TRC
WORLDWIDE ENGINEERING

(C.O.A. No. 27322)

ORTIZ DETENTION CENTER, CORE BUILDING #II

Flat Roof Replacement and Related Work

Lee County
Southwest Florida

2501 Ortiz Ave
Fort Myers, Florida 33905

Date: June 26, 2020 Job No. : 19FTM208

PROJECT MANUAL

11926 Fairway Lakes Drive, Fort Myers, Florida 33913 (239) 939-1414

ORTIZ DETENTION CENTER CORE BUILDING #II

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(FILE No.: 19FTM208)

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SECTION 00800

GENERAL CONDITIONS

1.01 DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms shall have the meanings indicated which shall be applicable to both the singular and plural thereof:

ADDENDUM: Alteration or clarification of the specifications or plans provided by the OWNER or OWNER'S AGENT prior to the Bid Opening. An Addendum becomes part of the Contract Documents when the Contract is executed.

AGREEMENT: The written agreement between the OWNER and the CONTRACTOR covering the Work to be performed, including the CONTRACTOR'S Bid and the Bonds.

AGENT: A party who is under separate CONTRACT with the OWNER to act on his behalf. This agent is TRC Worldwide Engineering, Incorporated.

APPLICATION FOR PAYMENT: The form, which is to be used by the CONTRACTOR in requesting progress payments.

BID: The offer of proposal of the Bidder submitted on the prescribed form setting forth the prices for which the Work is to be performed.

BIDDER: Any person, firm or corporation submitting a Bid for the Work.

CHANGE ORDER: A written order to the CONTRACTOR signed by the OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

CONTRACT DOCUMENTS: The Agreement, Specifications, Drawings, addenda (whether issued prior to opening of Bids or after execution of the Agreement) and modifications.

CONTRACT PRICE: The total monies payable to the CONTRACTOR under the Contract Documents.

CONTRACT TIME: The dates established for commencement and completion as stated in the Agreement and presented in calendar days. Fully complete means completion of all Work including Punch List items.

CONTRACTOR: The person, firm or corporation with whom the OWNER has executed the Agreement.

DRAWINGS AND SPECIFICATIONS: The drawings and plans which show the character and scope of the Work to be performed and which have been prepared by the OWNER'S REPRESENTATIVE and approved by the OWNER and are part of the Contract Documents.

FIELD CHANGE REQUEST: A written request from the CONTRACTOR requesting an addition, deletion or revision in the Work. The Document is not a Change Order, but evidence that the parties expect the Change Request will be incorporated and approved in a subsequently issued Change Order. (See Change Order).

INSPECTION: On-site observations as necessary to verify that construction is being completed in general conformance with the plans and the specifications.

OWNER: The Corporation or Entity with whom the Contractor has executed the Agreement.

OWNER'S REPRESENTATIVE: A person or persons charged with representing the OWNER'S interests. This is TRC Worldwide Engineering, Incorporated.

PROJECT: The entire construction to be performed as provided in the Contract Documents.

PROJECT MANUAL: The Instructions to the Bidders, the General Conditions, the Technical Sections and all Supplemental Drawings as indicated in the volume "Project Manual".

SHOP DRAWINGS: All drawings, diagrams, illustrations, brochures, schedules, and other data which are prepared by the CONTRACTOR, a Subcontractor, manufacturer, supplier or distributor and which illustrates the equipment, material or some portion of the Work.

SUBCONTRACTOR: An individual, firm or corporation having a direct contract with the CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

WORK: Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by the CONTRACTOR under the Contract Documents, including the furnishings of all labor, materials, equipment and other incidentals.

1.02 COPIES OF DOCUMENTS

A. The OWNER will furnish to the CONTRACTOR as many copies of the Specifications and Drawings as are reasonably necessary up to 3 copies for the permitting of the Work. Additional copies may be furnished, upon request, at the cost of reproduction.

B. The CONTRACTOR will keep one record copy of all specifications, Drawings, Addenda, Modifications, and Shop Submittals at the site and in good order.

1.03 USE OF PREMISES

A. The CONTRACTOR will not load nor permit any part of the structure, to be loaded with loads that will endanger the structure, nor will he subject any part of the Work to stresses or pressures that will endanger it.

1.04 AUTHORITY OF THE OWNER'S REPRESENTATIVE/AGENT

A. General: The OWNER'S REPRESENTATIVE will review the work done and materials furnished by the CONTRACTOR, and carry out such other duties as are stated in these Specifications, or delegated to him by the OWNER.

B. The OWNER'S REPRESENTATIVE will conduct on-site observations of construction in progress at appropriate intervals to determine that work is proceeding in general conformance with the plans and the specifications. The purpose of the OWNER'S REPRESENTATIVE'S visits to the site will be to enable the OWNER'S REPRESENTATIVE to better carry out the duties and responsibilities assigned to, and undertaken by, the OWNER'S REPRESENTATIVE during the Construction Phase, and, in addition, by exercise of OWNER'S REPRESENTATIVE'S efforts as an experienced and qualified design professional, to provide for Association a greater degree of confidence that the completed work of CONTRACTOR(S) conforms to the Contract Documents and that the integrity of the design concept as reflected in the Contract Documents has been implemented and preserved by CONTRACTOR(S).

C. The OWNER'S REPRESENTATIVE will review requests for payment, shop drawings, material and equipment to be furnished for purposes of determining compliance with the Contract Documents.

D. Any information NOT furnished, or not furnished by the OWNER'S REPRESENTATIVE or inspectors does not relieve the CONTRACTOR of his responsibilities to complete the work.

E. The OWNER'S REPRESENTATIVE will notify the CONTRACTOR concerning any violation of, or failure to comply with any part of the Contract by the CONTRACTOR and take or recommend such other steps authorized by the Specifications as he may deem necessary.

F. The OWNER'S REPRESENTATIVE shall decide all questions concerning the interpretation of the Contract Documents pertaining to the character, quality, amount and value of any work done and materials furnished under or by reason of this Contract, and his estimate and decisions shall be final and conclusive.

G. Inspectors, employed by OWNER'S REPRESENTATIVE, and under the supervision of the OWNER'S REPRESENTATIVE, shall make periodic inspections. The inspector will notify the OWNER'S REPRESENTATIVE of any work performed or materials furnished which do not comply with the Contract Documents.

H. Notwithstanding the other provisions of this paragraph, the OWNER'S REPRESENTATIVE will have no responsibility for the CONTRACTOR'S means, methods, techniques, and procedures used in construction, and will not be held liable for the CONTRACTOR'S inadequate or unsatisfactory performance of work.

1.05 SUBMITTALS

A. The CONTRACTOR will also submit to the OWNER'S REPRESENTATIVE for approval, with such promptness as to cause no delay in the Work, at least three (3) copies of all Submittals and shop drawings required by the Contract Documents. The OWNER and OWNER'S REPRESENTATIVE will each retain one copy. All Submittals and shop drawings will have been checked by and stamped with the approval of the CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers and use for which intended.

B. Work requiring submission shall not be commenced until the submission has been approved by the OWNER'S REPRESENTATIVE for the following:

Item	Type
Roofing Materials	Specification Data Sheets
Fasteners	Specification Data Sheets
Manufacturer's Color Samples	Aluminum Kynar Flashings
Manufacturer's Warranty	Sample
Flashing	Specification Data Sheets (Details)
Insulation	Manufacturers Sloping Drawing
Sealants	Specification Data Sheets
Aluminum Scupper Drains	Fabrication Drawing

1.06 APPLICATIONS FOR PROGRESS PAYMENTS

A. At least ten days prior to submitting the first application for a progress payment, the CONTRACTOR will submit a schedule of values of the Work including quantities and unit prices, aggregating the Contract Price. This schedule shall be satisfactory in form and substance to the OWNER and shall subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction.

B. Upon approval of the schedule of values by the OWNER, it shall be incorporated into the form of Application for Payment furnished by the OWNER. (AIA Document G702, G703). The CONTRACTOR shall submit an updated Project Schedule with each Application for Payment.

C. The CONTRACTOR will submit to the OWNER'S REPRESENTATIVE for review three (3) copies of the Application for Payment filled out and signed by the CONTRACTOR covering the Work completed during the first twenty-five (25) days of the preceding month supported by such data as the OWNER may

reasonably require. Quantities used in the Application for Payment shall be previously approved by ENGINEER.

D. The CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will have passed to the OWNER prior to the making of the Application for Payment, free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens"); and no Work, materials or equipment covered by an Application for Payment will have been acquired by the CONTRACTOR or by any other person performing the Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the CONTRACTOR or such other person.

E. The OWNER'S REPRESENTATIVE will, within ten working days after receipt of each Application for Payment, either indicate in writing his approval of payment and present the Application to the OWNER, or return the Application to the CONTRACTOR indicating in writing his reasons for refusing to approve payment (such as errors or incomplete Pay Applications). In the latter case, the CONTRACTOR will make the necessary corrections and resubmit the Application. The OWNER will, within ten days of presentation to him of an approved Application for Payment, pay the CONTRACTOR the amount approved by the OWNER or OWNER'S REPRESENTATIVE. Should the resubmitted Application cause a delay in payment, there will be no penalty towards the OWNER.

F. If the CONTRACTOR fails to provide the required construction schedules, submittals and samples, or fails to provide for tests and inspections, the OWNER'S REPRESENTATIVE may withhold approval of pay applications until the deficiencies have been corrected.

G. CONTRACTOR shall submit simultaneously with his Progress Payment Request a Contractor's Affidavit for Partial Progress Payment listing all subcontractors and suppliers, even if a notice to owner has not been filed along with Partial Waivers & Releases of Lien on printed forms acceptable to the OWNER.

1.07 APPROVAL OF PAYMENTS

A. Approval by the OWNER'S REPRESENTATIVE of any payment requested in an Application for Payment will be based on observations of the Work Progress and on a review of the Application for Payment and determination that the work has progressed to the point indicated and that the quality of Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning project upon completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in the approval).

B. Approval of payment by the OWNER'S REPRESENTATIVE shall not be deemed

to have been based on exhaustive or continuous on-site inspections to check the quality or the quantity of Work, or that he has reviewed the means, methods and techniques, sequences, and procedures of construction or that he has made any examination to ascertain how or for what purpose the CONTRACTOR has used the monies paid or to be paid to him on account of the Contract Price.

C. Payments due to the CONTRACTOR may be withheld by the OWNER on account of defective work not remedied, claims filed, reasonable evidence indicating probability of filing claims, failure of CONTRACTOR to make payment properly to Subcontractor or for material or labor on the reasonable belief of Association that the work to be performed under this Contract which remain unfinished cannot be completed for the balance then unpaid.

1.08 FINAL PAYMENT

A. Upon written notice from the CONTRACTOR to the OWNER that the Project is complete, the OWNER will make a final inspection with the CONTRACTOR and will notify the CONTRACTOR in writing of any particulars in which this inspection reveals that the Work is defective. The CONTRACTOR shall immediately make such corrections as are necessary to remedy such defects. At the OWNER'S request, the OWNER'S REPRESENTATIVE may be asked to perform an additional final inspection to verify all deficiencies have been remedied.

B. After the CONTRACTOR has completed any such corrections to the satisfaction of the OWNER and delivered all maintenance and operating instructions, schedules, guarantees, certificates of inspection and other documents, and CONTRACTOR has performed all of his obligations under the Contract Documents, he may make application for final payment following the procedure for progress payments. The final Application for Payment shall be accompanied by such supporting data as the OWNER may require, together with complete and legally effective releases or waivers of all Liens arising out of the Contract Documents and the labor and services performed and the material and equipment furnished thereunder. In lieu thereof and as approved by the OWNER, the CONTRACTOR may furnish receipts or releases in full; an affidavit of the CONTRACTOR that the releases and receipts include all labor, services, material and equipment for which a Lien could be filed, and that all payrolls, material and equipment bills, and other indebtedness connected with the Work for which the OWNER or his property might in any way be responsible, have been paid or otherwise satisfied; and consent of the surety, if any, to final payment. If any Subcontractor or supplier fails to furnish a release or receipt in full, the CONTRACTOR may furnish a bond satisfactory to the OWNER to indemnify him against any Lien.

C. CONTRACTOR shall submit simultaneously with Final Payment Application a Contractor's Final Affidavit and Release of Lien, plus Final Releases of Lien from all subcontractors, material and equipment suppliers, on forms acceptable to the OWNER.

1.09 WARRANTIES

A. The CONTRACTOR shall submit the following documents to the OWNER upon substantial completion and prior to final payment.

1. Provide Manufacturer's 20 Year NDL (No Dollar Limit) Warranty, plus additional 5 Year Warranty for the Membrane Only (25 Year Total Membrane Warranty). All materials to be warrantied shall be manufactured or supplied by approved membrane manufacturer.

B. All other work performed under this Contract not stipulated above will be warranted by the CONTRACTOR for all labor and material for a period of five (5) years from date of final payment. CONTRACTOR shall repair any and all leaks within forty-eight hours of notification or such defects and/or leaks during this five-year period.

END OF SECTION

SECTION 01010

SUMMARY OF WORK

General Description

The project includes removal all roofing materials down to structural deck and installation new flat roofing at the main tower roof of the structure as well as replacement of the roofing system at (5) low roofs and (2) high roofs. All new roofing systems shall achieve a minimum ¼" per foot slope. Miscellaneous work scope within this project includes installation of (2) new roof access hatches, minor Exterior Insulation Finishing System (EIFS) repairs at ancillary structures, removal/reinstallation of existing roof access ladders with new fasteners, and restoration of the existing lightning protection system. Roofing Contractor shall provide 5-year leak free warranty upon completion and approval of WORK.

The OWNER'S CONTACT is Scott S. Musheff, AIA, Senior Project Manager of Lee County Department of Facilities Construction and Management. Cell No: (239) 357-2759.

The OWNER'S REPRESENTATIVE is TRC Worldwide Engineering, Inc., and the primary contact is Robert Algoo, P.E., Project Manager. Cell No. (239) 898-2893.

Special Notes

All of the Contractor's project personnel and subcontractors will be subject to a mandatory background check by the Lee County Sheriff's Office. Access to and from the facility will require advanced notice to facility personnel and crews must be escorted to and from the work area. Facility staff will require a tools list be completed when entering the facility and validated prior to leaving, if any item is unaccounted for all work activities will be shut down until the item is located.

The following paragraphs describe work to be performed by CONTRACTOR. See Unit Schedules, Supplemental Drawings and other sections of Project Manual for further detail.

GENERAL

1. CONTRACTOR is responsible for covering / protecting fixed components to remain from debris and spatter.

2. The CONTRACTOR is to protect elevators and walkways from damage or dirt during transport of crews and/or materials.

3. CONTRACTOR shall obtain permit prior to commencement of construction activities. The OWNER'S REPRESENTATIVE will supply drawings and specifications for application and closeout of permits required for the WORK.

4. CONTRACTOR is responsible for permit acquisition and coordination of all inspections required by the Authority Having Jurisdiction (AHJ).

