



# City of Madison

# Fleet Services Roof Replacement

City of Madison Contract # 7027

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P-1.0	Roof Drain & Storm Sewer Lines Locations

City of  
Madison

Facilities & Sustainability  
Management  
210 Martin Luther King  
Jr. Blvd Room 115



Designed Prepared For:

City of  
Madison  
Fleet Services

Design & Project  
Engineer

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Fleet Services Roof Replacement  
200 North First Street  
Madison, WI  
Contract: 7027 Project: 53W1569

Sheet Number:

**TS-1.0**

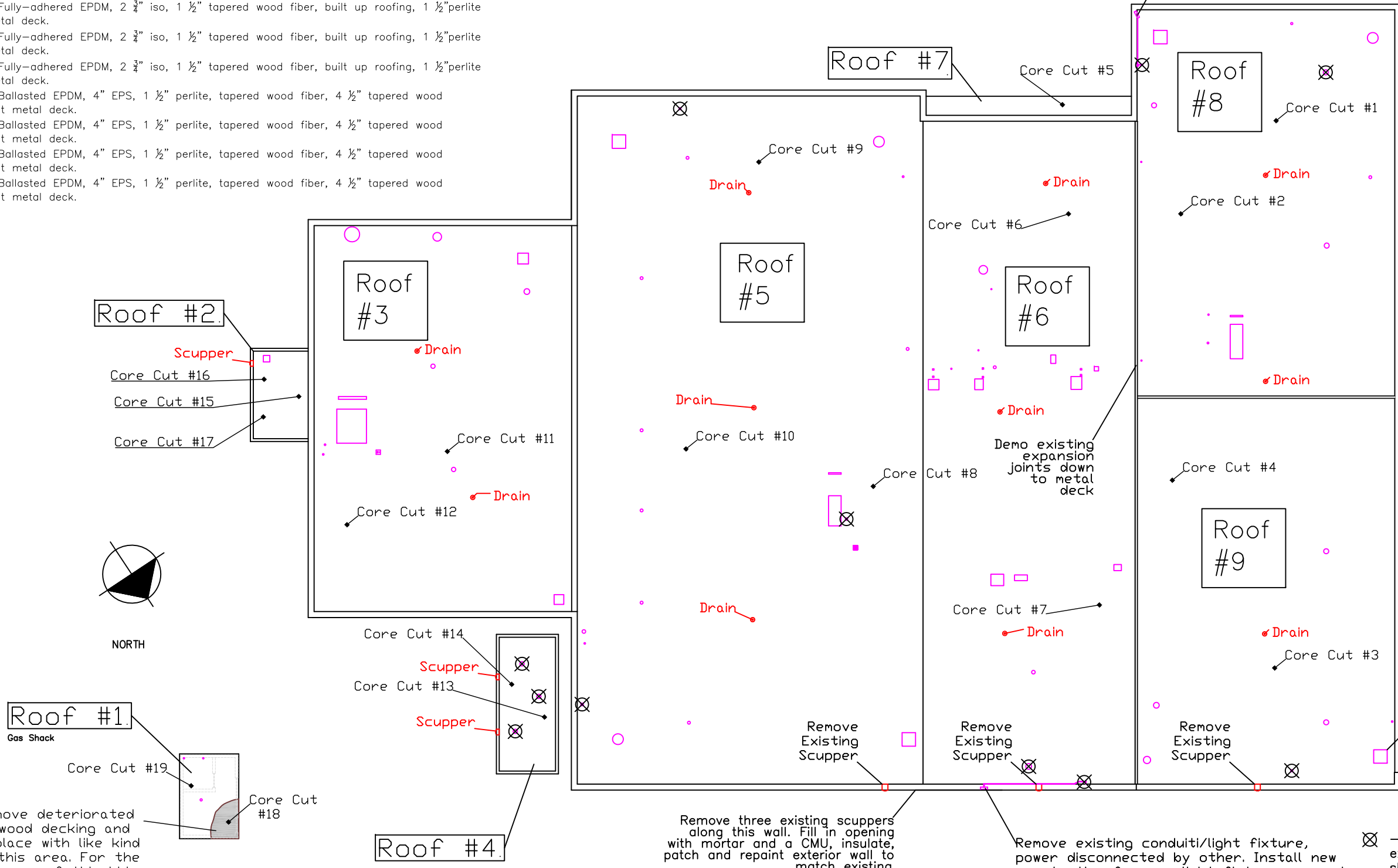
# CORE CUT SCHEDULE

- Roof #1 Cut #18 Ballasted EPDM, Protective matting, tapered plywood deck.
- Roof #1 Cut #19 Ballasted EPDM, Protective matting, tapered plywood deck.
- Roof #2 Cut #15 Ballasted EPDM, (2) Layers 2" extruded polystyrene insulation, tapered concrete deck.
- Roof #2 Cut #16 Ballasted EPDM, (2) Layers 2" extruded polystyrene insulation, tapered concrete deck.
- Roof #2 Cut #17 Ballasted EPDM, (2) Layers 2" extruded polystyrene insulation, tapered concrete deck.
- Roof #3 Cut #11 Ballasted EPDM, 4" EPS, thermoplastic membrane, 1 1/2" perlite, built-uproofing, 1 1/2" perlite, corrugated flat metal deck.
- Roof #3 Cut #12 Ballasted EPDM, 7" EPS, thermoplastic membrane, 1 1/2" perlite, built-uproofing, 1 1/2" perlite, corrugated flat metal deck.
- Roof #4 Cut #13 Ballasted EPDM, 1" iso, tapered concrete deck.
- Roof #4 Cut #14 Ballasted EPDM, 1" iso, tapered concrete deck.
- Roof #5 Cut #8 Fully-adhered EPDM, 2 1/2" iso, 1 1/2" perlite, tapered wood fiber, corrugated flat metal deck.
- Roof #5 Cut #9 Fully-adhered EPDM, 2 1/2" iso, 1 1/2" perlite, tapered wood fiber, corrugated flat metal deck.
- Roof #5 Cut #10 Fully-adhered EPDM, 2 1/2" iso, 1 1/2" perlite, tapered wood fiber, corrugated flat metal deck.
- Roof #6 Cut #6 Fully-adhered EPDM, 2 3/4" iso, 1 1/2" tapered wood fiber, built up roofing, 1 1/2"perlite corrugated flat metal deck.
- Roof #6 Cut #7 Fully-adhered EPDM, 2 3/4" iso, 1 1/2" tapered wood fiber, built up roofing, 1 1/2"perlite corrugated flat metal deck.
- Roof #7 Cut #5 Fully-adhered EPDM, 2 3/4" iso, 1 1/2" tapered wood fiber, built up roofing, 1 1/2"perlite corrugated flat metal deck.
- Roof #8 Cut #1 Ballasted EPDM, 4" EPS, 1 1/2" perlite, tapered wood fiber, 4 1/2" tapered wood fiber,corrugated flat metal deck.
- Roof #8 Cut #2 Ballasted EPDM, 4" EPS, 1 1/2" perlite, tapered wood fiber, 4 1/2" tapered wood fiber,corrugated flat metal deck.
- Roof #9 Cut #3 Ballasted EPDM, 4" EPS, 1 1/2" perlite, tapered wood fiber, 4 1/2" tapered wood fiber,corrugated flat metal deck.
- Roof #9 Cut #4 Ballasted EPDM, 4" EPS, 1 1/2" perlite, tapered wood fiber, 4 1/2" tapered wood fiber,corrugated flat metal deck.

## Fleet Services Roof Demolition Plan

Remove all of the existing roofing system down to the roof deck including all existing composition base flashing for Roofs 1-9.

Remove existing conduit/light fixture, power disconnected by other. Install new penetration for new light fixture support approximately 16" from the parapet wall. Support supplied by other.



