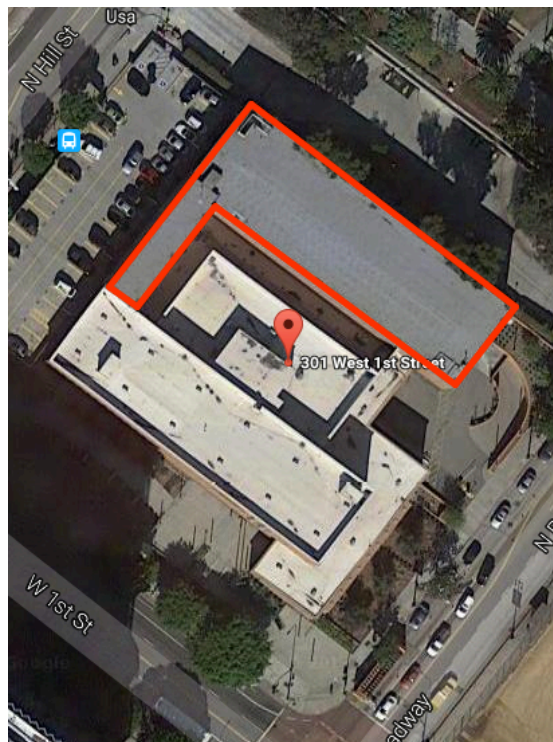
**LIBRARY ROOFING PROJECT MANUAL**

# PROJECT MANUAL

**BID SET**

**LA LAW LIBRARY**

301 West First Street, Los Angeles, CA 90012



**PVC-KEE Thermoplastic Membrane  
Roofing System Installation Project**

**Commercial Resource Management, LLC**

**January 5, 2018**

## CONTACTS / PROJECT IDENTIFICATION

Owner: **LA LAW LIBRARY**  
**301 West First Street**  
**Los Angeles, California 90012**

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**301 West First Street**  
**Los Angeles, California 90012**

Contractor: **TBA**

Roofing Consultant: **Commercial Resource Management, LLC**  
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Website to View Complete Document Set: **Go to:**  
**<http://www.lalawlibrary.org/>**  
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**NOTE:** Inquiries during the bidding process shall be directed to the Owner's Representative. The deadline to submit questions is not less than seven (7) calendar days prior to the scheduled closing for the receipt of Bid. Written response(s) will be issued as Amendments to the Bid Documents. Do not direct questions to any other person associated with this project; such action will only slow the Owner's Representative's ability to respond to your inquiry.

# **PVC-KEE THERMOPLASTIC MEMBRANE ROOFING SPECIFICATION**

## **PART 1: GENERAL INFORMATION**

**1.0 DESCRIPTION** - Contractor shall furnish and install a FTR 50 mil XT-FB, PVC-KEE single ply roofing system, or demonstrated equivalent, that conforms to standard ASTM D6754 for KEE based sheet roofing, complete with Primary Material Manufacturer's fasteners, flashings, adhesives and sealants as required to install a properly fabricated, complete roofing system. Keytone ethylene ester (KEE) is a flexible high molecular weight thermoplastic co-polymer that promotes chemical resistance and remains flexible with age.

**1.1 RELATED WORK** - As specified in other sections, Contractor to supply accessories required by project details.

**1.2 COORDINATION WITH OTHER TRADES** - Contractor to coordinate with other Trades affected by the performance of this specification to achieve orderly completion of the Work.

**1.3 QUALITY CONTROL PROCEDURES** - Quality Control for roofing and installation of related materials, includes the following services:

- 1.3.1 Commercial Resource Management, LLC has been retained to provide quality assurance including monitoring and documentation of the roofing system installation.
- 1.3.2 The work will be subject to continual audit by Commercial Resource Management, LLC. The Contractor is to notify the Consultant when work is to begin in sufficient time to arrange inspection and is to remain in continual contact throughout the course of the job regarding scheduling of work. He shall furnish the Consultant safe access to the work areas and the information necessary to accomplish such auditing.

### **Applicator Requirements**

- 1.3.3 Contractor shall be currently approved by the manufacturer of the materials to be used. Contractor shall use only skilled craftsmen completely familiar with the products and the manufacturer's current recommended methods of installation. Obtain roofing components for membrane roofing system only from same manufacturer as membrane roofing or approved by membrane roofing manufacturer.

- 1.3.4 Except as modified and supplemented herein, Contractor shall follow the published requirements and written recommendations of the manufacturer. If, in the opinion of the Contractor, any work is specified in such a manner as to make it impossible to produce work of the highest quality, or should discrepancies appear from one drawing to another or between drawings and specifications, the Contractor shall advise the Roofing Consultant before proceeding.

#### **Pre-Construction Meeting**

- 1.3.5 Prior to installation of the roofing system, representatives of the following entities are requested to meet at the project site: Owner's Contracting Official, Roofing Consultant, Contractor and Subcontractors, Material Manufacturer and representatives of other entities directly concerned with installation or performance of the roofing system. The Contractor shall attend the conference with personnel directly responsible for the installation of roofing.
- 1.3.6 Attendees shall review all pertinent details and specifications, noting any potential problems and making any changes, deletions or additions as deemed necessary. Also included in the discussion will be the following: nature and availability of materials, guarantee and submittal requirements, scheduling and forecast, weather conditions, regulatory requirements, protection of building and surrounding property, protection of completed roof system, proposed installation procedures, progress payments, audits and any additional items related to the total roof system.
- 1.3.7 Attendees shall have the opportunity to tour roofing areas and discuss existing construction and general conditions including roof slope, flashings, counter flashings, penetrations, flashing details, drain locations, and materials compatibility.
- 1.3.8 Discussion will be recorded, including agreement or disagreement on matters of significance. If meeting ends with substantial disagreements, it will be determined how disagreements will be resolved and a date will be set for a reconvened meeting. A copy of recorded discussion will be furnished to all attendees.

#### **Quality Control Progress Inspections**

- 1.3.9 The Roofing Consultant will conduct progress meetings at the Site at regular intervals, to review fabrication issues, timing and sequencing, present and future needs, quality and work standards, change orders, and any other business items arising from a Field walk through.
- 1.3.10 Membrane manufacturer shall provide inspection by a Quality Assurance Technician at no extra charge to the building owner or contractor, to ascertain that the roofing system has been installed in accordance with the manufacturer's published specifications and details.

#### **Defective Work**

- 1.3.11 Should the installation of the roofing system not be approved by the manufacturer's technician, correcting the defective work shall be done by the contractor until the roof system satisfactorily meets all the specifications and the manufacturer's requirements. Corrective work will be done with no additional expense to the owner.

#### **Final Inspection**

- 1.3.12 The Contracting Official or his designated Representative and the Roofing Consultant shall, with the Contractor, inspect the entire completed roof system, including surfacing, membrane, flashings, metal components, etc. Any deficiencies or incomplete work items will be noted at this time and documented. A punch list of all such items with agreed schedule for completion will be issued by the Consultant for close out prior to final payment.

### **1.4 WARRANTY**

- Installers: Provide five (5) year contractor guarantee starting from the date of final acceptance of all roofs. The bonding company must also cover the first year warranty. Provisions of the warranty must cover defects in workmanship and materials; and all corrective actions necessary to repair damage to the roof membrane and insulation materials caused by roof leaks, or improper application.
- Warranty: Must cover damage to building and contents resulting from failure to resist penetration of water during construction.

Manufacturer:: Contractor will obtain from the Manufacturer, a twenty plus ten (20+10) year NDL (No Dollar Limit) full value (non prorated) System Warranty

covering labor and materials.

## **1.5 DELIVERY, STORAGE AND PRODUCT HANDLING**

- All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Un-vented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weld ability.
- Load goods so as not to cause structural damage, or create a safety hazard.
- All materials which are determined to be damaged by the Roofing Consultant or the manufacturer are to be removed from the job site and replaced at no cost to the Owner.

