abaa 2026 building enclosure conference

Expansion Joints: A Continuous Disconnect in the Building Envelope

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AIA Continuing Education Provider

abaa EDUCATION

Expansion Joints:
A Continuous Disconnect in the Building Envelope

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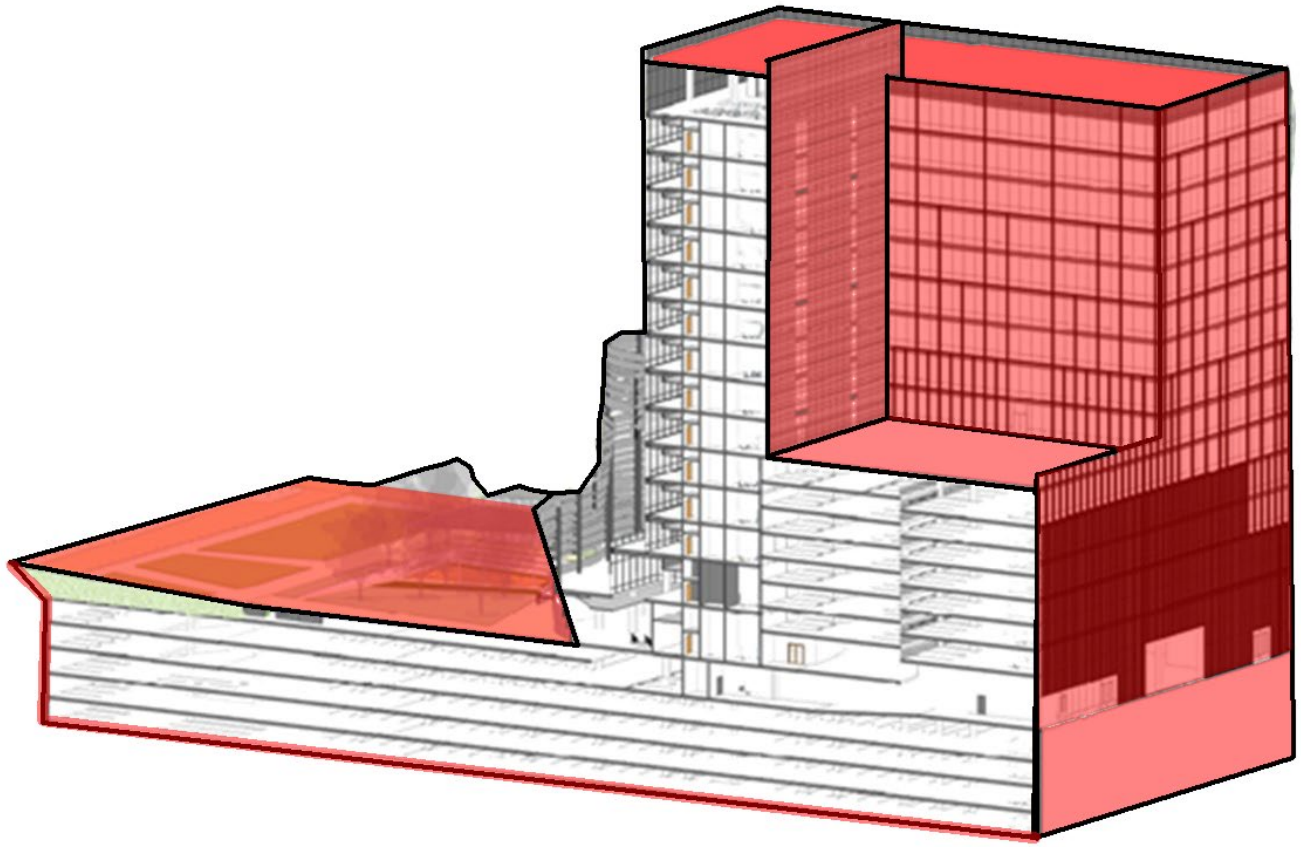
Learning Objectives

1. Locate the building expansion joints that slice through the building envelope.
2. Identify the available types of expansion joints and discuss their benefits and limitations.
3. Discuss challenges associated with detailing and installation of expansion joint.
4. Review suggested best practices for the design and installation of expansion joints.

Introduction To Expansion Joints

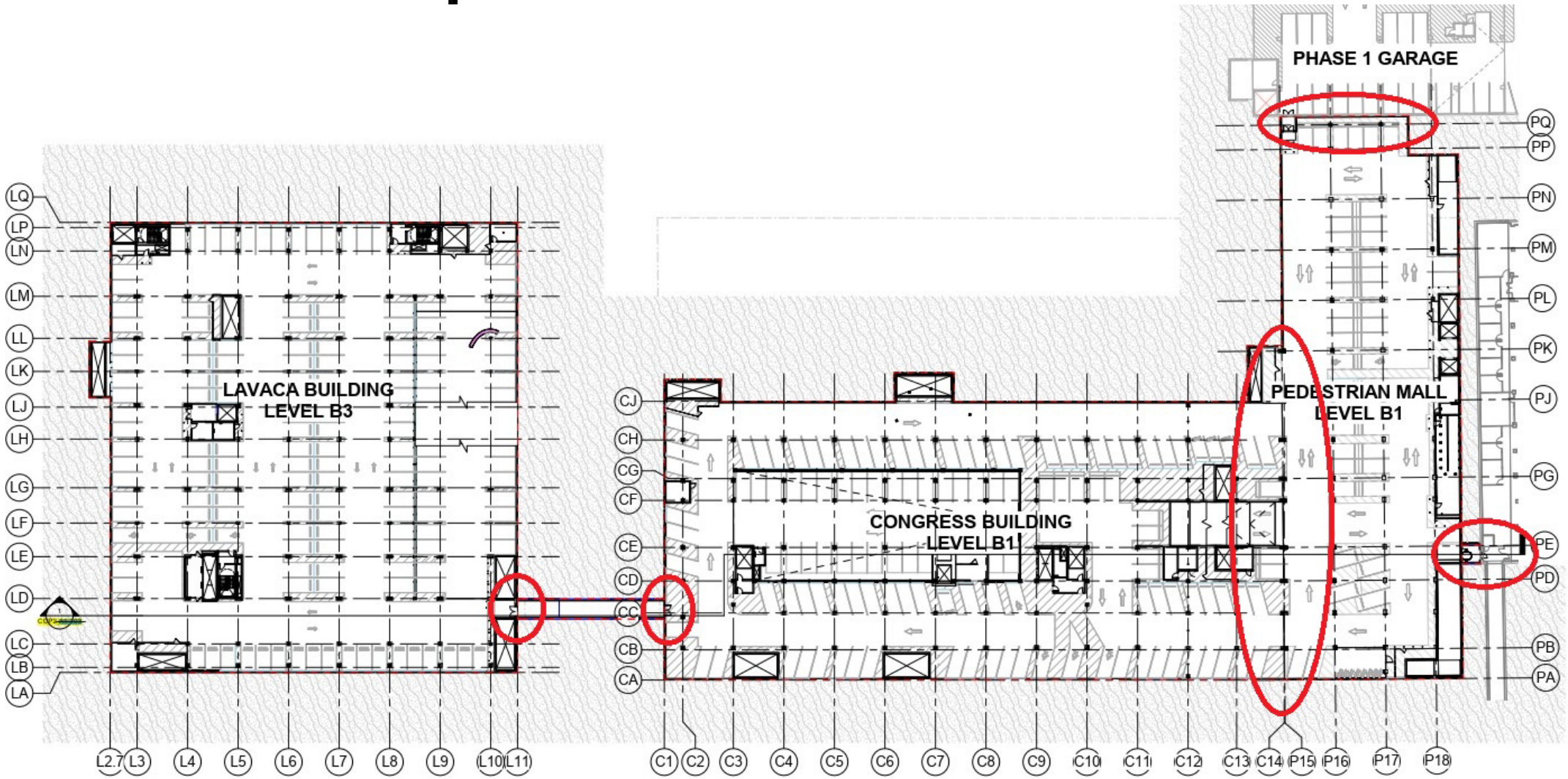
Building Enclosure



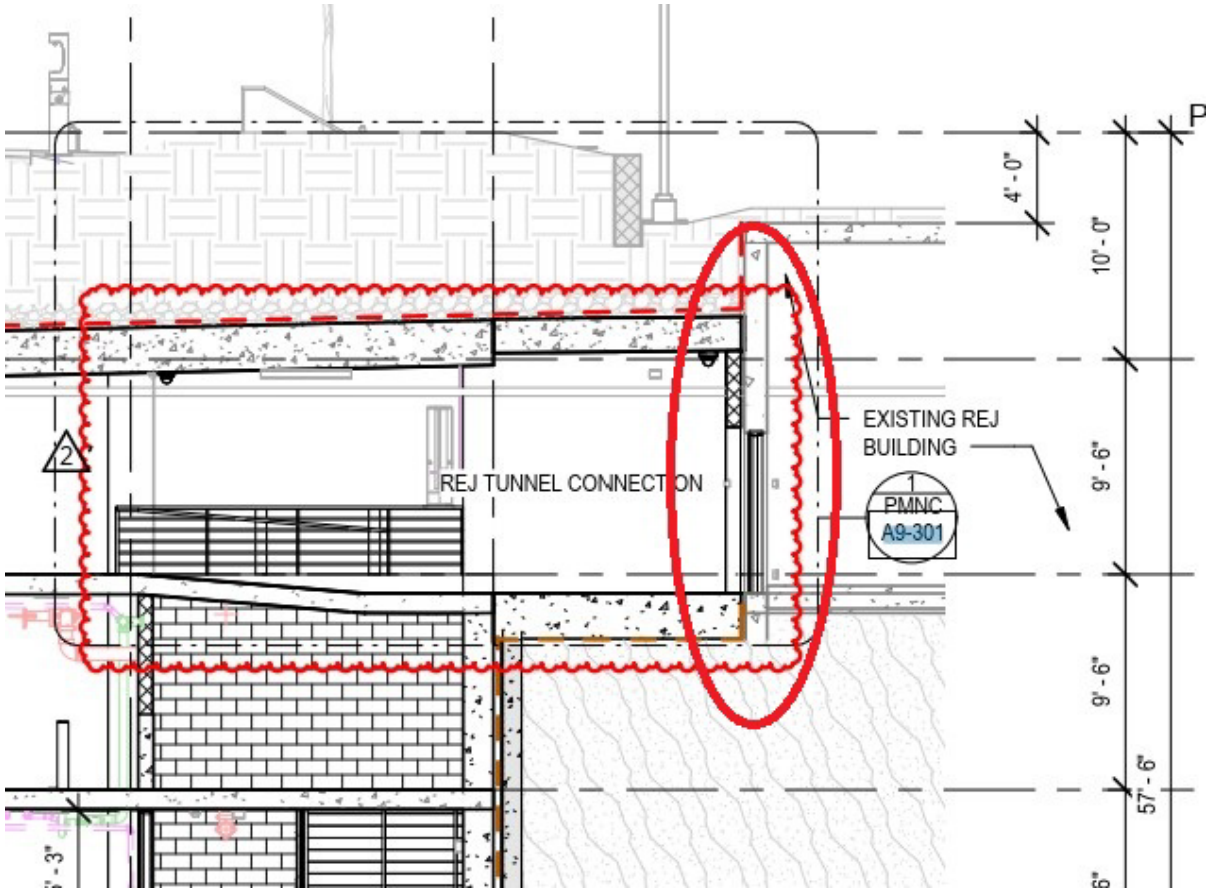
Control Layers

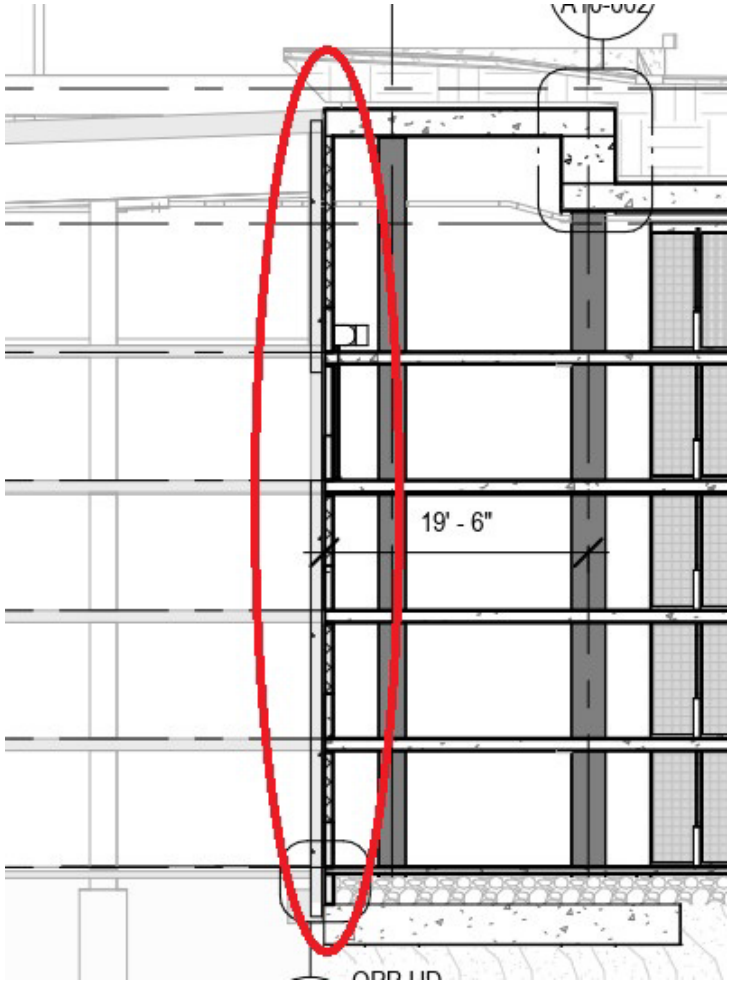
Phenomenon	Transport Mechanism	Control Strategy
Heat	Conduction Convection Radiation	Insulation Air Barriers
Air	Natural & Forced Ventilation	Air Barriers
Water (bulk)	Gravity Capillary Action Air Entrainment	Air & Water Resistive Barriers Waterproofing Flashing
Water (vapor)	Diffusion Humidity in Air	Vapor Retarders Air Barriers
Light	Non-Opaque Openings	Size and Translucency
Sound	Air Pressure Waves	Air Barriers STC of Assemblies
Vibration	Structural Vibration	Vibration Isolators

Expansion Joint Locations



Expansion Joint Locations

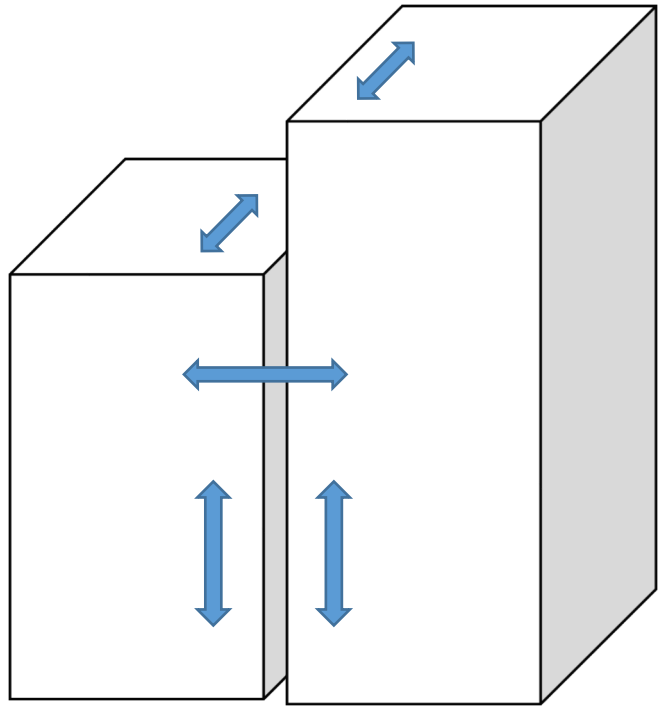




Expansion Joint Design

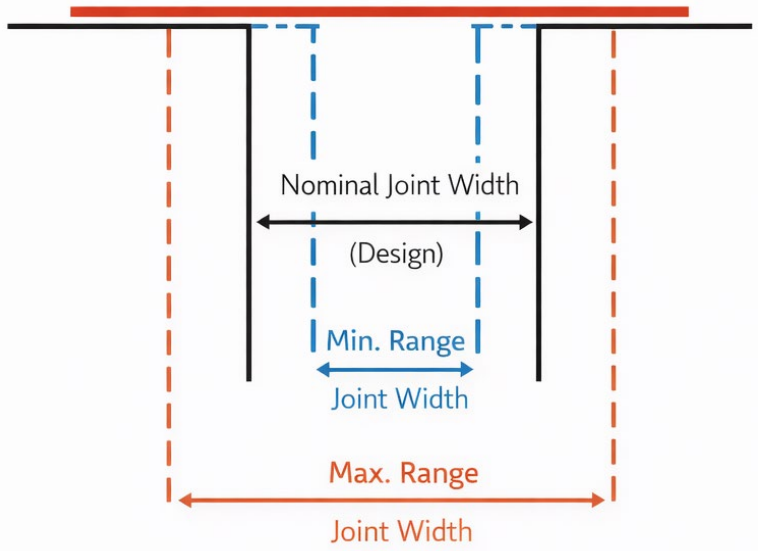
Expansion joints are designed to relieve stress on building materials caused by movement and allow independent movement without causing damage to the structures.

- Building movement is primarily induced by:
  - Thermal expansion and contraction.
  - Sway caused by wind loading.
  - Seismic events.
  - Static load deflection.
  - Live load deflection.
  - Differential Settlement.
  - Material shrinkage and creep. (Concrete)



Expansion Joint Design

JOINT WIDTHS DEFINED:



INSTALLATION LOCATION

☐ Interior
☐ Exterior
1

☐ Wall
☐ Floor/Deck
☐ Roof
2

☐ Above Grade
☐ Below Grade
☐ Submerged
3

CONSTRUCTION TYPE

☐ New Construction
☐ Retrofit Construction
4

FIRE RATING

☐ No Fire Rating
Fire Rating: ☐ 1-hr ☐ 2-hr ☐ 3-hr
5

EXPANSION GAP INFORMATION

Joint Gap Width(s): _____
Varies from: _____ *to* _____ *(over its length)*
6

Joint Substrate Depth:
_____
7

Total Footage (ft or m):
_____
8

Have Gap Dimensions Been Field Measured? ☐ Yes / ☐ No
Substrate Surface Temp. _____ Ambient Temp. _____
9

Substrate Composition: _____
(e.g., concrete, brick, metal, etc.)
Membrane Tie-in?: ☐ Yes / ☐ No Type_____
Metal Pour Stops?: ☐ Yes / ☐ No
10

Movement *(if known):*
_____
(e.g., ± thermal; ± shear, etc.)
11

Joint is: ☐ Primary Seal
☐ Secondary Seal
12

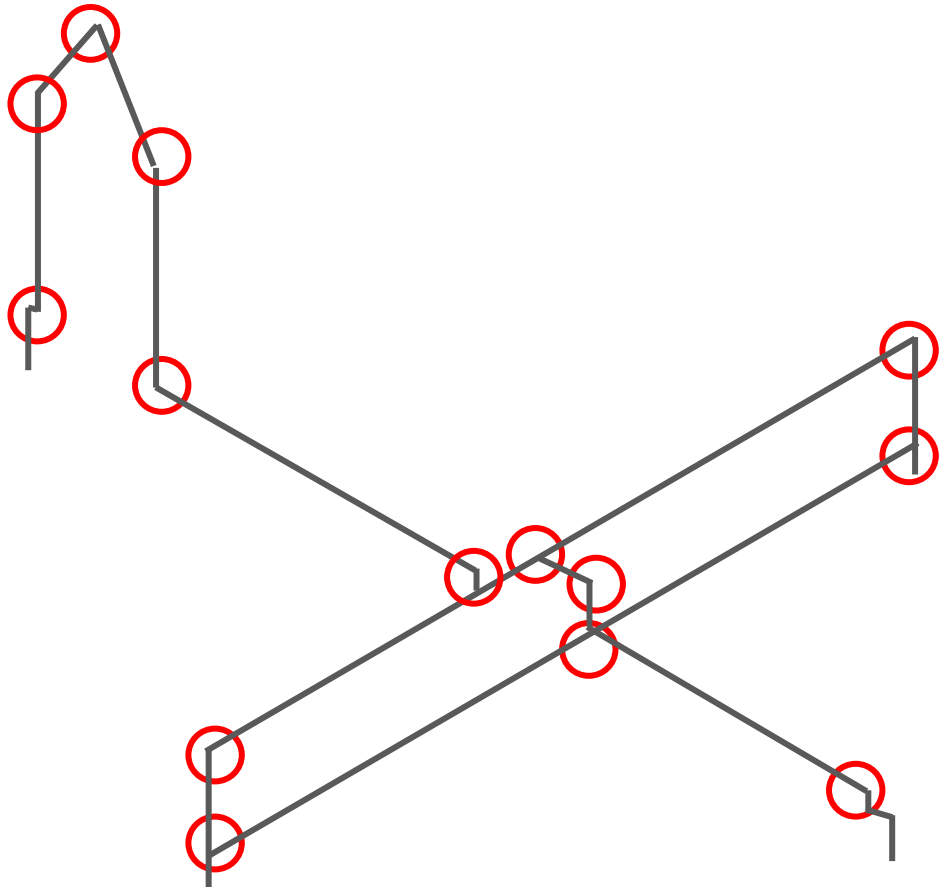
Joint Will Seal Out: ☐ Rain/Water ☐ Cold/Heat
☐ Sound ☐ Air ☐ Vermin ☐ Other _____
13

Are There Transitions? ☐ Yes *(explain)* / ☐ No
_____
14

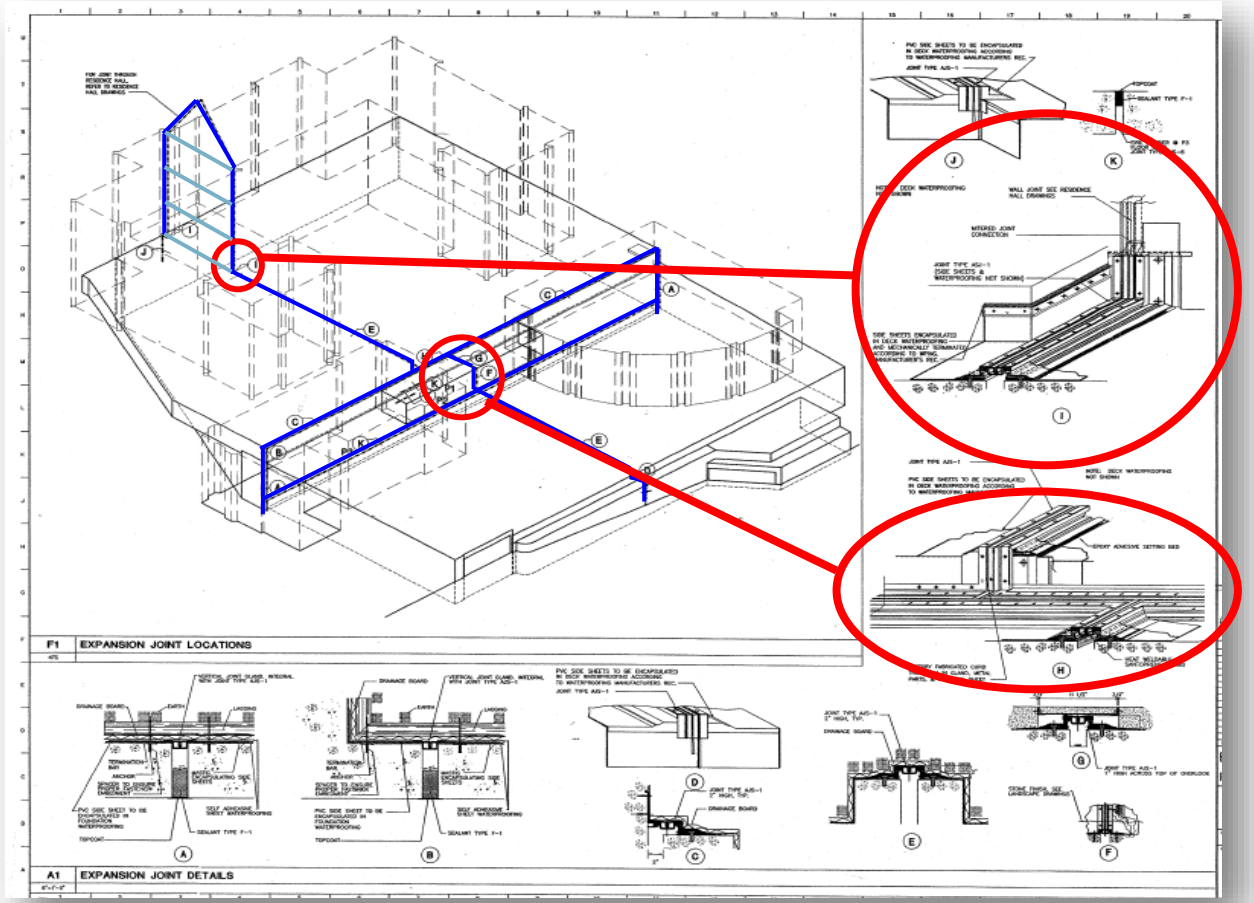
How Does the Joint Terminate?
_____
15

Visualize an Isometric Layout of the Joint

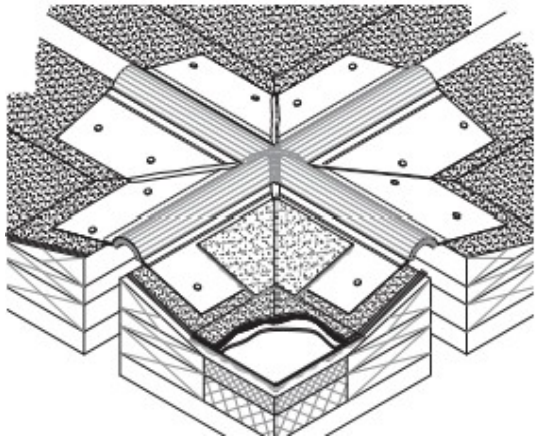
- Find and correct problems during design
- Select products for a warrantable and watertight application
- Reduce RFI's and Change Orders