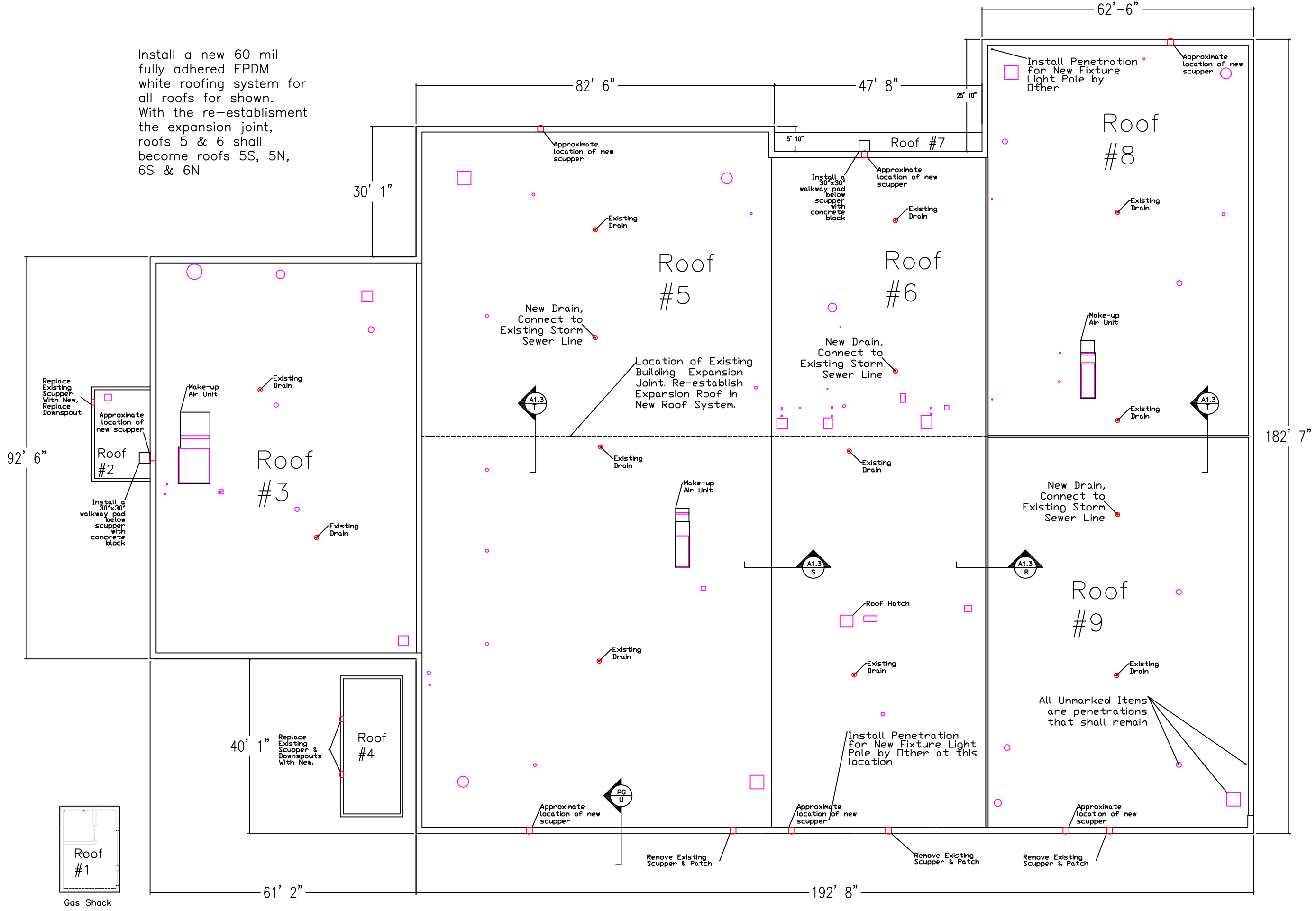
Remove three existing scuppers along this wall. Fill in opening with mortar and a CMU, insulate, patch and repaint exterior wall to match existing.

Remove existing conduit/light fixture, power disconnected by other. Install new penetration for new light fixture support approximately 16" from the parapet wall. Support supplied by other.

⊗ -Notes location where existing Penetrations shall be removed and metal deck patched



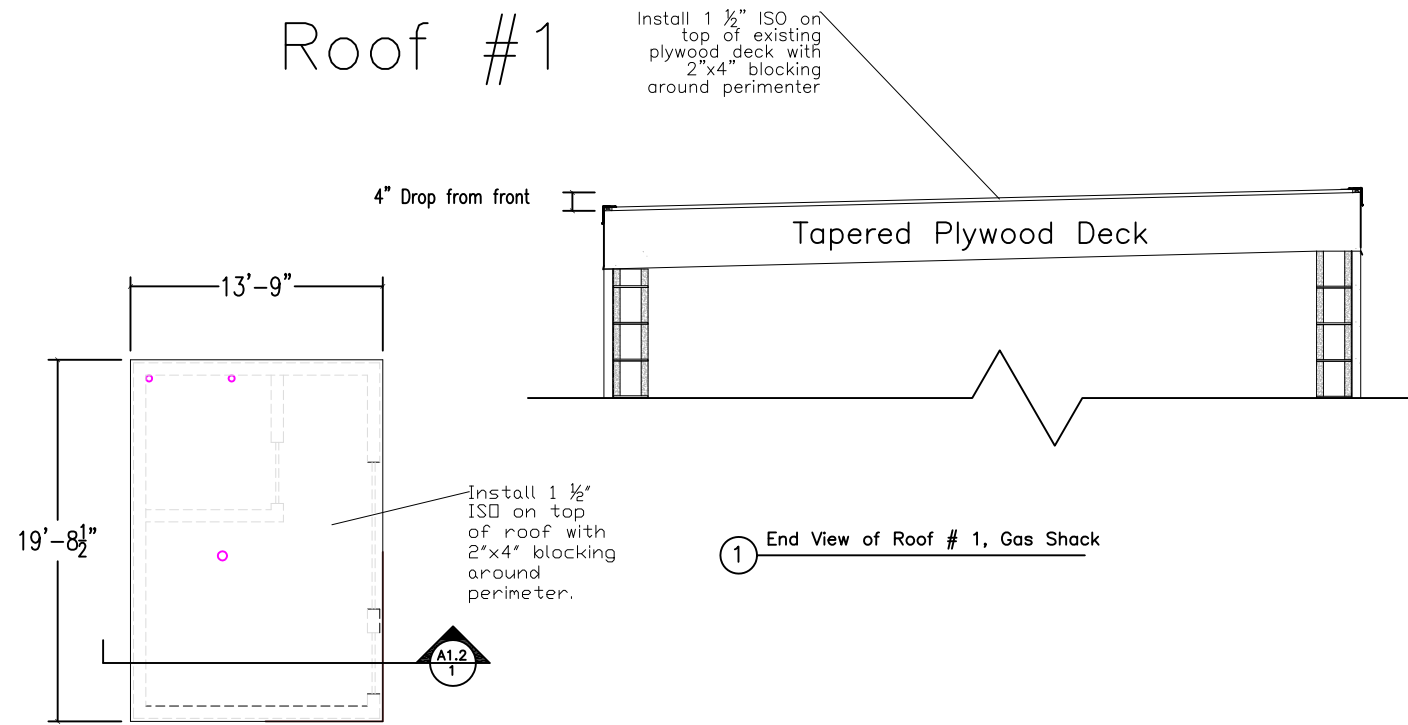
Install a new 60 mil fully adhered EPDM white roofing system for all roofs for shown. With the re-establishment the expansion joint, roofs 5 & 6 shall become roofs 5S, 5N, 6S & 6N



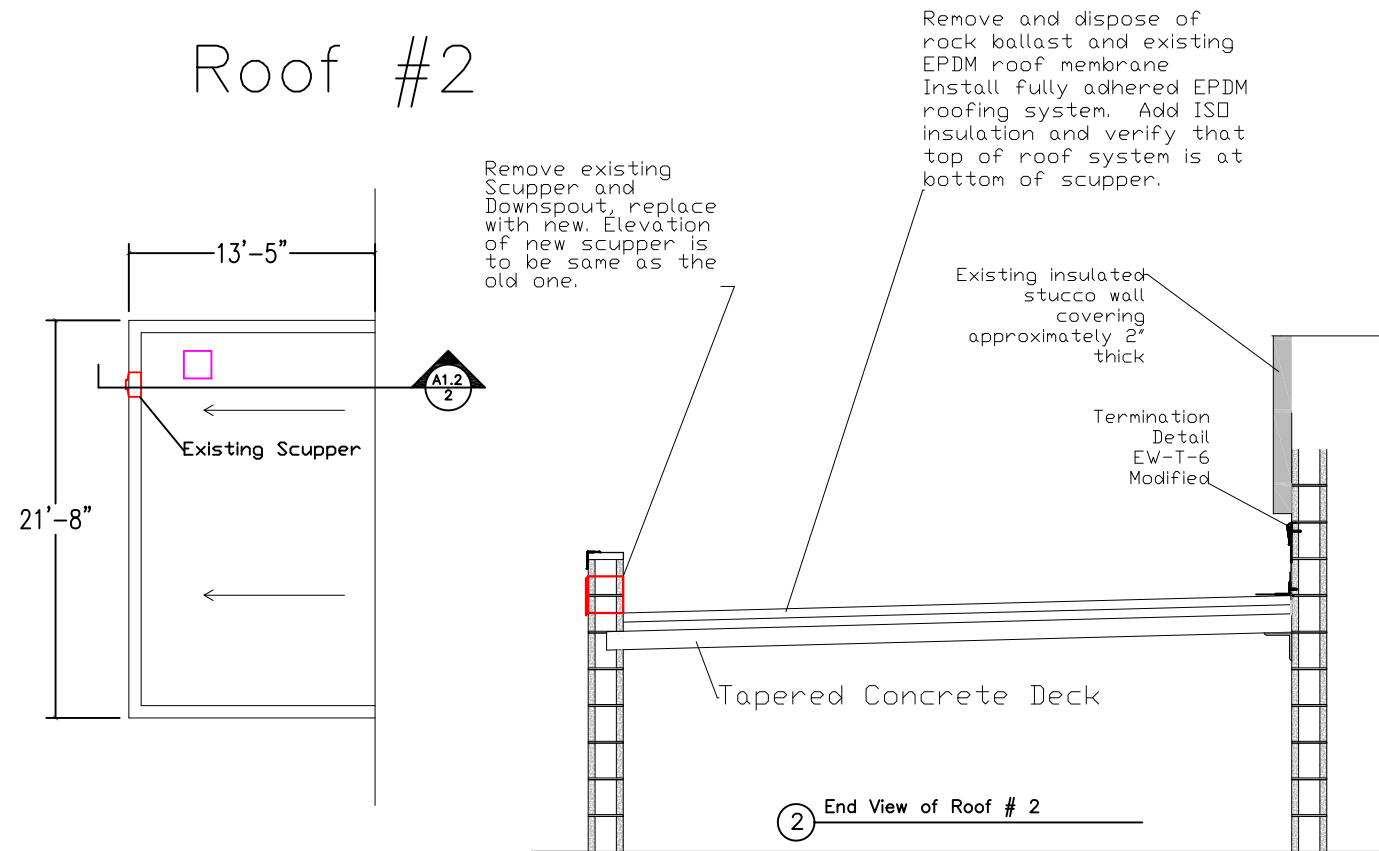
Dimensions are provided for reference only. The contractor is responsible for field verifying details and dimensions.