## **1.6 RELATED PRODUCTS**

- A) Fasteners - All masonry anchors for miscellaneous flashings or flanges must be pre-drilled expansion anchors, such as Rawl Zamac Nailin. Drill hole same nominal diameter as anchor. Insert anchor and tap gently against item to be fastened. Drive head flush to expand the bolt. Membrane is fully adhered, yet does require fasteners at perimeter and around all penetrations. Rawl 3/16" masonry SPIKES® are described in Section 2.3.5. Use 1/4" Rawl Zamac Nailin with FTR Termination Bar or demonstrated equivalent applied over structural concrete.

## **PART 2 - ROOF SYSTEM AND MATERIALS**

### **2.1 DESCRIPTION OF ROOF SYSTEM:**

Contractor shall furnish and install a fully adhered FTR 50 mil XT-FB, PVC-KEE single ply roofing system, or demonstrated equivalent, incorporating polyester fabric reinforcement to impart puncture, tensile, and tear resistance, that conforms to standard ASTM D6754 for KEE based sheet roofing. The system shall be complete with Primary Material Manufacturer's

fasteners, flashings, adhesives and sealants as required to install a properly fabricated, complete roofing system. Keytone ethylene ester (KEE) is a flexible high molecular weight thermoplastic co-polymer that promotes chemical resistance and remains flexible with age. Additionally, the membrane must meet the guidelines for Energy Star®, Cool Roof Rating Council (CRRC), and LEED energy saving and temperature reduction requirements.

## **2.2 PROTECTION OF PROPERTY AND PERSONS**

- A) SAFE, PROFESSIONAL CONDUCT:** All work shall be performed in a safe, professional manner, conforming to good roofing practice and all Federal, State and local codes. The Contractor shall be solely responsible for any and all injuries to individuals or properties, resulting directly or indirectly from the Contractor's performance of the work, whether caused in part by a party indemnified under this section, and the Contractor agrees to indemnify and hold the Owner, Roofing Consultant, and their Board of Trustees, officers, elected officials, employees, agents and volunteers free and harmless from and against any and all liabilities, expenses, claims, costs, suits and damages resulting from performance of the Work.

The Contractor shall maintain sufficient safeguards against the occurrence of accidents, injuries or damage to any person or property.

Materials requiring removal are to be disposed in a safe and legal manner.

**2.3 MATERIALS:** Shall conform to the respective specifications and to the requirements herein.

**2.3.1 50 mil FiberTite-XT-FB “fleece back” or demonstrated equivalent:** Membrane shall conform to ASTM 6754 “Standard for Keytone Ethylene Ester Based Sheet Roofing”, with 4 oz. non-woven polyester felt heat bonded to the back side, with a 3 in. selvedge edge for field welding.

**2.3.2 50 mil FiberTite-XT or demonstrated equivalent:** for use on parapet walls contains the same characteristics as 50 mil XT-FB as described above, but with a smooth surface on both sides.

**2.3.3 FTR 190e or demonstrated equivalent:** A low VOC solvent borne contact adhesive is designed for bonding non-fleece back membranes to vertical surfaces and is to be used on all parapet walls for this project. It is compliant with all air quality districts in California, and is a Nitrile/PVC polymeric adhesive also approved by FM-Global and Underwriters Laboratories.



**2.3.4 CR-20 Adhesive or demonstrated equivalent:** CR-20 is a two component, low rise, spray polyurethane adhesive foam. It is applied in a “spatter” pattern for adhering the “Fleece Back” membrane. CR-20 is delivered in portable containers (Parts A & B) and can be applied without additional equipment or external power requirements.

**2.3.5 Rawl Mushroom Head, Carbon Steel SPIKE® - 3/16” x 3 1/2” or demonstrated equivalent:** For use as membrane perimeter assurance and restraint fasteners, secured in concrete structural decks. For perimeter assurance use with FTR-Magnum barbed stress plates as described in 2.3.6 below. **Also for use with wood nailers at walls. Use 3/8” or 1/2” inch diameter for attachment of wood nailers at the roof perimeter, in accordance with primary material manufacturer requirements and Factory Mutual’s Property Loss Prevention Date Sheet 1-49.** Fasteners are counter sunk, with washers.

**2.3.6 FTR-MAGNUM Series Barbed Stress Plates or demonstrated equivalent:** Used to anchor membrane, with a 1/4 inch diameter hole in its center. The plate has a raised reinforcement area and “barbs.” For use with perimeter fasteners described above.

**2.3.7 Flashing Accessories:** Manufacturer provides pre-molded and sheet form non-reinforced accessories for their Roofing Systems. They are sealed in place using conventional hot air welding techniques. Pre molded KEE pipe flashings accommodate cylindrical penetrations from 1 to 6 inches in diameter. Pre molded universal inside/outside corner flashings accommodate wall, curb and other rectangular penetration corners. Manufacturer also provides a 60-mil, non-reinforced KEE membrane for use where pre-molded components do not accommodate the penetration.

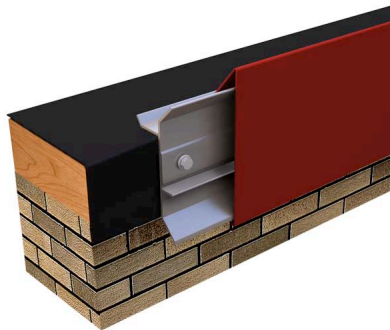
**2.3.8 FTR Termination Bar or demonstrated equivalent:** FTR Termination Bar is designed and intended for attaching and sealing roofing membrane and flashing terminations, and to provide linear restraint at flashing transitions or compression seals at flashing termination points. Bars are corrosion resistant extruded 6063 T5 aluminum, pre-punched with slotted holes at 7.8 inch intervals and are 10 feet in length. Fasteners with metal, neoprene backed sealing washers are to be used when bars are exposed to the weather.

**2.3.9 FTR 101 or demonstrated equivalent:** FTR 101 is a general purpose, one component, high performance, gun-grade elastomeric polyurethane sealant. It typically requires no priming to bond to many materials including metal, masonry, concrete and wood. FTR 101 is designed for use with FiberTite membranes in conjunction with terminations, drain seals and metal flashings. It exhibits excellent resistance to weather, stress, movement, water and many environmental chemicals while maintaining adhesion, cohesion and elasticity. Seaman Corporation supplies FiberTite 101 in cases of ten (10) standard 11 fl. oz. cartridges.

**2.3.10 Roof Drains - Clamping Type:** Complete assembly including cast iron bowl, strainer and clamping ring to replace existing drain main and overflow pairs. Provide new stainless steel fasteners, washers and nuts.

**2.3.11 Fibertite Tuff Trac or demonstrated equivalent Walkway & Protection Materials:** To improve footing on wet surfaces, and to be applied at exit / entry points for roof hatch and stairs. FiberTite Tuff Trac features XTreme membrane 46 x 44/1,000 x 1000 denier woven polyester fabric reinforcement coated with KEE formulation, embossed with a low profile diamond plate design, and is designed to be hot air welded directly to the roofing membrane.

**2.3.12 Architectural Metal Edge Systems:** FiberTite (or demonstrated equivalent) AT Fascia consists of a heavy duty extruded aluminum anchor bar that secures the membrane face to the perimeter nailer, and functions as a receiver for the snap on steel fascia cover. Metal Edge system is to be supplied in phosphorized paint grade finish, primed and painted to match existing exterior wall color for use at upper roof level, sized to match existing coverage at the outside wall. Remove existing gravel guard drip edge at upper level.



