



# HORRY COUNTY SCHOOLS

## WATERWAY ES ROOFING RENOVATION

CONSTRUCTION DOCUMENTS

01/06/22

LS3P PROJECT # 2201-218720

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#### Reviewed For Code Compliance

These Construction Documents (Plans and Specifications) have been reviewed for Code Compliance. Any changes or alterations shall be approved by the South Carolina Office of School Facilities (OSF). This review does not relieve the design professional representing the school district (Owner) from code omissions as interpreted by OSF. The Owner, Design Professional, Contractor, and their representatives are responsible for complying with all OSF Regulations and Local, State and National Codes and Standards in effect at the time of the Building Permit issuance. This plan review does not prevent OSF from requiring corrections during construction to meet code requirements.

SCDE Project Number: 2022-932-OSF

Stamped Plans and Specifications are required to be on site for inspections.

Plan Reviewer: M. Dennis Knight, P.E. \_\_\_\_\_ Date: 2/7/2022

**Whole Building Systems, LLC**, under contract to the **SC Department of Education - Office of School Facilities** Electronic Stamp



#### ARCHITECTS

LS3P ASSOCIATES LTD.  
701-A Lady St.,  
Columbia, SC 29201  
tel: 803-765-2418  
fax: 803-765-2419

#### BUILDING ENVELOPE

WM BUILDING ENVELOPE CONSULTANTS, LLC  
512 Limestone Point  
Chapin, SC 29036  
tel: 803-260-4532

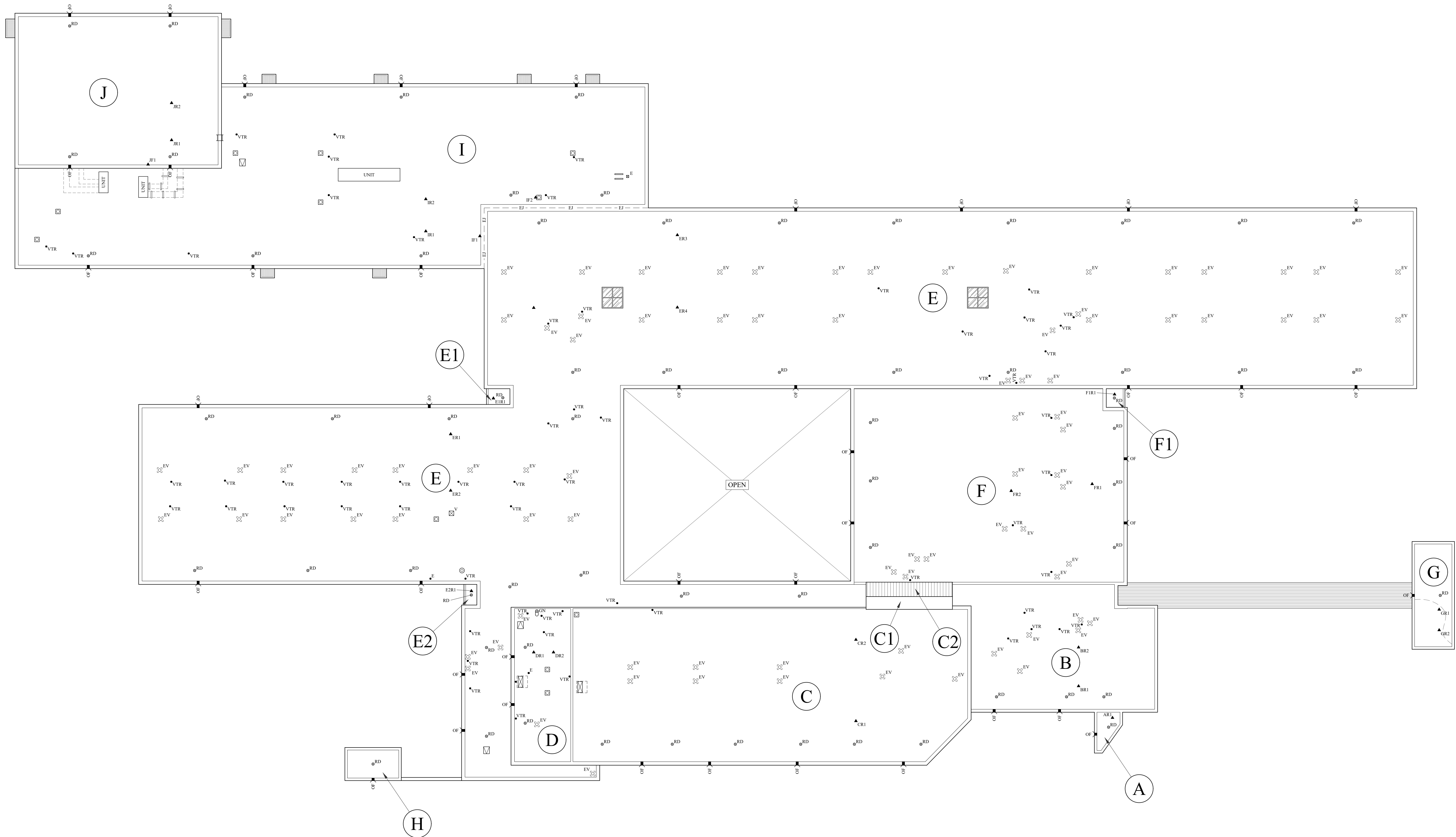
#### PLUMB./MECH./ELEC./FP

BUFORD GOFF AND ASSOCIATES, INC.  
1331 Elmwood Ave., Suite 200  
Columbia, SC 29201  
tel: 803-254-6302  
fax: 803-771-6142

P:\CAEL\_EDU\201\2201-218720 Waterway ES (WWE) Roofing\2.0 Design\Drawings\Arch\_Waterway ES Roofing Renovation\_2020.rvt  
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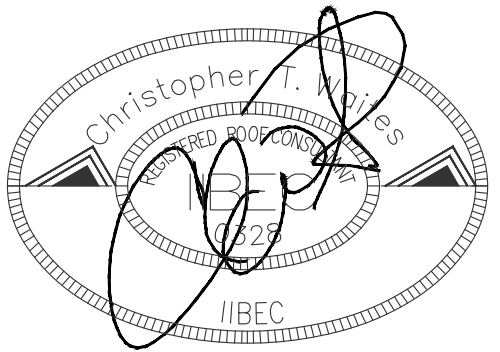
1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
2. SEE SHEET 401 "OVERALL EXISTING ROOF PLAN (IR SCAN)" FOR APPROXIMATE LOCATIONS MOISTURE WAS DETECTED DURING INFRARED SCAN
3. SEE "PARTIAL EXISTING ROOF PLAN" SHEETS FOR EXISTING ROOF CORE SUMMARY.



WATERWAY ES  
ROOFING  
RENOVATION



701-A LADY STREET COLUMBIA SC 29201  
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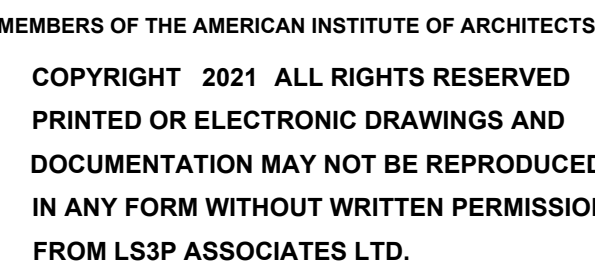
REVISIONS:

No.	Description	Date

PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
CHECKED BY: CW

OVERALL  
EXISTING ROOF  
PLAN

A-400



PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
CHECKED BY: CW

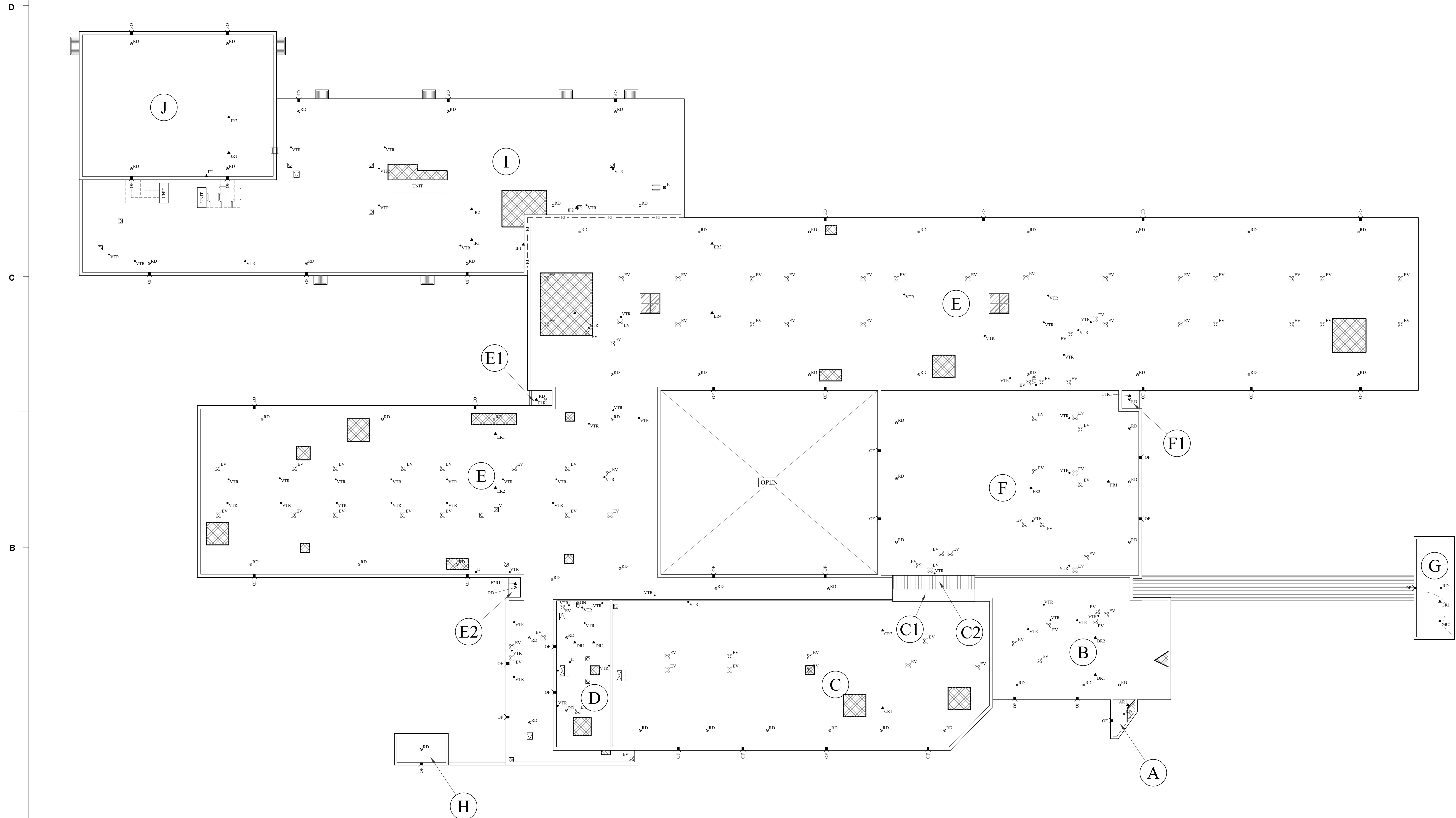
**OVERALL  
EXISTING ROOF  
PLAN (IR SCAN)**

# A-401

NOTES:

1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
2. SEE "PARTIAL EXISTING ROOF PLAN" SHEETS FOR EXISTING ROOF CORE SUMMARY.

 = APPROXIMATE LOCATIONS WHERE MOISTURE WAS DETECTED DURING INFRARED SCAN



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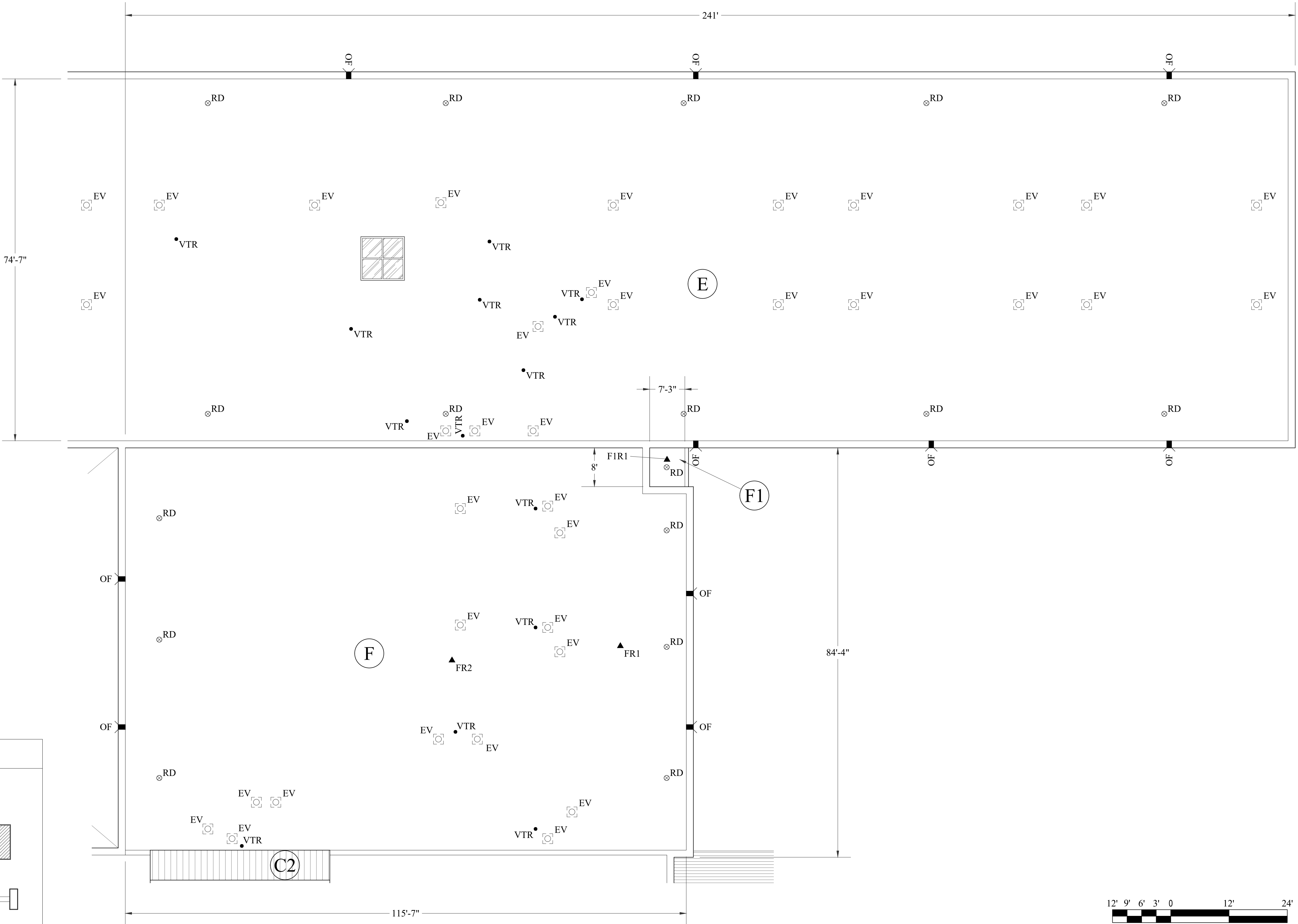
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
- ALL EQUIPMENT TO HAVE A MINIMUM BASE FLASHING HEIGHT OF 8" OR GREATER FROM TOP OF FINISH ROOF SURFACE.

EXISTING ROOF CORE SUMMARY

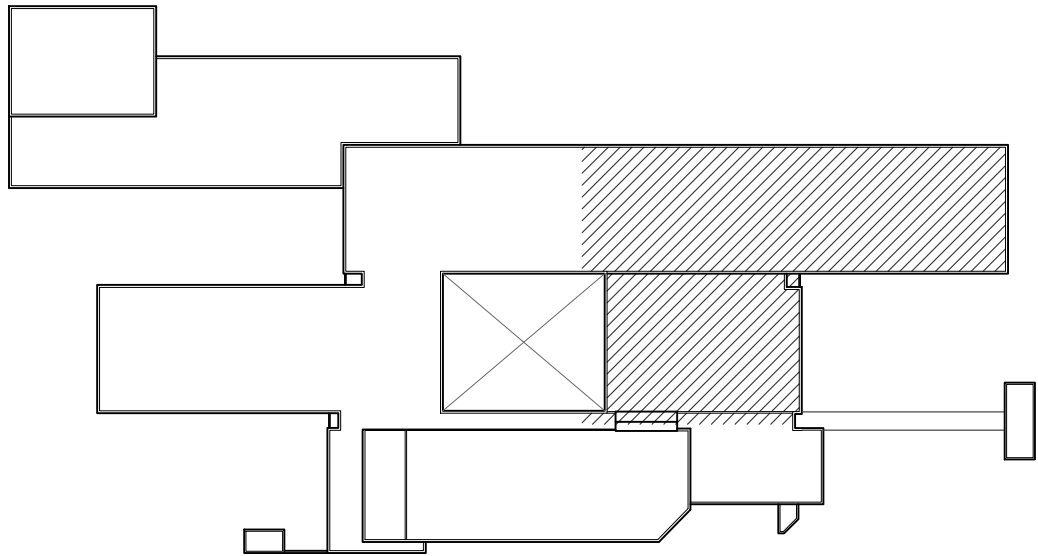
▲ XRX	CORE NUMBER AND IDENTIFIER
▲ XFX	FLASHING NUMBER AND IDENTIFIER
FR1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
FR2	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"

DRAWING LEGEND

⊗ RD	ROOF DRAIN	⊙	STACK	--- EJ ---	EXPANSION JOINT		MECHANICAL EQUIPMENT WITH DUCT PENETRATION
▣ OF	OVERFLOW SCUPPER	⊠	VENTILATOR		METAL ROOF SYSTEM	=====	PARAPET WALL
• VTR	VENT THROUGH ROOF	⊠ GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT	==	EQUIPMENT SUPPORT CURB
⊠ EV	EXHAUST VENT	⊠	ROOF HATCH		SLOPE ARROW	⊗ XX	ROOF DESIGNATION
• E	ELECTRICAL PENETRATION / PITCH PAN	UNIT	MECHANICAL UNIT / HVAC				



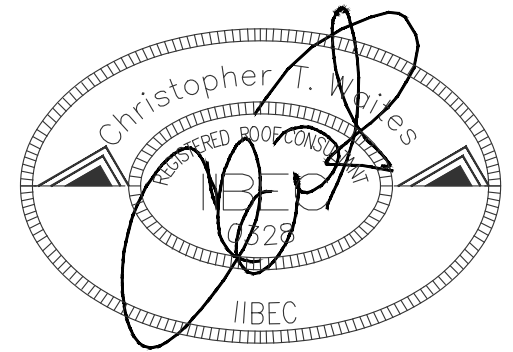
KEY PLAN



WATERWAY ES  
ROOFING  
RENOVATION



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No.	Description	Date

PROJECT: 2201-218720  
DATE: 01/06/22  
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PARTIAL EXISTING  
ROOF PLAN

A-501

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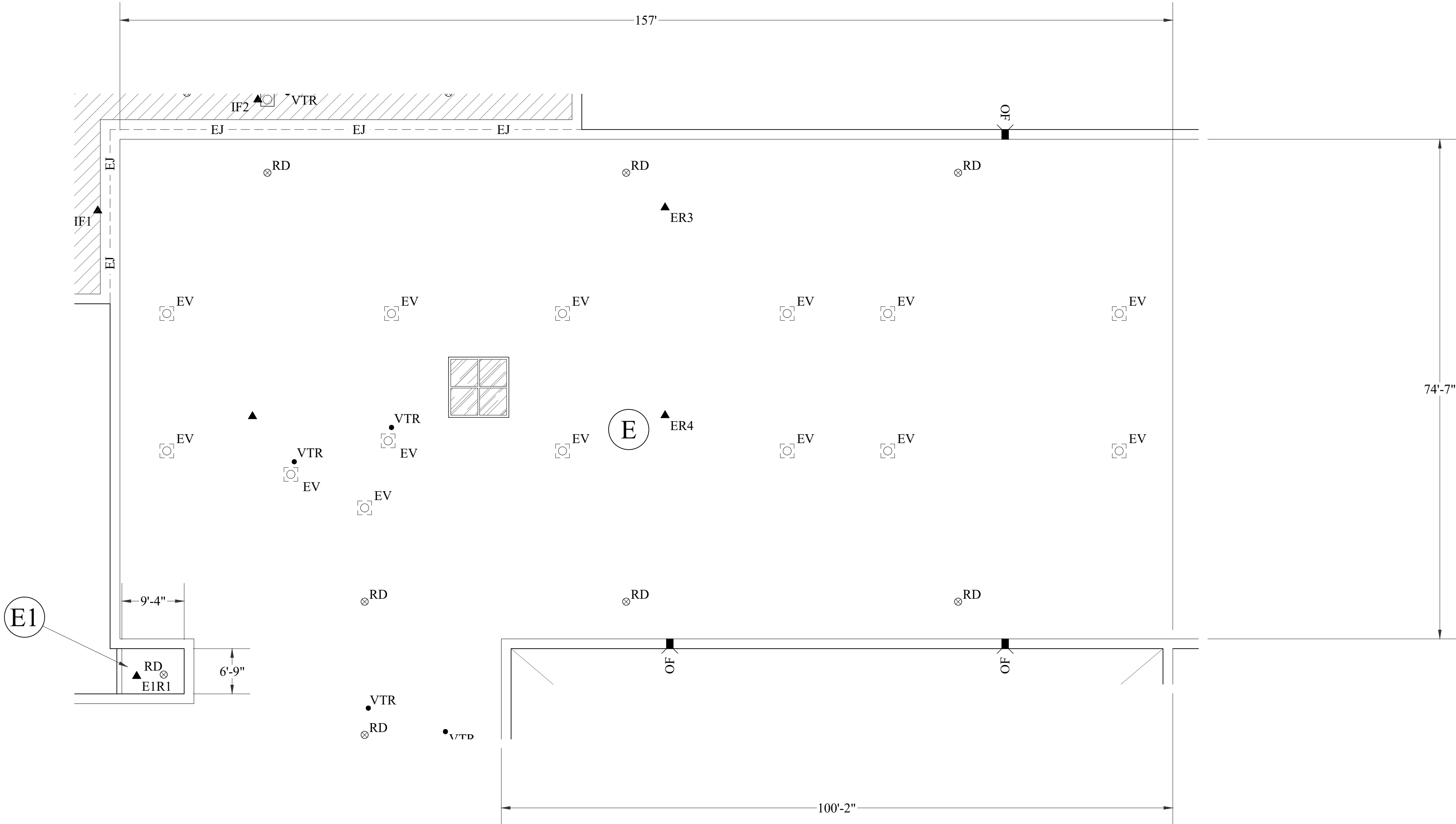
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
- ALL EQUIPMENT TO HAVE A MINIMUM BASE FLASHING HEIGHT OF 8" OR GREATER FROM TOP OF FINISH ROOF SURFACE.

EXISTING ROOF CORE SUMMARY

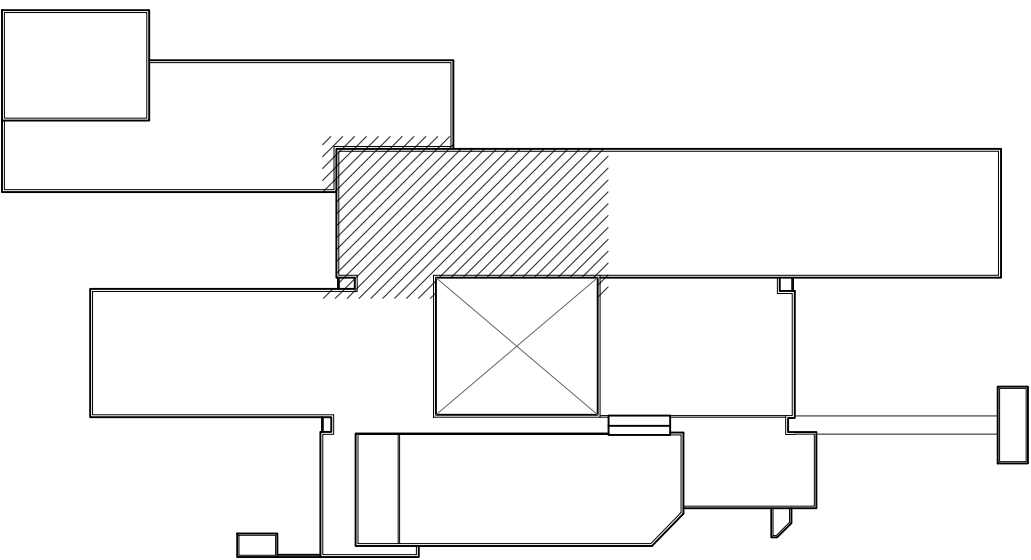
▲ XRX	CORE NUMBER AND IDENTIFIER
▲ XFX	FLASHING NUMBER AND IDENTIFIER
ER3	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
ER4	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"

DRAWING LEGEND

⊙ RD	ROOF DRAIN	⊙	STACK	--- EJ ---	EXPANSION JOINT		MECHANICAL EQUIPMENT WITH DUCT PENETRATION
▣ OF	OVERFLOW SCUPPER	□	VENTILATOR		METAL ROOF SYSTEM	=====	PARAPET WALL
• VTR	VENT THROUGH ROOF	⊠ GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT	=====	EQUIPMENT SUPPORT CURB
⊠ EV	EXHAUST VENT	▣	ROOF HATCH		SLOPE ARROW	⊗ XX	ROOF DESIGNATION
• E	ELECTRICAL PENETRATION / PITCH PAN	UNIT	MECHANICAL UNIT / HVAC				



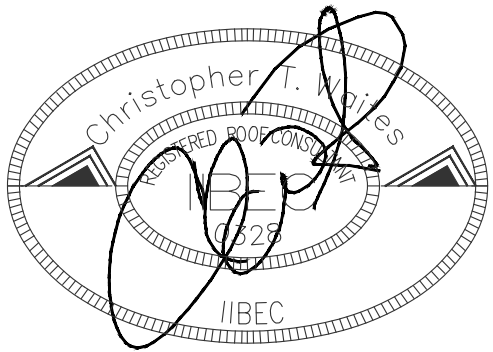
KEY PLAN



WATERWAY ES  
ROOFING  
RENOVATION



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No.	Description	Date

PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
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PARTIAL EXISTING  
ROOF PLAN

A-502

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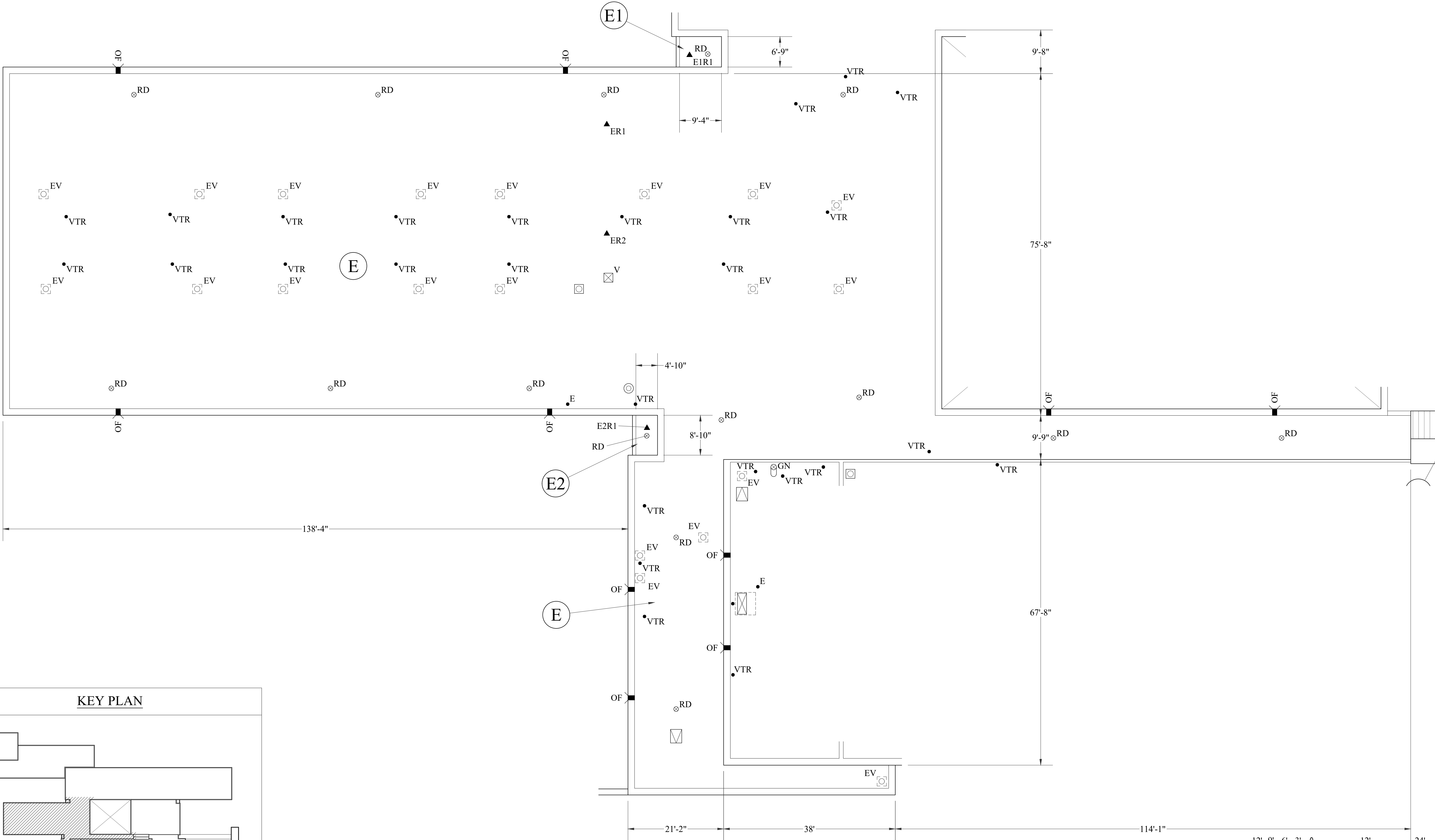
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
- ALL EQUIPMENT TO HAVE A MINIMUM BASE FLASHING HEIGHT OF 8" OR GREATER FROM TOP OF FINISH ROOF SURFACE.

EXISTING ROOF CORE SUMMARY

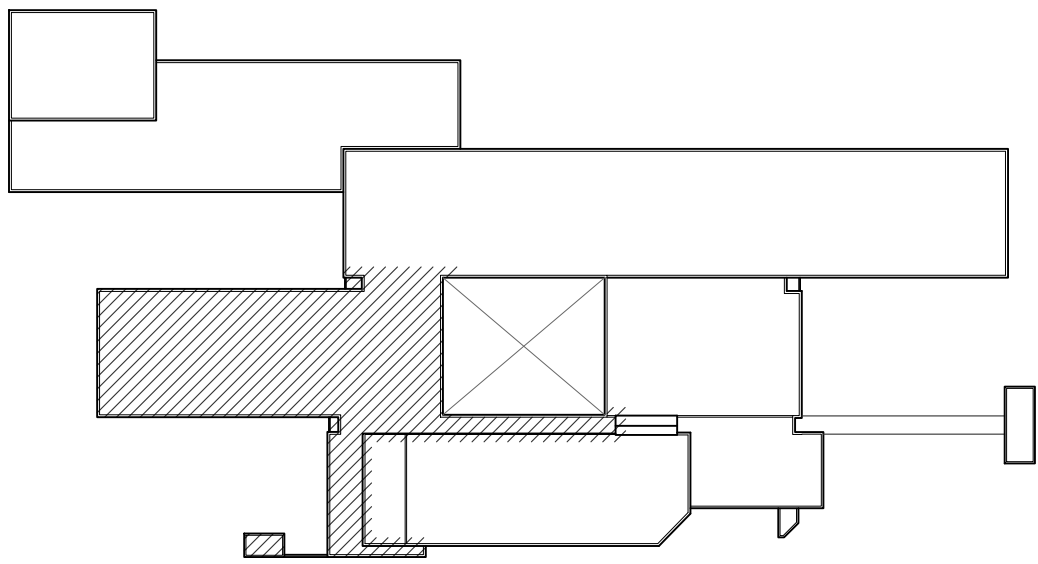
▲ XRX	CORE NUMBER AND IDENTIFIER
▲ XFX	FLASHING NUMBER AND IDENTIFIER
ER1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
ER2	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"

DRAWING LEGEND

⊗ RD	ROOF DRAIN	⊙	STACK	--- EJ ---	EXPANSION JOINT		MECHANICAL EQUIPMENT WITH DUCT PENETRATION
▣ OF	OVERFLOW SCUPPER	⊠	VENTILATOR		METAL ROOF SYSTEM	=====	PARAPET WALL
• VTR	VENT THROUGH ROOF	⊠ GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT	=====	EQUIPMENT SUPPORT CURB
⊠ EV	EXHAUST VENT	⊠	ROOF HATCH		SLOPE ARROW	⊗ XX	ROOF DESIGNATION
• E	ELECTRICAL PENETRATION / PITCH PAN	UNIT	MECHANICAL UNIT / HVAC				



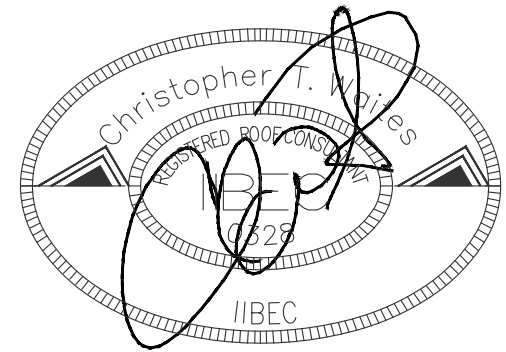
KEY PLAN



WATERWAY ES  
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No.	Description	Date
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PROJECT: 2201-218720  
DATE: 01/06/22  
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PARTIAL EXISTING  
ROOF PLAN

A-503

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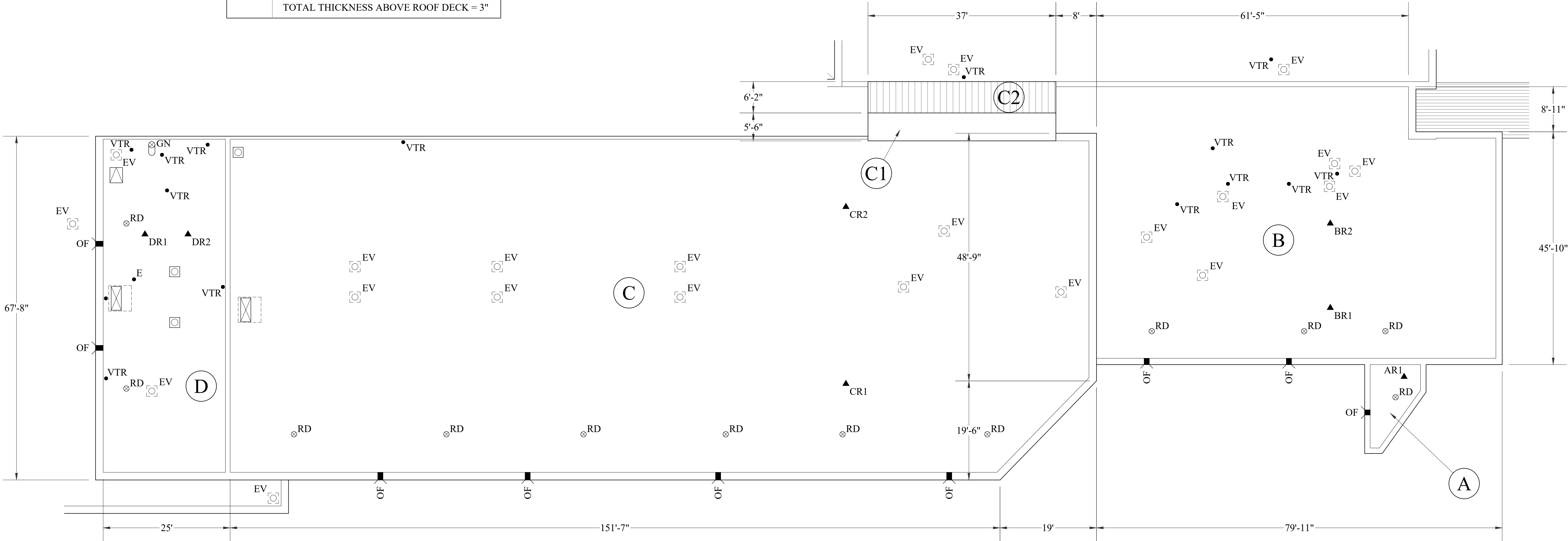
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
- ALL EQUIPMENT TO HAVE A MINIMUM BASE FLASHING HEIGHT OF 8" OR GREATER FROM TOP OF FINISH ROOF SURFACE.

EXISTING ROOF CORE SUMMARY

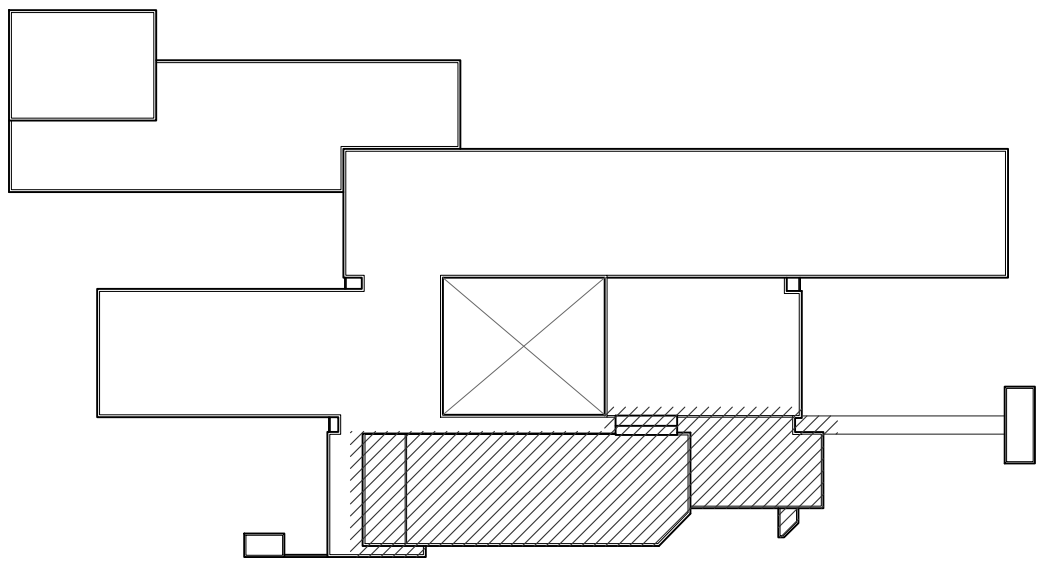
▲ XRX	CORE NUMBER AND IDENTIFIER
▲ XFX	FLASHING NUMBER AND IDENTIFIER
BR1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
BR2	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
CR1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
CR2	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
DR1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
DR2	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"

DRAWING LEGEND

⊙ RD	ROOF DRAIN	⊙	STACK	--- EJ ---	EXPANSION JOINT		MECHANICAL EQUIPMENT WITH DUCT PENETRATION
▣ OF	OVERFLOW SCUPPER	□	VENTILATOR		METAL ROOF SYSTEM	=====	PARAPET WALL
• VTR	VENT THROUGH ROOF	⊠ GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT	=====	EQUIPMENT SUPPORT CURB
⊠ EV	EXHAUST VENT	▣	ROOF HATCH		SLOPE ARROW	⊗ XX	ROOF DESIGNATION
• E	ELECTRICAL PENETRATION / PITCH PAN	UNIT	MECHANICAL UNIT / HVAC				



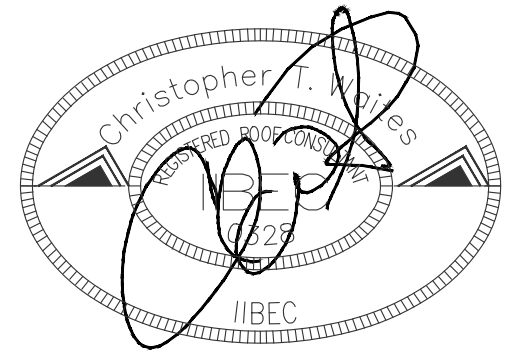
KEY PLAN



WATERWAY ES  
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No.	Description	Date
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PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
CHECKED BY: CW

PARTIAL EXISTING  
ROOF PLAN

A-504

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

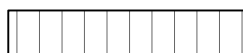



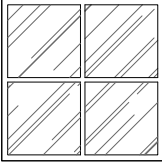







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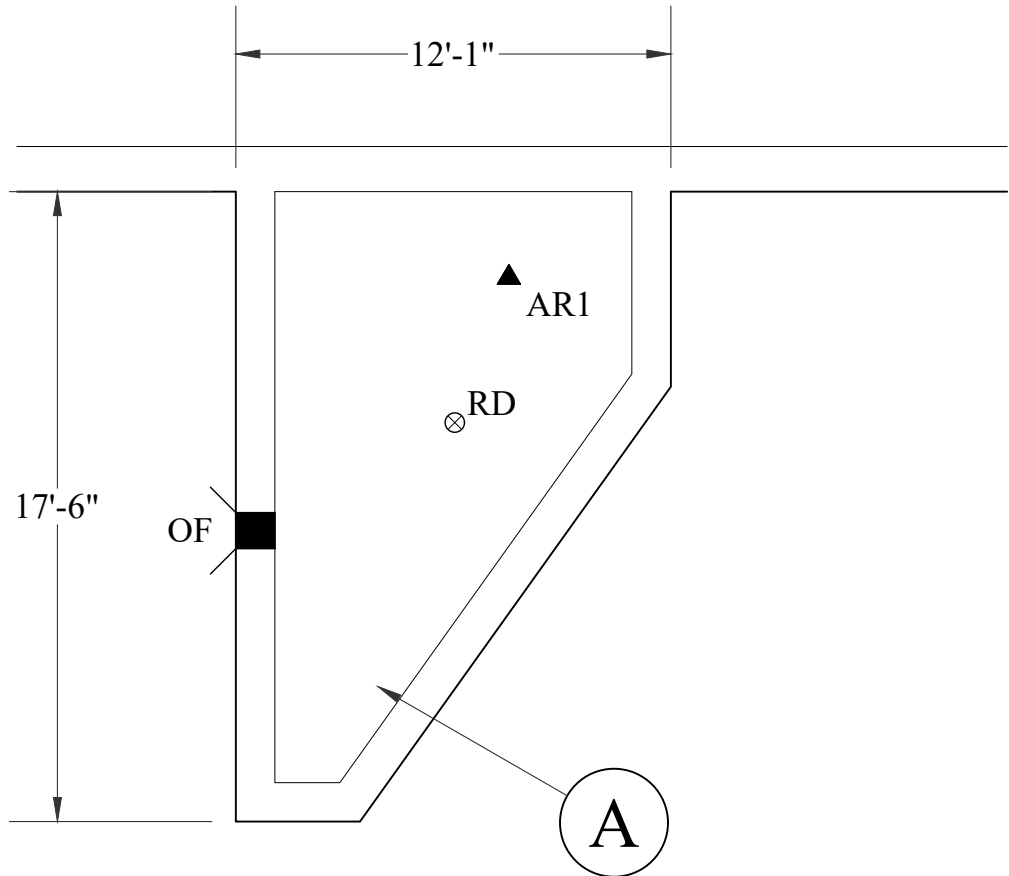
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
- ALL EQUIPMENT TO HAVE A MINIMUM BASE FLASHING HEIGHT OF 8" OR GREATER FROM TOP OF FINISH ROOF SURFACE.