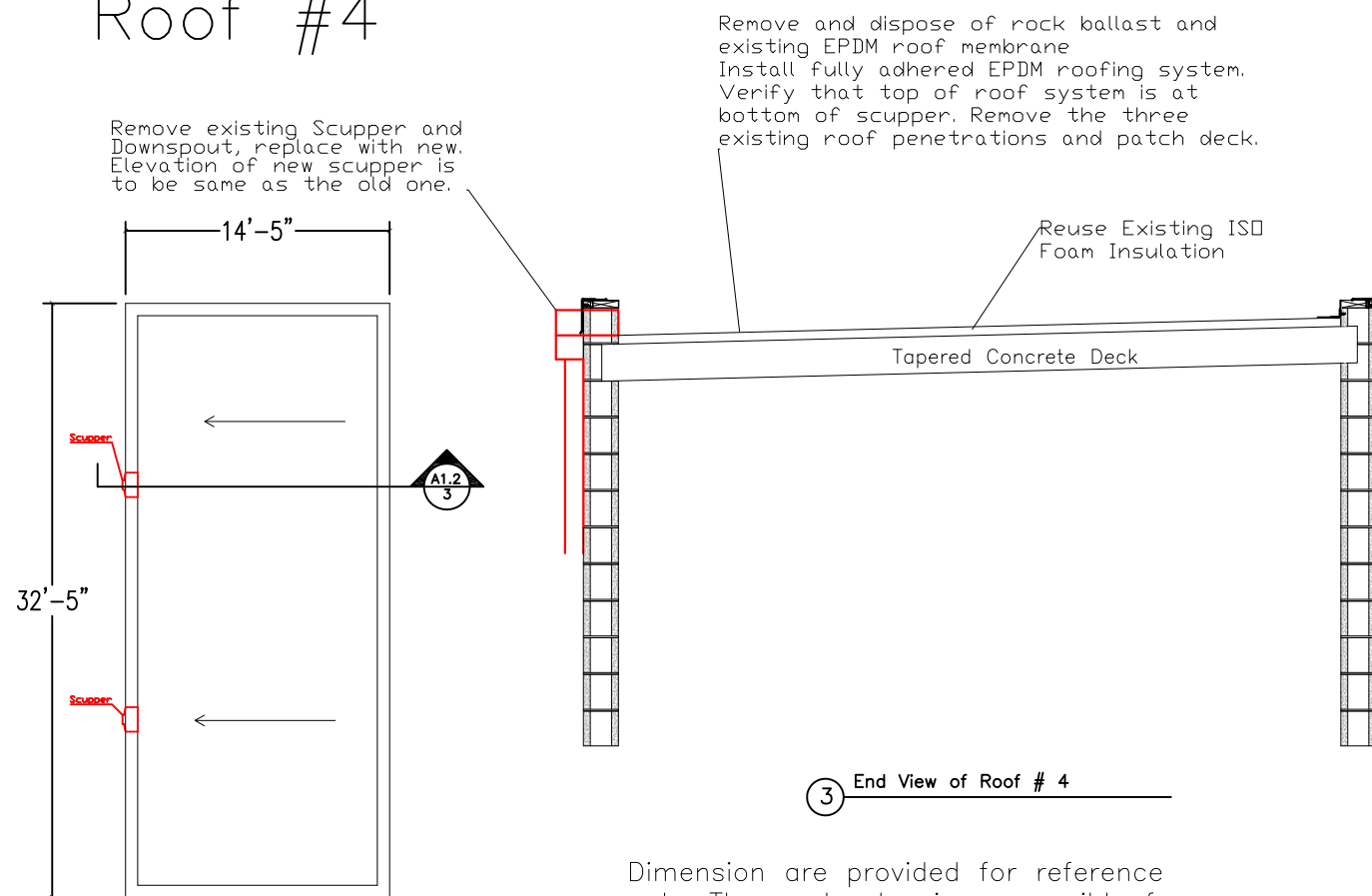
# Roof #1



# Roof #2

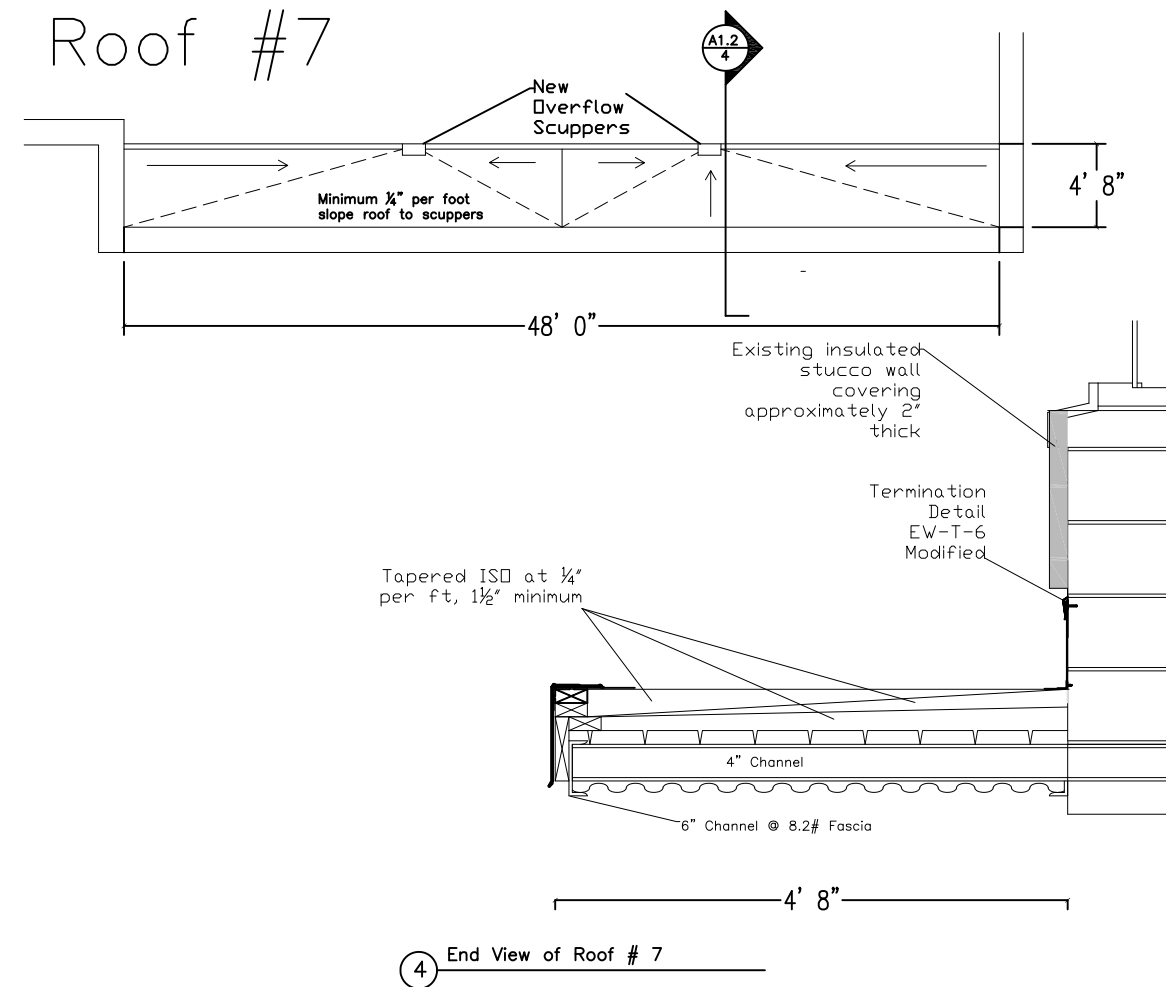


# Roof #4



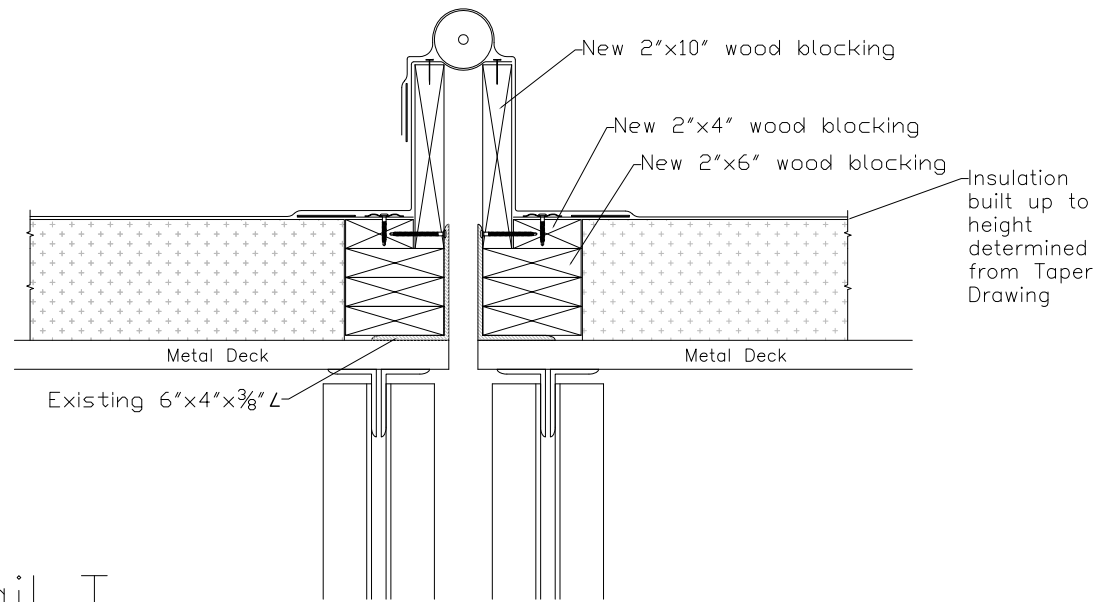
Dimension are provided for reference only. The contractor is responsible for field verifying details and dimensions.