5. CONTRACTOR shall provide detailed schedule for review and approval by OWNER'S REPRESENTATIVE two weeks prior to commencement of construction activities.

6. CONTRACTOR shall create a site safety plan that would include the installation of fences, scaffolding and overhead protection at locations below work to protect from falling debris and to allow for egress from all building exits. CONTRACTOR may be required to submit said plan to the building department as part of permit application.

7. CONTRACTOR shall repair and / or replace any damaged components, including landscaping, and clean/paint/repair all areas affected by the scope of work herein. Site and elements not included in the scope of work, but affected by repairs, shall be refurbished to pre-construction condition.

8. Disposal of demolition debris and construction waste is the responsibility of the CONTRACTOR. Perform disposal in manner complying with applicable federal, state, and local regulations. CONTRACTOR shall leave the work area in a clean state at the end of each work day.

9. At completion of work, CONTRACTOR shall remove construction debris; clean all areas affected by repairs free of debris, spatter, etc. and perform landscaping repairs prior to leaving area where work has been completed.

ROOFING SYSTEM

1. CONTRACTOR shall furnish and install a FiberTite KEE Thermoplastic Roofing System. This system shall comprise of a FiberTite SBS 190 Torch Grade Base 150 Mil temporary roof, tapered insulation, cover board, and FiberTite-XT 50 membrane. Provide Manufacturer's 20 Year NDL (No Dollar Limit) Warranty, plus additional 5 Year Warranty for the Membrane Only (25 Year Total Membrane Warranty). All materials to be warrantied shall be manufactured or supplied by approved membrane manufacturer.
    a. Roofing manufacturer's requirements for the specified warranty shall be strictly adhered to.
    b. Removal of entire existing roof membrane and flashings including removal of all existing insulation down to the structural roof deck.

2. CONTRACTOR shall provide roofing system in accordance with Florida Product Approval **FL4930-R14 System C-10 and VP-3**, refer to attached details.

3. WORK relative to the replacement of the existing flat roof shall consist of, but not be limited to, the following:
    a. Removal of entire existing roofing membrane and flashings down to the structural roof deck.
    b. Preparation of roofing substrates for attachment of new roofing system.
    c. Installation of torch-applied temporary roof system.
    d. Install tapered roofing insulation adhered to temporary roof.
    e. Install cover board to tapered insulation.
    f. Install membrane system adhered to cover board.
    g. Membrane shall extend up walls and curbs in accordance to attached details.

h. Provide all other roofing related items specified or indicated on the drawings or otherwise necessary to provide a complete roofing system, including walk pads, condensate line supports, and pitch pans.
i. Refer to Section 07523 for complete specifications and details relative to roofing installation.

4. CONTRACTOR shall schedule an inspection of the exposed structural roof deck with the OWNER'S REPRESENTATIVE and the MANUFACTURER upon removal of existing roofing materials.

5. Provide all roofing-related items specified or indicated on the drawings or specifications or otherwise necessary to provide a complete weatherproof roofing system.

6. All plumbing vents and exhaust vents shall be covered with screen wire during demolition to protect from debris.

7. Furnish new FiberClad metal scuppers in accordance to detail FTR-DD2. Existing collectors and downspouts are to remain. (See Detail MB-S-2)

8. Cut existing wall finish (EIFS) at wall bases, remove existing flashings, install new Kynar .040 aluminum flashing and apply new EIFS system. Raise flashings as necessary to accommodate new roof slope. Wall coatings to match existing.

9. Provide FiberTite Metal-Era Tapered Coping at all parapet walls. (See Detail FTR-DW5a)

10. CONTRACTOR to provide all other roofing related items specified or indicated on the drawings or otherwise necessary to provide a complete roofing system, including walk pads, AC stands, expansion joint flashings, counter flashings, etc.

11. Provide "Walk Pads" to all equipment service areas and mechanical rooms, walk pad layout to match existing as shown on the attached drawing. CONTRACTOR shall submit walk pad layout plan for approval by OWNER and OWNER'S REPRESENTATIVE.

12. Provide .040 aluminum cap flashing at all mechanical room door thresholds.

13. Provide "Miro" (or equal) supports with aluminum or stainless-steel clamps at all piping, conduits and condensate lines at a maximum of 4' O.C. Fasten support to protection pads in accordance with manufacturer's recommendations.

14. Curb Flashings: Many of the existing curbs support non-liftable equipment, CONTRACTOR to flash up to existing counter-flashings in accordance to Details FTR-DP1 and FTR-DP1I (Non-Liftable).

15. Existing lightning protection system to be removed, repaired and reinstalled by a Certified Licensed Lightning Protection Company. A letter of certification shall be issued at the conclusion of their work.

16. ALTERNATE: Remove and replace all existing roof access hatches (2 Total) with new units by Bilco.

17. CONTRACTOR to repair damage at existing EIFS walls at the elevator machine room and stair tower.

18. CONTRACTOR to replace all existing fasteners for the roof access ladders with new stainless-steel components.

19. Remove and replace all existing sealants throughout roof area(s). CONTRACTOR shall submit proposed sealant to OWNER'S REPRESENTATIVE for approval.

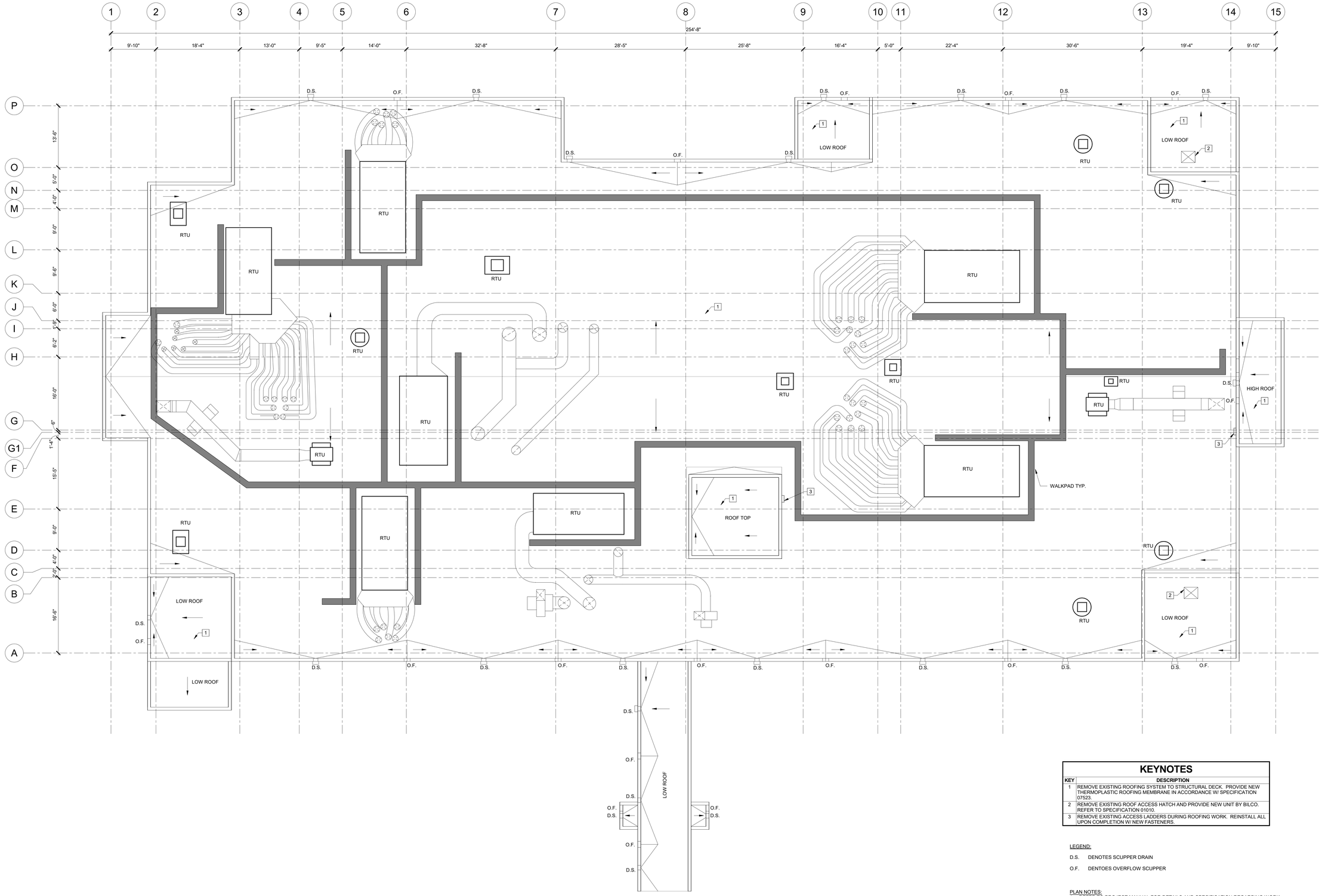
20. Prepare and paint all existing galvanized base and counter flashings with Sherwin Williams coatings as per manufacturer's recommendations.

21. Roofing system wind pressure requirements shall be in accordance with the following:

ASD ROOF PRESSURES (PSF)			
	ZONE 1 (INTERIOR)	**ZONE 2 (END)**	**ZONE 3 (CORNER)**
WIND AREA (SQ. FT.)			
10	-74.28	-116.59	-158.99
20	-69.58	-109.56	-151.85
50	-64.88	-102.49	-142.48

Distance "a" = 12.0 FT. Roof Zones as defined by ASCE 7-10

END OF SECTION



KEYNOTES

KEY	DESCRIPTION
1	REMOVE EXISTING ROOFING SYSTEM TO STRUCTURAL DECK. PROVIDE NEW THERMOPLASTIC ROOFING MEMBRANE IN ACCORDANCE W/ SPECIFICATION 07523.
2	REMOVE EXISTING ROOF ACCESS HATCH AND PROVIDE NEW UNIT BY BILCO. REFER TO SPECIFICATION 01010.
3	REMOVE EXISTING ACCESS LADDERS DURING ROOFING WORK. REINSTALL ALL UPON COMPLETION W/ NEW FASTENERS.

LEGEND:

D.S. DENOTES SCUPPER DRAIN

O.F. DENTOES OVERFLOW SCUPPER

PLAN NOTES:
1. REFER TO PROJECT MANUAL FOR DETAILS AND SPECIFICATION REGARDING WORK.
2. REFER TO SPECIFICATION 01010 FOR ROOF UPLIFT PRESSURES.

1 / S-1 ROOF PLAN
1/8" = 1'-0"

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WORLDWIDE ENGINEERING, RESTORATION & INSPECTION
CERTIFICATE OF AUTHORIZATION NO. 3761

PROJECT
ORTIZ DETENTION CENTER, CORE BUILDING #II
FLAT ROOF REPLACEMENT AND RELATED WORK
2501 ORTIZ AVENUE
FORT MYERS FLORIDA, 33905

JOB NUMBER 19FTM208
ISSUE DATE 09/30/19
DRAWN BY KLI
DESIGNED BY RA

REVISIONS

CORE II ROOF PLAN

SHEET NUMBER S-1

19. Vapor barrier options for use over **structural concrete deck** followed by adhesive-applied insulation carry the following Maximum Design Pressure (MDP) limitations. The **lesser** of the MDP listings below vs. those in Table 3A-1 or 3A-2 applies.

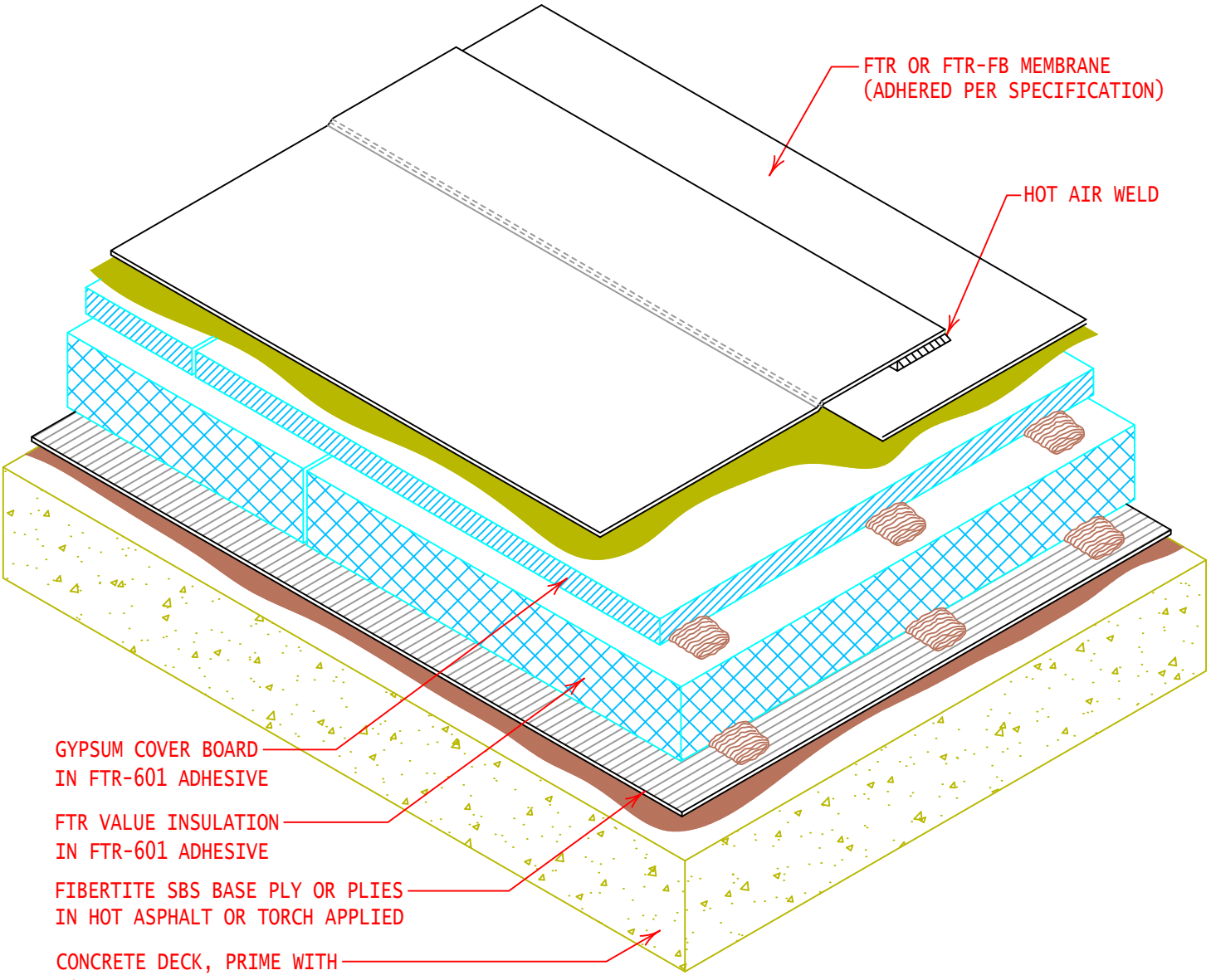
VAPOR BARRIER OPTIONS; STRUCTURAL CONCRETE DECK; FOLLOWED BY ADHESIVE-APPLIED INSULATION PER TABLE 3A-1 OR 3A-2:					
Option #	Primer	Vapor Barrier		Insulation Adhesive	MDP (psf)
		Type	Application		
VB-1.	Elastocol Stick or Elastocol Stick Zero	VaporTite or Soprema Sopravap'r	Self-adhering	FTR-601, ribbons 12-inch o.c.	-180.0
VB-2.	Siplast PA 1125	One or two plies FiberTite-SBS Base or FiberTite-SBS 190 Base	Hot-asphalt	FTR-601, ribbons 12-inch o.c.	-202.5
VB-3.	Siplast PA 1125	One or two plies FiberTite-SBS TG Base or FiberTite-SBS 190 TG Base	Torch-applied	FTR-601, ribbons 12-inch o.c.	-232.5
VB-4.	ASTM D41	Soprema Elastophene Flam LS FR GR or Sopralene Flam 180 GR	Torch-applied	ICP Adhesives CR-20, ribbons 12-inch o.c.	-169.0
VB-5.	ASTM D41	Soprema Elastophene Stick FR GR or Elastophene Stick HR FR GR	Self-adhering	ICP Adhesives CR-20, ribbons 12-inch o.c.	-250.0
VB-6.	ASTM D41	Soprema Elastophene LS FR GR	Hot-asphalt	ICP Adhesives CR-20, ribbons 12-inch o.c.	-270.0
VB-7.	Siplast PA 1125	One or two plies FiberTite-SBS Base or FiberTite-SBS 190 Base	Hot-asphalt	Hot-asphalt, 25-30 lbs/square	-202.5
VB-8.	Siplast PA 1125	One or two plies FiberTite-SBS TG Base or FiberTite-SBS 190 TG Base	Torch-applied	Hot-asphalt, 25-30 lbs/square	-202.5
VB-9.	ASTM D41	Smooth-surfaced, asphalt built-up roof	Hot asphalt	Hot-asphalt, 25-30 lbs/square	-375.0

20. "MDP" = Maximum Design Pressure is the result of testing for wind load resistance based on allowable wind loads. Refer to FBC 1609 for determination of design wind pressures.