At lower level parapet walls, secure 2 x 8 wood nailer, cut to fit the angle at the outside edge, and cut the inner edge parallel to match. Apply 24 gauge clad metal using galvanized annular ring shank nails staggered six (6) inches on center, over 20 gauge continuous cleat, fastened three (3) inches on center. Use galvanized annular ring shank nails. Nails to have minimum one (1) inch penetration into wood.

**2.3.13 Wood Nailers:** Wood nailers are pressure treated with salt preservatives and must be securely attached. Use Douglas Fir, or wood having similar decay resistant properties.

**2.3.14 Dunn-Edwards Super-Loc® Premium or demonstrated equivalent Primer for roof edges to be painted:** Suer-Loc® Premium modified acrylic urethane primer with

superior adhesion, does not contain ethylene glycol, a listed hazardous air pollutant. Dunn-Edwards is the only major manufacturer to have removed EG.

**2.3.15 Dunn-Edwards Evershield® or demonstrated equivalent low sheen Velvet finish:** Dunn-Edwards Evershield® is an ultra premium paint. Apply two (2) coats. Paint and Primer must be manufacturer's best ultra premium exterior grade. Color must be computer color matched to existing painted upper roof edge or wall color sample.

**2.3.16 FTR-Value or demonstrated equivalent Closed Cell Polyisocyanurate Insulation One and a half (1 1/2) Inch Thickness:** FTR-Value is a rigid roof insulation panel composed of a closed cell polyisocyanurate foam core with fiber reinforced facers on each side, manufactured to meet or exceed Federal Specifications: ASTM C1289-06 Type II, Class 1 Grade 2, and approved by Underwriters Laboratories and FM-Global as a component of FiberTite roofing systems. To be used as replacement for any wet insulation removed around drains. Confirm thickness of existing insulation prior to ordering. For adhered insulation attachment, insulation boards shall not exceed four (4) feet by four (4) feet.

**2.3.17 Roof Access Hatch - Hinged, Counterbalanced Spring Loaded Cover Assembly:** Replace the existing roof hatch in the South East corner, with new. Remove and properly dispose of existing old unit.

**2.3.18 Butyl Sealant Tape with double sided adhesive**

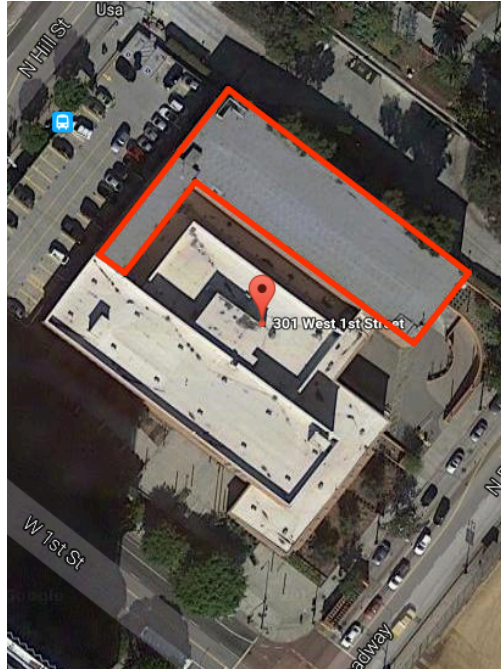
**2.3.19 24 Gauge Stainless Steel Surface Mounted Counter Flashing with Sealant Ledge:** For use at the curb surrounding concrete stairs in the North West corner. To be applied over termination bar, and backed with butyl sealant tape as above, over properly prepared surfaces.

**2.3.20 20 Gauge Hot Dipped G-90 Galvanized Metal Plate and "Expansion Joint Filler" Closed-Cell Polyethylene Tubing:** For use with field fabricated expansion joint at upper level roof outcropping, to replace existing expansion joint.

**2.3.21 22 Gauge Stainless Steel 2B Finish:** For use in fabricating and installing properly sealed replacement flashings for the expansion area where lower level adjoins upper level walls. Use only stainless steel fasteners where required.

## **PART 3 - PROJECT SCOPE**

### **3.1 SCOPE OF WORK:**



The Work of this Specification includes the roof area known as the “Seventies” building, located on the North. At three core sample locations, the roof assembly consisted of one layer of mineral granule surfaced built up roofing over inch and a half (1 1/2”) polyisocyanurate insulation over a structural concrete deck. Core samples may not be representative of the existing roofing system at repairs or other areas.

Replace the roof access hatch in the South East corner with new as described in Special Conditions item 4.4.4.

Replace all existing drains with new cast iron roof drain pairs and new stainless steel fasteners, including main and overflow, securely fastened to the roof deck and including a clamping ring. Where wet or damp materials are encountered, remove and replace all wet or damaged materials.

Remove all roofing material at the parapet walls. Cut 2x8 nailers aligned with exterior wall angle at outside edge, and cut the inner edge parallel to match. Fasten nailers to achieve

secure attachment meeting primary material manufacturer requirements, and FM data sheet 1-49. Install clad metal over continuous cleat, formed to fit exterior wall surface. Fully adhere membrane at walls. Prime and paint clad metal visible over roof edge, to match existing wall color.

At the upper level roof, remove existing drip edge, turn membrane over the edge and install new Architectural Metal edge using paint grade fascia. Match existing coverage at the outside wall. Prime and paint to match existing color at exterior walls. Replace any damaged or deteriorated nailers.

## **PART 4 - EXECUTION OF THE WORK**

### **4.1 Installation of PCV-KEE Membrane**

- Only install as much new roofing as can be made weathertight each day, including all flashing and detail work. Cleaned and heat-weld all seams before leaving the job site that day. Coordinate work to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.
- Scheduled and execute all work without exposing the interior building areas to the effects of inclement weather. Protect the existing building and its contents against all risks.
- All surfaces to receive new materials shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application.
- Secure all new and temporary construction, including equipment and accessories, in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- Install uninterrupted water stops at the end of each day's work and completely remove before proceeding with the next day's work. Water stops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.
- Install all flashings concurrently with the roof membrane in order to maintain a watertight condition as the work progresses.

- Seal the water stop to the deck and/or substrate so that water will not be allowed to travel under the new or existing roofing.
- Seal the edge of the membrane in a continuous heavy application of manufacturer approved sealant.
- When work resumes, cut out the contaminated membrane. Remove all sealant, contaminated membrane, separation board fillers, etc. from the work area and properly dispose off site. None of these materials shall be used in the new work.
- If inclement weather occurs while a temporary water stop is in place, provide the labor necessary to monitor the situation to maintain a watertight condition.
- If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense.

Install walk pads to provide additional traction at access points. The FTR Roofing membrane is puncture resistant. Use membrane protection to prevent construction damage during the performance of this Work.

#### **4.1.1 Preparation:**

Remove the existing wall coverings at the parapet walls. Also remove any loose or torn cap sheet at exhaust fan and other curbs near the roof access hatch in the South East corner. Remove and replace all wet insulation in this area, or encountered around others drains and / or repair areas.

Recover installation: Contractor is required to properly prepare the existing roofing membrane in accordance with the Primary Material Manufacturer's Installation Guidelines and these Specifications for installation.

Surfaces to receive new membrane must be free of any standing water, dew or any other contaminants that could impair adhesion of the membranes. Examine all areas and correct all conditions detrimental to proper execution of the Work. All surfaces to be bonded must be clean, dry and free of any debris that would interfere with the proper application of the membrane.

Cut or double cut blisters and re-adhere.

#### **4.1.2 Roof Removal and installation at Drains:**

Remove the existing roof and all components at drains. Replace main and overflow drain pairs with new cast iron drains and clamping rings. Provide new stainless steel fasteners, washers and nuts. Ensure new drains are level, plumb and secured to the deck. Temporarily plug openings to protect drain lines from debris. Remove temporary plugs in the event of rain. Follow Manufacturer's Detail Drawing for drains, using non reinforced 60 mil flashing piece extending out to the field membrane. The drain target sheet should be sized and installed to provide for a minimum of 12 inches of exposed 60 mil on all sides of the drain. The outer edges are then heat welded to the field membrane as shown in Detail Drawings. Work shall be coordinated to ensure that sequencing of the installation promotes a 100% watertight installation at the end of each day.