EXISTING ROOF CORE SUMMARY

▲ XRX	CORE NUMBER AND IDENTIFIER
▲ XFX	FLASHING NUMBER AND IDENTIFIER
AR1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
E1R1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
E2R1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
F1R1	SINGLE PLY MEMBRANE POLYISOCYANURATE 5" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 5"

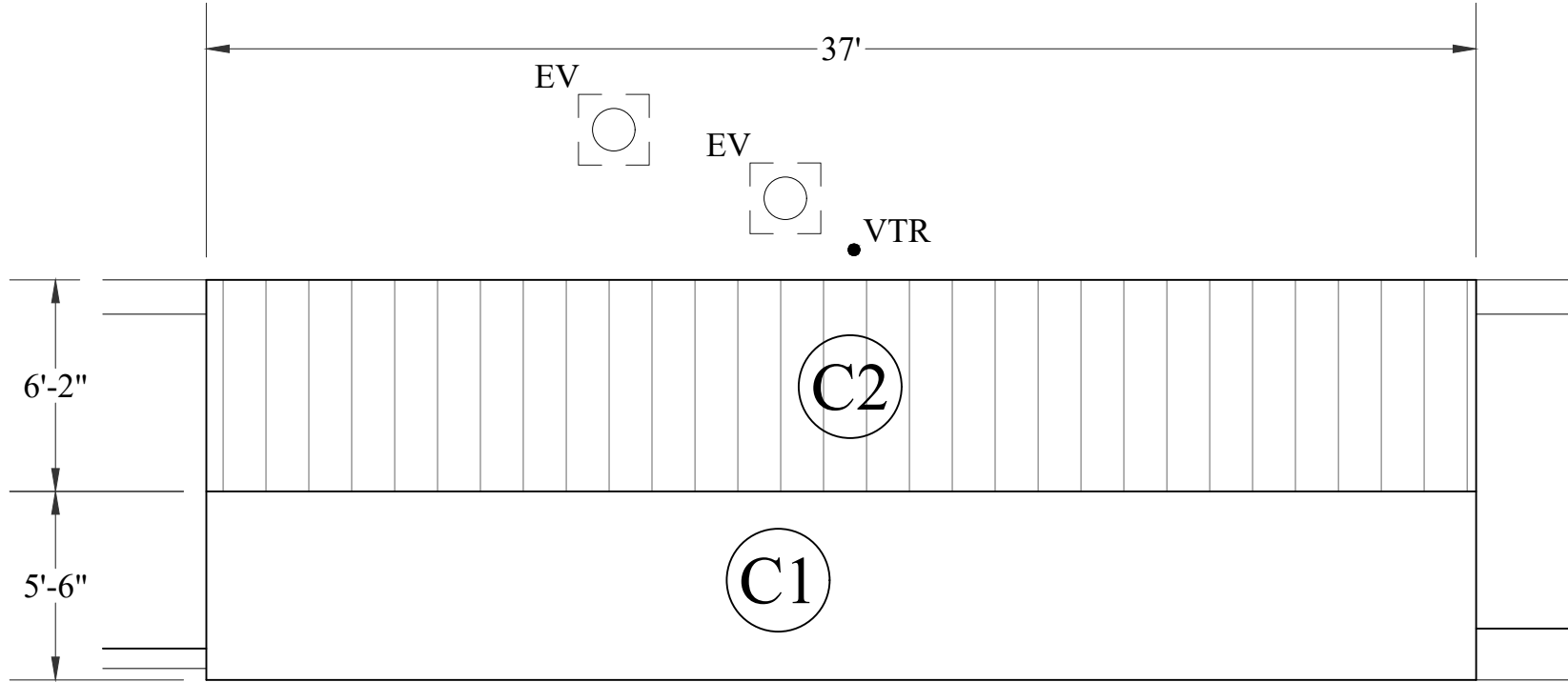
DRAWING LEGEND

 RD	ROOF DRAIN	 STACK		 EJ	EXPANSION JOINT		MECHANICAL EQUIPMENT WITH DUCT PENETRATION
 OF	OVERFLOW SCUPPER	 VENTILATOR			METAL ROOF SYSTEM		PARAPET WALL
 VTR	VENT THROUGH ROOF	 GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT		EQUIPMENT SUPPORT CURB
 EV	EXHAUST VENT		ROOF HATCH		SLOPE ARROW		ROOF DESIGNATION
 E	ELECTRICAL PENETRATION / PITCH PAN		UNIT MECHANICAL UNIT / HVAC				



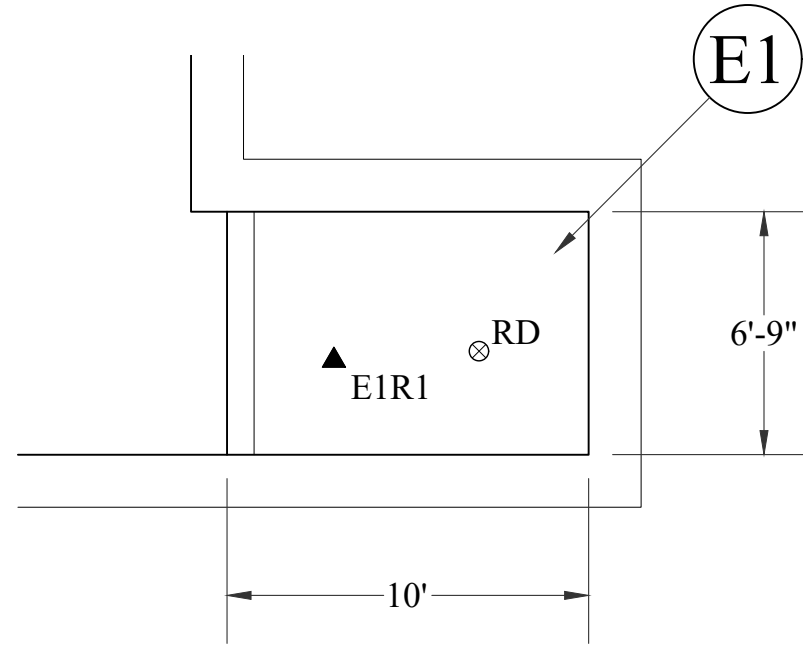
A  
A-505  
3/16" = 1'-0"

PARTIAL ROOF PLAN - AREA "A"



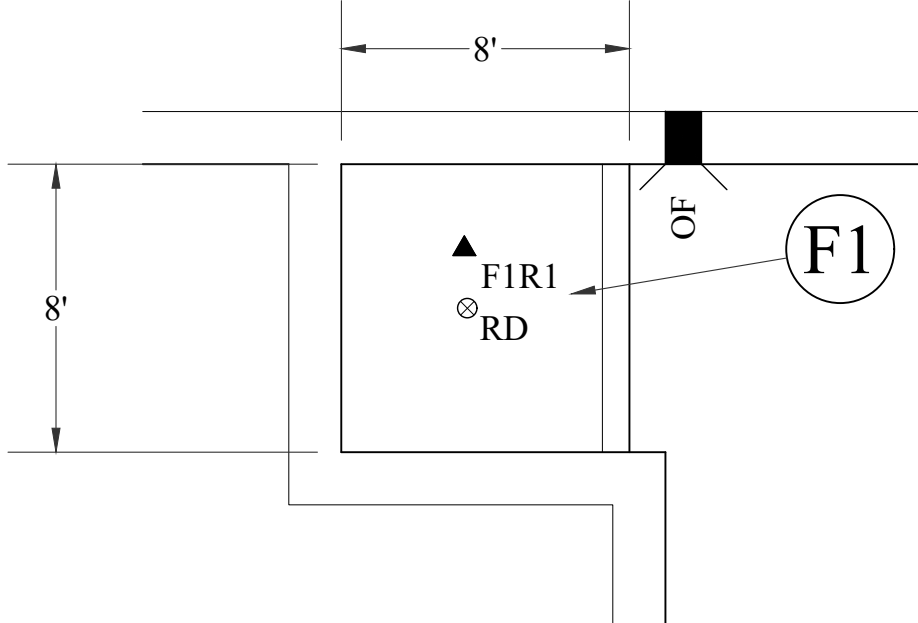
B  
A-505  
3/16" = 1'-0"

PARTIAL ROOF PLAN - AREA "C1" AND "C2"



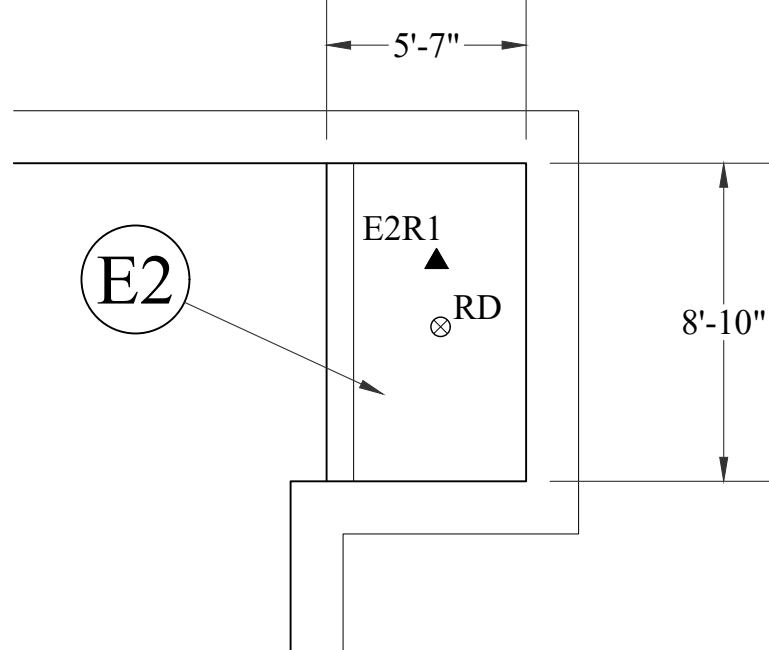
C  
A-505  
3/16" = 1'-0"

PARTIAL ROOF PLAN - AREA "E1"



D  
A-505  
3/16" = 1'-0"

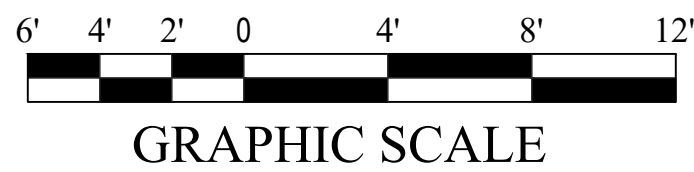
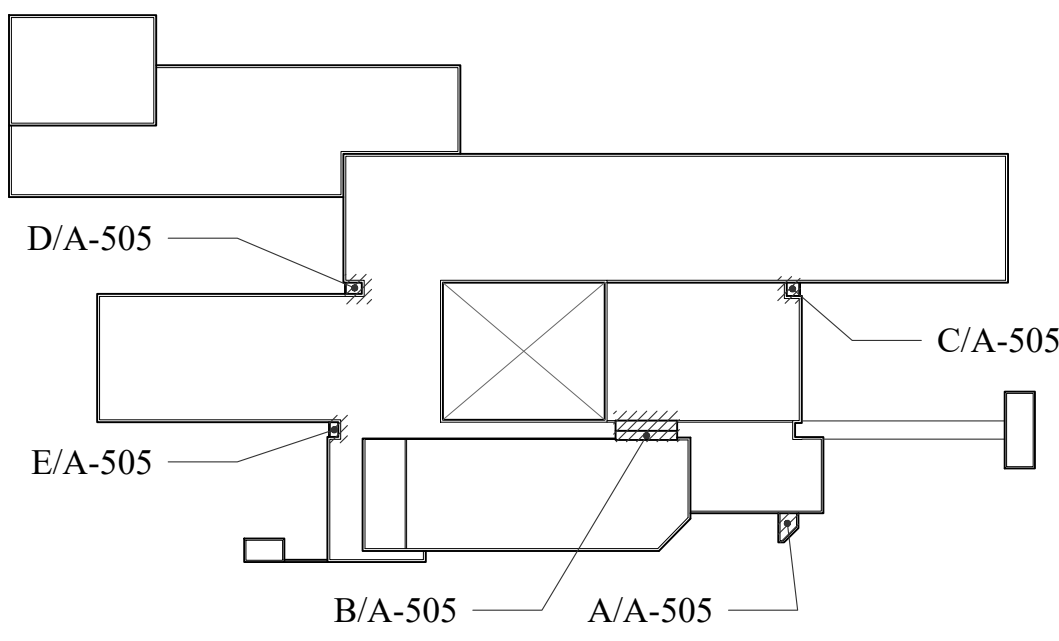
PARTIAL ROOF PLAN - AREA "F1"



E  
A-505  
3/16" = 1'-0"

PARTIAL ROOF PLAN - AREA "E2"

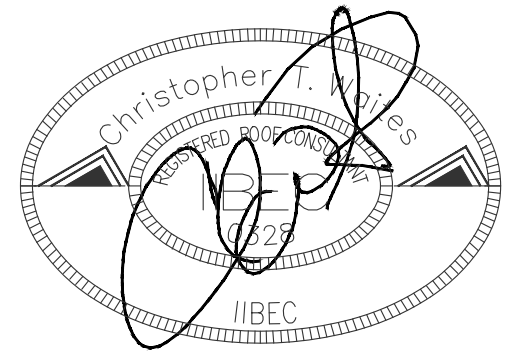
KEY PLAN



WATERWAY ES  
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PARTIAL EXISTING  
ROOF PLANS




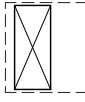






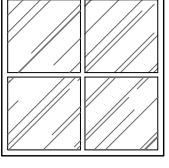







A-505

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NOTES:

- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
- ALL EQUIPMENT TO HAVE A MINIMUM BASE FLASHING HEIGHT OF 8" OR GREATER FROM TOP OF FINISH ROOF SURFACE.

DRAWING LEGEND

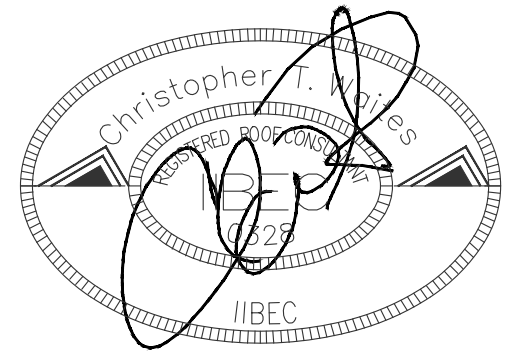
 RD	ROOF DRAIN	 STACK	 EJ EXPANSION JOINT	 MECHANICAL EQUIPMENT WITH DUCT PENETRATION
 OF	OVERFLOW SCUPPER	 VENTILATOR	 METAL ROOF SYSTEM	 PARAPET WALL
 VTR	VENT THROUGH ROOF	 GN GOOSE NECK / HOOD PENETRATION	 SKY LIGHT	 EQUIPMENT SUPPORT CURB
 EV	EXHAUST VENT	 ROOF HATCH	 SLOPE ARROW	 XX ROOF DESIGNATION
 E	ELECTRICAL PENETRATION / PITCH PAN	 UNIT MECHANICAL UNIT / HVAC		



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EXISTING ROOF CORE  
SUMMARY

▲ XRX	CORE NUMBER AND IDENTIFIER
▲ XFX	FLASHING NUMBER AND IDENTIFIER
IR1	GBUR PERLITE 3/4" POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 4"
IR2	GBUR PERLITE 3/4" POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 4"
JR1	GBUR PERLITE 3/4" POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 4"
JR2	GBUR PERLITE 3/4" POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 4"

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PARTIAL EXISTING  
ROOF PLAN

A-506

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

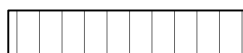
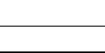


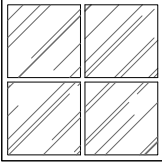
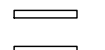





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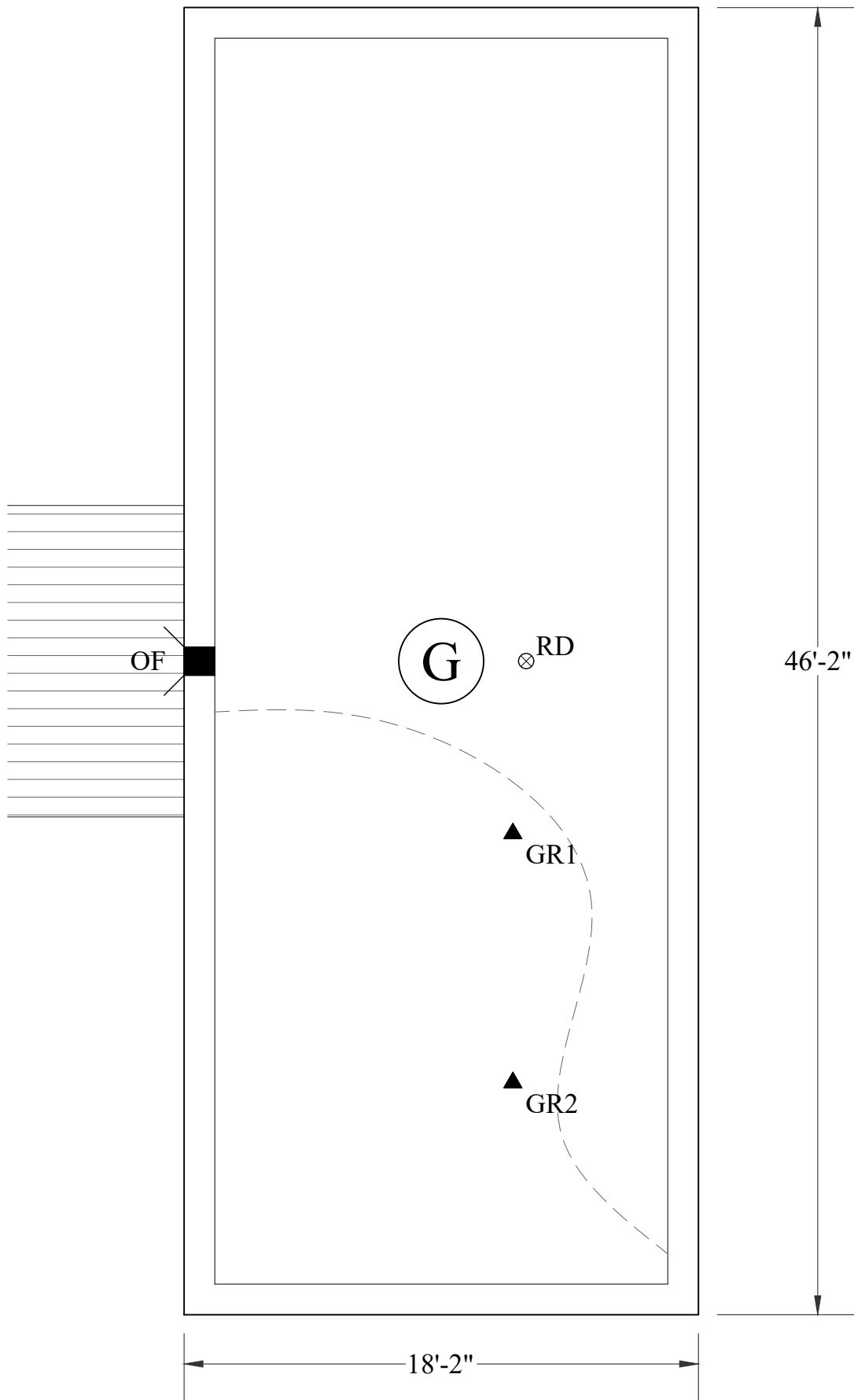
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND PENETRATIONS.
- ALL EQUIPMENT TO HAVE A MINIMUM BASE FLASHING HEIGHT OF 8" OR GREATER FROM TOP OF FINISH ROOF SURFACE.

EXISTING ROOF CORE SUMMARY

▲ XRX	CORE NUMBER AND IDENTIFIER
▲ XFX	FLASHING NUMBER AND IDENTIFIER
GR1	SINGLE PLY MEMBRANE POLYISOCYANURATE 3" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 3"
GR2	SINGLE PLY MEMBRANE POLYISOCYANURATE 5" METAL ROOF DECK TOTAL THICKNESS ABOVE ROOF DECK = 5"

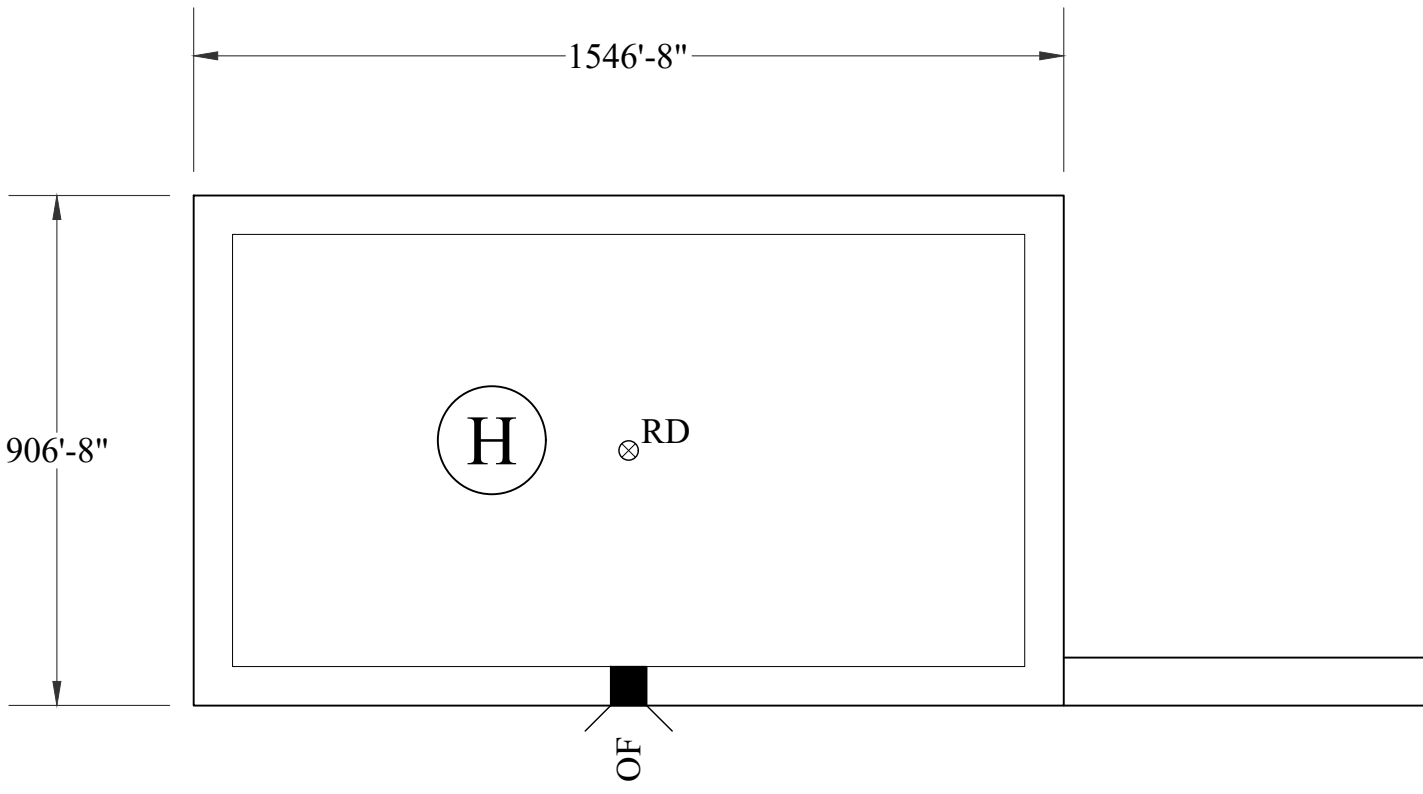
DRAWING LEGEND

 RD	ROOF DRAIN	 STACK	 EJ EXPANSION JOINT	 MECHANICAL EQUIPMENT WITH DUCT PENETRATION
 OF	OVERFLOW SCUPPER	 VENTILATOR	 METAL ROOF SYSTEM	 PARAPET WALL
 VTR	VENT THROUGH ROOF	 GN GOOSE NECK / HOOD PENETRATION	 SKY LIGHT	 EQUIPMENT SUPPORT CURB
 EV	EXHAUST VENT	 ROOF HATCH	 SLOPE ARROW	 ROOF DESIGNATION
 E	ELECTRICAL PENETRATION / PITCH PAN	<div>UNIT</div> MECHANICAL UNIT / HVAC		



PARTIAL ROOF PLAN - AREA "G"

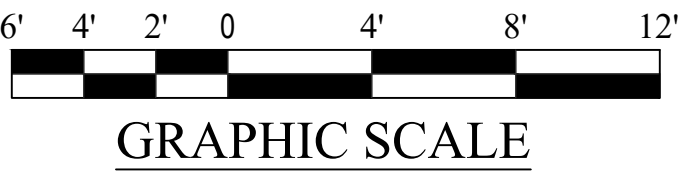
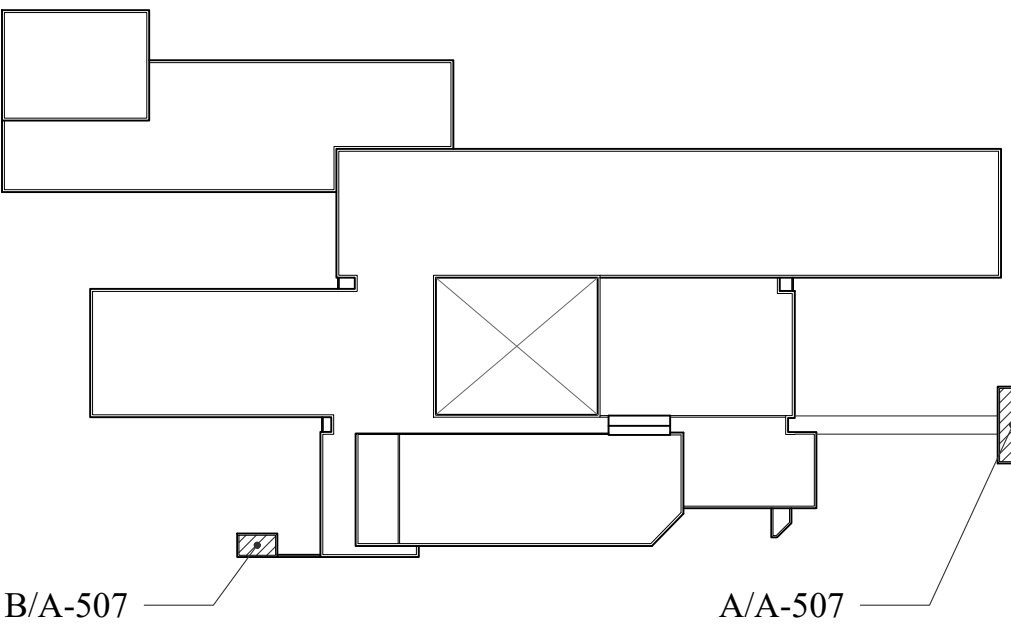
A  
A-507  
3/16" = 1'-0"



PARTIAL ROOF PLAN - AREA "H"

B  
A-507  
3/16" = 1'-0"

KEY PLAN



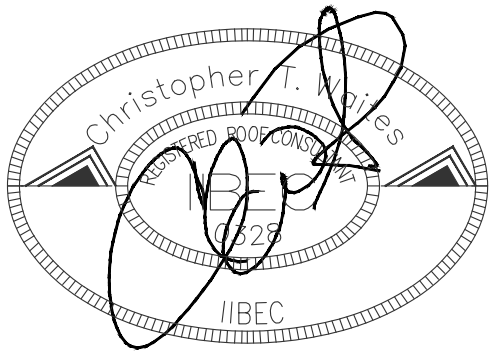
GRAPHIC SCALE



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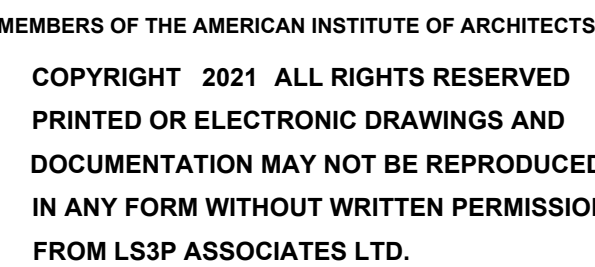
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No.	Description	Date

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PARTIAL EXISTING  
ROOF PLANS

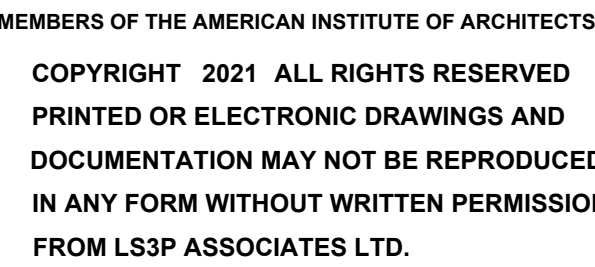
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PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
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**PARTIAL NEW  
ROOF PLAN  
(BASE BID / ALT 3)**

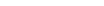
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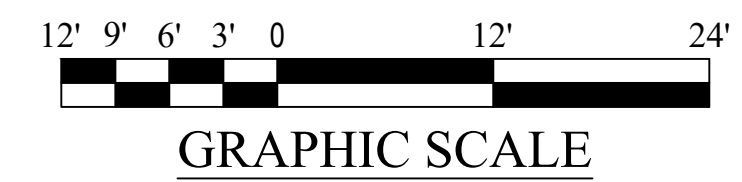
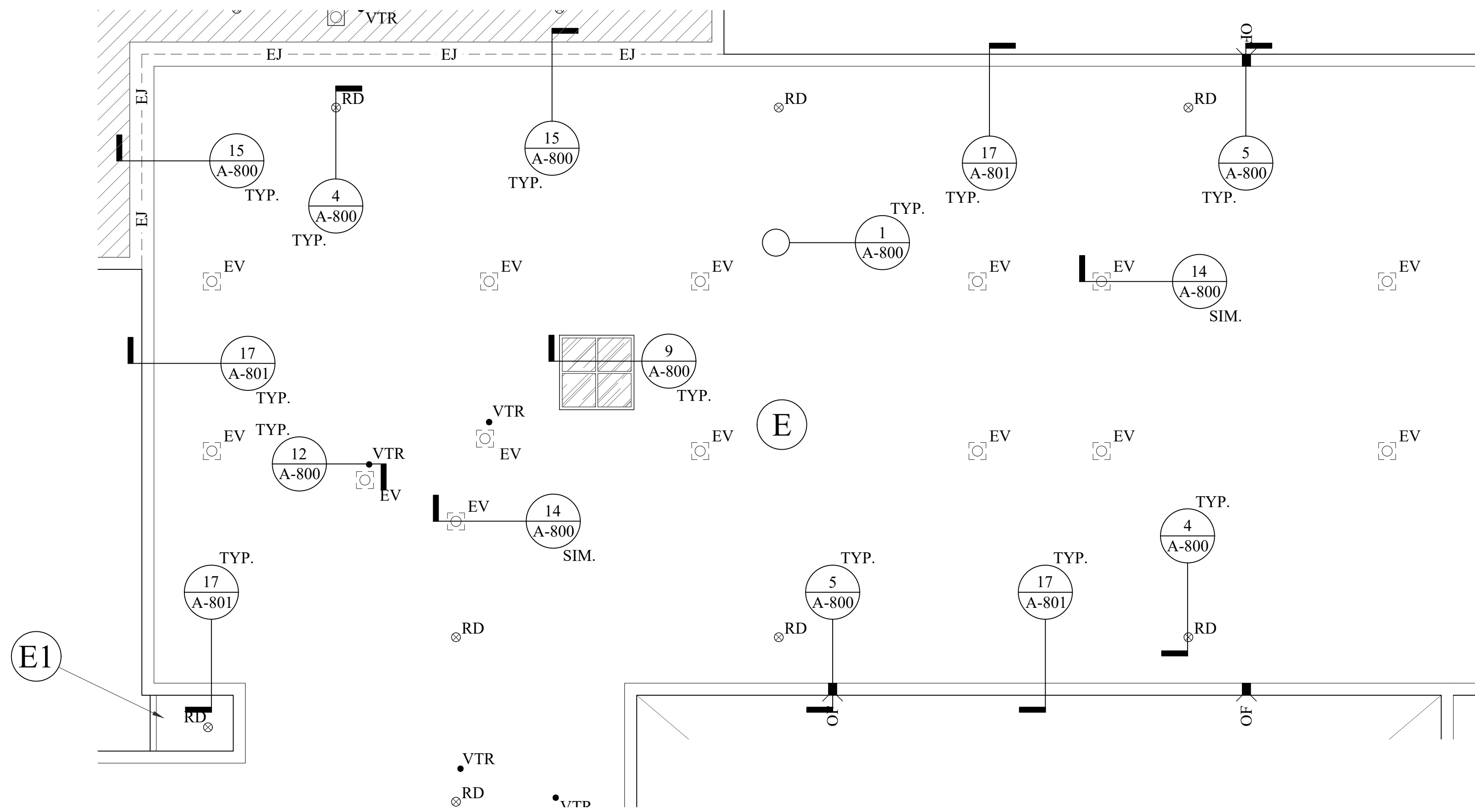


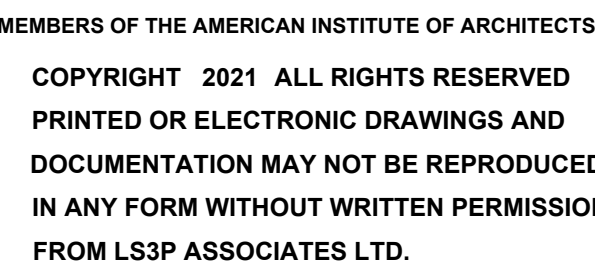
No.	Description	Date

**PARTIAL NEW  
ROOF PLAN  
(BASE BID / ALT 3)**

# A-602

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 OF	OVERFLOW SCUPPER		VENTILATOR		METAL ROOF SYSTEM		PARAPET WALL
 VTR	VENT THROUGH ROOF	 GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT		EQUIPMENT SUPPORT CURB
 EV	EXHAUST VENT		ROOF HATCH		SLOPE ARROW	 XX	ROOF DESIGNATION
 E	ELECTRICAL PENETRATION / PITCH PAN	 UNIT	MECHANICAL UNIT / HVAC				





PROJECT: 2201-218720  
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**PARTIAL NEW  
ROOF PLAN  
(BASE BID / ALT 3)**

# A-603



















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D

C

B

A

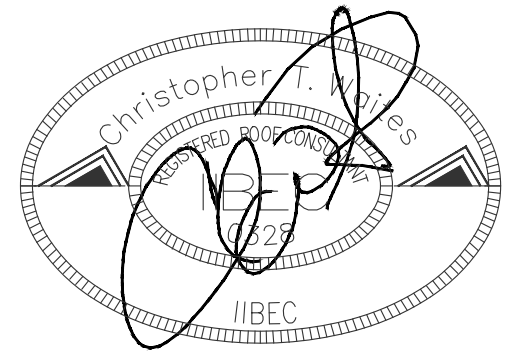
DRAWING LEGEND							
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	OF	OVERFLOW SCUPPER		VENTILATOR			METAL ROOF SYSTEM
	VTR	VENT THROUGH ROOF		GN			SKY LIGHT
	EV	EXHAUST VENT					SLOPE ARROW
	E	ELECTRICAL PENETRATION / PITCH PAN		UNIT			MECHANICAL EQUIPMENT WITH DUCT PENETRATION
							PARAPET WALL
							EQUIPMENT SUPPORT CURB
						XX	ROOF DESIGNATION



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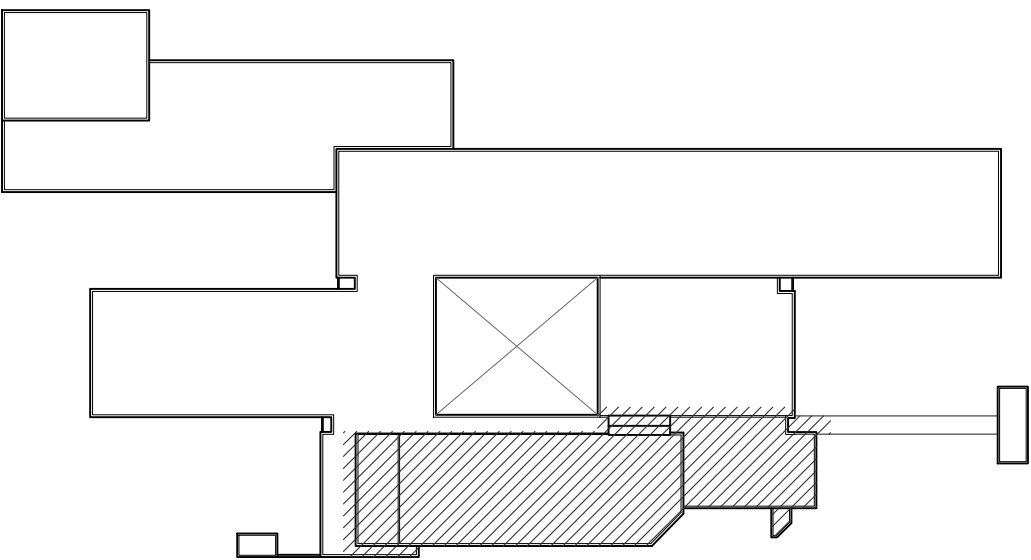
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PARTIAL NEW  
ROOF PLAN  
(BASE BID / ALT 3)

A-604

KEY PLAN





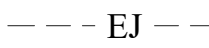















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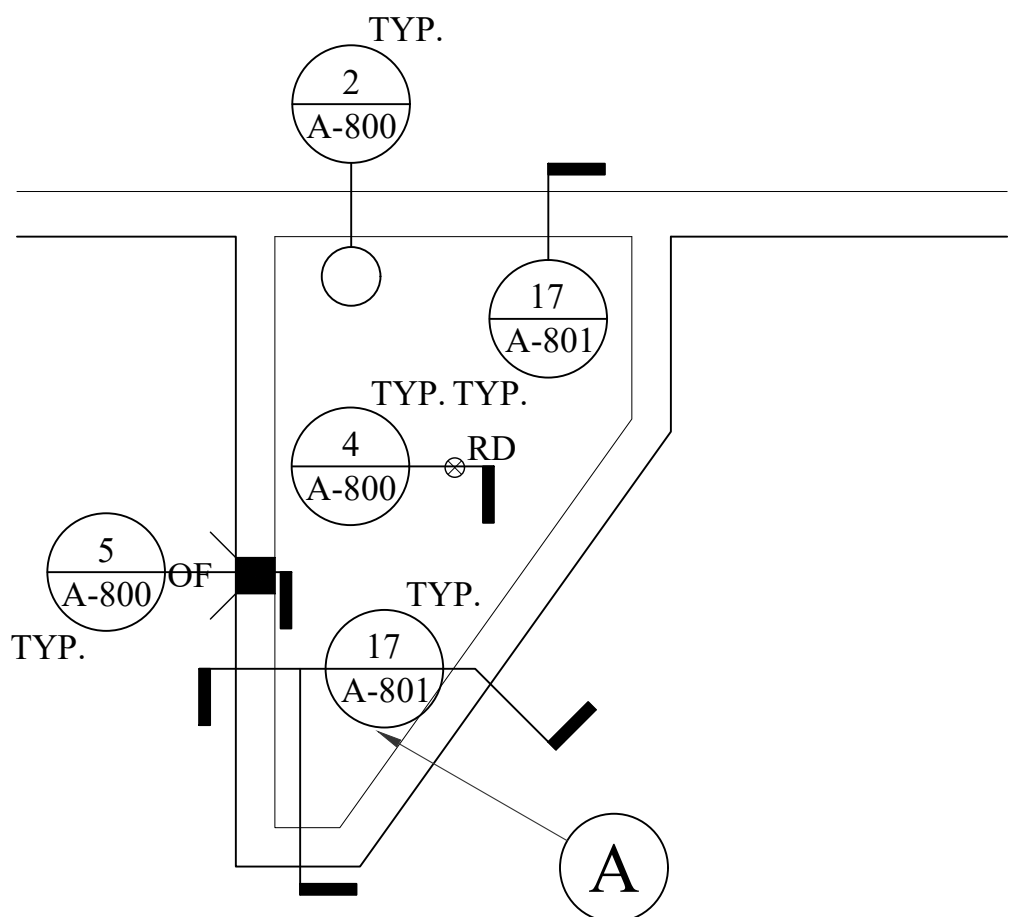
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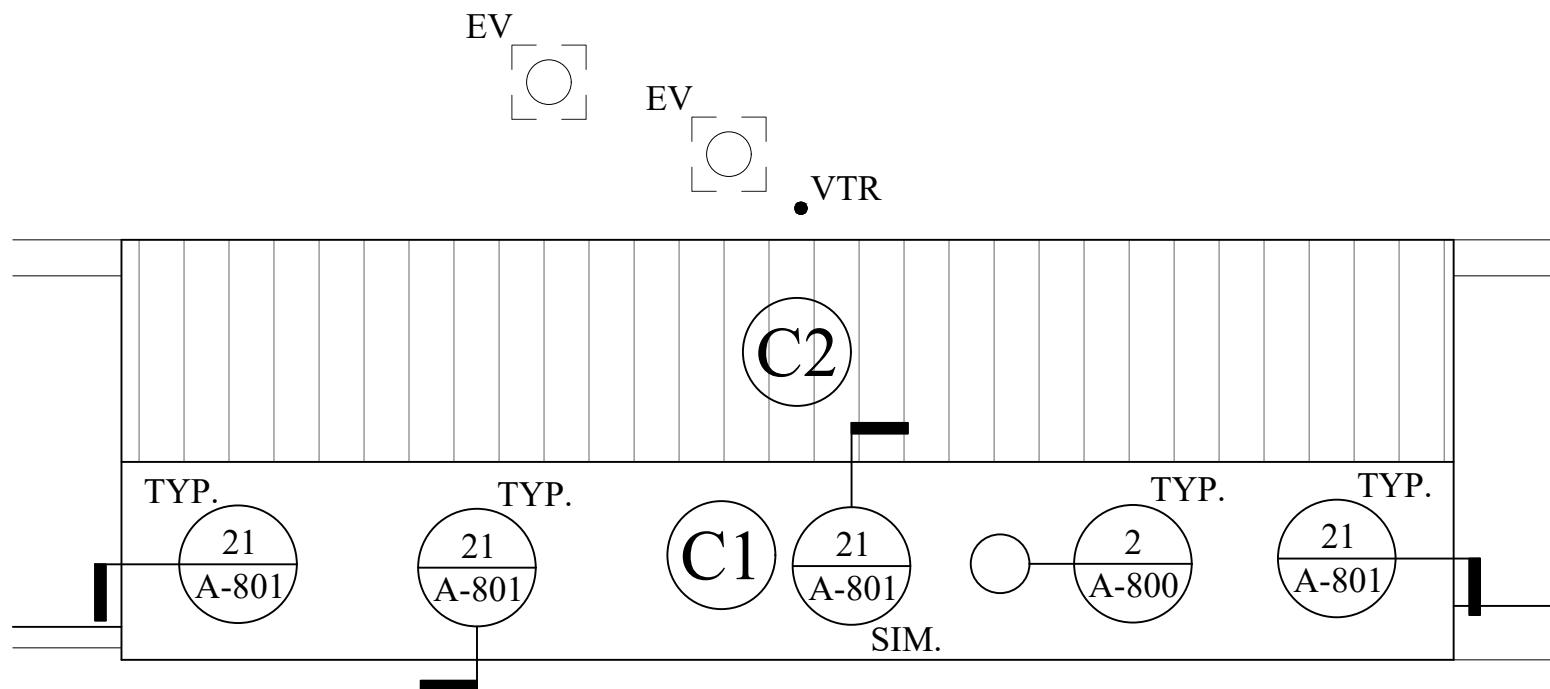
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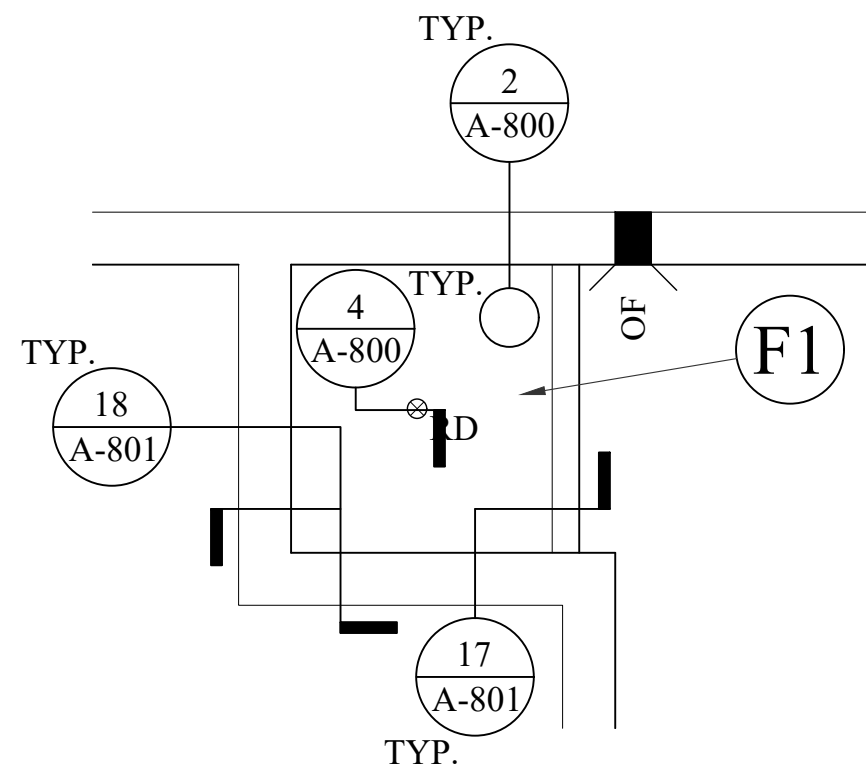
DRAWING LEGEND							
	RD	ROOF DRAIN		STACK		EJ	EXPANSION JOINT
	OF	OVERFLOW SCUPPER		VENTILATOR			METAL ROOF SYSTEM
	VTR	VENT THROUGH ROOF		GN			SKY LIGHT
	EV	EXHAUST VENT					SLOPE ARROW
	E	ELECTRICAL PENETRATION / PITCH PAN		UNIT			MECHANICAL EQUIPMENT WITH DUCT PENETRATION
							PARAPET WALL
							EQUIPMENT SUPPORT CURB
							ROOF DESIGNATION



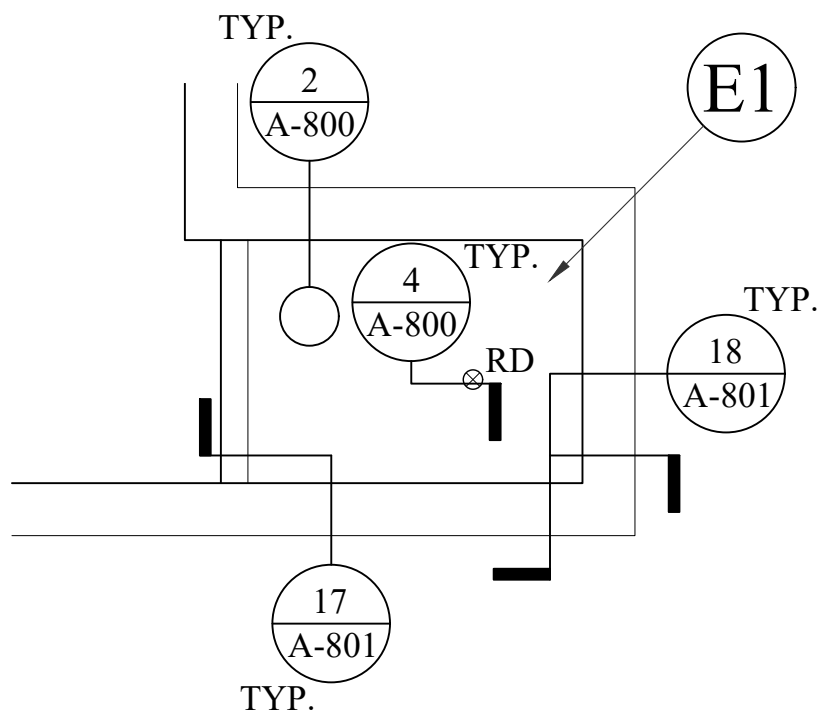
**PARTIAL ROOF PLAN - AREA "A"**  
A-605 3/16" = 1'-0"



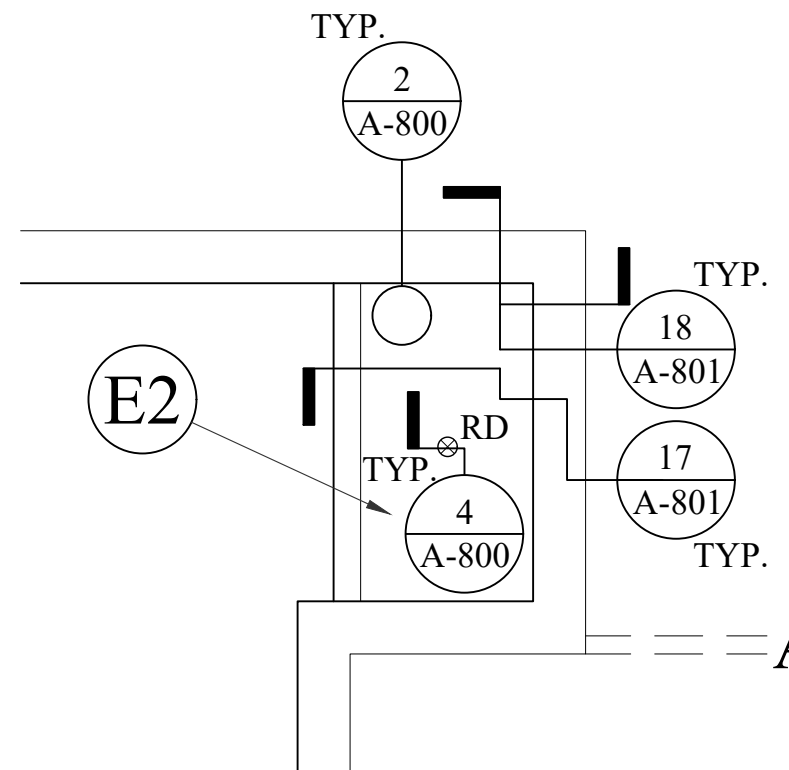
**PARTIAL ROOF PLAN - AREA "C1" AND "C2"**  
B-605 3/16" = 1'-0"