# Roof #7



Roof #9

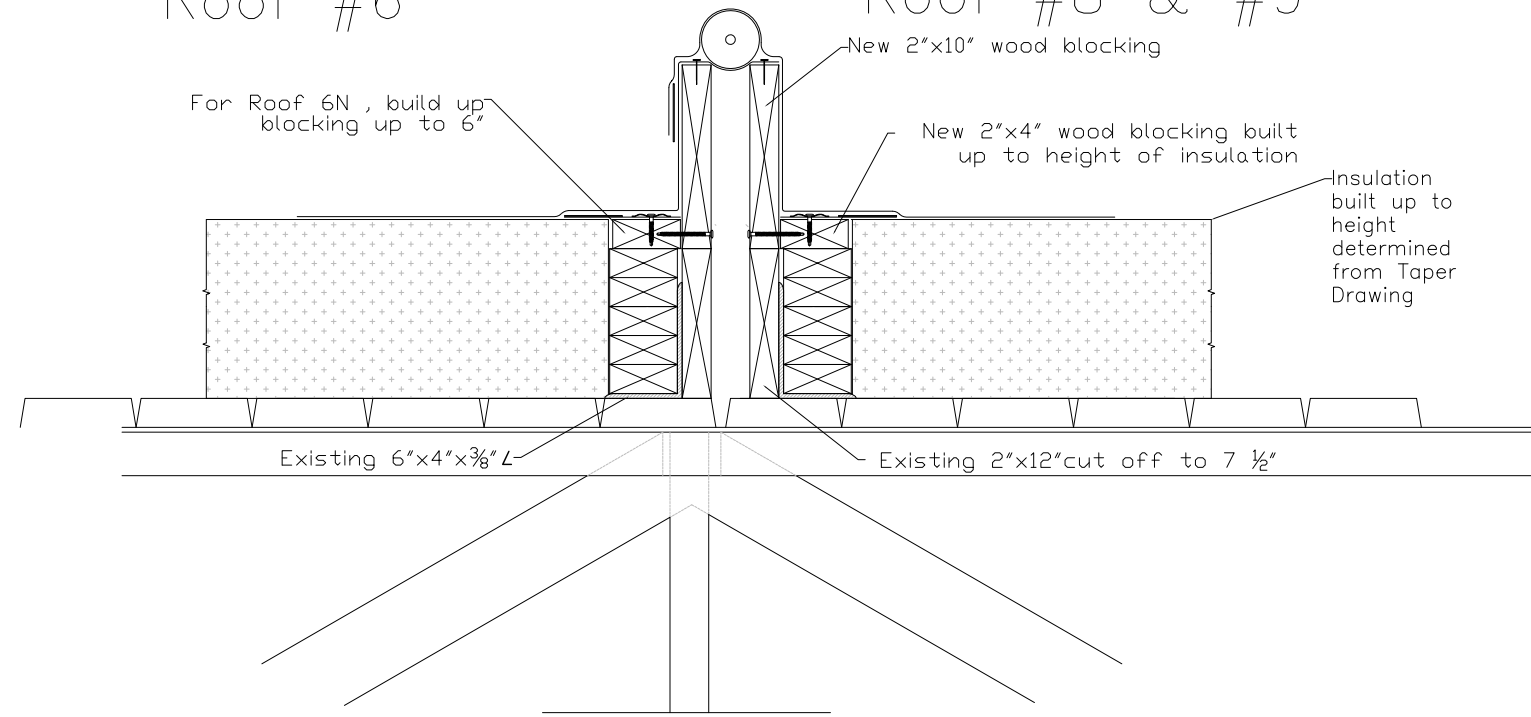
Roof #8



Detail T  
Expansion Joint Between Roof #8 & #9

Roof #6

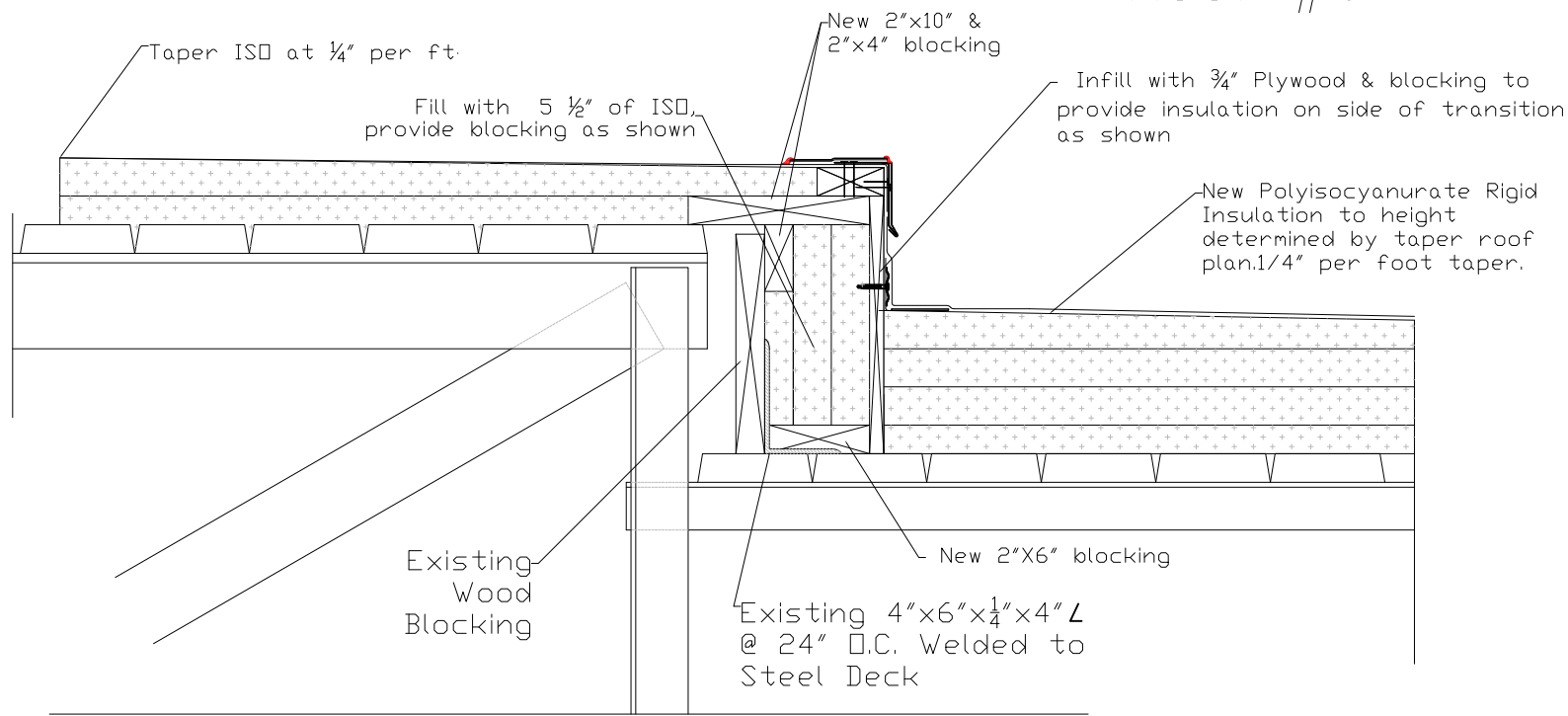
Roof #8 & #9



Detail R— Expansion Joint Between  
Roof #6 & Roofs #8 & #9

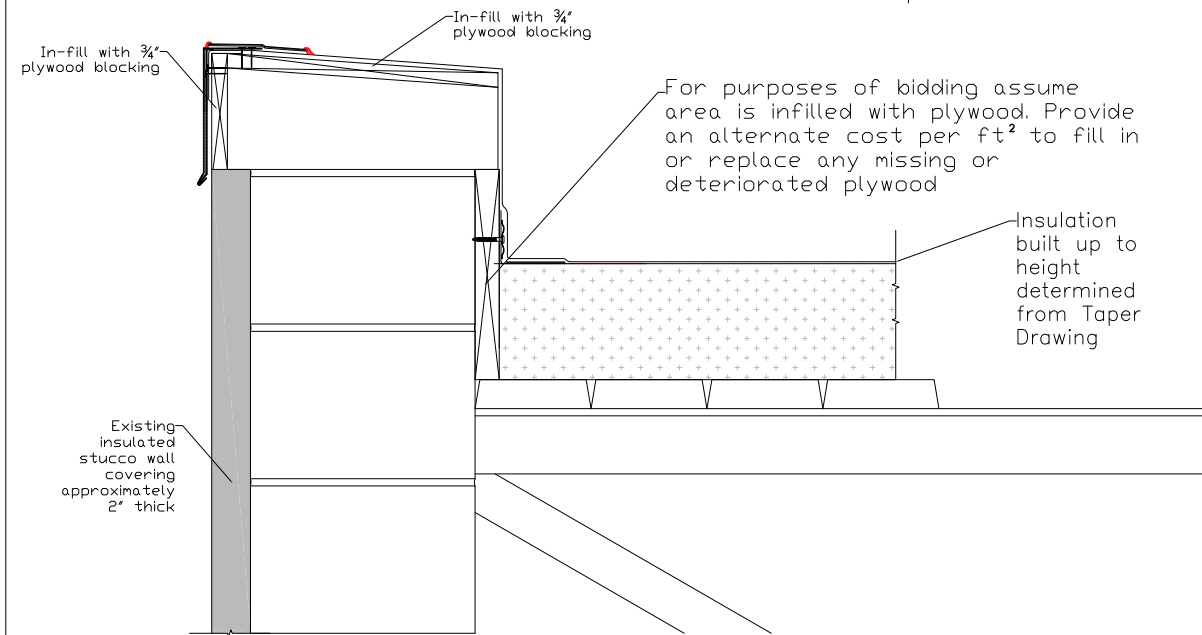
Roof #5

Roof #6



Detail S— Transition Between Roof  
#5 & #6

General Detail for all Parapet Walls



Detail U— Parapet Wall Roof #5

For purposes of bidding provide blocking as shown on drawings. Additional blocking shall be provide as unit price alternate. Existing blocking may be reused after inspection & approval from the Project Manger.