TABLE 3A-1: STRUCTURAL CONCRETE DECKS - NEW CONSTRUCTION OR REROOF (TEAR-OFF)
SYSTEM TYPE A-1: BONDED INSULATION, BONDED ROOF COVER
SEE NOTE 19 FOR VAPOR BARRIER OPTIONS

System No.	Deck (Note 1)	Base Insulation Layer		Top Insulation Layer		Roof Cover (Note 17)		MDP (psf)
		Type	Attach	Type	Attach	Type	Attach	
FIBERTITE, FIBERTITE-XT, FIBERTITE-SM OR FIBERTITE-XTREME APPLIED IN FTR-190E:								
C-1.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	HA	(Optional) Additional layer(s) of base insulation	HA	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-410.0
C-2.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	FTR-601 or OSFA	(Optional) Additional layer(s) of base insulation	FTR-601 or OSFA	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-232.5
C-3.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	ICP CR-20	(Optional) Additional layer(s) of base insulation	ICP CR-20	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-262.5
C-4.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	OB-500	(Optional) Additional layer(s) of base insulation	OB-500	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-150.0
C-5.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	HA	Min. 0.25-inch Dens Deck or Dens Deck Prime	HA	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-290.0
C-6.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	FTR-601 or OSFA	Min. 0.25-inch Dens Deck or Dens Deck Prime	FTR-601 or OSFA	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-232.5
C-7.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	ICP CR-20	Min. 0.25-inch Dens Deck or Dens Deck Prime	ICP CR-20	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-270.0
C-8.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	OB-500	Min. 0.25-inch Dens Deck or Dens Deck Prime	OB-500	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-150.0
C-9.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	HA	Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	HA	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-290.0
C-10.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	FTR-601 or OSFA	Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	FTR-601 or OSFA	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-247.5
C-11.	Min. 2,500 psi structural concrete	Min. 1.5-inch ACFoam II, H-Shield, ENRGY 3 or FTR-Value	ICP CR-20	Min. 0.25-inch SECUROCK Gypsum-Fiber Roof Board	ICP CR-20	FiberTite, FiberTite-XT, FiberTite-SM or FiberTite-XTreme	FTR-190e	-247.5

NOTE:
BOTTOM LAYER OF INSULATION SHALL BE LAID DOWN IN A STAGGERED PROFILE. STAGGER AND OFFSET TOP LAYER OF INSULATION FROM BOTTOM LAYER TO PREVENT ALIGNED EDGES.



Fiberlite Solutions Corporation
INTELLIGENT ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

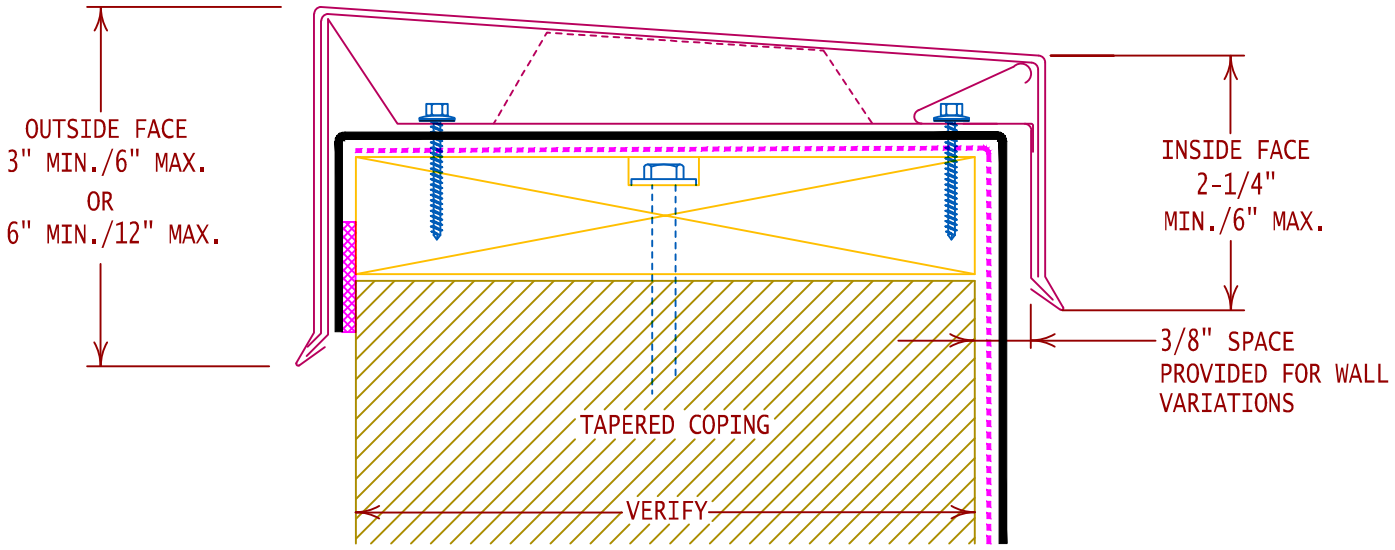
APPLICABLE SYSTEMS:
"FTR MP 02/13"

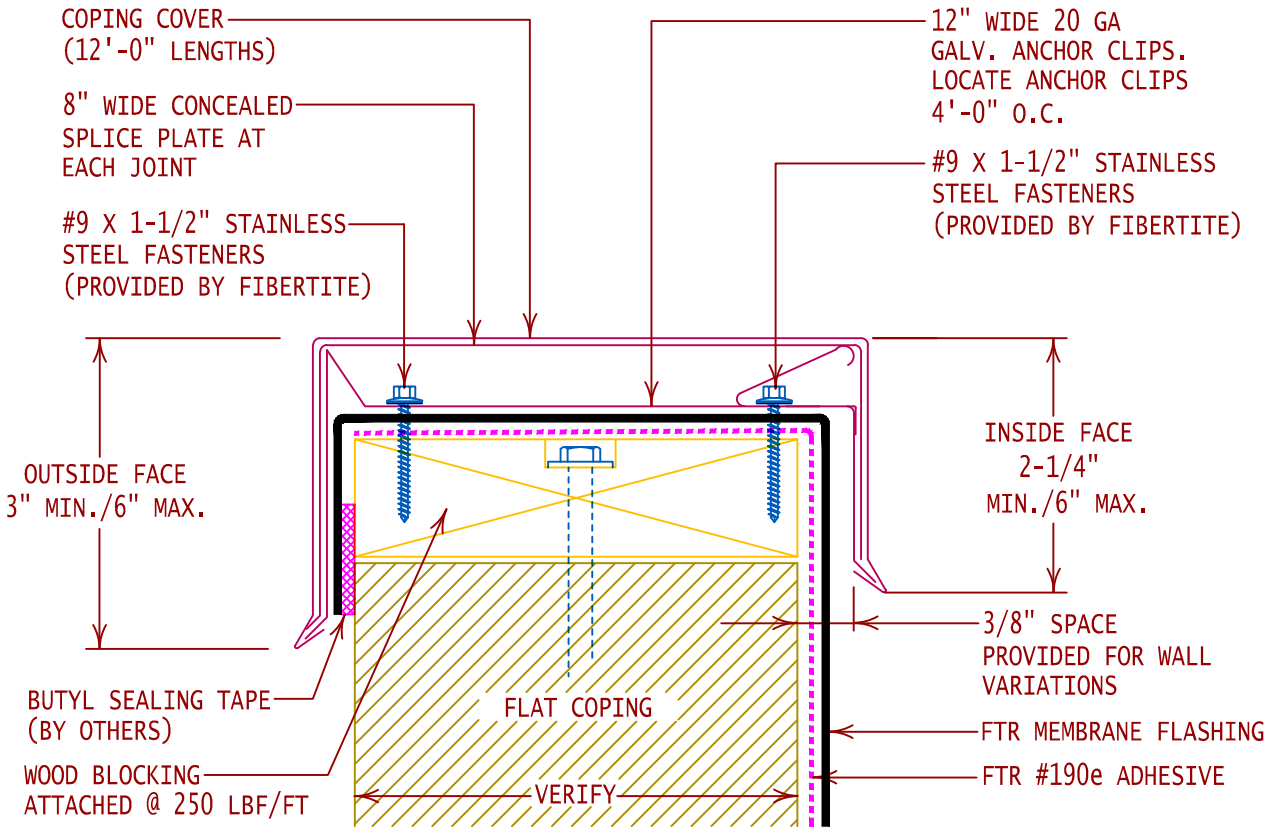
COMPOSITE ROOF SYSTEM W/ TEMP ROOF (ADHERED INSULATION IN FTR-601 ADHESIVE)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	08-13-13	FTR-DAS2

FM APPROVED / MIAMI DADE APPROVED

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





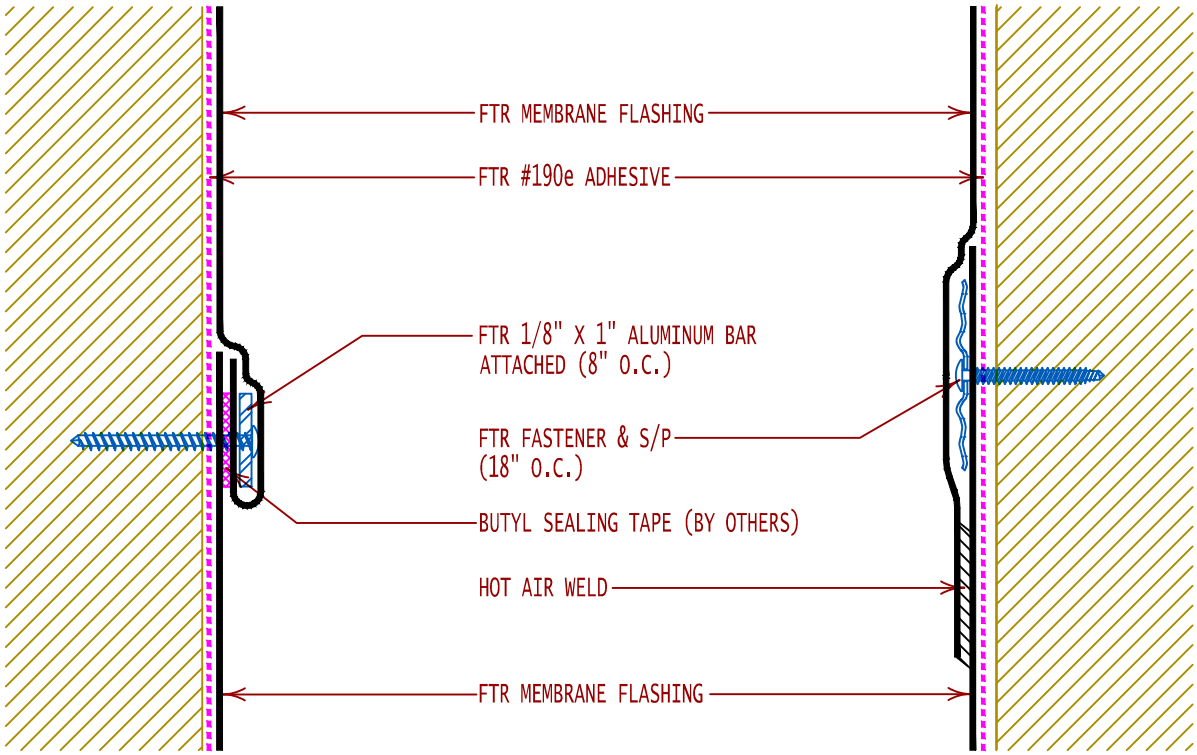
Fiberlite Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