#### **4.1.3 Fully adhered roof membrane installation:**

50 mil FiberTite-XT-FB "fleece back" is adhered directly over properly prepared surfaces, clean, dry, and free of surface contaminants.

**CR-20 low rise plural component foam can impart greater strength than mechanical fasteners, but the materials are more sensitive to proper application. Read and understand the guidelines, and follow all Manufacturer recommendations noting set up time for adhesive based on temperature. Fleece back membrane installation requires standard formula CR-20.**

Components age in storage and lose effectiveness. Use fresh stock. Do not exceed manufacturer recommendations for maximum shelf life. When applied, adhesive temperature should be between 70-95 degrees F. Do not store at temperatures over 100 deg. F.

Purge hoses after use to prevent pressure buildup when left in the heat of the sun.

**Important:** When spraying is stopped for more than one (1) minute, the nozzle should be removed and replaced with a new nozzle. If the trigger is pulled while a clogged nozzle is on the gun, chemicals under pressure can back up and "crossover" into the hoses. This is easily avoided by changing nozzles when spraying is stopped for more than one (1) minute.

**The bonding range for FTR-CR20 will vary according to ambient and substrate temperature. The amount of substrate area that the FTR-CR20 is applied to ahead of the membrane should be monitored to prevent installing the membrane in dry adhesive. Care must be taken, particularly in high temperature environments of 90 degrees F and above,**

**to insure that the-CR20 has not dried or skinned over prior to embedding the fleece back membrane.**

**Use of a protection board is recommended to prevent overspray of adhesive at membrane side laps that could interfere with proper bonding when heat welding seams.**

#### **MEMBRANE SECUREMENT**

- A. Un-roll approximately 30 feet of the FTR 50 mil XT-FB (Fleece Back) membrane and position the roll over the properly installed/prepared substrate. Pull the tail back over the roll to expose a workable area (approx. 30') of substrate. (Do not utilize the "butterfly method.")
- B. Apply a 100% continuous coat of adhesive to the substrate
- C. The amount of substrate that can be coated with a workable amount of adhesive will be determined by application method, ambient temperature, humidity, and available manpower.
- D. To ensure proper application and curing of the adhesive, the outside air temperature shall be above 40°F and rising.
- E. CR-20 adhesive is to be applied by splatter-spraying and "back" rolling or just rolling.
- F. Roller applied adhesive shall utilize a solvent resistant 3/8 inch nap roller.
- G. The splatter-spray application will be even, 100% coverage of the substrate with no voids, skips, globs, puddles, or similar irregularities.
- H. Allow the adhesive to set up only to the point that the adhesive is slightly cured but still wet. Do not allow adhesive to skin or "dry out."
- I. CR-20 Adhesive can be directly affected by moisture. The CR-20 adhesive shall not be installed over substrates that are moist or wet or on systems or substrates that have residual moisture.
- J. Broom the adhered portion of the membrane to ensure full contact and complete the bonding process by firmly pressing the bonded membrane into place with a weighted, foam-covered, lawn roller.
- K. Repeat the process for the remaining un-bonded portion of the membrane, lapping subsequent, adjacent rolls of membrane a minimum of 3 inches, ensuring proper shingling of the membrane to shed water along the laps.
- L. No adhesive shall be applied to the lap "seam" areas of the membrane. Areas contaminated with adhesive are difficult to clean, will impair proper welding of the seams and require a membrane patch.
- M. Do not use bad or marginal adhesives. Contact manufacturer if the quality of the adhesive is suspect.



#### **4.1.4 Installation at Parapet Walls:**

Remove the existing wall coverings at the parapet walls. New FiberTite 50 mil XT (non fleece back) is to be installed at all parapet walls, fully adhered in FTR 190e adhesive.

2x8 wood nailers are to be installed with the outer edge cut at an angle to match the outer wall surface at the top of the parapet walls. Cut the inner edge of the nailer parallel to the outer edge. It is essential that secure attachment is accomplished. Use Rawl mushroom head, carbon steel Spike as described in Section 2.3.5, 3/8" or 1/2" diameter fastened in accordance with primary material manufacturer requirements and FM Data Sheet 1-49. Minimum embedment for 3/8" is 1 3/4", for 1/2" fasteners, minimum embedment in the concrete substrate is 2 1/2".

Install 20 gauge continuous cleat and clad metal to conform to exterior wall angle. Use galvanized annular ring shank nails minimum with one (1) inch penetration fastened in a staggered pattern, three (3) inches on center for the cleat, and six (6) inches on center for the clad metal.

#### **4.1.5 Priming and Painting Exposed Metal Roof Edges:**

Use only specified materials, manufacturer's best ultra premium grade, computer color matched to existing walls.

Remove surface contamination and prepare surfaces in accordance with product manufacturer's instructions for priming and painting.

Apply primer, and two (2) finish coats of paint. Do not exceed application rate recommended for the surface. Comply with manufacturer's recommendation for drying time between applications.

Apply paints smoothly, free of, streaks, runs, sags, holidays, air bubbles, and excessive roller stipple. Correct defects by applying additional finish coat.

#### **4.1.6 Membrane Perimeter "assurance" or restraint:**

Must be provided at all building perimeters and penetrations, by fastening through the structural deck with rows of Magnum stress plates and fasteners spaced twelve (12) inches on center, sealed by heat welding membrane over the fasteners. See fastener description under Materials, - Section 2.3.6.

#### **4.1.7 Hot Air Welding:**

All field seams exceeding 10 feet in length shall be welded with an approved automatic welder. The use of a dedicated, portable generator is required to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.

All seams must be clean and dry prior to welding. Remove foreign materials from the seams (dirt, oils, etc.) with acetone or authorized alternative. Use CLEAN WHITE COTTON cloths and allow approximately five minutes for solvents to dissipate. Do not use denim or synthetic rags for cleaning.

Hand Welding - For hand welding, the membrane should be intermittently tack welded to hold in place. The back “interior” edge shall be welded first, with a thin, continuous weld to concentrate heat along the exterior edge of the lap during the final welding pass.

The nozzle shall be inserted at a 45 degree angle. Once the polymer begins to flow, a hand roller shall be used to apply pressure at a right angle. Properly welded seams shall utilize a 1½ inch wide nozzle, to create a homogeneous weld, a minimum of 1½ inches in width.

Smaller nozzles may be used for corners, and other field detailing, maintaining a minimum 1 inch weld.

Probe all seams with a dull, pointed probe to ensure the weld has created a homogeneous bond.

- At least three (3) times a day, take a minimum of one (1) inch wide cross-section samples of welded seams, and temporarily retain at location for subsequent inspection review.
- Correct welds display failure from shearing of the membrane prior to separation of the weld.
- The job foreman and/or supervisor shall initiate daily inspections of all completed work which shall include, but is not limited to, the probing of all seam welding with a dull pointed instrument to assure the quality of the application and ensure that any equipment or operator deficiencies are immediately resolved.

Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current manufacturer's Specifications and Details.

Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted.

**4.2 WEATHER PROTECTION** - Daily, prior to job shut down, progressive installation of material shall be checked for water integrity. Seal perimeter and all seams water tight. All wet materials from failure to ensure water integrity shall be replaced at the Contractor's expense.

**4.3 CLEANUP:** Clean Up - Debris shall be removed daily as work progresses. Areas around the work space to be cleaned daily. Job site to be left in completely clean condition at completion.