City of  
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210 Martin Luther King Jr.  
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200 North First Street  
Madison, WI

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Sheet Number:  
**A-1.2**  
Roof  
Details

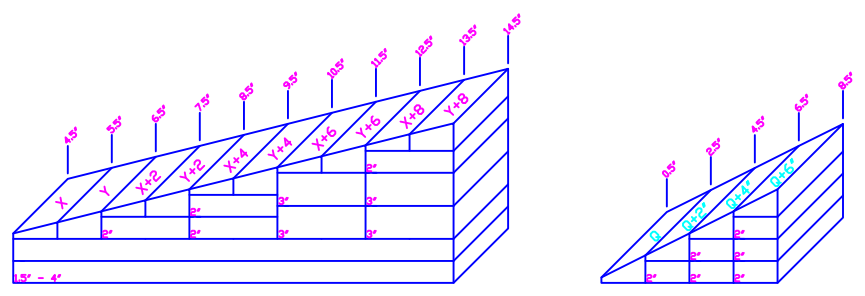
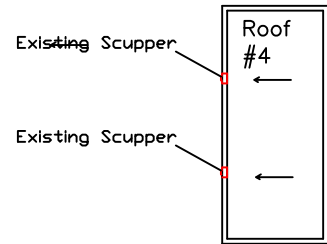
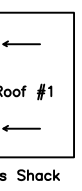
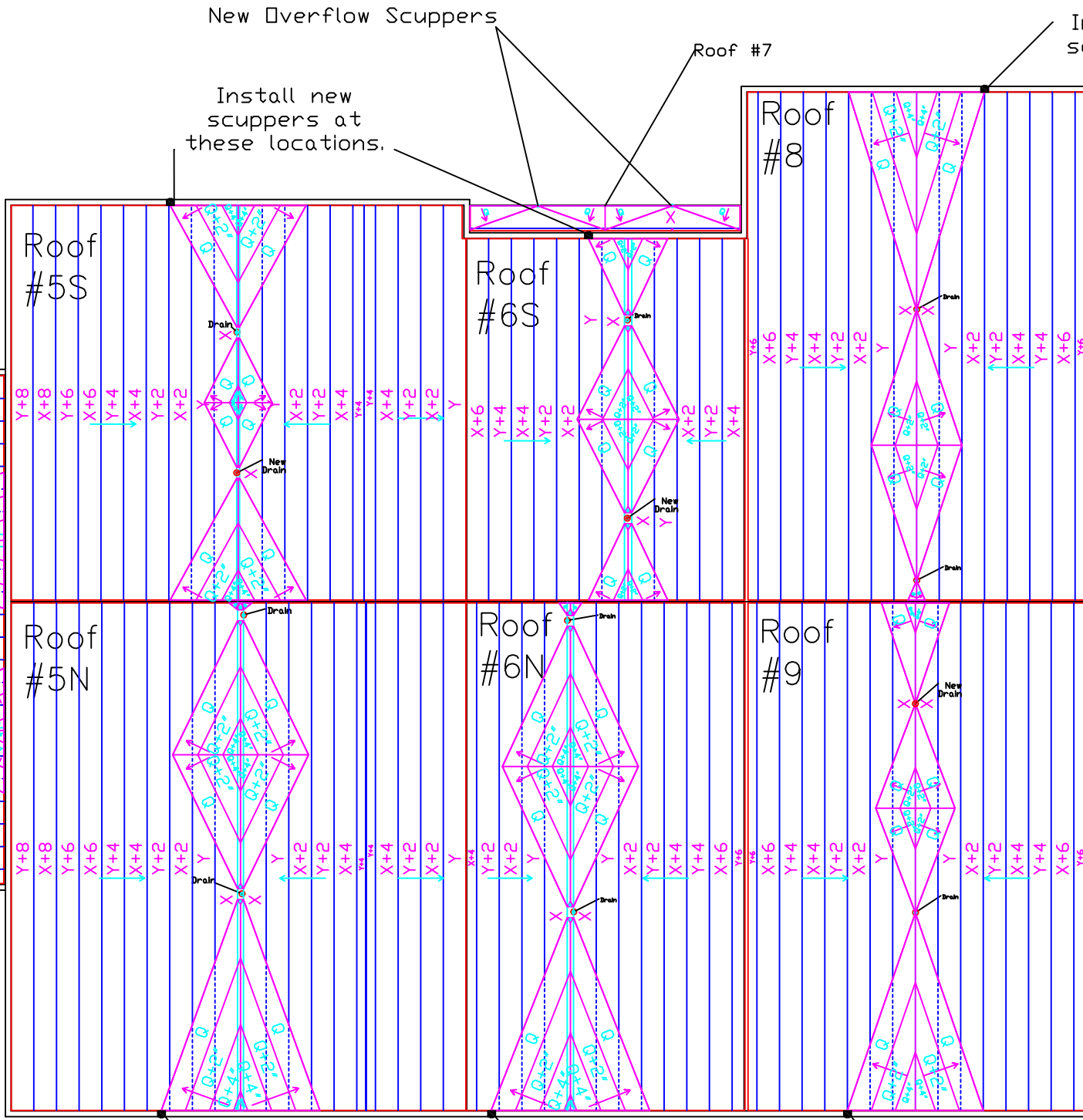
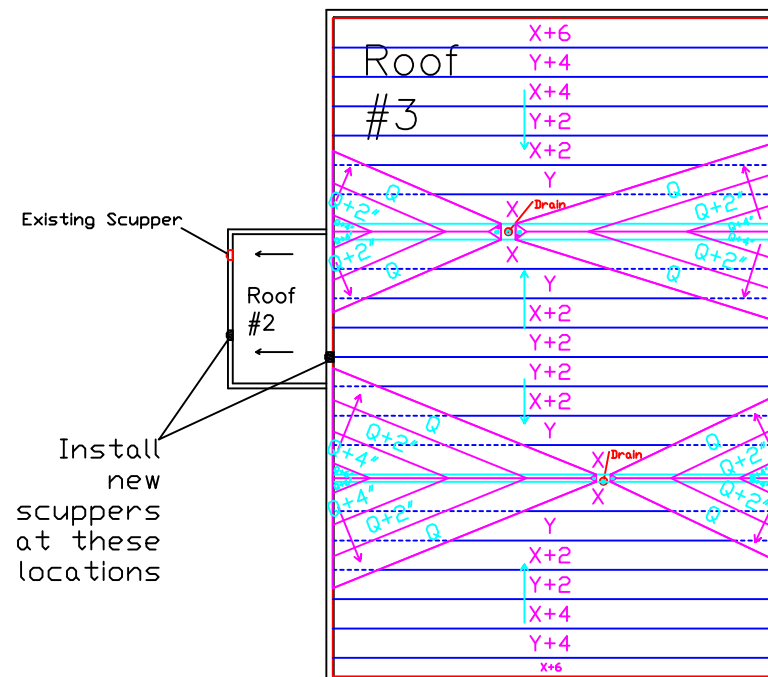
**Roof Base Layers:**

- Roof #3 & 6S- Install 2" Base Layer
- Roof # 5N, 5S, 6N, 8, & 9- Install 1.5" Base Layer
- Roof #7- Install No Base Layer
- Roof #1- Install 1 1/2" Base Layer Only (Tapered Roof)
- Roof #2- Install 4" Base Layer Only (Tapered Roof)
- Roof #4- Use Existing ISO as Base, (Tapered Roof)

New Overflow Scuppers

Install new scuppers at these locations.

Install new scupper at this location.