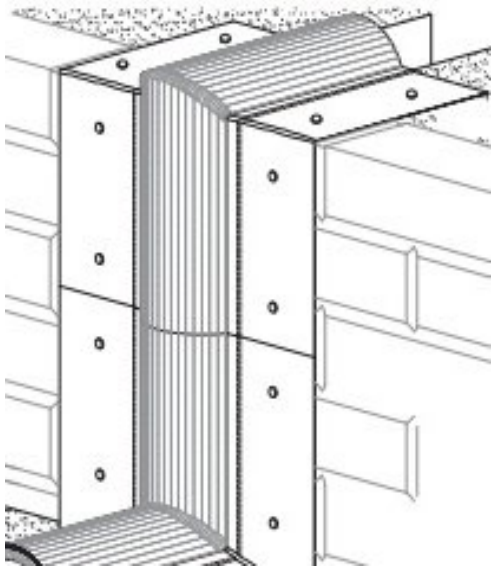


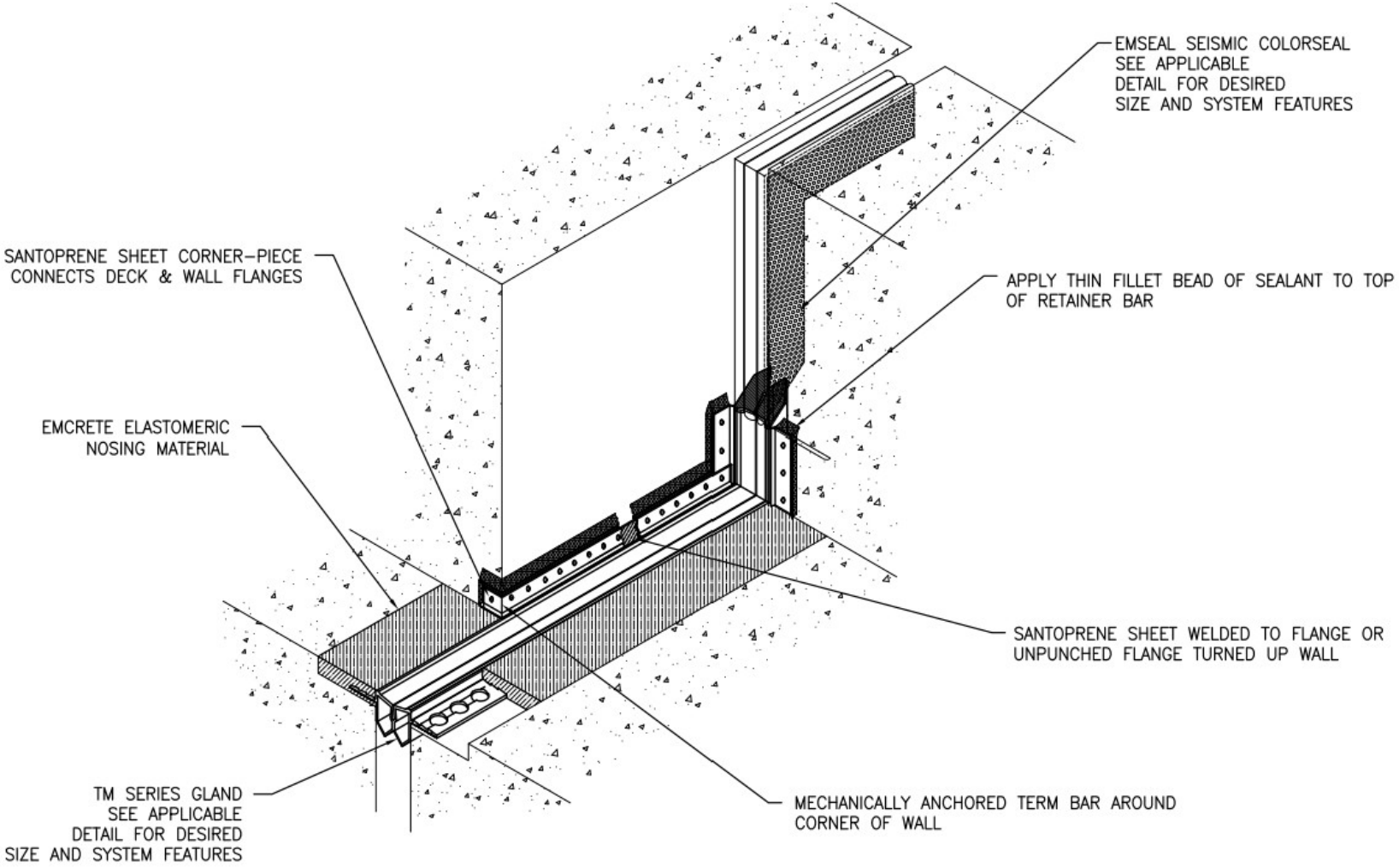
Design & Specify in 3-D



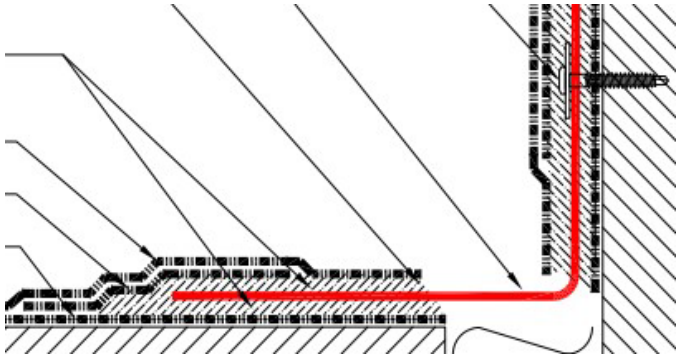
Visualize Transitions

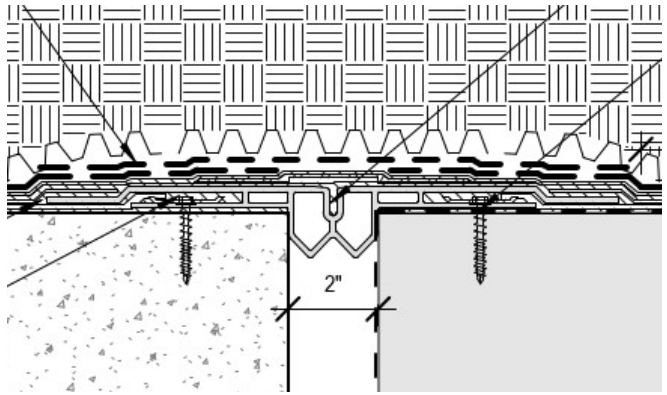


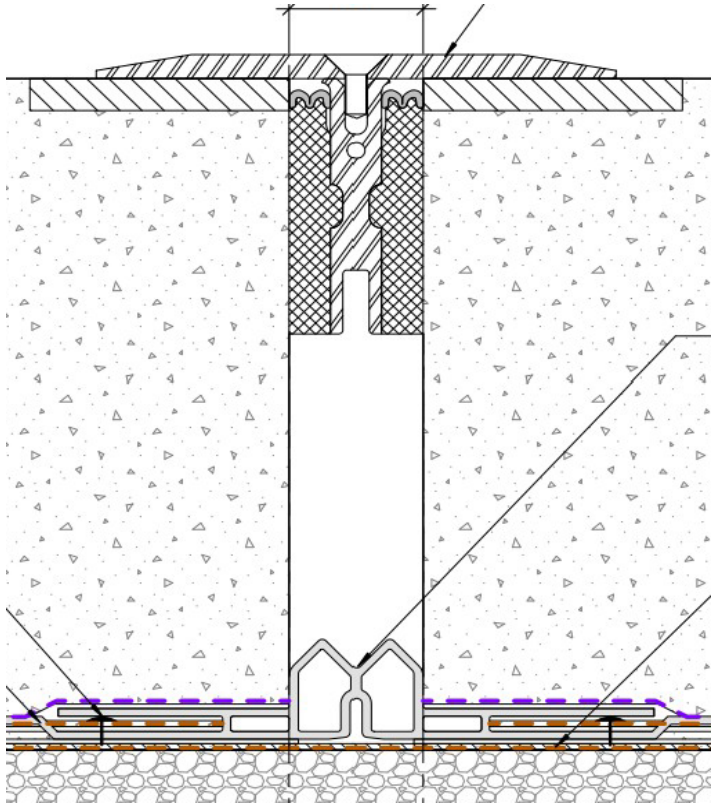


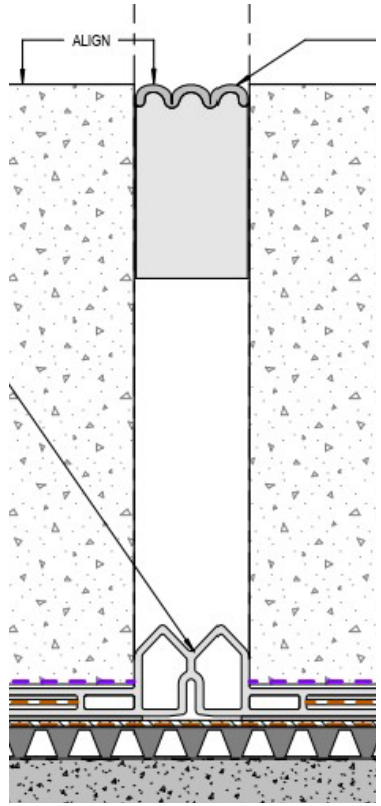


Types of Expansion Joints

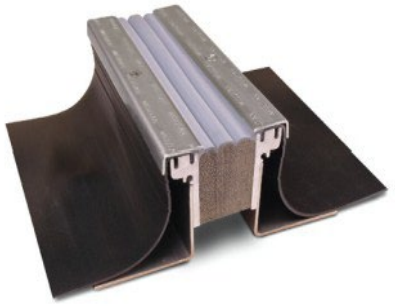


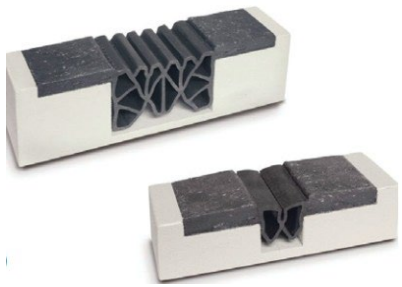




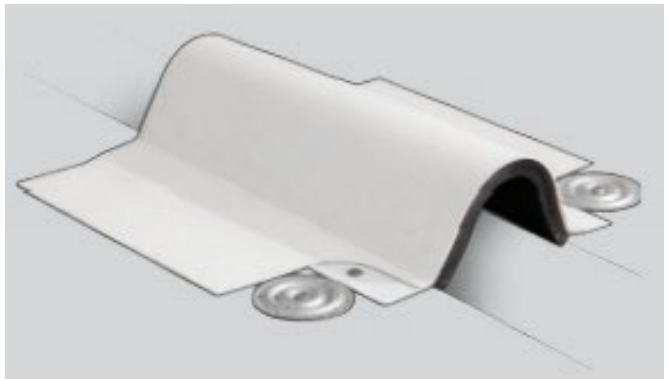


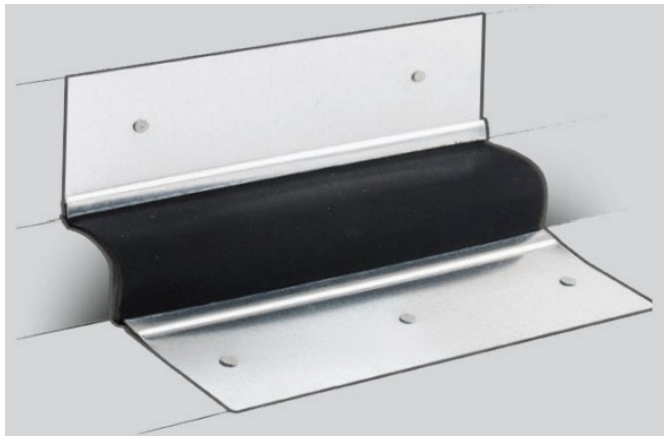
Types of Expansion Joints

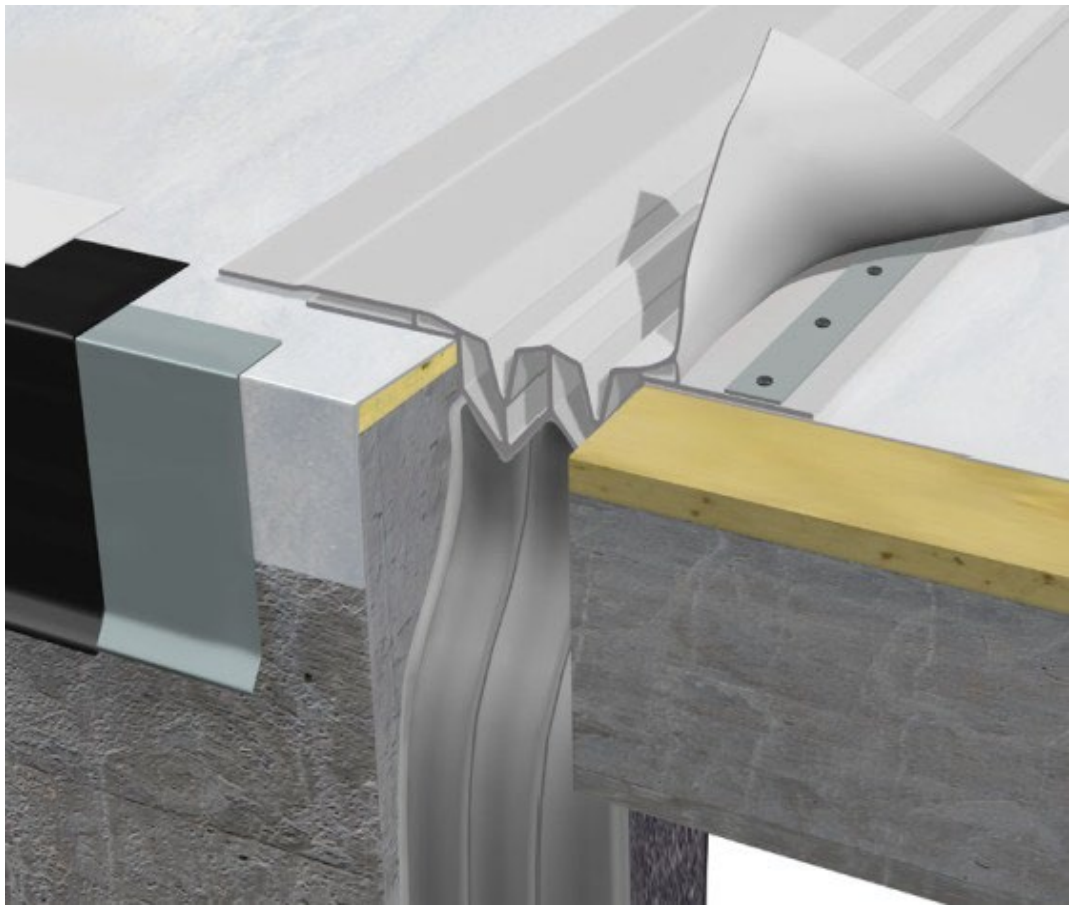




Types of Expansion Joints







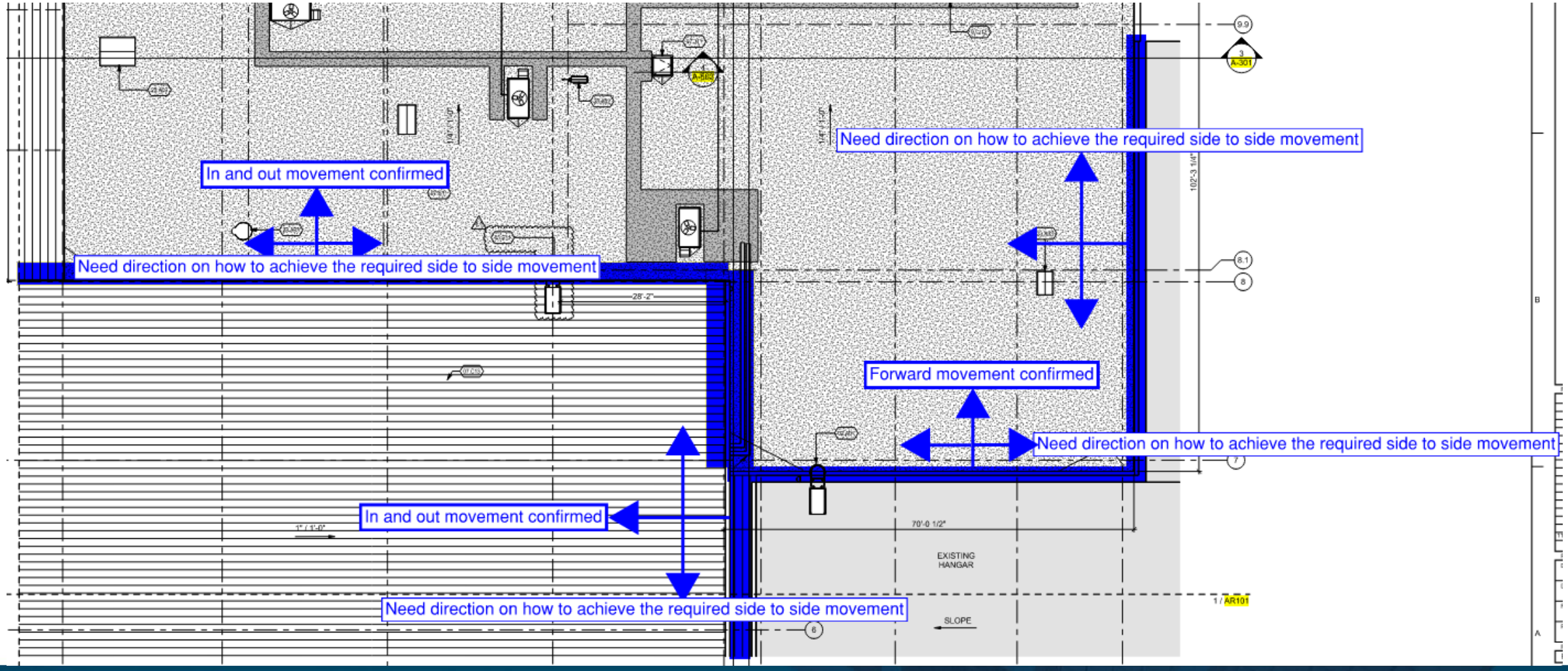
Preconstruction & Buyout

	PMNC GARAGE Connection to PHASE 1 GARAGE		
1/PMNC A10-201	**Base of Wall EJ - Level B5**		
4//CCP2 A10-011	Extruded PVC Expansion Joint	Y	
	Below Grade Membrane welded to EJ	N	Not welded, Liquid membrane and termination bar
	Below Grade Membrane, full with roll centered under expansion joint	N	Shown to tie into vapor barrier, not wp, 1/PMNC A10-201
	All integral fasteners	Y	
	1 HR Fire Rated Pre Formed Expansion Joint	Y	
	Stainless Steel Termiantion Bar	Y	
3/PMNC A10-201	**Top of Wall EJ at Grade**		
4//CCP2 A10-011	Extruded PVC Expansion Joint	Y	
	Below Grade Membrane welded to EJ	N	Should be tied into the deck wp (hot applied)
	Below Grade Membrane, full with roll centered under expansion joint	N	Should be tied into the deck wp (hot applied)
	All integral fasteners	Y	
	1 HR Fire Rated Pre Formed Expansion Joint	Y	
2/CCP2 A10-011	**Level B2 - Vehicular Connection (Slab to Slab)**		
	2" Preformed Expansion Joint	Y	
	Protective Cover Plate	Y	
	1 HR Fire Rated Pre-Formed Expansion Joint	Y	
2/PMNC A10-201	**Pedestrain Door Connection - Levels B5, B4, B3, B2, and B1 (Slab to Slab)**		
	Pre Formed Expansion Joint	Y	
	Protective Plate	Y	
	1 HR Fire Rated Pre Formed Expansion Joint	Y	
ALLOWANCE	**Side and top closure/treatment for Vehicular and Pedestrian connections to existing Phase 1 bldg.** JED TO PROVIDE		

Preconstruction & Buyout

- Verify Expansion Joint locations and sizes are consistent across architectural, structural, and interior drawings.
  - Size of the EJ affects the cost. (2" vs 4" EJ you can't just double the cost of a 2".)
  - Make sure EJ's don't line up with interior doors or MEP chases.
- Confirm Expansion Joint performance criteria: Movement capacity, fire rating, acoustics, waterproofing, and durability.
  - Typically interior EJ's over-designed and Exterior EJ's are under-designed.
  - Sometimes EJ's are doubled up in different scopes of work.
  - Does slab on grade or elevated slabs need the same performance?
- Identify missing and unclear details that will impact constructability and quality.
- Confirm ownership for the scopes of work: WRB EJ, Veneer EJ, Roof EJ, Floor EJ, Wall EJ, Ceiling EJ, and Below Grade EJ.

Preconstruction & Buyout



Preconstruction & Buyout

- Missing Details make pricing difficult for the Trade Partners.
  - Guesstimate vs Estimate. (Allowance is an option.)
- Assumptions are made during the buyout attempt by the Trade Partner.
- Minimize Change Orders through early design coordination. Buyout during preconstruction if possible.
- Validate procurement lead times to avoid delays.
- Confirm warranty responsibility and requirements when expansion joint products are incorporated into the shop drawings.
  - Last product on top owns the warranty???

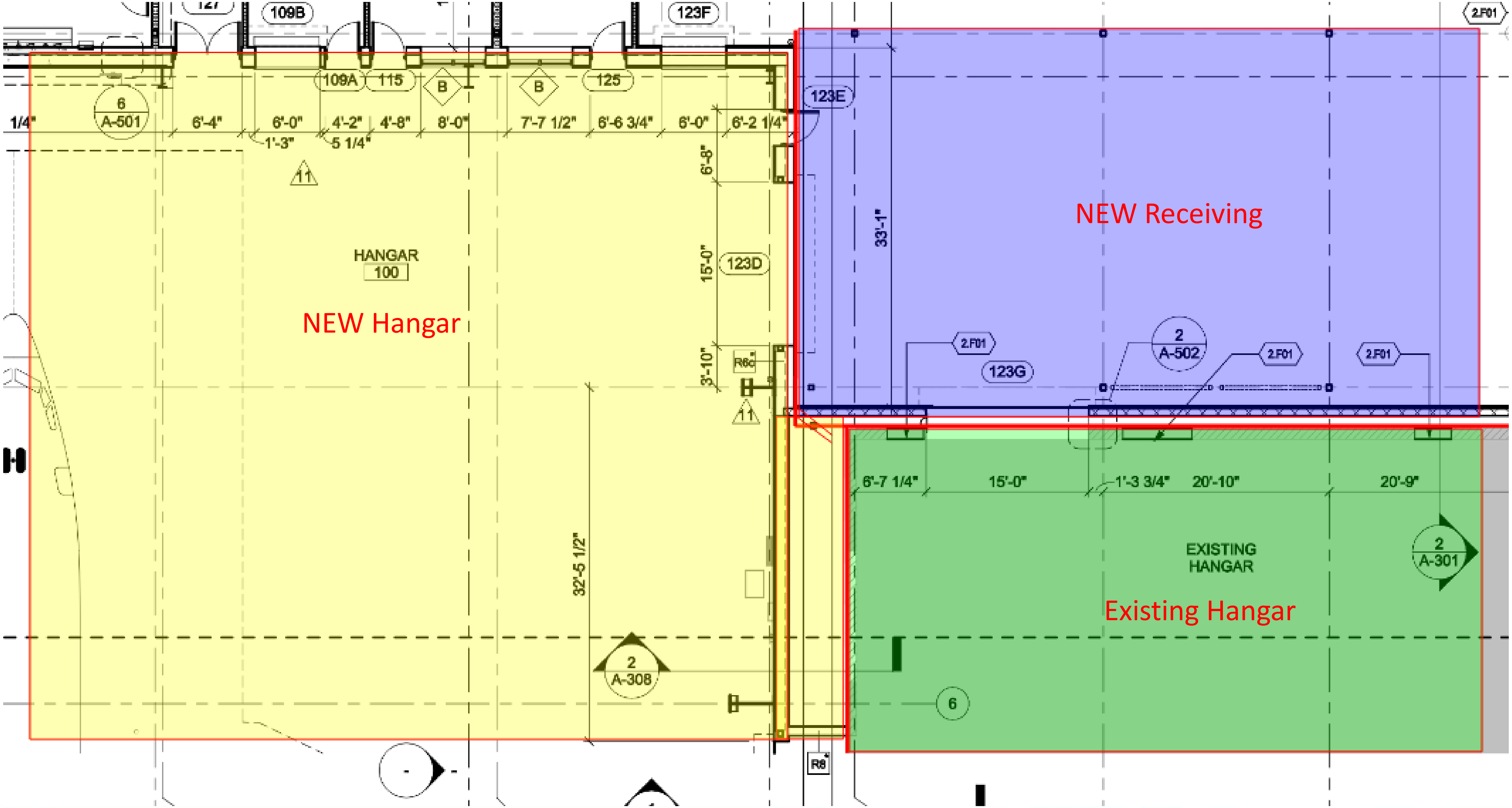
Preconstruction & Buyout

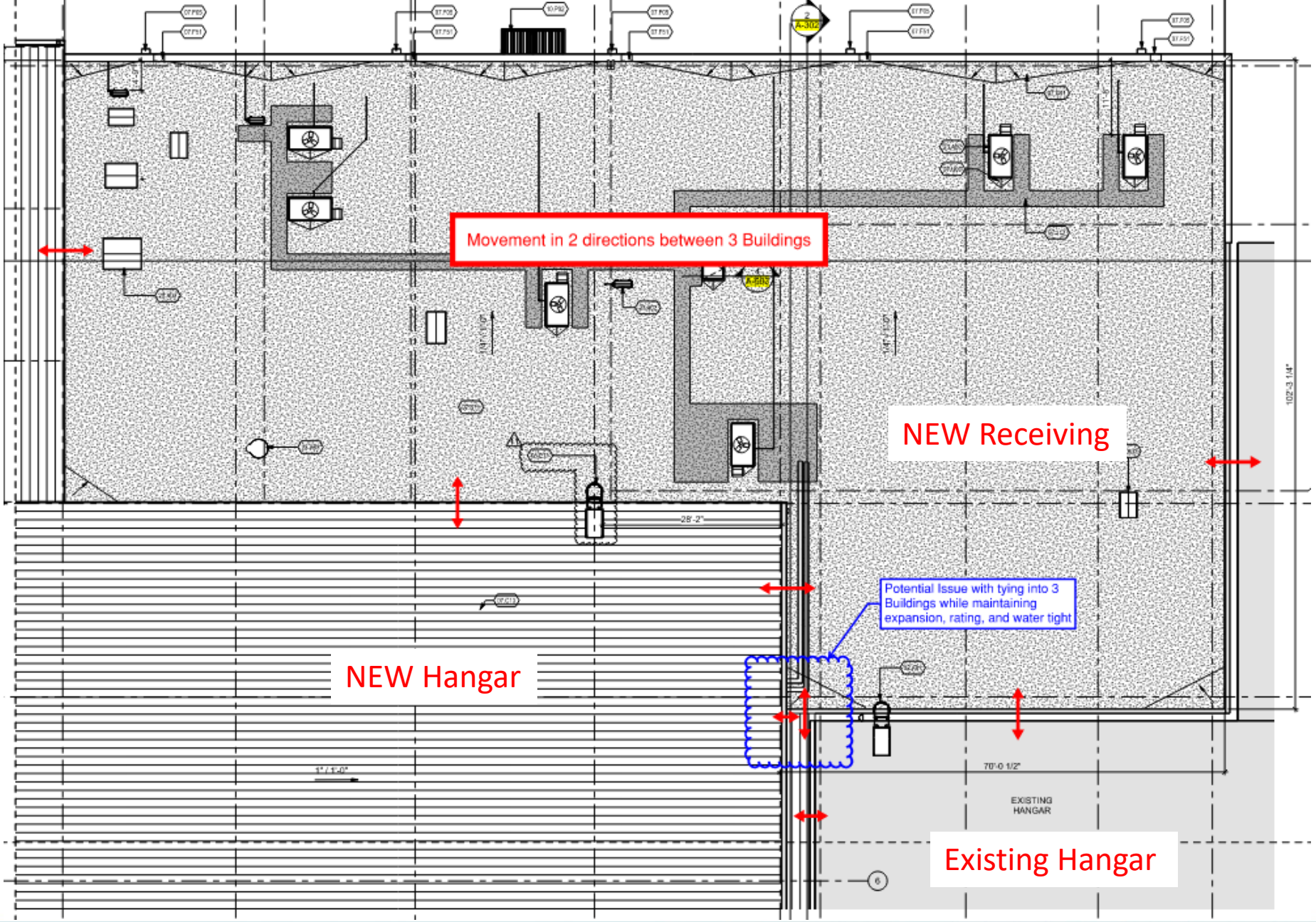
- Most Expansion Joint Manufacturers will provide shop drawings.
- Only some Trade Partners will create shop drawings.
- Buyout metal terminations for different systems to maintain warranties and to compatibility and adhesion problems.
- Substrate and surface preparation are the biggest field install problems. Who owns the substrate?
- Figure in tolerance if possible. Concrete, Masonry, Steel, Framing, etc.
- Consider hinge cover plates vs flat cover plates on interior floors.

Project Installation Examples

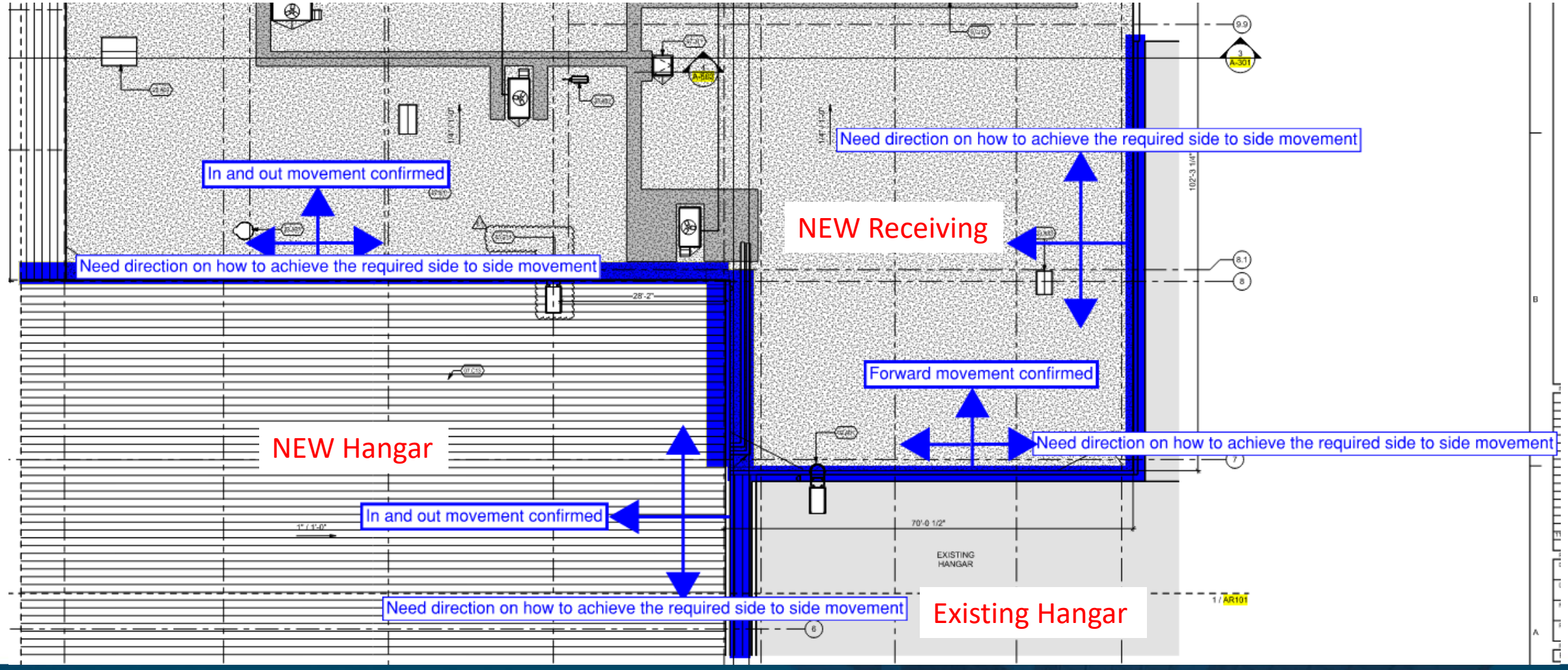
Airport Project

- Project Details:
- $35 Million Dollar Maintenance Hangar.
- 80,000 sq/ft and can fit (3) 737 planes inside.
- Expansion Joints to separate (3) different structures.
- Constructability Review identified Expansion Joint issues.
- (12) total Expansion Joint RFI's during construction.