## 4.4 SPECIAL CONDITIONS

**4.4.1 Temporary Repair Prior to Start:** Install temporary water seals at loose and open seams, or torn “cap sheet” at parapet walls and equipment curbs, and any open or cracked corner details before starting other work to minimize water intrusion. Self adhesive membranes may be used over properly prepared surfaces, free of surface contaminants.

**4.4.2 Stainless Steel Flashings at the base of Upper Level Outcropping, where it joins the Lower Level Roof:** Fabricate and install new 22 gauge 2B stainless steel flashings and trim that provide for thermal expansion, weathertight mounting and positive anchorage to building. Coordinate installation with wall flashings and other components.

Install components required for a complete flashing assembly including corners, seams and flashings complying with SMACNA’s sheet metal manual. Use standing seam with folded ends for panel joints, and interlocking slip joint seams at panel ends allowing for thermal or structural movement, to provide laps, joints and seams that will be weather resistant and water tight using concealed fasteners where possible.

Hem all exposed edges, half (1/2) inch on the concealed side. Use only stainless fasteners, washers and nuts. Use surface mounted counter flashing at walls.

**4.4.3 Masonry Anchors:** Pre-drill all masonry anchors, and use metal, not plastic, masonry anchors such as Rawl products. Power driven fasteners are not acceptable.

**4.4.4 Roof Access Hatch - Hinged, Counterbalanced Spring Loaded Cover Assembly:** Replace the existing roof hatch in the South East corner, with new. Remove and properly dispose of existing old unit.

**4.4.5 Walkway & Protection Materials:** To improve footing on wet surfaces, apply Protection Materials at all roof access traffic points around the concrete stairs with railing, where they meet the roof level, and at the roof access hatch.

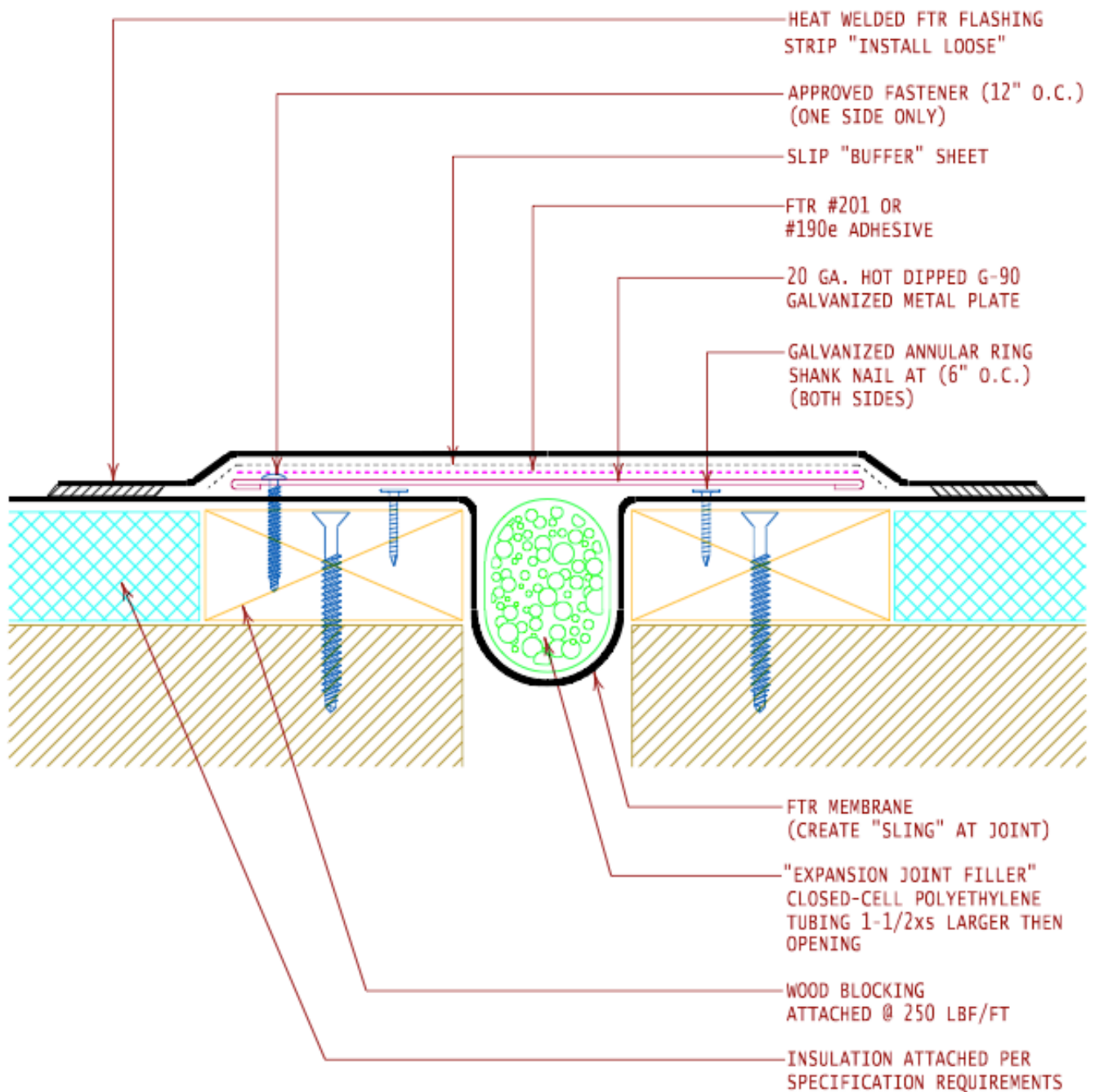
1. Roofing membrane to receive walkway material shall be clean and dry.
2. Cut and position the walkway material as directed by the specifications.
3. Hot air weld the entire perimeter of the walk way to the previously cleaned roofing membrane. Avoid excessive heating of the walk way material to prevent scorching the underlying roofing membrane.

**4.4.6 Sealant Application:** Where sealant is applied to existing weathered surfaces, such as walls, clean existing surfaces with a rag lightly coated with sealant or primer, to remove all surface contaminants prior to application of sealant. All surfaces to receive sealant and / or butyl sealing tape are to be free of surface contaminants that could interfere with full adhesion.