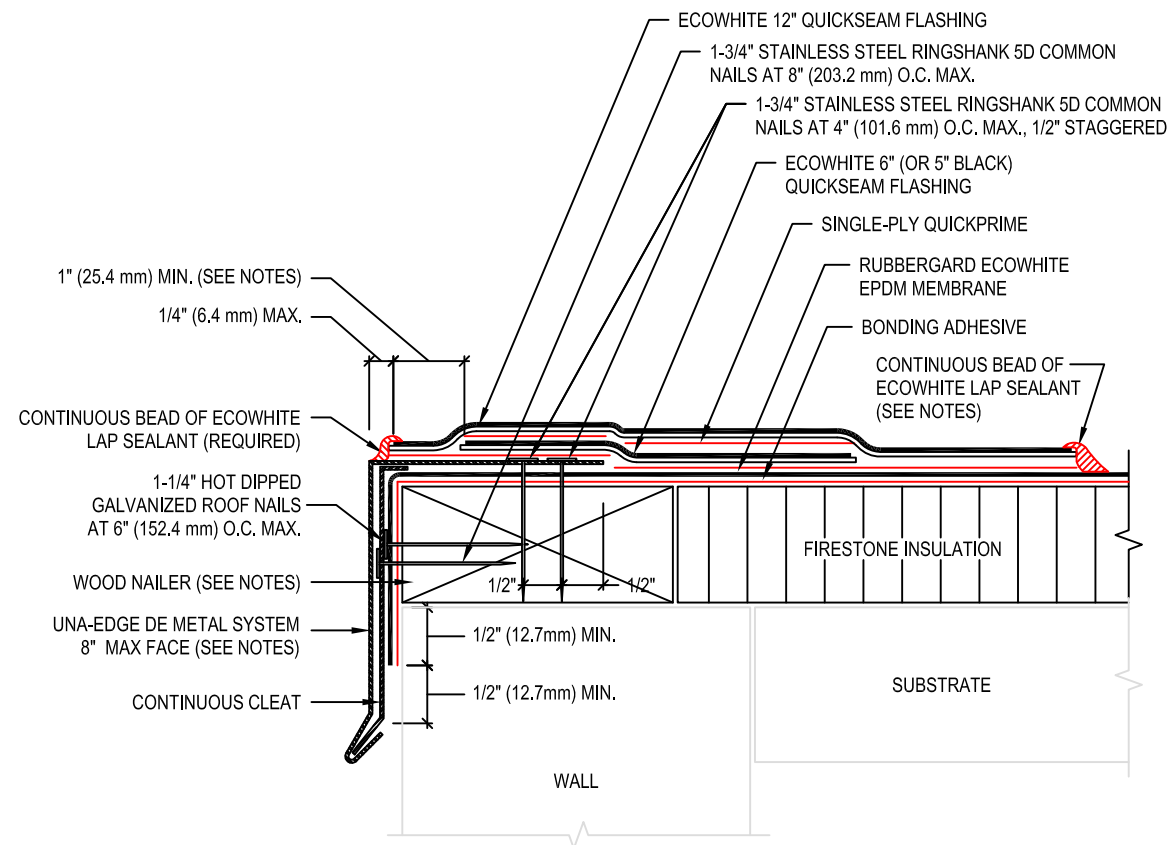
**Taper Section Cross Sections**  
Base layers from X as stated above.

Install new scupper at this location.

Install new scupper at this location.

Install new scupper at this location.

Install taper roof plan to obtain a minimum of R-35 for each roof section. Scuppers shall be fabricated from .040 Aluminum and shall have welded metal sleeves with rounded sheet metal flange corners. Dimension of scupper shall be 8" x 16" and shall extend one inch from outside wall with flange and continuous bead of sealant. Scupper height for Roof #5 shall be no less than 4". Shop drawings must be provide for taper plan and scupper detail. Bottom of scuppers shall be locate at top elevation of roofing membrane.

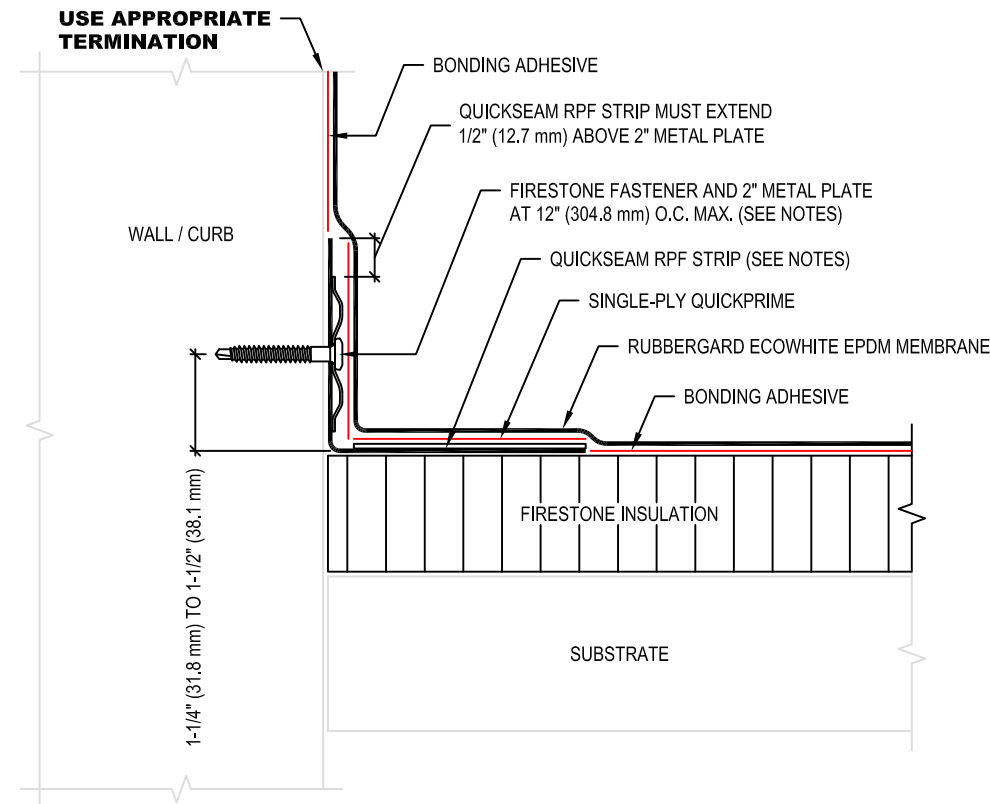


**NOTES:**

1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. 12" ECOWHITE QUICKSEAM FLASHING EXTEND TO WITHIN 1/4" (6.4 mm) OF THE METAL EDGE.
3. INSTALL METAL WORK TO FIRESTONE INSTALLATION INSTRUCTIONS.
4. ECOWHITE LAP SEALANT IS REQUIRED ALONG ENTIRE UPSLOPE EDGE OF ECOWHITE QUICKSEAM FLASHING WHEN ROOF SLOPE IS 1" (25.4 mm) PER FOOT OR GREATER, REFER TO EW-LS-9 FOR SEAM EDGE TREATMENT.
5. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LBS PER LINEAR FOOT MINIMUM IN ANY GIVEN DIRECTION.
6. FLANGE OF METAL MUST BE FULLY SUPPORTED BY WOOD AND TERMINATED AT LEAST 1/2" (12.7 mm) FROM EDGE OF WOOD.

## Roof Edge Detail EW-RE-14A

Note: These details are provided for one manufacturer only and are intended for reference. The contractor shall provide submittals based on the roofing manufacturer specifications that will provide the stated warranty