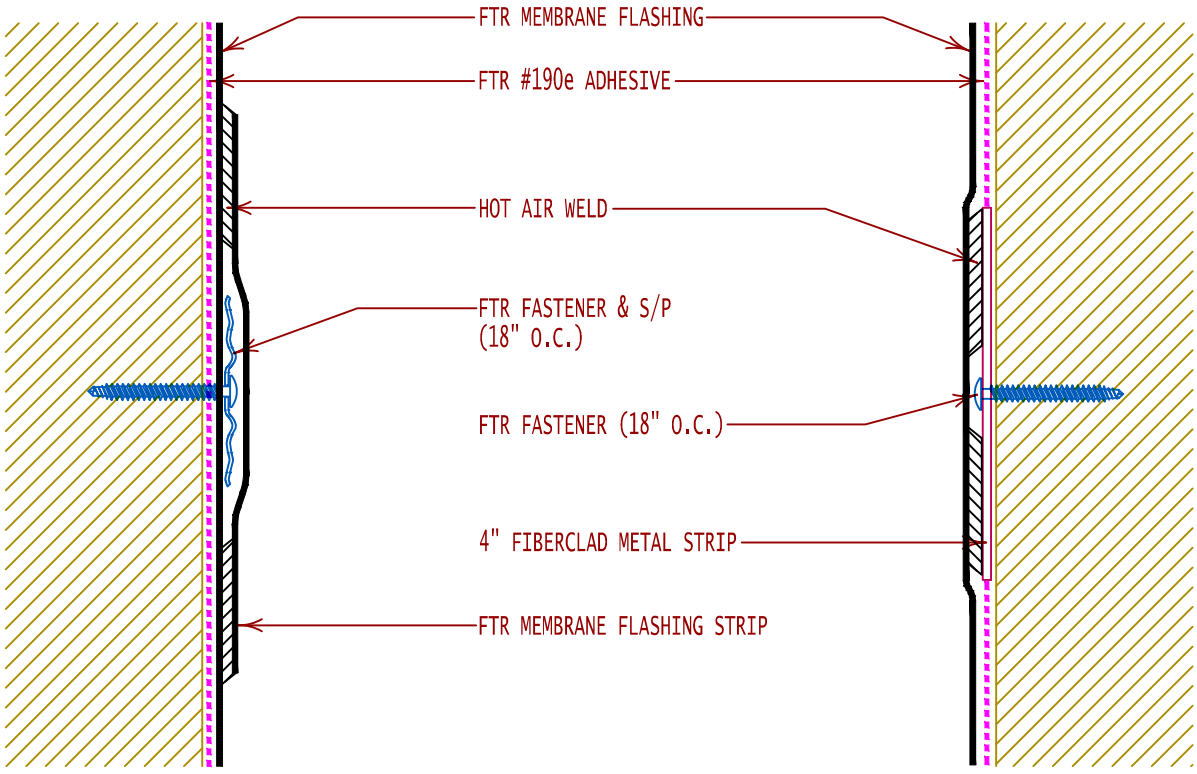
GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

FIBERTITE PREMANUFACTURED COPING SYSTEM (TAPERED AND NON-TAPERED)

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW5a





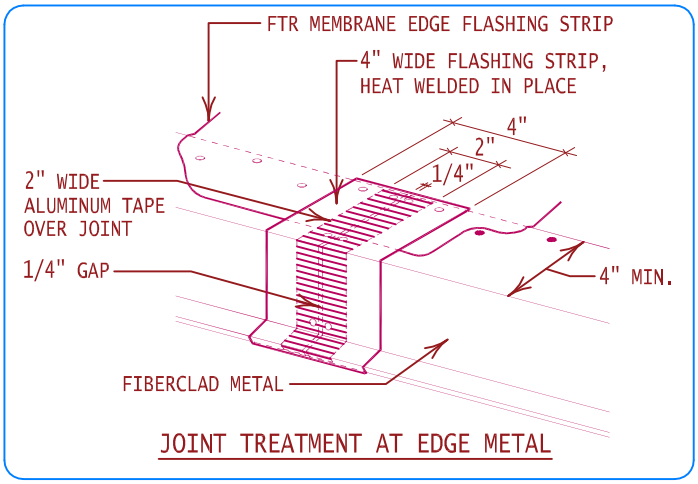
FiberTite Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

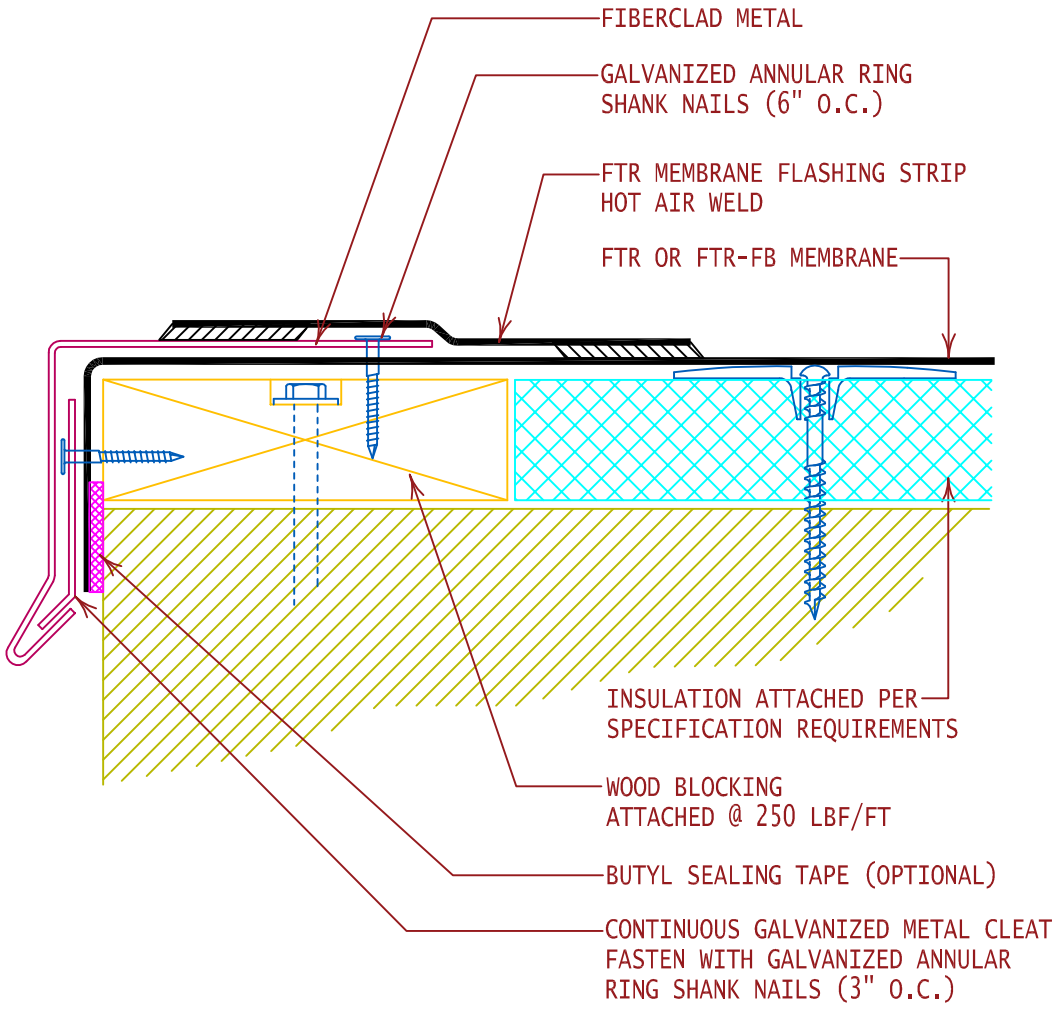
APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

WALL FLASHING / INTERMEDIATE ATTACHMENT WHEN NECESSARY

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DW7



JOINT TREATMENT AT EDGE METAL



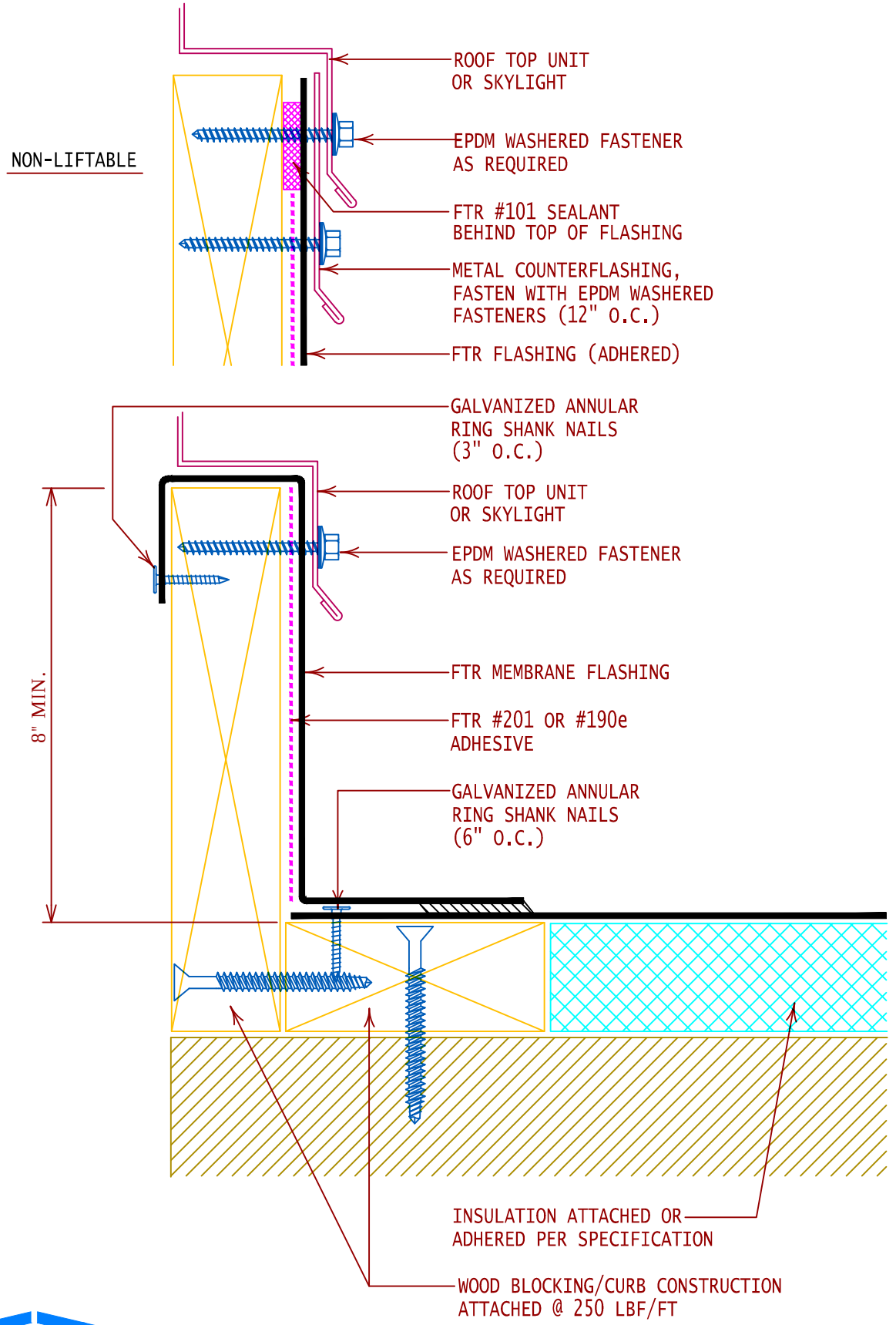
Fiberlite® Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"

TYPICAL EDGE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DE1



Fiberlite Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

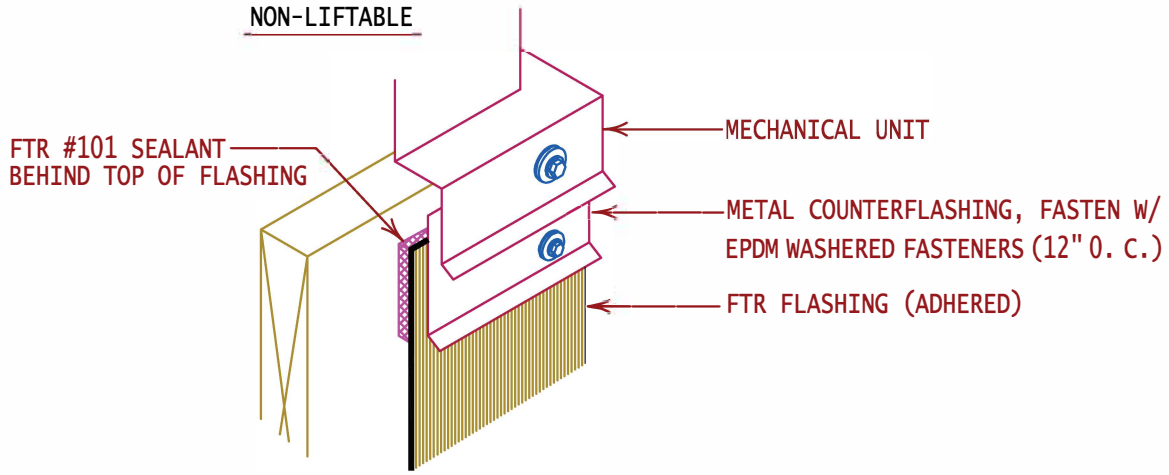
GENERAL REFERENCE:
"FTR GS 02/13"

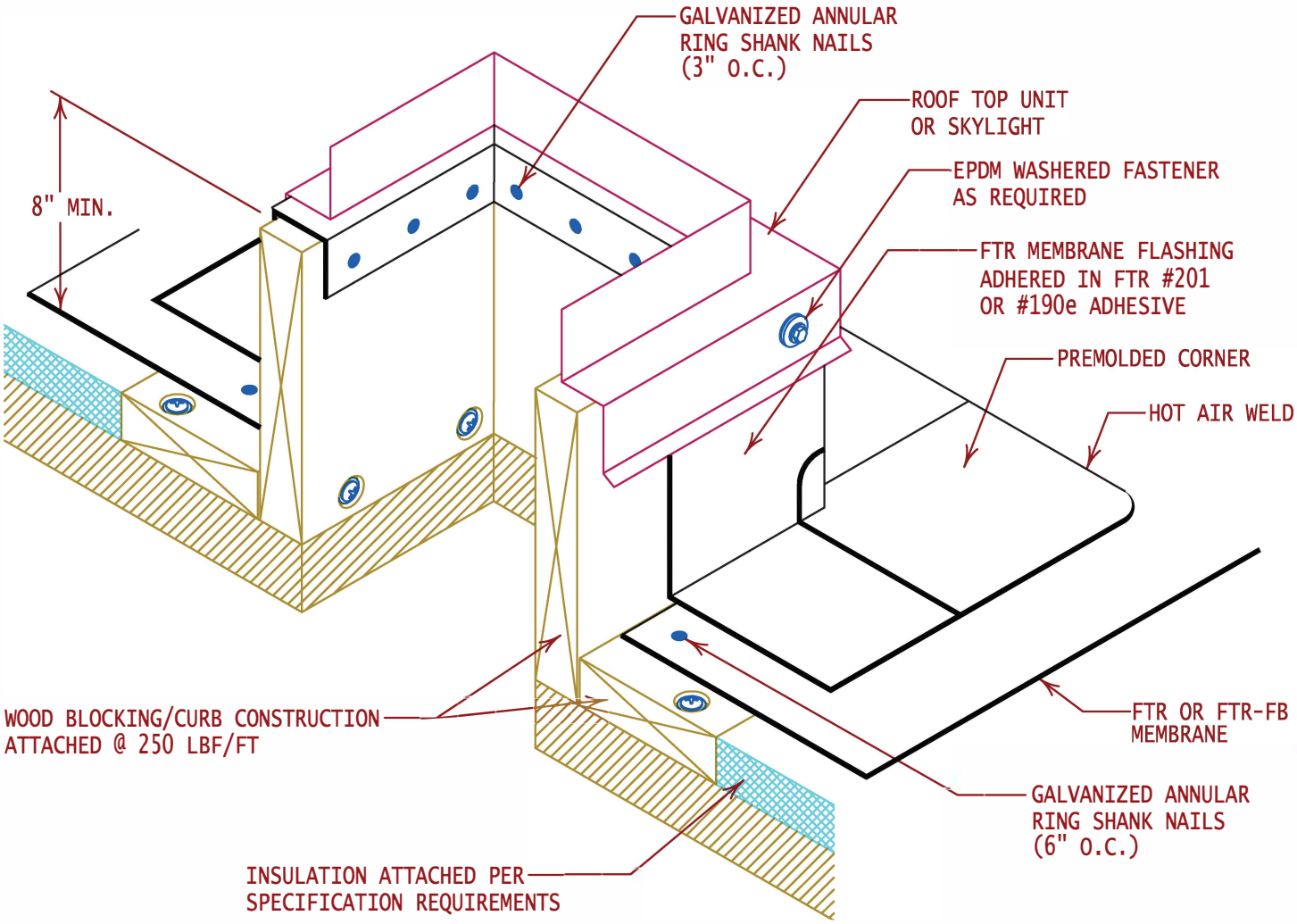
APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