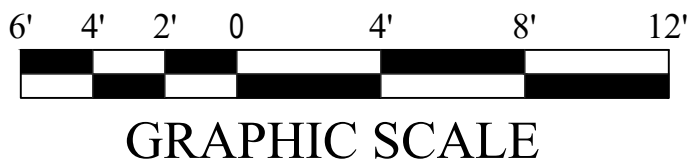
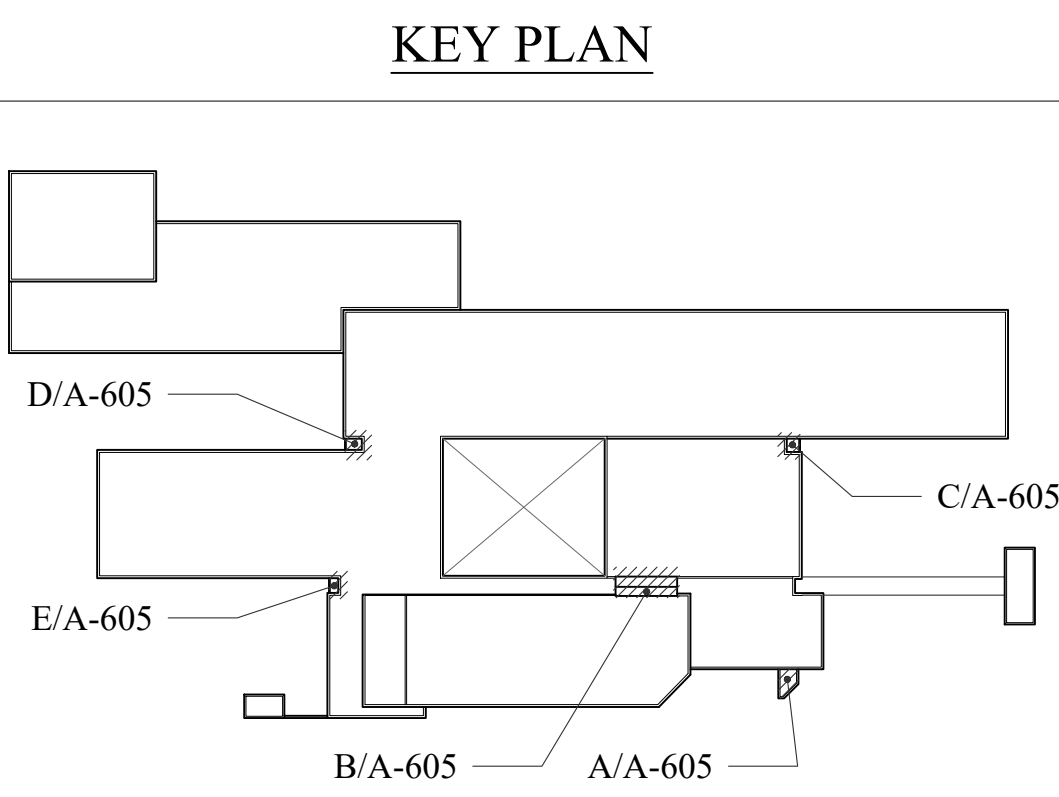
**PARTIAL ROOF PLAN - AREA "F1"**  
C-605 3/16" = 1'-0"



**PARTIAL ROOF PLAN - AREA "E1"**  
D-605 3/16" = 1'-0"



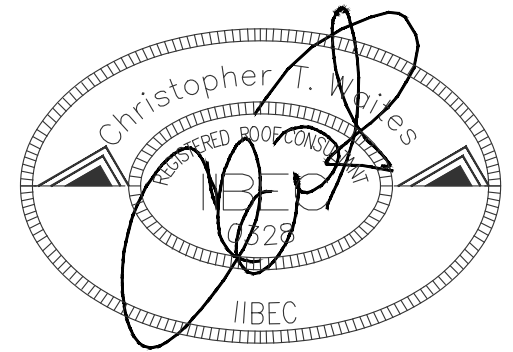
**PARTIAL ROOF PLAN - AREA "E2"**  
E-605 3/16" = 1'-0"



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**PARTIAL NEW  
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**A-605**

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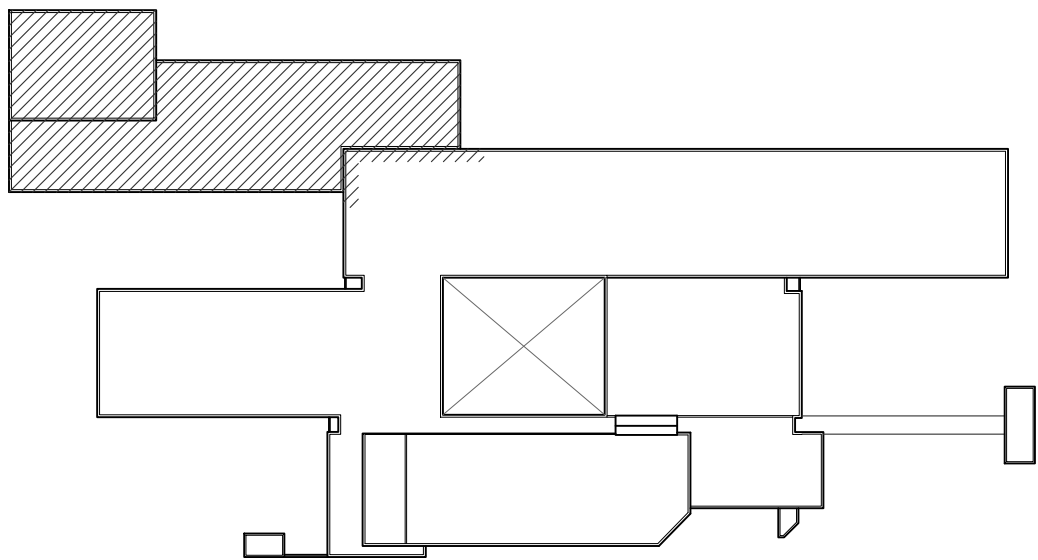
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


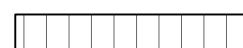



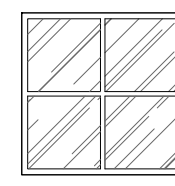







B

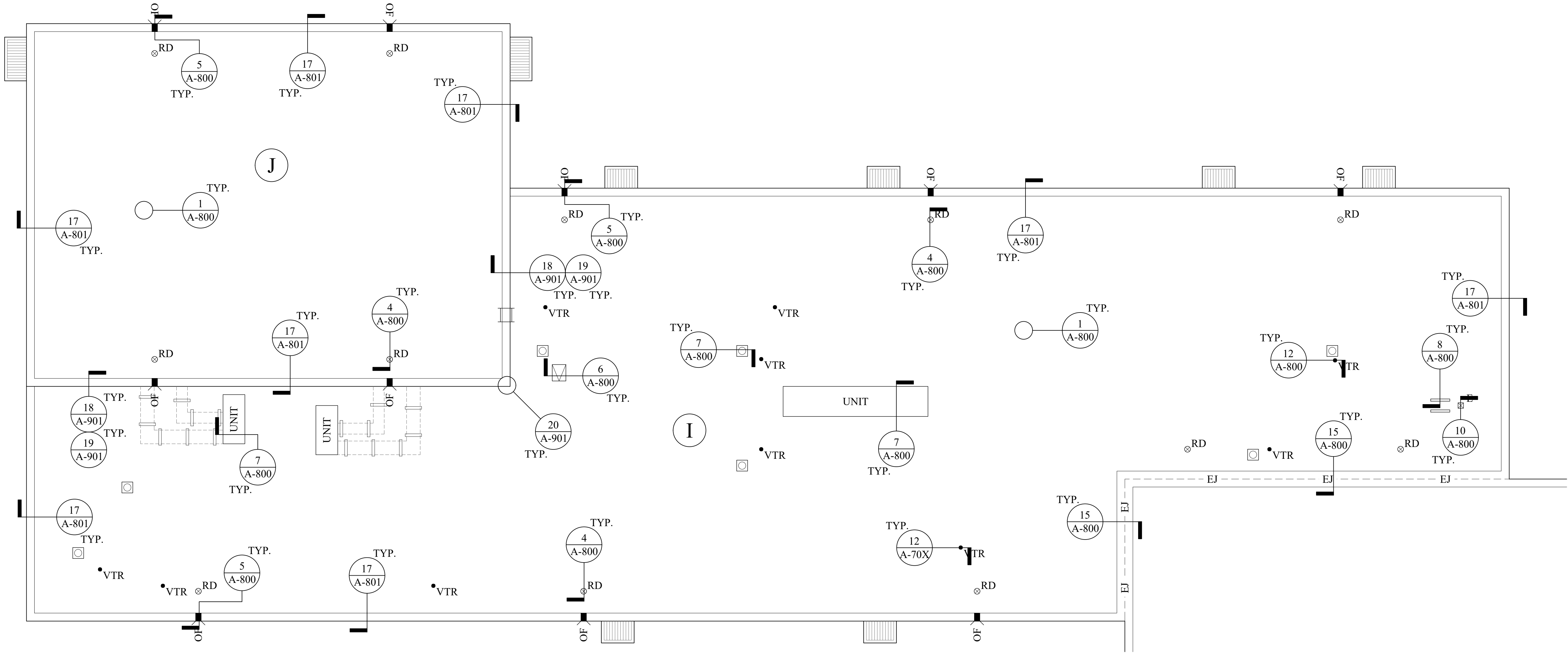
A

KEY PLAN



DRAWING LEGEND

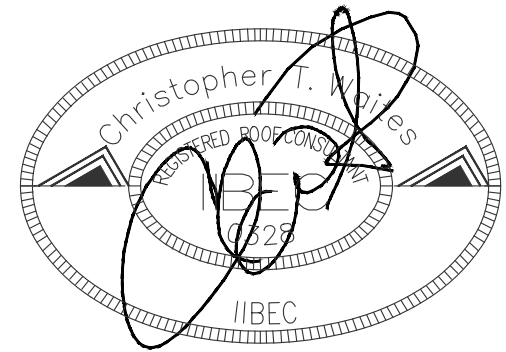
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 OF	OVERFLOW SCUPPER		VENTILATOR		METAL ROOF SYSTEM		PARAPET WALL
 VTR	VENT THROUGH ROOF	 GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT		EQUIPMENT SUPPORT CURB
 EV	EXHAUST VENT		ROOF HATCH		SLOPE ARROW		ROOF DESIGNATION
 E	ELECTRICAL PENETRATION / PITCH PAN		UNIT				
			MECHANICAL UNIT / HVAC				



WATERWAY ES  
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CHECKED BY: CW

PARTIAL NEW  
ROOF PLAN  
(ALT 1)

A-606

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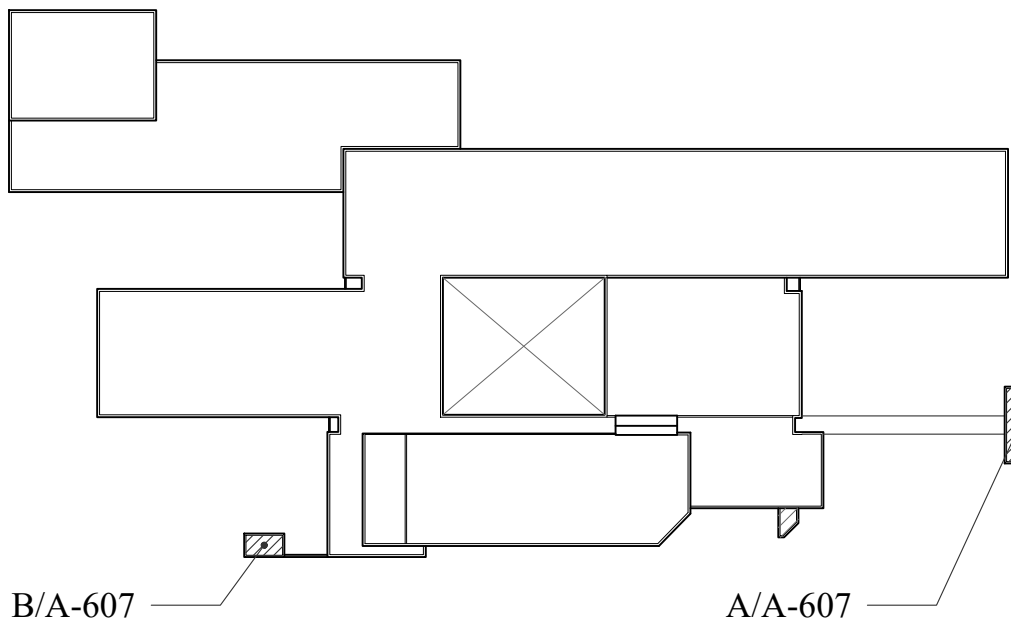
D

C

B

A

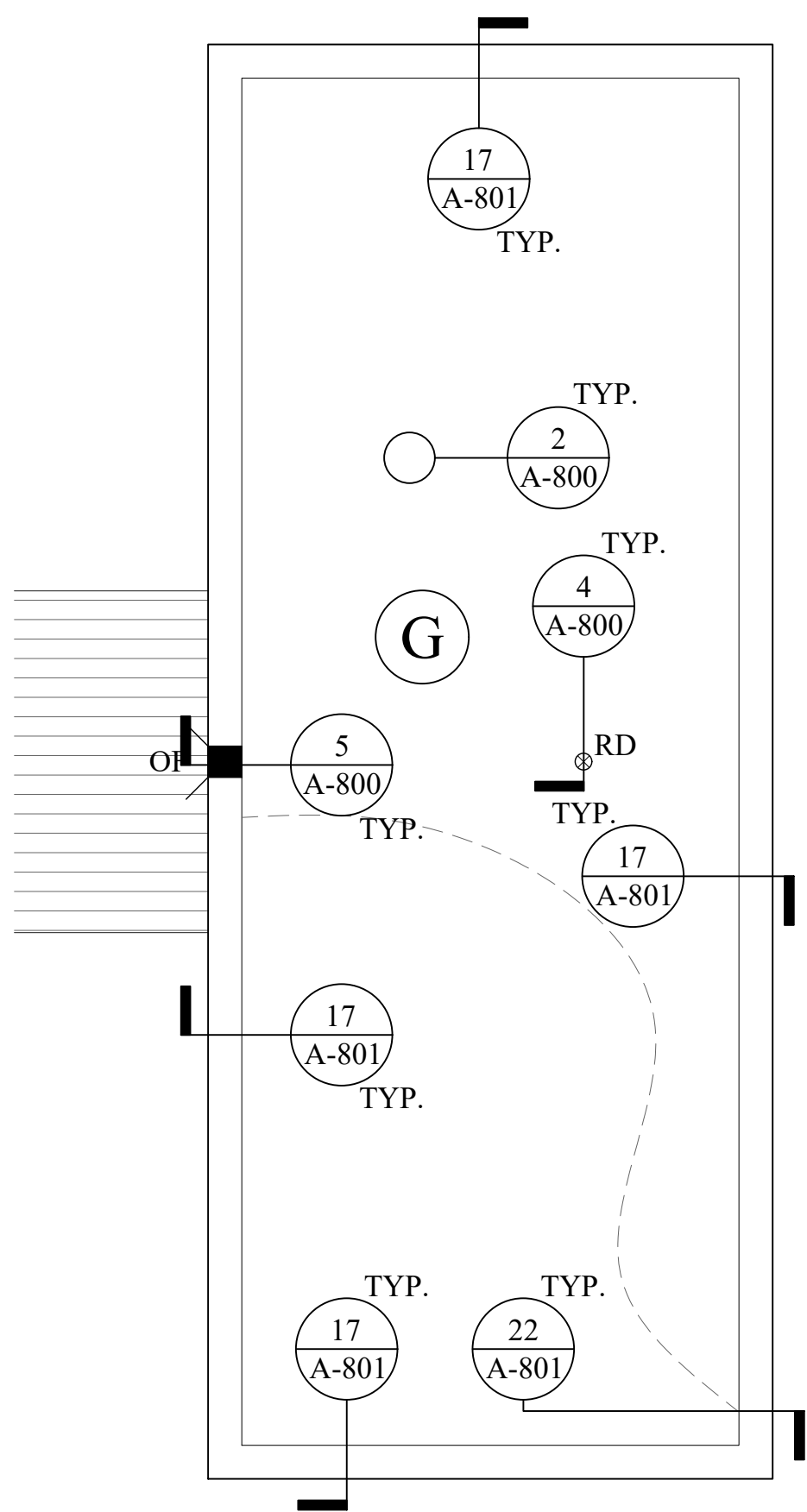
KEY PLAN



A  
A-607

PARTIAL ROOF PLAN - AREA "G" (ALT 3 & 4)

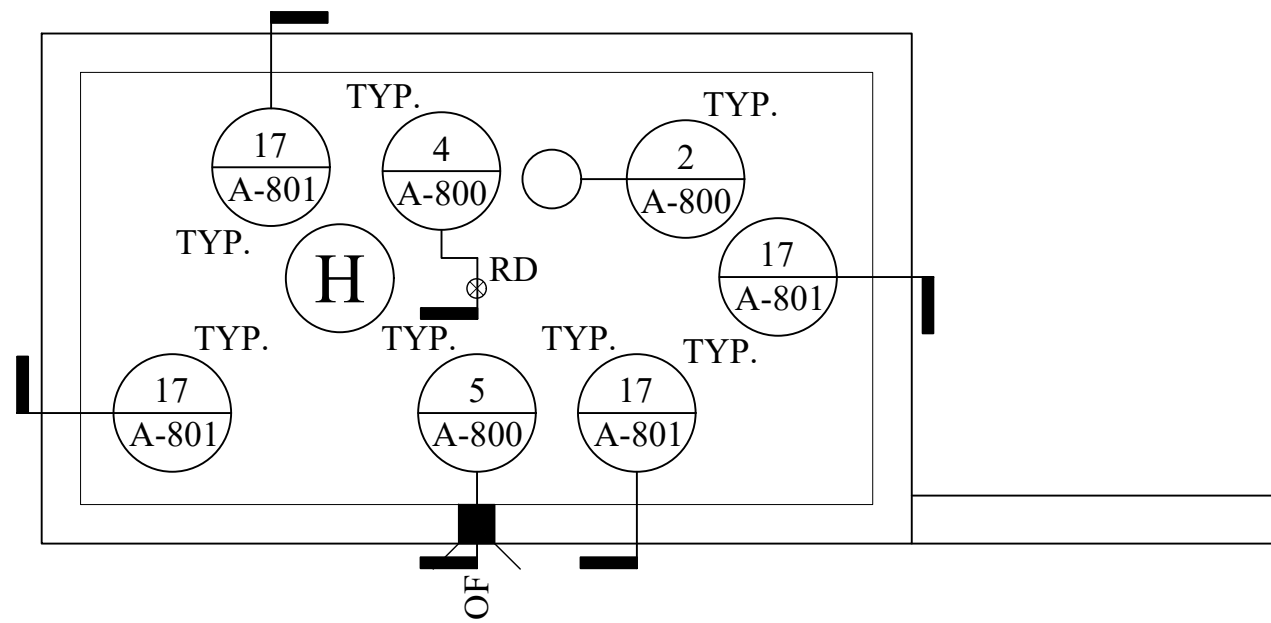
3/16" = 1'-0"



B  
A-607

PARTIAL ROOF PLAN - AREA "H" (ALT 3 & 4)

3/16" = 1'-0"



DRAWING LEGEND

- RD ROOF DRAIN
- OF OVERFLOW SCUPPER
- VTR VENT THROUGH ROOF
- EV EXHAUST VENT
- E ELECTRICAL PENETRATION / PITCH PAN

- STACK
- VENTILATOR
- GN GOOSE NECK / HOOD PENETRATION
- ROOF HATCH
- UNIT MECHANICAL UNIT / HVAC

- EJ EXPANSION JOINT
- METAL ROOF SYSTEM
- SKY LIGHT
- SLOPE ARROW

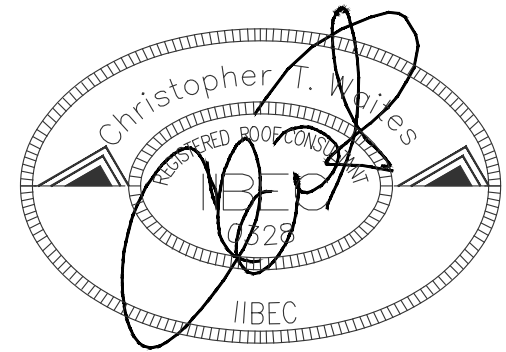
- MECHANICAL EQUIPMENT WITH DUCT PENETRATION
- PARAPET WALL
- EQUIPMENT SUPPORT CURB
- ROOF DESIGNATION



WATERWAY ES  
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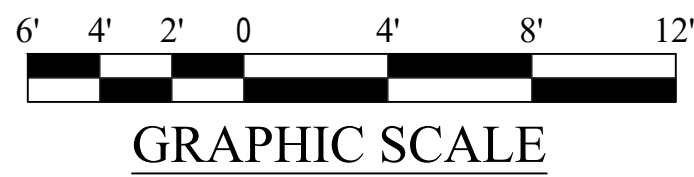
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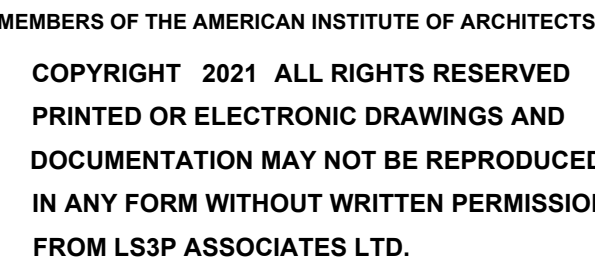
No.	Description	Date

PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
CHECKED BY: CW

NEW PARTIAL  
ROOF PLANS  
(ALT 3 & ALT 4)

A-607

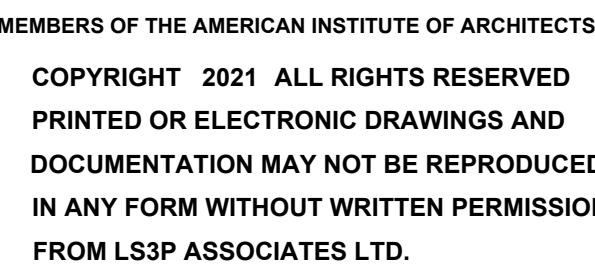




PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
CHECKED BY: CW

**PARTIAL NEW  
ROOF PLAN  
(ALT 2, 4 & 5)**

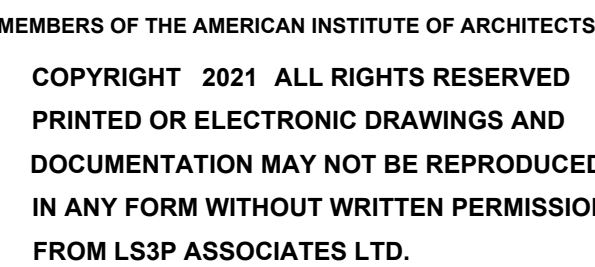
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No.	Description	Date

**PARTIAL NEW  
ROOF PLAN  
(ALT 2, 4 & 5)**

# A-702



PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
CHECKED BY: CW

**PARTIAL NEW  
ROOF PLAN  
(ALT 2, 4 & 5)**

# A-703













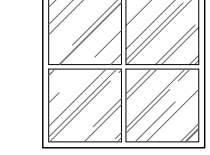





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D

C

B

A

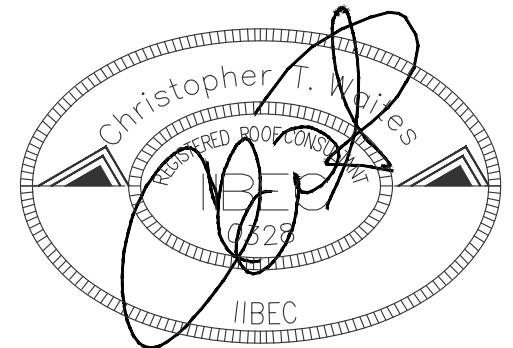
DRAWING LEGEND			
	RD	ROOF DRAIN	
	OF	OVERFLOW SCUPPER	
	VTR	VENT THROUGH ROOF	
	EV	EXHAUST VENT	
	E	ELECTRICAL PENETRATION / PITCH PAN	
	STACK		
	VENTILATOR		
	GN	GOOSE NECK / HOOD PENETRATION	
		ROOF HATCH	
	UNIT	MECHANICAL UNIT / HVAC	
	EJ	EXPANSION JOINT	
		METAL ROOF SYSTEM	
		SKY LIGHT	
		SLOPE ARROW	
		MECHANICAL EQUIPMENT WITH DUCT PENETRATION	
		PARAPET WALL	
		EQUIPMENT SUPPORT CURB	
	XX	ROOF DESIGNATION	



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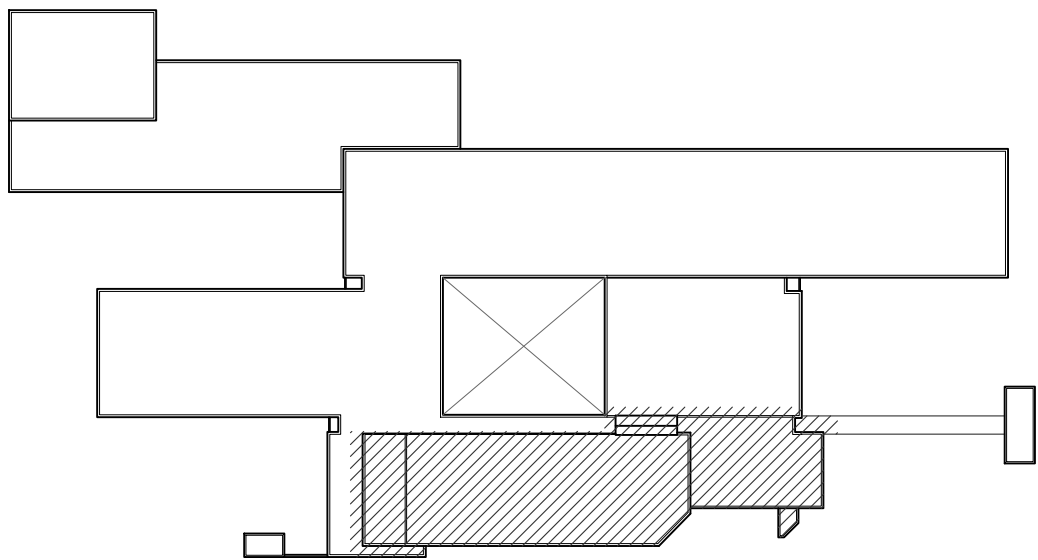
PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
CHECKED BY: CW

PARTIAL NEW  
ROOF PLAN  
(ALT 2, 4 & 5)

A-704



KEY PLAN



1

2

3

4

5






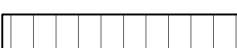


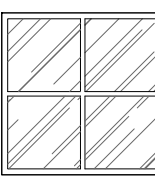









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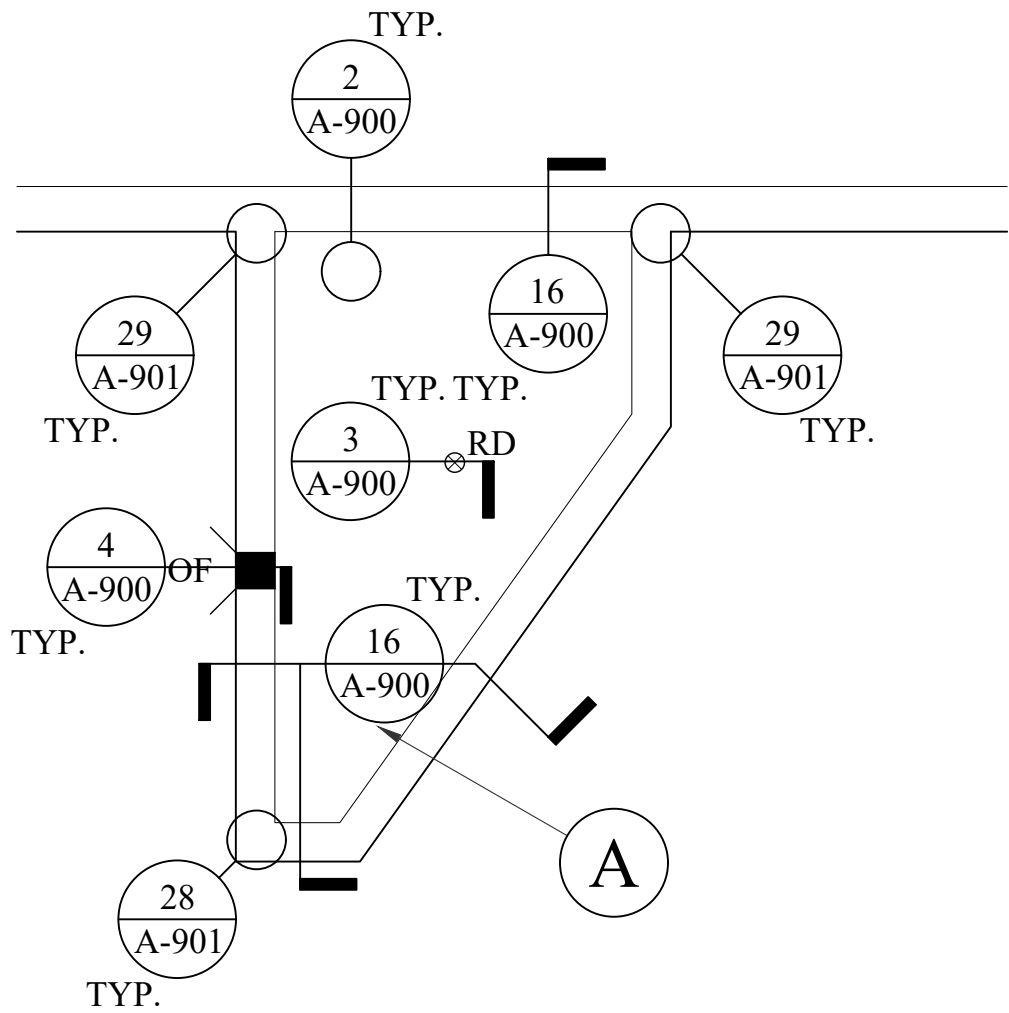
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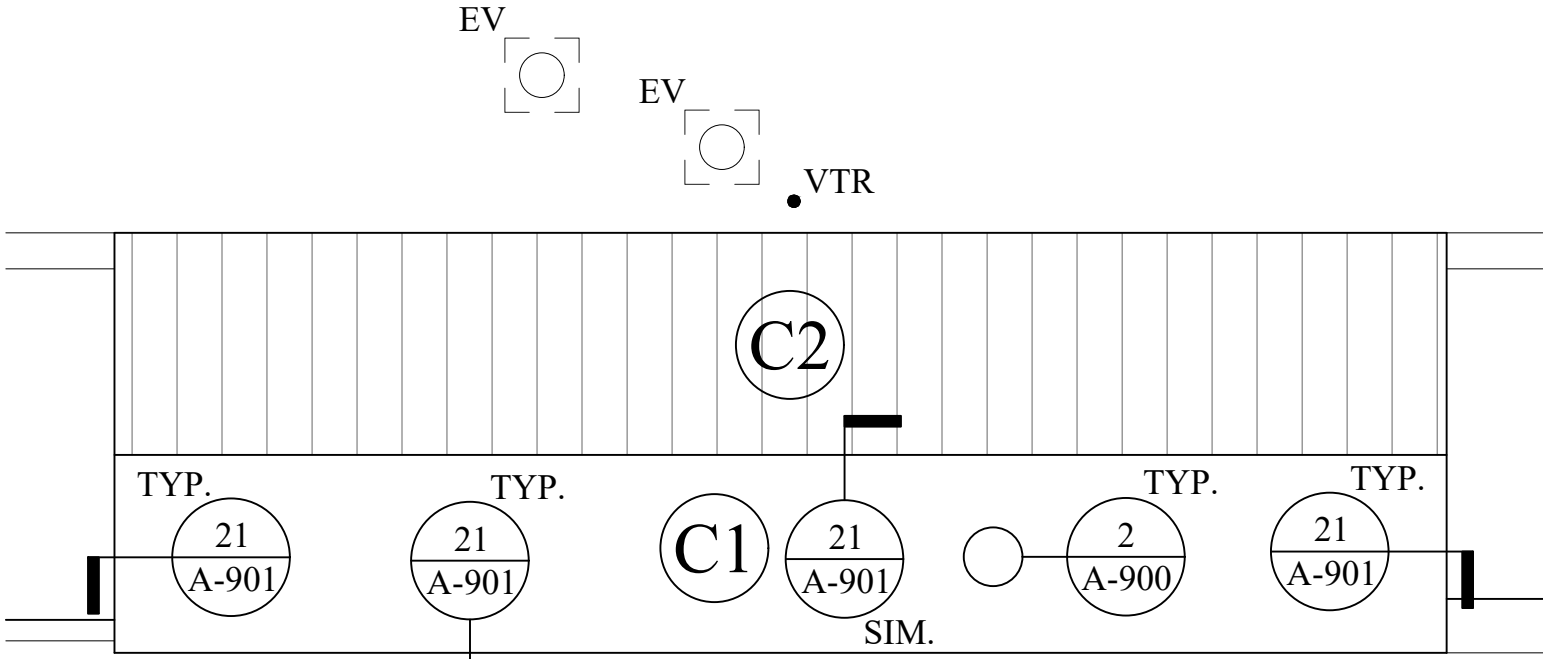
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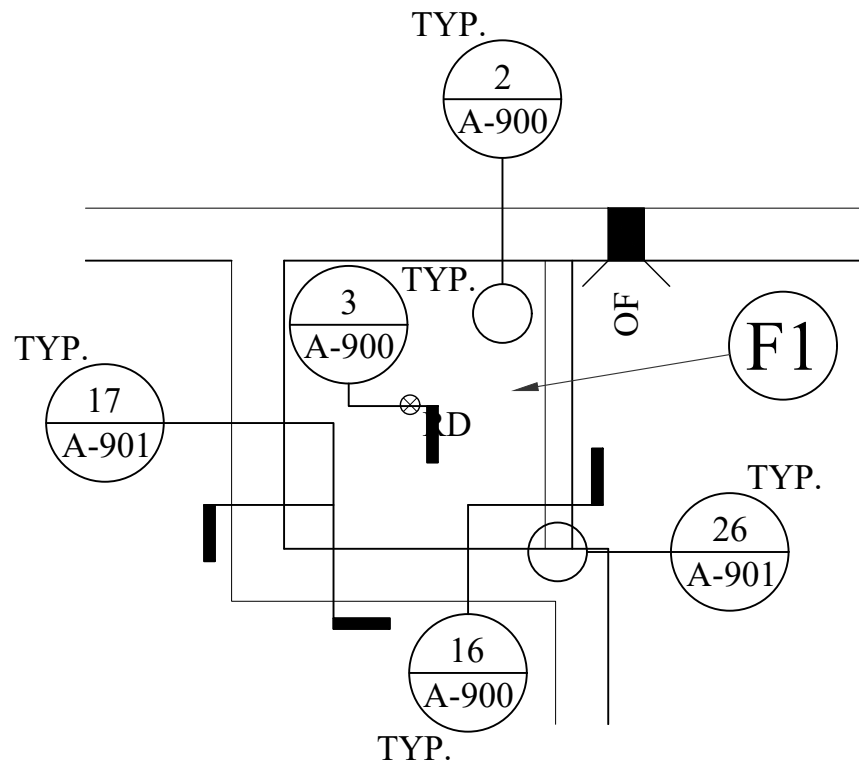
DRAWING LEGEND							
	RD	ROOF DRAIN		STACK		EJ	EXPANSION JOINT
	OF	OVERFLOW SCUPPER		VENTILATOR			METAL ROOF SYSTEM
	VTR	VENT THROUGH ROOF		GN			SKY LIGHT
	EV	EXHAUST VENT					SLOPE ARROW
	E	ELECTRICAL PENETRATION / PITCH PAN		UNIT			MECHANICAL EQUIPMENT WITH DUCT PENETRATION
							PARAPET WALL
							EQUIPMENT SUPPORT CURB
							ROOF DESIGNATION



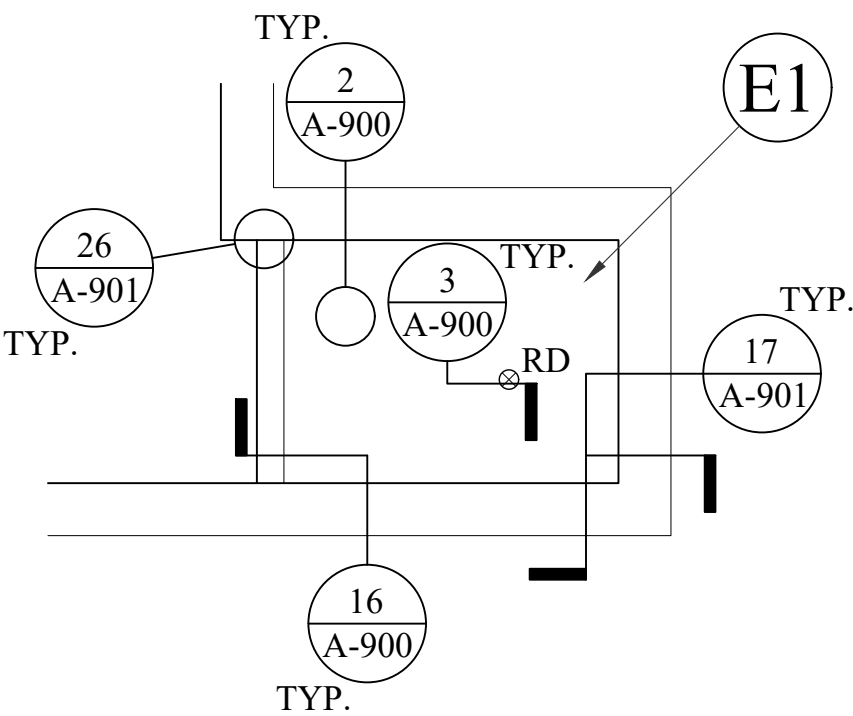
**PARTIAL ROOF PLAN - AREA "A"**  
A-705 3/16" = 1'-0"



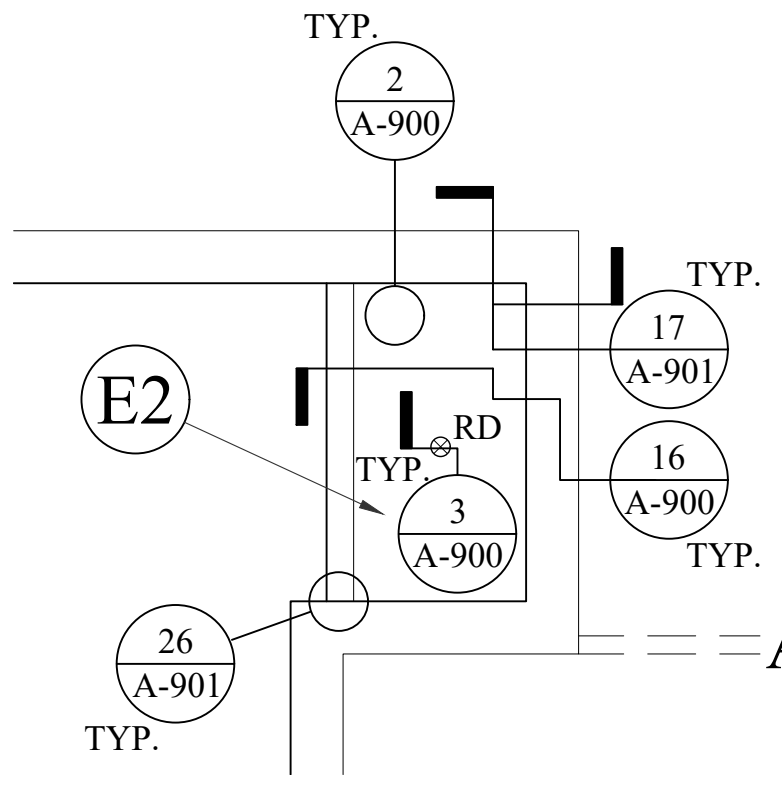
**PARTIAL ROOF PLAN - AREA "C1" AND "C2"**  
B-705 3/16" = 1'-0"



**PARTIAL ROOF PLAN - AREA "F1"**  
C-705 3/16" = 1'-0"

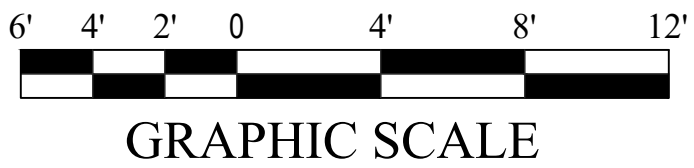
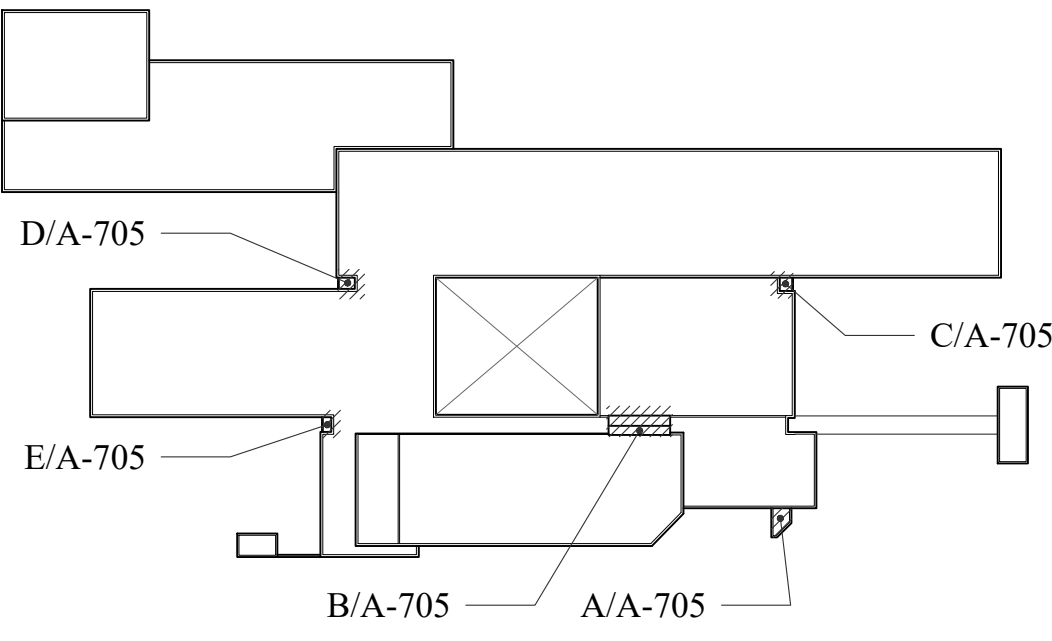


**PARTIAL ROOF PLAN - AREA "E1"**  
D-705 3/16" = 1'-0"



**PARTIAL ROOF PLAN - AREA "E2"**  
E-705 3/16" = 1'-0"

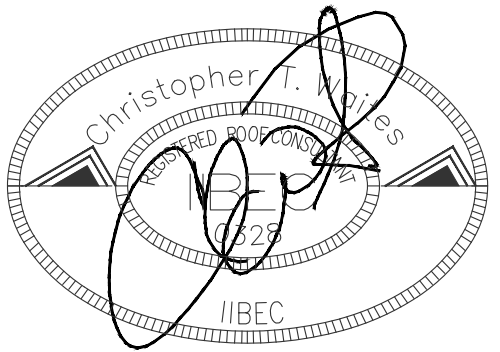
**KEY PLAN**



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**PARTIAL NEW  
ROOF PLAN  
(ALT 2, 4 & 5)**











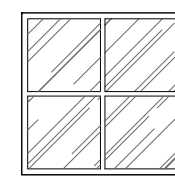







**A-705**

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NOTES:

1. ALL LOW SLOPED ROOFING SYSTEMS ARE TO BE REMOVED DOWN TO THE EXISTING ROOF DECK PRIOR TO NEW LOW SLOPED ROOFING SYSTEM INSTALLATION.
2. ALL EQUIPMENT TO BE RAISED TO PROVIDE A MINIMUM BASE FLASHING HEIGHT OF 8" OR GREATER FROM TOP OF FINISH ROOF SURFACE.
3. ALL ABANDONED ROOF TOP EQUIPMENT TO BE REMOVED WITH THE ROOF DECK BEING PATCHED AS REQUIRED. REFER TO STRUCTURAL DRAWINGS FOR SUPPLEMENTAL FRAMING FOR NEW DECKING.
4. WALK PADS ARE REQUIRED AT ALL ROOF ACCESS POINTS AND AROUND ALL MECHANICAL UNITS (WALK PADS NOT SHOWN FOR CLARITY).
5. TAPER CRICKETS TO BE INSTALLED AT HIGH SIDE OF ALL ROOF CURB PENETRATIONS.
6. TAPERED CRICKETS TO BE INSTALLED WITH A 2 TO 1 LENGTH RATIO.
7. MINIMUM 4'X4' TAPERED SUMP TO BE PROVED AT PRIMARY ROOF DRAINS.

DRAWING LEGEND

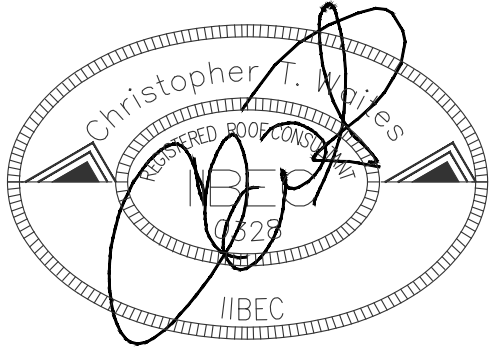
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 OF	OVERFLOW SCUPPER		VENTILATOR		METAL ROOF SYSTEM		PARAPET WALL
 VTR	VENT THROUGH ROOF	 GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT		EQUIPMENT SUPPORT CURB
 EV	EXHAUST VENT		ROOF HATCH		SLOPE ARROW		ROOF DESIGNATION
 E	ELECTRICAL PENETRATION / PITCH PAN		UNIT				
			MECHANICAL UNIT / HVAC				



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PARTIAL TAPER  
ROOF PLAN  
(ALT 2 & ALT 4)

A-706



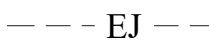

















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1/14/2021 8:12:38 AM

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1. ALL LOW SLOPED ROOFING SYSTEMS ARE TO BE REMOVED DOWN TO THE EXISTING ROOF DECK PRIOR TO NEW LOW SLOPED ROOFING SYSTEM INSTALLATION.
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3. ALL ABANDONED ROOF TOP EQUIPMENT TO BE REMOVED WITH THE ROOF DECK BEING PATCHED AS REQUIRED. REFER TO STRUCTURAL DRAWINGS FOR SUPPLEMENTAL FRAMING FOR NEW DECKING.
4. WALK PADS ARE REQUIRED AT ALL ROOF ACCESS POINTS AND AROUND ALL MECHANICAL UNITS (WALK PADS NOT SHOWN FOR CLARITY).
5. TAPER CRICKETS TO BE INSTALLED AT HIGH SIDE OF ALL ROOF CURB PENETRATIONS.
6. TAPERED CRICKETS TO BE INSTALLED WITH A 2 TO 1 LENGTH RATIO.
7. MINIMUM 4'X4' TAPERED SUMP TO BE PROVED AT PRIMARY ROOF DRAINS.