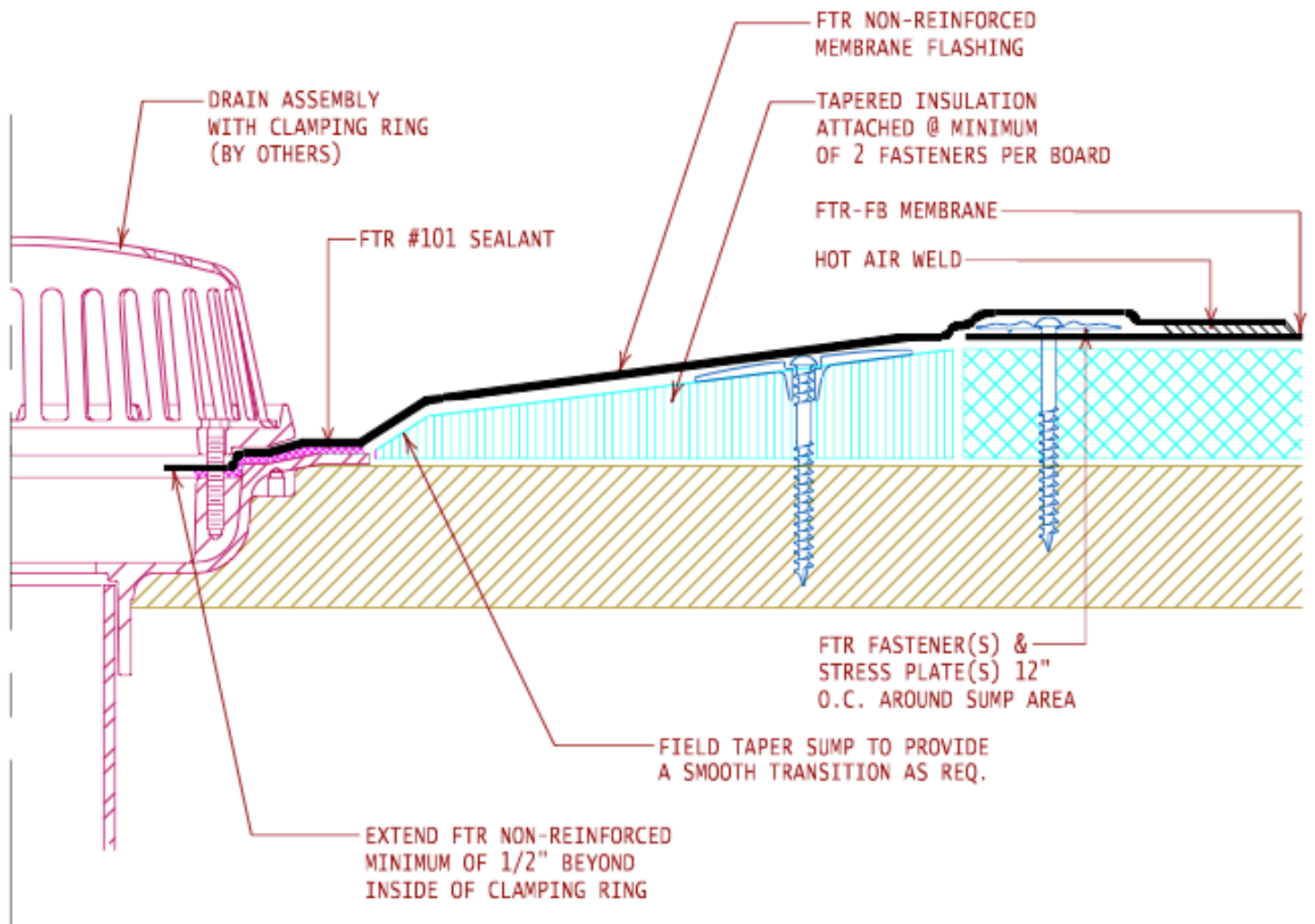
**4.4.7 Expansion Joint at Upper Level:** Install field fabricated expansion joint to replace existing expansion joint. Fasten twenty (20) gauge galvanized metal plate, one side only, over polyethylene filler, and cover with membrane, extending over exposed ends.

**4.4.8 Surface Mounted Counter Flashing with Sealant Ledge:** At the curb surrounding concrete stairs in the North West corner, install termination bar at the top of the membrane. Over the termination bar, install 24 gauge stainless steel counter flashing. **Detail Drawing Note:** At all counter flashing, apply double sided adhesive butyl tape to replace FTR 101 behind fasteners. Clean and prime surface prior to application. Apply and tool FTR 101 at sealant ledge.

**4.4.9 Free Flowing Drains:** Free flowing drains are essential to properly evacuate water from the roof surface. Temporarily plug drain lines while removing and replacing drains. At completion water test drains for free flow. It shall be the responsibility of the roofing Contractor to correct and repair defective drain operation, either directly or through an approved plumbing sub contractor. If the plumber cannot restore drains to proper operation with a service call, and structural defects are encountered requiring additional correction, additional amounts shall be added to the Contract Amount as Extra Work upon prior approval by Owner.



## EXPANSION JOINT

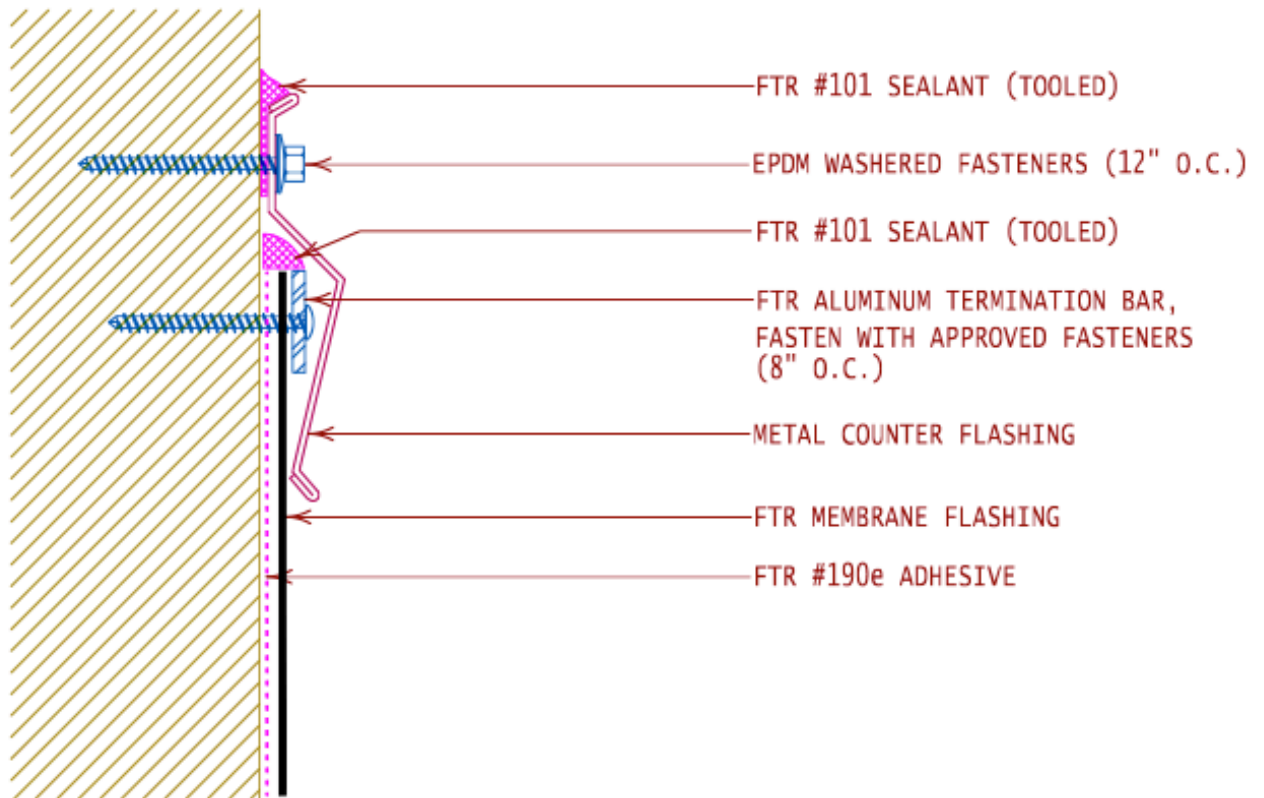


NOTE: USE TAPERED ROOF INSULATION (EDGE STRIPS) TO CREATE DRAIN SUMP. IF TOTAL INSULATION THICKNESS IS LESS THAN OR EQUAL TO 1 1/2 IN., TAPER 12 IN. FROM THE DRAIN CENTER. IF TOTAL INSULATION THICKNESS IS GREATER THAN 1 1/2 IN., TAPER 18 IN. FROM DRAIN CENTER.