TYPICAL WOOD CURB OR SKYLIGHT FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP1

NON-LIFTABLE





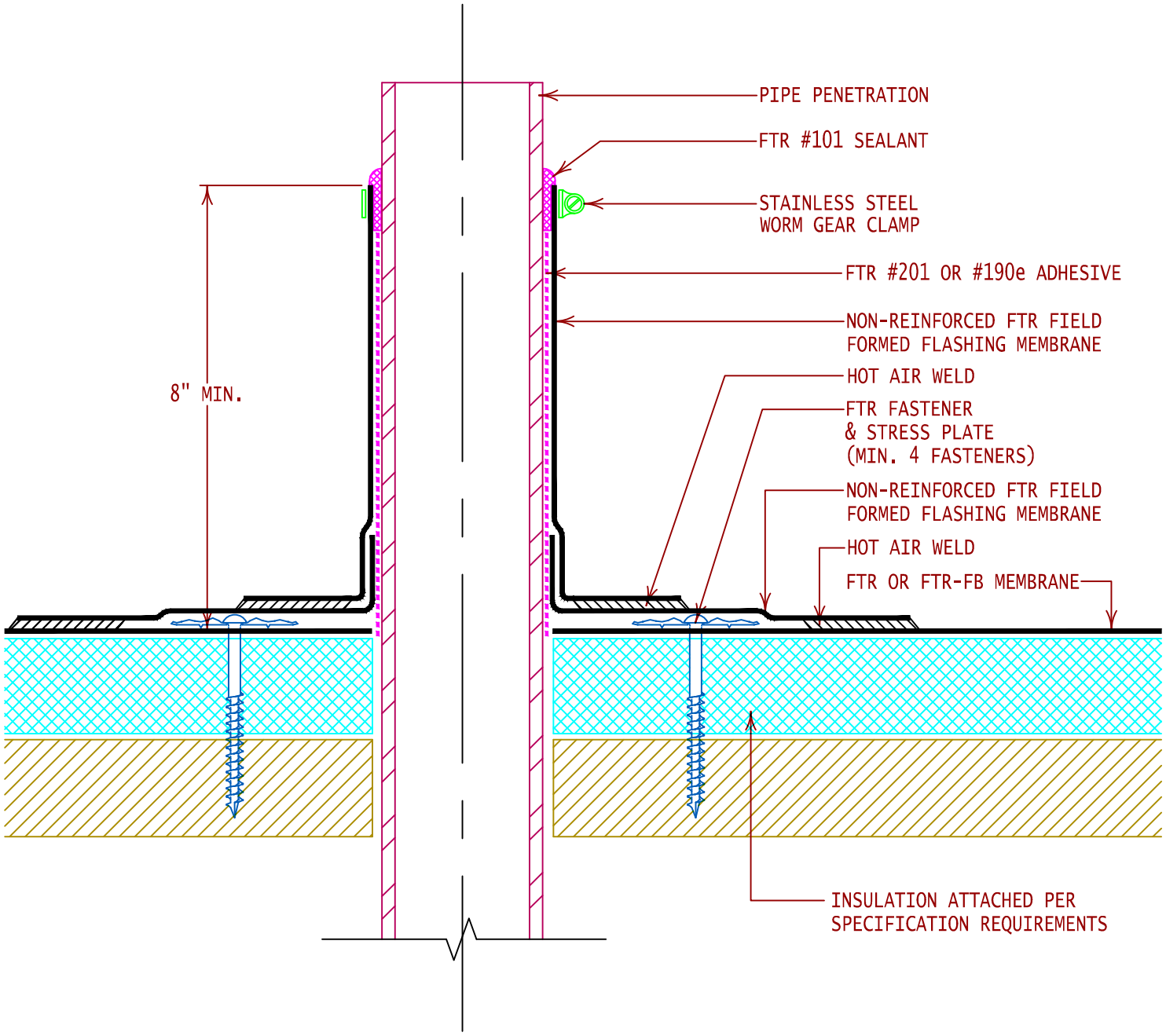
Fiberlite® Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

TYPICAL WOOD CURB OR SKYLIGHT FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP1I



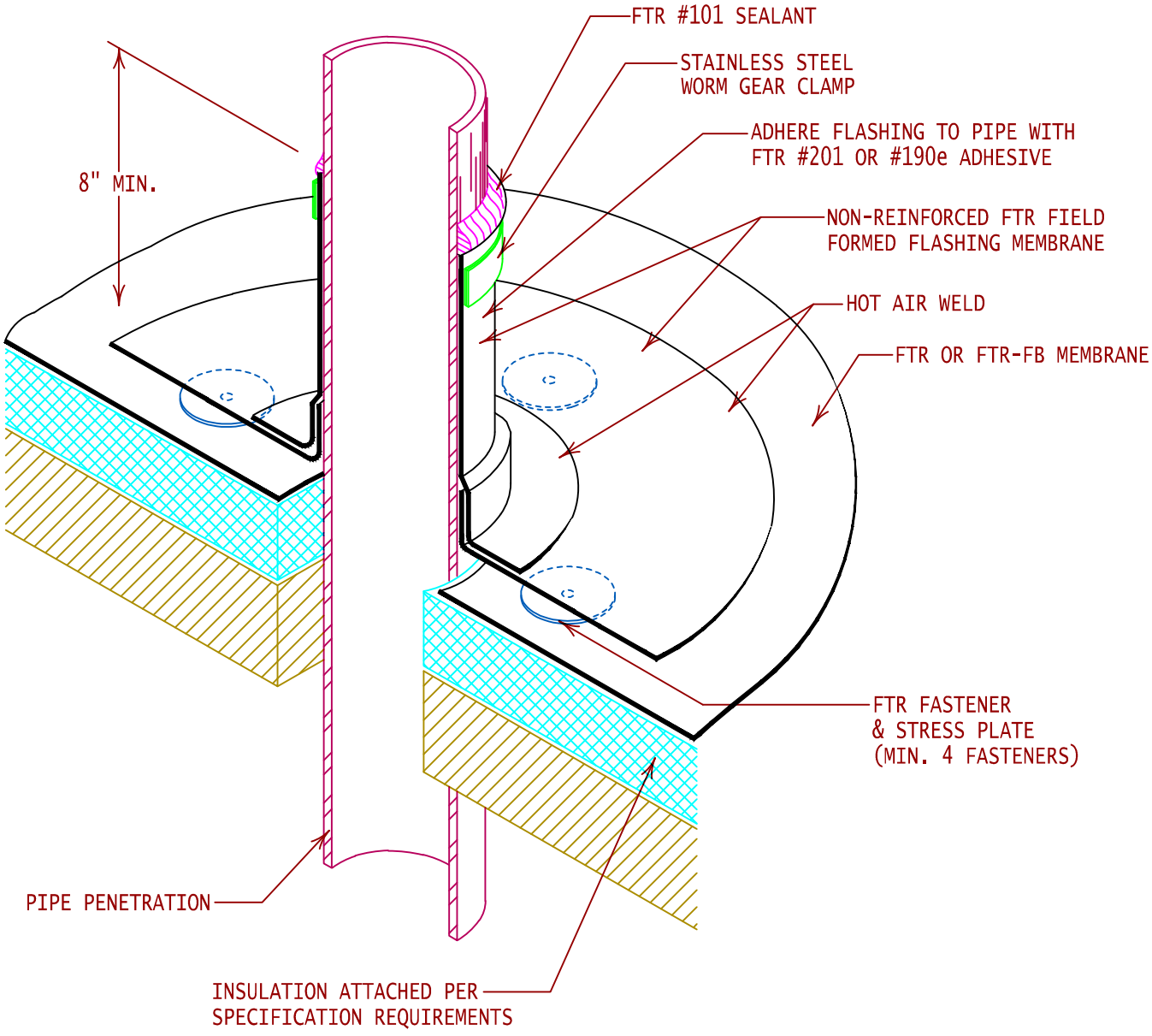
Fiberlite Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

FIELD FABRICATED PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP4



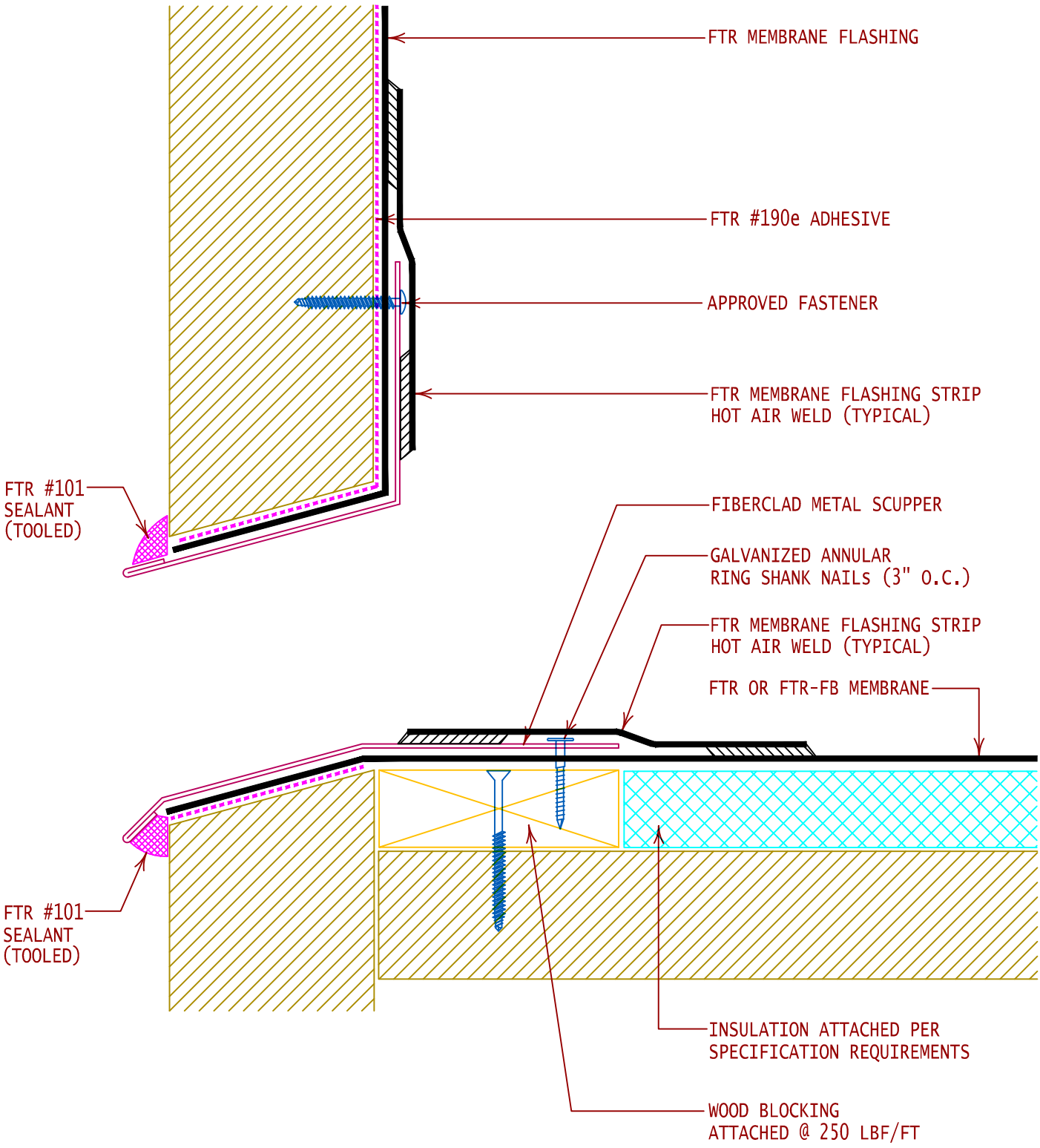
Fiberlite Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

FIELD FABRICATED PIPE FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DP4i



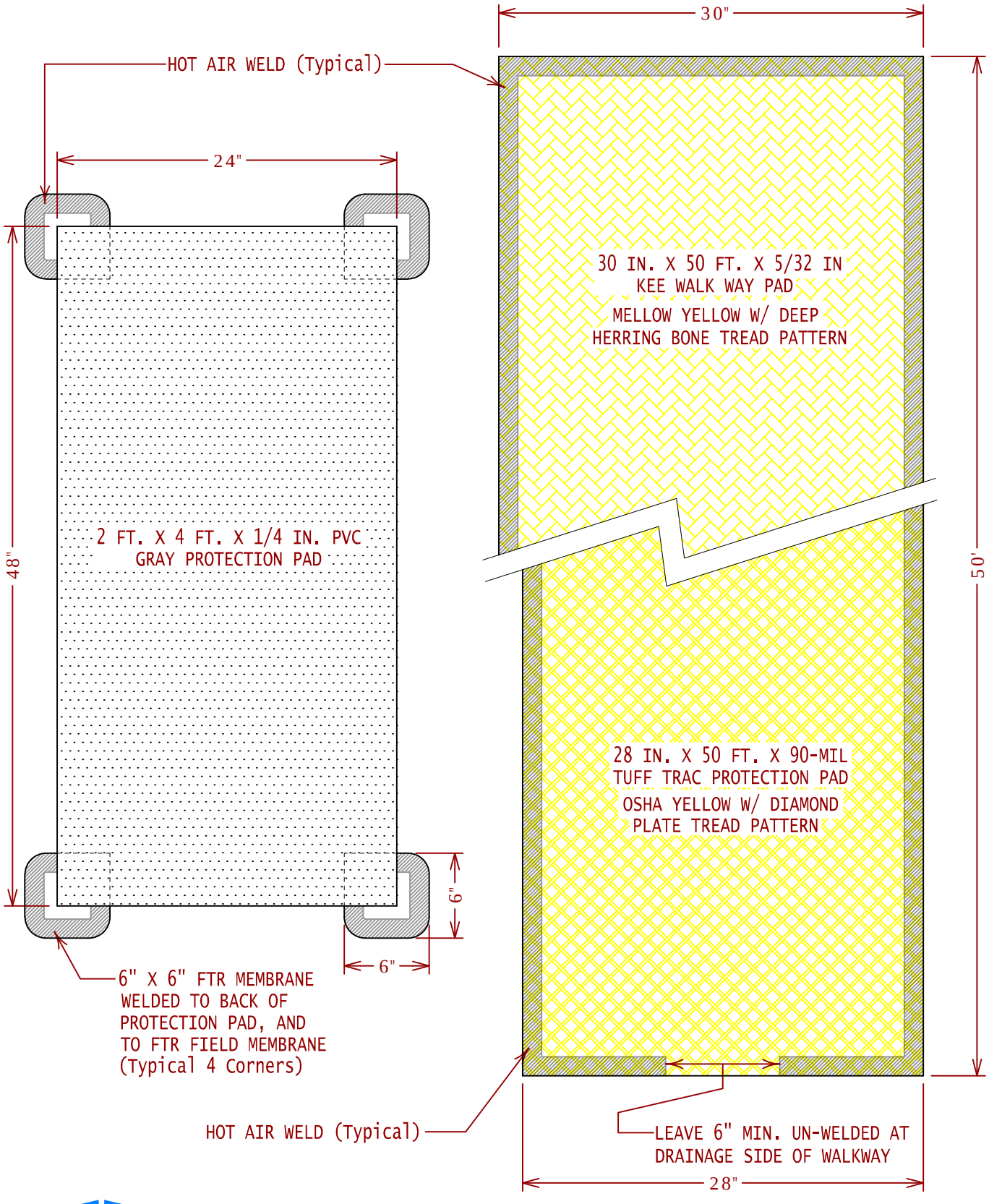
Fiberlite Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