DRAWING LEGEND

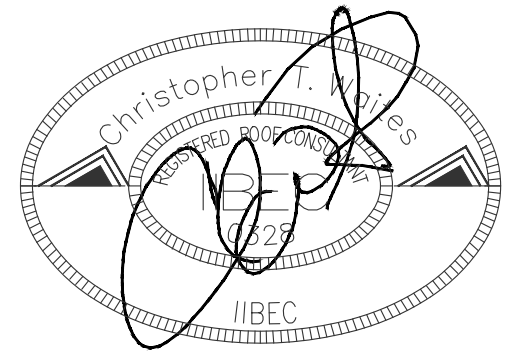
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 OF	OVERFLOW SCUPPER		VENTILATOR		METAL ROOF SYSTEM		PARAPET WALL
 VTR	VENT THROUGH ROOF	 GN	GOOSE NECK / HOOD PENETRATION		SKY LIGHT		EQUIPMENT SUPPORT CURB
 EV	EXHAUST VENT		ROOF HATCH		SLOPE ARROW	 XX	ROOF DESIGNATION
 E	ELECTRICAL PENETRATION / PITCH PAN	 UNIT	MECHANICAL UNIT / HVAC				



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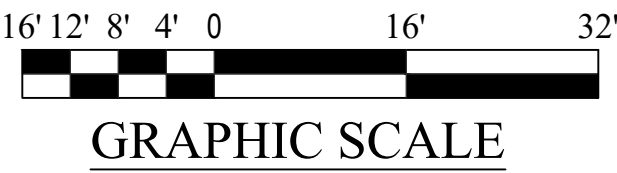
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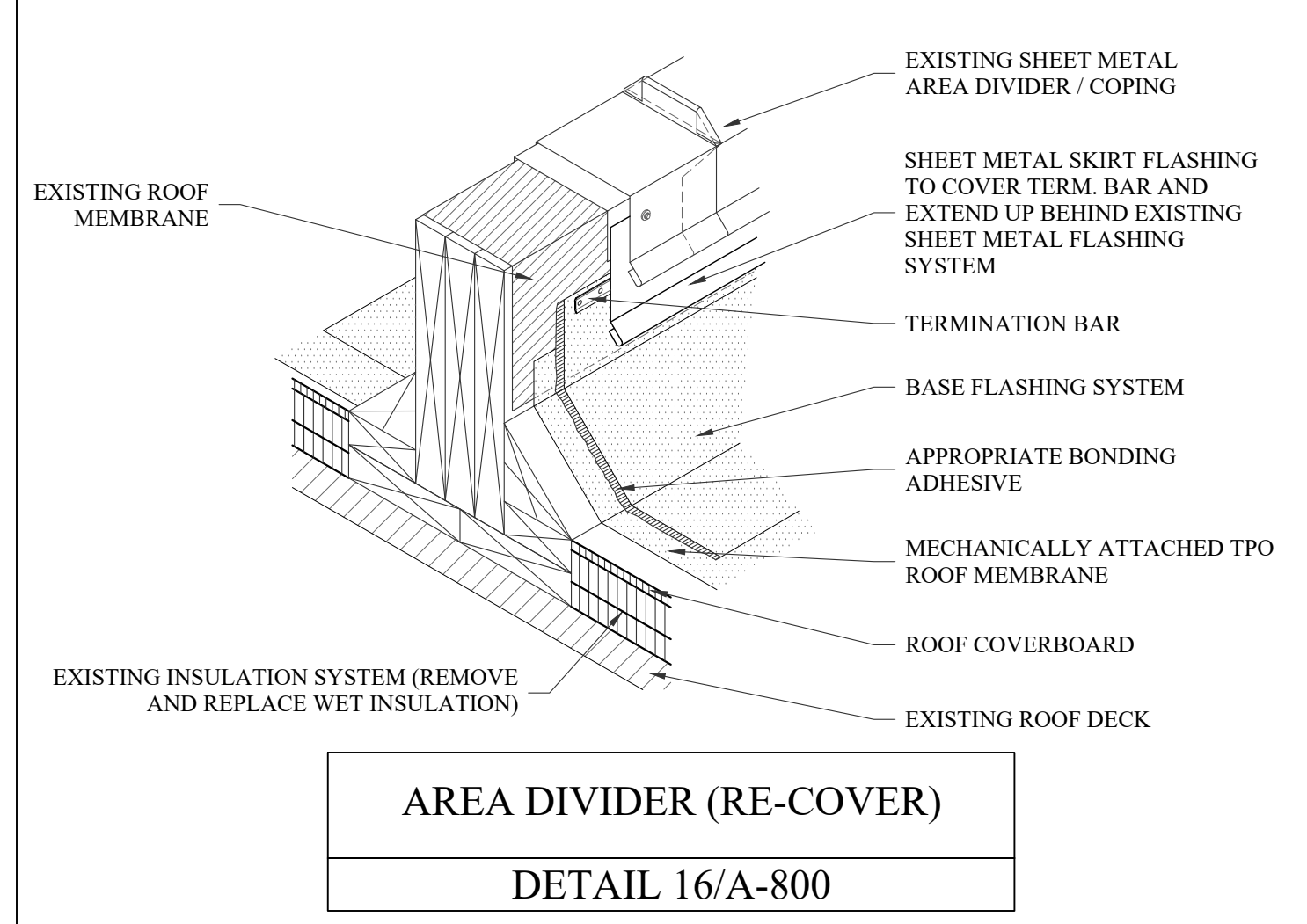
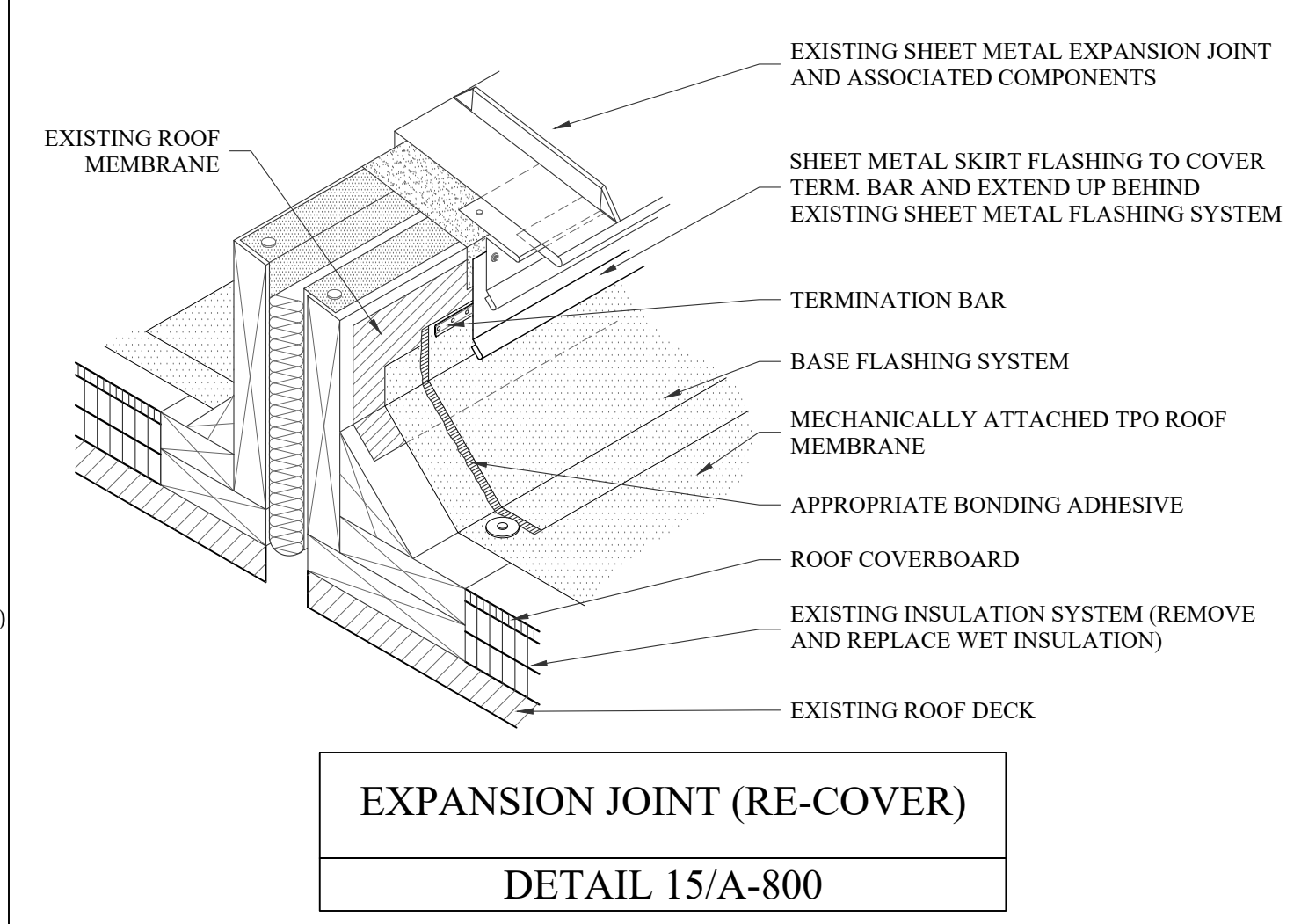
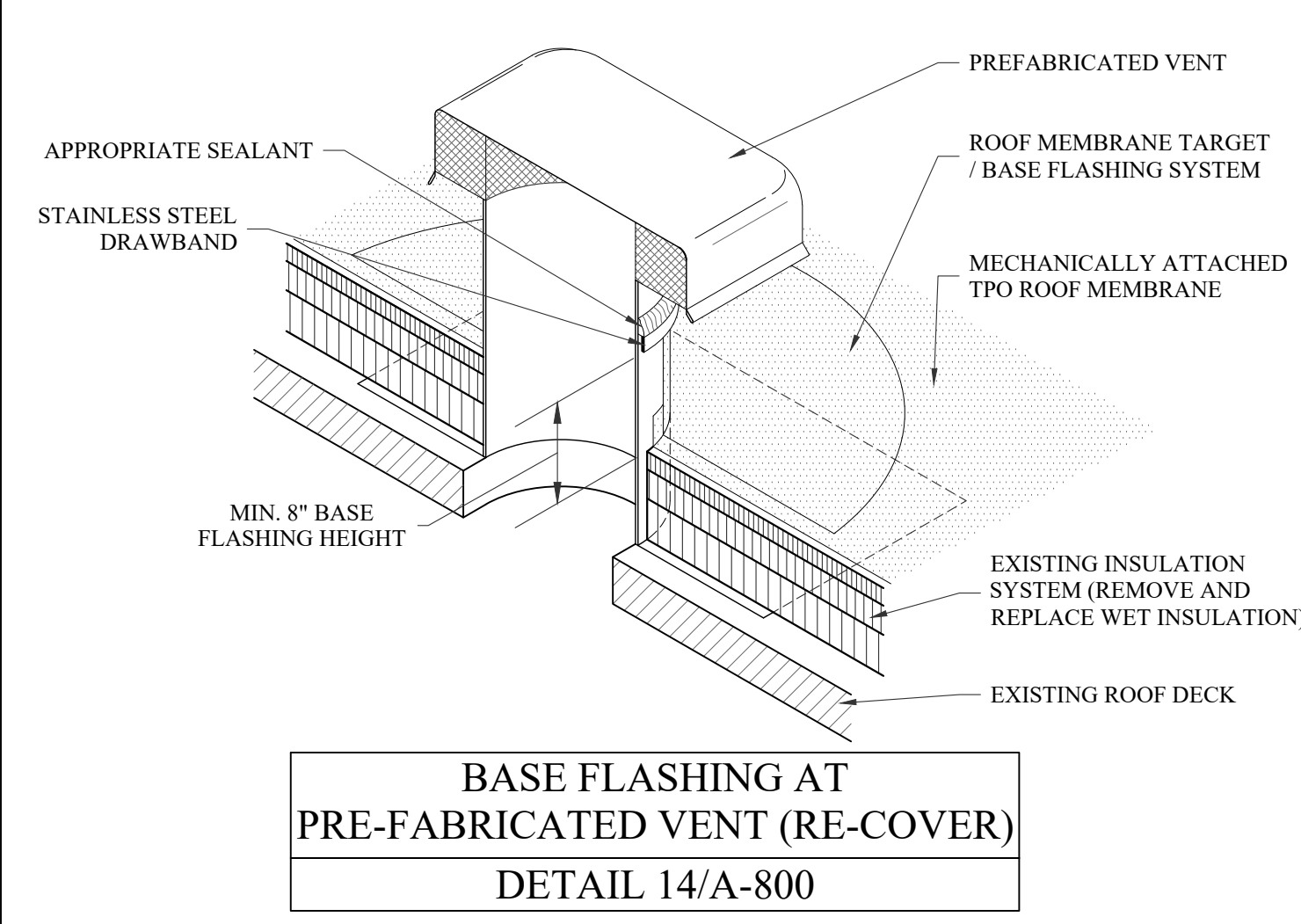
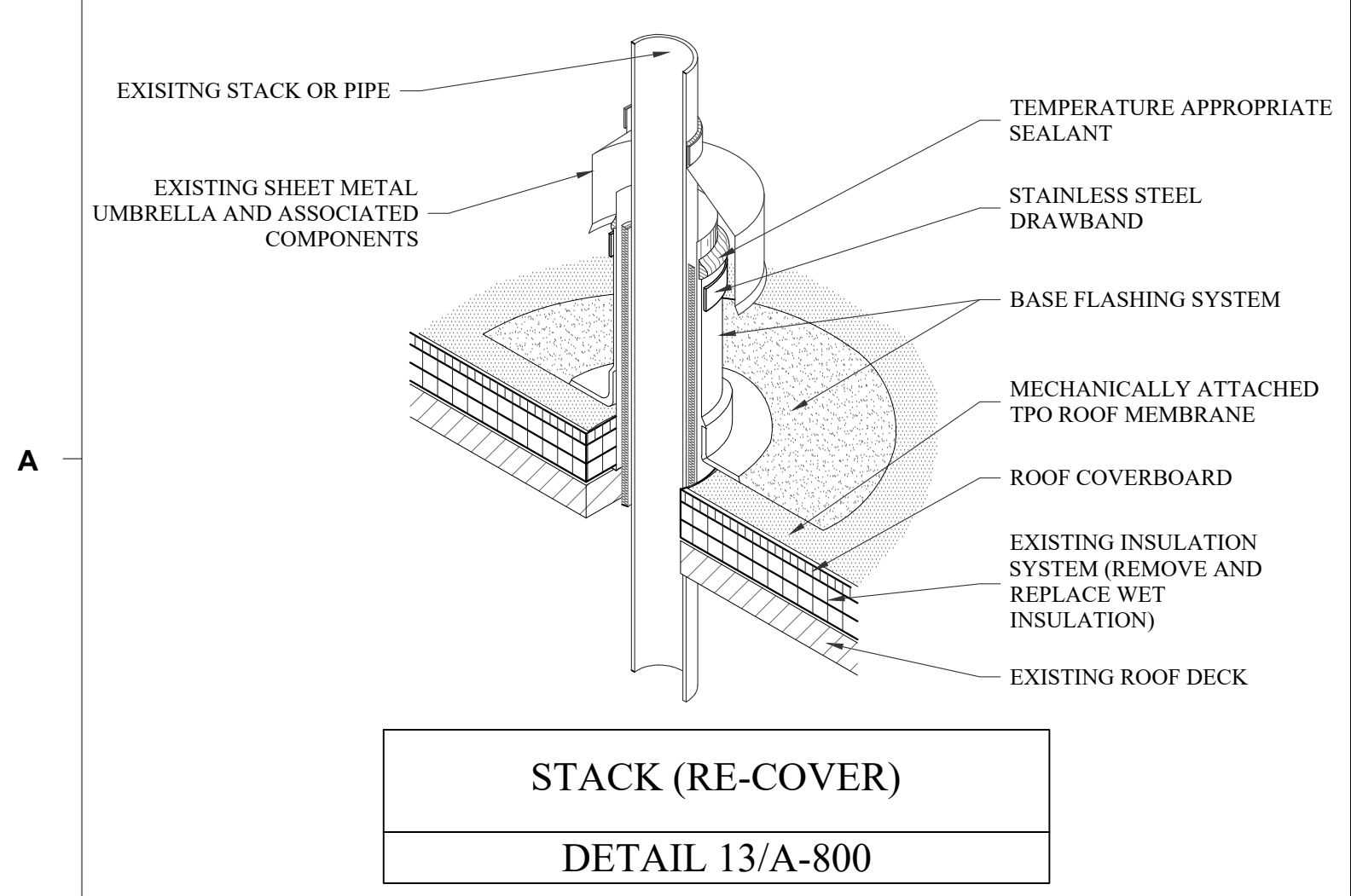
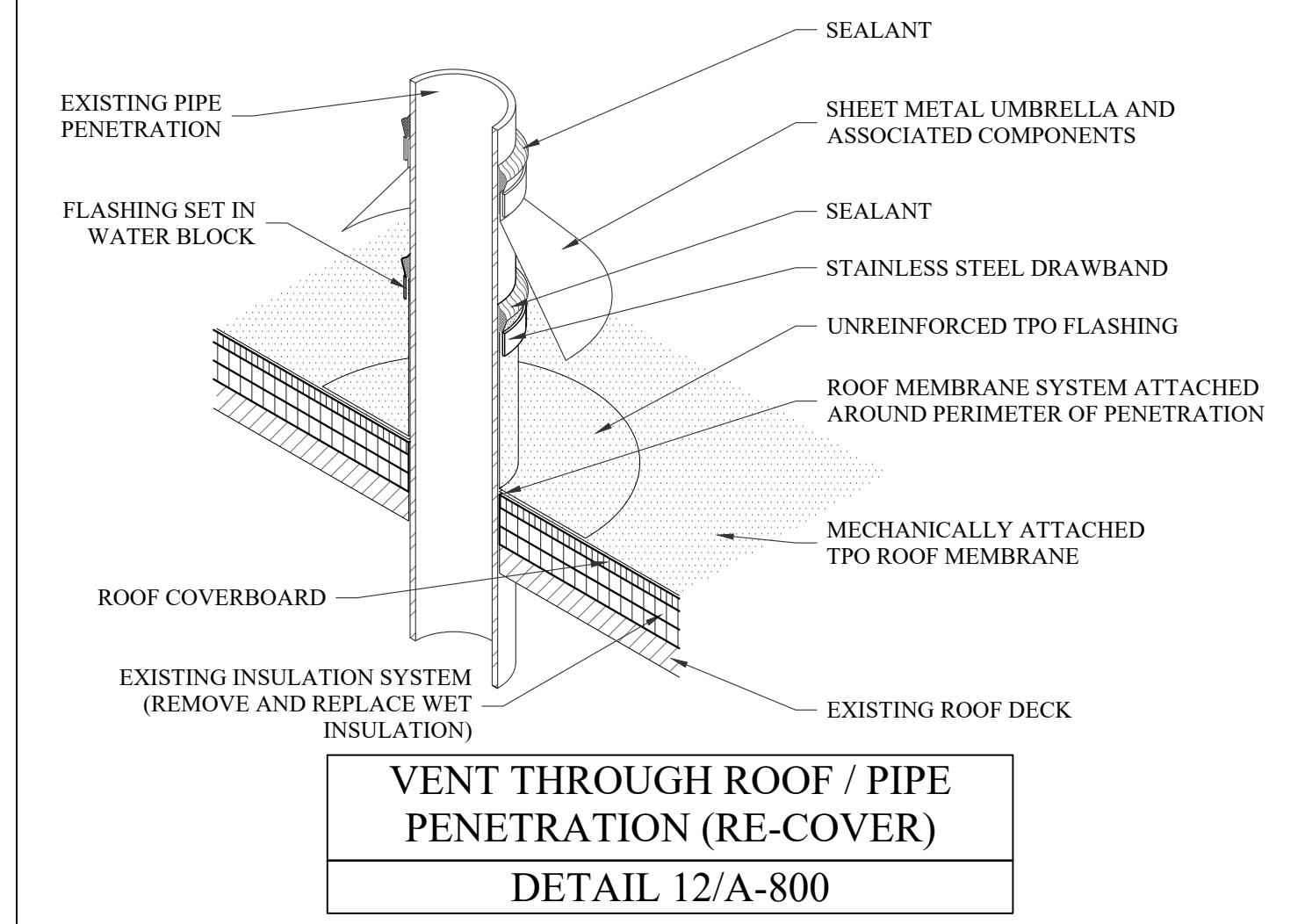
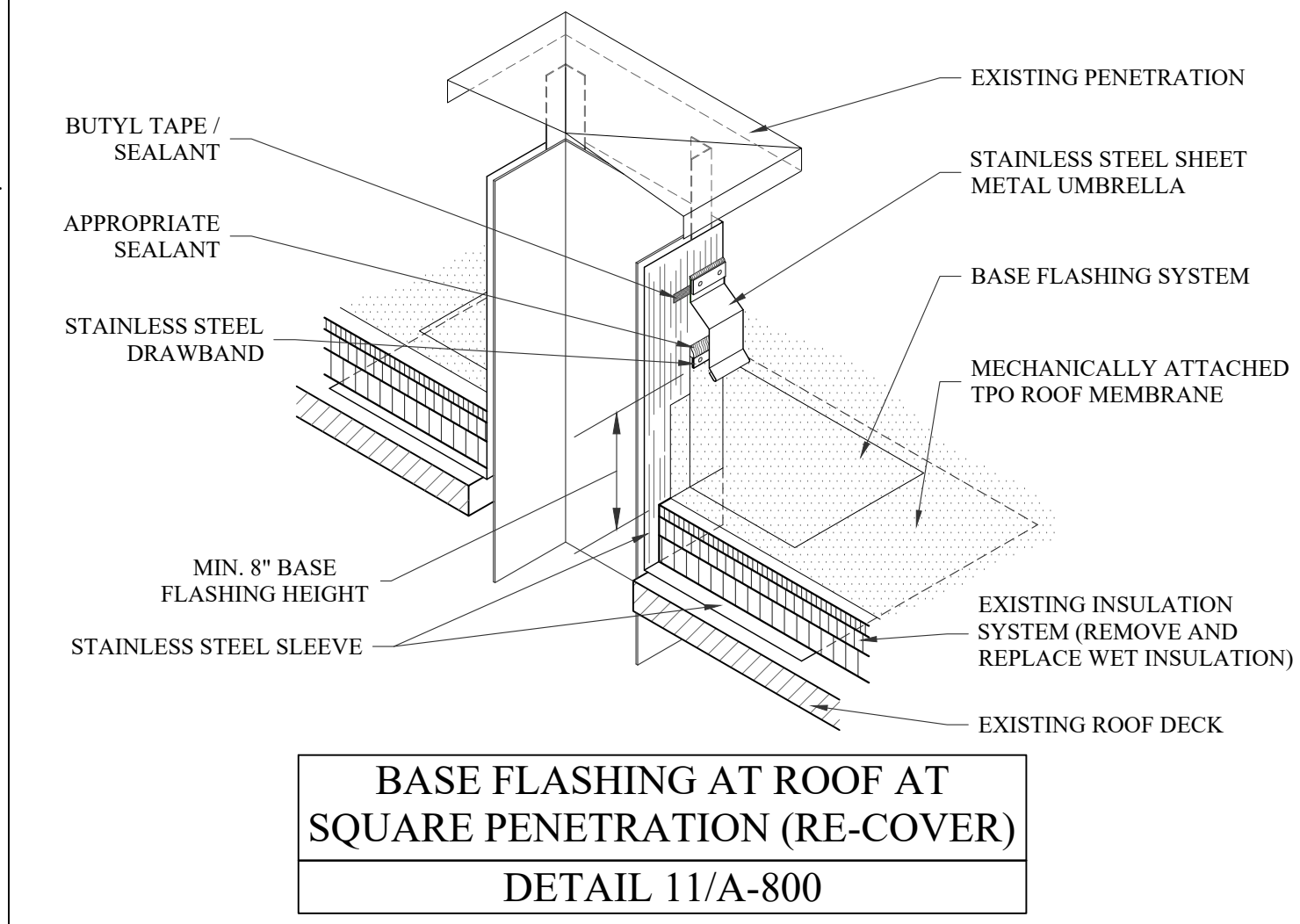
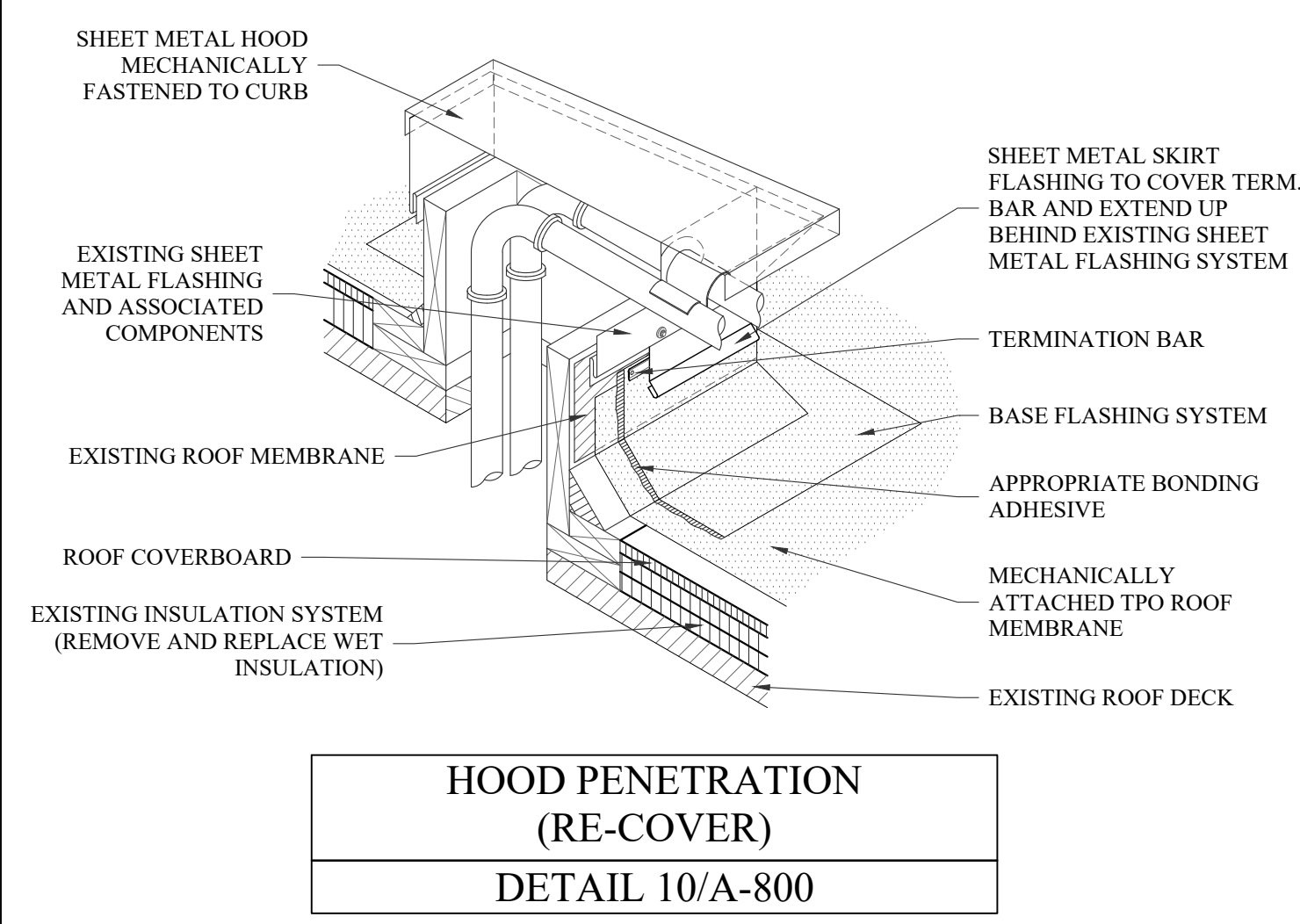
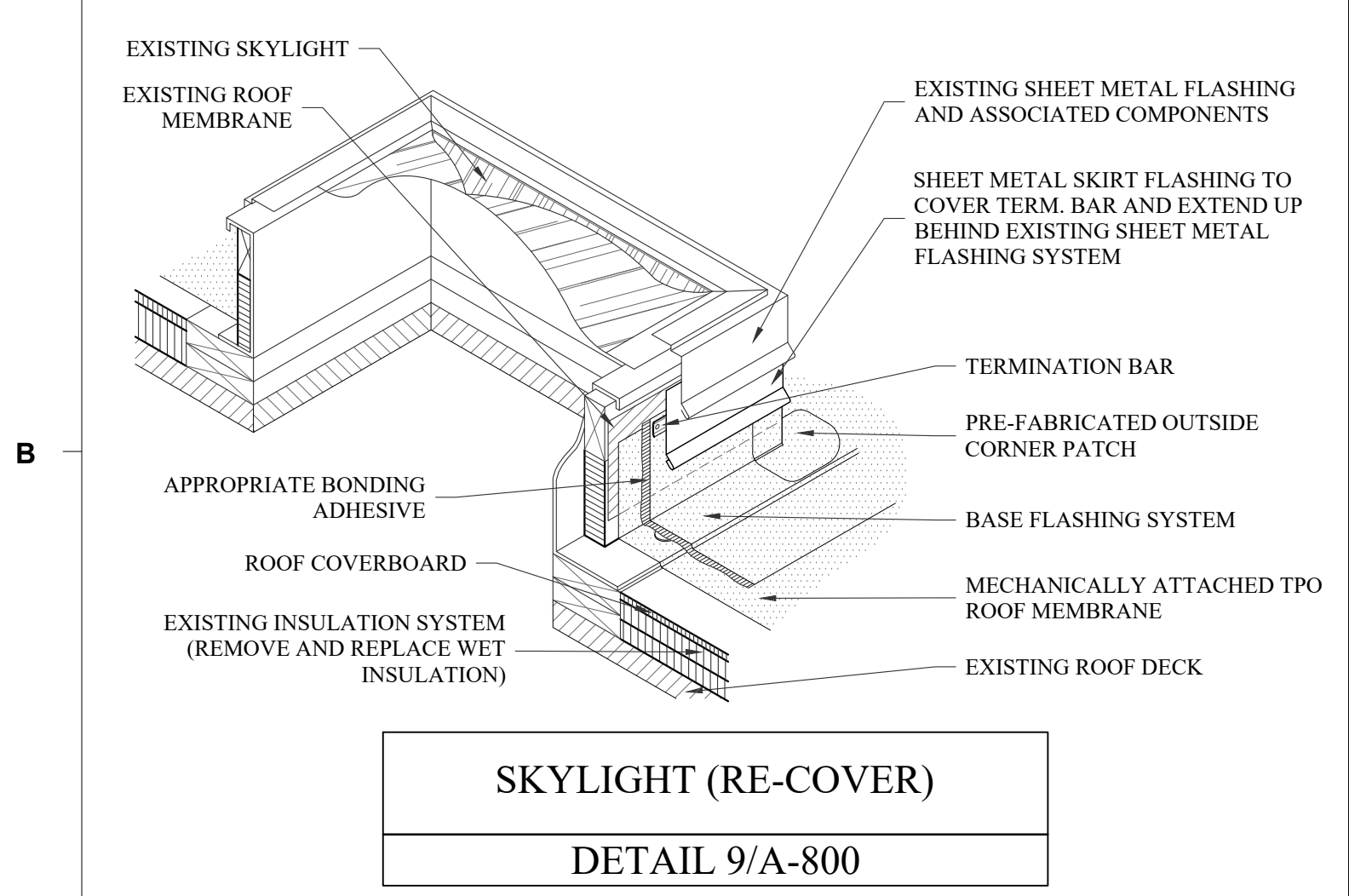
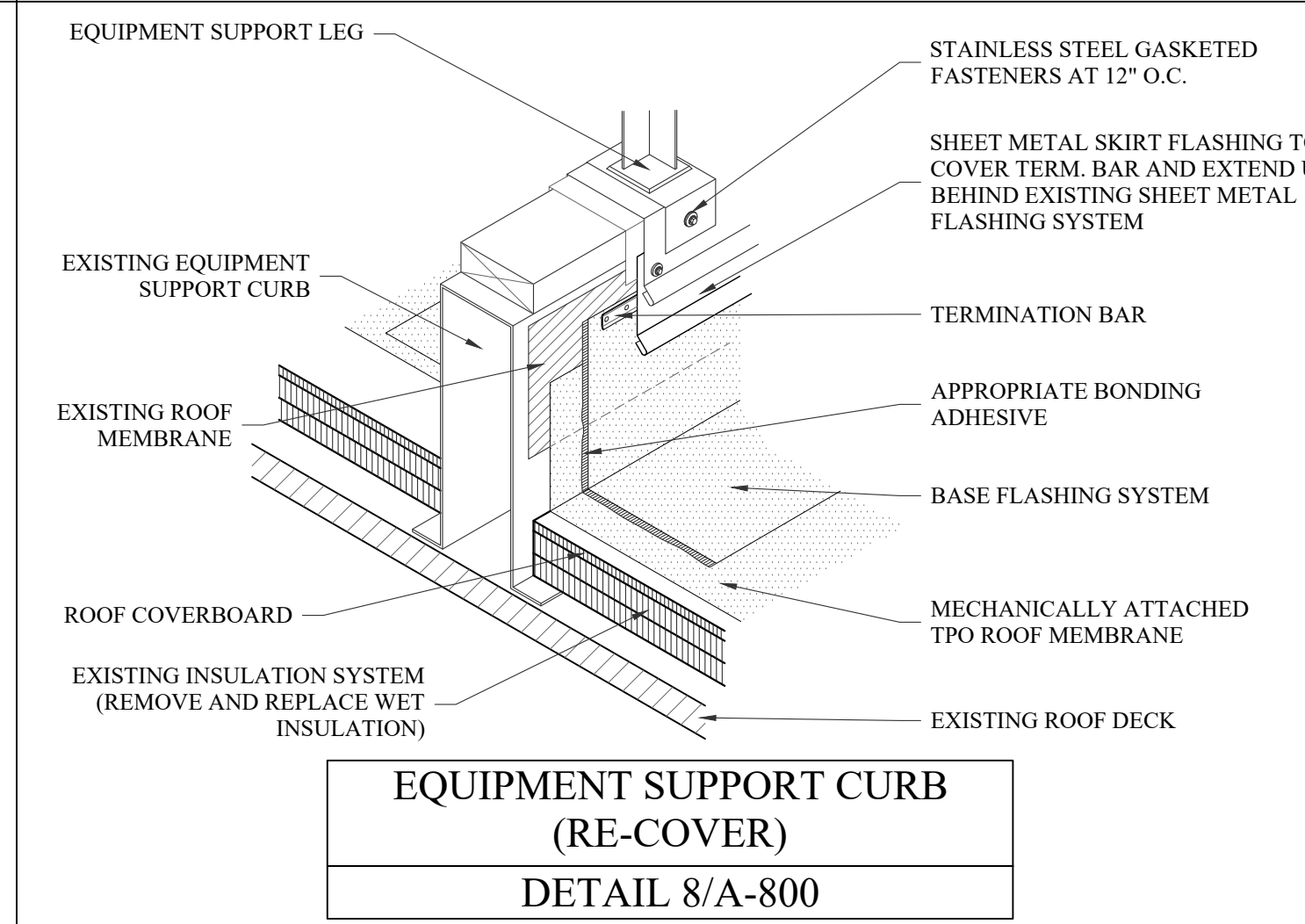
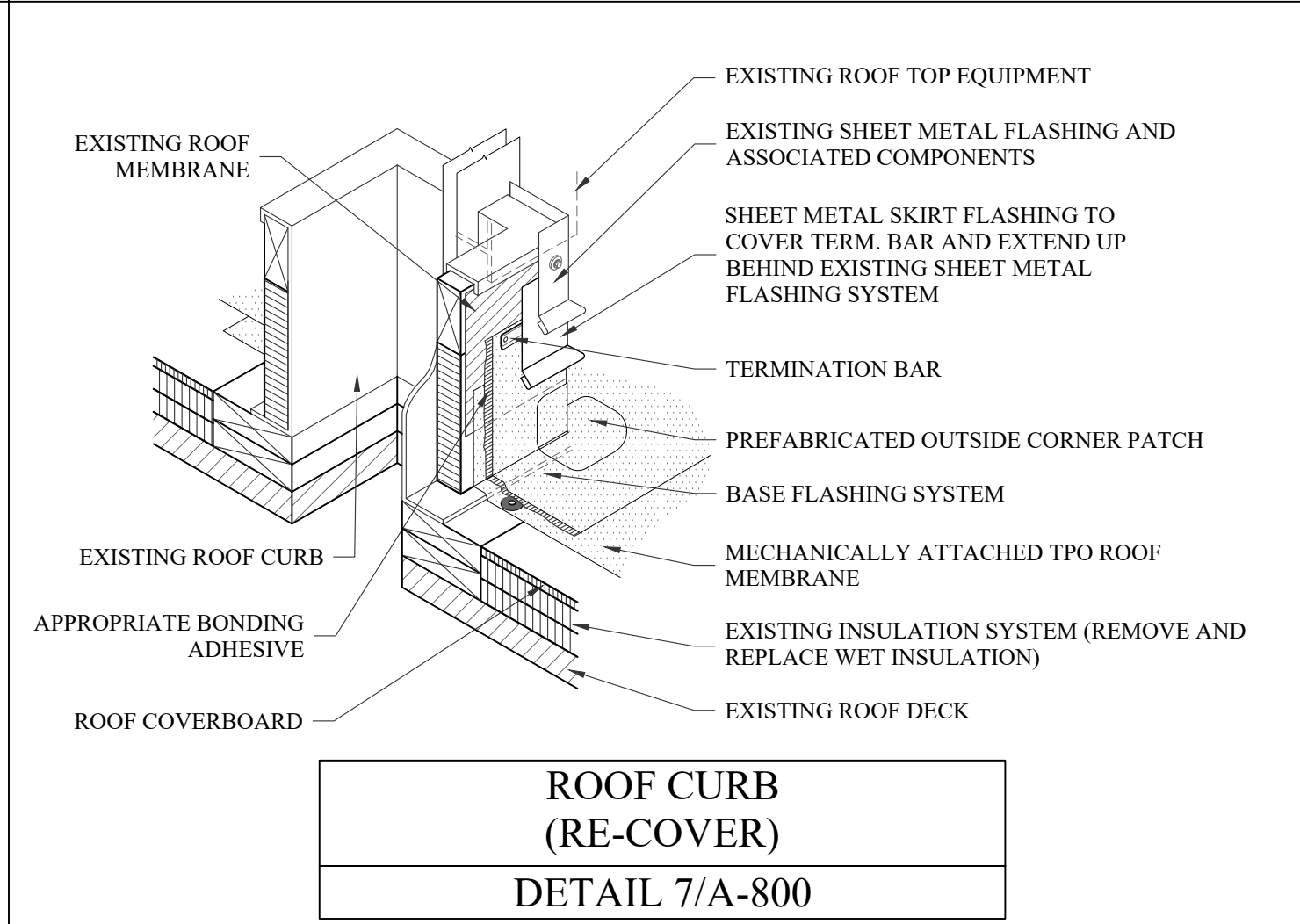
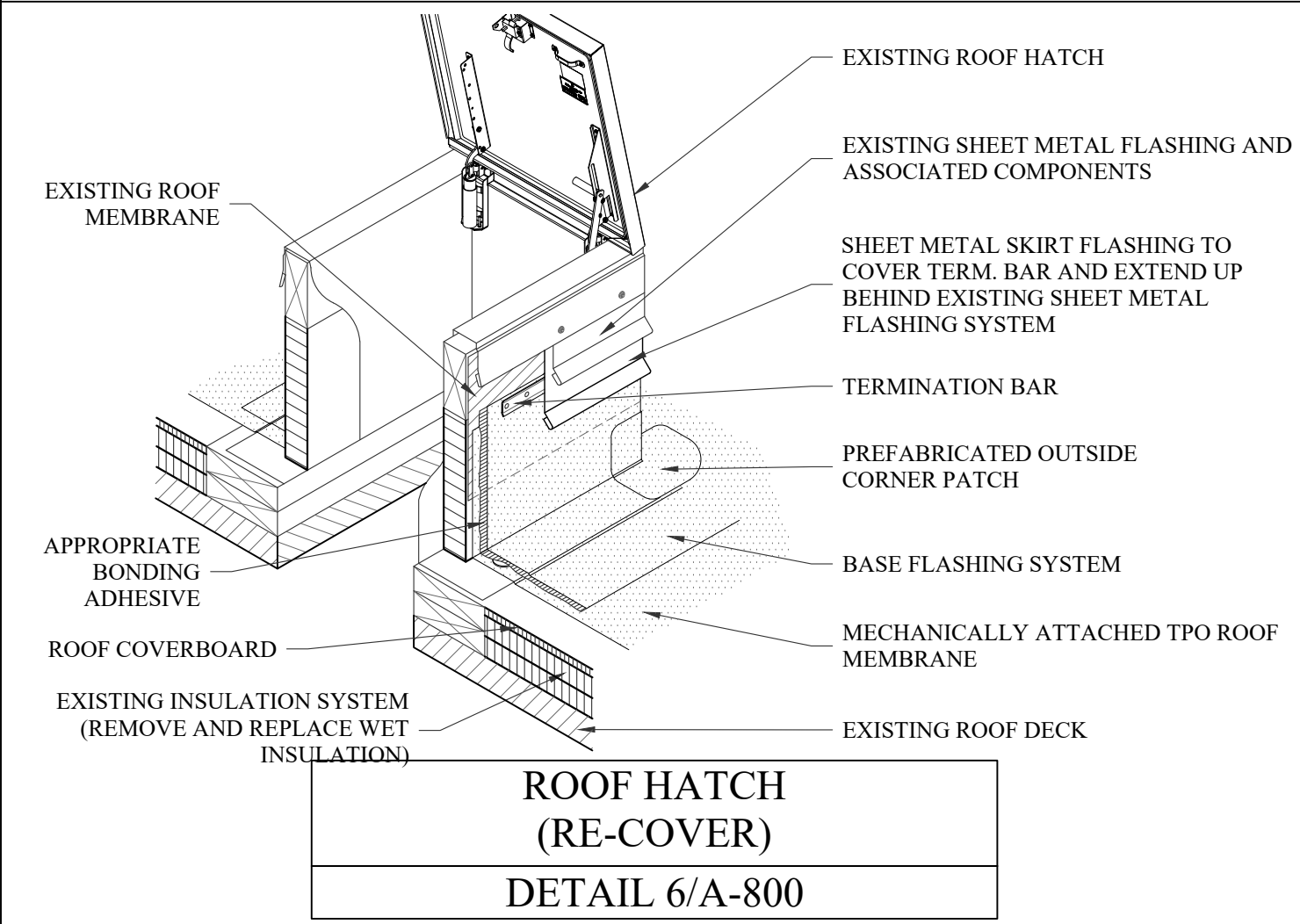
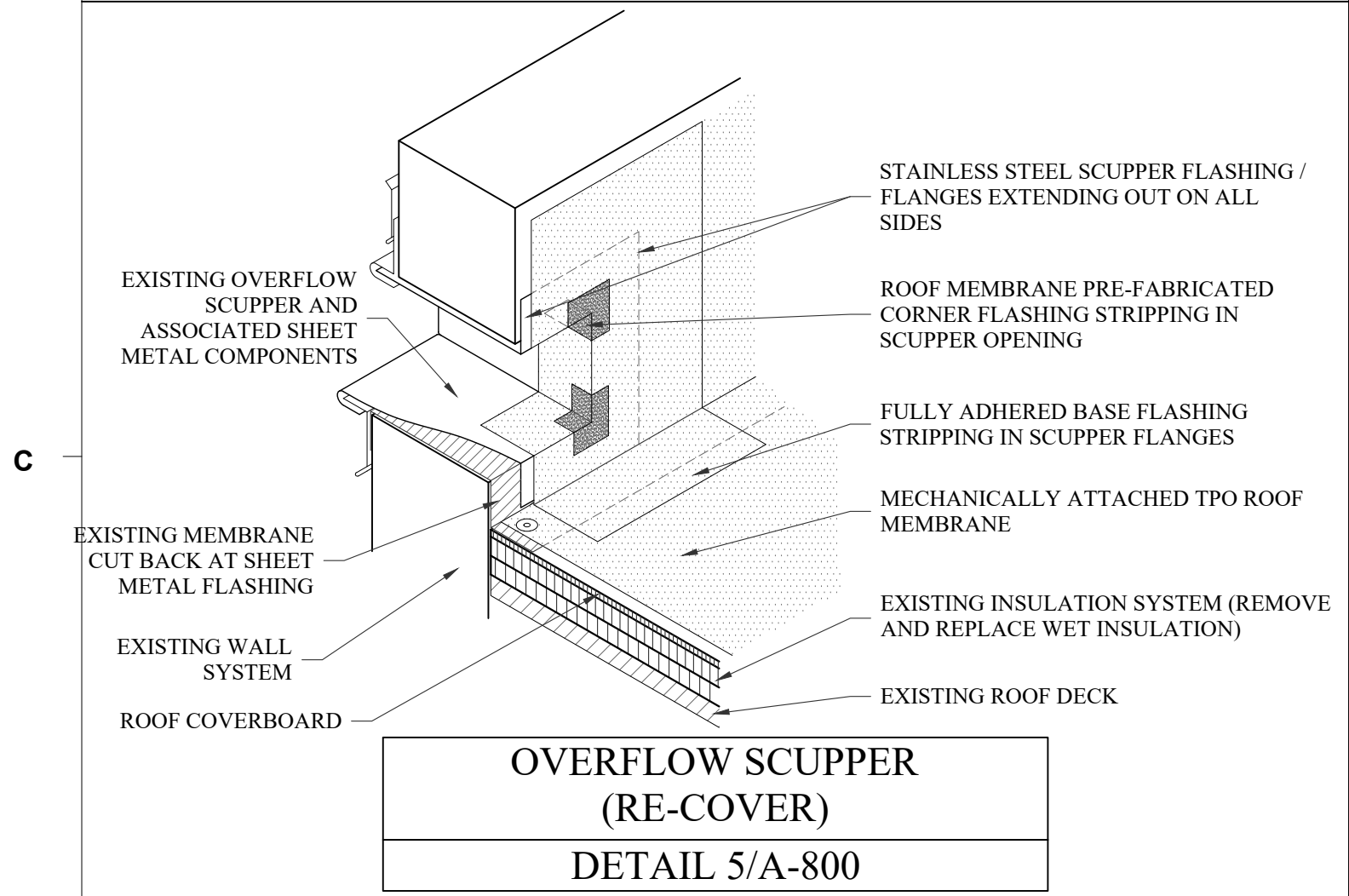
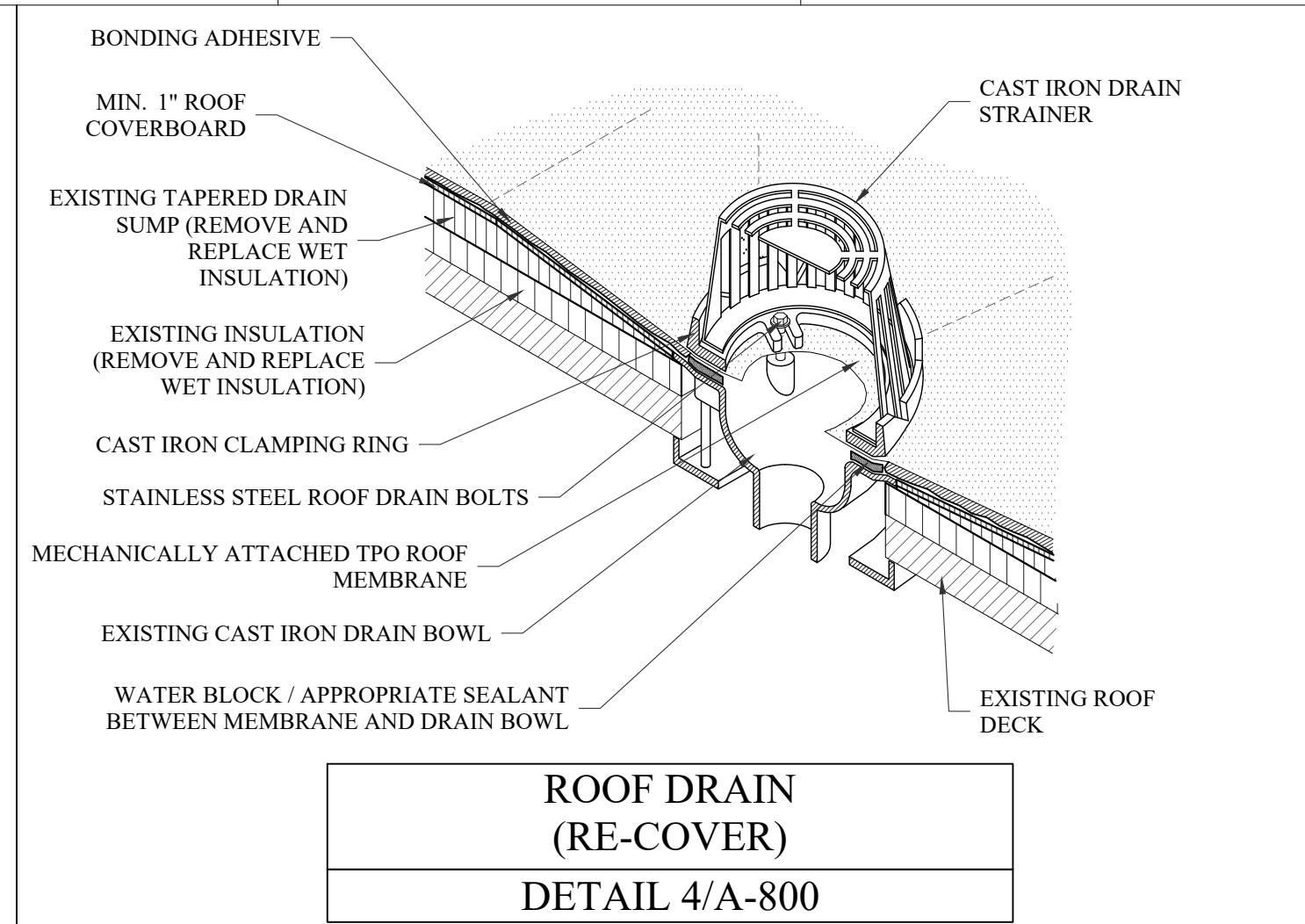
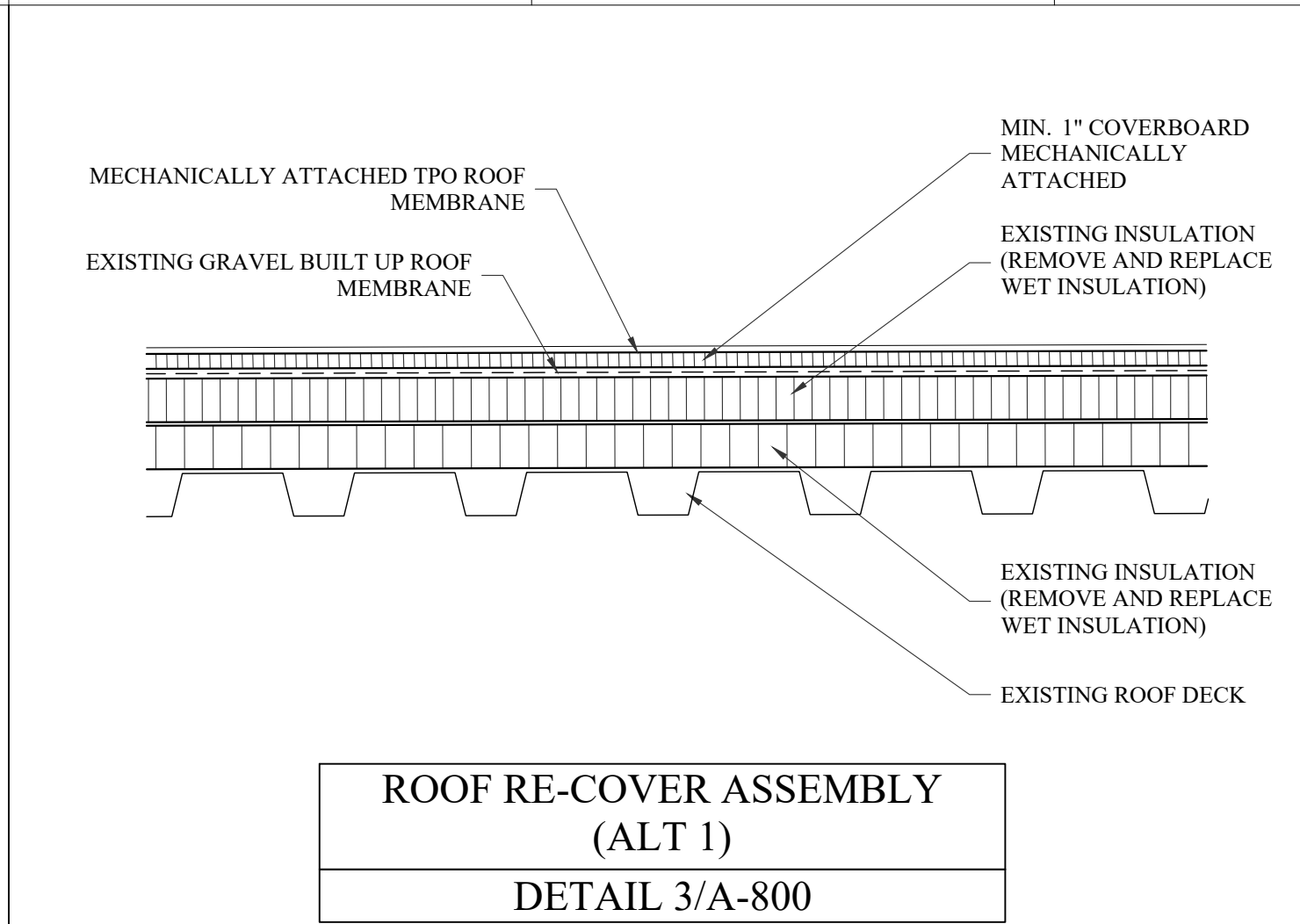
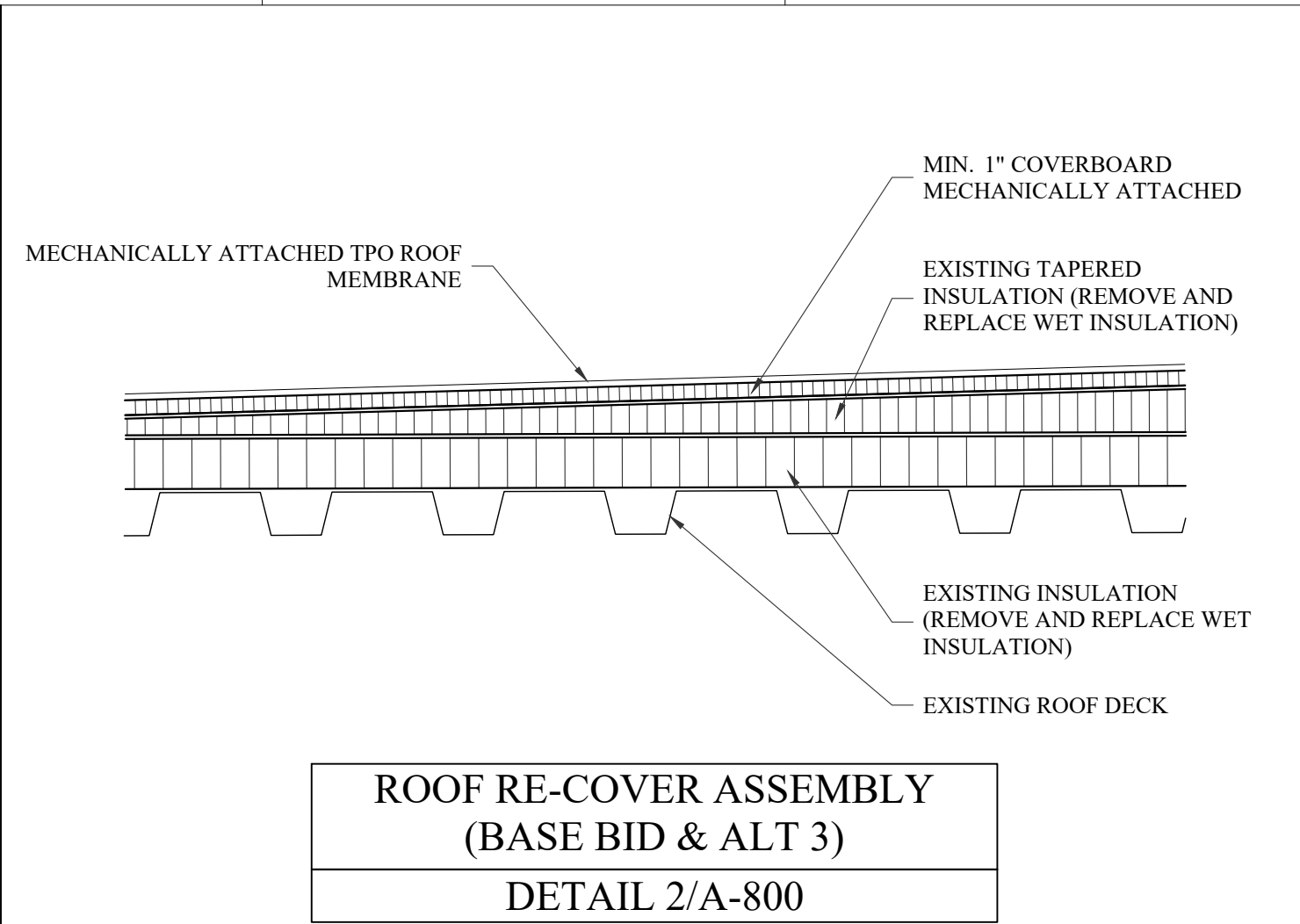
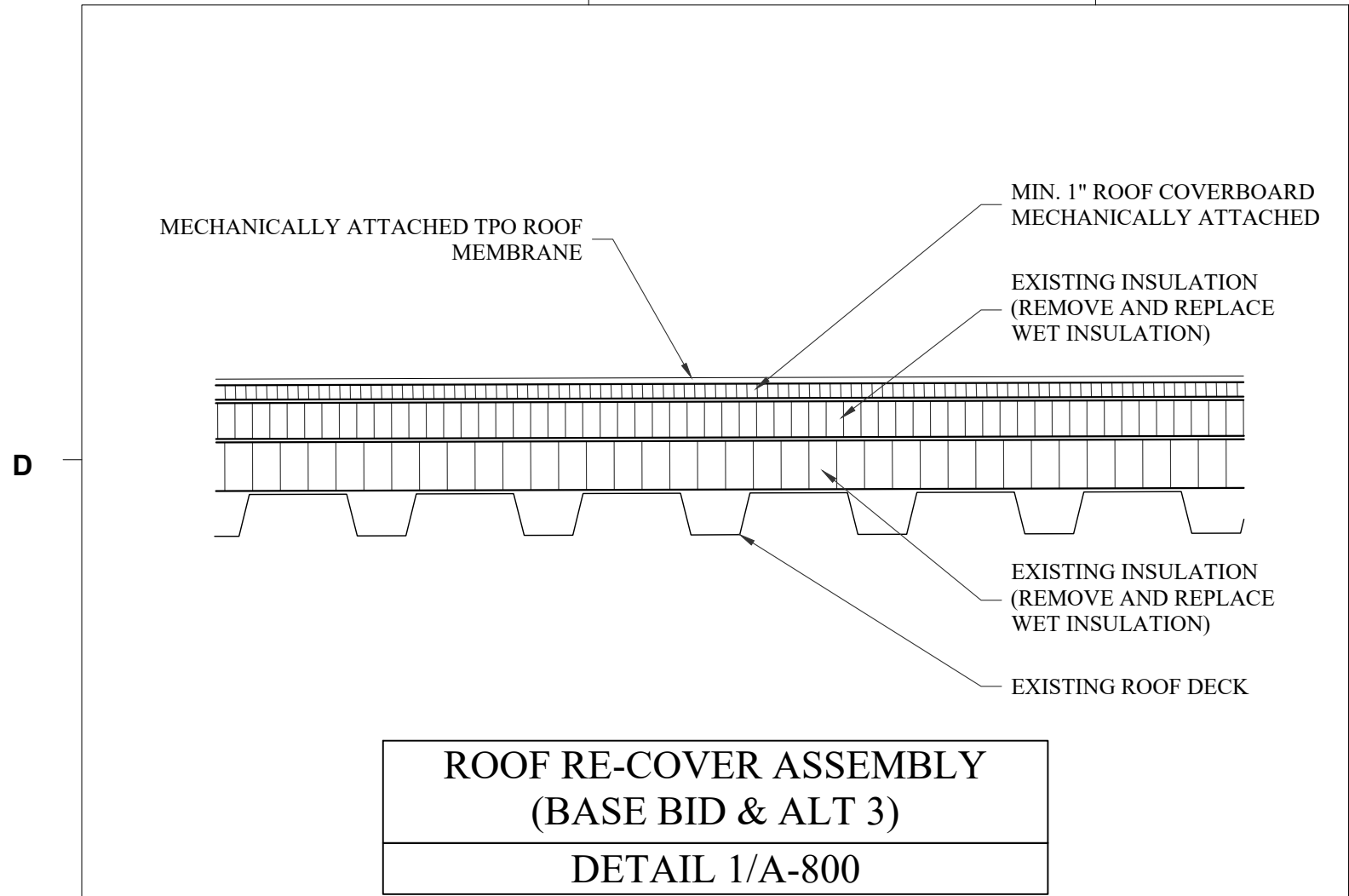
PROJECT: 2201-218720  
DATE: 01/06/22  
DRAWN BY: PD  
CHECKED BY: CW