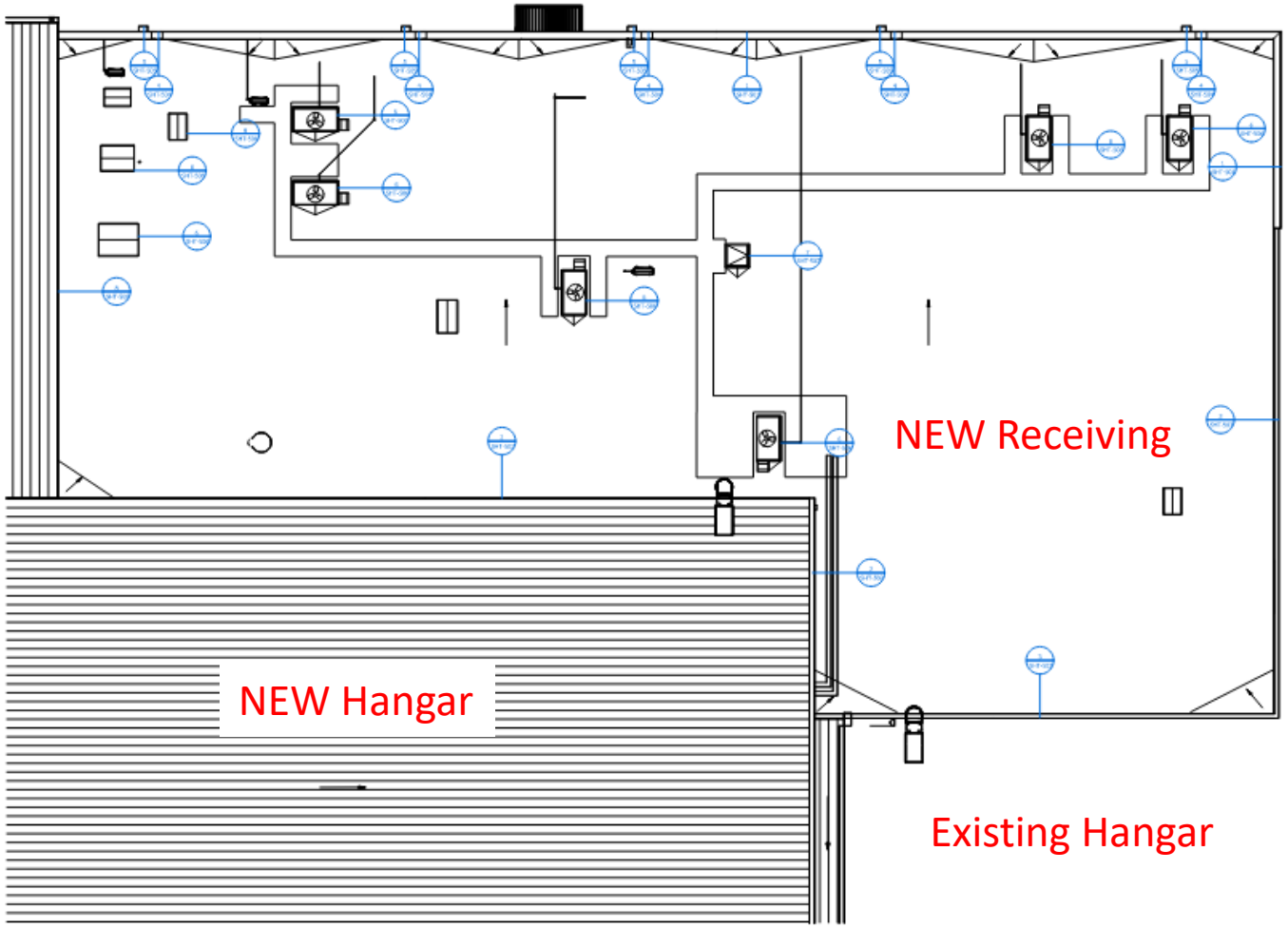



Movement in 2 directions between 3 Buildings
NEW Receiving
Potential Issue with tying into 3 Buildings while maintaining expansion, rating, and water tight
NEW Hangar
EXISTING HANGAR
Existing Hangar

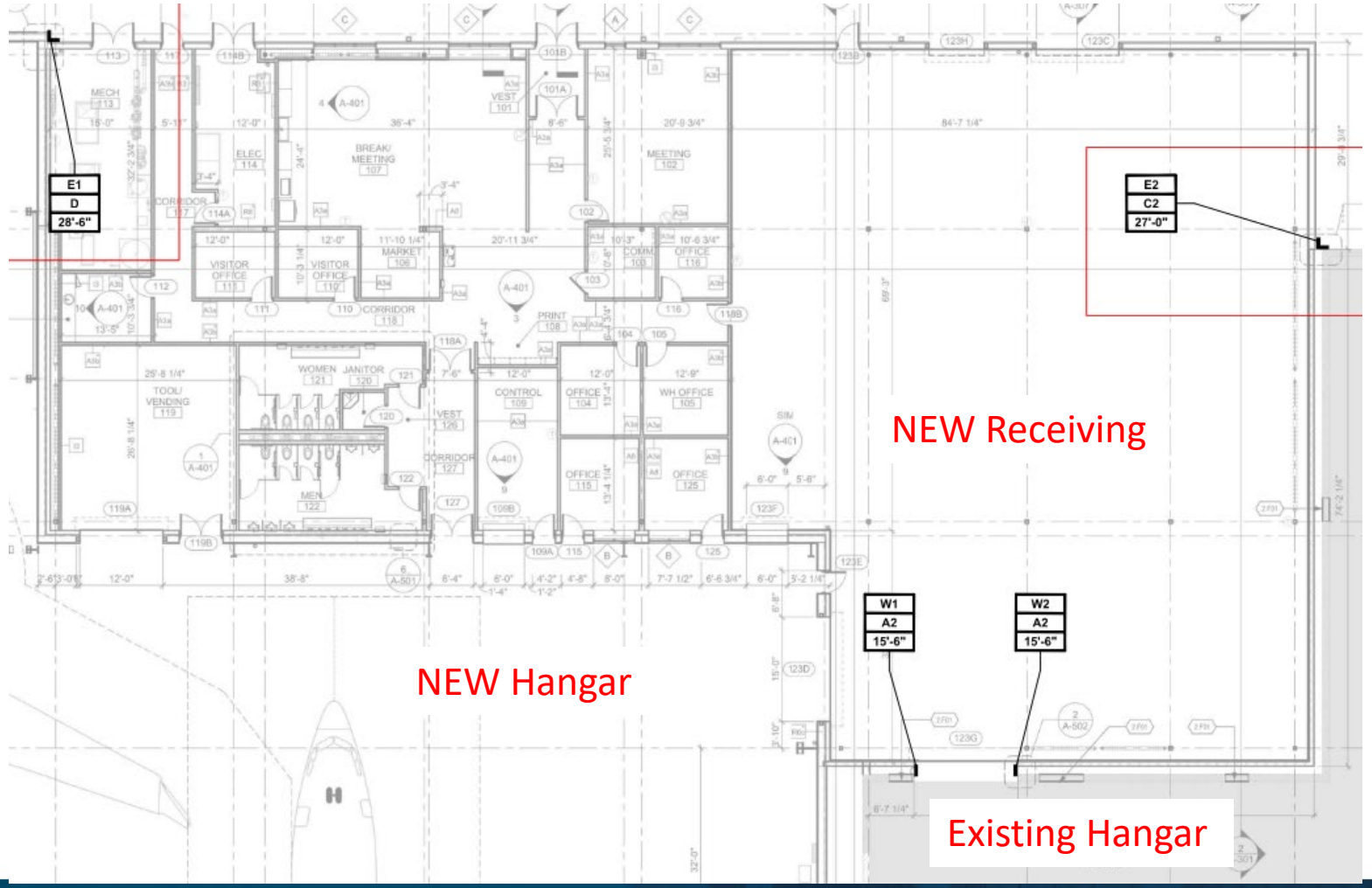
Airport Project- EJ Locations

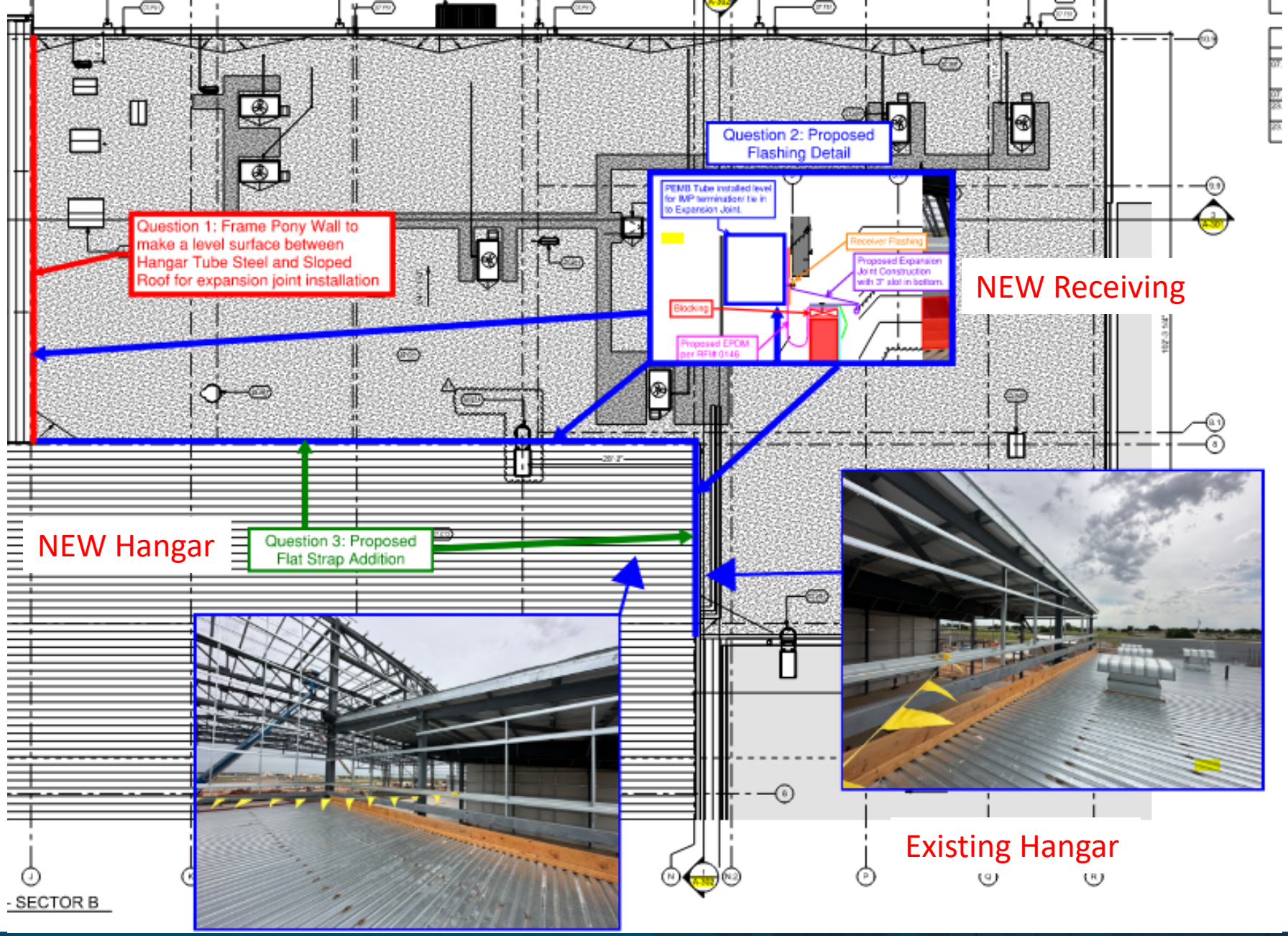


Airport Project- Roof Shops



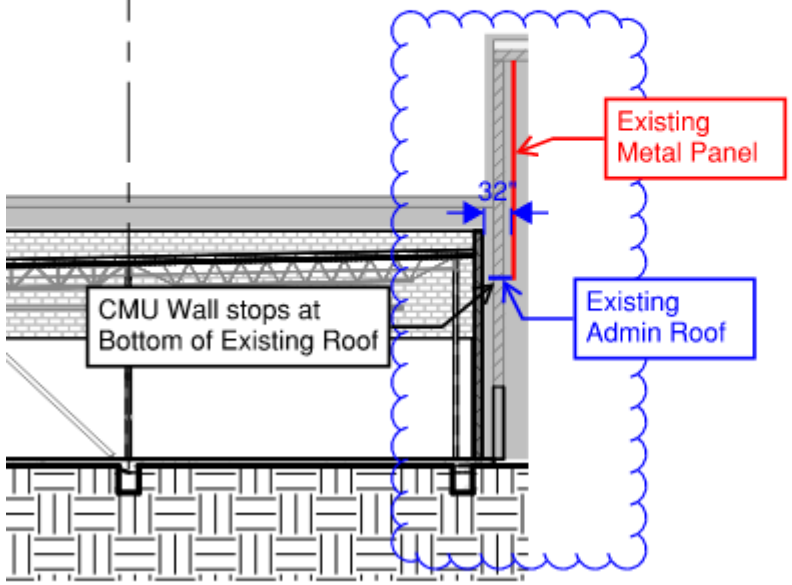
Airport Project- Wall Expansion Joint Shops



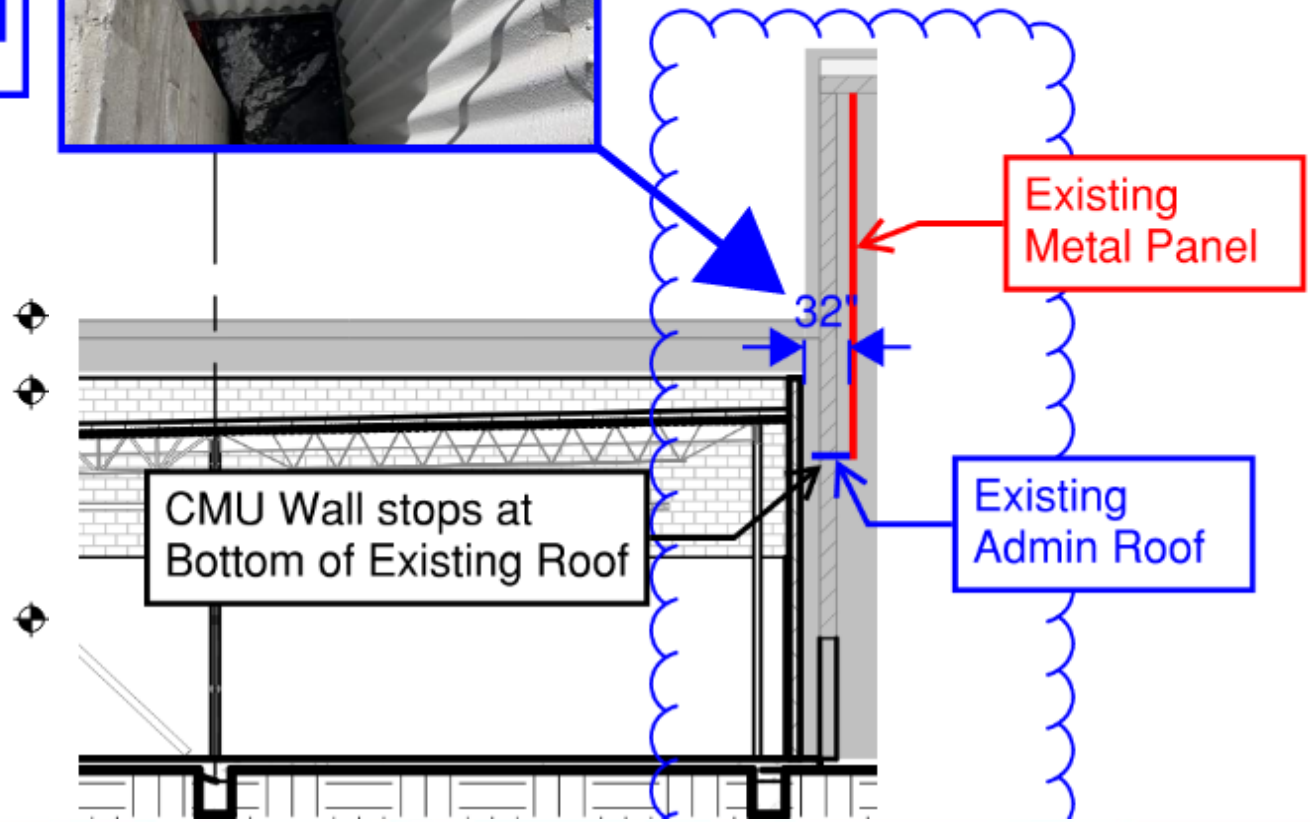

Question 1: Frame Pony Wall to make a level surface between Hangar Tube Steel and Sloped Roof for expansion joint installation
Question 2: Proposed Flashing Detail
PEMB Tube installed level for IMP termination/ tie in to Expansion Joint.
Receiver Flashing
Proposed Expansion Joint Construction width 3" slot in bottom.
Blocking
Proposed EPDM per RFI# 0146
NEW Receiving
NEW Hangar
Question 3: Proposed Flat Strap Addition
Existing Hangar
- SECTOR B

EJ Coordination

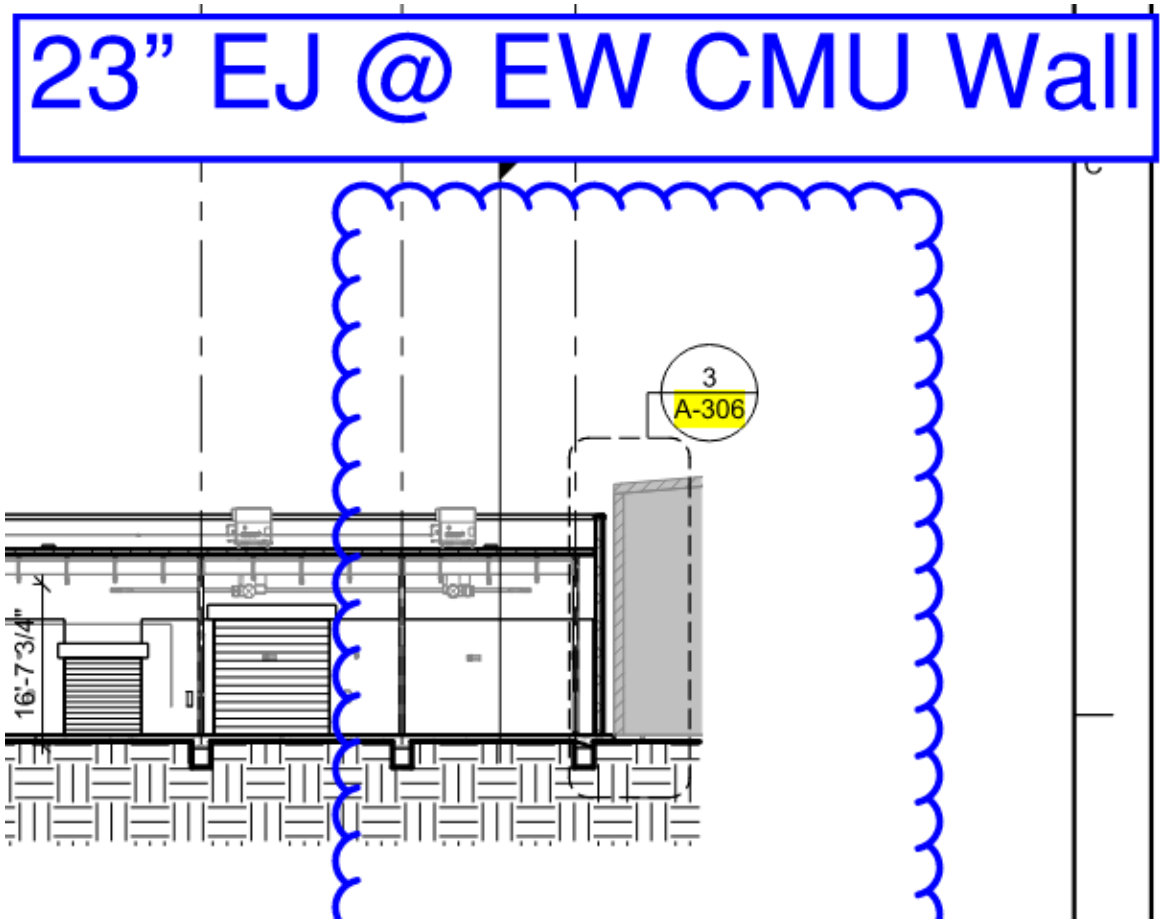
32” EJ @ NS CMU Wall

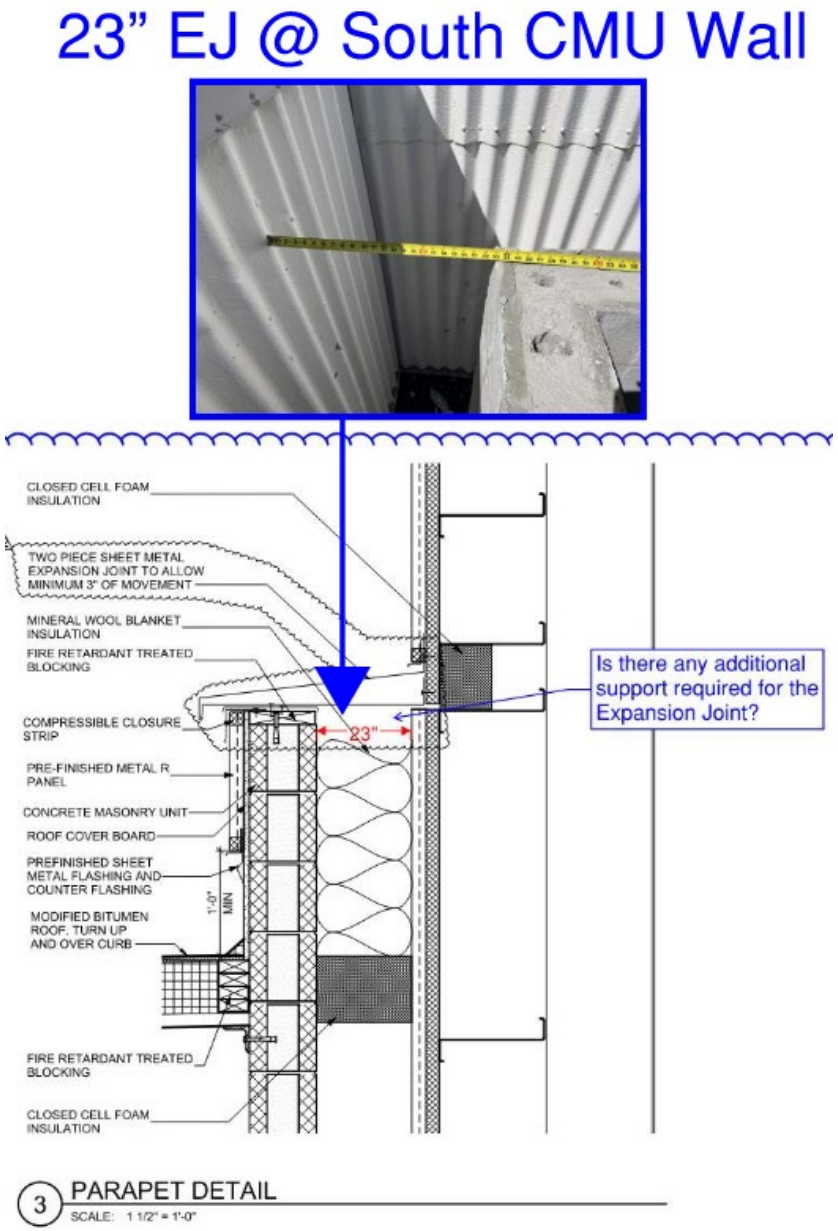


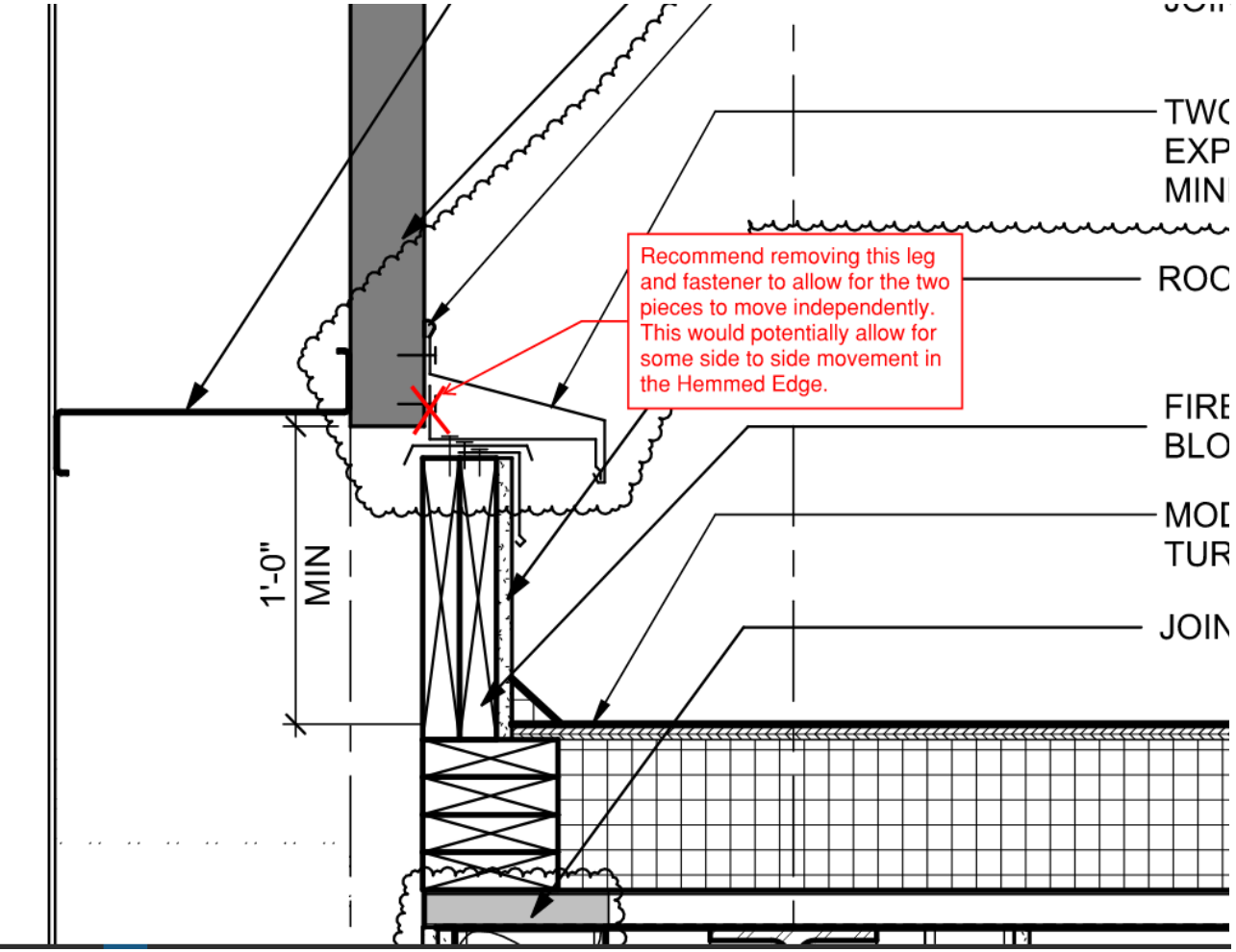
32” EJ @ NS CMU Wall

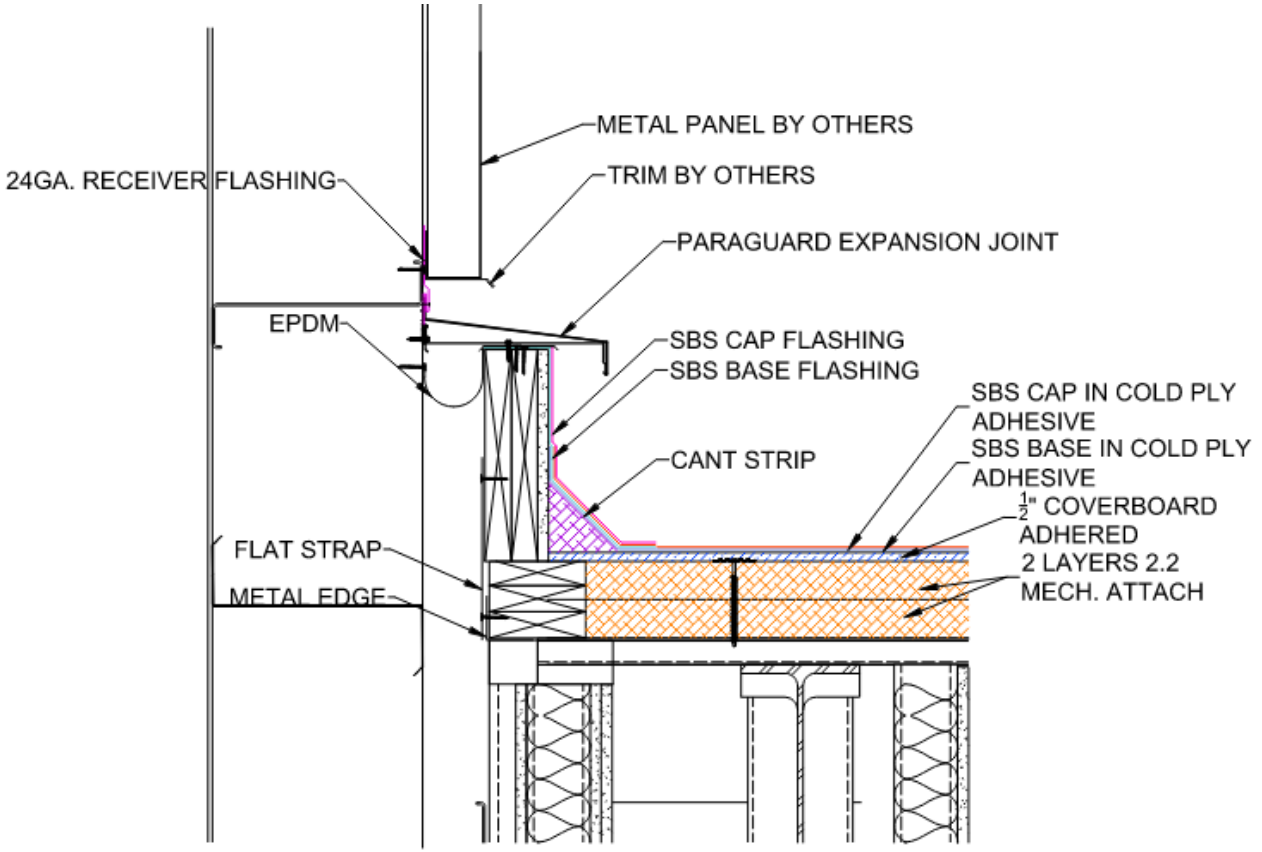


RFI Process

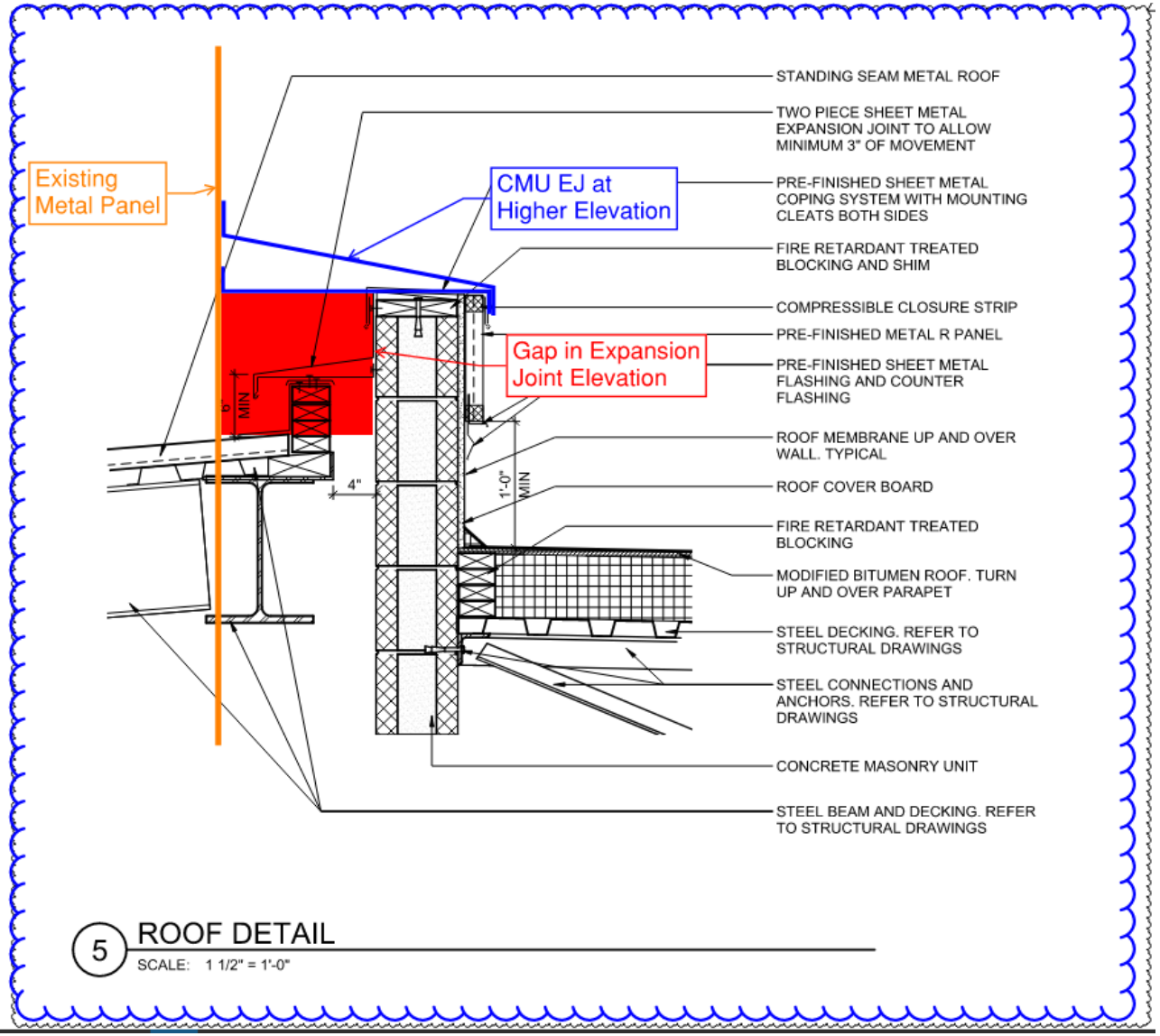

23” EJ @ EW CMU Wall
3
A-306
16'-7 3/4"