TYPICAL SCUPPER FLASHING

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DD2



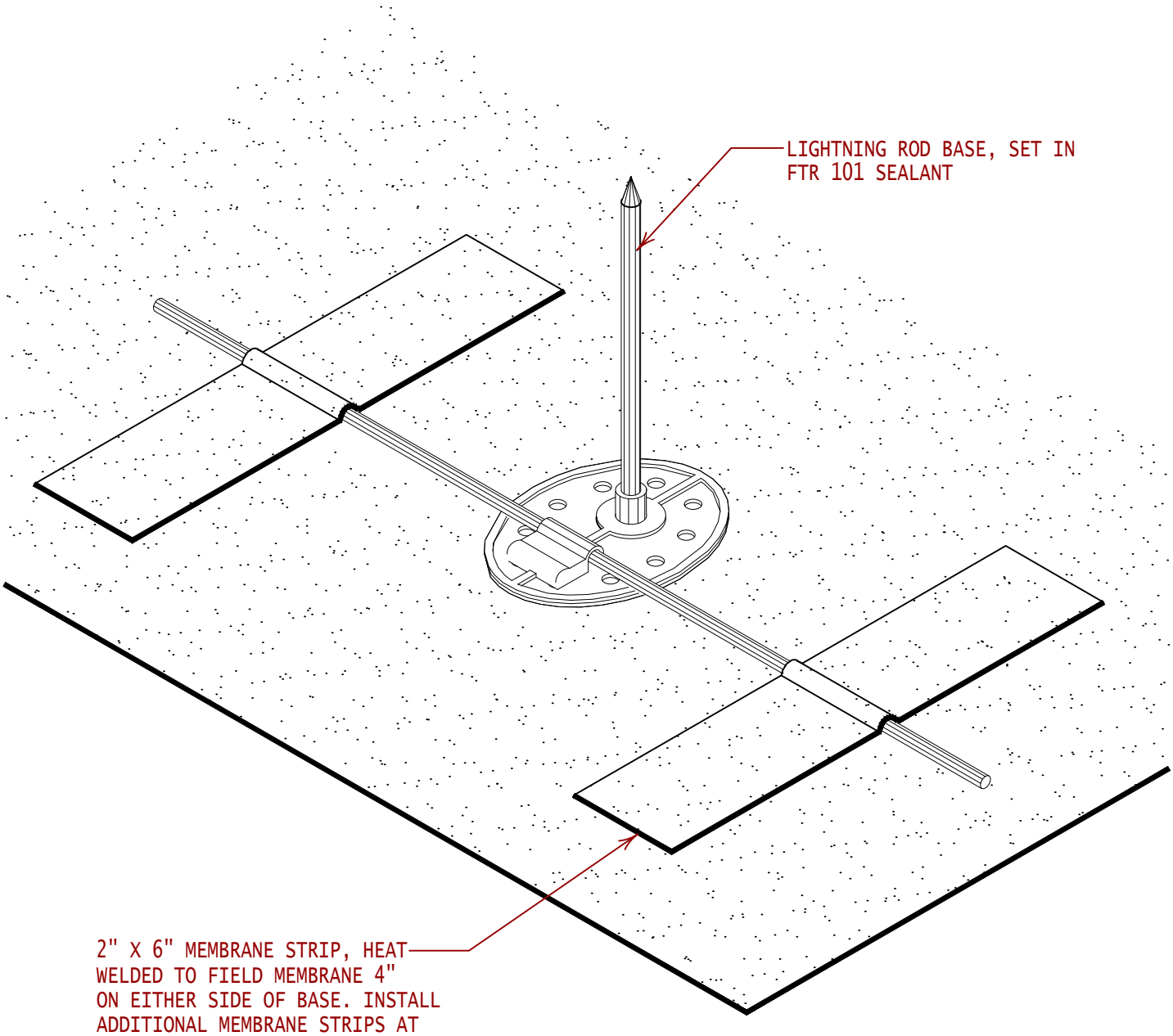
Fiberlite® Seaman Corporation
INTELLIGENT ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

FTR PROTECTION PAD & WALK WAY MATERIALS

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-DM1



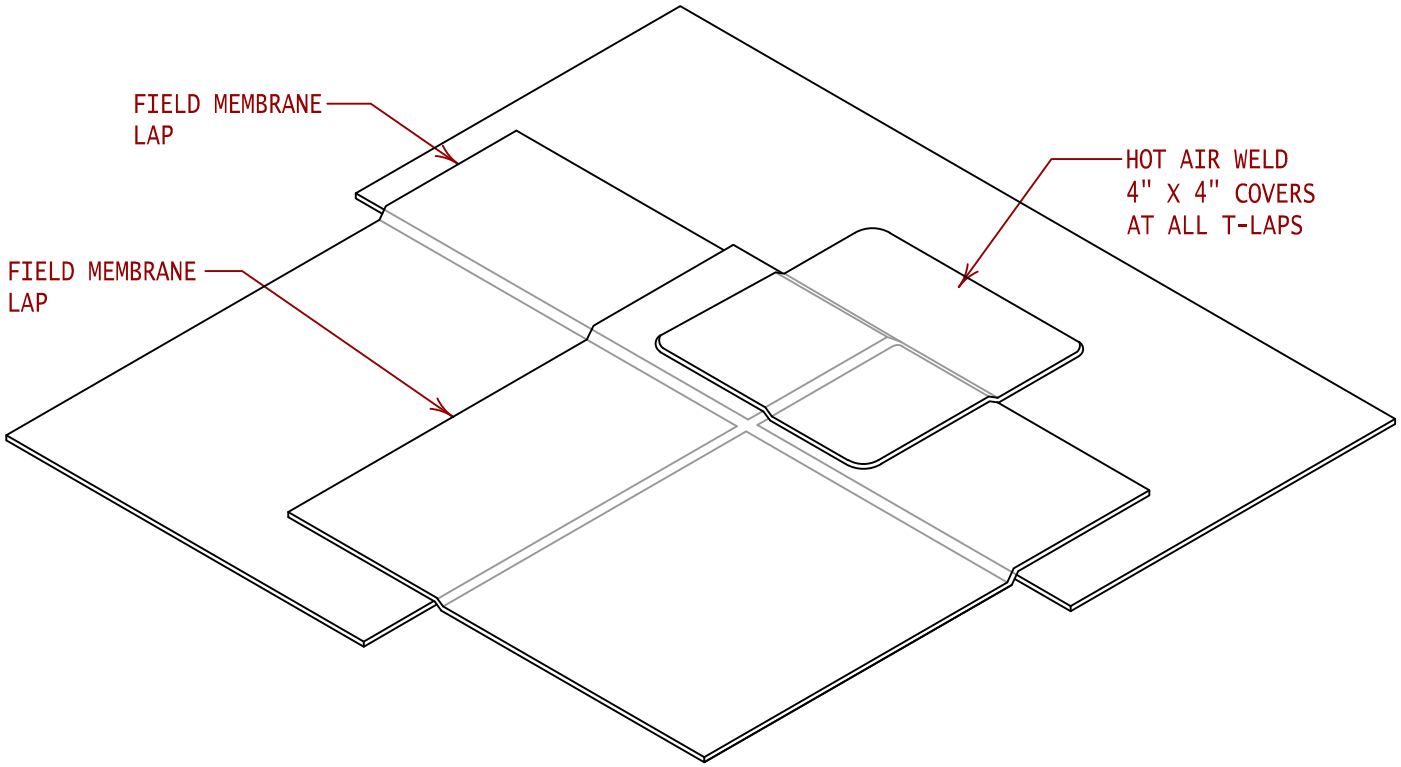
Fiberlite Sealant Corporation
INTELLIGENT ROOFING SOLUTIONS

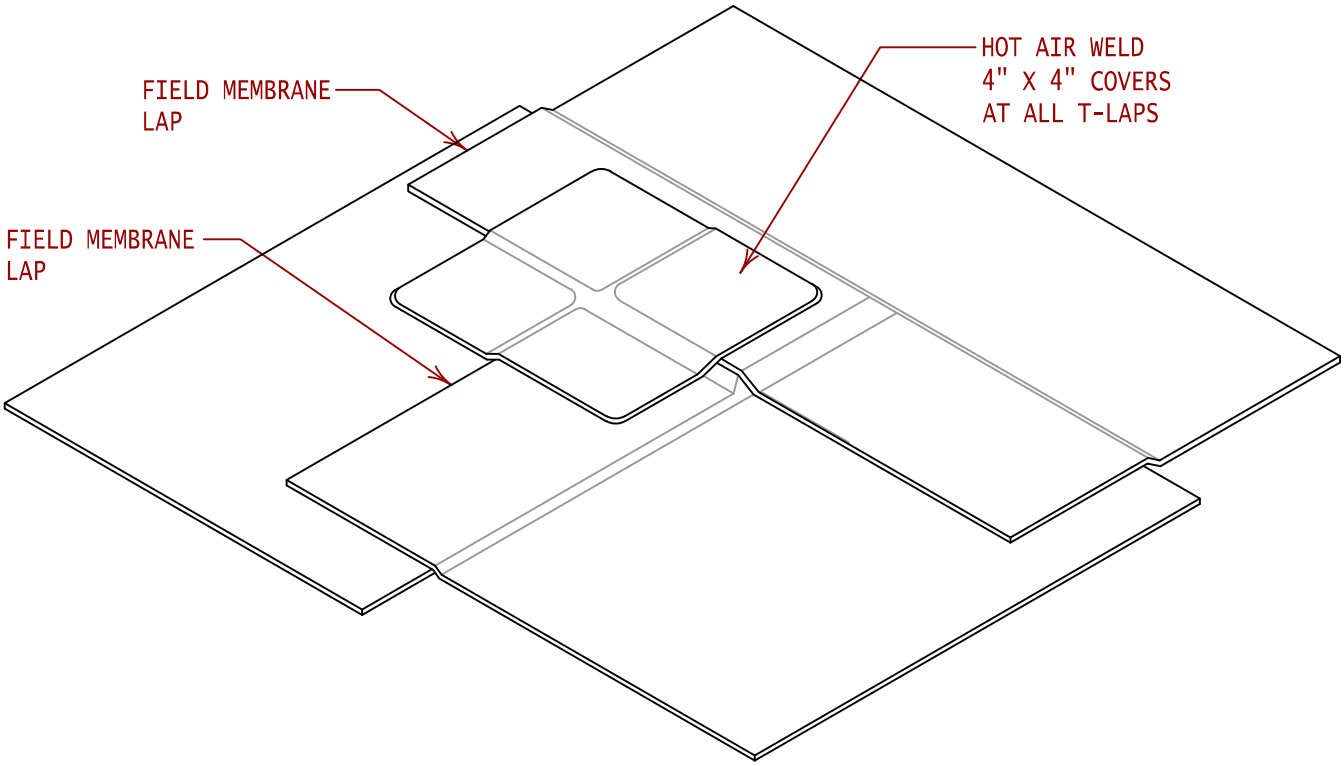
GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

LIGHTNING PROTECTION

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	12/11/17	FTR-DM3





Fiberlite
Seaman Corporation
INTELLIGENT
ROOFING SOLUTIONS

GENERAL REFERENCE:
"FTR GS 02/13"

APPLICABLE SYSTEMS:
"FTR MA 02/13"
"FTR AD 02/13"
"FTR BA 02/13"

TYPICAL COVERS AT MEMBRANE T-LAPS

REVISES DETAIL	ISSUE DATE	DRAWING NUMBER
ALL PREVIOUS	02-10-14	FTR-TLAP

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

1.01 GENERAL

A. All of the CONTRACTOR'S personnel will be subject to a mandatory background check by the Lee County Sheriff's Office.

B. Access to and from the facility will require advanced notice to facility personnel and crews must be escorted to and from the work area.

C. Facility staff will require a tools list be completed when entering the facility and validated prior to leaving, if any item is unaccounted for all work activities will be shut down until the item is located.

D. The CONTRACTOR'S staging area will be determined during a mandatory pre-construction conference.

E. The CONTRACTOR will provide on-site storage / office facilities as necessary. The CONTRACTOR shall be responsible for providing off-site parking or material storage if the designated area is not large enough for all on-site needs.

1.02 TOILET FACILITIES

A. The CONTRACTOR will provide portable toilet facilities located at the site as directed by the OWNER.

1.03 TEMPORARY SERVICES

A. The OWNER will provide temporary electric service and water at the job site. CONTRACTOR will pay any hook-up or installation charges to access OWNER'S electric or water. CONTRACTOR shall verify location of existing potable water sources and electrical outlets.

1.04 PROTECTION OF EXISTING WORK

A. The CONTRACTOR shall exercise extreme care to ensure that no damage occurs to the existing structures, adjacent properties, interior finishes, amenities, landscaping, and vehicles. Any damage incurred due to his work, negligence, act or omission, shall be replaced or properly repaired at his expense. This applies to all subcontractors employed by General Contractor.

B. Disposal of demolition debris and construction waste is the responsibility of the CONTRACTOR. Perform disposal in manner complying with applicable federal, state, and local regulations. CONTRACTOR shall leave the work area in a clean state at the end of each work day.

1.05 MISCELLANEOUS

A. Work hours shall be limited to conform to local ordinances as allowed by the City of Fort Myers. All employees are subject to dress code requirements, shirts must be worn on the job at all times.

B. No person employed by the CONTRACTOR or any of his Subcontractors will be allowed inside the facility without being accompanied by the OWNER, his contact or unless specific written permission is received.

C. ABSOLUTELY NO NOISY ACTIVITIES (lifts, chipping hammers etc…) BEFORE 8:00 a.m. or AFTER 5:00 p.m. Normal working days Monday to Friday unless directed otherwise by OWNER.