PARTIAL TAPER  
ROOF PLAN  
(ALT 2 & ALT 4)

A-707



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No.	Description	Date

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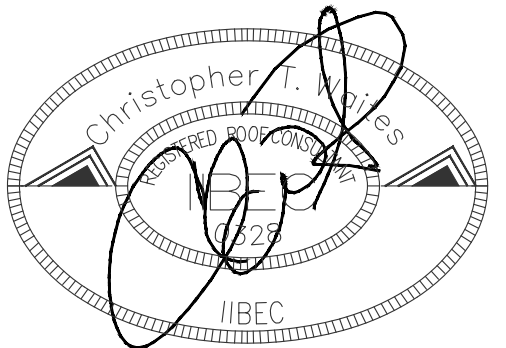
D				
	<div>BASE FLASHING AT PARAPET WALL (RE-COVER)</div> <div>DETAIL 17/A-801</div>	<div>BASE FLASHING AT MASONRY WALL (RE-COVER)</div> <div>DETAIL 18/A-801</div>	<div>BASE FLASHING AT WALL PANELS (RE-COVER)</div> <div>DETAIL 19/A-801</div>	<div>BASE FLASHING AT WINDOW / SILL PAN (RE-COVER)</div> <div>DETAIL 20/A-801</div>
C				
	<div>ROOF EDGE TERMINATION (RE-COVER)</div> <div>DETAIL 21/A-801</div>	<div>PIPE PENETRATION THROUGH BASE FLASHING</div> <div>DETAIL 22/A-801</div>	<div>DETAIL NOT USED</div> <div>DETAIL 23/A-801</div>	<div>DETAIL NOT USED</div> <div>DETAIL 24/A-801</div>
B				
	<div>DETAIL NOT USED</div> <div>DETAIL 25/A-801</div>	<div>DETAIL NOT USED</div> <div>DETAIL 26/A-801</div>	<div>DETAIL NOT USED</div> <div>DETAIL 27/A-801</div>	<div>DETAIL NOT USED</div> <div>DETAIL 28/A-801</div>
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	<div>DETAIL NOT USED</div> <div>DETAIL 29/A-801</div>	<div>DETAIL NOT USED</div> <div>DETAIL 30/A-801</div>	<div>DETAIL NOT USED</div> <div>DETAIL 31/A-801</div>	<div>DETAIL NOT USED</div> <div>DETAIL 32/A-801</div>



WATERWAY ES  
ROOFING  
RENOVATION



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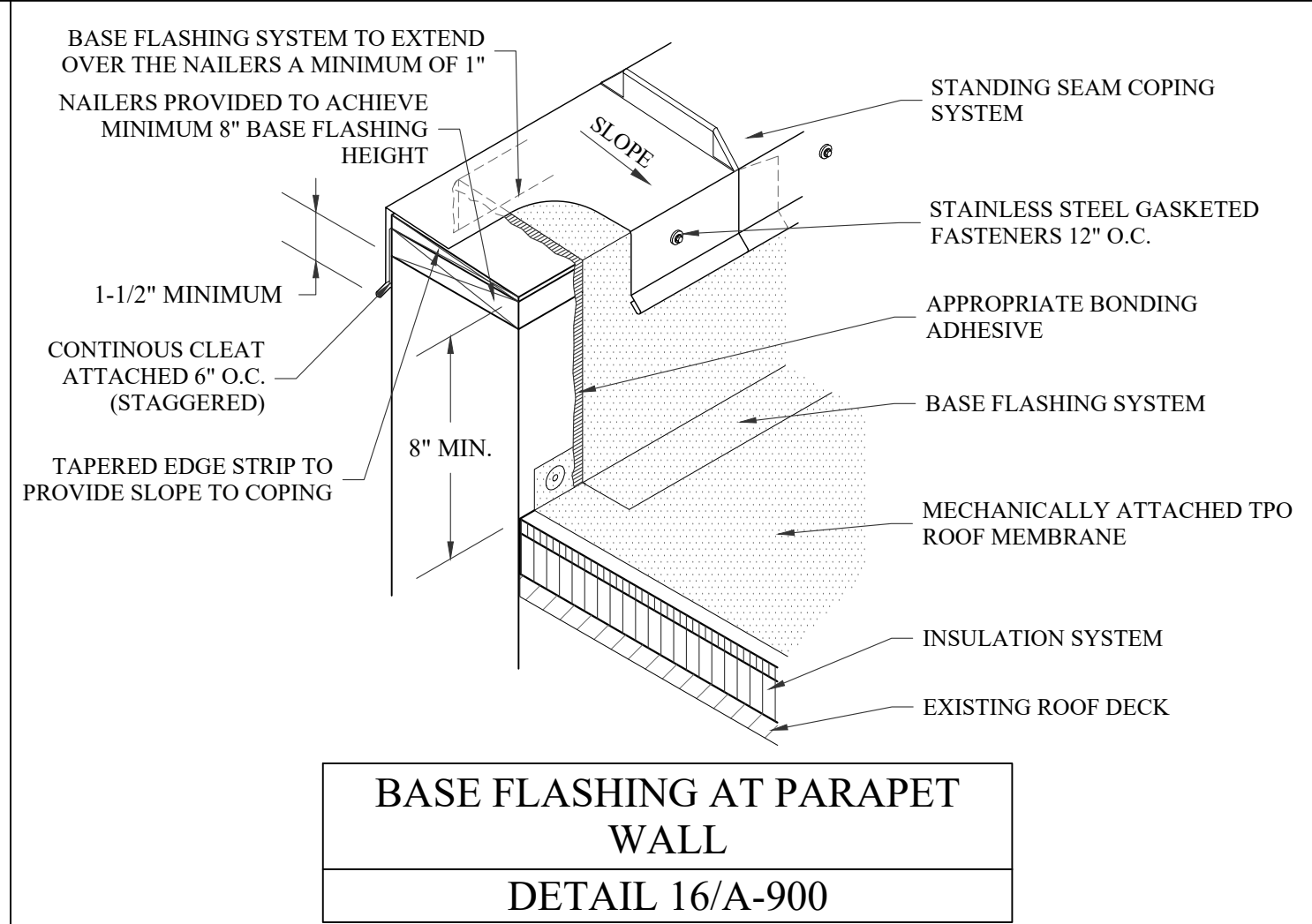
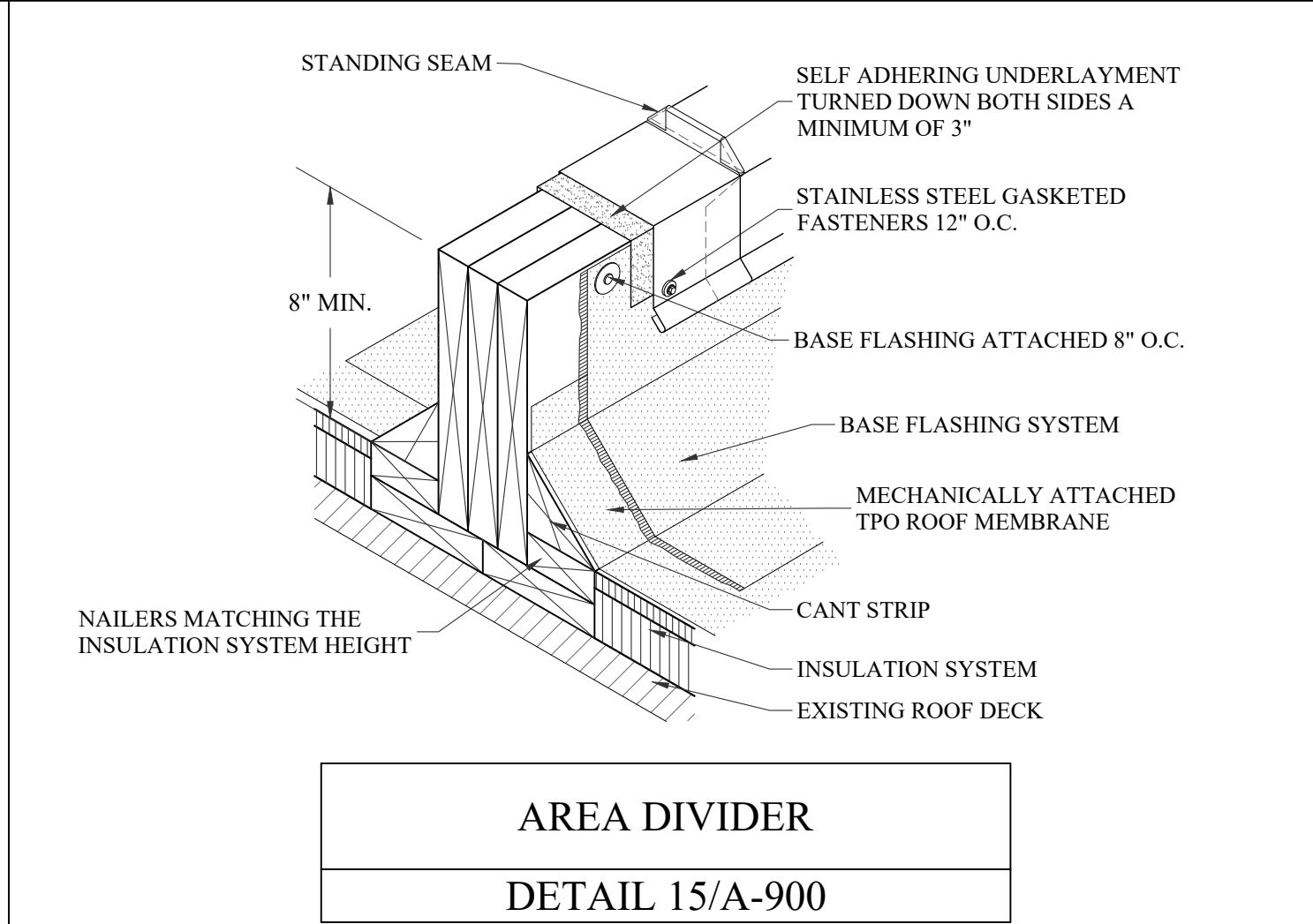
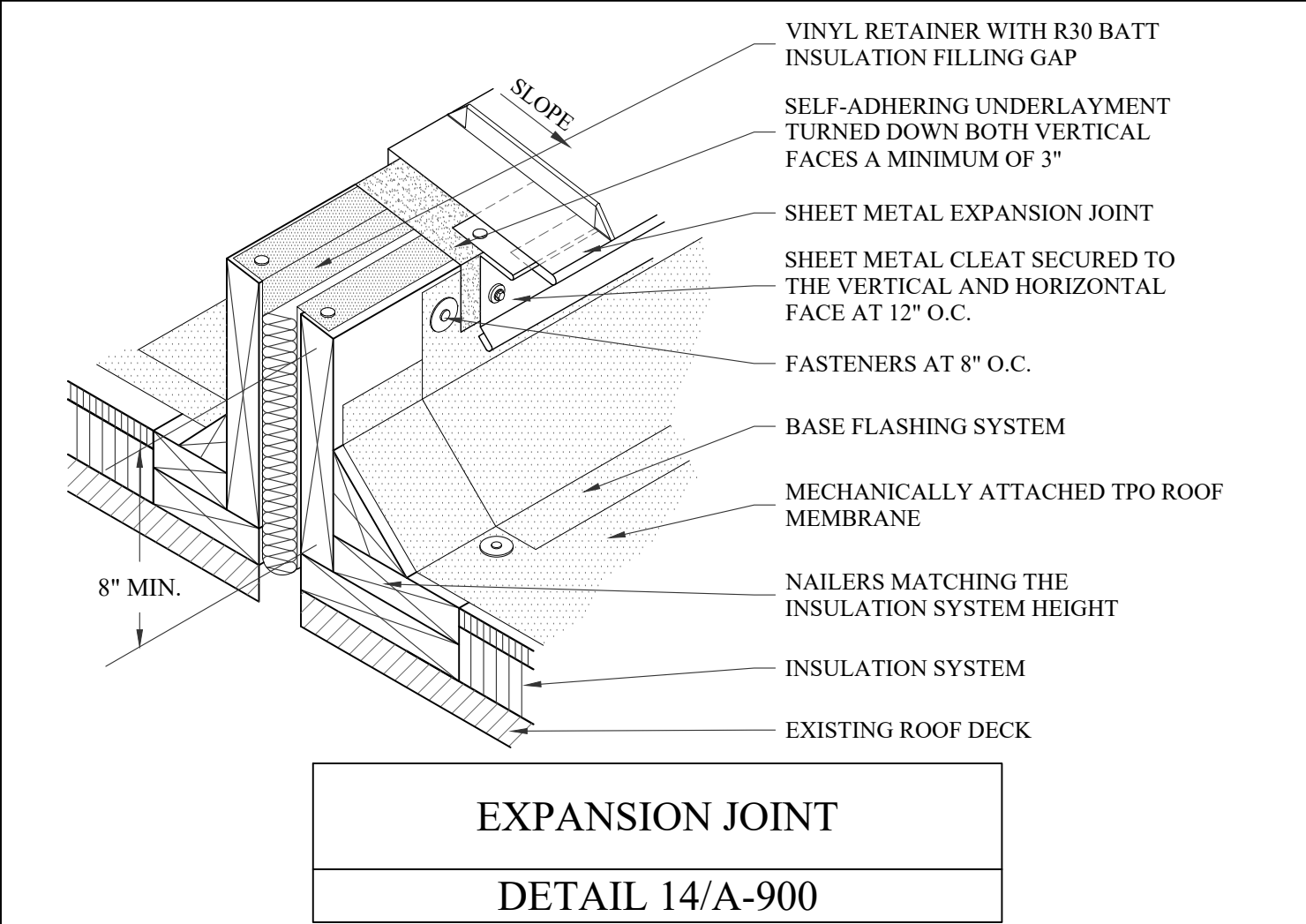
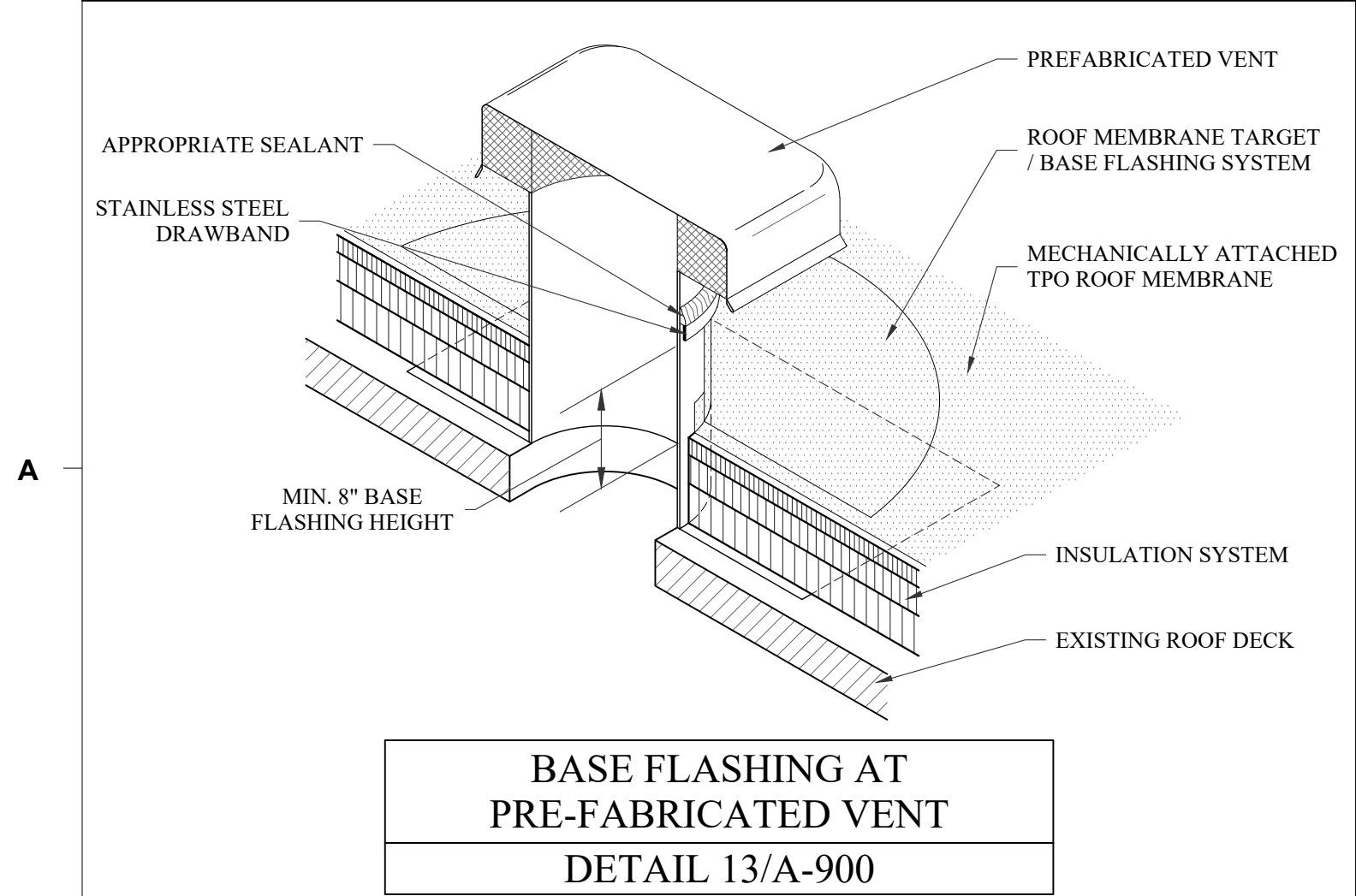
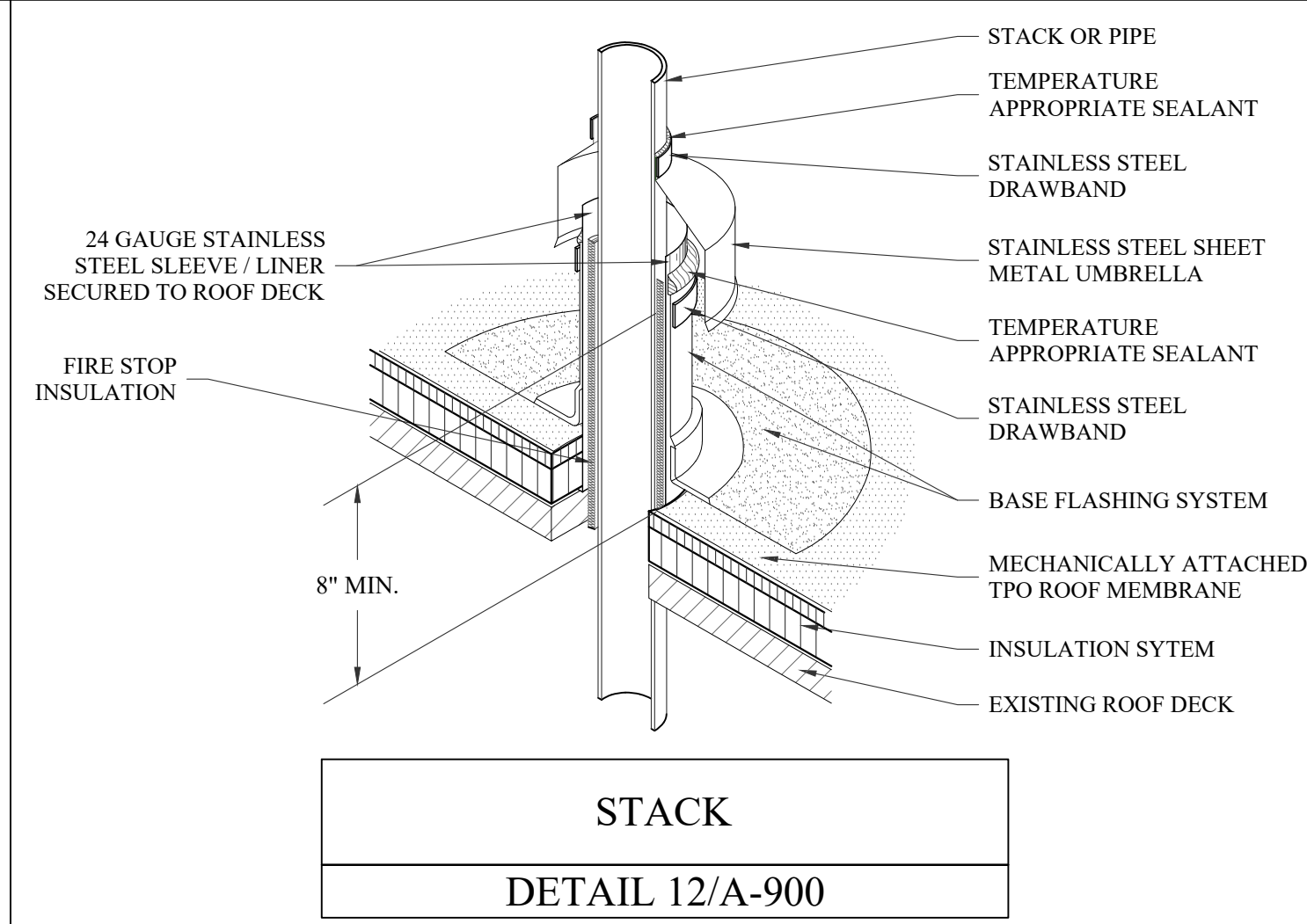
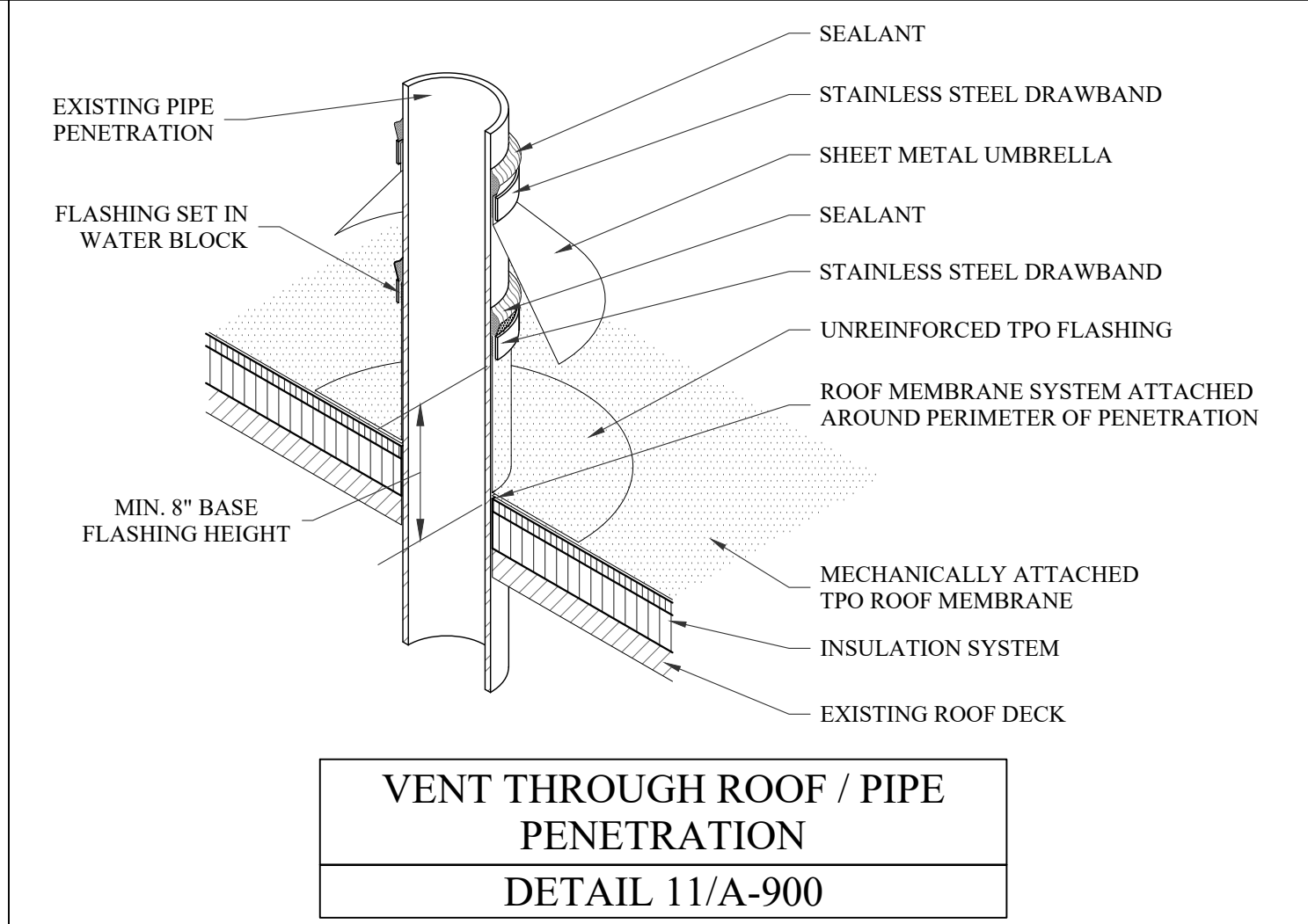
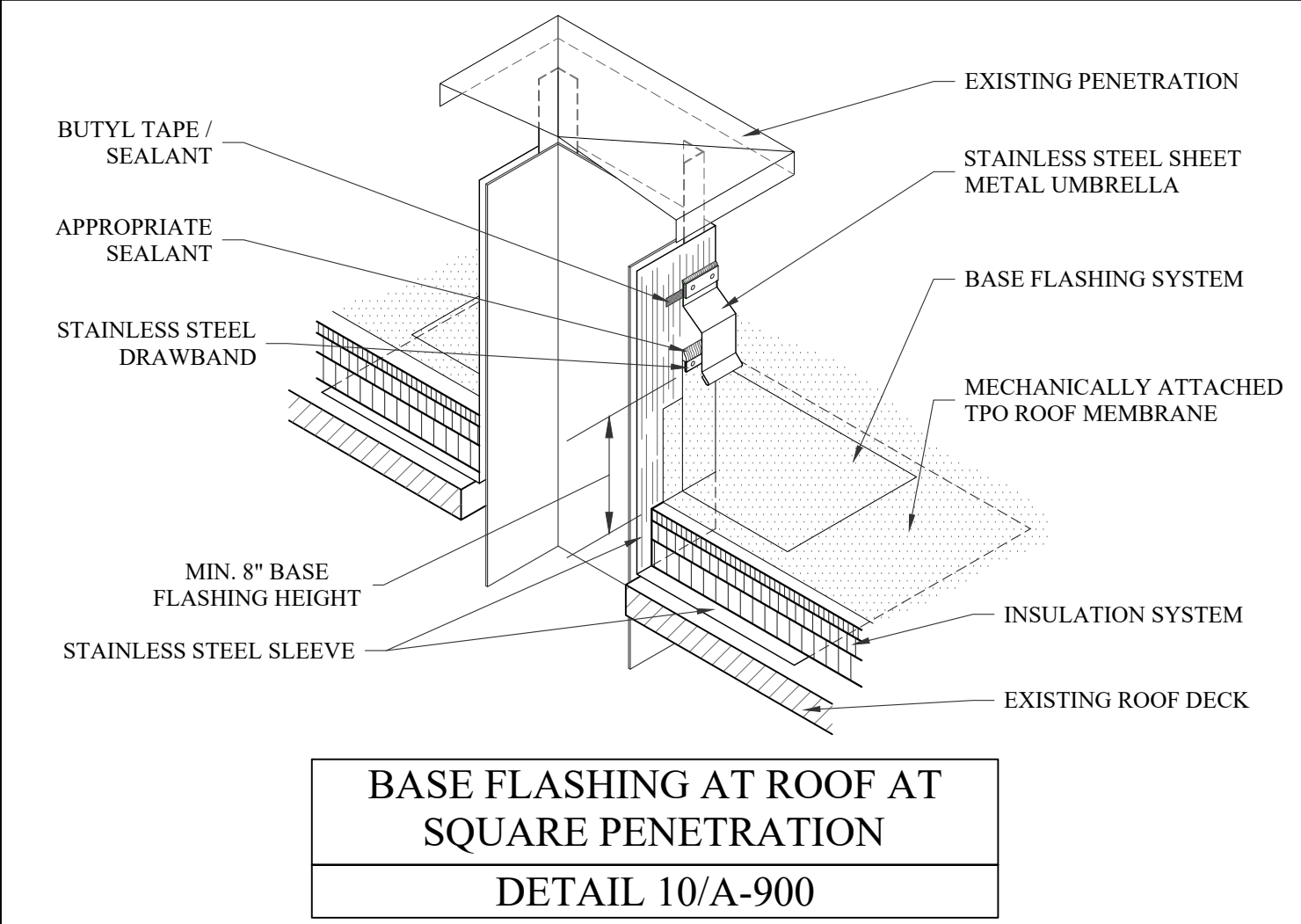
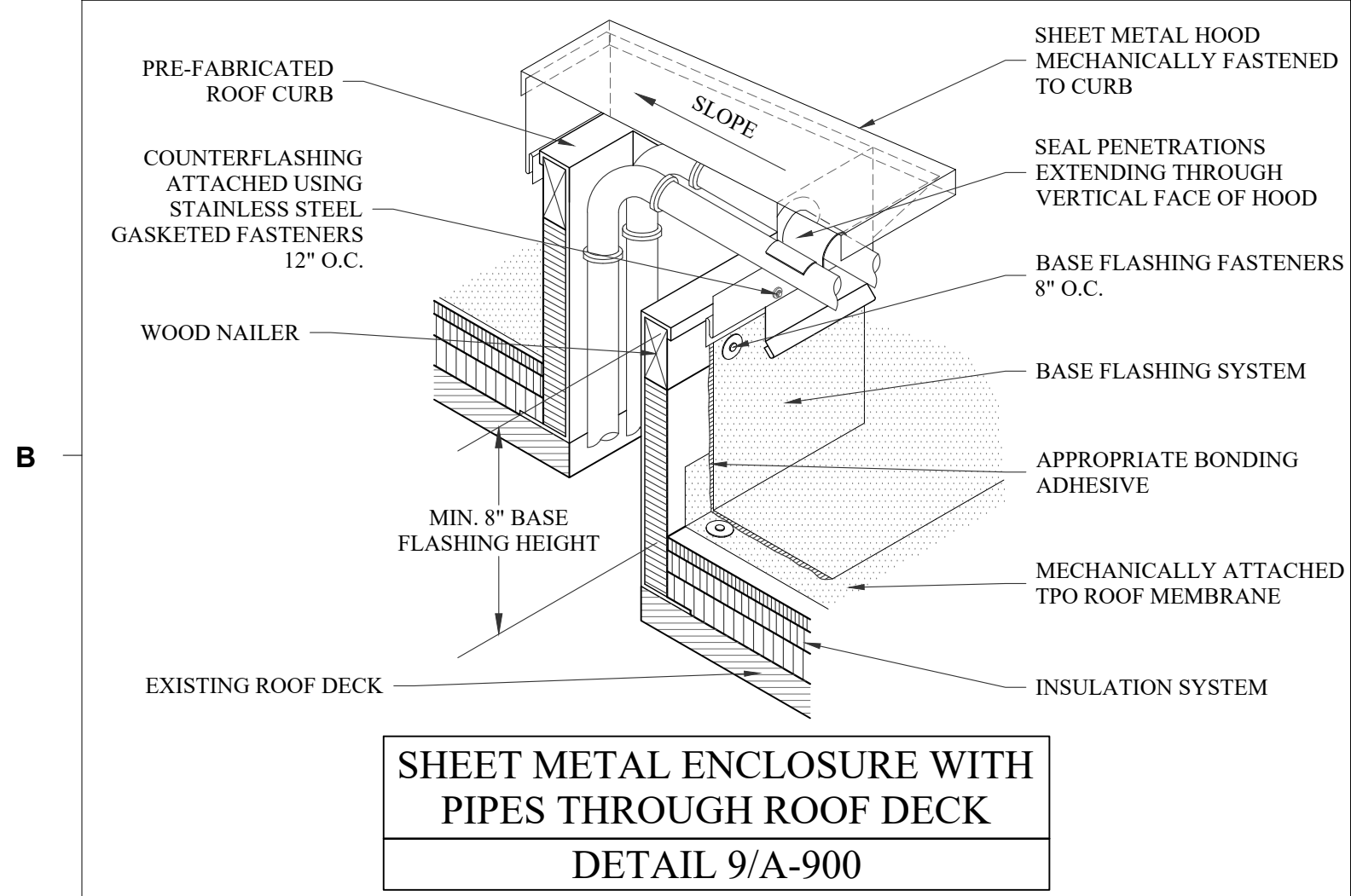
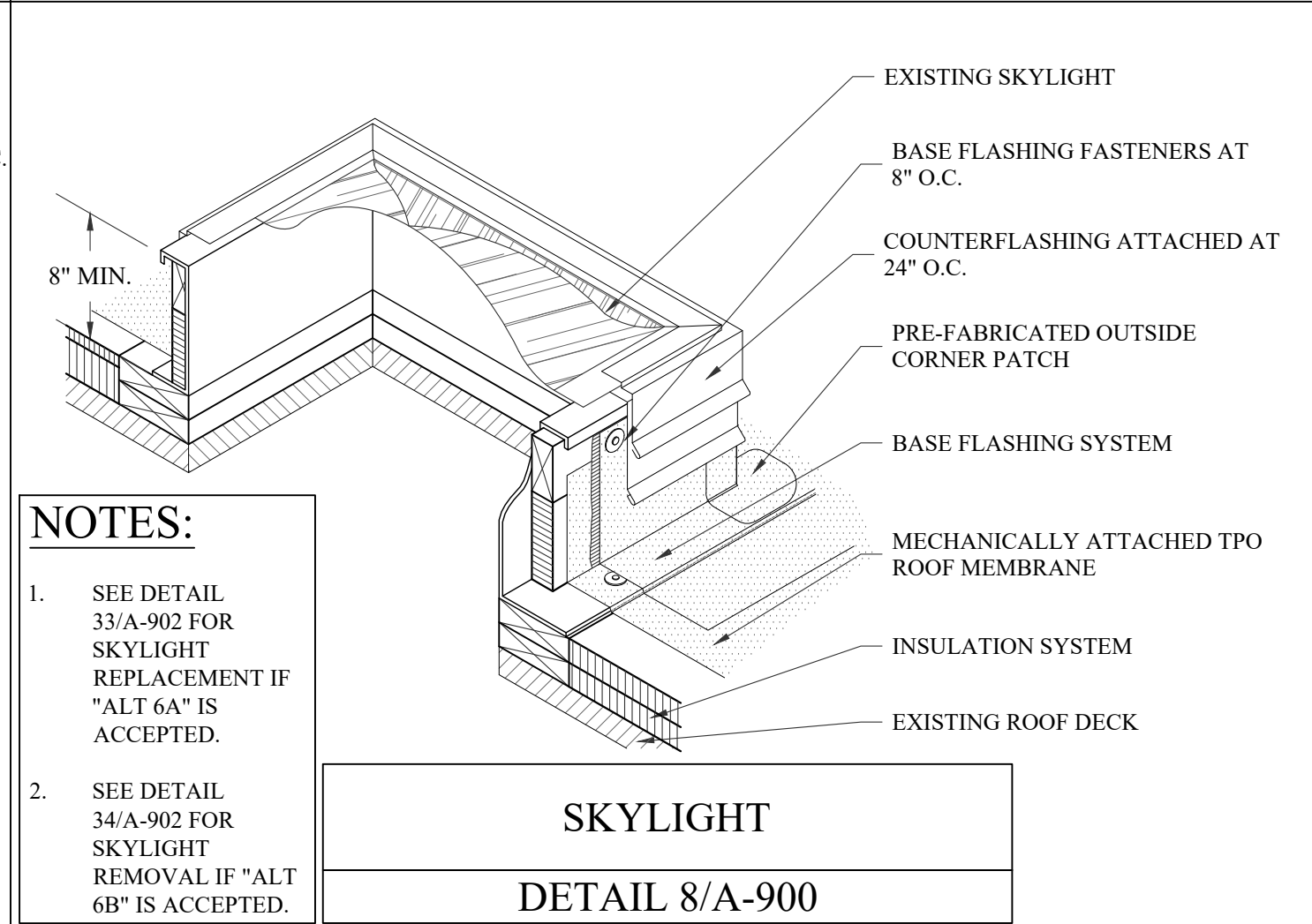
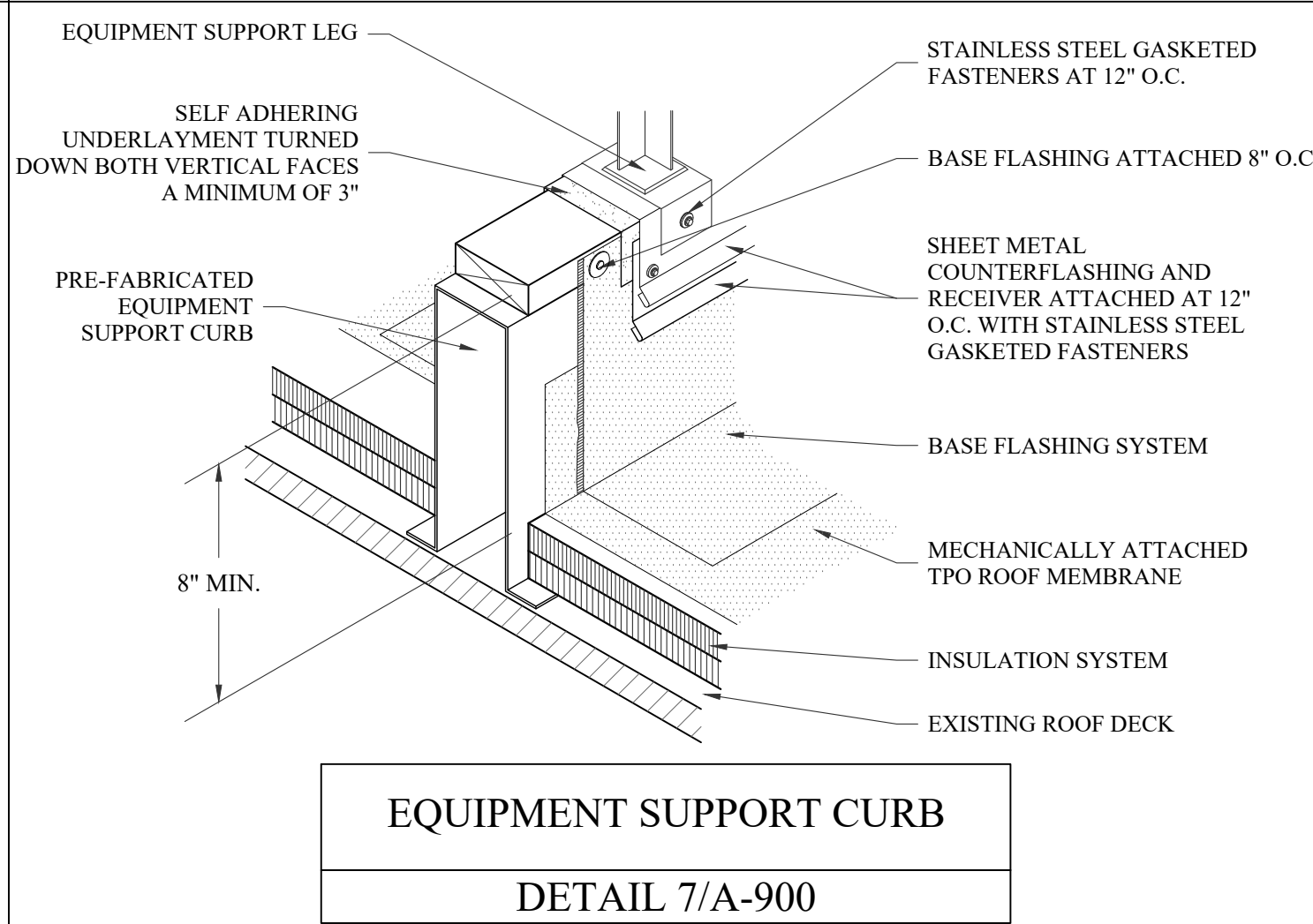
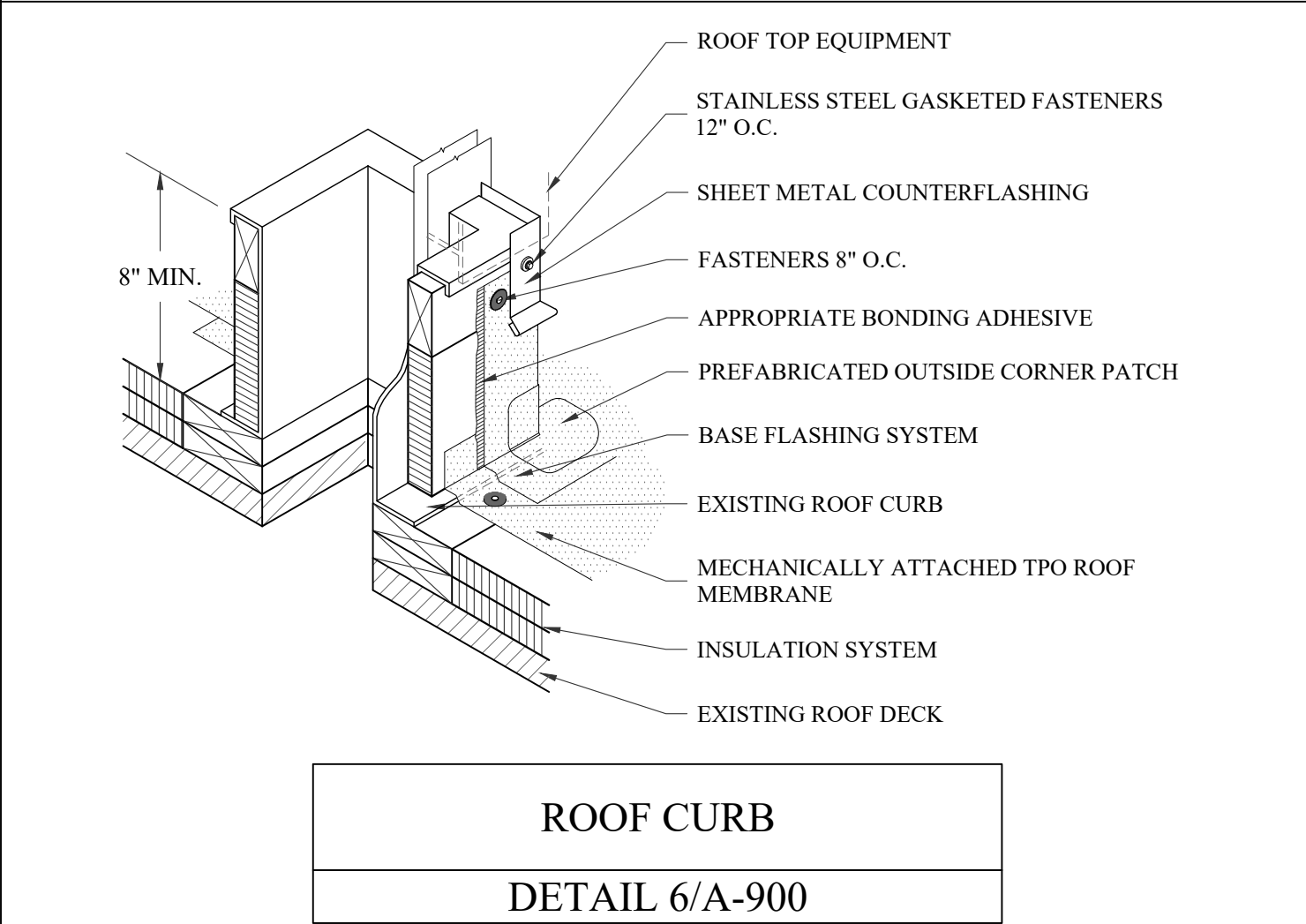
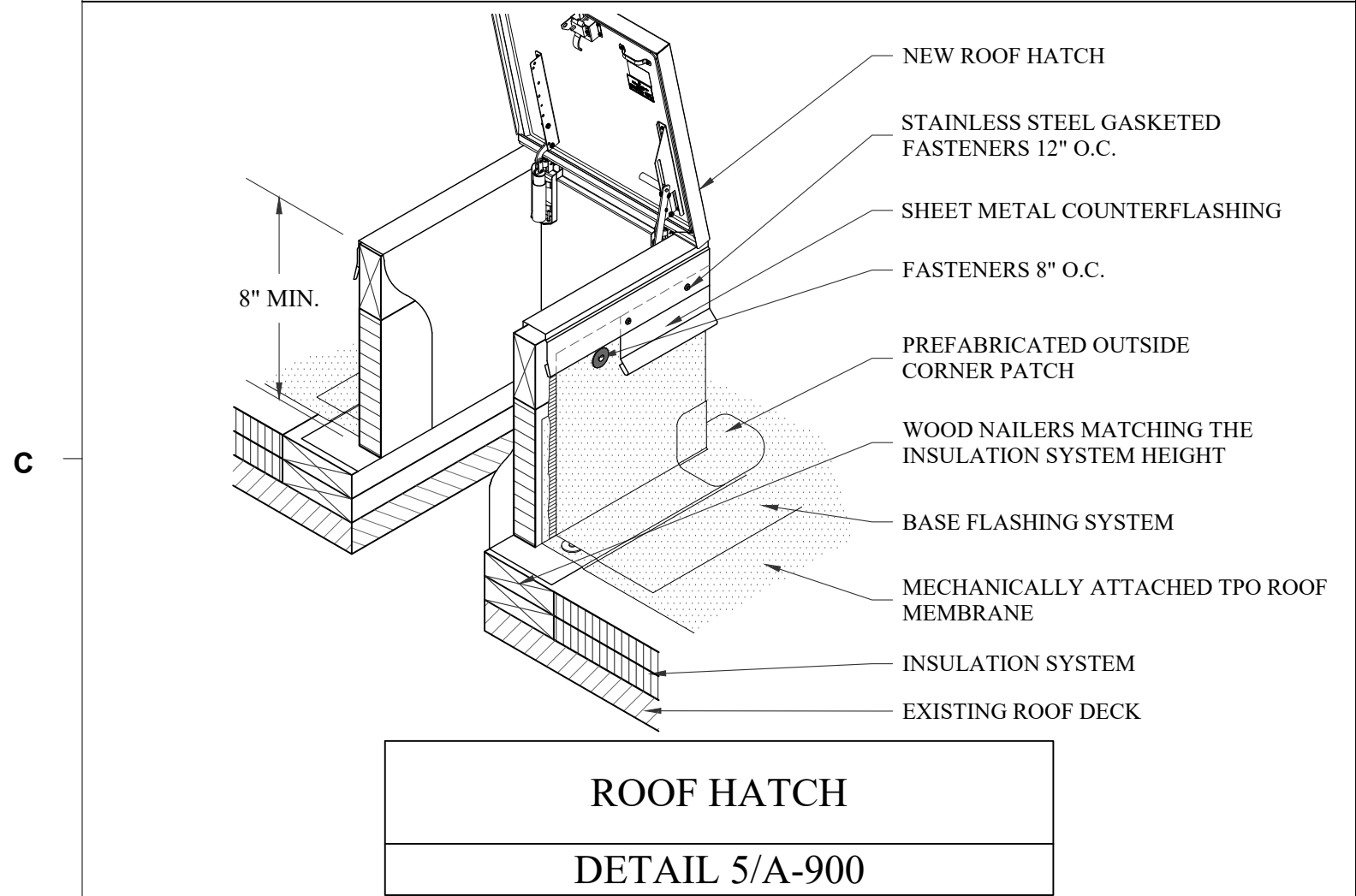
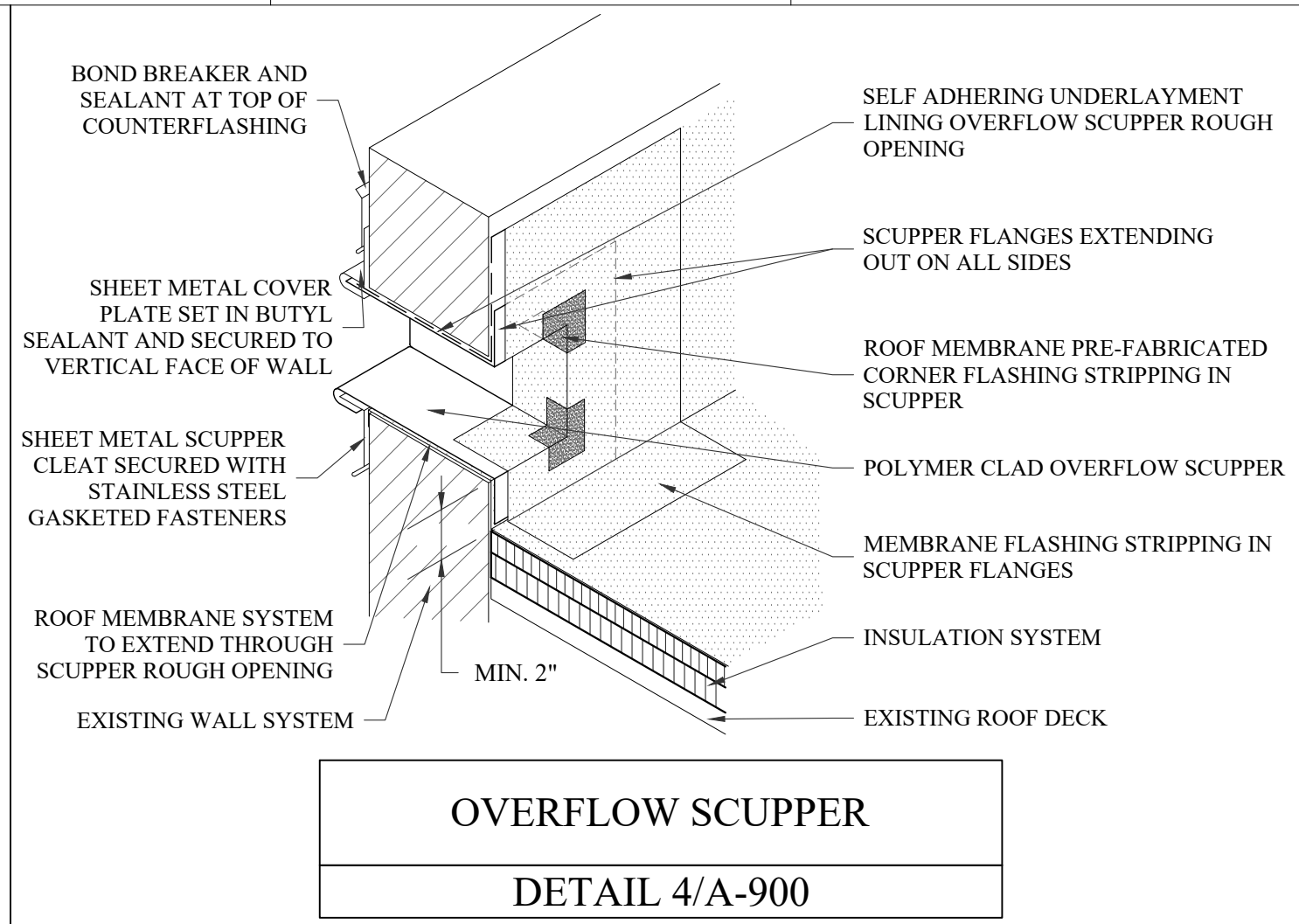
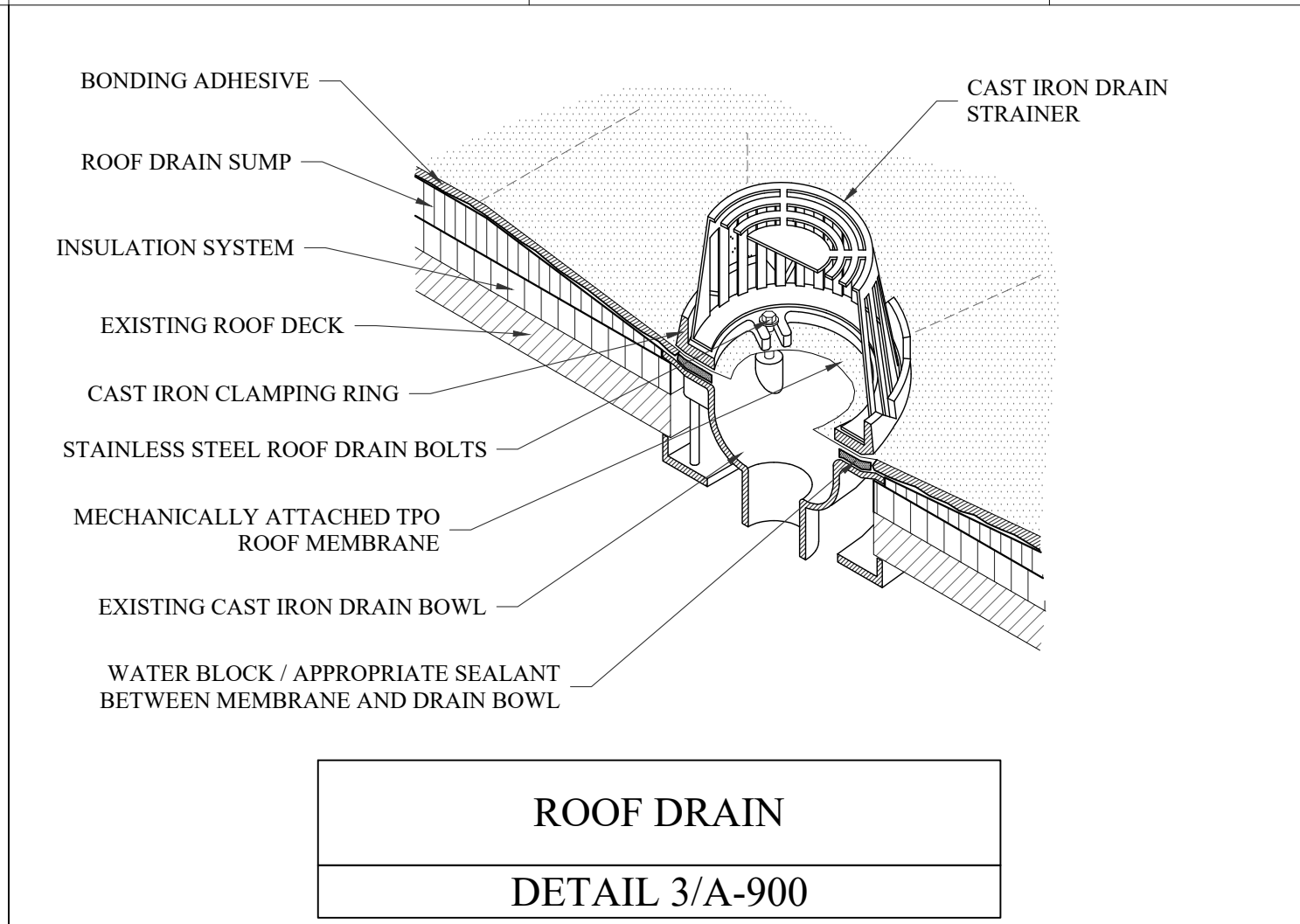
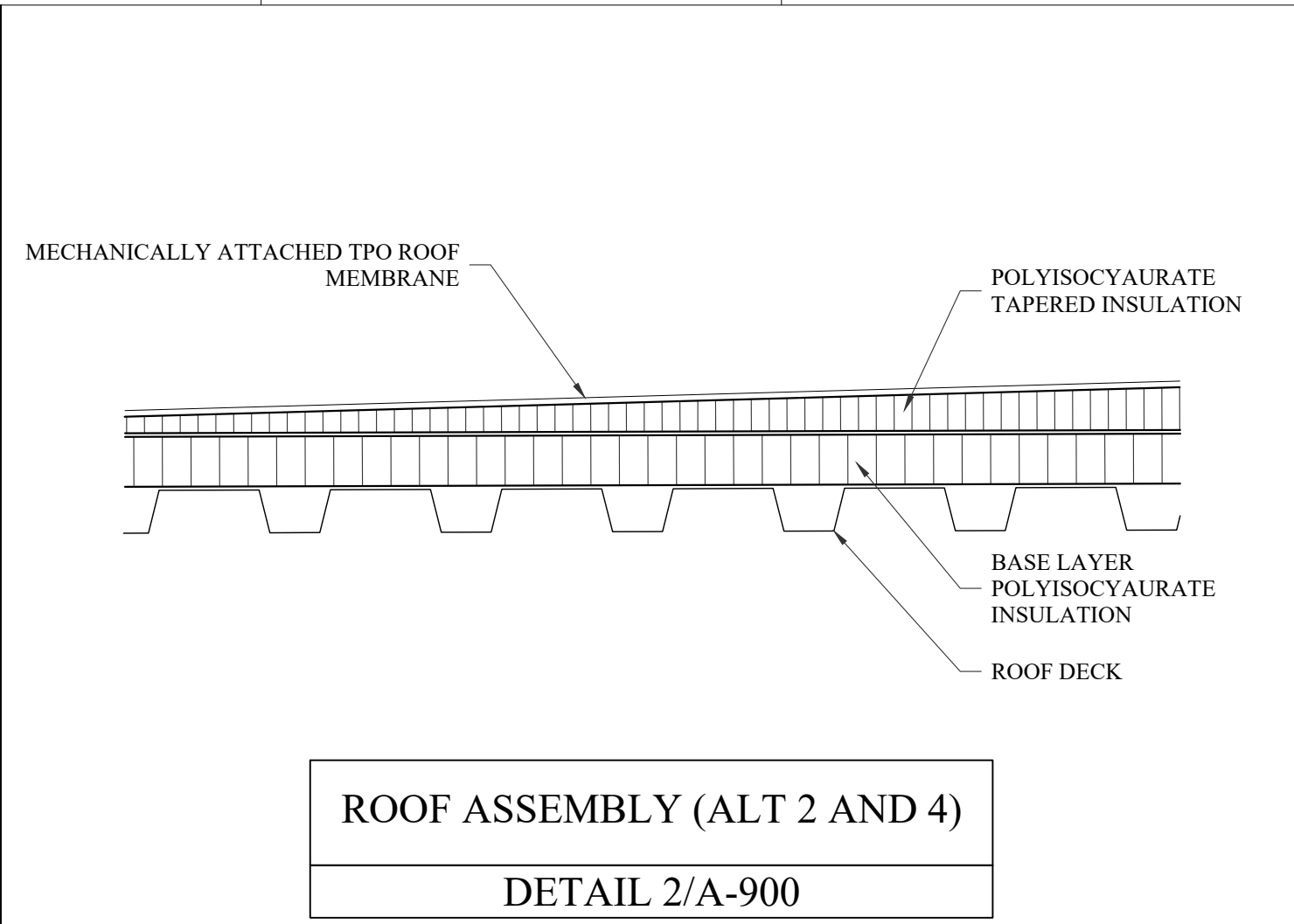
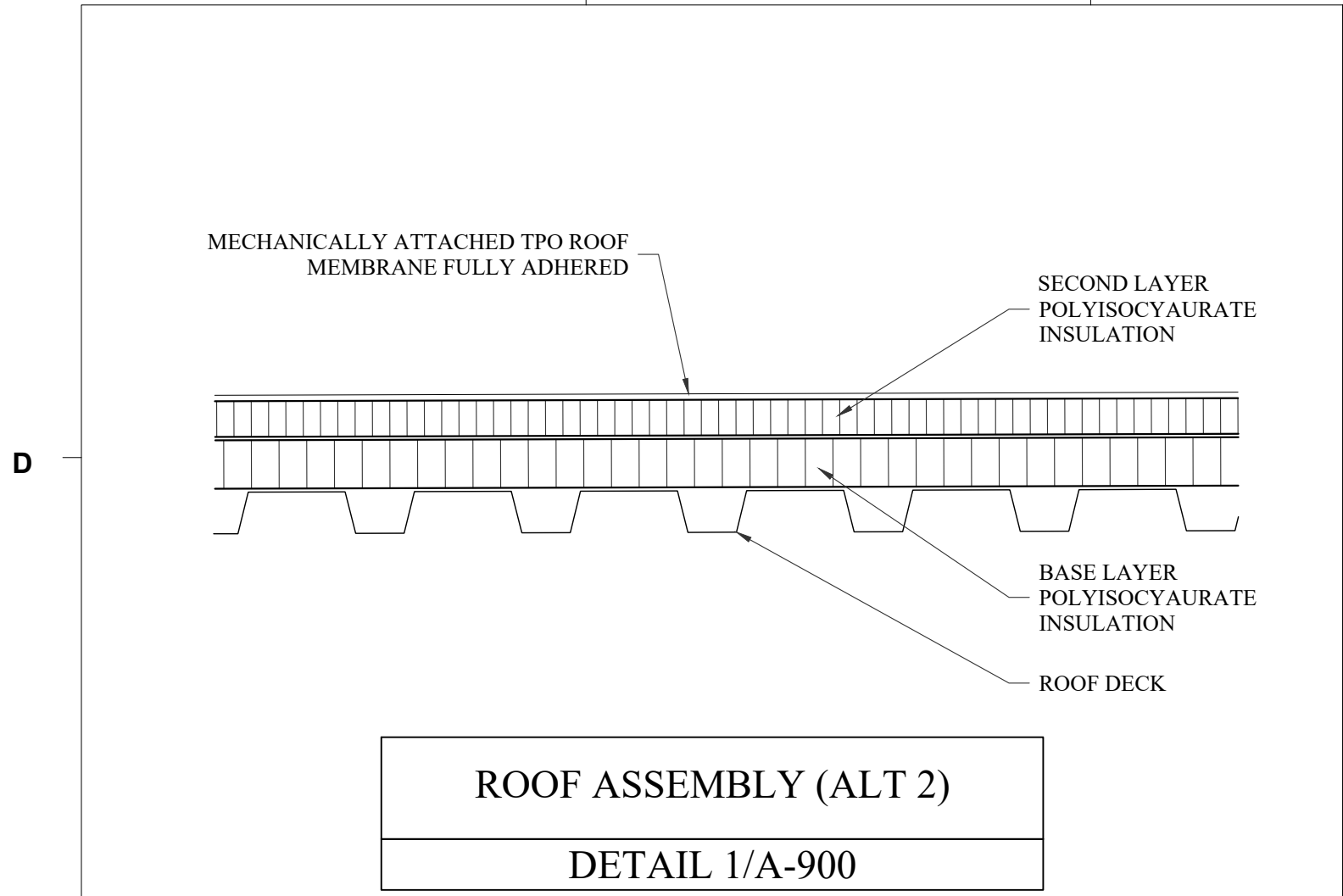
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DETAILS