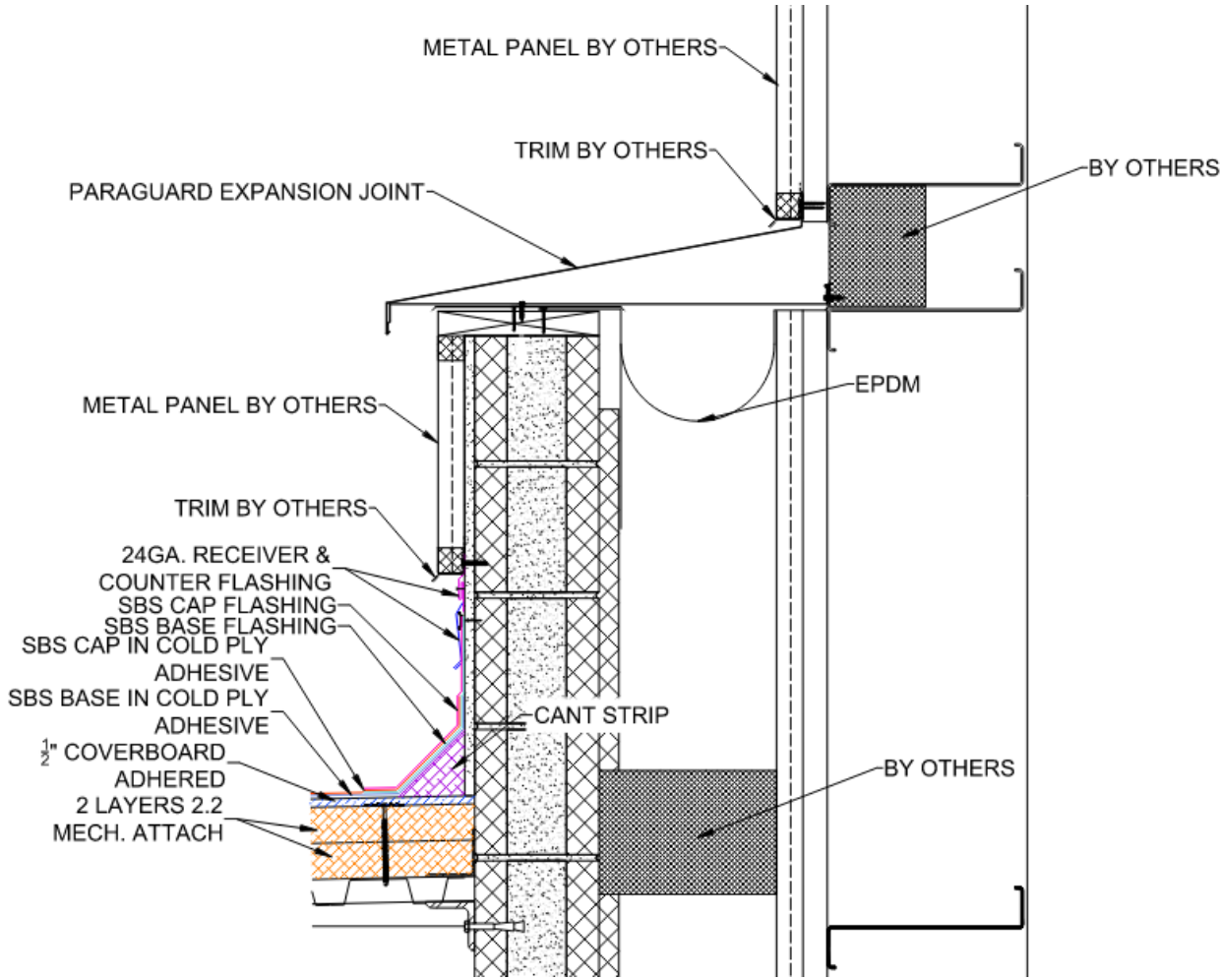

23” EJ @ South CMU Wall
CLOSED CELL FOAM INSULATION
TWO PIECE SHEET METAL EXPANSION JOINT TO ALLOW MINIMUM 3" OF MOVEMENT
MINERAL WOOL BLANKET INSULATION
FIRE RETARDANT TREATED BLOCKING
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL R PANEL
CONCRETE MASONRY UNIT
ROOF COVER BOARD
PREFINISHED SHEET METAL FLASHING AND COUNTER FLASHING
MODIFIED BITUMEN ROOF, TURN UP AND OVER CURB
FIRE RETARDANT TREATED BLOCKING
CLOSED CELL FOAM INSULATION
23"
1'-0" MIN
Is there any additional support required for the Expansion Joint?
3 PARAPET DETAIL
SCALE: 1 1/2" = 1'-0"

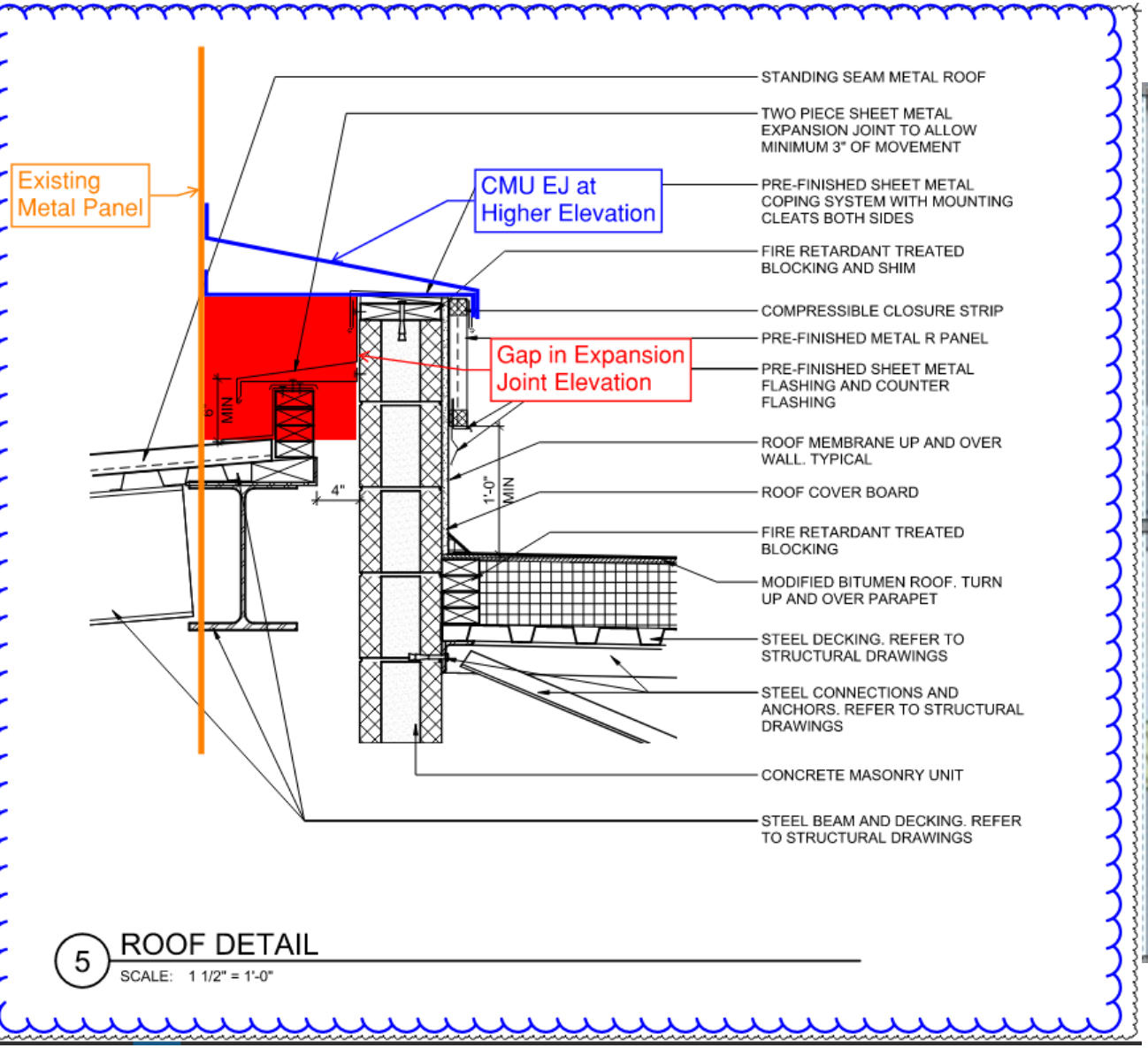




2 SECTION DETAIL
REF: 2 A-504

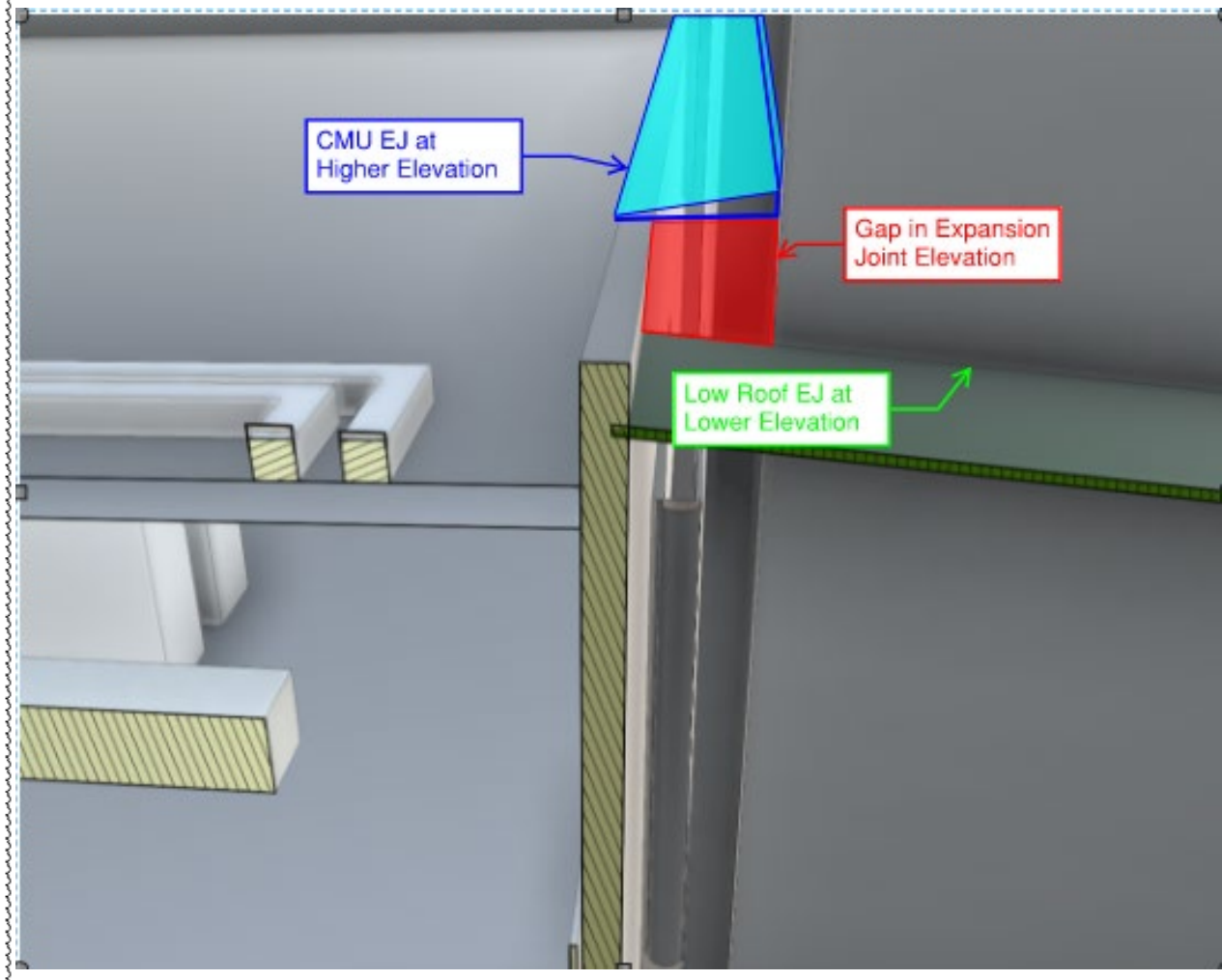

Existing Metal Panel
CMU EJ at Higher Elevation
Gap in Expansion Joint Elevation
STANDING SEAM METAL ROOF
TWO PIECE SHEET METAL EXPANSION JOINT TO ALLOW MINIMUM 3" OF MOVEMENT
PRE-FINISHED SHEET METAL COPING SYSTEM WITH MOUNTING CLEATS BOTH SIDES
FIRE RETARDANT TREATED BLOCKING AND SHIM
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL R PANEL
PRE-FINISHED SHEET METAL FLASHING AND COUNTER FLASHING
ROOF MEMBRANE UP AND OVER WALL. TYPICAL
ROOF COVER BOARD
FIRE RETARDANT TREATED BLOCKING
MODIFIED BITUMEN ROOF. TURN UP AND OVER PARAPET
STEEL DECKING. REFER TO STRUCTURAL DRAWINGS
STEEL CONNECTIONS AND ANCHORS. REFER TO STRUCTURAL DRAWINGS
CONCRETE MASONRY UNIT
STEEL BEAM AND DECKING. REFER TO STRUCTURAL DRAWINGS
6" MIN
4"
1'-0" MIN
5 ROOF DETAIL
SCALE: 1 1/2" = 1'-0"

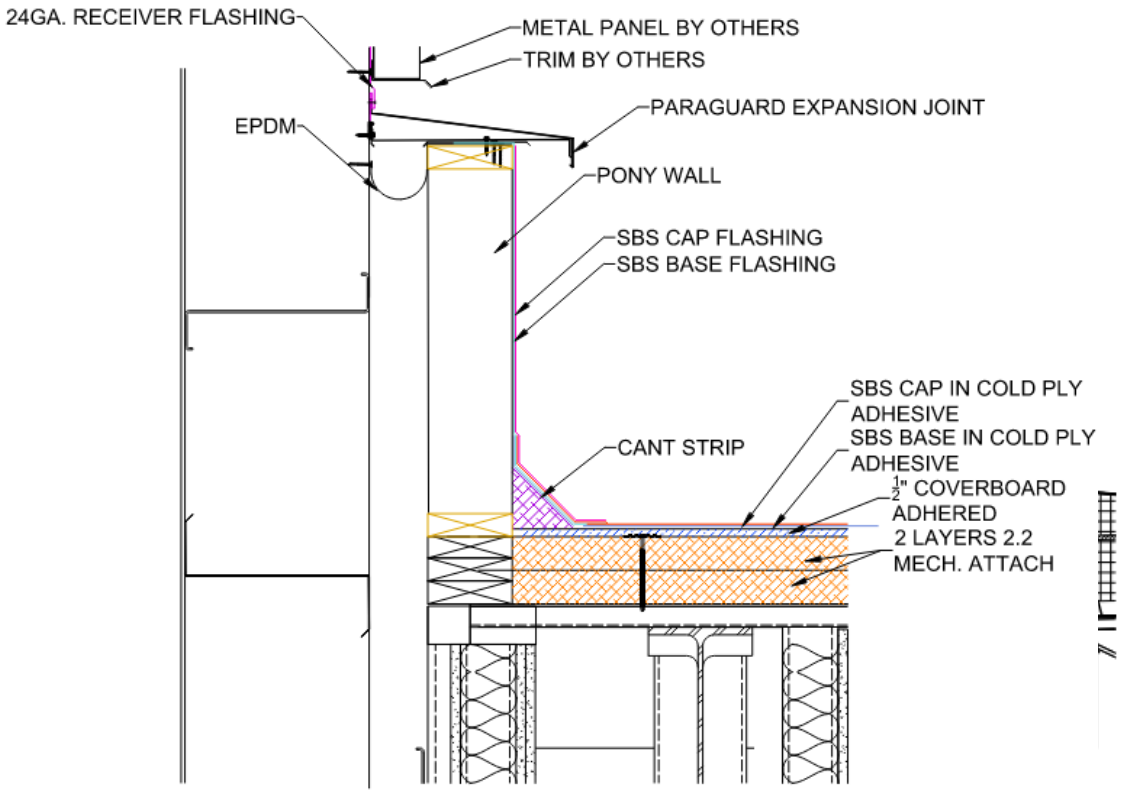

METAL PANEL BY OTHERS
TRIM BY OTHERS
BY OTHERS
PARAGUARD EXPANSION JOINT
EPDM
METAL PANEL BY OTHERS
TRIM BY OTHERS
24GA. RECEIVER & COUNTER FLASHING
SBS CAP FLASHING
SBS BASE FLASHING
SBS CAP IN COLD PLY
ADHESIVE
SBS BASE IN COLD PLY
ADHESIVE
½" COVERBOARD
ADHERED
2 LAYERS 2.2
MECH. ATTACH
CANT STRIP
BY OTHERS



5 ROOF DETAIL

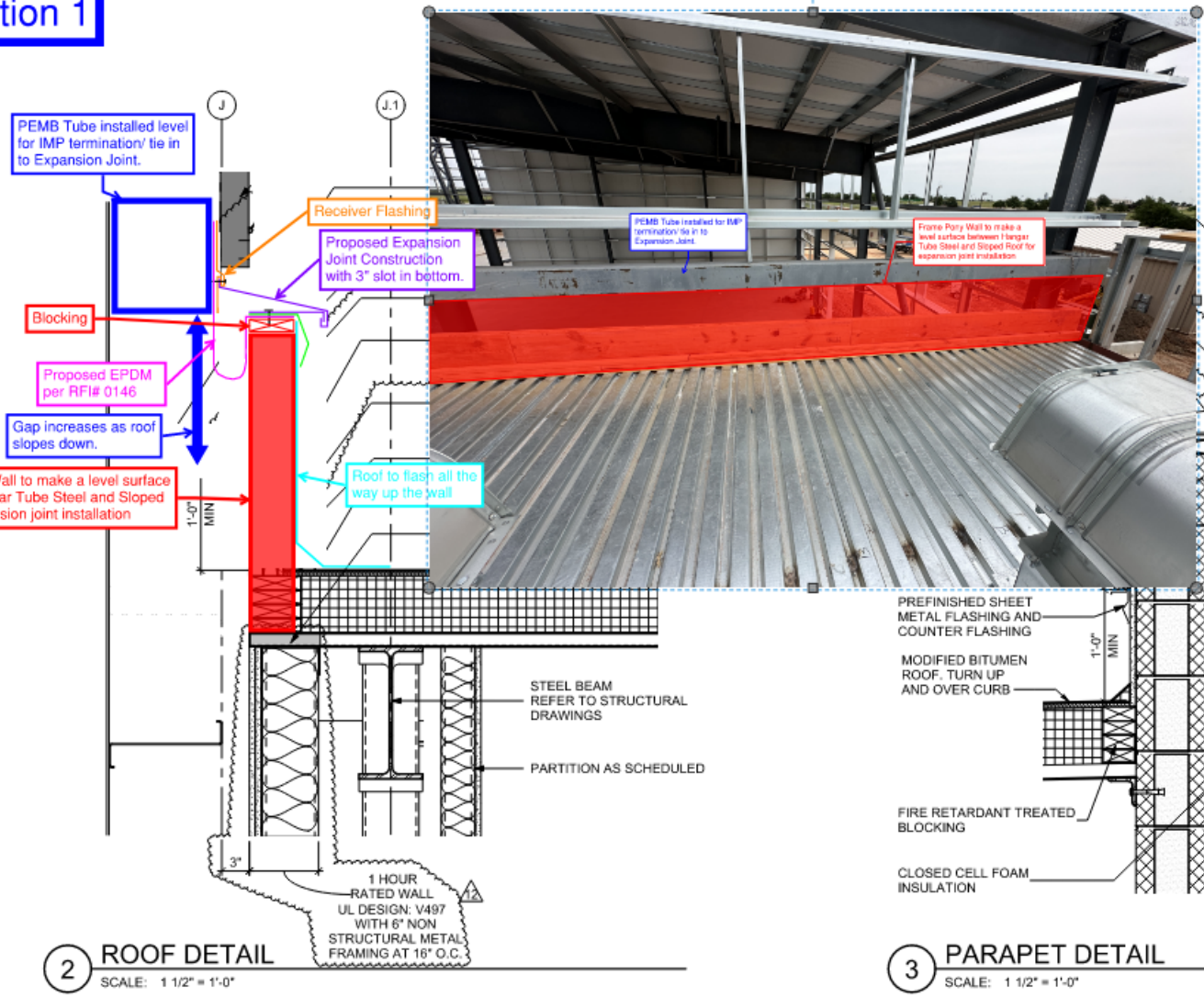
SCALE: 1 1/2" = 1'-0"





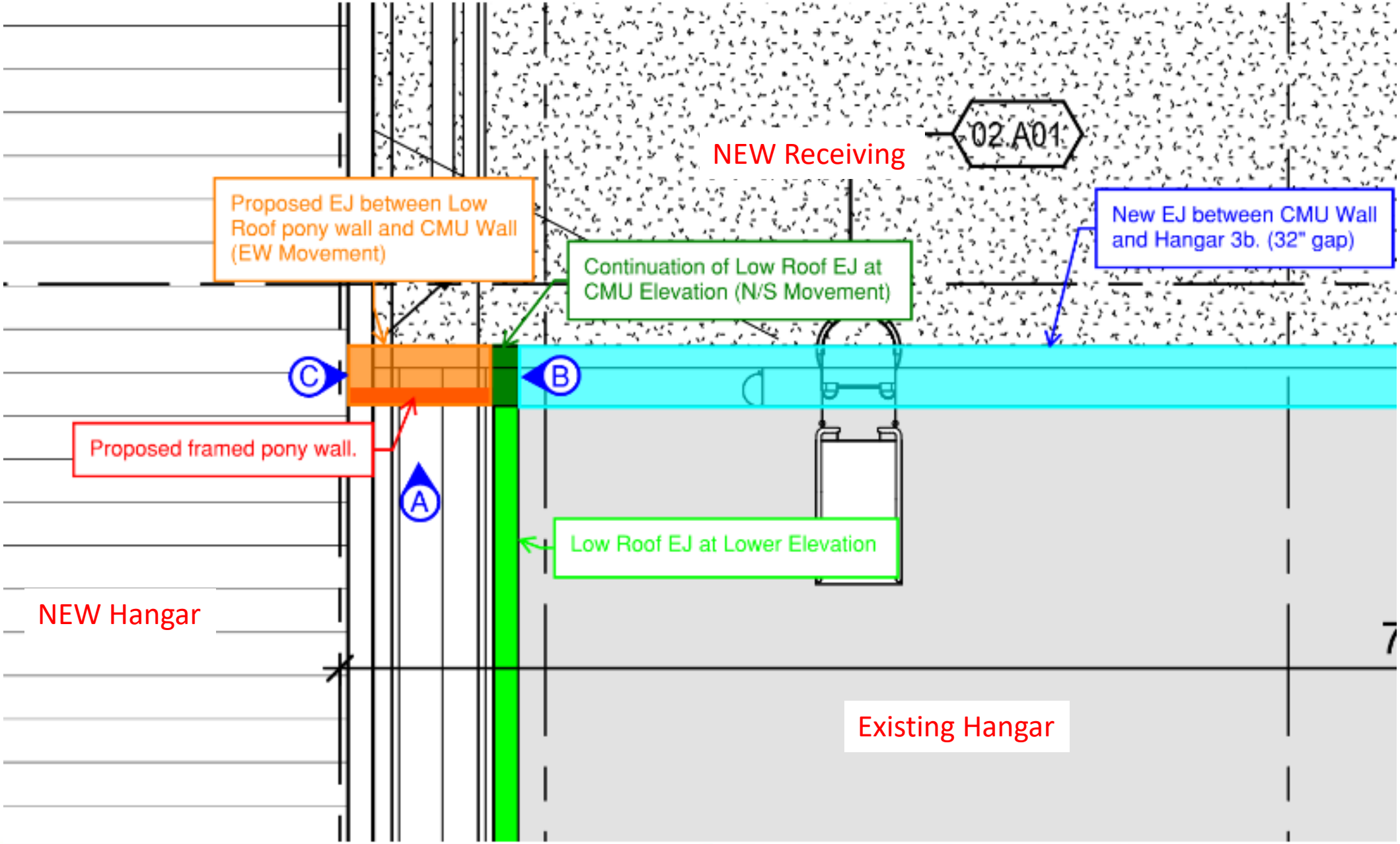
8 SECTION DETAIL
REF: 2 A-504

Question 1

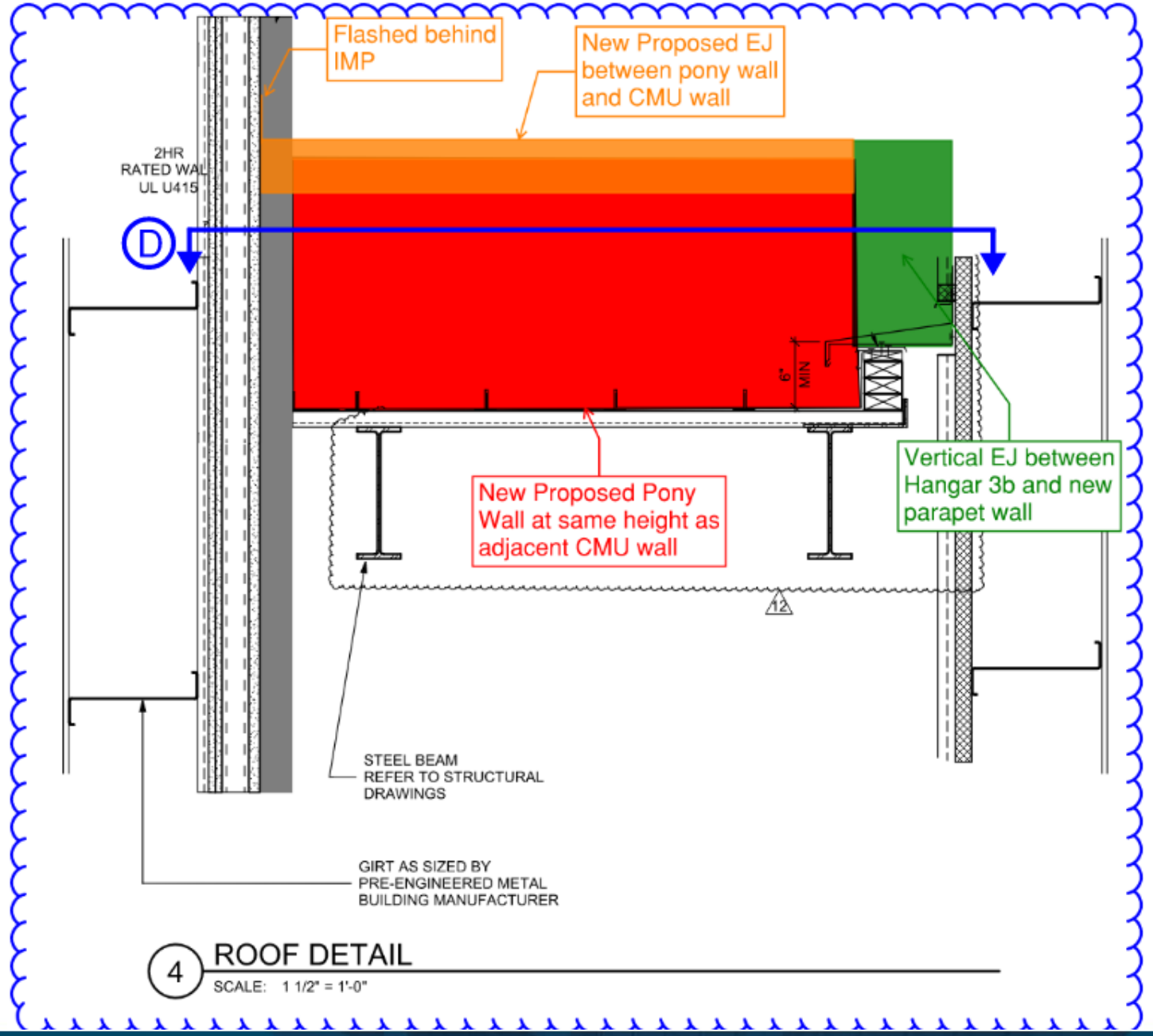


2 ROOF DETAIL
SCALE: 1 1/2" = 1'-0"

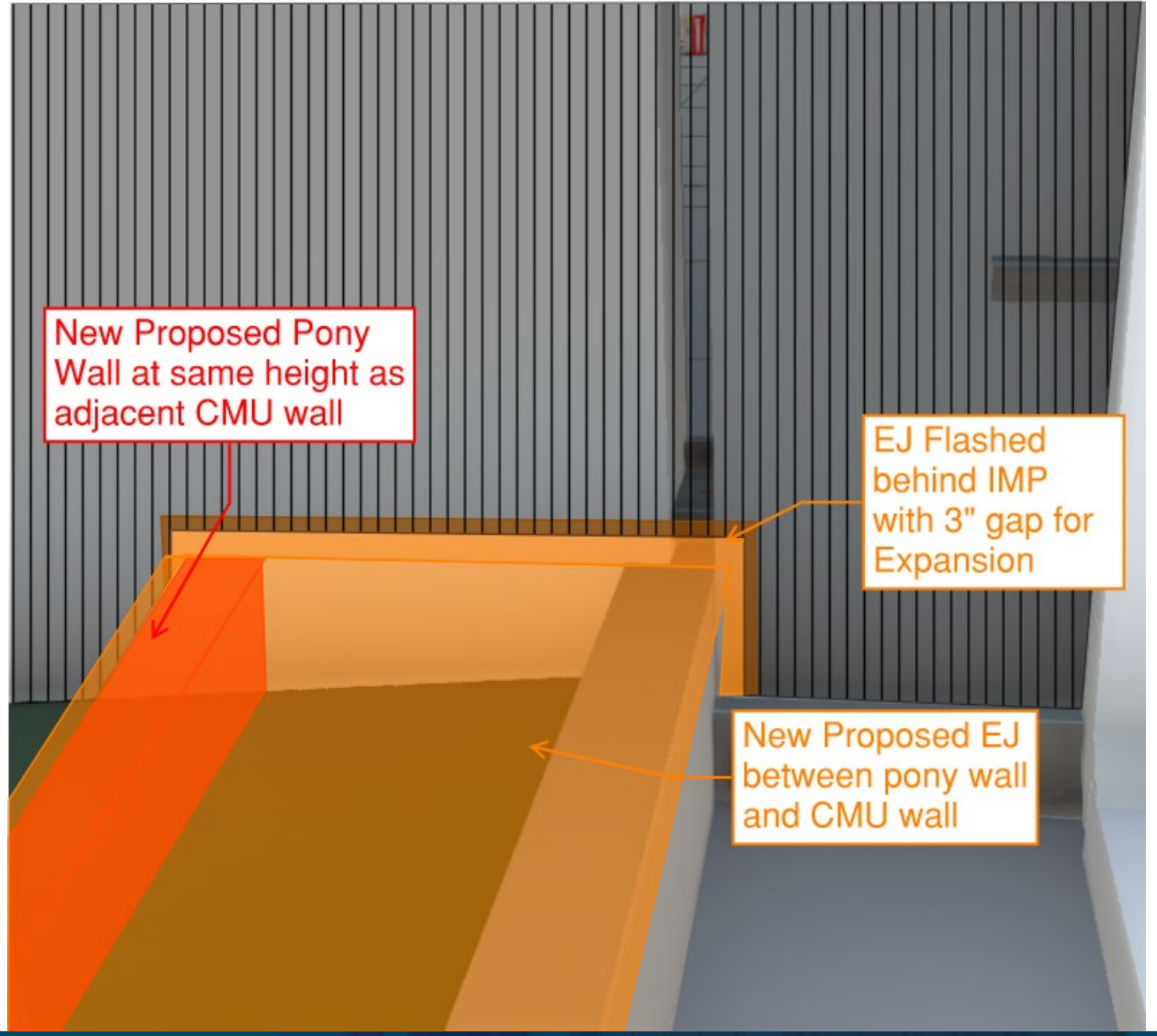
3 PARAPET DETAIL
SCALE: 1 1/2" = 1'-0"