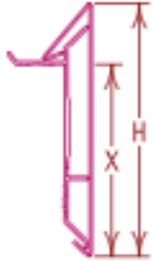
## TYPICAL DRAIN FLASHING



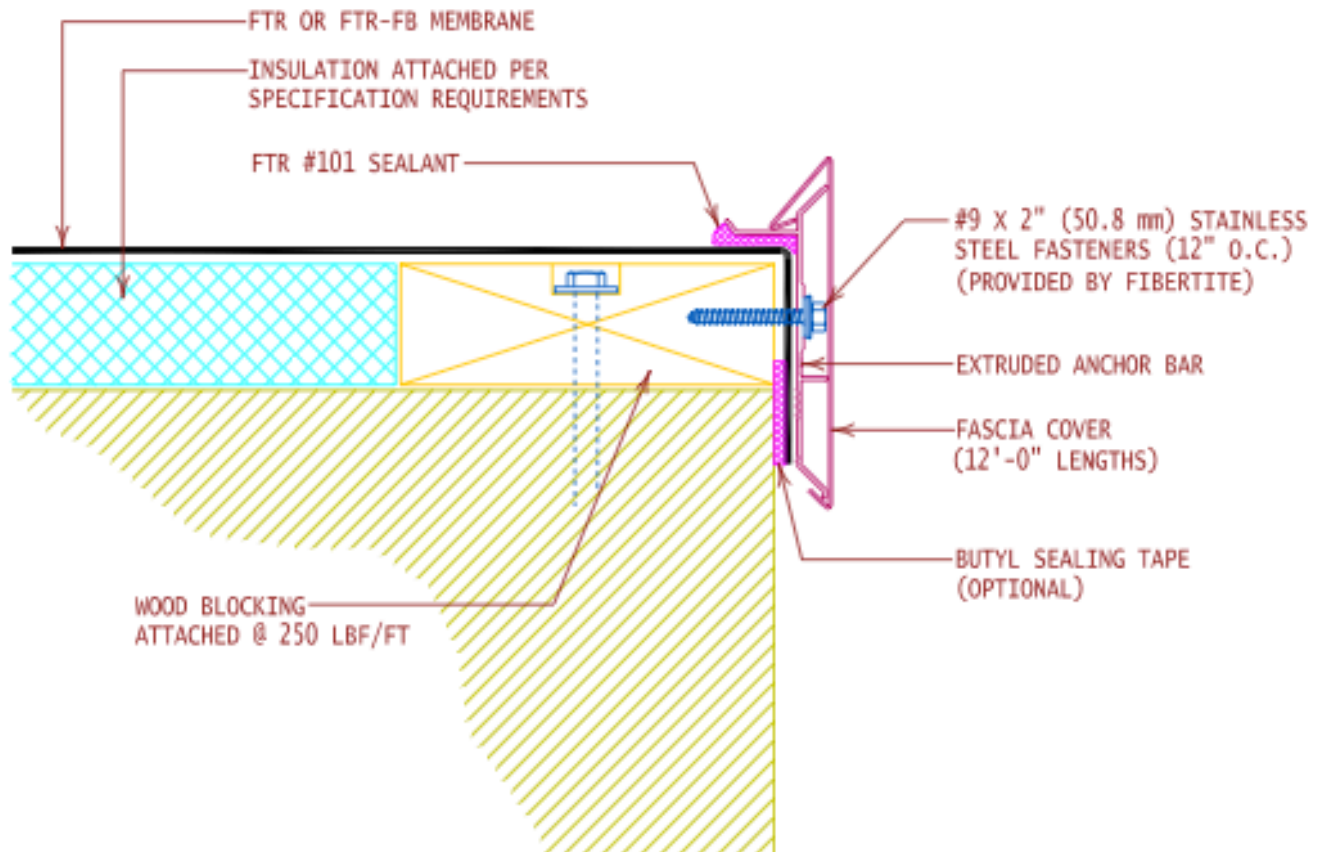




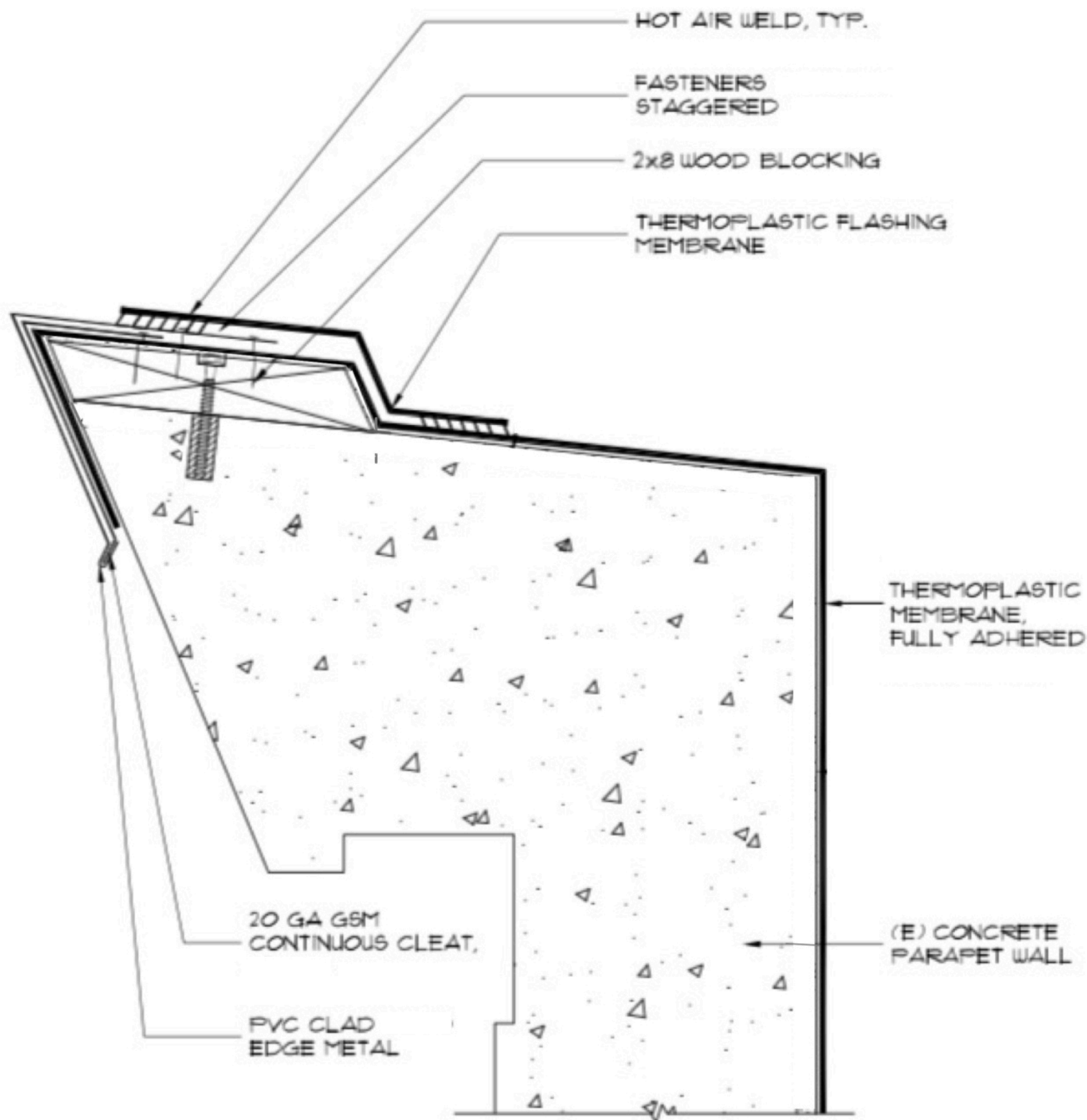
## COUNTER FLASHING

FIBERTITE AT FASCIA SYSTEM (STANDARD FASCIA)				
PRODUCT ID. NO.	H DIMENSION	X DIMENSION	NAILER COVERAGE	
F-2040	4" (101.6 mm)	2-3/4" (69.9 mm)	1 NAILER	
F-2055	5-1/2" (139.7 mm)	4-1/2" (108.0 mm)	2 NAILERS	
F-2070	7" (177.8 mm)	5-3/4" (146.0 mm)	3 NAILERS	
F-2085	8-1/2" (215.9 mm)	7-1/4" (184.2 mm)	4 NAILERS	
FM APPROVED 1-645 / MIAMI DADE APPROVED				

NOTE:  
INSTALL PRE-MANUFACTURED EDGE  
SYSTEM PER SPECIFICATIONS AND  
FIBERTITE'S INSTALLATION  
REQUIREMENTS



UPPER LEVEL ROOF EDGE



## PARAPET EDGE

SCALE: N.T.S.