A-801

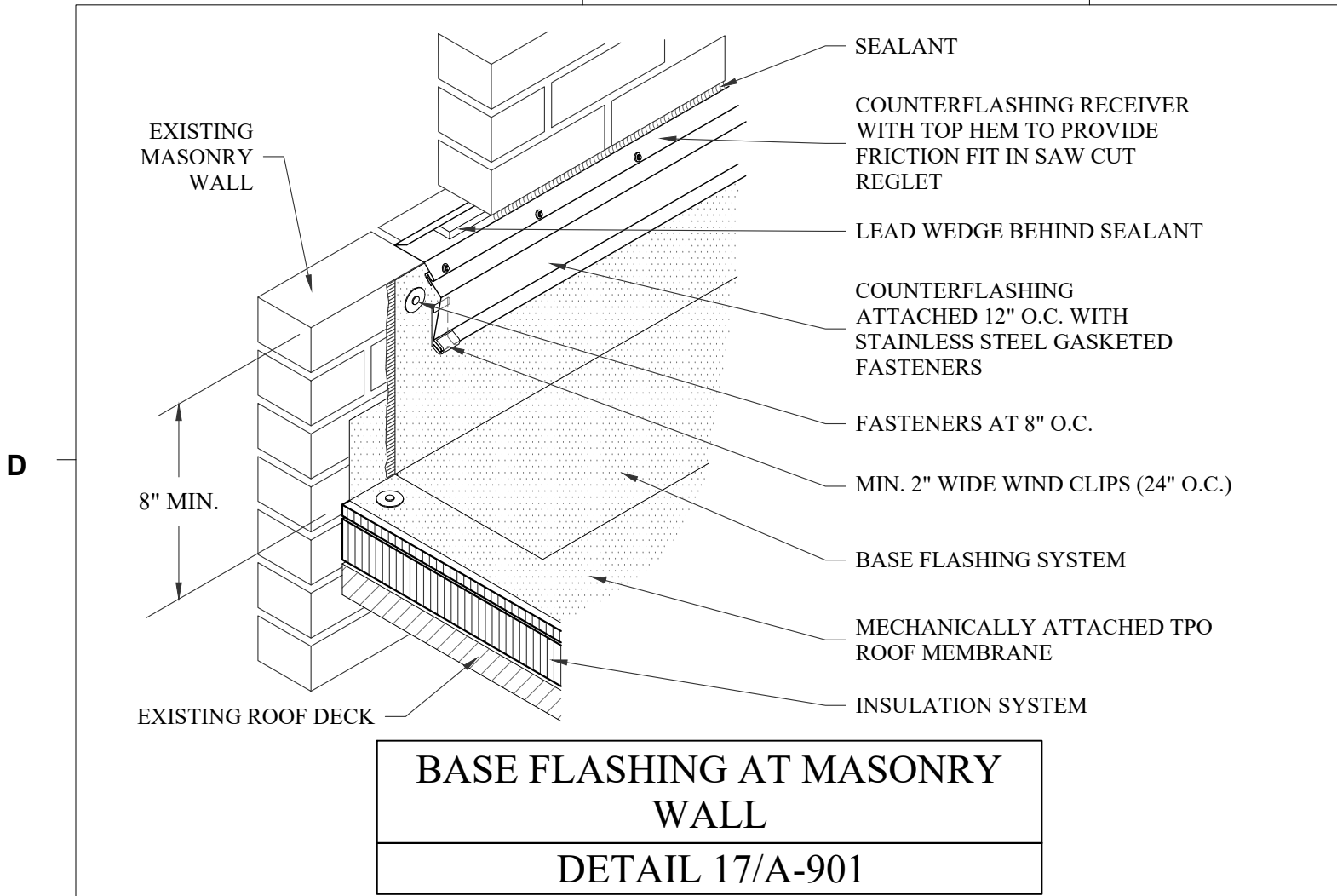
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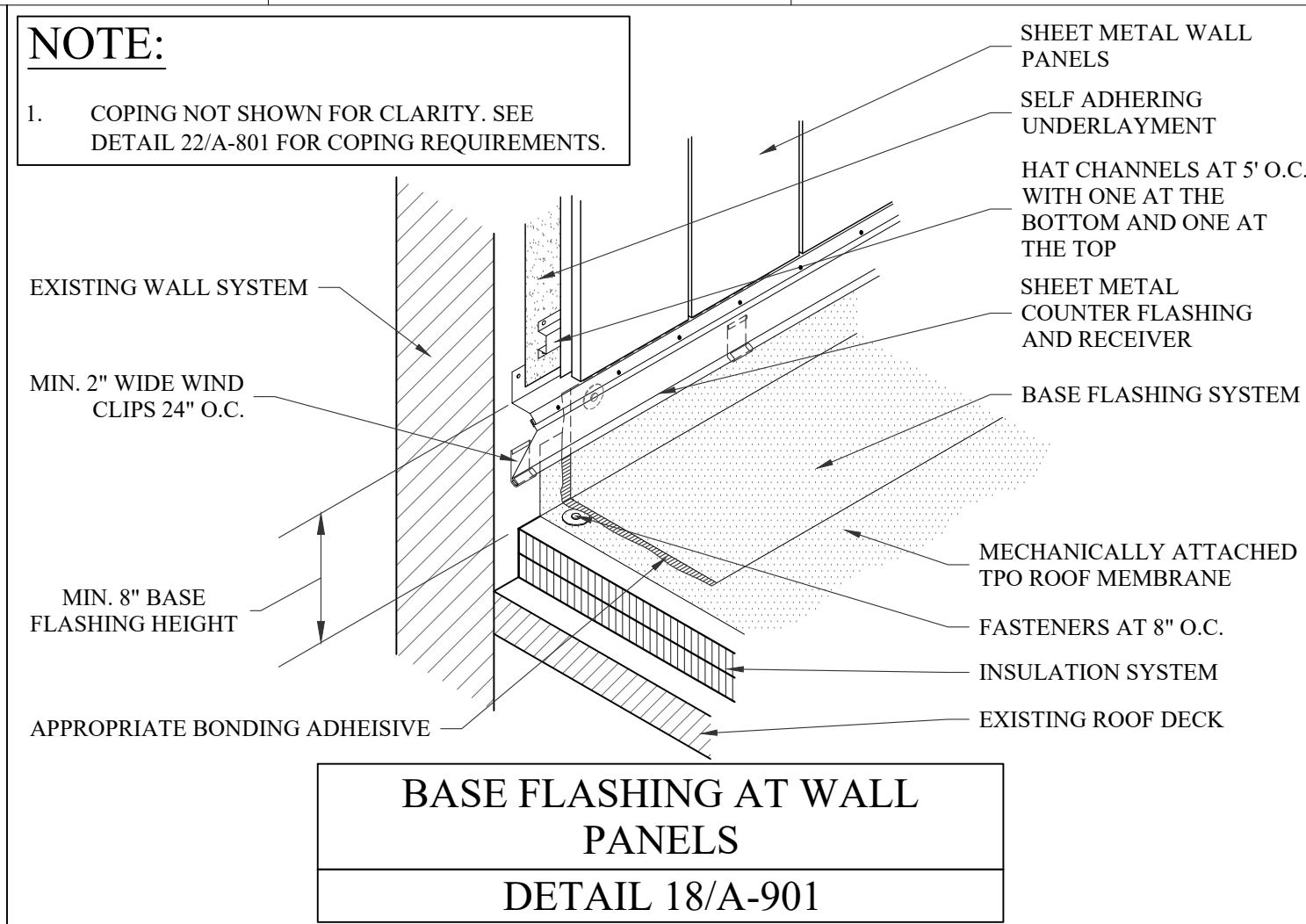
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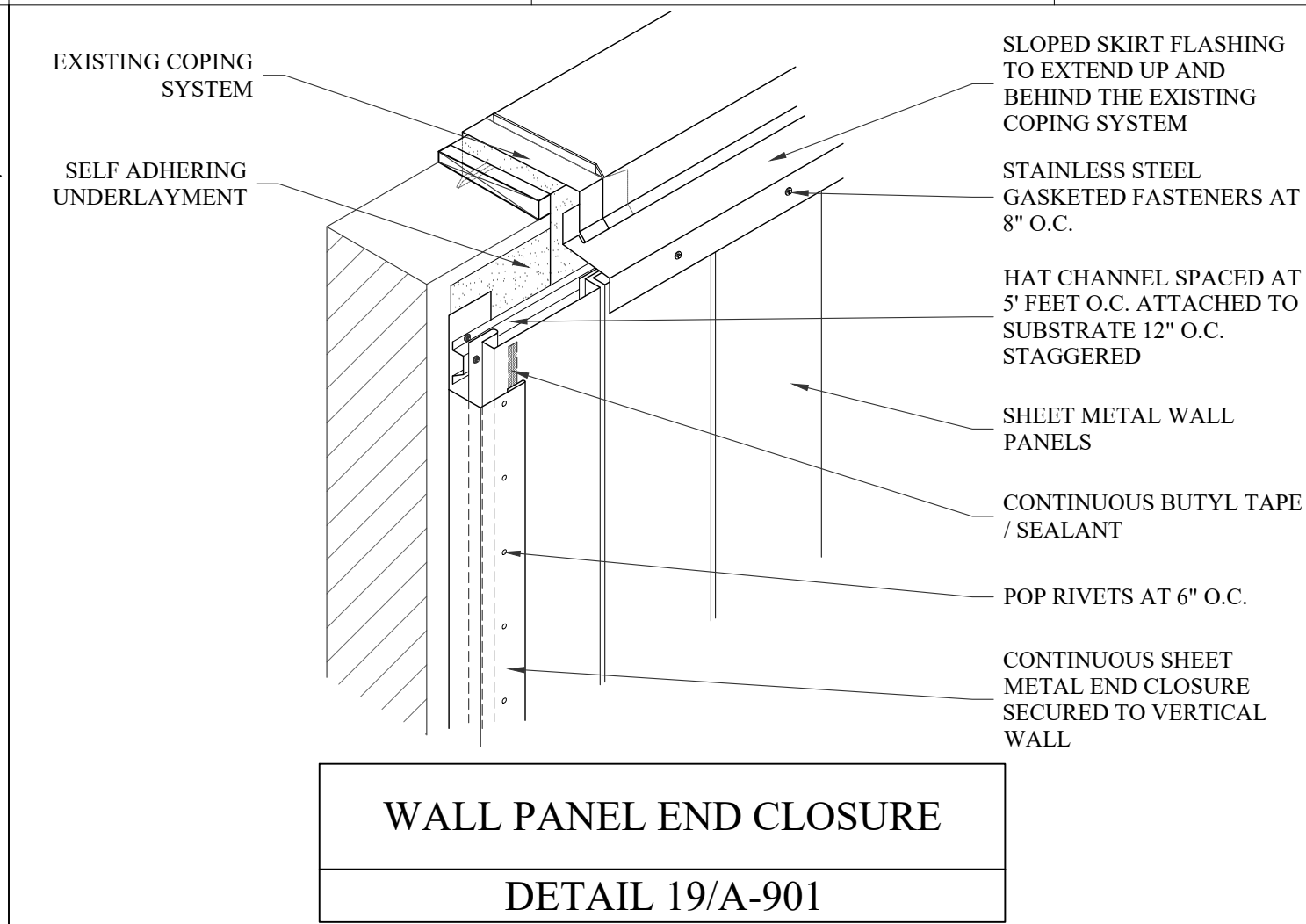
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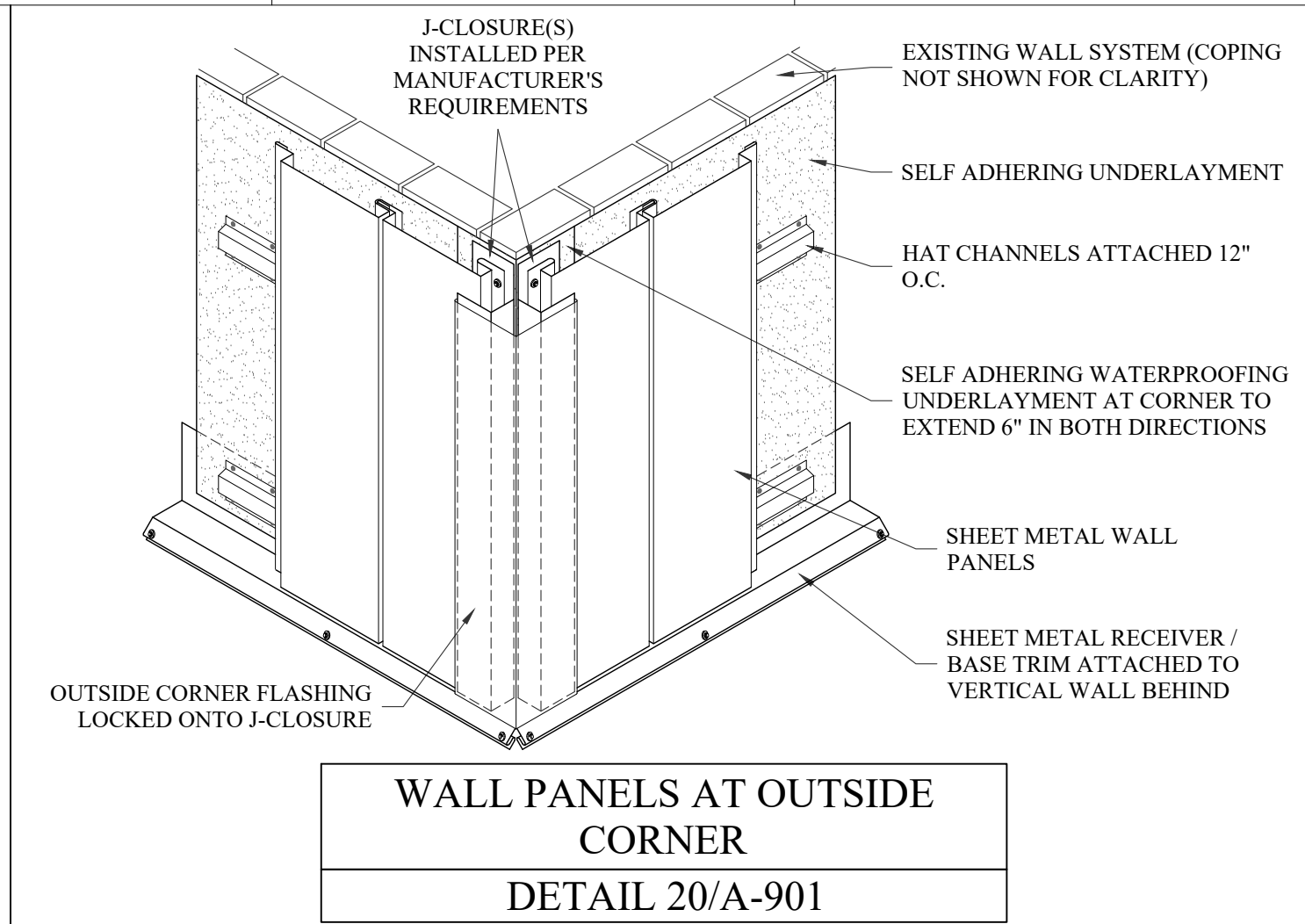
BASE FLASHING AT MASONRY WALL  
DETAIL 17/A-901



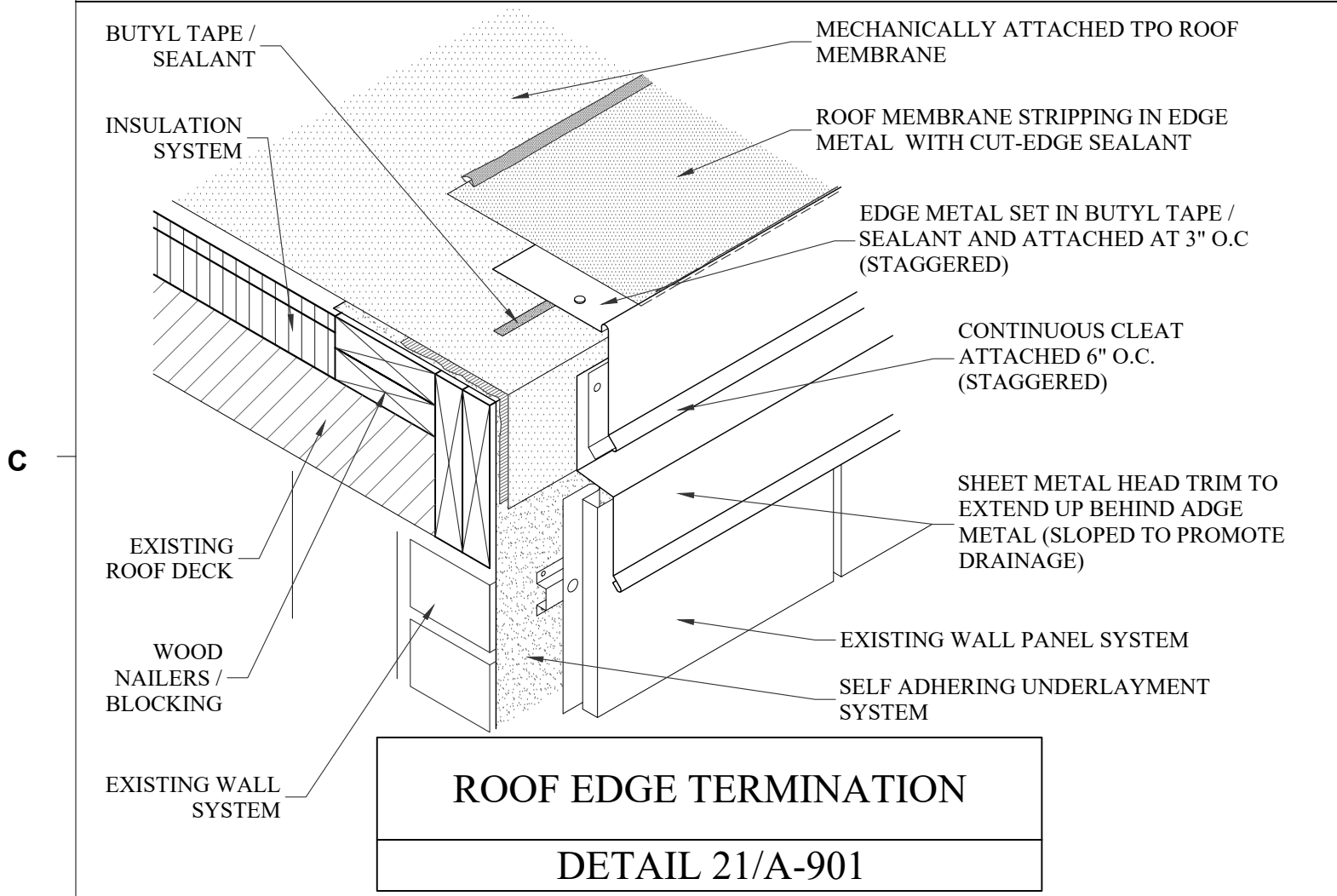
BASE FLASHING AT WALL PANELS  
DETAIL 18/A-901