02 A01
NEW Receiving
Proposed EJ between Low Roof pony wall and CMU Wall (EW Movement)
Continuation of Low Roof EJ at CMU Elevation (N/S Movement)
New EJ between CMU Wall and Hangar 3b. (32" gap)
C
B
Proposed framed pony wall.
A
Low Roof EJ at Lower Elevation
NEW Hangar
Existing Hangar

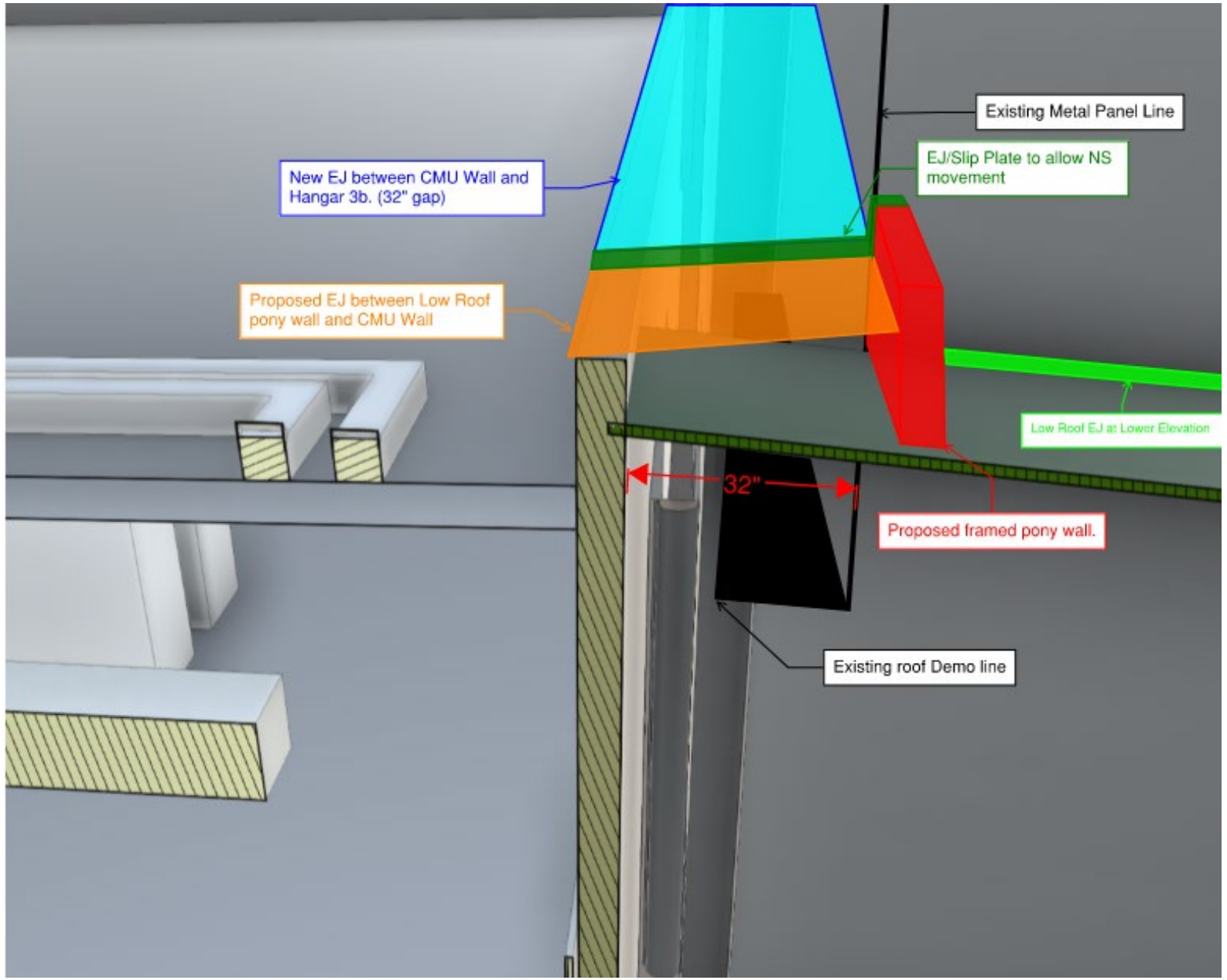
Detail A


Flashed behind IMP
New Proposed EJ between pony wall and CMU wall
2HR RATED WAL
UL U415
D
6" MIN
New Proposed Pony Wall at same height as adjacent CMU wall
Vertical EJ between Hangar 3b and new parapet wall
12
STEEL BEAM
REFER TO STRUCTURAL DRAWINGS
GIRT AS SIZED BY
PRE-ENGINEERED METAL
BUILDING MANUFACTURER
4
ROOF DETAIL
SCALE: 1 1/2" = 1'-0"

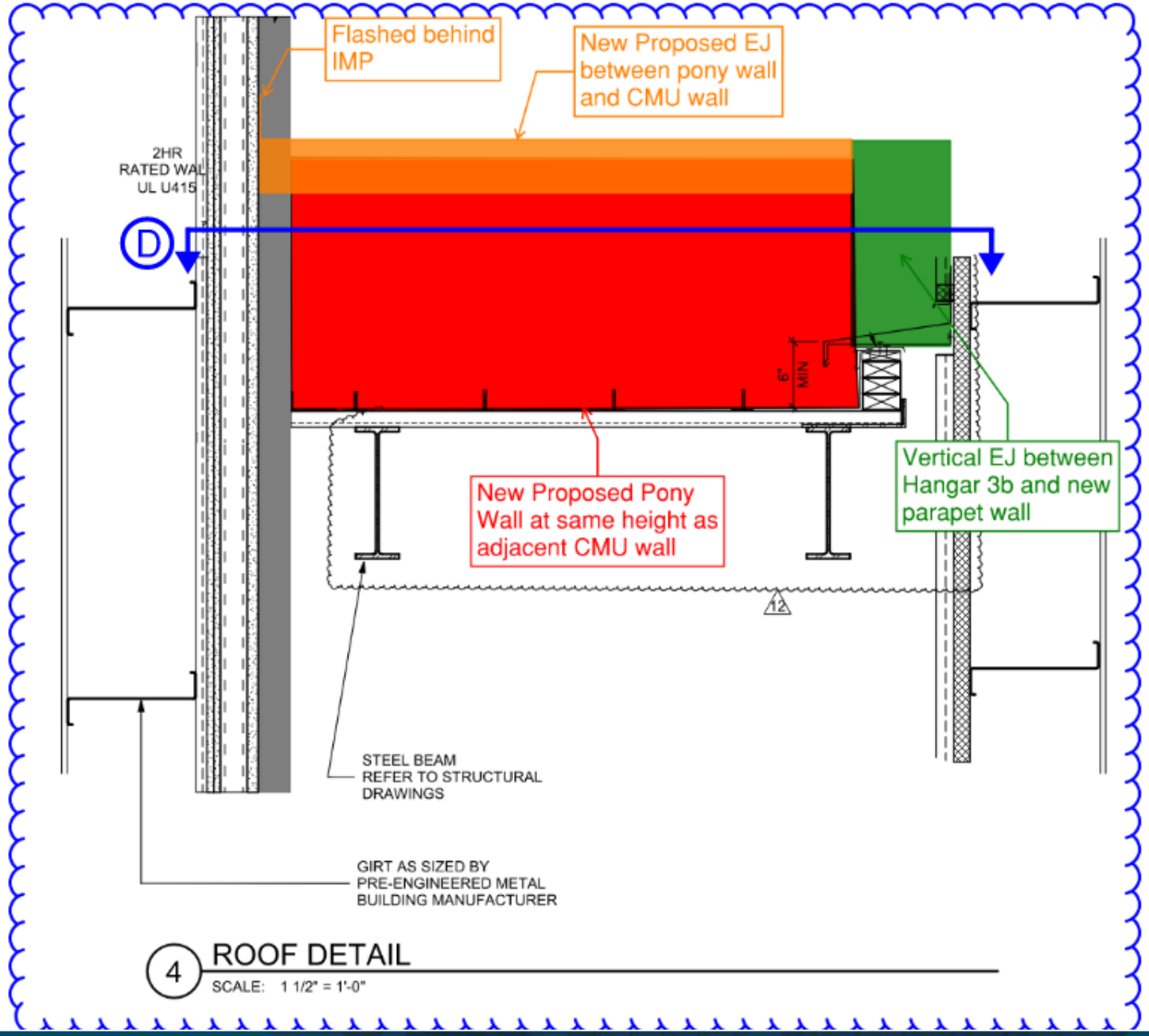
Detail B


New Proposed Pony Wall at same height as adjacent CMU wall
EJ Flashed behind IMP with 3" gap for Expansion
New Proposed EJ between pony wall and CMU wall

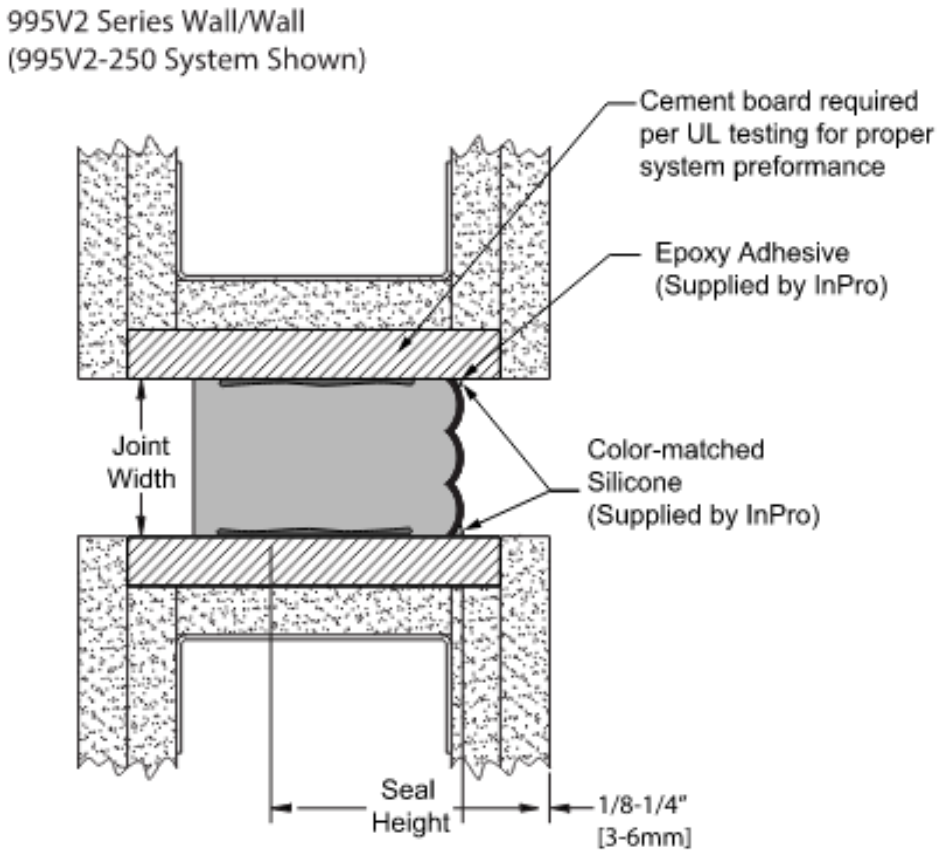
Detail C


Existing Metal Panel Line
EJ/Slip Plate to allow NS movement
New EJ between CMU Wall and Hangar 3b. (32" gap)
Proposed EJ between Low Roof pony wall and CMU Wall
Low Roof EJ at Lower Elevation
32"
Proposed framed pony wall.
Existing roof Demo line

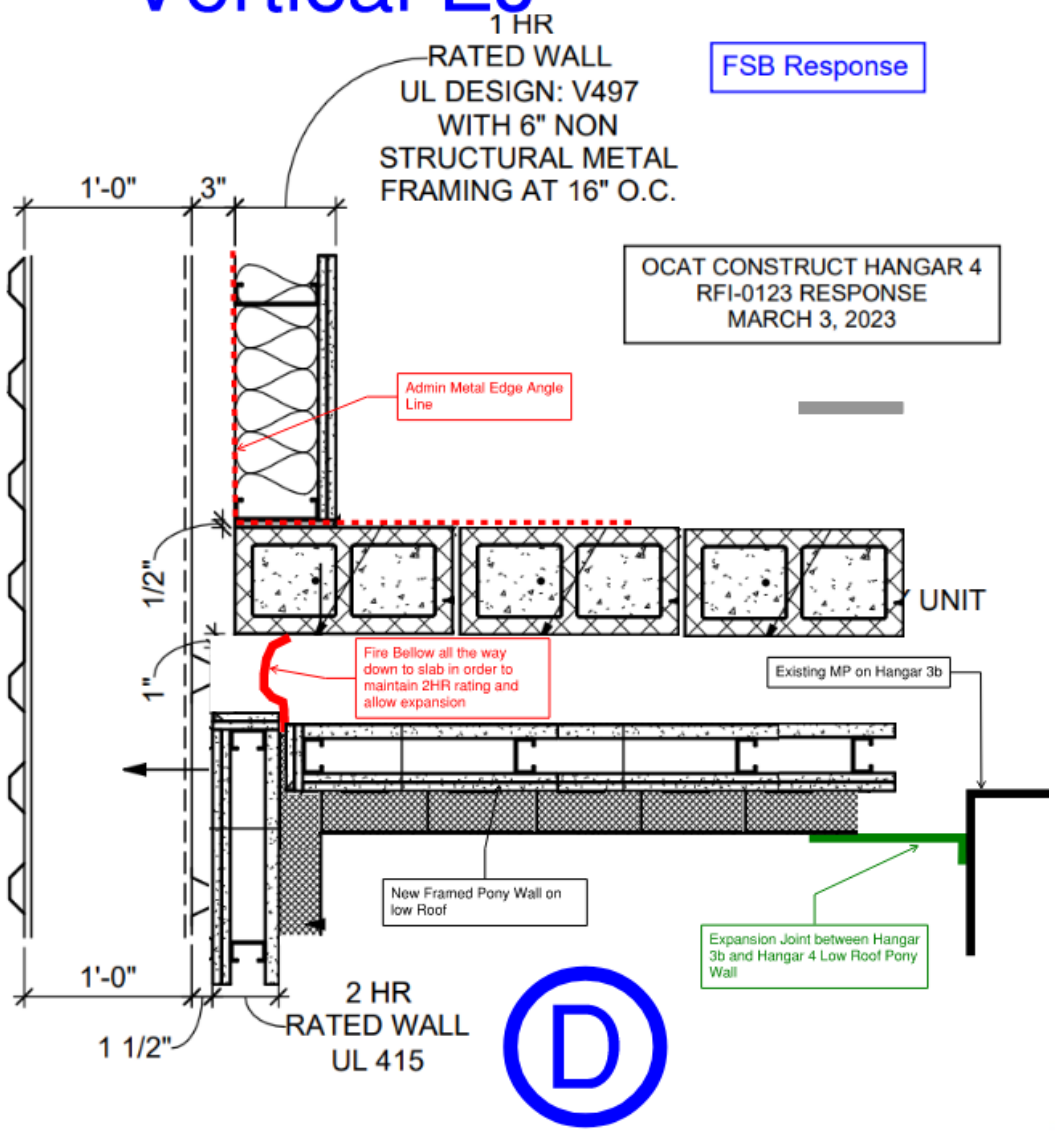
Detail D


Flashed behind IMP
New Proposed EJ between pony wall and CMU wall
2HR RATED WAL
UL U415
D
6" MIN
New Proposed Pony Wall at same height as adjacent CMU wall
Vertical EJ between Hangar 3b and new parapet wall
12
STEEL BEAM
REFER TO STRUCTURAL DRAWINGS
GIRT AS SIZED BY
PRE-ENGINEERED METAL
BUILDING MANUFACTURER
4
ROOF DETAIL
SCALE: 1 1/2" = 1'-0"