D. No radios or other music playing shall be permitted.

E. CONTRACTOR shall provide his own waste receptacles and contract with local waste management carrier for removal of construction debris. CONTRACTOR will NOT use OWNER'S dumpster.

F. No drugs or alcohol or will be permitted on the site.

G. Pursuant to Section 00800, Article 1.15, the CONTRACTOR will be responsible for providing a full time, English speaking superintendent on the job, to remain onsite at all times work is being performed by CONTRACTOR.

H. Provide temporary barricades to prevent occupant access below elevated work areas overhead. Provide overhead protection above work areas were egress from building is required.

1.06 TELEPHONE

A. The CONTRACTOR will be available to OWNER'S REPRESENTATIVE and subcontractors during working hours via mobile telephone.

1.07 PARKING

A. Parking onsite is limited. Contractor's parking will be limited to within established staging area during the Pre-Construction Conference.

1.09 SIGNS

A. Job signs shall not be erected without written approval of the OWNER.

1.10 PRODUCT AND MATERIAL SUBSTITUTIONS

A. "Or approved substitute or equivalent": Where named products in specifications

text are accompanied by this phrase and approval was not requested nor approved during the Bid period, comply with those Contract Document provisions concerning "substitutions" for obtaining OWNER'S REPRESENTATIVE'S approval (by Change Order) to provide an unnamed product.

B. Named Products: Manufacturer's name for product, as recorded in published product literature, of latest issue as of date of Contract Documents. Refer requests to use products of a later (or earlier) model to OWNER'S REPRESENTATIVE for acceptance before proceeding.

C. Work-Related Submittals: CONTRACTOR'S submittal of (and OWNER'S REPRESENTATIVE'S acceptance of) shop drawings, product data or samples which relate to work not complying with requirements of Contract Documents, does not constitute an acceptable or valid request for a substitution, nor approval thereof.

1.11 REQUESTS FOR INFORMATION

A. Requests for Information (R.F.I.'s) during construction phase of project shall be submitted via written request, to be submitted to OWNER'S REPRESENTATIVE for response.

B. CONTRACTOR shall utilize form titled "Request for Information" located at the end of this Section.

C. Completed form shall be submitted to OWNER'S REPRESENTATIVE via fax transmission or email using OWNER'S REPRESENTATIVE'S contact information printed on the RFI form.

D. OWNER'S REPRESENTATIVE shall endeavor to answer CONTRACTOR'S requests within two business days of the receipt of such request.

SUBSTITUTION REQUEST FORM

DATE: _____

PROJECT:_____

SPECIFIED
ITEM:_____

_____
SECTION PAGE PARAGRAPH DESCRIPTION

The undersigned requests consideration of the following:

_____
(PROPOSED SUBSTITUTION)

The undersigned certifies the following are correct, unless modified by attachments:

1. The proposed substitution does not affect dimensions shown on the Drawings.
2. The undersigned (CONTRACTOR) will pay for changes to the building design, including engineering design, detailing, and construction costs caused by the requested substitution.
3. The proposed substitution will have no adverse effect on other trades, the construction schedule, unit prices or specified warranty requirements.
4. Maintenance and service parts will be locally available for the proposed substitution.

The undersigned further states that the function, appearance and quality of the proposed substitution are equivalent or superior to the specified item.

(For use by TRC Worldwide Engineering, Inc.)

Submitted by:

_____
Signature

_____
Firm

_____
Address

Telephone:_____

_____ Accepted

_____ Accepted as Noted

_____ Not Accepted

_____ Received too Late

By:_____

Remarks:_____

Attached data includes product description, specifications, drawings, photographs, performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified. Attached data also includes a description of changes to the Contract Documents which the proposed substitution will require for its proper installation.

FIELD CHANGE REQUEST

This is a written request from the CONTRACTOR requesting an addition, deletion or revision in the Work. The document is not a Change Order, but evidence that the parties expect the change requested will be incorporated and approved in a subsequently issued Change Order.

DATE: _____

PROJECT: _____ NO.: _____

CONTRACTOR: _____

ISSUED BY: _____

1. The CONTRACTOR hereby requests the following change(s) in the Work.

   DESCRIPTION OF THE CHANGE(S):

   _____

   _____

   _____

   _____

2. The proposed basis of adjustment to the Contract Sum is:

   _____ Lump Sum Increase (Decrease) of $ _____

   _____ Unit Price of $_____ per _____

   _____ Not-to-Exceed Increase (Decrease) of $ _____

3. The Contract Time is proposed to (be Adjusted) Remain Unchanged). The Proposed Adjustment, if any, is (an Increase of _____ Days) (A Decrease of Days).

4. This Request is not a Change Order, but evidence that the parties expect the Change Request will be incorporated and approved in a subsequently issued Change Order.

_____	_____	_____
OWNER:	CONTRACTOR:	TRC WORLDWIDE:
DATE:_____	DATE:_____	DATE: _____

REQUEST FOR INFORMATION

PROJECT: _____

TO: TRC Worldwide Engineering, Inc.
11926 Fairway Lakes Drive
Fort Myers, Florida 33913
Phone: (239) 939-1414
Fax: (239) 278-4289

RFI #: _____

ATTN: _____

FROM: _____

CONTRACTOR REQUEST DATE: _____

ENGINEER RESOLVED DATE: _____

ACTION REQUESTED
☐ Clarification
☐ Direction
☐ Approval

SUBJECT: _____

REFERENCE: Specification Section: _____ Other: _____

Detail No.: _____

INFORMATION NEEDED: _____

CONTRACTOR RECOMMENDATION: _____

ENGINEER RESPONSE: _____

SECTION 07523

THERMOPLASTIC ROOFING MEMBRANE

PART 1: GENERAL

1.01 SUMMARY

A. Furnish and install a new weather and watertight High Performance **FiberTite KEE Thermoplastic Roofing System**.

B. System shall be installed in compliance with **FL4930-R14 System C-10 and VB-3.**

C. Provide **FiberTite Perma-Tite Tapered Coping** at all perimeter parapet walls. Coping shall be tapered such that water drains to the inside of the wall onto the roofing surface.

D. Disposal of demolition debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.

E. Commencement of work by Contractor shall constitute acknowledgement by Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing membrane manufacturer. No modification of the Contract Sum will be made for failure to adequately examine the Contract Documents or the project conditions.

F. Alternate KEE membrane substitution must have certification, by letter from the Membrane Roof System Manufacturer (MRSM), stating the the submitted project specific membrane formulation has a minimum of 20 years of successful performance history in the state of Florida. MRSM must provide locations to be visited for performance inspection by the OWNER or OWNER'S REPRESENTATIVE.

1.02 DEFINITIONS

A. Roofing Terminology: Refer to ASTM D1079 for definition of terms related to roofing work not otherwise defined in the section.

1.03 REFERENCE STANDARDS

A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2017.

B. ASTM D6163/D6163M - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements; 2016.

C. ASTM D6164/D6164M - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements; 2016.

D. ASTM D6754 – Standard Specification for Ketone Ethylene Ester Based Sheet Roofing.

E. ASTM D751 – Test Methods for Coated Fabrics

F. CAN-ULC-S770 - Standard Test Method Determination of L-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams; 2015.

G. FM 4470 GM Global – Roof Assembly Classifications

H. FM DS 1-28 - Wind Design; 2016.

I. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components; Factory Mutual System; 2016.

J. UL 790 – Fire Hazard Classifications

K. National Roofing Contractors Association (NRCA) – Roofing and Waterproofing Manual

L. Seaman Corporation / FiberTite General Latest Guide Specifications

1.04 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Meeting: Before start of roofing work, Contractor shall hold a meeting to discuss the proper installation of materials and requirements to achieve the warranty.

1. Require attendance with parties directly influencing the quality of roofing work or affected by performance of roofing work.

2. Notify all parties a minimum (14) days in advance of meeting.

3. A technical representative of the MRSM shall be available to make recommendations necessary to ensure compliance with project specifications and specification alternatives due to unforeseen job conditions.

1.05 SUBMITTALS

A. See Section 00800 – General Conditions for submittal procedures.

B. Product Data:

1. Provide membrane manufacturer's printed data sufficient to show that all components of roofing system, including insulation and fasteners, comply with the specified requirements and with the membrane manufacturer's requirements and recommendations for the system type specified; include data for each product used in conjunction with roofing membrane.

C. Samples:

1. Submit sample of MRSM Commercial Roofing Warranty.

2. Submit color chart for pre-finished metal.

3. Submit samples of each product to be used.

D. Shop Drawings:

1. Provide roof membrane manufacturer's standard details customized for this project for all relevant conditions, including flashings, base tie-ins, roof edges, terminations, expansion joints, penetrations, and drains.

2. For tapered insulation, provide project-specific layout and dimensions for each board.

E. Installer Qualifications: Submit an approved Pre-Installation Notice / Request for Warranty from the high-performance membrane roof system manufacturer certifying compliance with the system requirements described in the Quality Assurance section of this specification.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: The High-Performance Membrane Manufacturer shall be an American owned company with no less than 25 years' experience as a commercial roofing manufacturer.

B. Installer Qualifications: A licensed roofing contractor, authorized by the MRSM with a minimum of five (5) years' experience installation the type of roof system specified for the project.

C. Source Limitations: Obtain all components including roof insulation and/or coverboard, fasteners, adhesives, and all other accessories as required from the approved MRSM.

D. The Contractor shall maintain an adequate number of skilled workers who are thoroughly trained and experienced in the necessary crafts, and who are completely familiar with the specified requirements and methods necessary for the proper performance of the work. No allowance will be made for lack of skill on the part of the workers.

E. Any deviations from contract, drawings and/or specifications must be submitted in writing for approval prior to implementation to the OWNER'S REPRESENTATIVE and the MRSM for acceptance/approval.

F. Upon completion of the roof installation, the Contractor shall arrange for a quality assurance / warranty inspection by the Technical Service Department of the approved MRSM. Notice of the inspection date and time will be given to the OWNER'S REPRESENTATIVE at least 72 hours prior to the inspection taking place.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.

B. Select and operate material handling equipment in a safe manner, guarding against damage to existing construction or newly applied roofing and conforming to Manufacturer's recommendations of handling and storage.

C. All rolls of membrane shall be stored lying down, elevated above the roof deck and completely protected from moisture. Manufacturer's packaging is not considered adequate for outdoor storage.

D. Insulation and coverboard materials shall be elevated on pallets and fully protected from moisture. Manufacturer's packaging is not considered adequate protection from moisture.

E. Adhesives and sealants shall be safely stored between 50°F and 80°F prior to use.

F. Flammable materials shall be stored in a cool, dry area, away from sparks and open flames. Follow all precautions as outlined in Manufacturer's Safety Data Sheets (SDS).

G. Materials having been determined by the OWNER'S REPRESENTATIVE to be damaged shall be immediately removed from the construction site and replaced at no cost to the OWNER.

1.08 WARRANTY

A. See Section 00800 – General Conditions, for additional warranty requirements.

B. Comply with warranty procedures required by manufacturer, including notifications, scheduling, and inspections.

C. Warranty: Provide Manufacturer's 20 Year NDL (No Dollar Limit) Warranty, plus additional 5 Year Warranty for the Membrane Only (25 Year Total Membrane Warranty). All materials to be warrantied shall be manufactured or supplied by approved membrane manufacturer.

D. All other work performed under this Contract not stipulated above will be warranted by the CONTRACTOR for all labor and material for a period of five (5) years from date of final payment. CONTRACTOR shall repair any and all leaks within forty-eight hours of notification or such defects and/or leaks during this five-year period.

PART 2: PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. **FiberTite** by **Seaman Corporation.**

B. Substitutions are not allowed.

2.02 ROOFING SYSTEM DESCRIPTION

A. Tear Down: Complete tear off down to the existing structural concrete roof deck.

B. Temporary Roof / Vapor Barrier: Styrene-butadiene-styrene Membrane.

C. Insulation: High Density Polyisocyanurate

D. Coverboard: Gypsum Core

E. Flashing Membrane: Ketone-ethylene-ester (KEE) Membrane

F. Cap Membrane: Ketone-ethylene-ester (KEE) Membrane

G. Roofing System: Styrene-butadiene-styrene modified bituminous membrane.

2.03 MEMBRANE MATERIALS

A. Membrane: Nominal 50-mil ketone-ethylene-ester (KEE) membrane reinforced with a 6.5 oz / yd^2 knitted polyester fabric as manufactured by Seaman Corporation, under the trade name **FiberTite-XT 50**, conforming to physical properties as outlined in the associated data sheet. FiberTite-XT greatly exceeds all requirements outlined in ASTM D6754. Membrane color shall be **DC196 Off-White**.

B. Flashing Membrane: Specified smooth back KEE membrane shall be used for all flashing requirements to match the field membrane and warranty expectations selected for the roofing system.

C. Temporary Roof: **FiberTite SBS 190 Torch Grade Base 150 Mil.**

2.04 INSULATION

A. Roofing insulation shall be installed to provide a suitable surface for the FiberTite Roofing System.

B. Wherever insulation thickness exceeds 2-inches, install insulation in multi-layer assembly with all joints staggered the maximum amount possible to increase thermal efficiency.

1. FTR-Value Polyisocyanurate

a. FM approved meeting Class A 1-90 for fire and wind.

b. Meets requirements of ASTM C1289.

2.05 COVER BOARD

A. Provide cover board as insulation overlayment. Cover board shall be a water-resistant gypsum core substrate conforming to the following:

1. FM approved meeting Class A-190 for fire and wind.

2. Meets requirements of ASTM C473.

B. Acceptable materials as supplied by MRSM:

1. ½" Securock Gypsum Fiber.

2.06 ROOF ACCESSORIES

A. Furnish accessories manufactured, marketed, or approved by MRSM required to complete the roof installation to manufacturer's specification including (as applicable), but not limited to, the items listed below:

1. Adhesives: Application technique and coverage rates will vary according to substrate and environmental conditions.

    a. FTR-190e Bonding Adhesive: A VOC compliant solvent borne, contact (two-sided) bonding adhesive, designed for bonding non-fleece back FiberTite membrane / flashing to properly prepared and preauthorized vertical substrates and smooth back membrane applications.

    b. FTR-601: A dual component, single bead (ribbon applied) urethane insulation adhesive. Adhesive is a non-solvent, elastomeric, urethane adhesive, specifically designed for bonding single or multiple layers of roof insulation, insulation composites and cover boards to structural roof decks and base sheets.

2. PA-1125 Primer: An asphalt, solvent blend primer conforming to ASTM D41 requirements. Used for concrete surface priming prior to application of FTR SBS modified bitumen.

3. FTR-101 Sealant: A single component gun-grade polyurethane sealant to seal flashing terminations.

4. FTR-SLS Sealant: A single component pourable, self-leveling, polyurethane sealant to fill pitch pans.

5. FiberClad Metal Aluminum: Metal material used to fabricate flashing details. 4' x 10' sheets of 0.040" thick 3003H14 aluminum, laminated with a 0.02-mil polymeric coating.

6. FTR Pre-Molded Flashing(s): Injection molded vent stack, split WrapidFlash and inside/outside corner flashing using KEE vinyl compound.