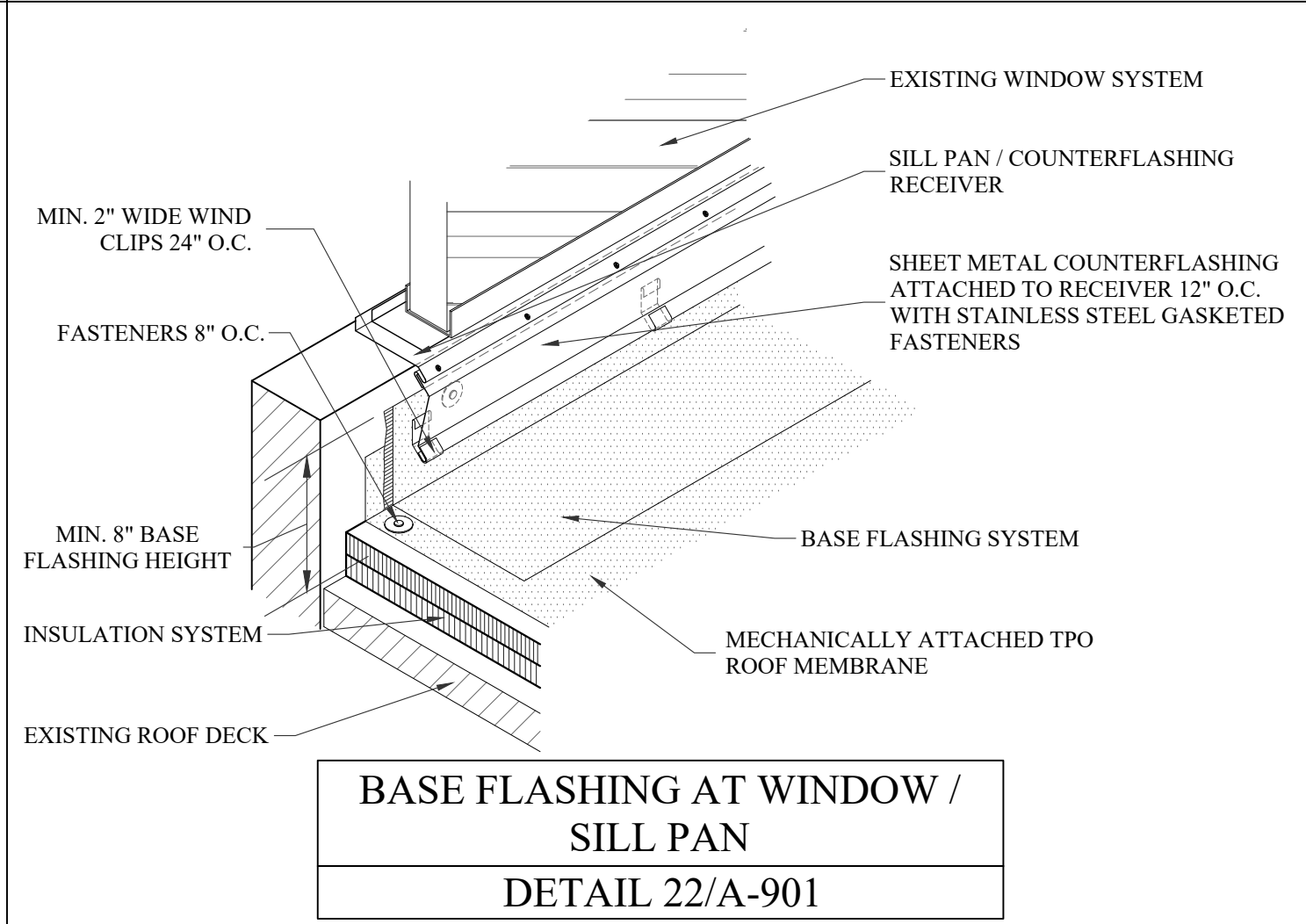
WALL PANEL END CLOSURE  
DETAIL 19/A-901



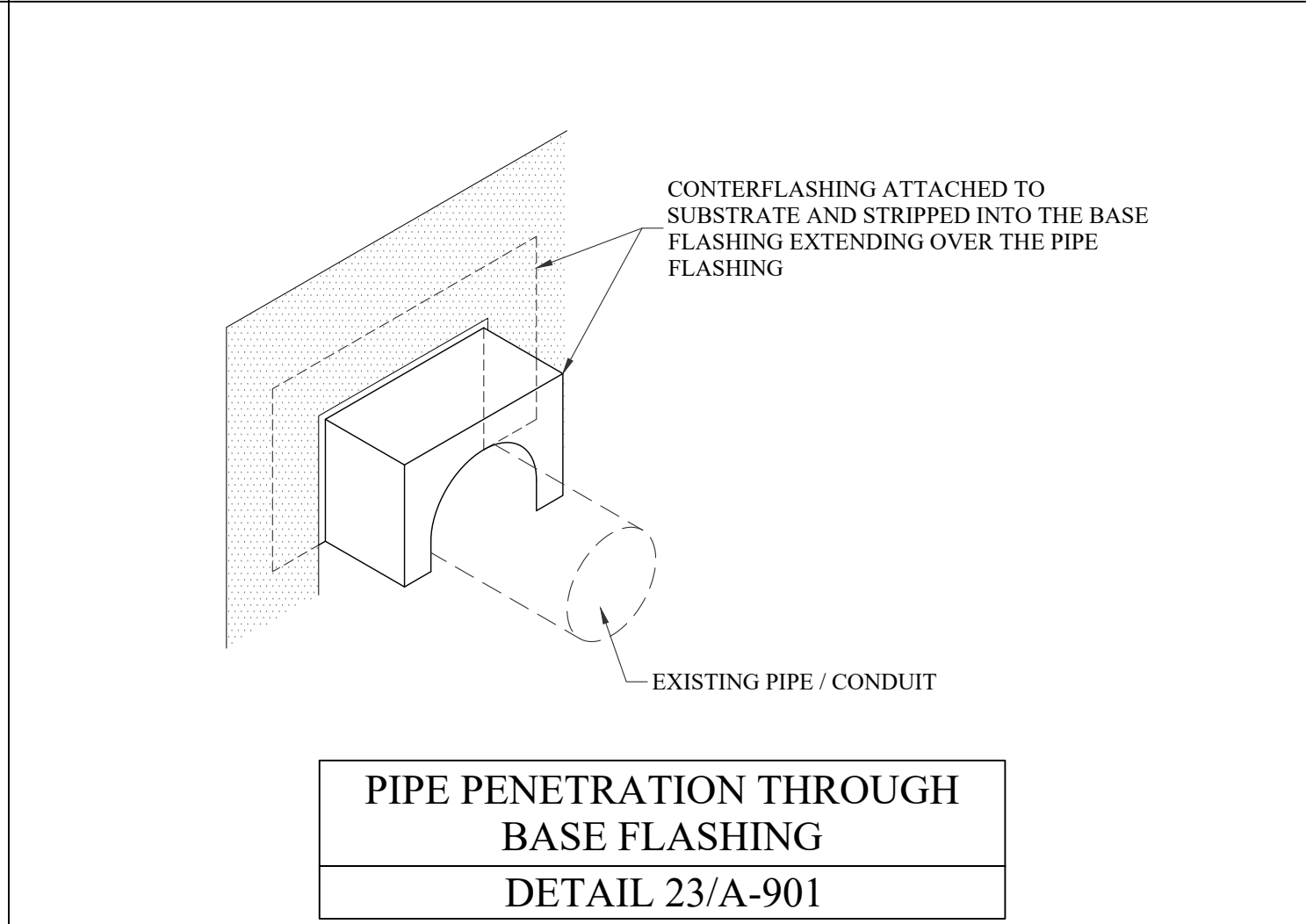
WALL PANELS AT OUTSIDE CORNER  
DETAIL 20/A-901



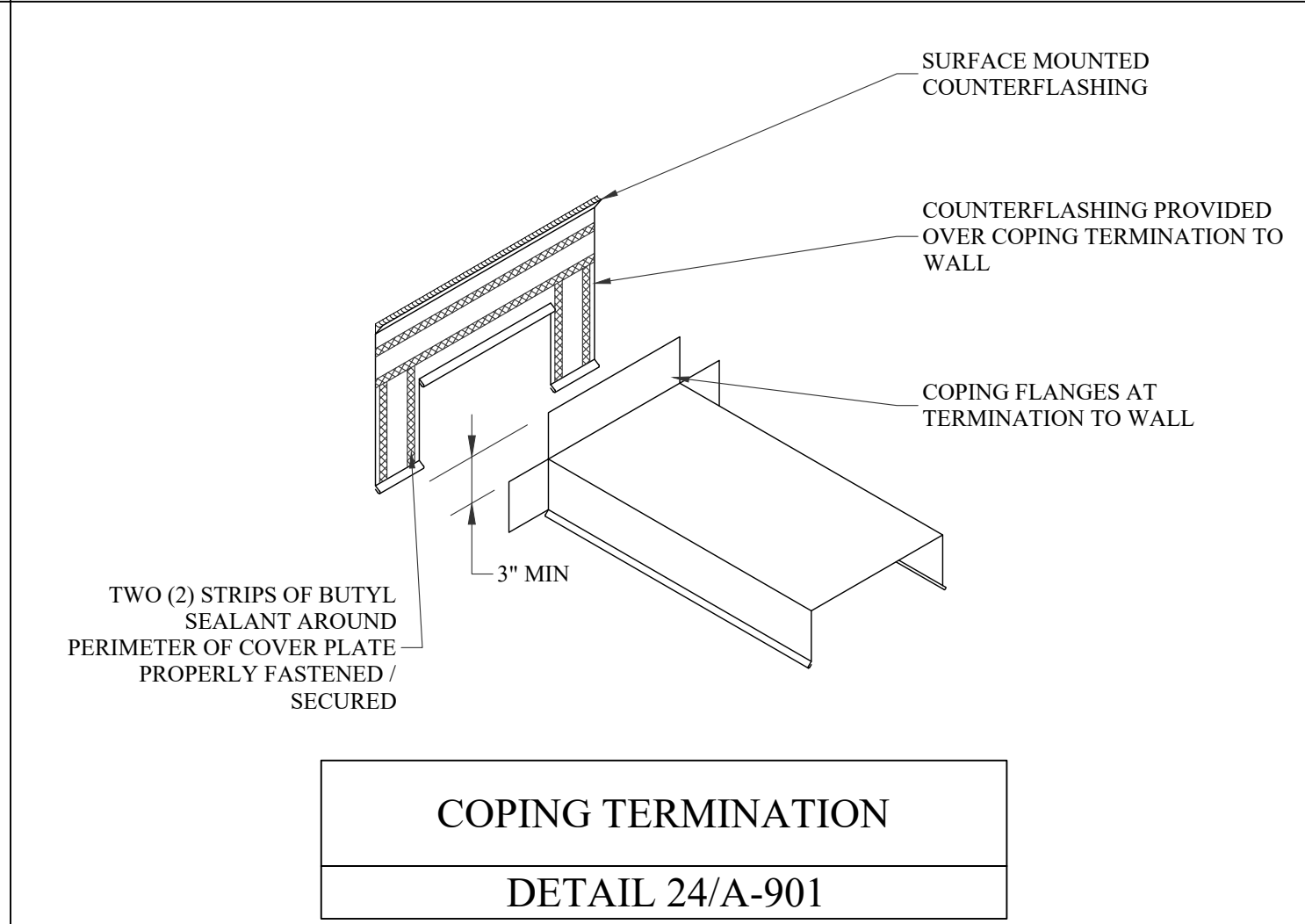
ROOF EDGE TERMINATION  
DETAIL 21/A-901



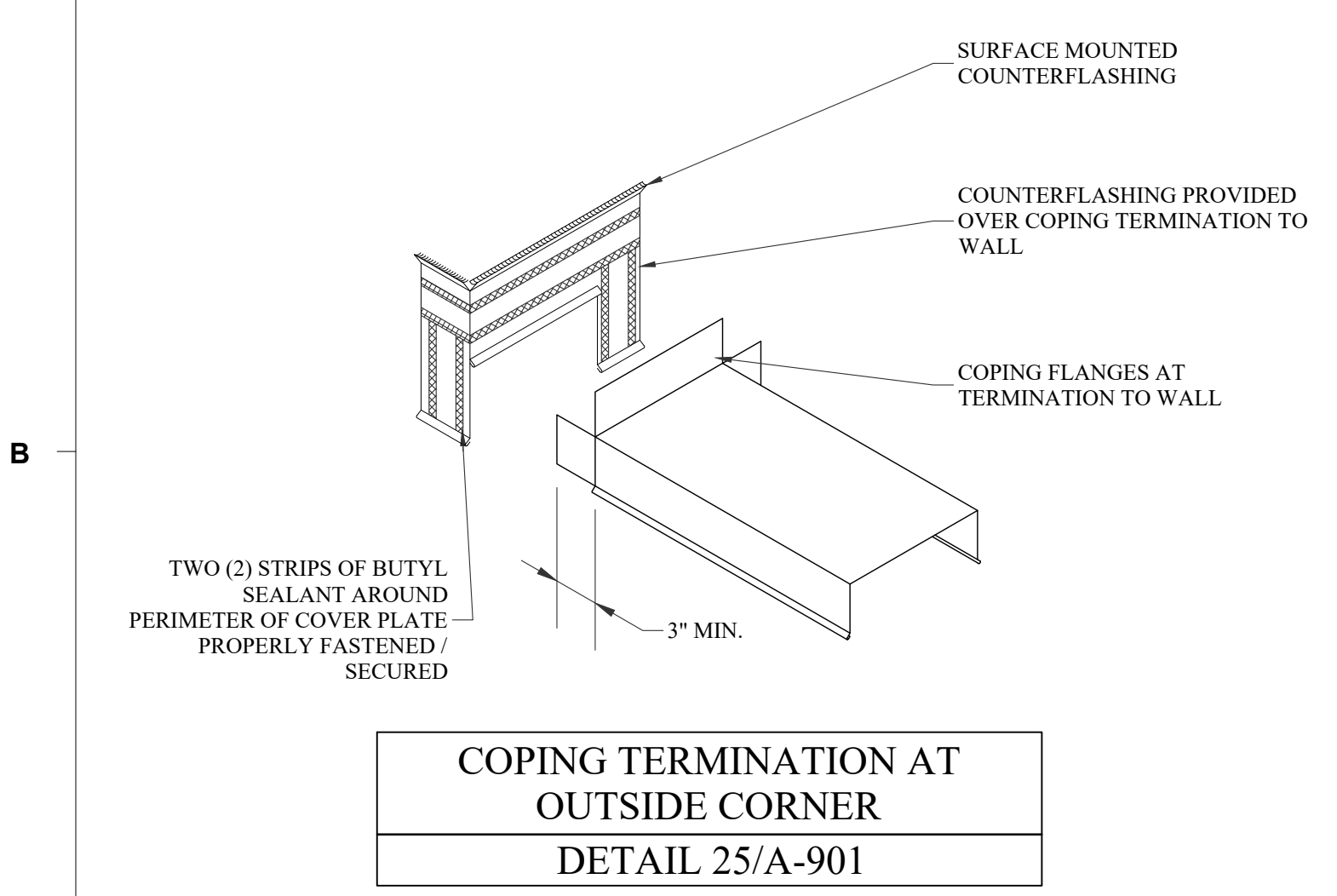
BASE FLASHING AT WINDOW / SILL PAN  
DETAIL 22/A-901



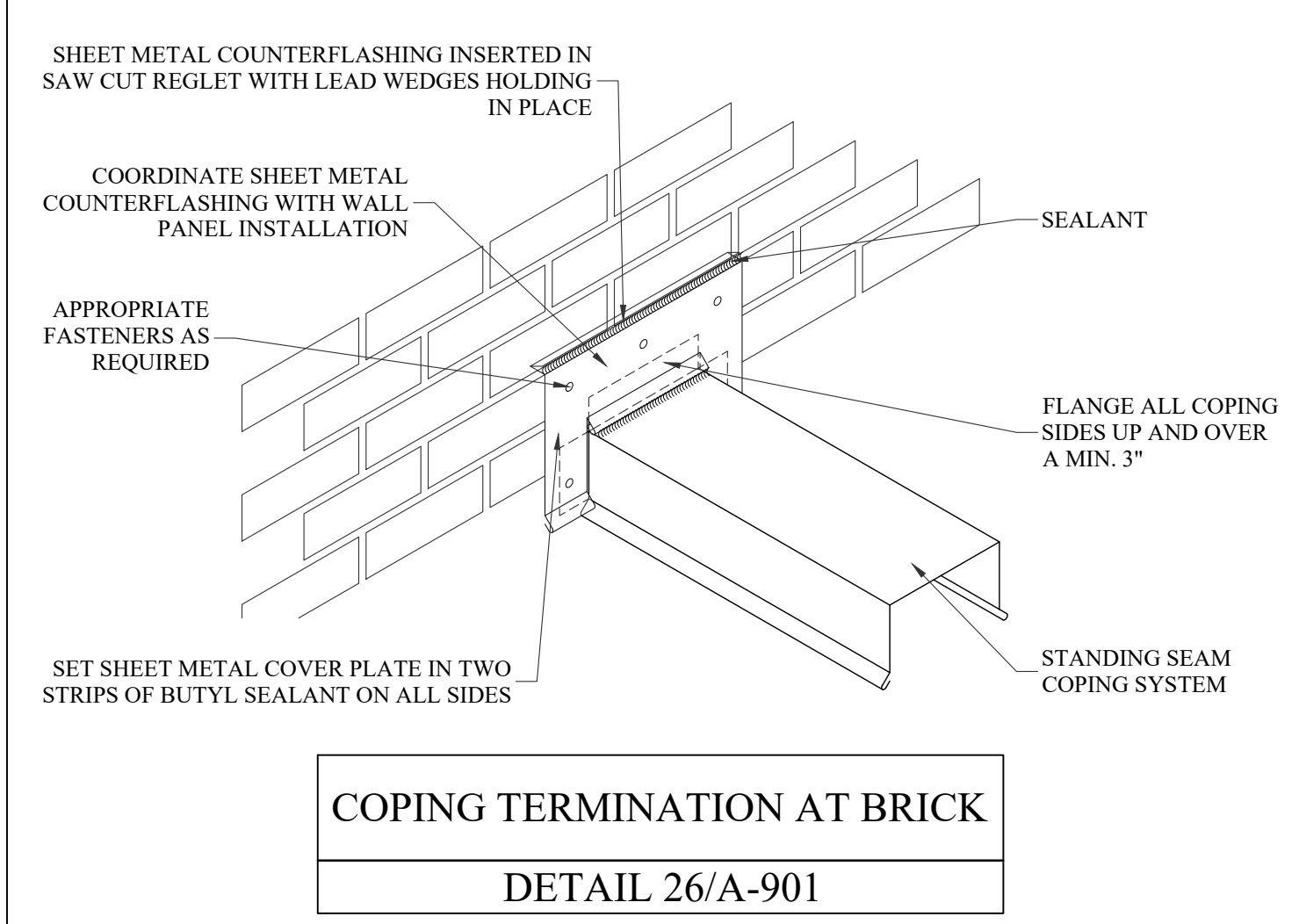
PIPE PENETRATION THROUGH BASE FLASHING  
DETAIL 23/A-901



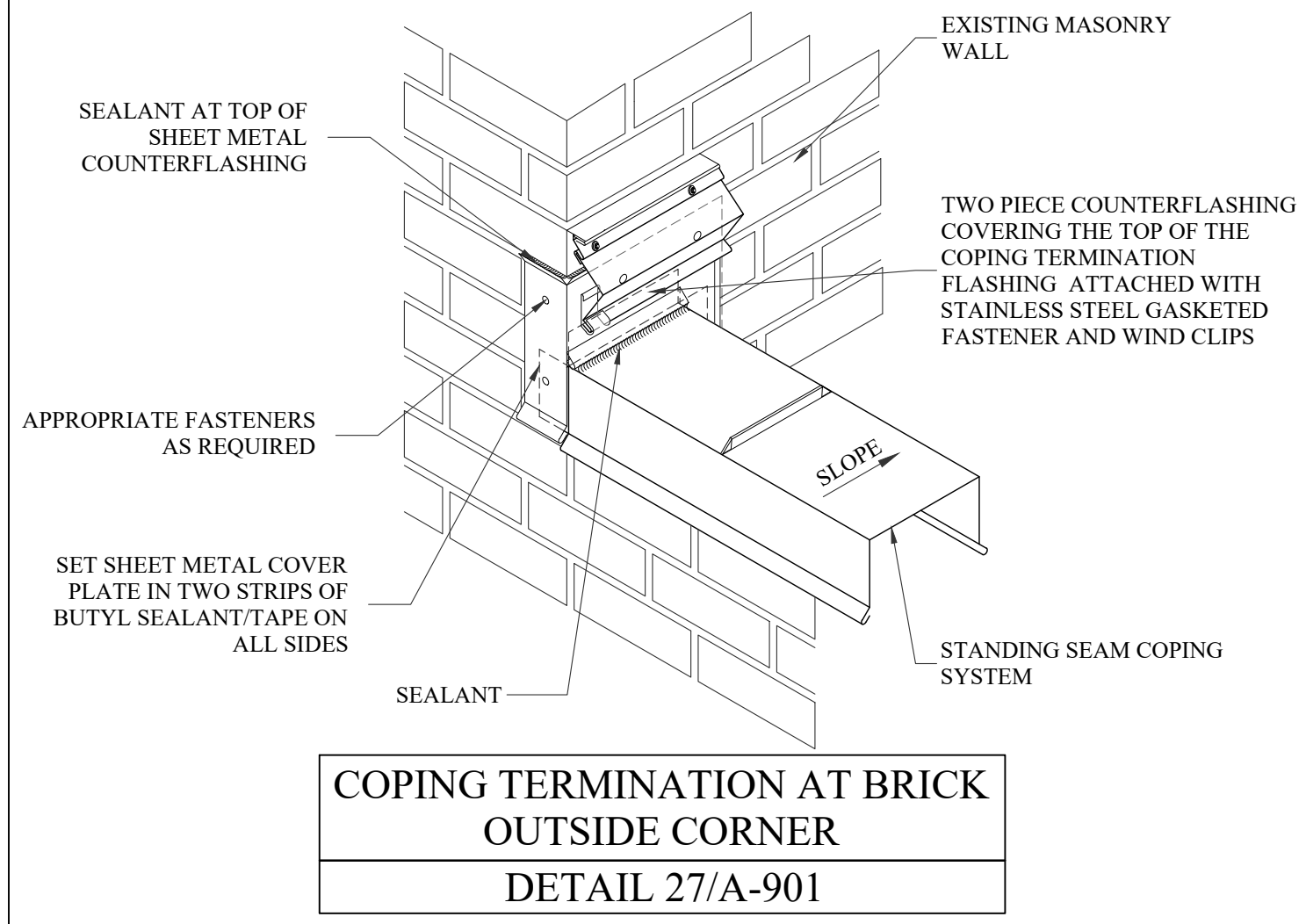
COPING TERMINATION  
DETAIL 24/A-901



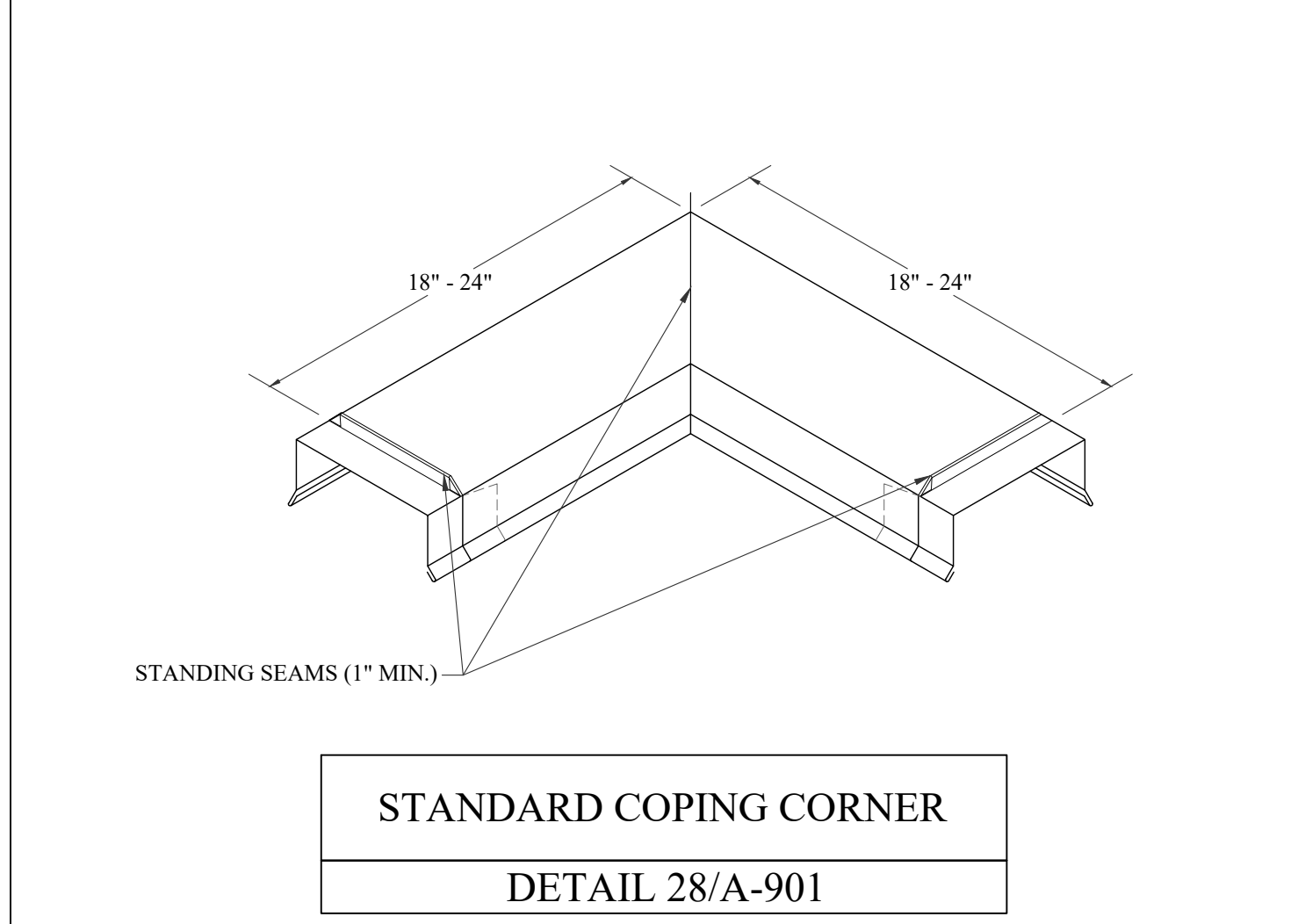
COPING TERMINATION AT OUTSIDE CORNER  
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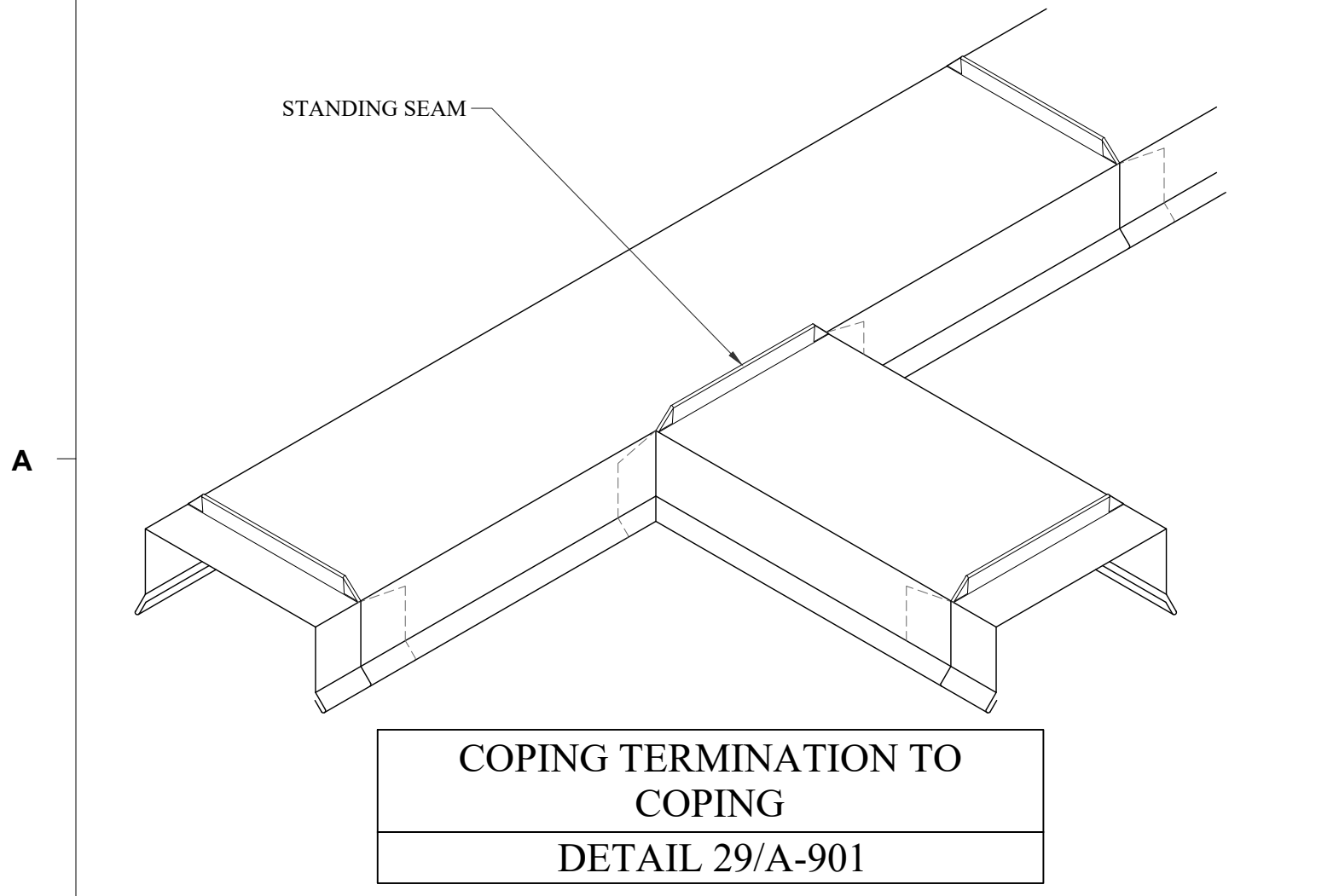
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DETAIL 26/A-901



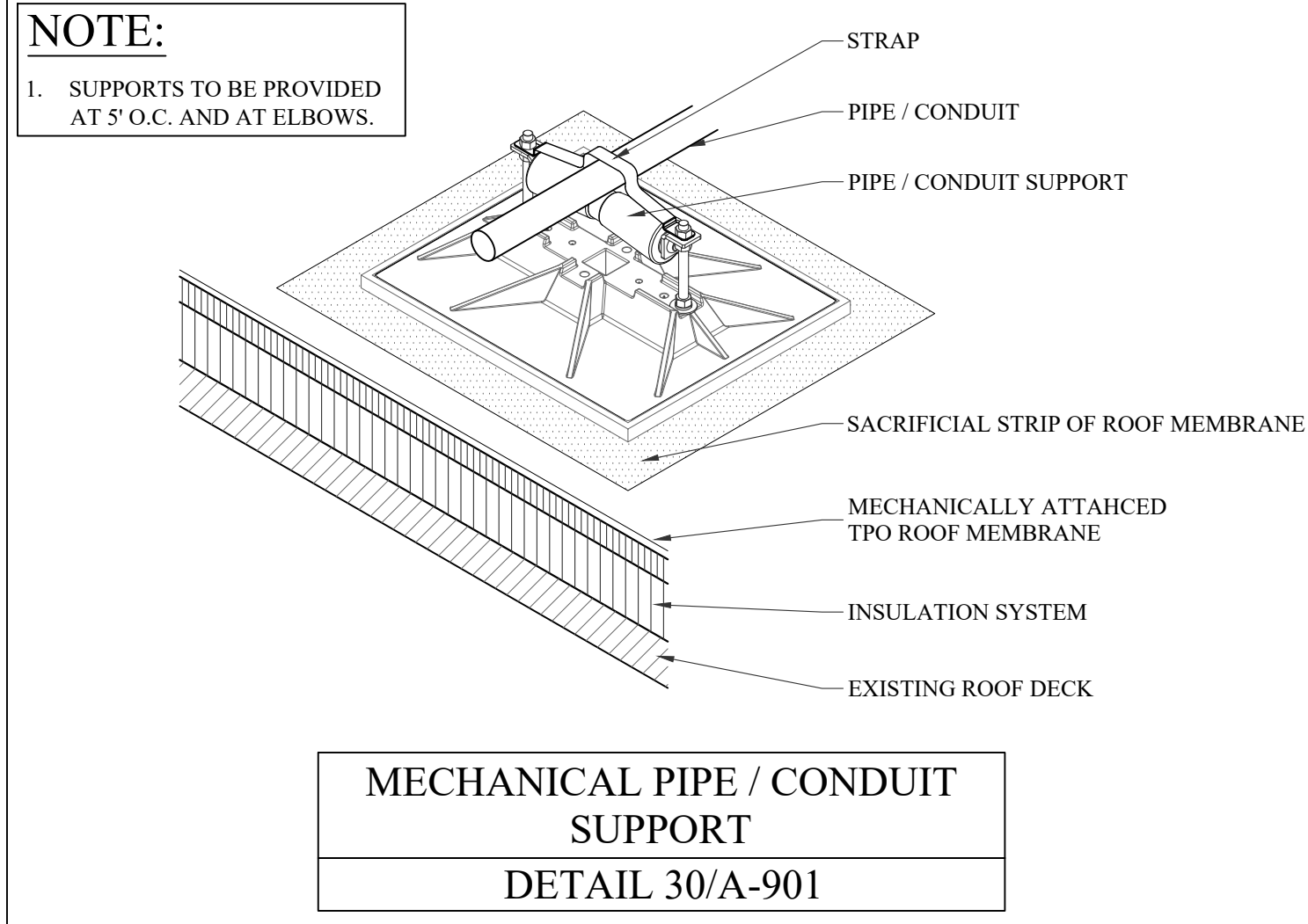
COPING TERMINATION AT BRICK OUTSIDE CORNER  
DETAIL 27/A-901



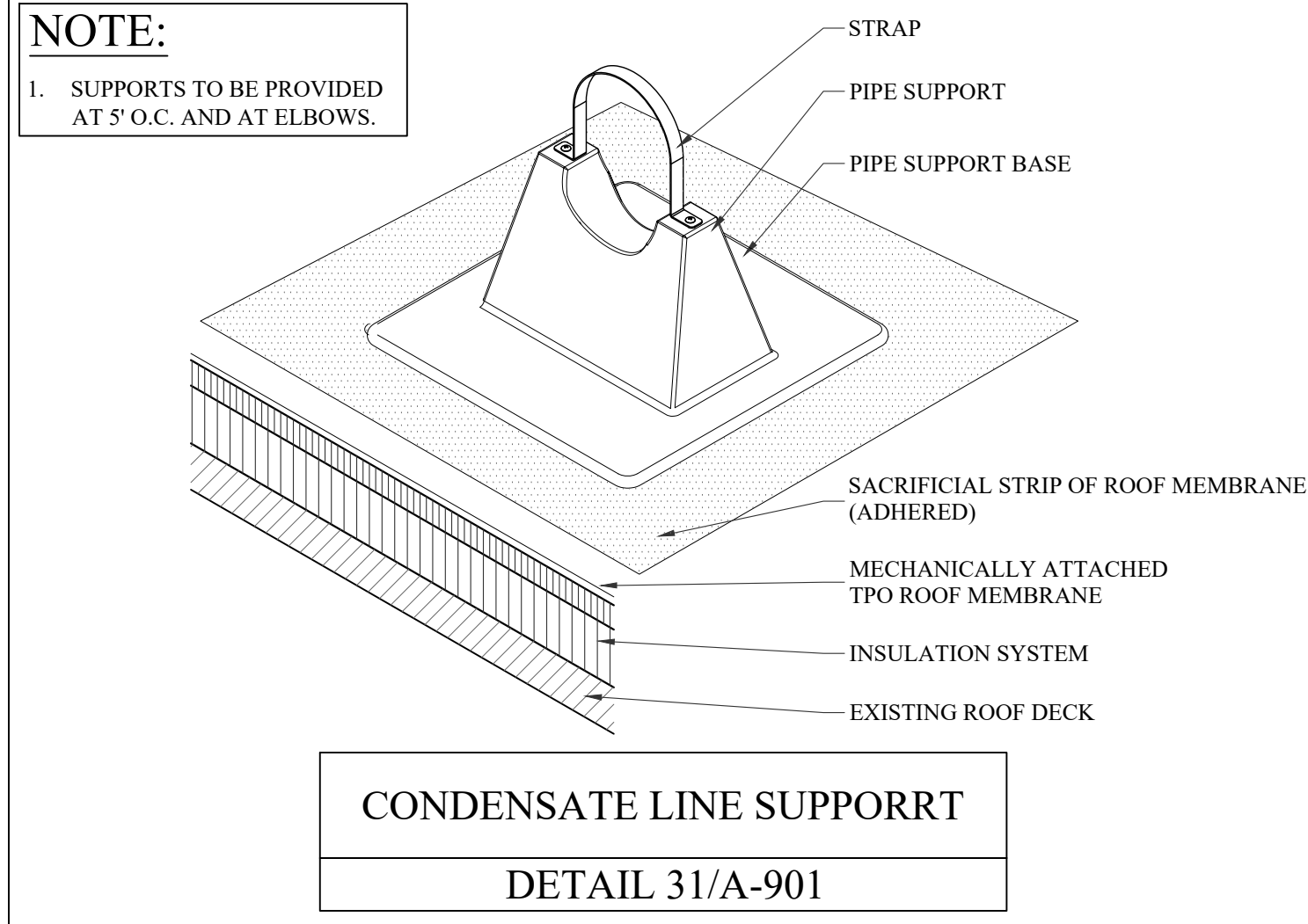
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DETAIL 28/A-901



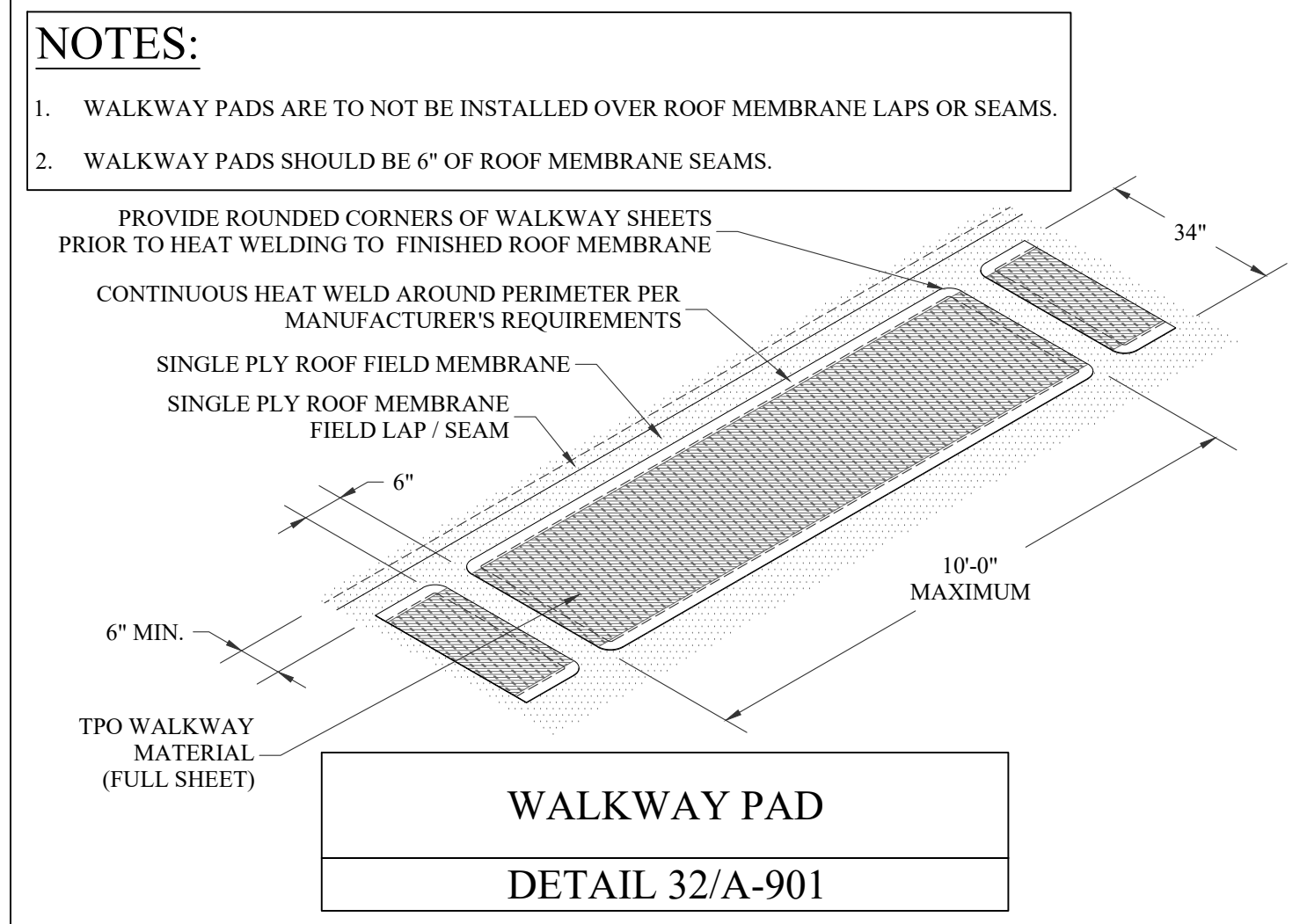
COPING TERMINATION TO COPING  
DETAIL 29/A-901



MECHANICAL PIPE / CONDUIT SUPPORT  
DETAIL 30/A-901



CONDENSATE LINE SUPPORT  
DETAIL 31/A-901



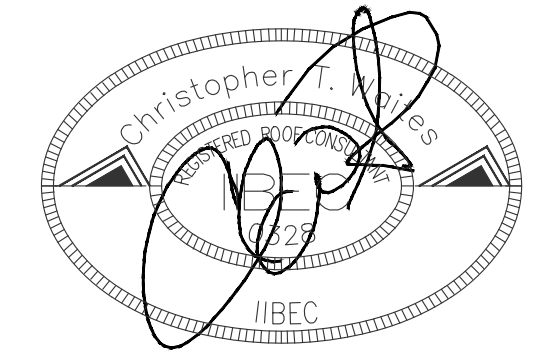
WALKWAY PAD  
DETAIL 32/A-901



## WATERWAY ES ROOFING RENOVATION



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## DETAILS A-901

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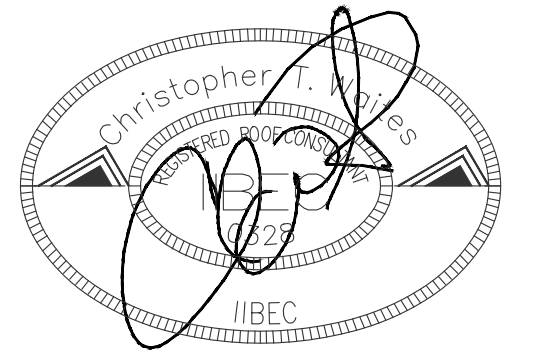
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WATERWAY ES  
ROOFING  
RENOVATION



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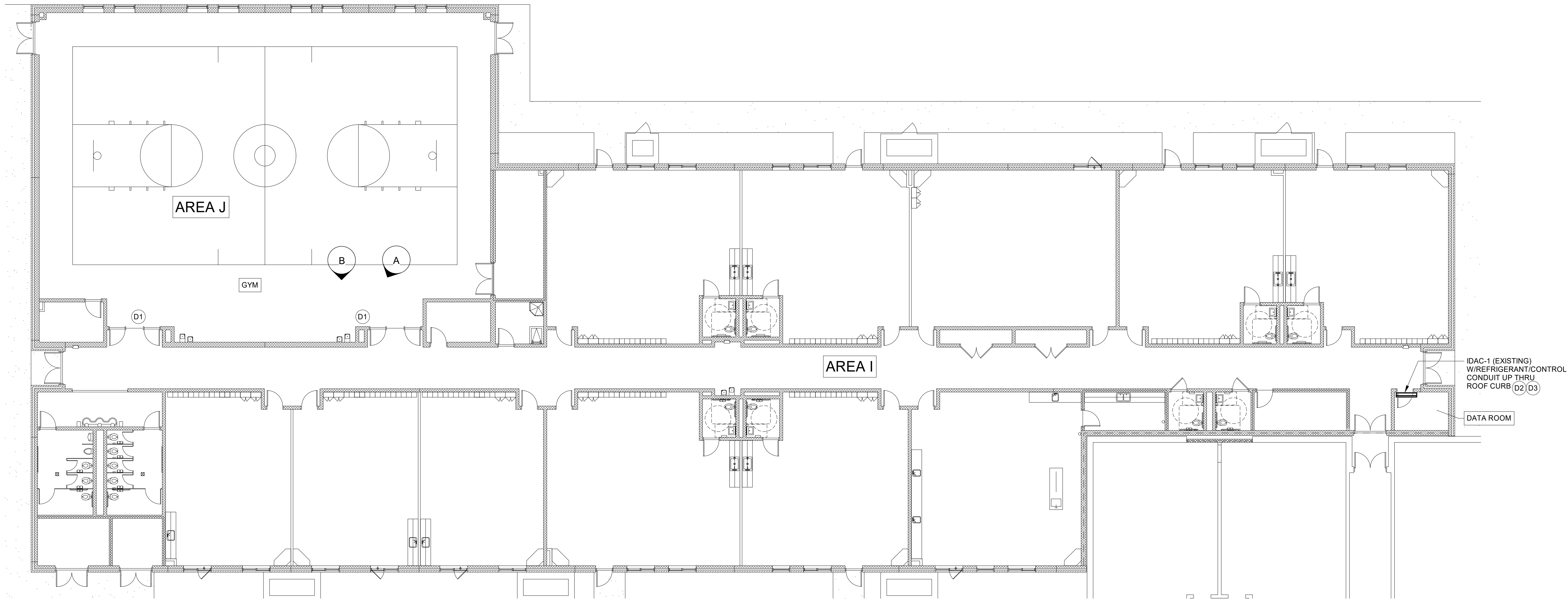
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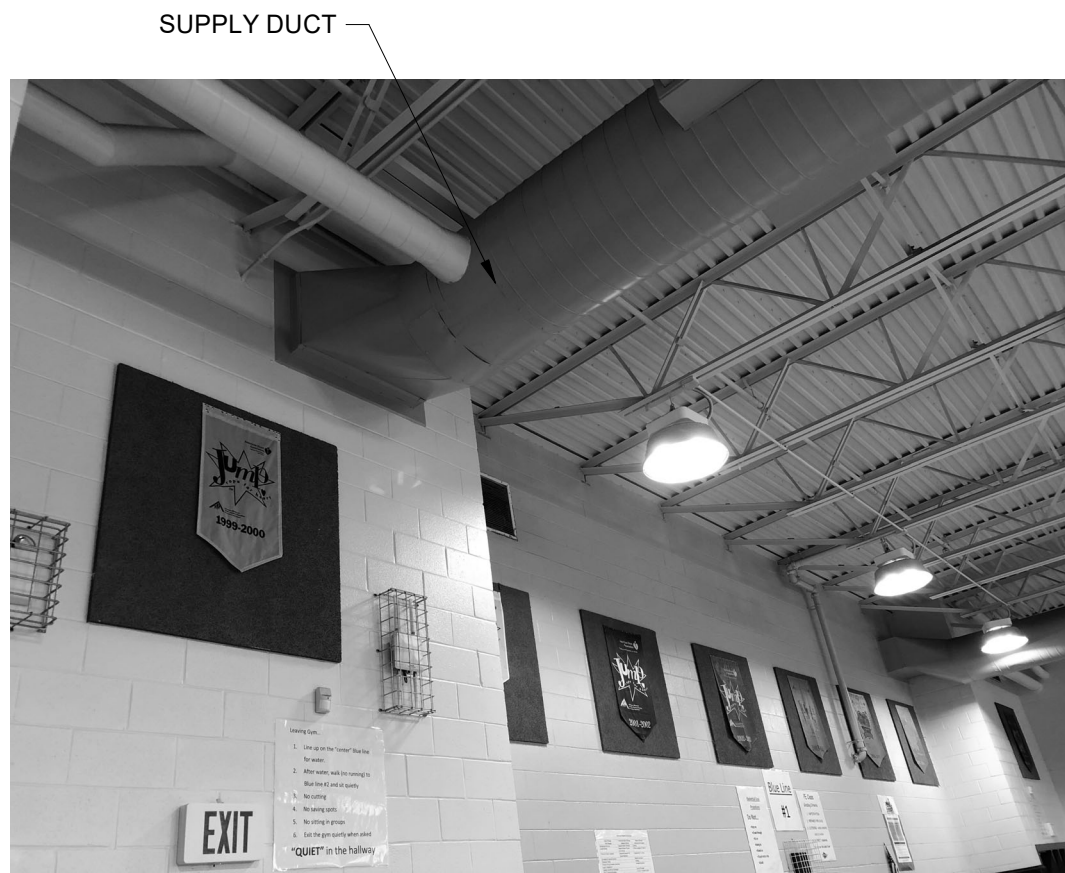
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No.	Description	Date
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PROJECT: 2201-218720  
DATE: 01/06/2022



1 FLOOR PLAN - HVAC - DEMOLITION  
3/32" = 1'-0"



A GYM SUPPLY DUCT



B GYM RETURN GRILLE

MECHANICAL DEMOLITION NOTES

- (D1) REMOVE EXISTING THERMOSTAT. PROVIDE STAINLESS STEEL COVERPLATE FOR SPHP-1 & SPHP-2.
- (D2) REMOVE EXISTING INDOOR UNIT (IDAC-1), CONTROLS, SUPPORTS AND ACCESSORIES.
- (D3) REMOVE REFRIGERANT LINES AND CONTROLS (CONDUIT AND WIRING) UP THROUGH ROOF CURB TO OUTDOOR UNIT (ODAC-1).