Detail D

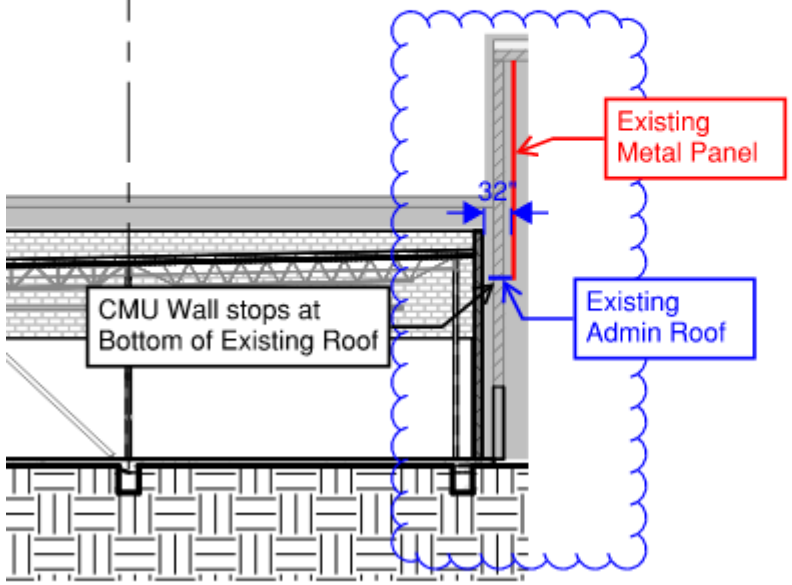


CMU EJ Fire Rating/Extra Vertical EJ

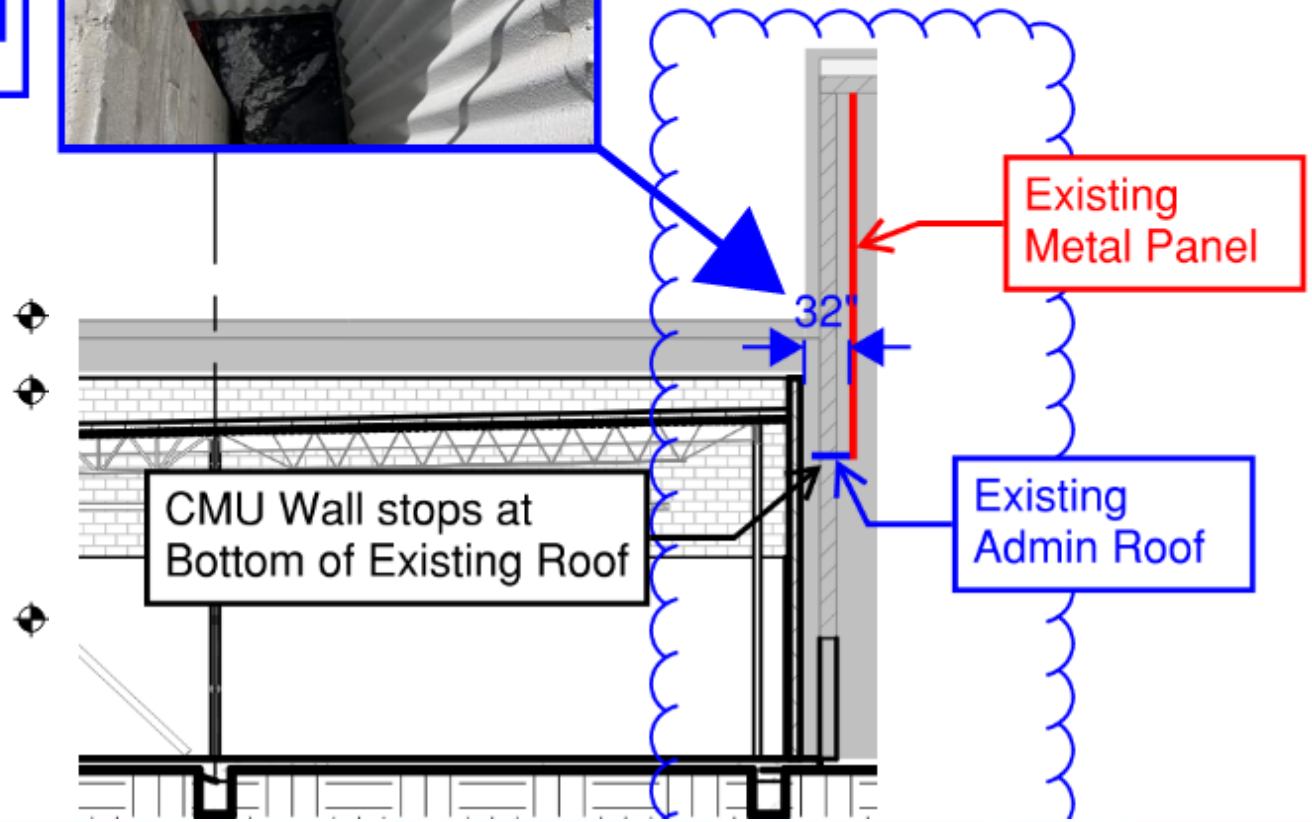


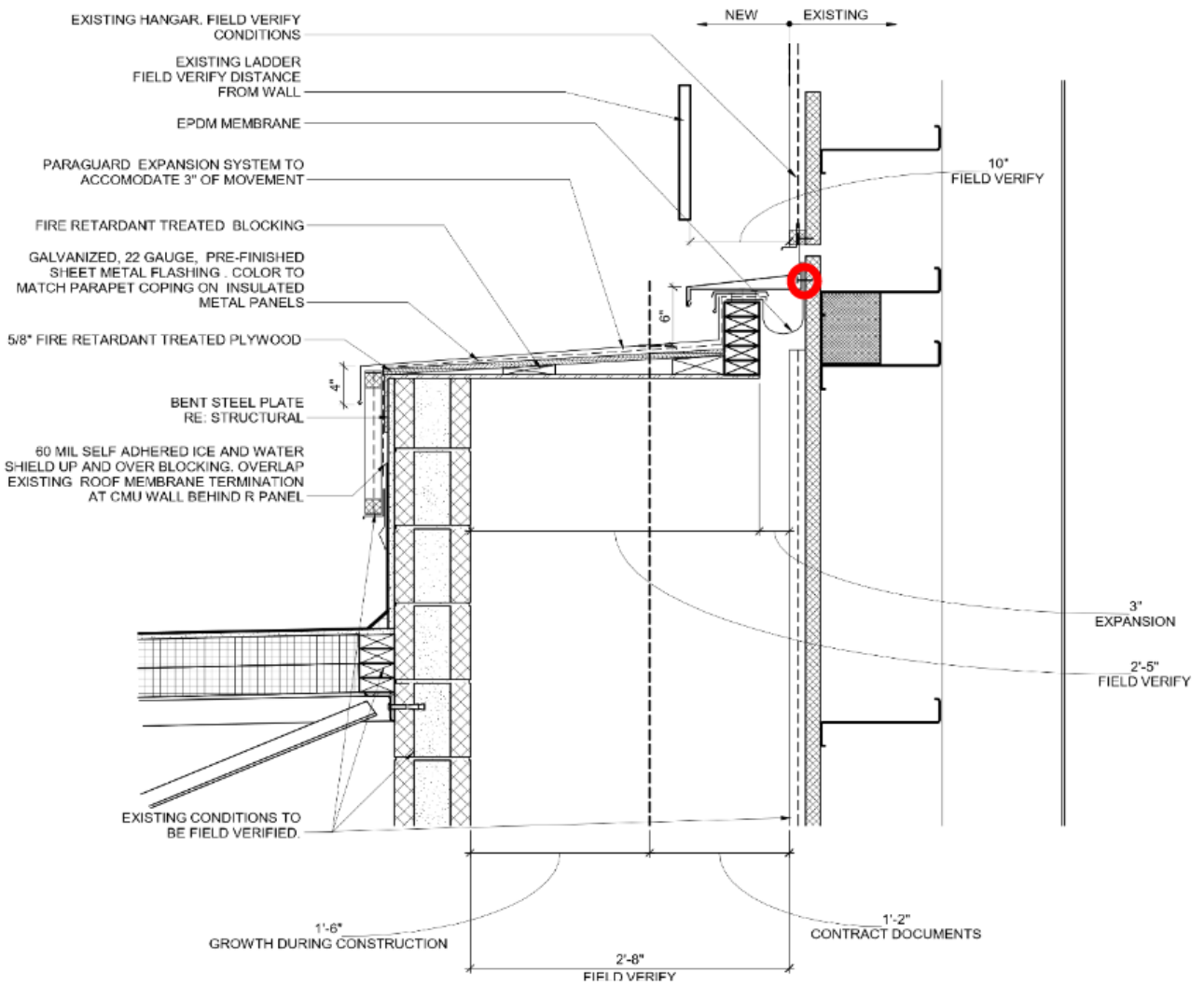
EJ Coordination

32” EJ @ NS CMU Wall

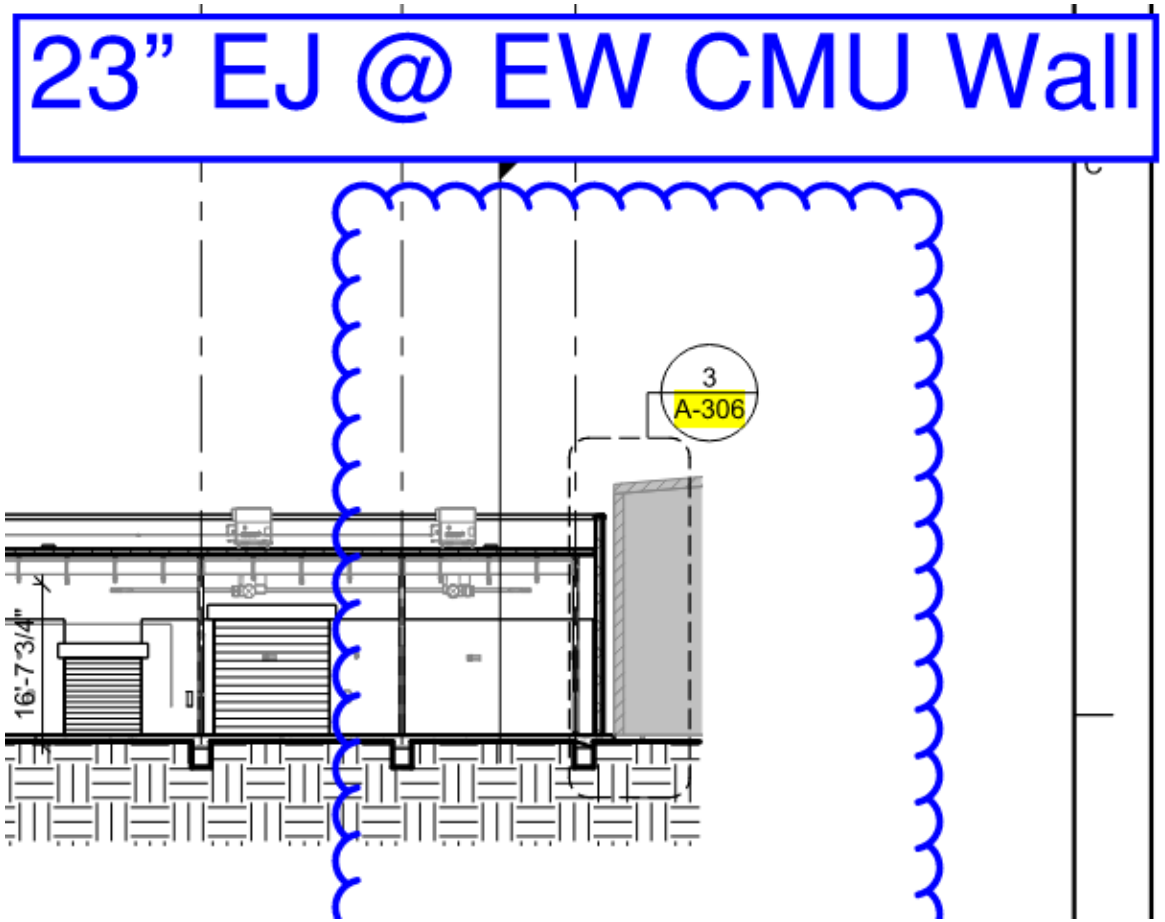


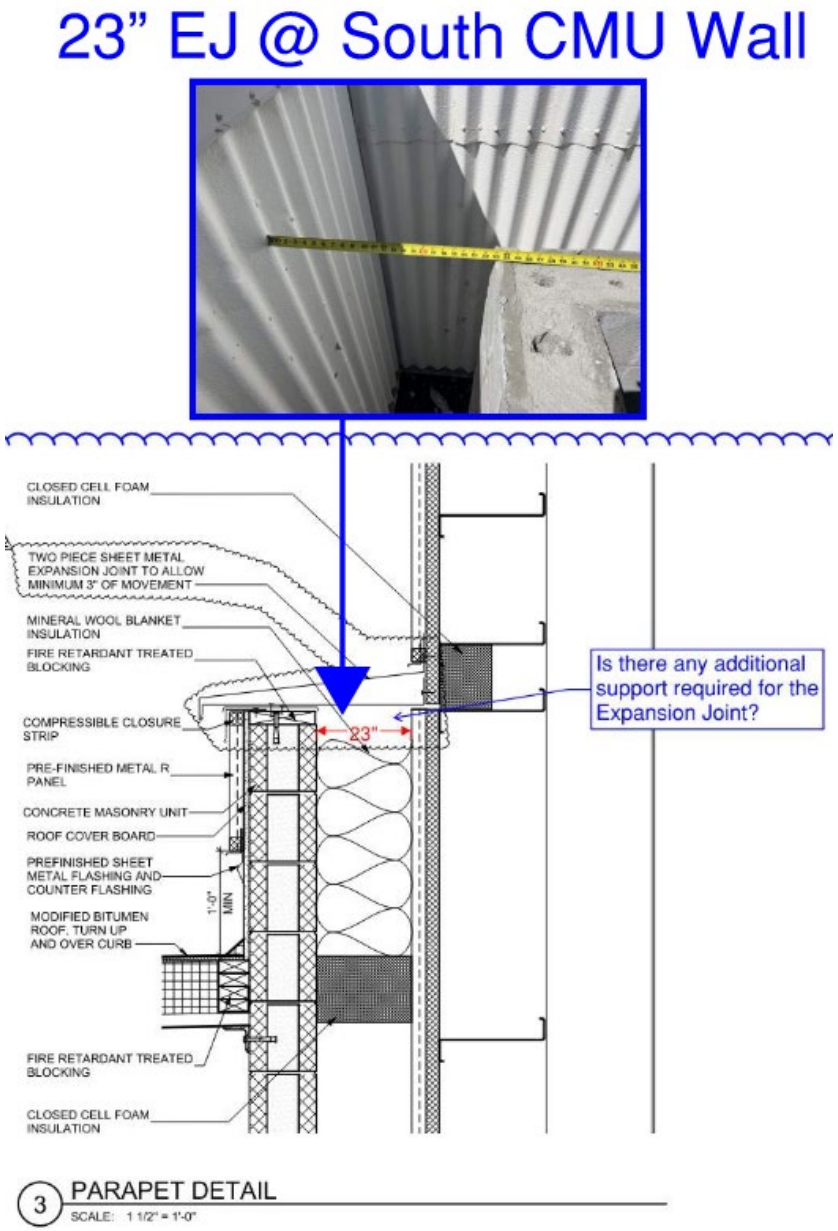
32” EJ @ NS CMU Wall

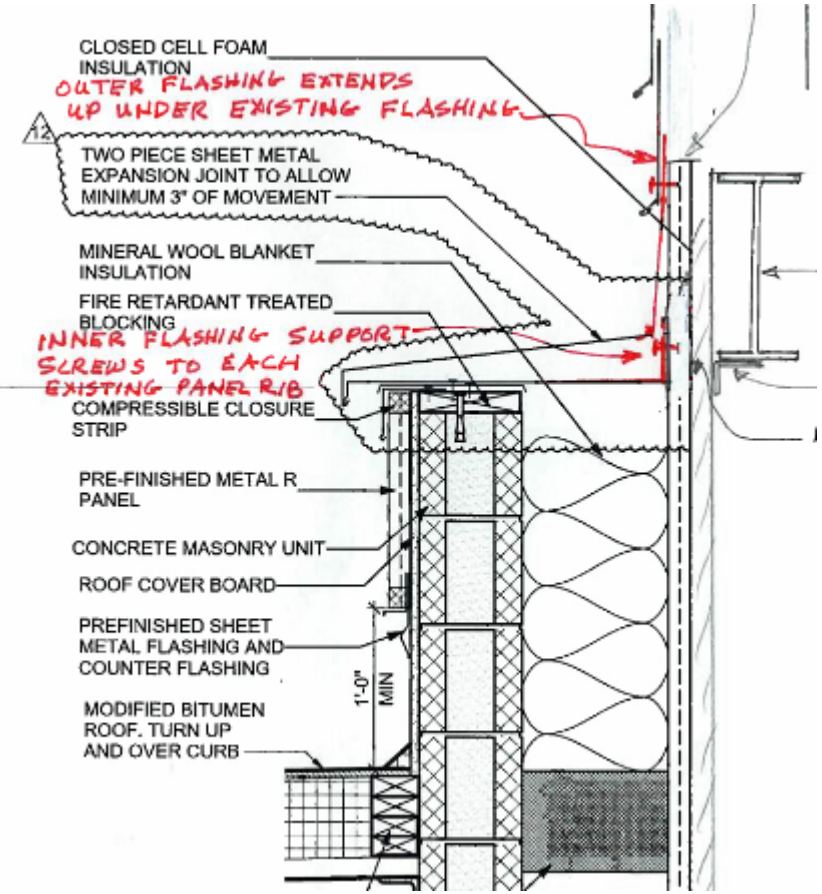


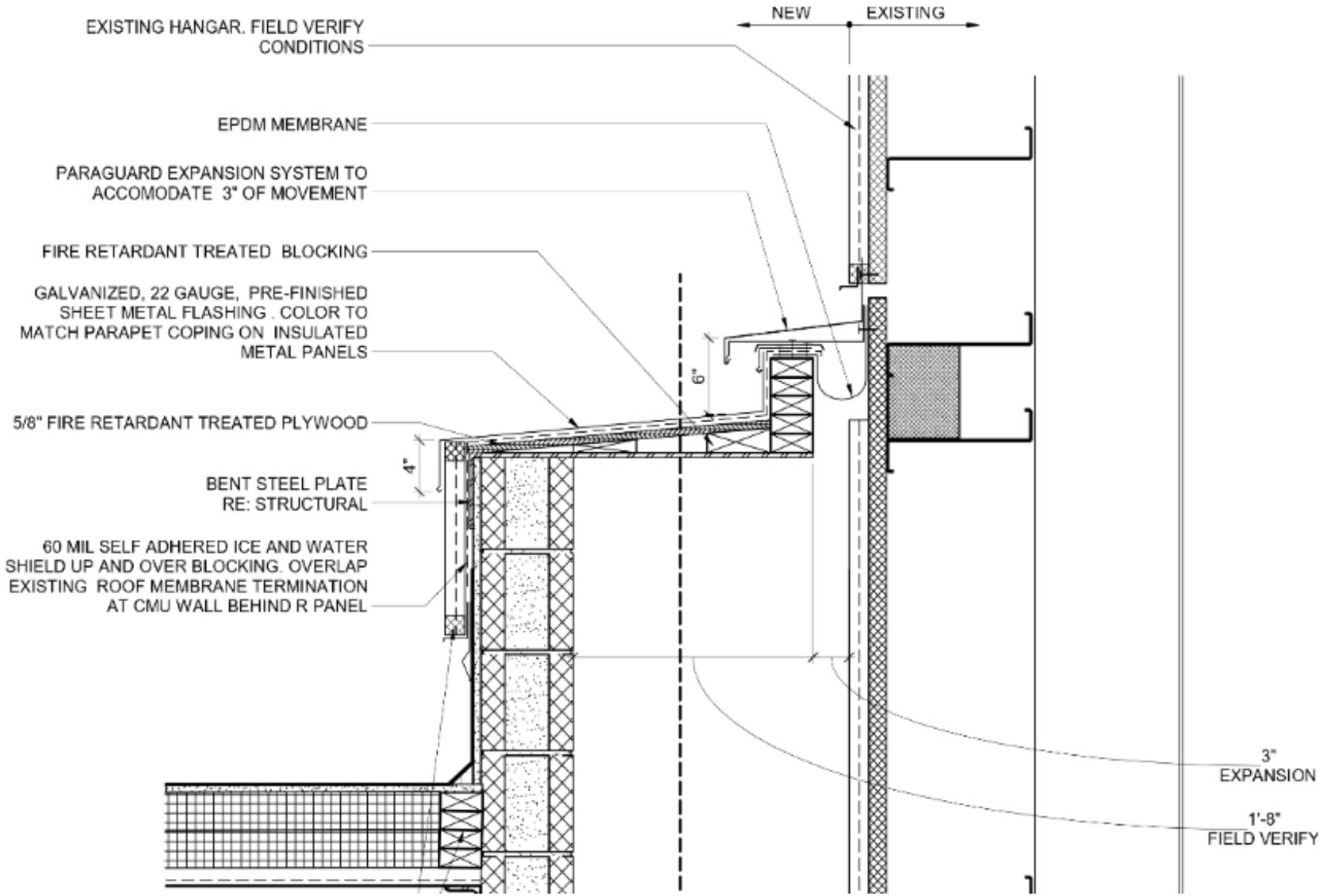

NEW
EXISTING
EXISTING HANGAR. FIELD VERIFY CONDITIONS
EXISTING LADDER FIELD VERIFY DISTANCE FROM WALL
EPDM MEMBRANE
PARAGUARD EXPANSION SYSTEM TO ACCOMODATE 3" OF MOVEMENT
FIRE RETARDANT TREATED BLOCKING
GALVANIZED, 22 GAUGE, PRE-FINISHED SHEET METAL FLASHING . COLOR TO MATCH PARAPET COPING ON INSULATED METAL PANELS
5/8" FIRE RETARDANT TREATED PLYWOOD
BENT STEEL PLATE RE: STRUCTURAL
60 MIL SELF ADHERED ICE AND WATER SHIELD UP AND OVER BLOCKING. OVERLAP EXISTING ROOF MEMBRANE TERMINATION AT CMU WALL BEHIND R PANEL
EXISTING CONDITIONS TO BE FIELD VERIFIED.
10"
FIELD VERIFY
6"
4"
3"
EXPANSION
2'-5"
FIELD VERIFY
1'-6"
GROWTH DURING CONSTRUCTION
2'-8"
FIELD VERIFY
1'-2"
CONTRACT DOCUMENTS

RFI Process

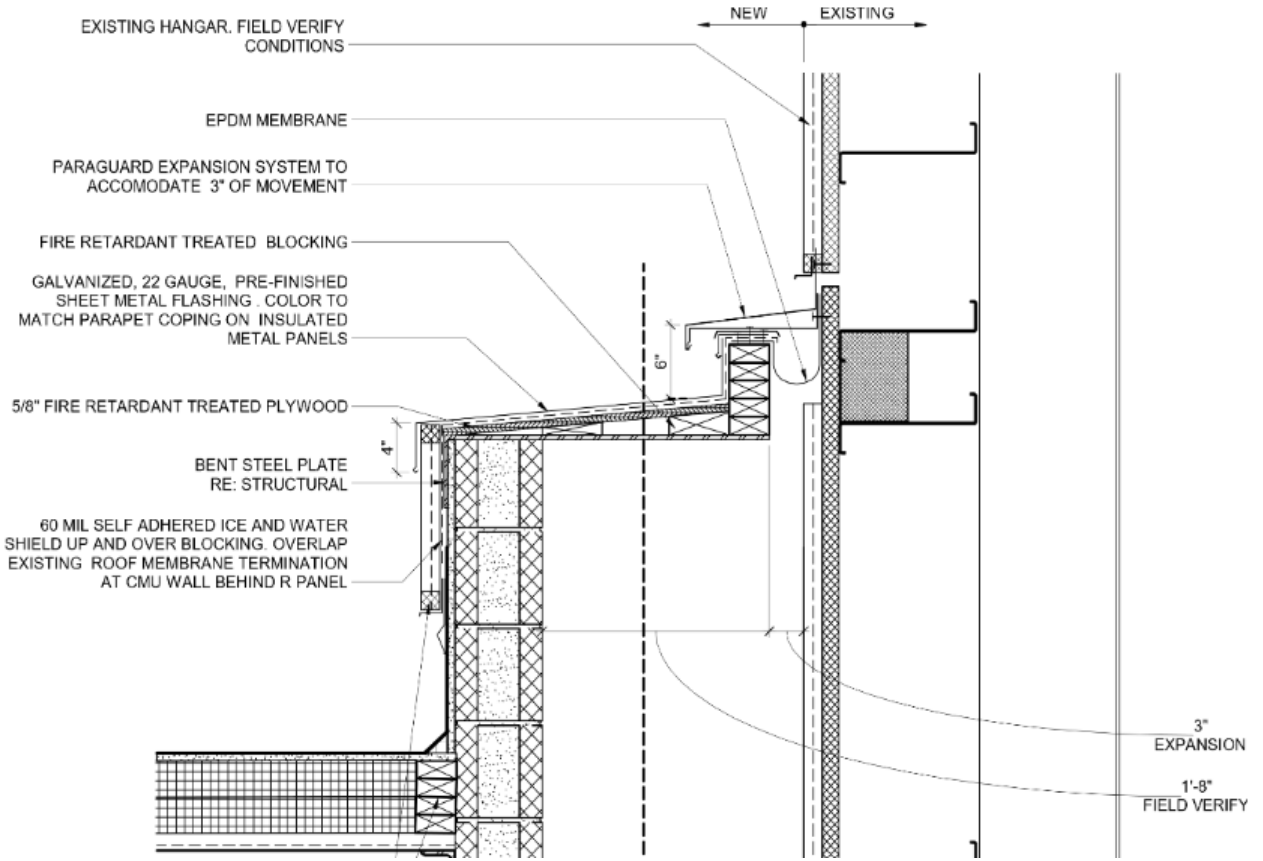

23” EJ @ EW CMU Wall
3
A-306
16'-7 3/4"

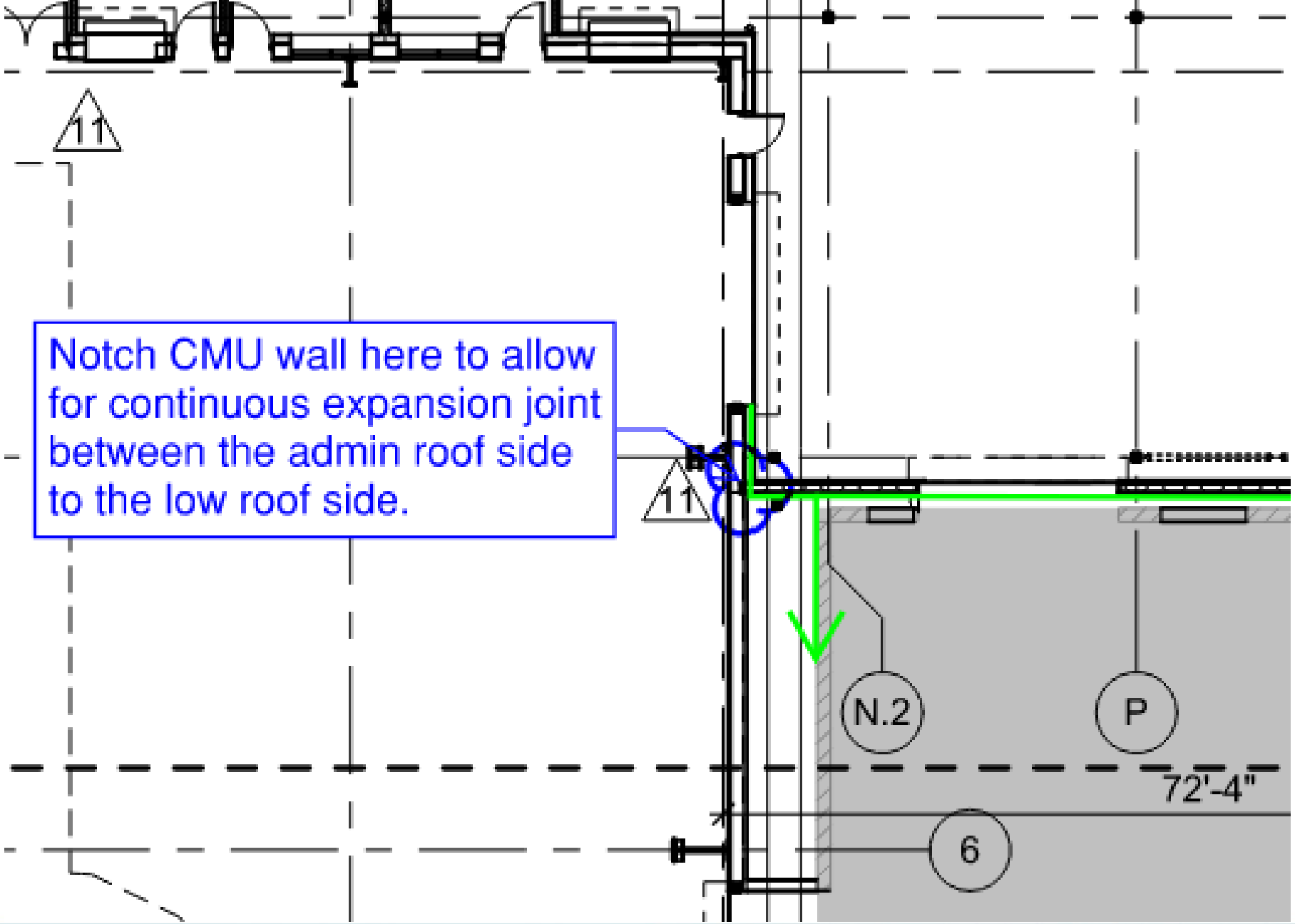

23” EJ @ South CMU Wall
CLOSED CELL FOAM INSULATION
TWO PIECE SHEET METAL EXPANSION JOINT TO ALLOW MINIMUM 3" OF MOVEMENT
MINERAL WOOL BLANKET INSULATION
FIRE RETARDANT TREATED BLOCKING
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL R PANEL
CONCRETE MASONRY UNIT
ROOF COVER BOARD
PREFINISHED SHEET METAL FLASHING AND COUNTER FLASHING
MODIFIED BITUMEN ROOF, TURN UP AND OVER CURB
FIRE RETARDANT TREATED BLOCKING
CLOSED CELL FOAM INSULATION
23"
1'-0" MIN
Is there any additional support required for the Expansion Joint?
3 PARAPET DETAIL
SCALE: 1 1/2" = 1'-0"

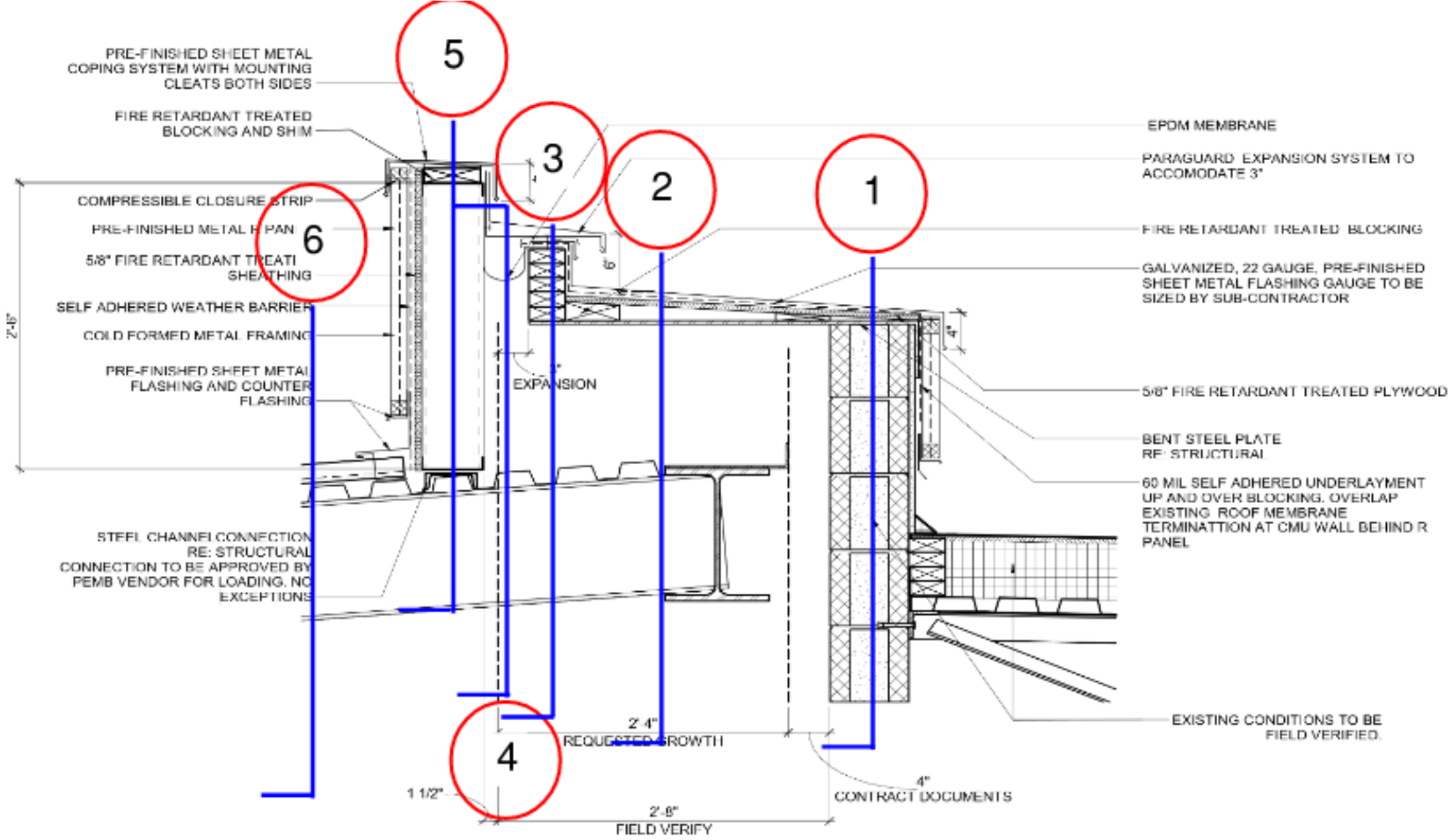

CLOSED CELL FOAM INSULATION
OUTER FLASHING EXTENDS UP UNDER EXISTING FLASHING
12
TWO PIECE SHEET METAL EXPANSION JOINT TO ALLOW MINIMUM 3" OF MOVEMENT
MINERAL WOOL BLANKET INSULATION
FIRE RETARDANT TREATED BLOCKING
INNER FLASHING SUPPORT SCREWS TO EACH EXISTING PANEL RIB
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL R PANEL
CONCRETE MASONRY UNIT
ROOF COVER BOARD
PREFINISHED SHEET METAL FLASHING AND COUNTER FLASHING
1'-0" MIN
MODIFIED BITUMEN ROOF. TURN UP AND OVER CURB


NEW
EXISTING
EXISTING HANGAR. FIELD VERIFY CONDITIONS
EPDM MEMBRANE
PARAGUARD EXPANSION SYSTEM TO ACCOMODATE 3" OF MOVEMENT
FIRE RETARDANT TREATED BLOCKING
GALVANIZED, 22 GAUGE, PRE-FINISHED SHEET METAL FLASHING . COLOR TO MATCH PARAPET COPING ON INSULATED METAL PANELS
5/8" FIRE RETARDANT TREATED PLYWOOD
BENT STEEL PLATE RE: STRUCTURAL
60 MIL SELF ADHERED ICE AND WATER SHIELD UP AND OVER BLOCKING. OVERLAP EXISTING ROOF MEMBRANE TERMINATION AT CMU WALL BEHIND R PANEL
6"
4"
3" EXPANSION
1'-8" FIELD VERIFY


HALO
EXTERRA


NEW
EXISTING
EXISTING HANGAR. FIELD VERIFY CONDITIONS
EPDM MEMBRANE
PARAGUARD EXPANSION SYSTEM TO ACCOMODATE 3" OF MOVEMENT
FIRE RETARDANT TREATED BLOCKING
GALVANIZED, 22 GAUGE, PRE-FINISHED SHEET METAL FLASHING . COLOR TO MATCH PARAPET COPING ON INSULATED METAL PANELS
5/8" FIRE RETARDANT TREATED PLYWOOD
BENT STEEL PLATE RE: STRUCTURAL
60 MIL SELF ADHERED ICE AND WATER SHIELD UP AND OVER BLOCKING. OVERLAP EXISTING ROOF MEMBRANE TERMINATION AT CMU WALL BEHIND R PANEL
6"
4"
3" EXPANSION
1'-8" FIELD VERIFY

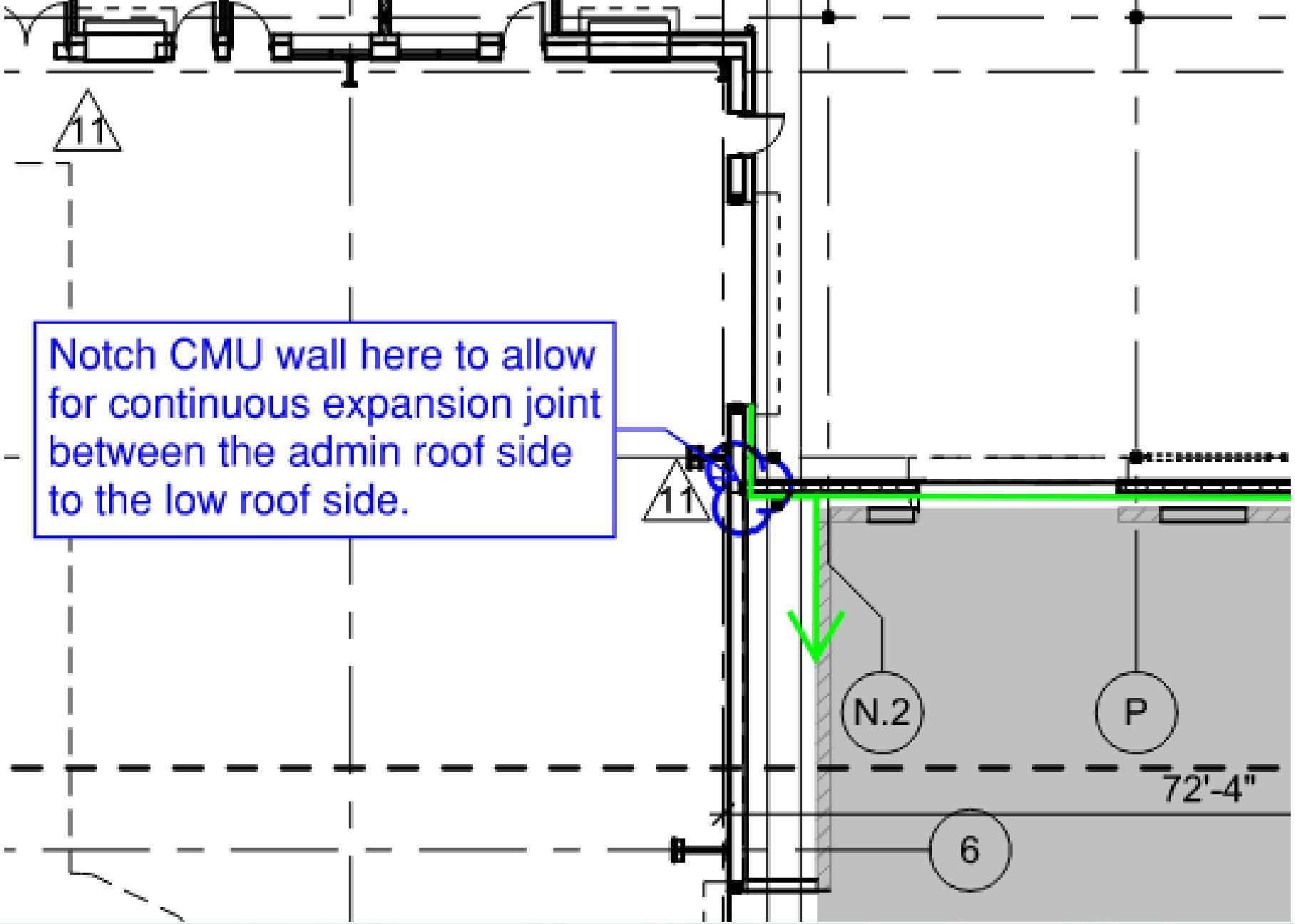

11
Notch CMU wall here to allow for continuous expansion joint between the admin roof side to the low roof side.
11
N.2
P
72'-4"
6

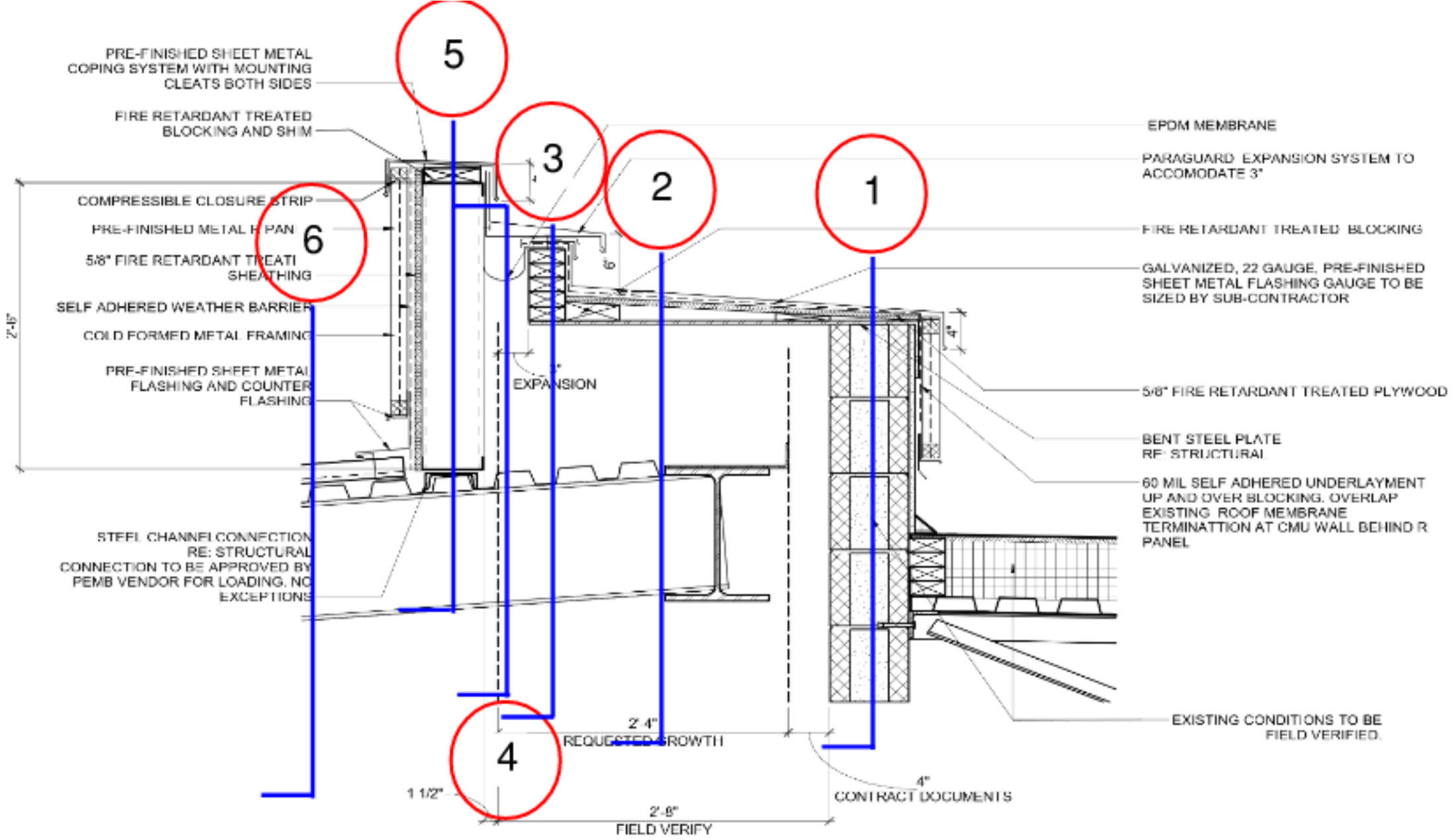

PRE-FINISHED SHEET METAL COPING SYSTEM WITH MOUNTING CLEATS BOTH SIDES
FIRE RETARDANT TREATED BLOCKING AND SHIM
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL R PAN
5/8" FIRE RETARDANT TREATI SHEATHING
SELF ADHERED WEATHER BARRIER
COLD FORMED METAL FRAMING
PRE-FINISHED SHEET METAL FLASHING AND COUNTER FLASHING
STEEL CHANNEL CONNECTION RE: STRUCTURAL CONNECTION TO BE APPROVED BY PEMB VENDOR FOR LOADING. NO EXCEPTIONS
2'-6"
5
3
2
1
6
4
EXPANSION
2' 4"
REQUESTED GROWTH
1 1/2"
2'-6"
FIELD VERIFY
4"
CONTRACT DOCUMENTS
EPDM MEMBRANE
PARAGUARD EXPANSION SYSTEM TO ACCOMODATE 3"
FIRE RETARDANT TREATED BLOCKING
GALVANIZED, 22 GAUGE, PRE-FINISHED SHEET METAL FLASHING GAUGE TO BE SIZED BY SUB-CONTRACTOR
5/8" FIRE RETARDANT TREATED PLYWOOD
BENT STEEL PLATE RE: STRUCTURAL
60 MIL SELF ADHERED UNDERLAYMENT UP AND OVER BLOCKING. OVERLAP EXISTING ROOF MEMBRANE TERMINATTION AT CMU WALL BEHIND R PANEL
EXISTING CONDITIONS TO BE FIELD VERIFIED.