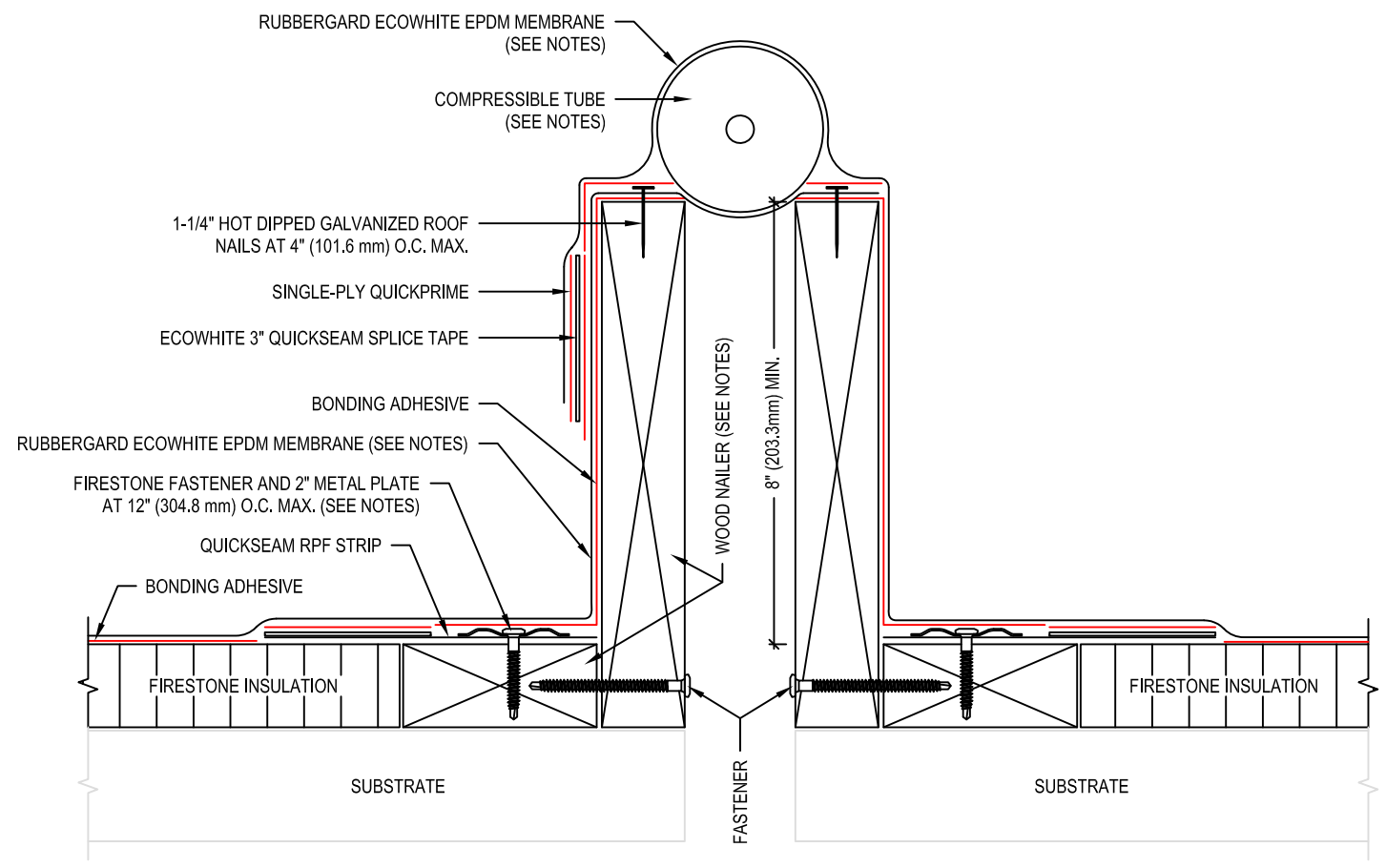


**NOTES:**

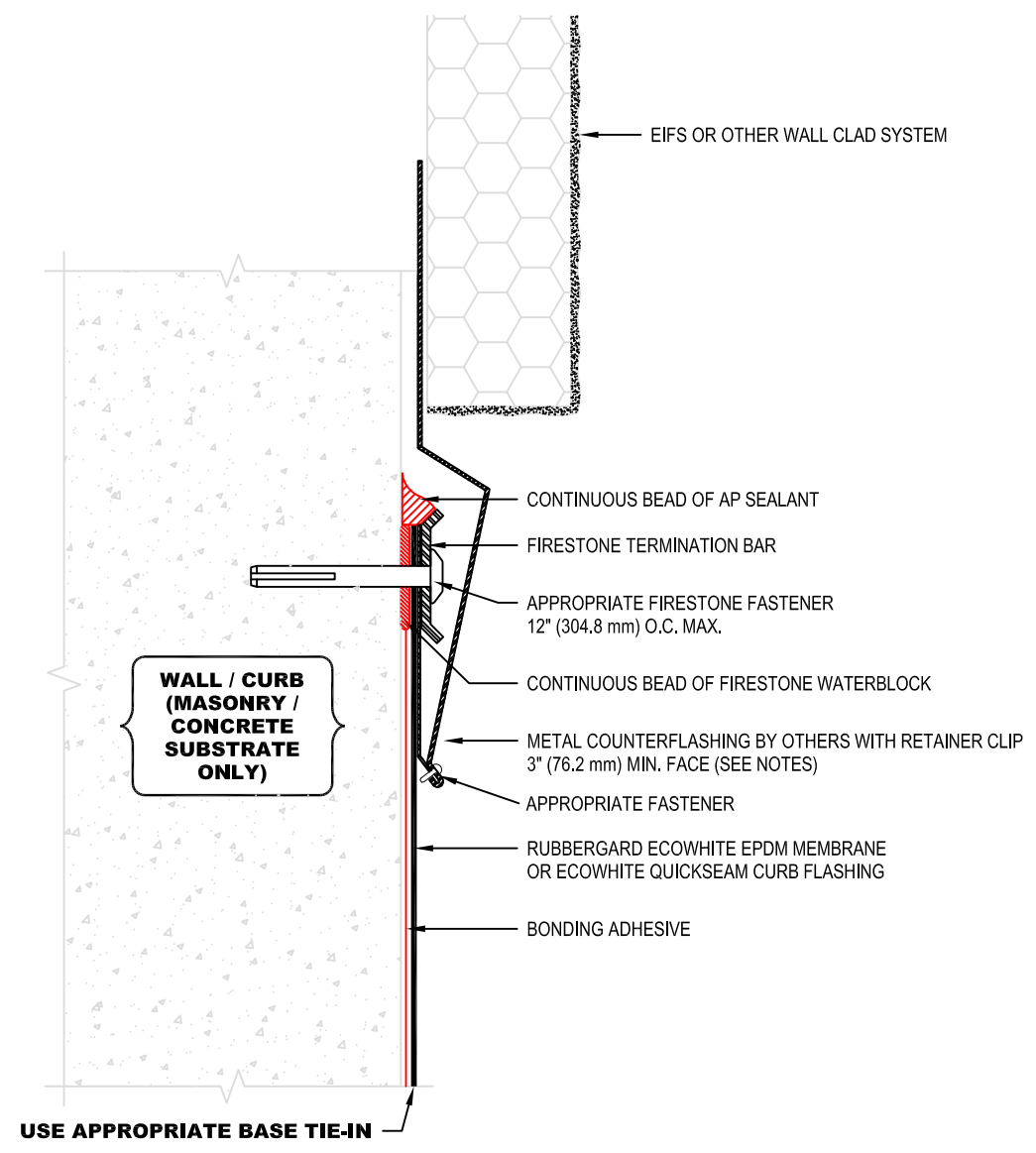
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. REFER TO EW-BT-14 & 15 FOR QUICKSEAM RPF STRIP LAYOUT AT CORNERS.

## Base Tie In Detail EW-RE-14A





- NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
  2. RUBBERGARD ECOWHITE EPDM MEMBRANE SPOT ATTACHED ALONG THE TOP OF EXPANSION JOINT TUBE WITH BONDING ADHESIVE.
  3. COMPRESSIBLE TUBE (SUPPLIED BY OTHERS) DIAMETER MUST EXCEED THE DECK OPENING BY 50% MIN. OR DESIGNED MOVEMENT (WHICHEVER IS GREATER).
  4. FIELD MEMBRANE FORMED INTO RETAINER TO SUPPORT FOAM ROD.
  5. BATTEN STRIP MAY BE USED IN LIEU OF 2\"/>



- NOTES:
1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
  2. REGULAR MAINTENANCE OF COUNTERFLASHING AND SEALANTS REQUIRED. NOT INCLUDED AS PART OF THE FIRESTONE WARRANTY.
  3. METAL COUNTERFLASHING SHALL BE 24 GAUGE PRE-FINISHED STEEL OR .032\"/>

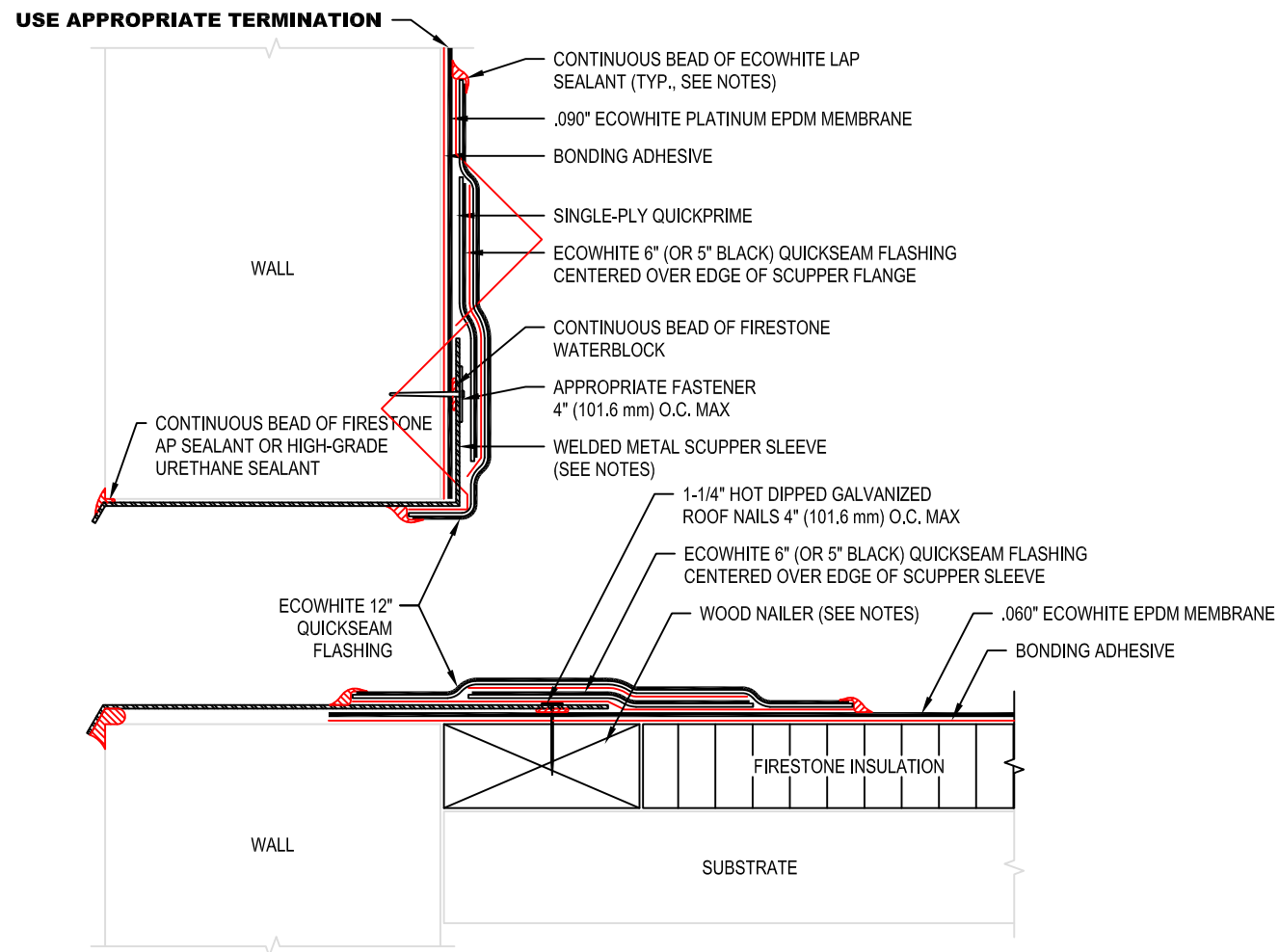
**WALL SYSTEMS MUST BE WATERPROOFED AND MAINTAINED IN ORDER FOR ANY SURFACE MOUNTED TERMINATION TO BE EFFECTIVE.**