7. FTR Non-reinforcement Membrane: Field fabrication membrane, 0.060 mil non-reinforced KEE membrane.

8. FTR T-Joint Covers: Pre-cut 4" x 4" 60 mil non-reinforced membrane to reinforce areas where three overlapping sheets of membrane intersect.

9. FTR Tuff-Trac Reinforced Walk Way and Protection Pads: High grade walkway/protection material with slip resistant design.

10. FTR Termination Bar: Membrane flashing restrain/termination seals, nominal 1/8" x 1" x 10' 6060-T5 extruded aluminum bar with pre-punched slots at 8" on center.

11. FTR Termination Bar Fasteners: Of appropriate length and size for the substrate.

12. FTR-Value Insulation: Polyisocyanurate and extruded polystyrene flat or tapered insulation.

13. FTR Architectural Metal: Preformed, architectural Kynar metal edge systems.

PART 3: INSTALLATION

3.01 GENERAL

A. The authorized roofing contractor shall ensure strict compliance with Manufacturer's General Guide Specification and specified references for the Installation of KEE Roofing System.

B. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.

C. Obtain all relevant instructions and maintain copies at project site for duration of installation period.

D. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.

E. Perform work using competent and properly equipped personnel.

F. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.

G. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80°F.

H. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.

1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.

2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.

3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.

I. Until ready for use, keep materials in their original containers as labeled by the manufacturer.

J. Consult membrane manufacturer's instructions, container labels, and Safety Data Sheets (SDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.02 EXAMINATION

A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.

B. Verify that surfaces and site conditions are ready to receive work. Notify the OWNER'S REPRESENTATIVE of any and all conditions detrimental to proper and timely execution of the work. Do not proceed until such conditions have been corrected to the satisfaction of the OWNER and OWNER'S REPRESENTATIVE.

C. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.

D. Examine roof substrate to verify that it is properly sloped to drains.

E. Verify that wood nailers have been properly installed.

3.03 PREPARATION

A. Remove all of the existing roof system down to the roof deck including all existing composition base flashings. Dispose of all materials properly. If encountered, perform asbestos removal in accordance with federal, state and local regulations and dispose of waste in legal manner.

1. At penetrations, remove all existing flashings, including lead, asphalt, mastic, etc.

2. At walls, curbs, and other vertical and sloped surfaces, remove loose and unsecured flashings; remove mineral surfaced and coated flashings; remove excessive asphalt to provide a smooth, sound surface for new flashings.

B. Remove only enough roofing to accommodate the day's work and ensure the exposed area can be made 100% watertight at the end of the day or prior to inclement weather.

C. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.

D. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.

E. The Contractor shall verify that the deck condition and/or existing roof construction is

suitable for the specified installation of the FiberTite Multi-Ply Roofing System and Induction Weld system.

F. When the installation of modified bitumen membrane materials involves torching or hot air welding techniques, and the project involves tear-off of an existing roof system, the leading exposed edge of the existing roof system and cant strips shall be encapsulated as required to prevent combustion due to incidental contact with flame or heat. Encapsulation of the existing materials shall be performed prior to beginning torch or hot air welding operations. At a minimum, encapsulation shall be accomplished using roof cement.

G. Fill all surface voids in the immediate substrate that are greater than ¼" wide with fill material acceptable insulation to membrane manufacturer.

H. Seal, grout, or tape deck joints, where needed, to prevent bitumen seepage into building.

I. All terminations of the KEE Roofing System must be constructed to prevent water from penetrating behind or beneath the new KEE Roofing System. This includes water from above, beside, below and beneath the new system.

J. Wood Nailers: Provide wood nailers at all perimeters and other locations where indicated on the drawings, of total height matching the total thickness of insulation being used.

3.04 TEMPORARY ROOF SYSTEM

A. Prime concrete substrate using PA-1125 Primer supplied by Seaman Corporation.

B. Fully bond the FTR-SBS membrane to the prepared substrate.

C. Utilize a minimum 3" side and end laps.

D. Apply directly behind the (torch) applicator.

E. Cut a dog ear angle at the end laps on overlapping selvage edge.

F. Using a clean trowel, apply pressure to top seal T-Laps immediately following base ply application.

G. Stagger end laps a minimum of 3'.

3.05 INSULATION AND COVER BOARD (GENERAL)

A. Roof insulation and/or coverboard shall be installed where by the long dimension of the board(s) run in parallel alignment and the short dimensions are staggered.

B. Insulation and/or cover board shall be installed with minimum joint dimensions and shall be tightly butted where possible. Maximum joint widths shall be 3/8". Damaged corners shall be cut out and replaced with an insulation piece a minimum of 12" x 12". Pieces that are cut from larger panels and are smaller than one square foot are not acceptable.

C. Install no more than can be covered during the same working day.

D. Taper roof insulation to scupper drains using tapered edge strips. If an insulation layer is 1-1/2” or less, taper 12” from the drain. If insulation thickness exceeds 1-1/2”, taper 18” from the drain. All taper boards or pieces must be adhered or mechanically fastened with a minimum of two fasteners per board.

E. Where a cover board and/or multiple layers are installed, each layer shall be offset from the previous layer a minimum of 12” on center.

F. At the end of each working day, provide a watertight cover on all unused insulation and cover board to avoid moisture penetration.

3.06 INSULATION AND COVER BOARD INSTALLATION

A. Insulation and adhesives shall be applied only to properly prepared and preapproved substrates that are free of any debris, dirt, grease, oil or moisture.

B. The minimum product temperature at time of application shall be 70°F.

C. Adhesives shall not be applied when surface or ambient temperatures are below 40°F or above 110°F.

D. Insulation shall be fully bonded to the substrate with a maximum board size of 4’ x 4’.

E. Cover board shall be fully bonded to the substrate with a maximum board size of 4’ x 8’.

F. Insulation and cover board shall be set into a continuous ½” bead of adhesive at a minimum rate of one linear foot of adhesive for every square foot of insulation board.

G. Adhesive rates are to be increased in roof perimeter and corner zones in accordance with specified Florida Product Approval.

H. Place the board onto the adhesive beads and walk on the boards, spreading the adhesive for maximum contact.

I. A second walking will be required after 10 minutes to ensure maximum contact and bond strength.

3.07 ADHERED MEMBRANE SECUREMENT

A. The Contractor shall assume full responsibility for any and all irregularities, defects or quality issues that arise due to failure to following published installation guidelines for the proper installation of adhered FiberTite membrane roofing systems.

B. Smooth Back Membrane Adhered with FTR-190e Bonding Adhesive:

1. Position the FiberTite membrane and fold the sheet to allow a workable exposure of the underside of the sheet.

2. Apply a 100% continuous coat of bonding adhesive to the exposed bottom side of the membrane and a mirrored area of the substrate.

3. The amount of membrane and substrate that can be coated with adhesive will be determined by application method, ambient temperature, humidity and available manpower.

4. Adhesive may be applied by spraying and back rolling or just rolling. Do not dump adhesive or pour from the cans.

5. Roller applied adhesive shall utilize a solvent resistant 3/8” nap roller, spreading the adhesive to ensure a smooth, even, 100% coverage of the substrate and membrane.

6. Spray applied adhesive must be spready out by roller to ensure a smooth, even, 100% coverage of the substrate and membrane with no voids, skips, globs, puddles or similar irregularities.

7. Adhesive coverage should average 100 square feet per gallon of applied adhesive with a 50 square feet per gallon net cover (+/- 10%) for the membrane and substrate combined.

8. Allow the adhesive to dry or cure to a point of being tacky, but not stringy to the touch on both surfaces. Do not allow adhesive to completely dry out on either surface.

9. When sufficiently cured, carefully maneuver the glued portion of the membrane onto the glued substrate surface, avoiding any wrinkles or air pockets.

10. 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.

11. Repeat the process for the remaining unbonded portion of the membrane, lapping subsequent, adjacent rolls of the membrane a minimum of 3”, ensuring proper shingling of the membrane to shed water along the laps.

12. No adhesive shall be applied to the lap seam areas of the membrane. Contaminated areas will inhibit proper welding of the seams, requiring a membrane patch or strip.

13. Do not use bad or marginal adhesives. Contract technical services if the quality of the adhesive is suspect.

3.08 HOT AIR WELDING

A. All field seams exceeding 10’ in length shall be welded with an approved automatic welder.

B. All field seams must be clean and dry prior to initiating any field welding.

C. Remove foreign materials from the seams (dirt, oils, etc.) with MEK or authorized alternative.

D. Do not allow cleaning solvents to come in contact with the Kynar top finish when using Kynar membrane. Aggressive solvents will either mar or completely remove the top finish.

E. Use clean white cotton cloths and allow approximately five minutes for solvents to dissipate before initiating the automatic welder. Do not use denim or synthetic rags for cleaning.

F. Contaminated areas within a membrane seam will inhibit proper welding and will require a membrane patch.

G. All welding shall be performed only by qualified personnel to ensure the quality and continuity of the weld.

H. Keep the bottom of the Induction Weld tool and cooling magnets clean.

I. Continuous operation of the induction welding process can promote overheating of the cooling magnets. Periodically cool the magnets using clean water to prevent melting and/or scarring of the KEE membrane.

J. Follow the Induction Welder tool manufacturer's recommendations for periodic cleaning and maintenance of the equipment.

K. Hand Welding Procedure:

1. The lap or seam area of the membrane may be intermittently tack welded to hold the membrane in place.

2. The back interior edge of the membrane shall be welded first with a thing, continuous, weld to concentrate heat along the exterior edge of the lap during the final welding pass.

3. The nozzle of the hand held hot air welder shall be inserted into the lap at a 45° angle to the lap. Once the polymer on the material begins to flow, a hand roller shall be used to apply pressure at a right angle to the tip of the hand welder. Properly welded seams shall utilize a 1-1/2" wide nozzle to create a homogeneous weld with a minimum width of 1-1/2".

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

L. Automatic Machine Welding Procedure:

1. Proper welding of the KEE membrane can be achieved with a variety of automatic welding equipment. Contact technical services for specific recommendations.

2. Follow all manufacturer instructions for the safe operation of automatic machine welders.

3. Follow local code requirements for electric supply, grounding and surge

protection.

4. The use of a dedicated, portable generator is highly recommended to ensure a consistent electrical supply, without fluctuations that can interfere with weld consistency.

5. Properly welded seams shall utilize a 1-1/2” wide nozzle to create a homogeneous weld with a minimum width of 1-1/2”.

3.09 FLASHING

A. Clean all vents, pipes, conduits, tubes, walls, and stacks to bare metal. All protrusions must be properly secured to the roof deck with approved fasteners. Flash all penetrations according to approved details.

B. Remove all loose and/or deteriorated cant strips and flashing.

C. Flash all curbs, parapets and interior walls in strict accordance with approved MRSM details.

D. All flashing shall be adhered to properly prepared, approved substrate(s) with bonding adhesive applied in sufficient quantity to ensure total adhesion.

E. The base flashing of all membrane flashing shall extend out on to the plane of the deck, beyond the wood nailers to a maximum width of 8”.

F. Vertical flashing shall be terminated no less than 8” above the plane of the deck with approved termination bar and counter-flashing or metal cap flashing.

G. When using FTR-201 as the adhesive, vertical wall flashing termination shall not exceed 40” without supplemental mechanical attachment of the flashing between the deck and the termination point of the flashing.

H. Complete all inside and outside corner flashing details with KEE preformed corners or an approved field fabrication detail.

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

J. Install penetration accessories in strict accordance with approved details. Ensure penetration accessories have not impeded in any way the working specification.

3.10 METAL FLASHING

A. Provide FiberTite Metal-Era Tapered Coping at all perimeter parapet walls. Coping shall be tapered such that water drains to the inside of the wall onto the roofing surface.

B. All perimeter edge details at to be fabricated from Polymeric-Clad Metal or utilize prefabricated Fascia System.

C. Fasten all metal flashing to wood nailers or approved substrate with approved fasteners

at 8” on center.

D. Install metal flashing in accordance with MRSM specifications and details.

3.11 PITCH PANS

A. Every reasonable effort shall be made to eliminate the need for pitch pans, including the removal of all existing pans. Contact MRMS technical services for specific design alternatives and recommendations.

B. In the event of no alternative, fabricate pitch pans from KEE Clad metal, installed in accordance with manufacturer details, ensuring proper attachment, maintaining a minimum of 2” clearance around the penetration.

C. Pitch pans shall be filled with non-shrinking grout to within 1” of the top of the pan. Allow the grout to dry and fill remainder of the pain with FTR-SLS pourable sealant.

D. Pitch pans and sealant will require periodic maintenance by the OWNER.

E. Pitch pans are maintenance items and shall not be considered as part of the warranty.

3.12 TEMPORARY SEALS

A. At the end of each working day or at the sign of rain, install temporary, 100% watertight seals where the completed new roofing adjoins old/existing roofing.

B. If water is allowed to enter beneath the newly completed roofing, the affected areas shall be removed and replaced at no additional expense to the OWNER.

C. Prior to the commencement of work, cut out and remove all contaminated membrane, insulation, roof cement or sealant and properly dispose.

3.13 LIGHTNING PROTECTION

A. The installation of lightning protection must be coordinated with the Contractor, UL certified lightning contractor and the OWNER.

B. The lightning protection system must be installed in such a manner that base plates, air terminals and cables do not penetrate the roofing membrane without the use of pre-approved flashing details.

3.14 FINISHING AND WALKWAY INSTALLATION

A. Install walkways at access points to the roof, around rooftop equipment that may require maintenance, and where indicated on the drawings. Use only specified walkway and protection pads.

3.15 FIELD QUALITY CONTROL

A. 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 field welding with a dull pointed

instrument to assure the quality of the application and to ensure that any equipment or operator deficiencies are immediately resolved.

B. Ensure that all aspects of the installation (sheet layout, attachment, welding, flashing details, etc.) are in strict accordance with the most current MRSM specifications and details.

C. Excessive patching of field seams because of inexperienced or poor workmanship will not be accepted at time of FINAL INSPECTION FOR WARRANTY ACCEPTANCE.

D. Any deviation from pre-approved specifications and/or details requires written authorized from MRSM technical services prior to application to avoid any warranty disqualification.

E. It is the responsibility of the Contractor, job foreman, supervisor, and/or quality control personnel to perform a final self-inspection on all seams prior to requesting the inspection for warranty issuance.

3.16 CLEANING

A. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.

B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.

C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.17 WARRANTY INSPECTION

A. Upon completion of the project, the authorized roofing contractor shall complete and submit the MRSM Project Completion Notice.

B. Upon receipt of the notice of completion by the MRSM, CONTRACTOR shall schedule an inspection with the MRSM, OWNER'S REPRESENTATIVE and the OWNER to thoroughly review the installation and verify compliance with MRSM specifications.

C. Any corrections or modifications necessary for compliance with the specifications and acceptance for warranty (punch list) will be noted on the Final Inspection for Warranty Form.

D. Upon completion of all punch list items and final acceptance of the installation, a warranty as authorized by the MRSM will be issued.

END OF SECTION