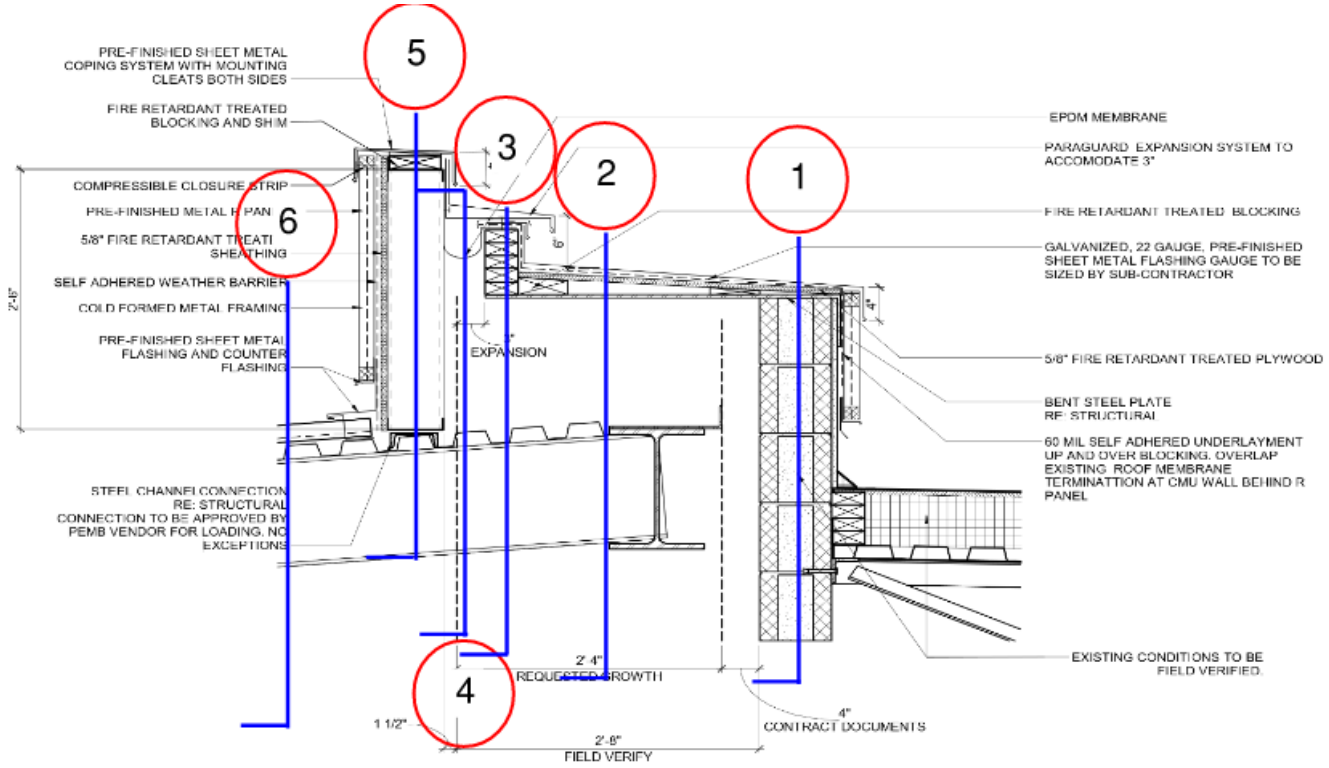

FLAMMABLE
KEEP FIRE AWAY

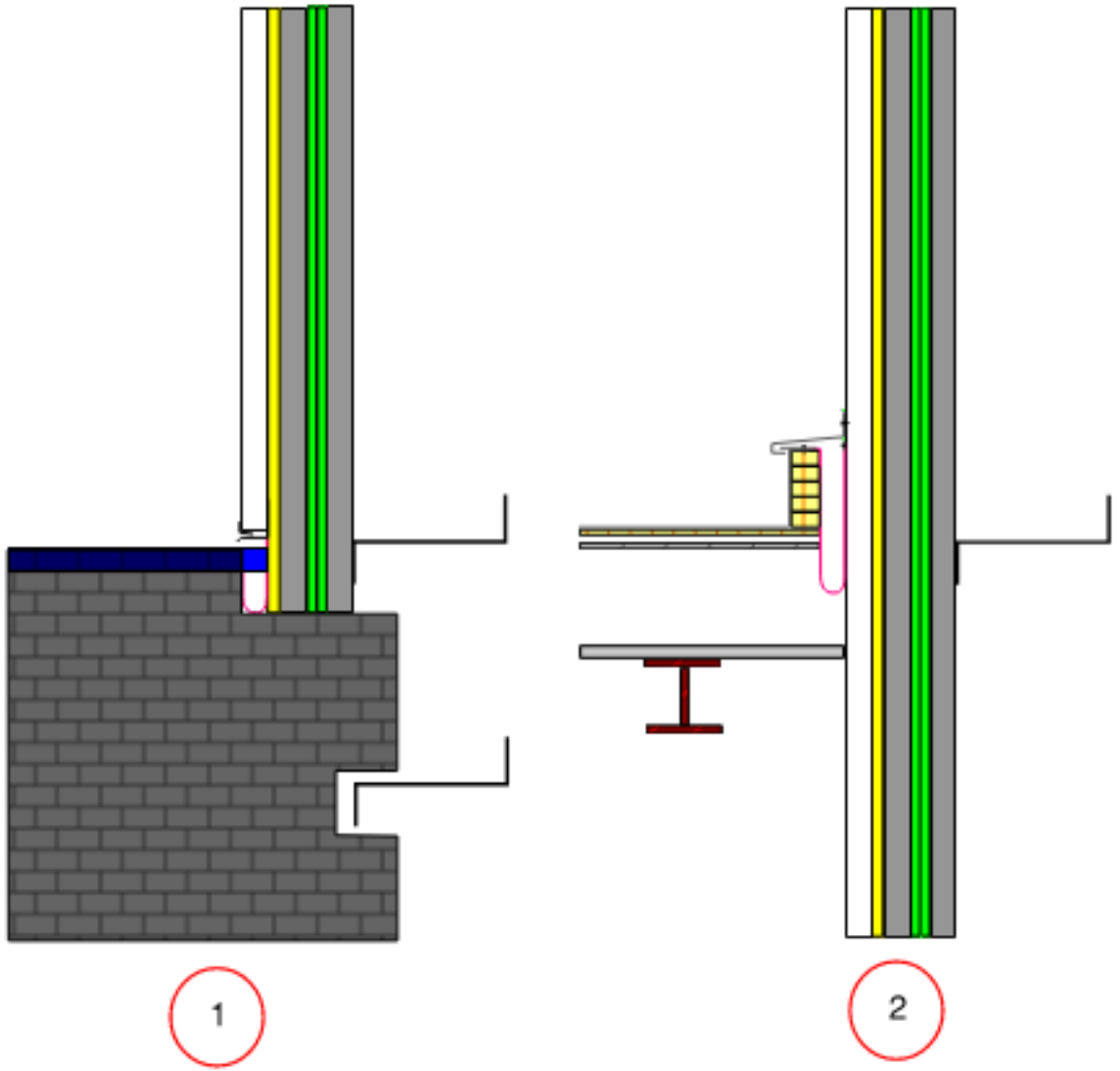

HANGER
3B
SKINNEY
ROOF

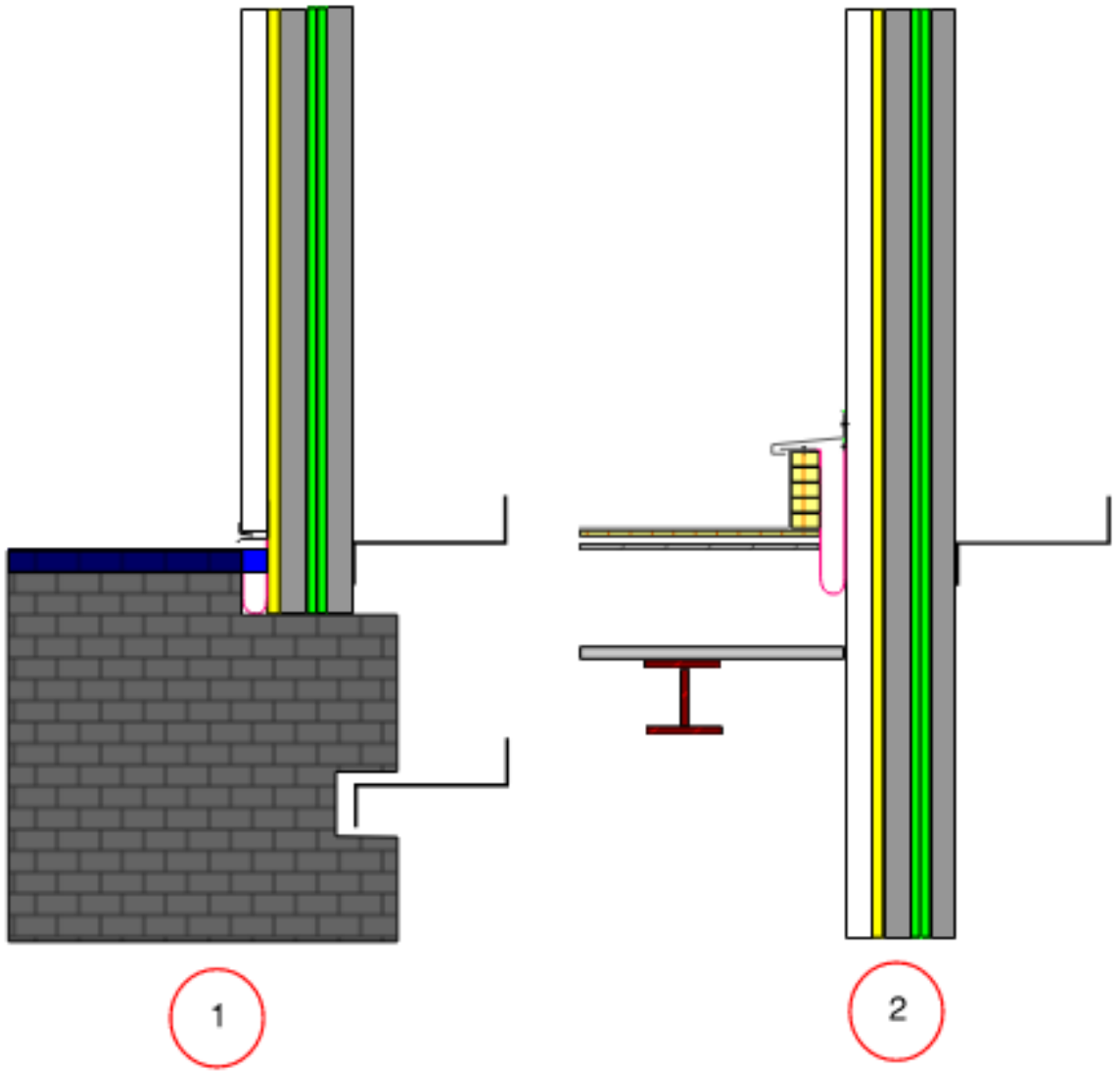

MCG

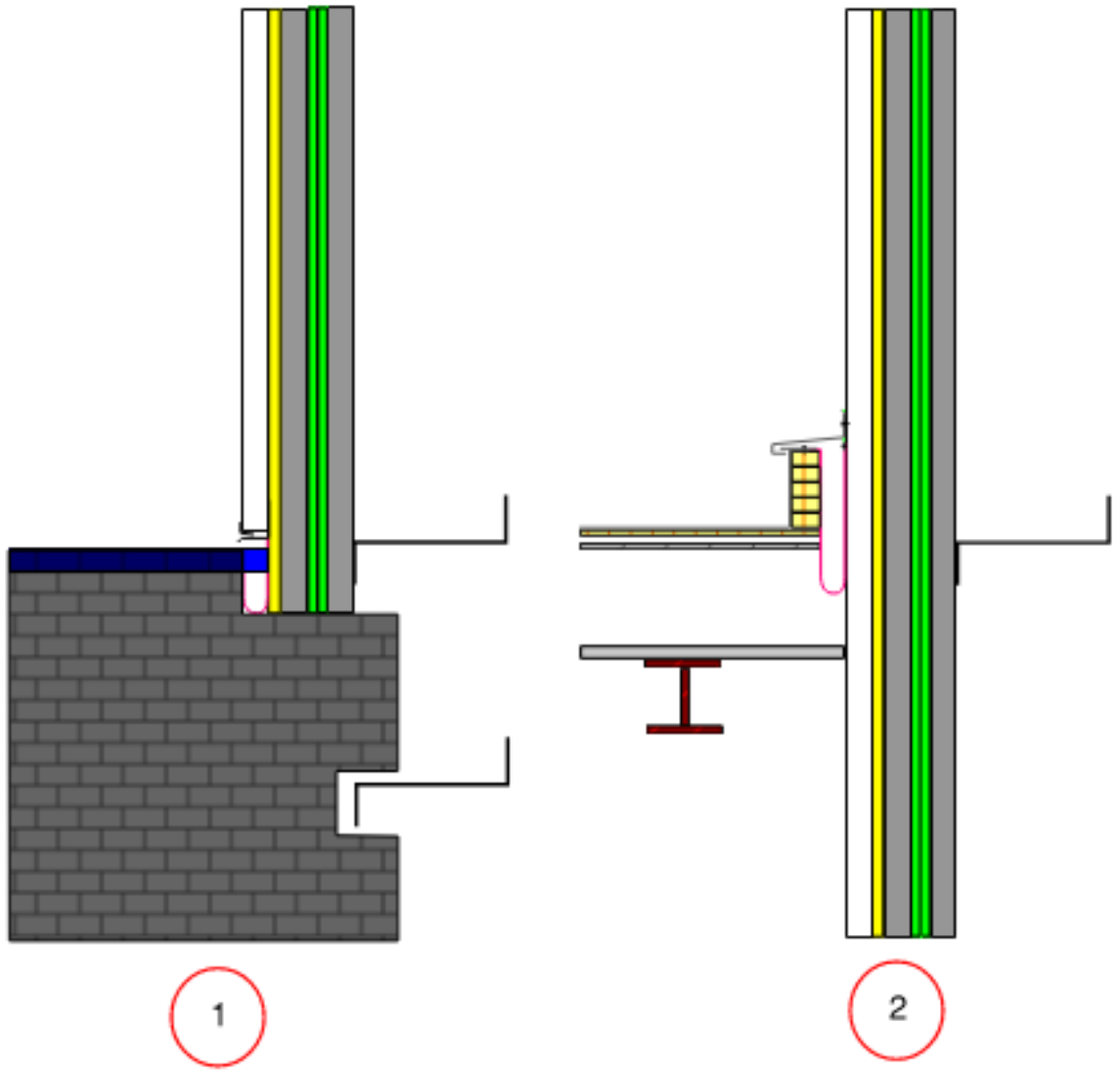

11
Notch CMU wall here to allow for continuous expansion joint between the admin roof side to the low roof side.
11
N.2
P
72'-4"
6

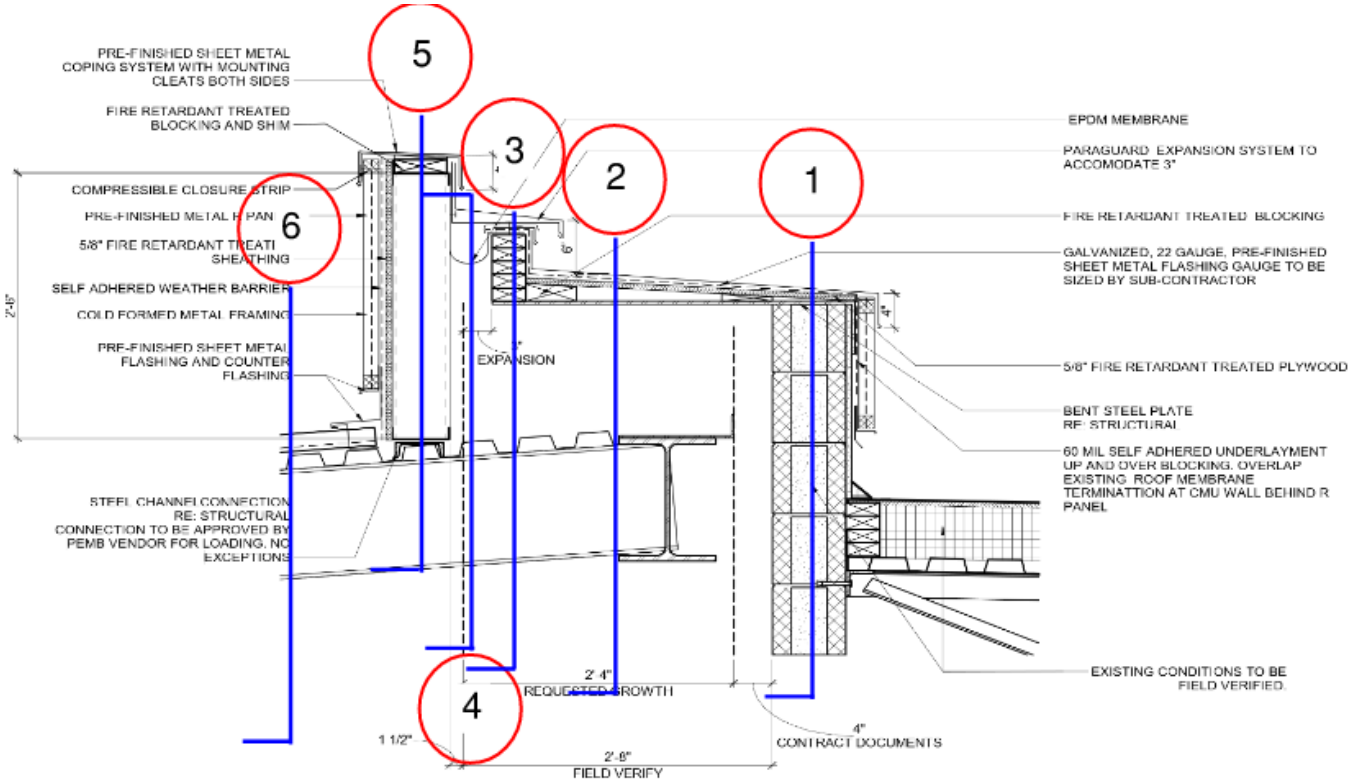

PRE-FINISHED SHEET METAL COPING SYSTEM WITH MOUNTING CLEATS BOTH SIDES
FIRE RETARDANT TREATED BLOCKING AND SHIM
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL R PAN
5/8" FIRE RETARDANT TREATI SHEATHING
SELF ADHERED WEATHER BARRIER
COLD FORMED METAL FRAMING
PRE-FINISHED SHEET METAL FLASHING AND COUNTER FLASHING
STEEL CHANNEL CONNECTION RE: STRUCTURAL CONNECTION TO BE APPROVED BY PEMB VENDOR FOR LOADING. NO EXCEPTIONS
2'-6"
5
3
2
1
6
4
EXPANSION
2' 4"
REQUESTED GROWTH
1 1/2"
2'-6"
FIELD VERIFY
4"
CONTRACT DOCUMENTS
EPDM MEMBRANE
PARAGUARD EXPANSION SYSTEM TO ACCOMODATE 3"
FIRE RETARDANT TREATED BLOCKING
GALVANIZED, 22 GAUGE, PRE-FINISHED SHEET METAL FLASHING GAUGE TO BE SIZED BY SUB-CONTRACTOR
5/8" FIRE RETARDANT TREATED PLYWOOD
BENT STEEL PLATE RE: STRUCTURAL
60 MIL SELF ADHERED UNDERLAYMENT UP AND OVER BLOCKING. OVERLAP EXISTING ROOF MEMBRANE TERMINATTION AT CMU WALL BEHIND R PANEL
EXISTING CONDITIONS TO BE FIELD VERIFIED.

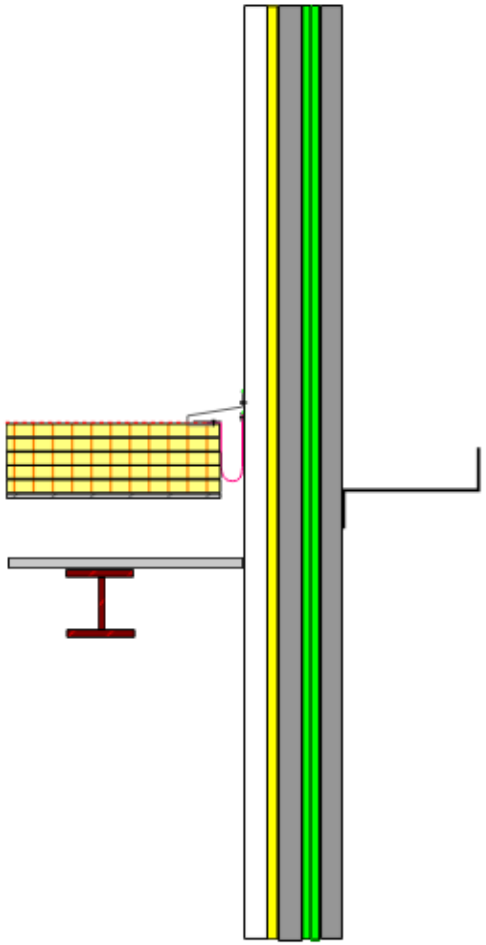

PRE-FINISHED SHEET METAL COPING SYSTEM WITH MOUNTING CLEATS BOTH SIDES
FIRE RETARDANT TREATED BLOCKING AND SHIM
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL PAN
5/8" FIRE RETARDANT TREATI SHEATHING
SELF ADHERED WEATHER BARRIER
COLD FORMED METAL FRAMING
PRE-FINISHED SHEET METAL FLASHING AND COUNTER FLASHING
STEEL CHANNEL CONNECTION RE: STRUCTURAL CONNECTION TO BE APPROVED BY PEMB VENDOR FOR LOADING. NO EXCEPTIONS
5
6
3
2
1
4
EPDM MEMBRANE
PARAGUARD EXPANSION SYSTEM TO ACCOMODATE 3"
FIRE RETARDANT TREATED BLOCKING
GALVANIZED, 22 GAUGE, PRE-FINISHED SHEET METAL FLASHING GAUGE TO BE SIZED BY SUB-CONTRACTOR
5/8" FIRE RETARDANT TREATED PLYWOOD
BENT STEEL PLATE RE: STRUCTURAL
60 MIL SELF ADHERED UNDERLAYMENT UP AND OVER BLOCKING. OVERLAP EXISTING ROOF MEMBRANE. TERMINATTION AT CMU WALL BEHIND R PANEL
EXISTING CONDITIONS TO BE FIELD VERIFIED.
EXPANSION
2'-4"
REQUESTED GROWTH
4"
CONTRACT DOCUMENTS
1 1/2"
2'-8"
FIELD VERIFY


1
2


1
2


1
2


PRE-FINISHED SHEET METAL COPING SYSTEM WITH MOUNTING CLEATS BOTH SIDES
FIRE RETARDANT TREATED BLOCKING AND SHIM
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL H PAN
5/8" FIRE RETARDANT TREATI SHEATHING
SELF ADHERED WEATHER BARRIER
COLD FORMED METAL FRAMING
PRE-FINISHED SHEET METAL FLASHING AND COUNTER FLASHING
STEEL CHANNEL CONNECTION RE: STRUCTURAL CONNECTION TO BE APPROVED BY PEMB VENDOR FOR LOADING. NO EXCEPTIONS
5
3
2
1
6
4
EPDM MEMBRANE
PARAGUARD EXPANSION SYSTEM TO ACCOMODATE 3"
FIRE RETARDANT TREATED BLOCKING
GALVANIZED, 22 GAUGE, PRE-FINISHED SHEET METAL FLASHING GAUGE TO BE SIZED BY SUB-CONTRACTOR
EXPANSION
5/8" FIRE RETARDANT TREATED PLYWOOD
BENT STEEL PLATE RE: STRUCTURAL
60 MIL SELF ADHERED UNDERLAYMENT UP AND OVER BLOCKING, OVERLAP EXISTING ROOF MEMBRANE TERMINATTION AT CMU WALL BEHIND R PANEL
EXISTING CONDITIONS TO BE FIELD VERIFIED.
2'-4"
REQUESTED GROWTH
4"
CONTRACT DOCUMENTS
1 1/2"
2'-6"
FIELD VERIFY
2'-6"



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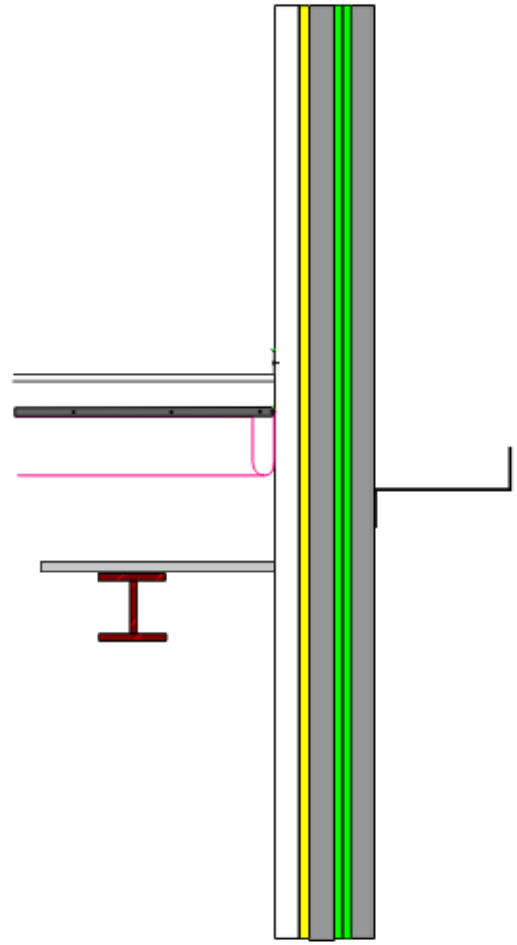

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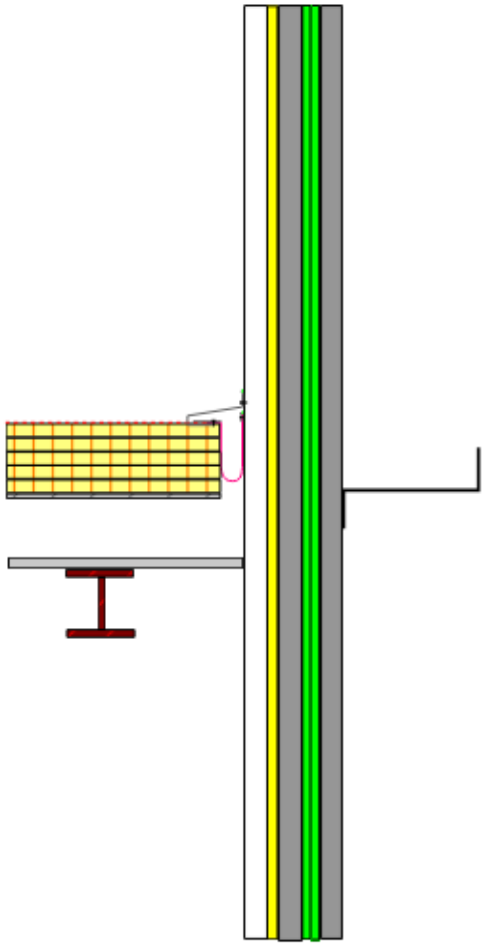