Expansion Joint Detail EW-E-9

Base Tie-In Detail EW-T-6, Modified

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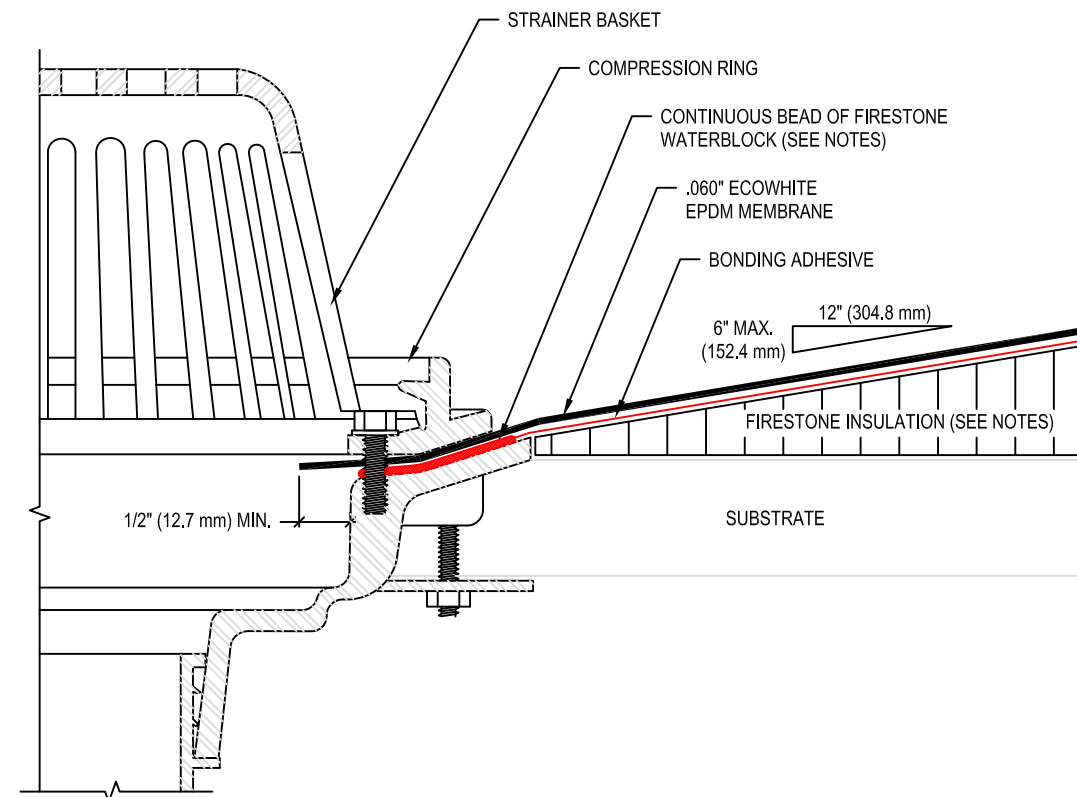


NOTES:

1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. SCUPPER MUST BE WELDED METAL SLEEVE. ROUND ALL SHEET METAL FLANGE CORNERS.
3. APPLY ECOWHITE LAP SEALANT AROUND ENTIRE PERIMETER OF QUICKSEAM FLASHINGS. REFER TO P-EW-LS-4 FOR SEAM EDGE TREATMENT.
4. WOOD NAILER MUST BE INSTALLED TO MEET APPLICABLE BUILDING CODES OR 200 LBS PER LINEAR FOOT MINIMUM IN ANY GIVEN DIRECTION.
5. FLANGE OF METAL MUST BE FULLY SUPPORTED BY WOOD AND TERMINATED AT LEAST 1/2" (12.7 mm) FROM EDGE OF WOOD.
6. SEE P-EW-S-1a & b FOR DETAILED INSTALLATION INSTRUCTIONS.

Thru-Wall Scupper Detail P-EW-S-1  
Welded Sleeve

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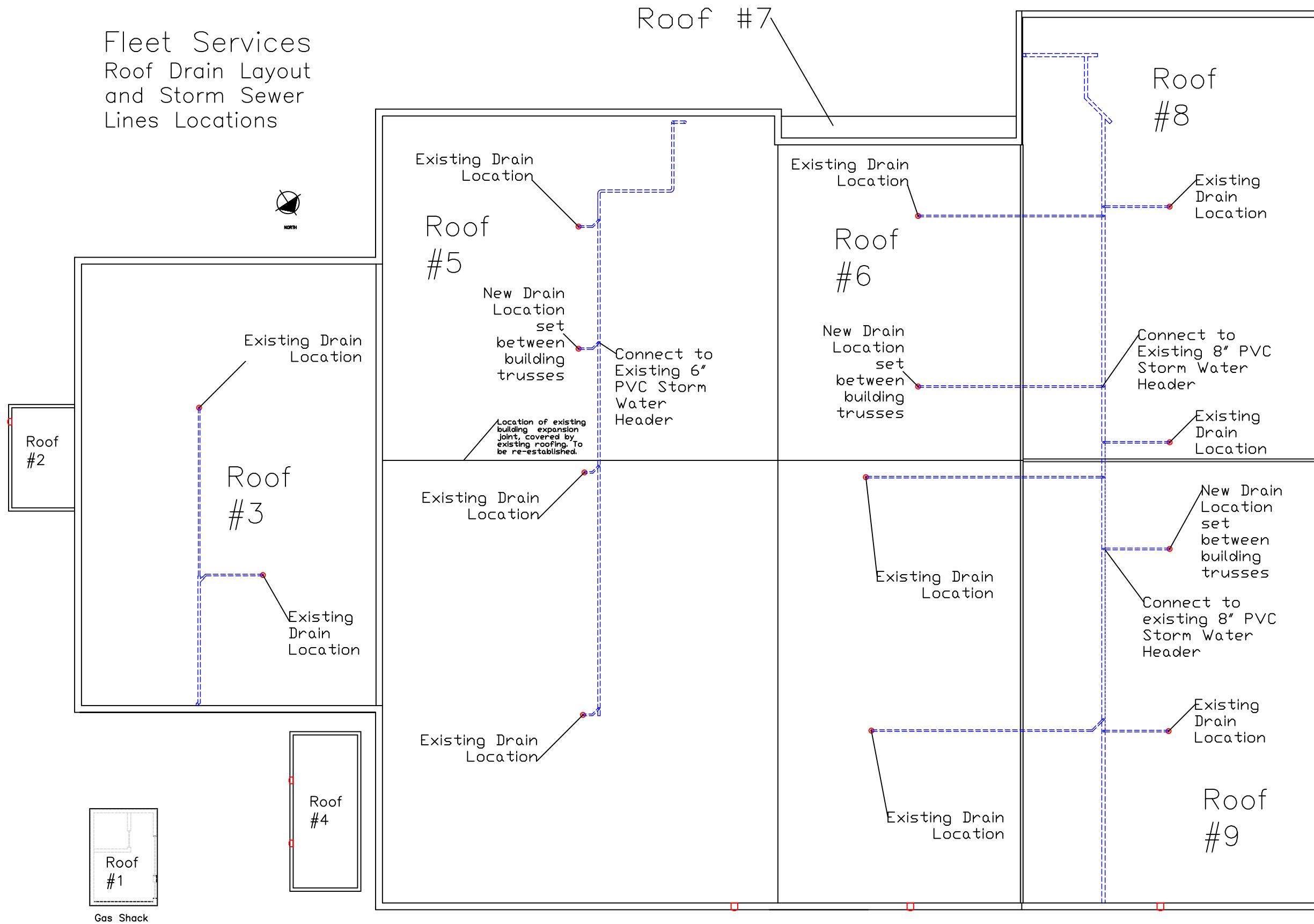


NOTES:

1. REFER TO FIRESTONE WEBSITE FOR MOST CURRENT INFORMATION.
2. HOLE IN MEMBRANE SHOULD EXTEND A MINIMUM OF 1/2" (12.7 mm) BEYOND CLAMPING RING AND SHOULD NOT BE SMALLER THAN THE DIAMETER OF THE LEADER PIPE.
3. INSULATION ADJACENT TO DRAIN TO BE APPROPRIATE FIRESTONE INSULATION WITH APPROPRIATE BONDING SURFACE.
4. FIRESTONE WATERBLOCK MIN. OF 1/2 OF 10 OZ (295 ml) TUBE PER 4" DRAIN. USE ADDITIONAL WATERBLOCK FOR LARGER DRAINS.
5. IN REROOF APPLICATIONS:  
- REMOVE EXISTING FLASHINGS DOWN TO METAL BOWL  
- REPAIR OR REPLACE BROKEN DRAIN COMPONENTS  
- DRILL AND TAP BROKEN DRAIN BOLTS AND REPLACE IF NECESSARY.

Roof Drain Detail P-EW-D-1

# Fleet Services Roof Drain Layout and Storm Sewer Lines Locations



Install three new roof drains at locations indicated. New drain lines shall be PVC, matching existing lines in schedule, type and insulation. Pitch of drain line shall be 1/4" per ft. Connect to existing storm water lines inside of building. Locate drains between trusses with exact locations to be determined by final taper insulation roof plan.