## **AVAILABLE INFORMATION**

### **INTRODUCTION**

#### **1. DOCUMENTS INCLUDED**

- A. Drawings for the Library ("Seventies" building) showing drain locations.
- B. Roof Cut Photos.

#### **2. DRAWINGS**

- A. Drawings are organized by building.
- B. Existing drawings are not "As-Built Drawings" or "Project Record Drawings" unless indicated as such.
- C. Existing drawings may not be complete, or accurate even if labeled as "As-Built Drawings" or "Project record Drawings".
- D. Dimensions and construction shown on existing drawings may not match current conditions. Contractor shall verify dimensions and construction in the field.
- E. Bidders may need to review more than one existing drawing, assisted by field investigations, to obtain the information required to determine locations, quantities, dimensions and other physical characteristics of existing site improvements and construction affecting the Work.

#### **3. ROOF CUT INFORMATION**

- A. Roof cut information and photos were collected at various areas of each roof of the "Seventies" Building. The exact location of on each roof where each roof cut and associated photo was taken is not provided.
- B. Roof cut information and photos may not be representative of existing roofing systems.
- C. Bidders may collect roof cuts, upon approval by Owner, as they deem necessary to determine for themselves conditions of existing roof system and associated construction. Test cuts must be performed by a licensed roofing contractor. Repair test cut locations in accordance with industry standards, and to the satisfaction of the Owner.

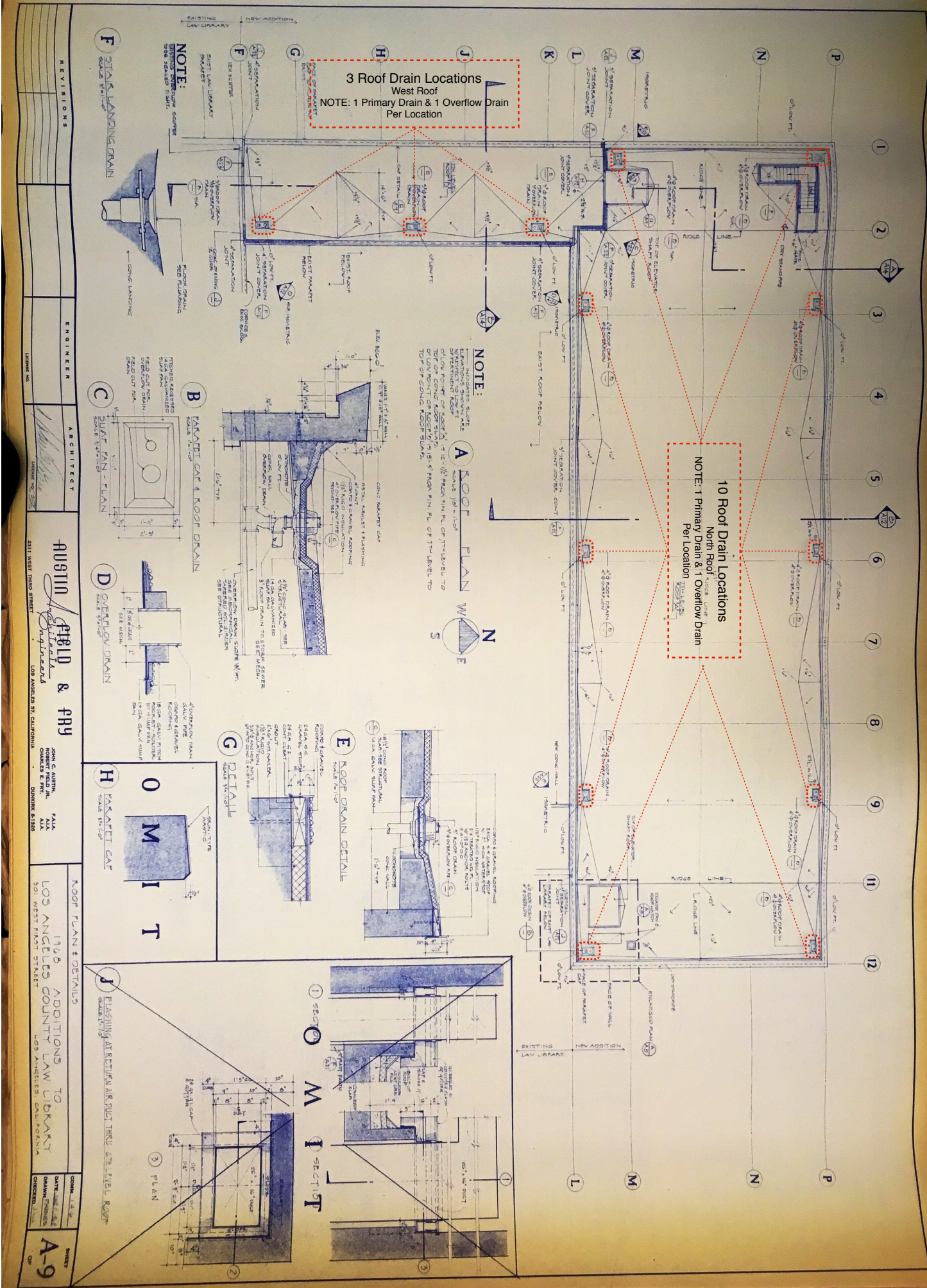
#### **4. RELIANCE ON AVAILABLE INFORMATION**

- A. Unless stipulated otherwise, the documents identified under this Section, are specifically excluded from the Contract Documents. Therefore, these documents are provided for informational purposes only. Owner, Roofing Consultant, and entities that prepared these documents make no warranty or guarantee that they are representative of those conditions currently existing at the Site. Interpretations made, opinions formed and conclusions drawn as a result of examination of these documents will be made, formed, and drawn solely by Bidder.









3 Roof Drain Locations  
West Roof  
NOTE: 1 Primary Drain & 1 Overflow Drain  
Per Location

10 Roof Drain Locations  
North Roof  
NOTE: 1 Primary Drain & 1 Overflow Drain  
Per Location

NOTE:  
INDICATED SURF  
FINISHES TO BE  
AS NOTED  
ON ROOF PLAN  
OF LOT 10 OF MAP 1  
15-18 FROM N.H. OF THE LEVEL TO  
TOP OF CONG. ROOF SLAB, 5'-3" FROM FIN. FL. OF 1<sup>ST</sup> LEVEL TO  
TOP OF CONG. ROOF SLAB.

A ROOF PLAN  
SCALE 1/8" = 1'-0"



E ROOF DRAIN DETAIL  
SCALE 1/4" = 1'-0"

C DETAIL  
SCALE 1/4" = 1'-0"

H PARAPET CAP  
SCALE 1/4" = 1'-0"

B PARAPET CAP & ROOF DRAIN  
SCALE 1/4" = 1'-0"

D OVERFLOW DRAIN  
SCALE 1/4" = 1'-0"

F STAIR LANDING DRAIN  
SCALE 1/4" = 1'-0"

AUSTIN FIELD & PHU  
ARCHITECTS  
1108 ADDITIONS TO  
LOS ANGELES COUNTY LAW LIBRARY  
301 WEST FIRST STREET  
LOS ANGELES, CALIFORNIA 90012  
JOHN C. AUSTIN, PRINCIPAL  
ROBERT PHU, JR., PRINCIPAL  
ALYA, PRINCIPAL  
DUNNICK #1350

REVISIONS  
ENGINEER  
ARCHITECT  
DATE  
DRAWN  
CHECKED  
SHEET  
A-9