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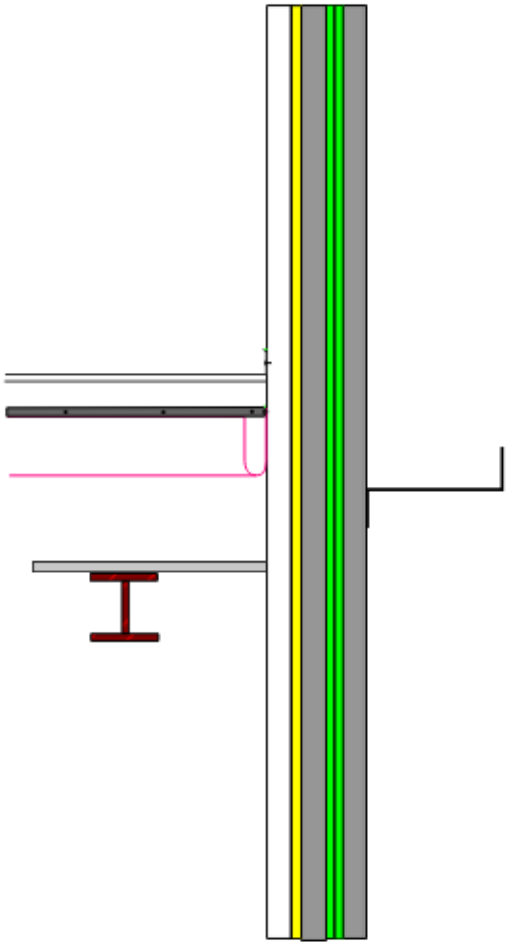
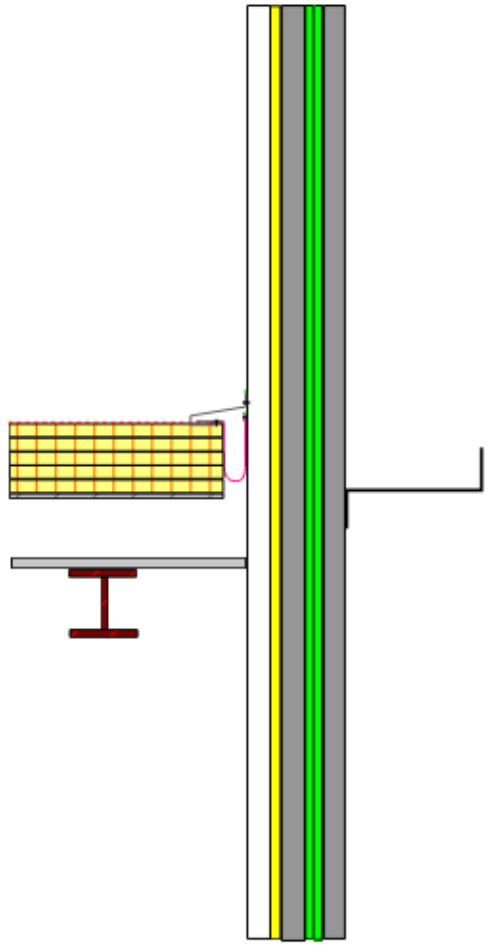
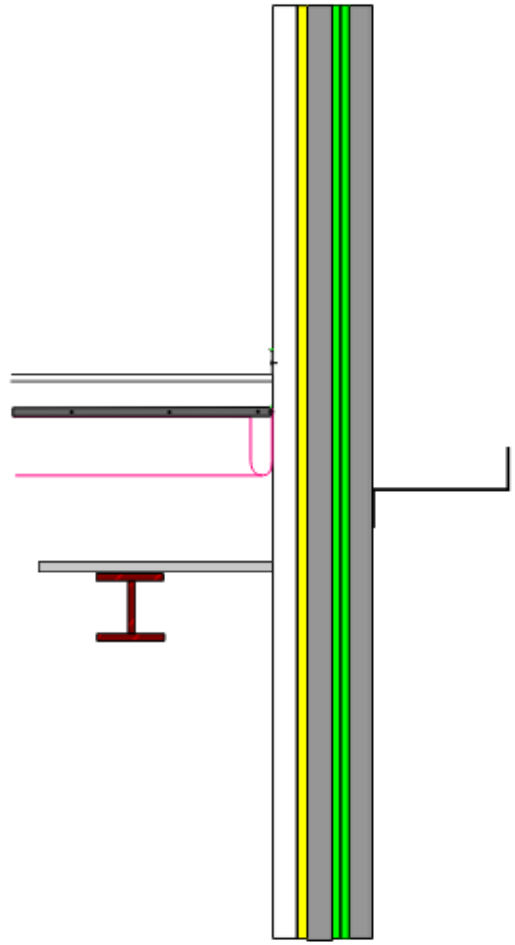


4



3



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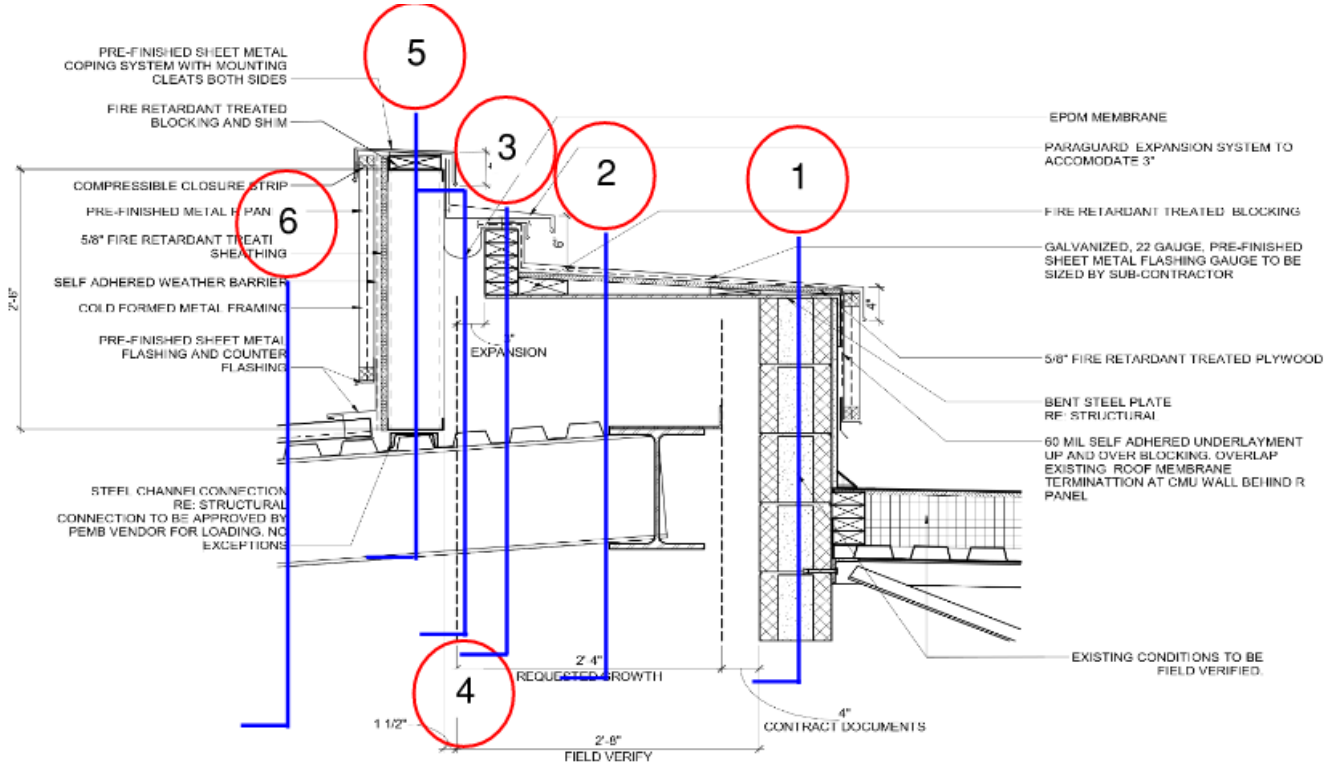
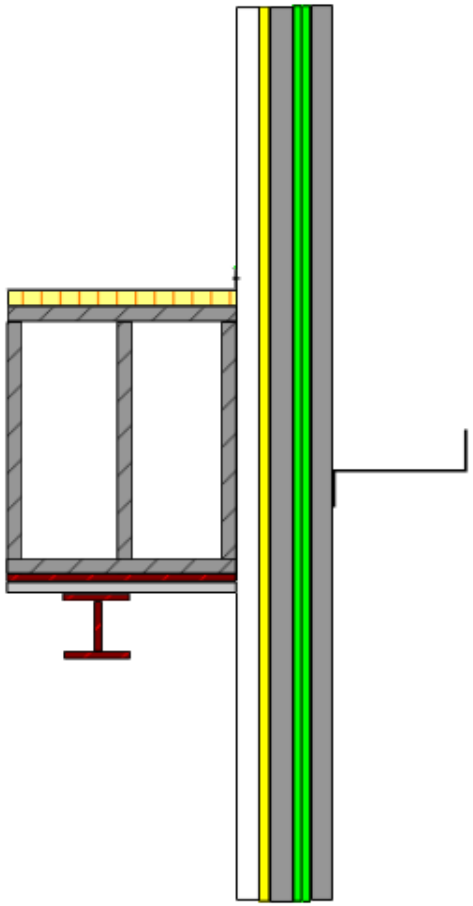

5
3
2
1
6
4
PRE-FINISHED SHEET METAL COPING SYSTEM WITH MOUNTING CLEATS BOTH SIDES
FIRE RETARDANT TREATED BLOCKING AND SHIM
COMPRESSIBLE CLOSURE STRIP
PRE-FINISHED METAL E PAN
5/8" FIRE RETARDANT TREATI SHEATHING
SELF ADHERED WEATHER BARRIER
COLD FORMED METAL FRAMING
PRE-FINISHED SHEET METAL FLASHING AND COUNTER FLASHING
STEEL CHANNEL CONNECTION RE: STRUCTURAL CONNECTION TO BE APPROVED BY PEMB VENDOR FOR LOADING. NO EXCEPTIONS
2'-6"
EXPANSION
6"
4"
2' 4"
REQUESTED GROWTH
1 1/2"
2'-8"
FIELD VERIFY
4"
CONTRACT DOCUMENTS
EPDM MEMBRANE
PARAGUARD EXPANSION SYSTEM TO ACCOMODATE 3"
FIRE RETARDANT TREATED BLOCKING
GALVANIZED, 22 GAUGE, PRE-FINISHED SHEET METAL FLASHING GAUGE TO BE SIZED BY SUB-CONTRACTOR
5/8" FIRE RETARDANT TREATED PLYWOOD
BENT STEEL PLATE RE: STRUCTURAL
60 MIL SELF ADHERED UNDERLAYMENT UP AND OVER BLOCKING. OVERLAP EXISTING ROOF MEMBRANE. TERMINATTION AT CMU WALL BEHIND R PANEL
EXISTING CONDITIONS TO BE FIELD VERIFIED.



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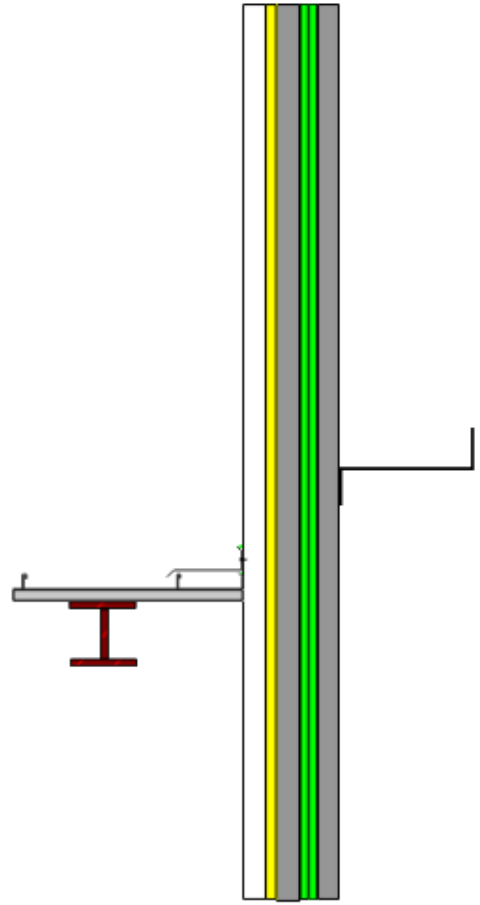

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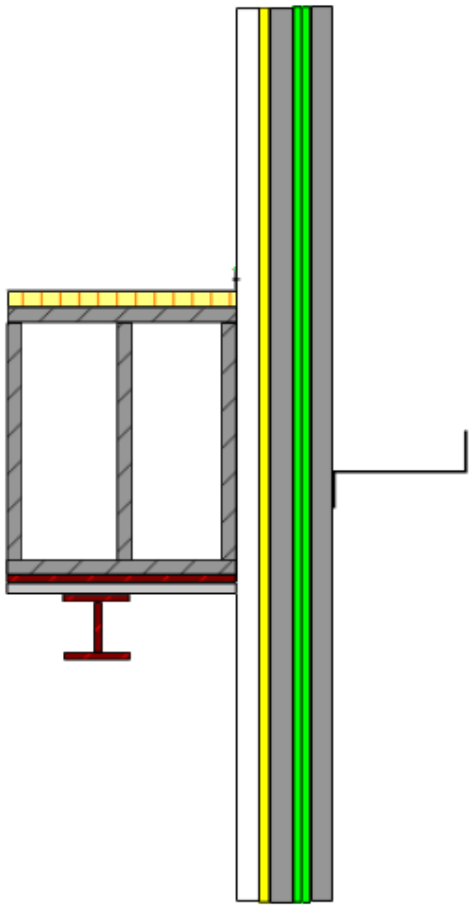

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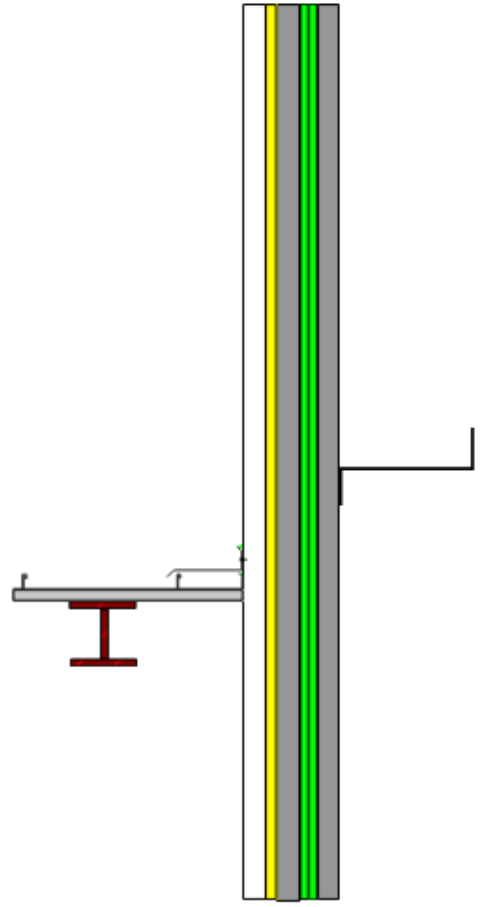

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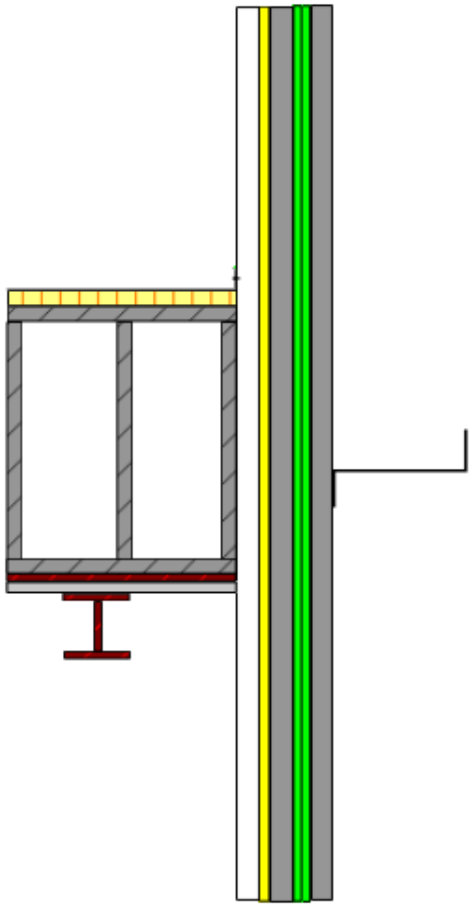

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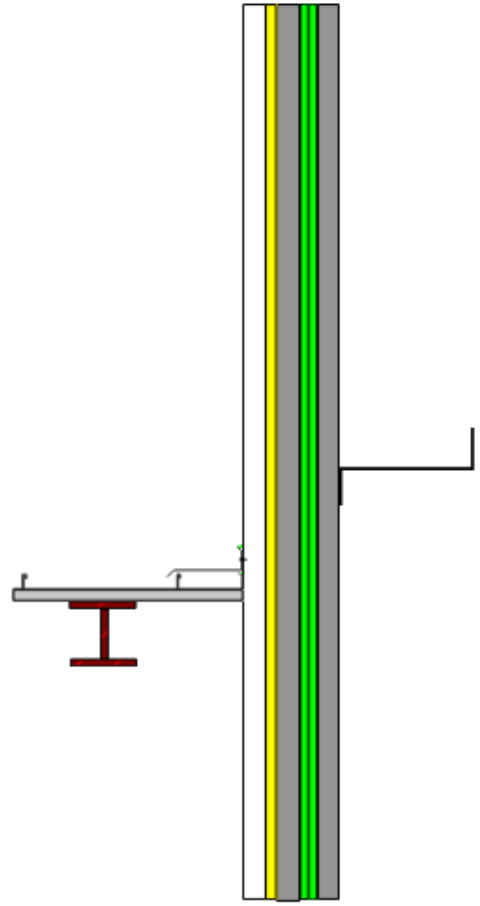

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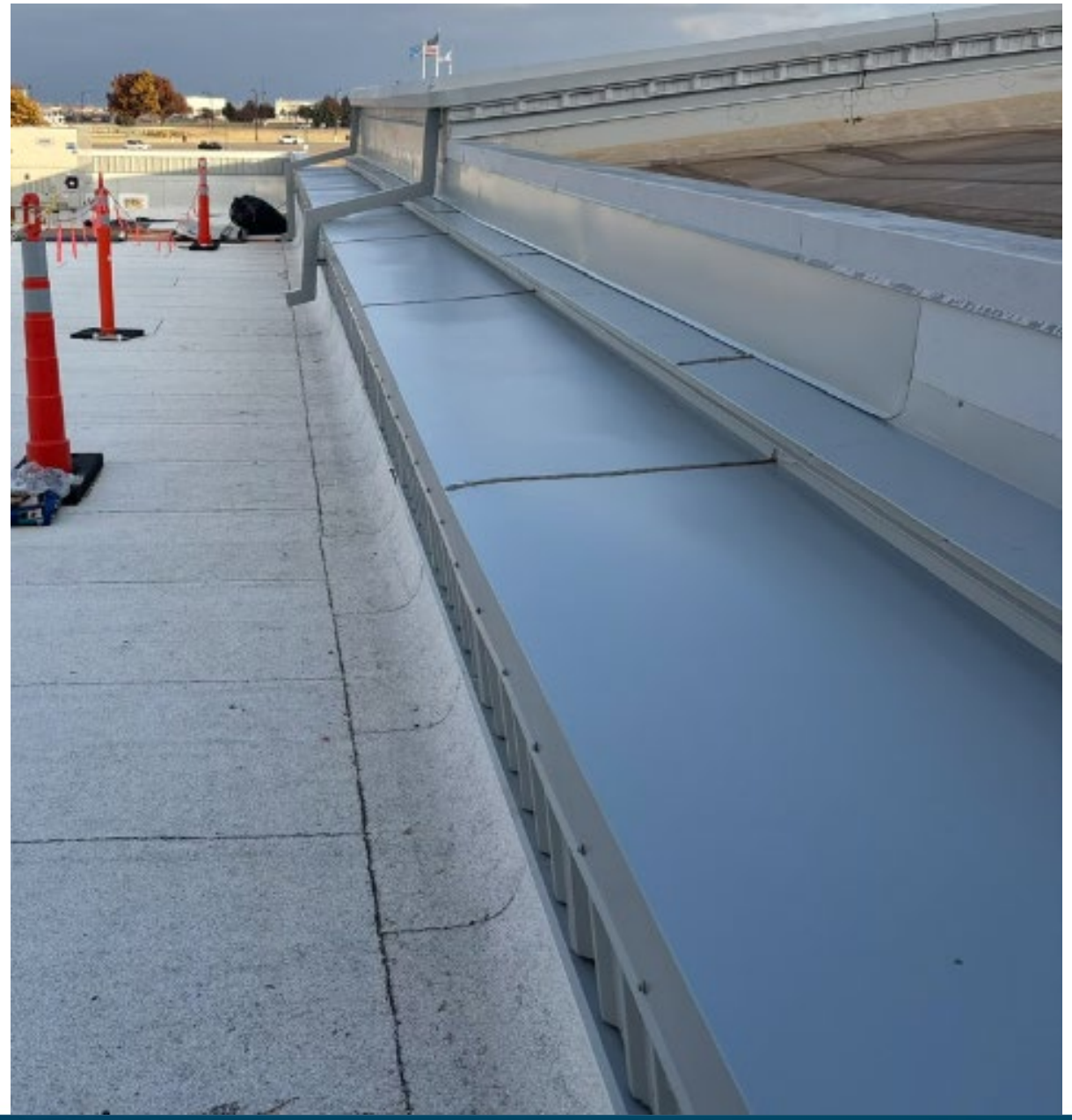
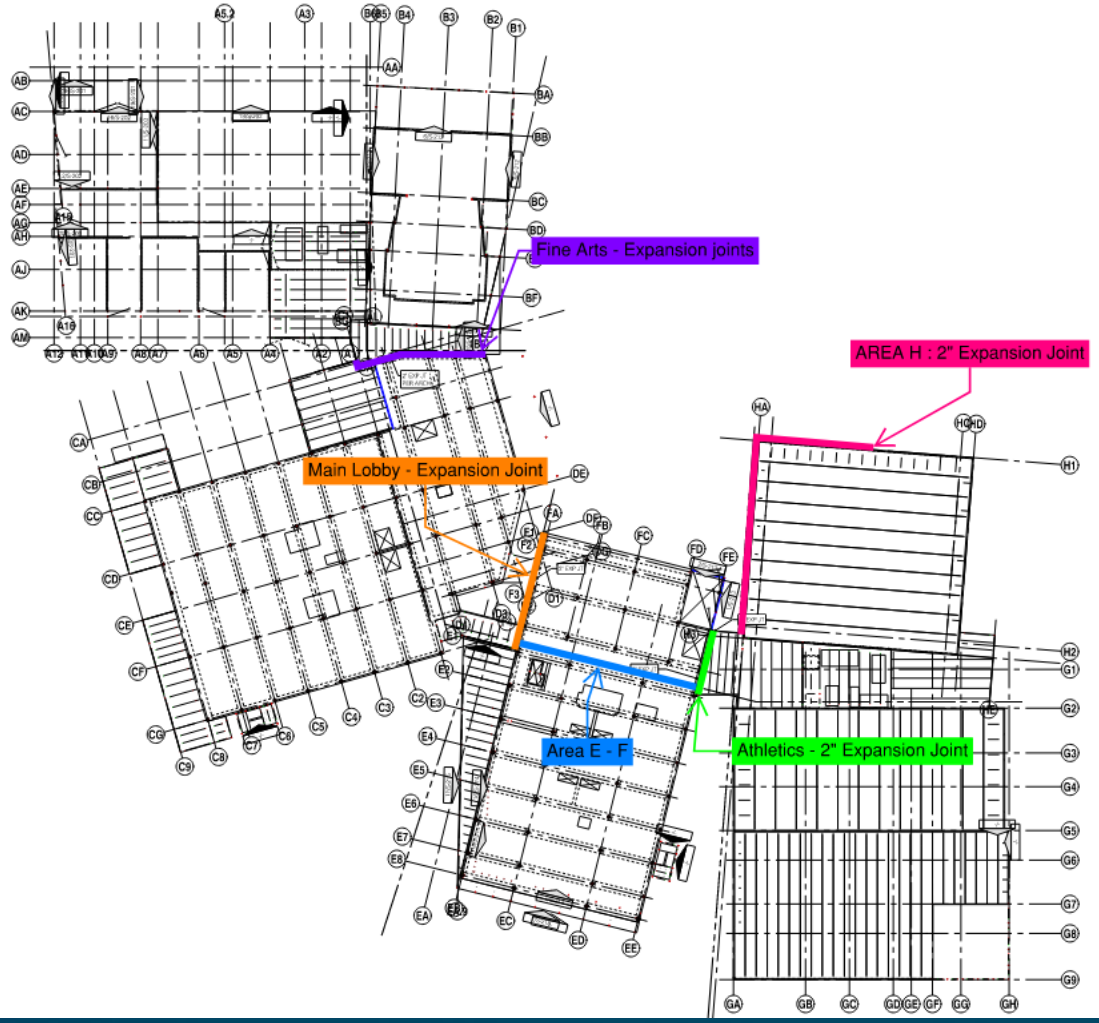
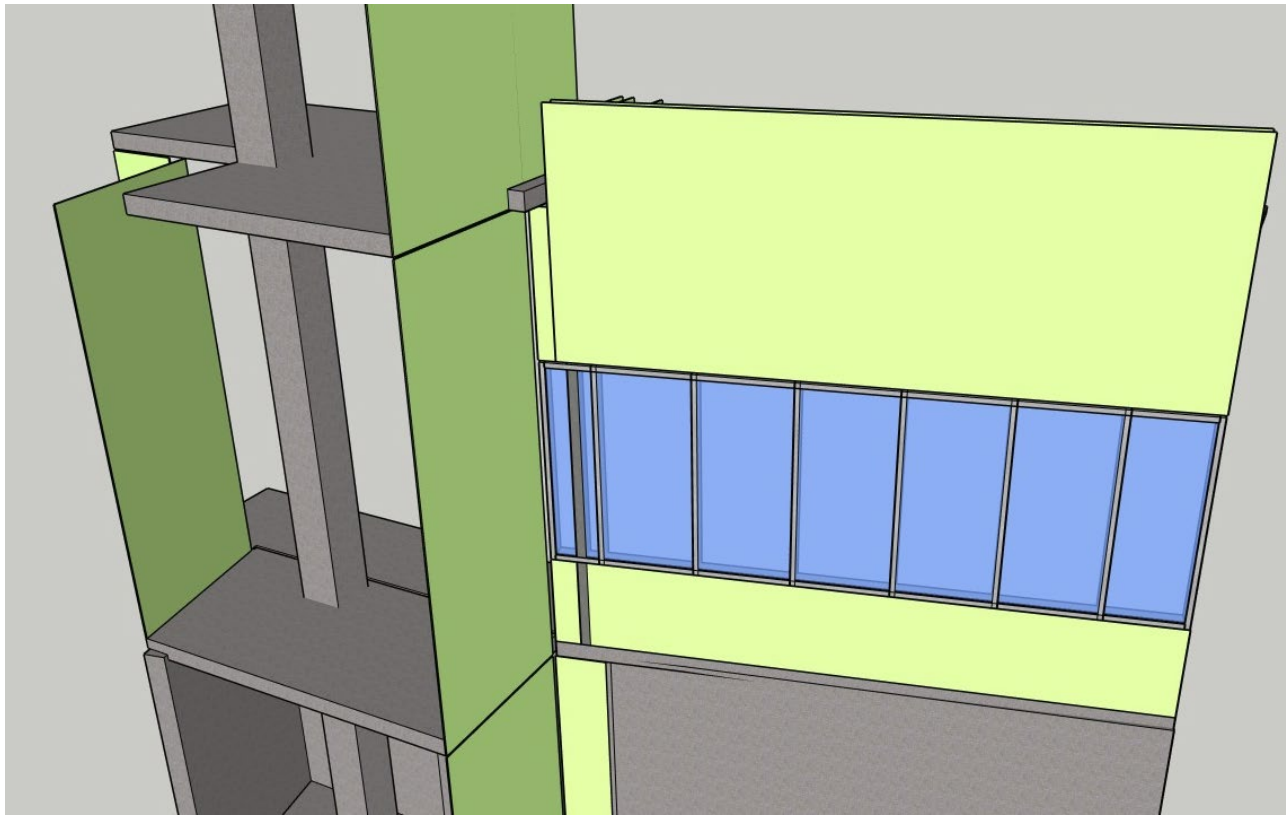


High School Project

- Project Details:
- $215 Million Dollar Early College High School for 1,800 students.
- Modernization project with culinary school, fine arts center, technical education spaces, indoor and outdoor athletics.
- College readiness and workforce pathway school.
- Expansion Joints to separate (4) different structures.
- Constructability Review identified Expansion Joint issues.
- Currently (10) total Expansion Joint RFI's during construction.

High School Project





Summary: Key Takeaways

1. **Expansion Joints Are Essential for Building Integrity** – They relieve stress from thermal movement, wind sway, seismic events, and settlement, allowing structures to move independently without damage.
2. **Design Must Go Beyond Joint Sizing** – Fire integrity, hygiene, waterproofing, acoustics, and ADA accessibility all factor into proper expansion joint specification.
3. **Early Preconstruction Coordination Prevents Costly Surprises** – Verify locations and sizes across all drawing sets, confirm performance criteria, and buy out during preconstruction to minimize change orders.
4. **Missing Details Drive Risk and Change Orders** – Incomplete design information forces trade partners into guesstimates, creates warranty confusion, and leads to substrate and installation problems in the field.
5. **Constructability Reviews Catch Issues – But Earlier Is Better** – Significant issues surface during construction. Consider treating Expansion Joints as a design assist or a delegated design system.

Q&A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