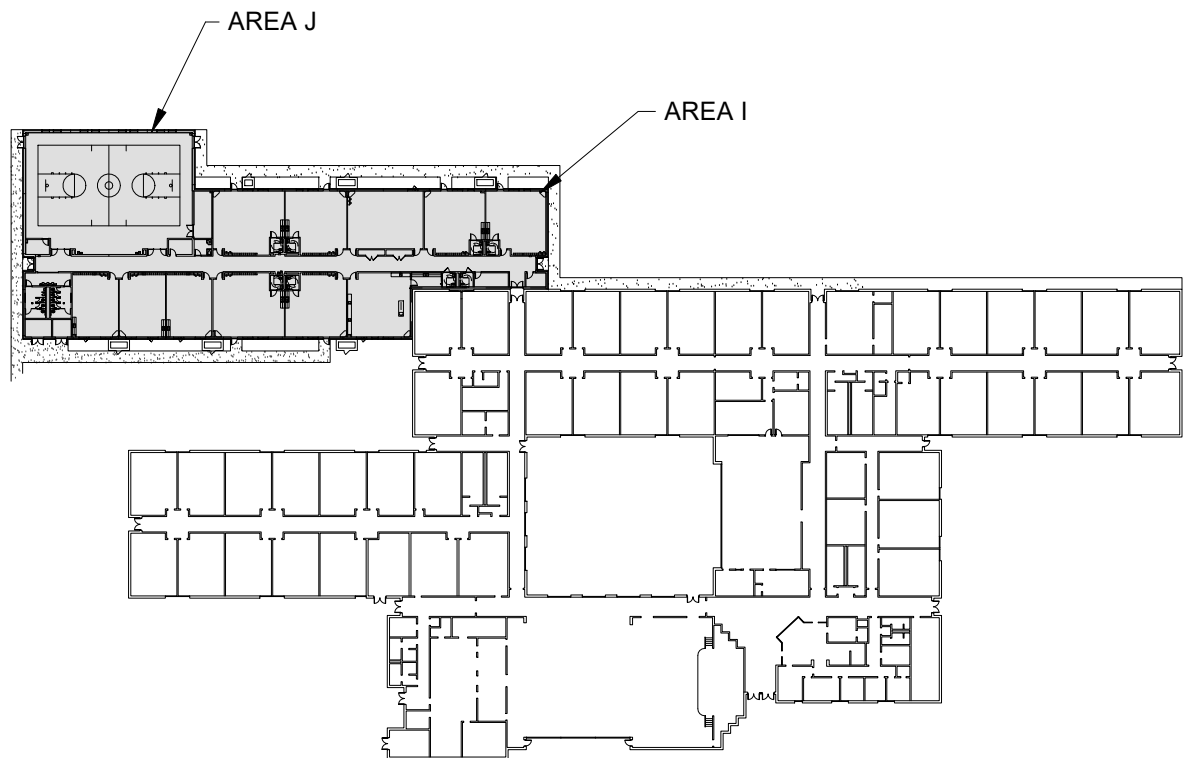
TEST AND BALANCE

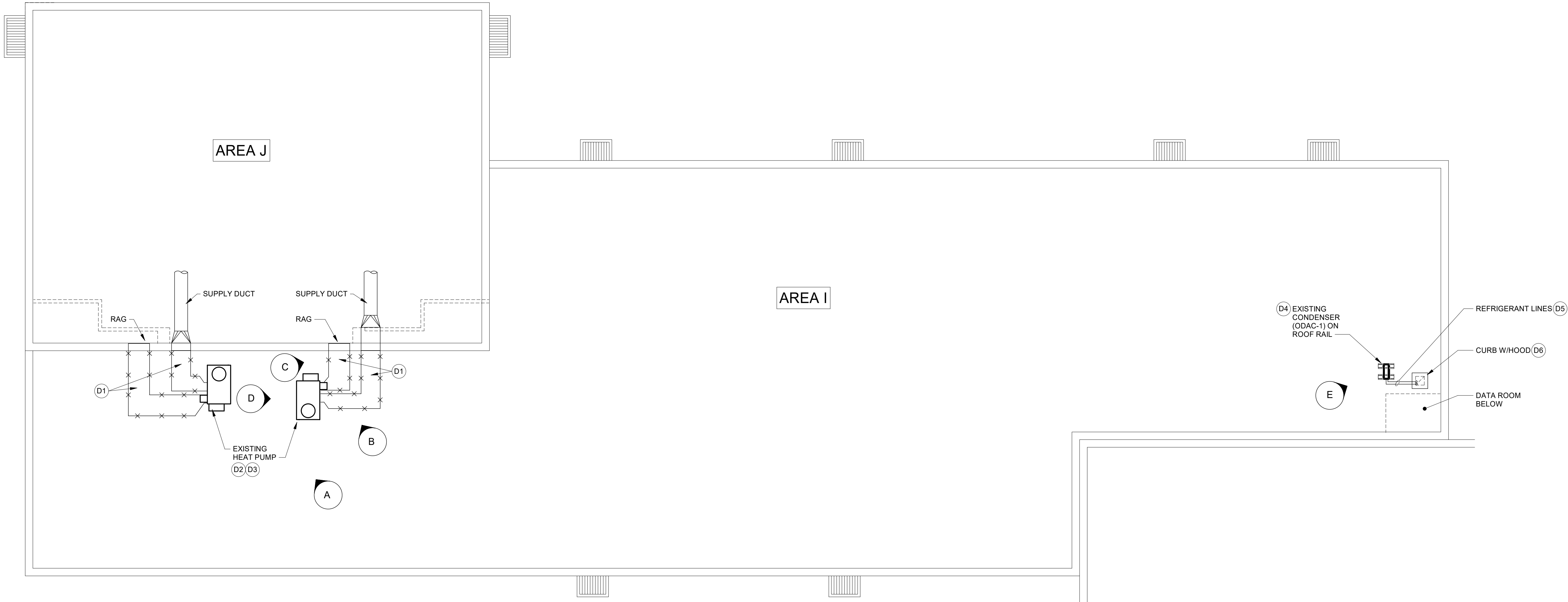
- BEFORE ANY DEMOLITION WORK IS PERFORMED, MEASURE AIRFLOW AT ALL SUPPLY AND RETURN GRILLES WITHIN THE GYM.
- SUBMIT PRE DEMOLITION REPORT TO THE A/E.
- AFTER THE NEW UNITS ARE INSTALLED, PROVIDE T & B PER SPECIFICATIONS. SET AIRFLOWS TO VALUES DETERMINED BY THE A/E.

ALTERNATE NO. 7:

REPLACE ROOFTOP HVAC UNITS  
AT ROOF AREA I.

KEY PLAN





1 ROOF PLAN - HVAC - DEMOLITION  
3/32" = 1'-0"



A ROOFTOP UNITS



B SUPPLY AND RETURN DUCT



C RETURN DUCT @ EXTERIOR WALL  
1/2" = 1'-0"



D ROOFTOP UNIT



E DATA ROOM CONDENSER

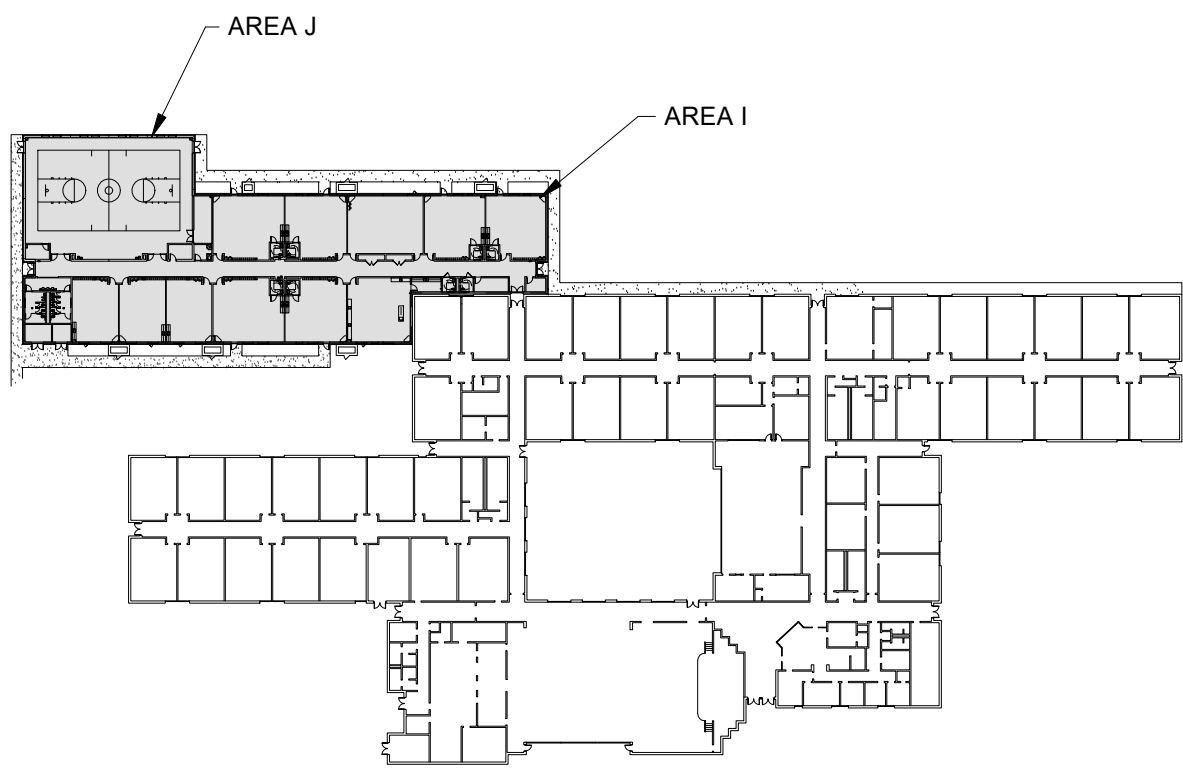
MECHANICAL DEMOLITION NOTES

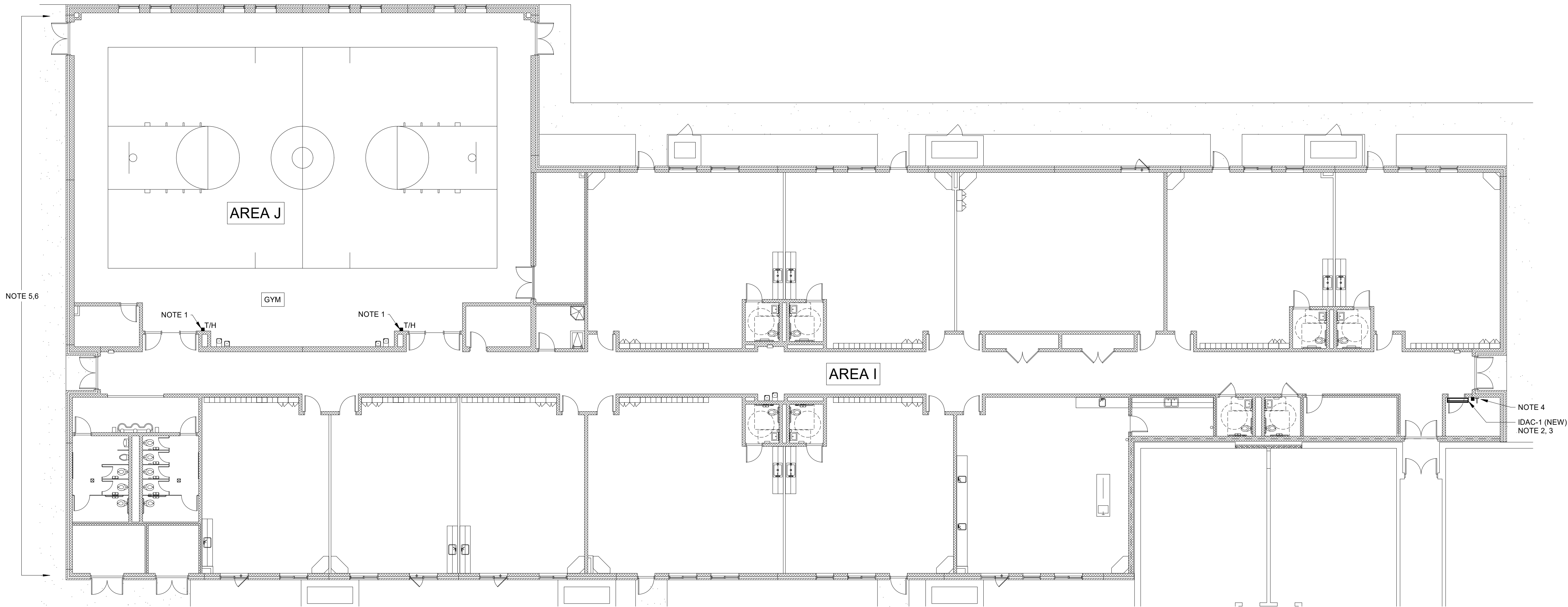
- (D1) REMOVE EXISTING DUCT, INSULATION, SUPPORTS AND ACCESSORIES TO APPROXIMATELY 4" TO 8" FROM GYM HIGH WALL. SECURE THE EXISTING DUCT OPENING WEATHERTIGHT UNTIL NEW DUCT IS INSTALLED.
- (D2) REMOVE EXISTING HEAT PUMP, CONTROLS AND ACCESSORIES. THE EXISTING CURB SHALL REMAIN. SECURE THE CURB WEATHERTIGHT UNTIL THE NEW UNIT IS INSTALLED.
- (D3) REMOVE EXISTING DRAIN LINE AND SUPPORTS.
- (D4) REMOVE EXISTING CONDENSER UNIT AND RAIL CAP. EXISTING EQUIPMENT RAILS SHALL BE EXTENDED.
- (D5) REMOVE REFRIGERANT LINES, CONDUIT AND WIRING FROM CONDENSER, THROUGH THE CURB, AND DOWN TO THE EXISTING INDOOR UNIT IN THE DATA ROOM.
- (D6) REMOVE THE EXISTING HOOD FROM THE CURB. THE EXISTING CURB SHALL BE EXTENDED. SECURE THE CURB WEATHERTIGHT UNTIL THE NEW HOOD, PIPING, AND CONDUIT IS INSTALLED.

ALTERNATE NO. 7:

REPLACE ROOFTOP HVAC UNITS  
AT ROOF AREA I.

KEY PLAN





**1 FLOOR PLAN - HVAC - RENOVATION**  
3/32" = 1'-0"

**ALTERNATE NO. 7:**  
**REPLACE ROOFTOP HVAC UNITS  
AT ROOF AREA I.**

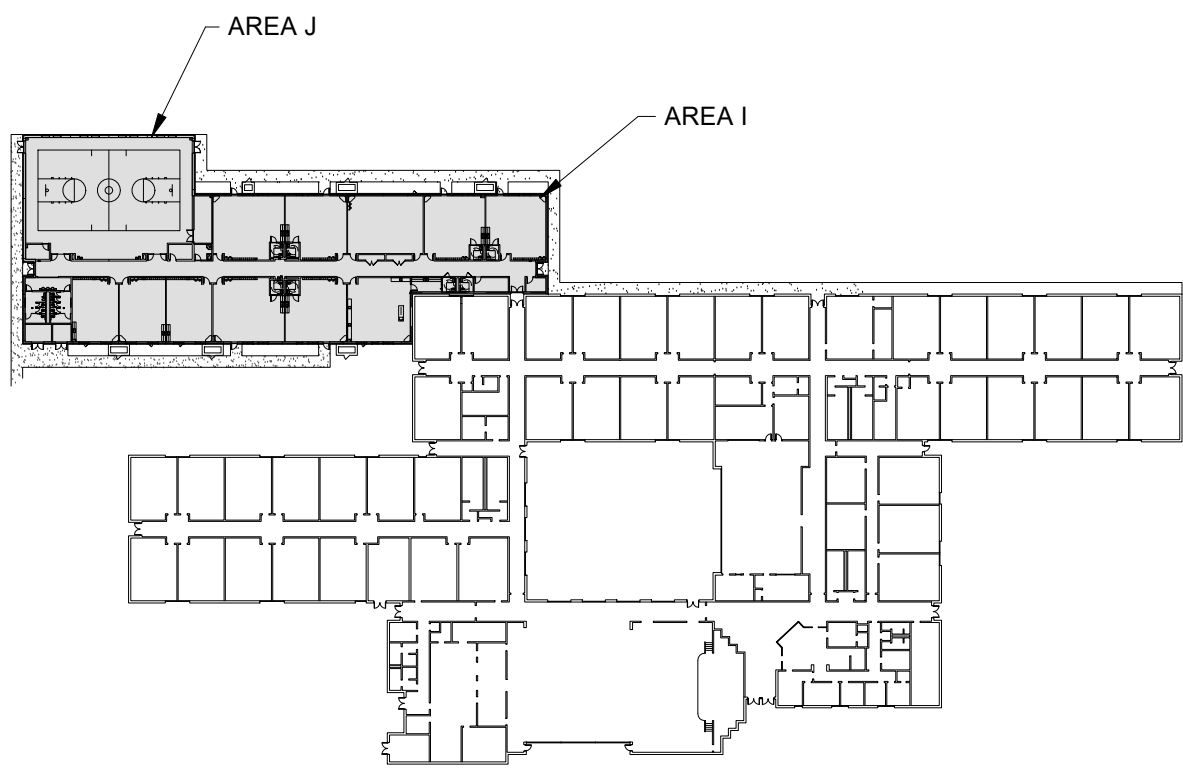
**MECHANICAL RENOVATION NOTES**

1. PROVIDE NEW TEMPERATURE AND HUMIDITY SENSOR FOR SPHP-1 & SPHP-2 WITH METAL GUARD. COORDINATE EXACT LOCATION WITH THE DISTRICT. PROVIDE WIRE MOLD WHERE WIRING IS EXPOSED.
2. INSTALL NEW INDOOR UNIT, IDAC-1.
3. ROUTE REFRIGERANT LINES AND CONTROL CONDUIT UP TO NEW ODAC-1 ON ROOF THROUGH THE EXISTING CURB. SEAL OPENINGS IN ROOF WEATHERTIGHT. PROVIDE NEW HOOD ON CURB.
4. PROVIDE THERMOSTAT FOR IDAC-1. ALSO PROVIDE A TEMPERATURE SENSOR FOR THE DATA ROOM TO ALLOW THE BUILDING AUTOMATION SYSTEM TO MONITOR THE DATA ROOM TEMPERATURE.
5. RUN ALL NEW WIRING IN CONDUIT. FIRE STOP CONDUIT AT ALL WALL PENETRATED. IF NO WALL RATING IS INDICATED, FIRE STOP FOR A 2 HR WALL. SEE DETAIL.
6. ALL NEW 120/1 OR 24V POWER REQUIRED FOR CONTROLS SHALL BE PROVIDED BY THE CONTROLS CONTRACTOR.

**TEST AND BALANCE**

1. BEFORE ANY DEMOLITION WORK IS PERFORMED, MEASURE AIRFLOW AT ALL SUPPLY AND RETURN GRILLES.
2. SUBMIT PRE DEMOLITION REPORT TO THE A/E.
3. AFTER THE NEW UNITS ARE INSTALLED, PROVIDE T & B PER SPECIFICATIONS. SET AIRFLOWS TO VALUES DETERMINED BY THE A/E.

**KEY PLAN**



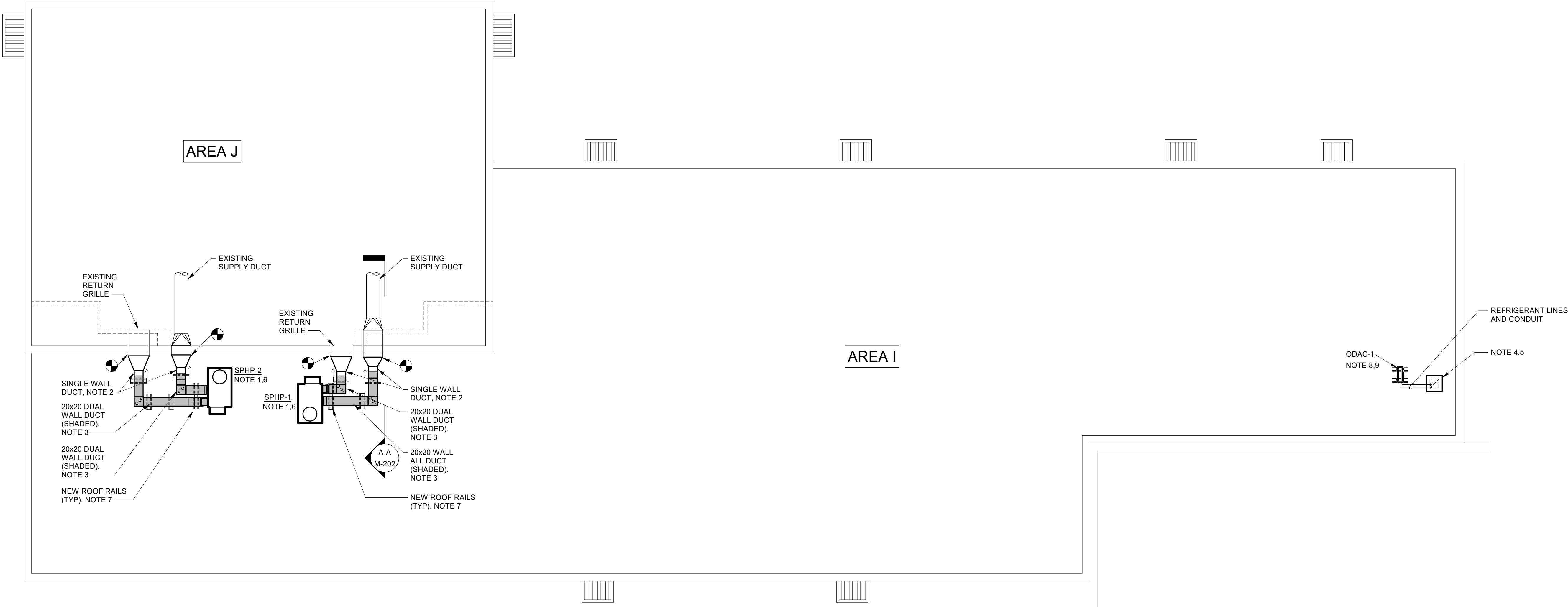
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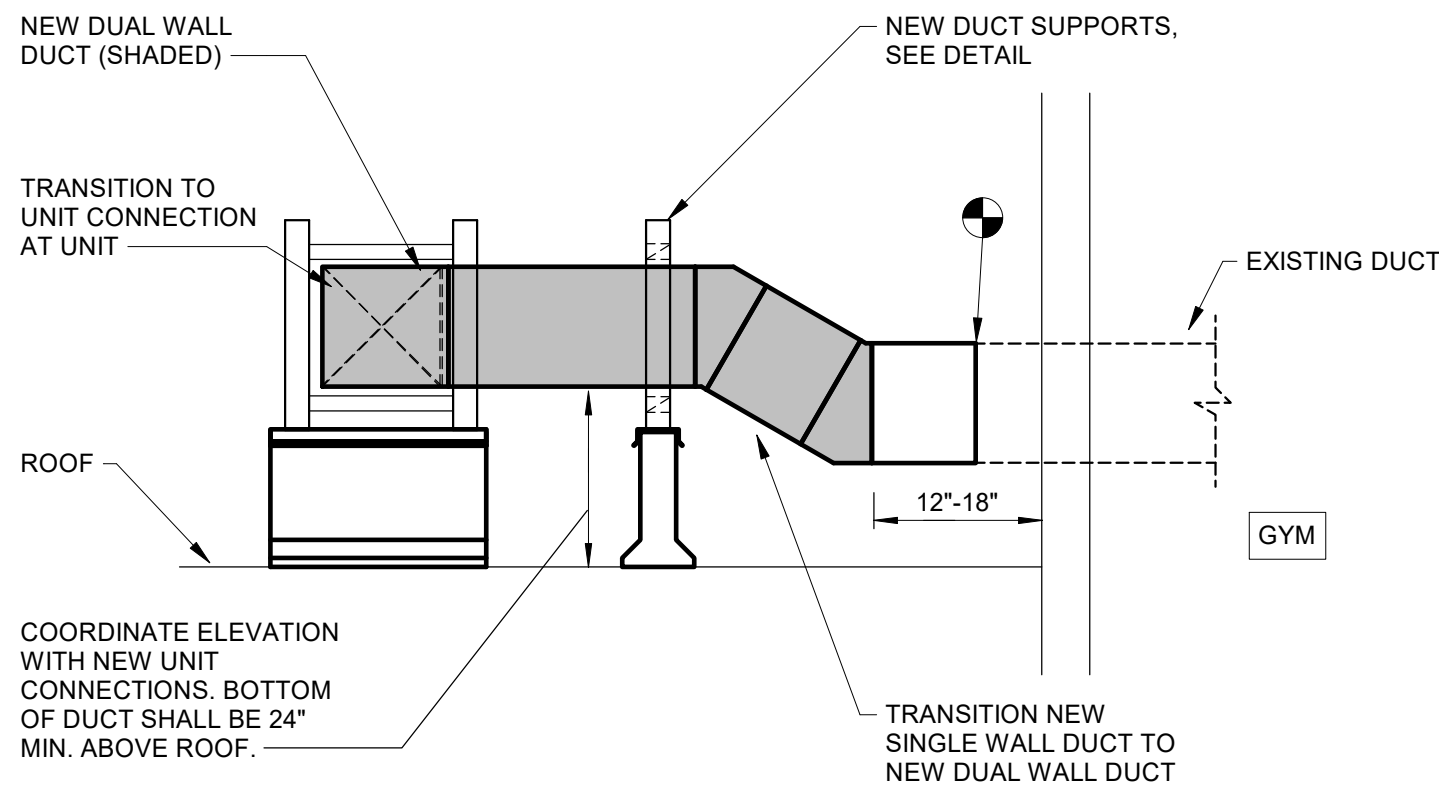
PROJECT: 2201-218720  
DATE: 01/06/2022

ROOF PLAN -  
HVAC -  
RENOVATION

M-202



1 ROOF PLAN - HVAC - RENOVATION  
3/32" = 1'-0"



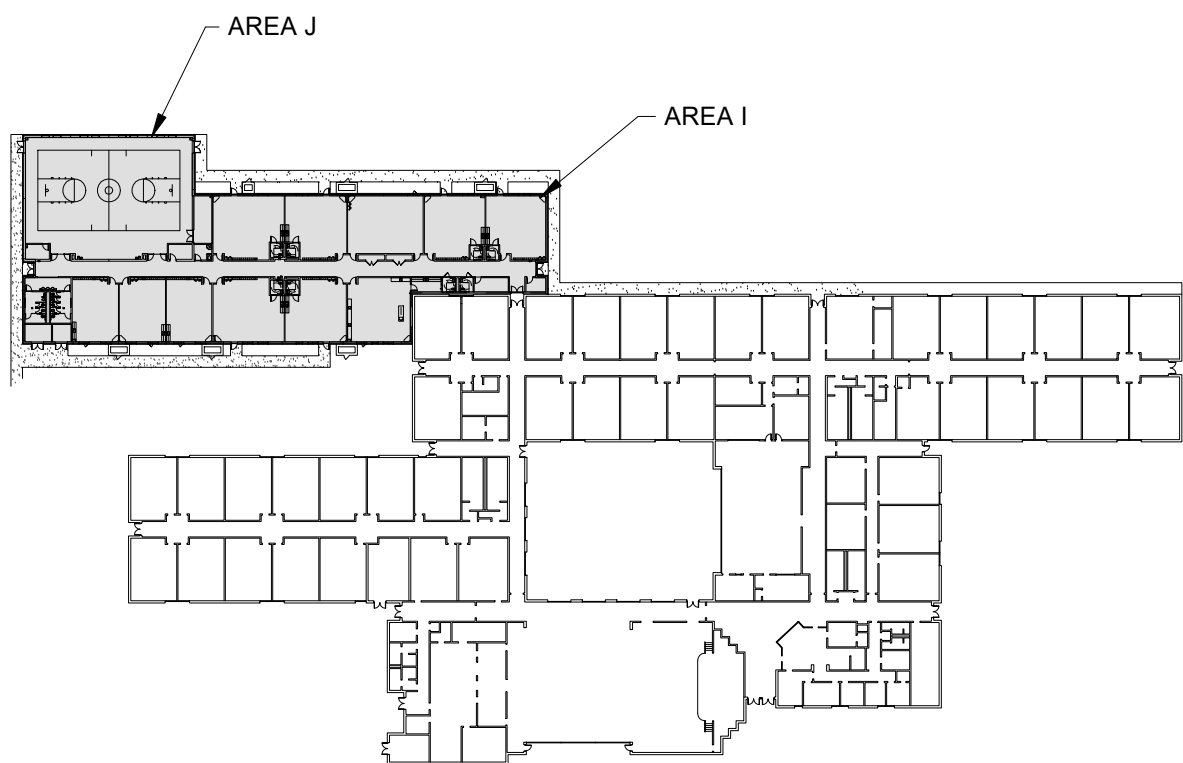
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NOT TO SCALE

ALTERNATE NO. 7:  
REPLACE ROOFTOP HVAC UNITS  
AT ROOF AREA I.

MECHANICAL RENOVATION NOTES

1. PROVIDE CURB EXTENSION AND ADAPTER CURB. COORDINATE SIZE WITH EXISTING CURB AND NEW UNIT. SUBMIT COORDINATION DRAWINGS TO A/E. SEE DETAIL FOR ADDITIONAL INFORMATION.
2. TRANSITION SINGLE WALL DUCT TO EXISTING.
3. DUCT MAY BE RESIZED BY THE CONTRACTOR AS LONG AS DUCT IS 400 SQUARE INCHES MINIMUM IN SIZE.
4. PROVIDE 2 - 2"x4" TREATED WOOD STACKED AND SECURED TO EXISTING CURB. TRIM WOOD TO WIDTH OF EXISTING CURB.
5. PROVIDE NEW WEATHERTIGHT HOOD ON THE EXISTING CURB. ROUTE PIPING AND CONDUIT DOWN THROUGH CURB/HOOD TO IDAC-1. SEAL THE PIPING AND CONDUIT THROUGH THE HOOD WEATHERTIGHT.
6. ROUTE UNIT DRAIN TO ROOF DRAIN. SEE DETAIL.
7. PROVIDE NEW ROOF RAILS TO SUPPORT DUCT. COORDINATE LOCATION WITH ROOFING CONTRACTOR. SEE DETAIL.
8. INSTALL NEW ODAC-1 ON EXISTING EQUIPMENT RAILS. ROUTE PIPING AND CONDUIT TO THE EXISTING ROOF CURB.
9. PROVIDE NEW CURB CAP.

KEY PLAN



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D

SINGLE PACKAGE HEAT PUMP SCHEDULE																																		
HEAT PUMP #	LOCATION	ESP (a) *	CFM		FANS				COMPRESSOR		ELECTRIC HEAT			COOLING COIL CAPACITY								HEATING					MAX WEIGHT (#)	ELECTRICAL			MANUFACTURER AND MODEL	REMARKS		
					OUTDOOR		INDOOR							MBH (NET)		OUTDOOR DB T	ENTERING AIR		LEAVING AIR		EER (b)	SEER (b)	ENT DB T	@ 17 F		@ 47 F		HSPF (b)	MAX MCA	MOCOP			VOLT / PH	
			TOTAL	OA	NO	FLA	BHP	HP	NO	RLA	STAGES	KW	VOLT / PH	TOTAL	SENS		DB	WB	DB	WB				COP	COP									
SPHP-1, 2	ROOF	.5	3600	850	1	1.4	1.37	2.75	2	8.46/7.80	2	27	460/3	118	87	95	80	67	55.5	55.4	11.5	16.0	60	-	-	114	-	-	1500	64	70	460/3	TRANE WHC 120	①②③④⑤⑥⑦⑧⑨⑩⑪⑫⑬
* INCLUDES DUCT, GRILLES, AND LOADED FILTERS; (a) INCHES WG; (b) @ARI CONDITIONS																																		
① ROOF CURB EXTENSION/ADAPTER   ③ SCROLL COMPRESSORS   ⑤ SINGLE PT CONNECTION   ⑦ HOT GAS REHEAT (55"-72"F MIN.)   ⑨ MULTI-SPEED, DIRECT DRIVE INDOOR FAN MOTOR   ⑪ NEEDLEPOINT BIPOLAR IONIZATION   ⑬ THRU BASE ELECTRICAL																																		
② HORIZONTAL DISCHARGE   ④ NON-FUSED DISCONNECT SWITCH   ⑥ LOW AMBIENT CONTROL TO 30°F   ⑧ 2" FILTERS   ⑩ LOW LEAK OUTSIDE AIR DAMPER   ⑫ R410A REFRIGERANT																																		
09/20																																		
S3251B																																		

C

SPLIT SYSTEM AIR CONDITIONING UNIT SCHEDULE (DUCTLESS)																													
INDOOR UNIT											OUTDOOR UNIT										COOLING COIL CAPACITY							REMARKS	
INDOOR AC #	LOCATION	CFM		EXT * SP(a)	HP	MAX. WEIGHT #	ELECTRIC			MANUFACTURER AND MODEL	OUTDOOR AC #	FANS		COMPRESSOR		MAX. WEIGHT #	ELECTRIC			MANUFACTURER AND MODEL	MBH (NET)		OUTDOOR DB T	ENT AIR		LVG AIR			SEER(b)
		TOT	OA				MAX MCA	MOCp	VOLT/PH			HP	NO	NO	RLA		MAX MCA	MOCp	VOLT/PH		TOT	SENS		DB	WB	DB	WB		
IDAC-1	DATA ROOM	700	0	-	56W	50	1.0	-	208/230/1	MITSUBISHI PKA-A24	ODAC-1	.75	1	1	12	150	18	30	208/230/1	MITSUBISHI PUY-A24	24	18.5	97	75	65	-	-	17.0	①②③④⑤⑥⑦
* INCLUDES DUCT, GRILLES, AND LOADED FILTERS (b) @ ARI CONDITIONS																													
① PROVIDE START CAPACITOR FOR SINGLE PHASE UNITS    ③ FACTORY MOUNTED CONDENSATE PUMP    ⑤ R410A REFRIGERANT    ⑦ WALL MOUNTED INDOOR UNIT																													
② LOW AMBIENT CONTROL TO 20°F    ④ POWER INDOOR UNIT FROM OUTDOOR UNIT    ⑥ HARD WIRED THERMOSTAT    ⑧ CEILING MOUNTED RECESSED INDOOR UNIT																													
9/20																													
S3252E																													



SOUTH CAROLINA  
STATE DEPARTMENT  
OF EDUCATION

OSF Form F3 – Building Code Analysis

Date: January 6, 2022

SUBMITTAL: ☐ Schematic ☐ Design Development ☒ Construction Document

SC CODE EDITION: 2018 ICC CODE EDITION: 2018 ICC A117.1 EDITION: 2017 OSF GUIDE EDITION: 2020

OTHER CODES/STANDARDS & EDITIONS:

PROJECT DESCRIPTION: [Brief Scope of Work & Include project delivery method (i.e. CMR, etc.)]  
Replacement of wall mounted heat pump HVAC systems throughout the facility via Design/Bid/Build delivery method.

B

1 of 2

Version April 2021



SOUTH CAROLINA  
STATE DEPARTMENT  
OF EDUCATION

OSF Form F3 – Building Code Analysis

Summary of data from approved ASHRAE 90.1 compliance sheets.

MECHANICAL INFORMATION		
GENERAL INFORMATION		
Building Location		Little River, South Carolina
Climate Zone		3A
Outdoor Design Temperature	Summer	92 deg F DB 77 deg F WB
	Winter	25 deg F DB N/A deg F WB
		Summer
	Indoor Design Temperature	Winter
OUTSIDE AIR		
Occupied Minimum Outside Air		5 cfm per person
CO2 Demand Management		<input checked="" type="checkbox"/> no <input type="checkbox"/> yes
Supervised Control System		<input type="checkbox"/> no <input checked="" type="checkbox"/> yes
MECHANICAL SYSTEMS, SERVICE SYSTEMS & EQUIPMENT		
Briefly describe mechanical system: Packaged Rooftop Heat Pump with hot gas reheat for humidity control, MERV 13 filters and Bipolar Ionization		
ELECTRICAL INFORMATION N/A, Existing Services		

2 of 2

Version April 2021

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	IN	INCHES
CFM	CUBIC FEET PER MINUTE.	ODAC-1	OUTDOOR AIR CONDITIONER NO.1
CLG	CEILING	ODP	OPEN DRIP PROOF
D	DRAIN	PD	PRESSURE DROP
EFF	EFFICIENCY	PH	PHASE
ELEC	ELECTRICAL	REF	REFRIGERANT LINES
ESP	EXTERNAL STATIC PRESSURE	SF	SQUARE FOOT
EXT	EXTERNAL	SPHP-1	SINGLE PACKAGE HEAT PUMP NO.1
FPS	FEET PER SECOND	TA	THROW AWAY (FILTER)
FT	FEET	VEL	VELOCITY
FLR	FLOOR	VOLT	VOLTAGE
HP	HORSE POWER		
IDAC-1	INDOOR AIR CONDITIONER NO.1		

4/01

S3956

MECHANICAL SYMBOL LEGEND

<input checked="" type="checkbox"/>	SUPPLY OR OUTSIDE AIR GRILLE	■ T	THERMOSTAT / SPACE SENSOR
	DUAL WALL DUCT (SHADED OR WHERE NOTED)	■ H	HUMIDISTAT / HUMIDITY SENSOR
	10x8		CONNECT NEW TO EXISTING
	INSIDE DUCT DIMENSION		CONTROL WIRING

6/20

S3950

DUCT PRESSURE CLASSIFICATION

DUCT	SYSTEM	PRESSURE	STATIC PRESSURE CLASS (INWG)
RETURN DUCT	ALL SYSTEM RETURNS	NEG	-2"
SUPPLY DUCT	ALL OTHER SYSTEM SUPPLYS	POS	+2"

6/02

S3958

MECHANICAL GENERAL NOTES

- DO NOT SCALE DRAWINGS, SEE ARCHITECTURAL AND ROOF DRAWINGS.
- LOCATE ALL THERMOSTATS 48"(TO TOP OF DEVICE) ABOVE FINISH FLOOR. UNLESS NOTED OTHERWISE.
- ALL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE SPECIFICATIONS. SUPPORT DETAILS SHALL BE SUBMITTED TO THE MECHANICAL ENGINEER.
- PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLATION OF DUCT, AIR HANDLING UNITS, FANS, AND ALL OTHER EQUIPMENT AND APPURTENANCES.
- ALL DUCT SHALL BE GALVANIZED SHEETMETAL EXCEPT AS NOTED.
- DUCT SIZES INDICATED SHALL BE CLEAR INSIDE DIMENSIONS.

7/17

S3951

MECHANICAL DEMOLITION NOTES

- DRAWINGS SHOW GENERAL INTENT OF DEMOLITION. QUANTITIES, LOCATIONS, SIZES AND EQUIPMENT ARE SHOWN TO INDICATE TYPE OF SYSTEM INSTALLED AND DOES NOT NECESSARILY REPRESENT EXACT CONDITIONS. CONTRACTOR SHALL FIELD VERIFY BEFORE BIDDING.
- DEMOLITION OF EQUIPMENT, SYSTEMS, AND COMPONENTS SHALL INCLUDE ALL SUPPORTS, PADS, HANGERS, INSULATION, CONTROLS, CONDUIT, ACCESSORIES, AND APPURTENANCES NOT REQUIRED FOR THE INSTALLATION OF THE NEW SYSTEM.
- ALL OPENINGS CREATED BY THE ABANDONMENT OR REMOVAL OF EXISTING SYSTEMS SHALL BE PATCHED.
- REMOVAL OF SYSTEMS SHALL INCLUDE COMPLETE SYSTEM WHENEVER PRACTICAL.

7/17

S3955

PACKAGED HEAT PUMP (SPHP-1 & 2)  
PRIOR APPROVAL REQUIREMENTS

- THE UNITS DUCTING CONFIGURATION AND ROUTING IS VERY LIMITED BY EXISTING CONDITIONS
- ANY UNIT SUBMITTED SHALL NOT BLOCK OR IMPEDE EASY ACCESS TO UNIT COMPONENTS, ACCESS DOORS, ETC.
- A VENDOR REQUESTING PRIOR APPROVAL TO BID THIS PROJECT SHALL SUBMIT ALONG WITH THEIR UNIT PERFORMANCE. A SKETCH CLEARLY SHOWING HOW THE DUCT ROUTING WILL NOT BLOCK OR IMPEDE EASY ACCESS, WITHOUT CLIMBING OVER DUCT, TO UNIT COMPONENTS, ACCESS DOORS, ETC.

SEISMIC AND WIND DESIGN CRITERIA

SEISMIC DESIGN CATEGORY (SDC): C

RISK CATEGORY: III

BASIC WIND SPEED: 156 MPH



WATERWAY ES  
ROOFING  
RENOVATION



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REVISIONS:

No.	Description	Date
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PROJECT: 2201-218720  
DATE: 01/06/2022

HVAC  
SCHEDULES &  
NOTES

M-301

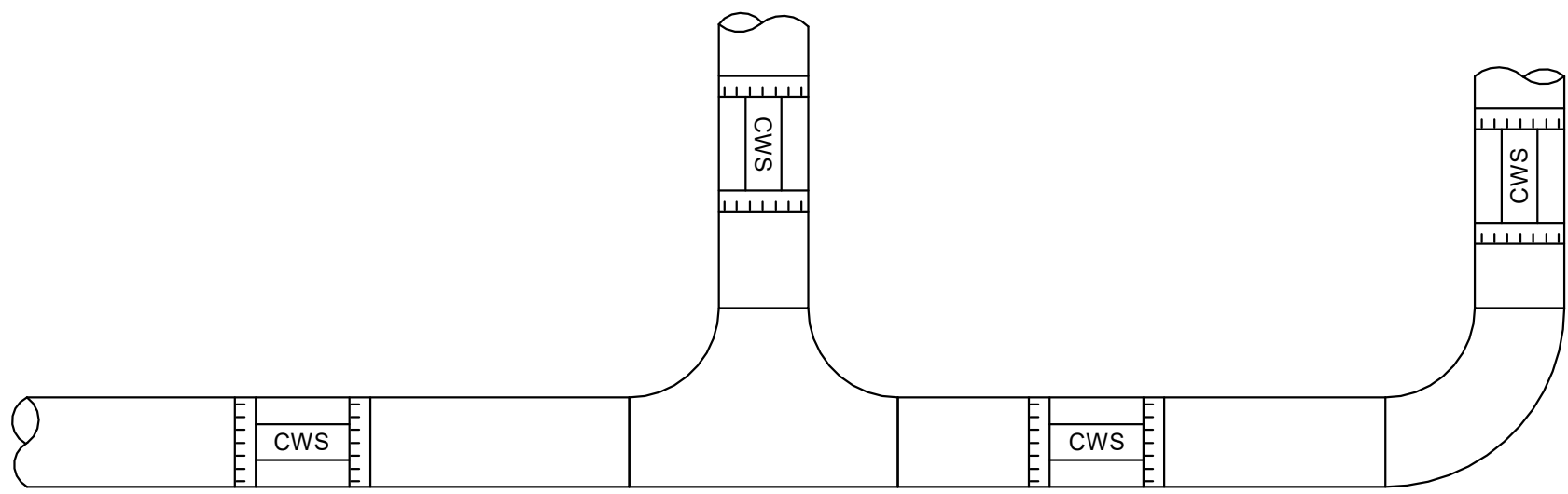
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1/6/2022 11:38:01 AM

D

C

B

A

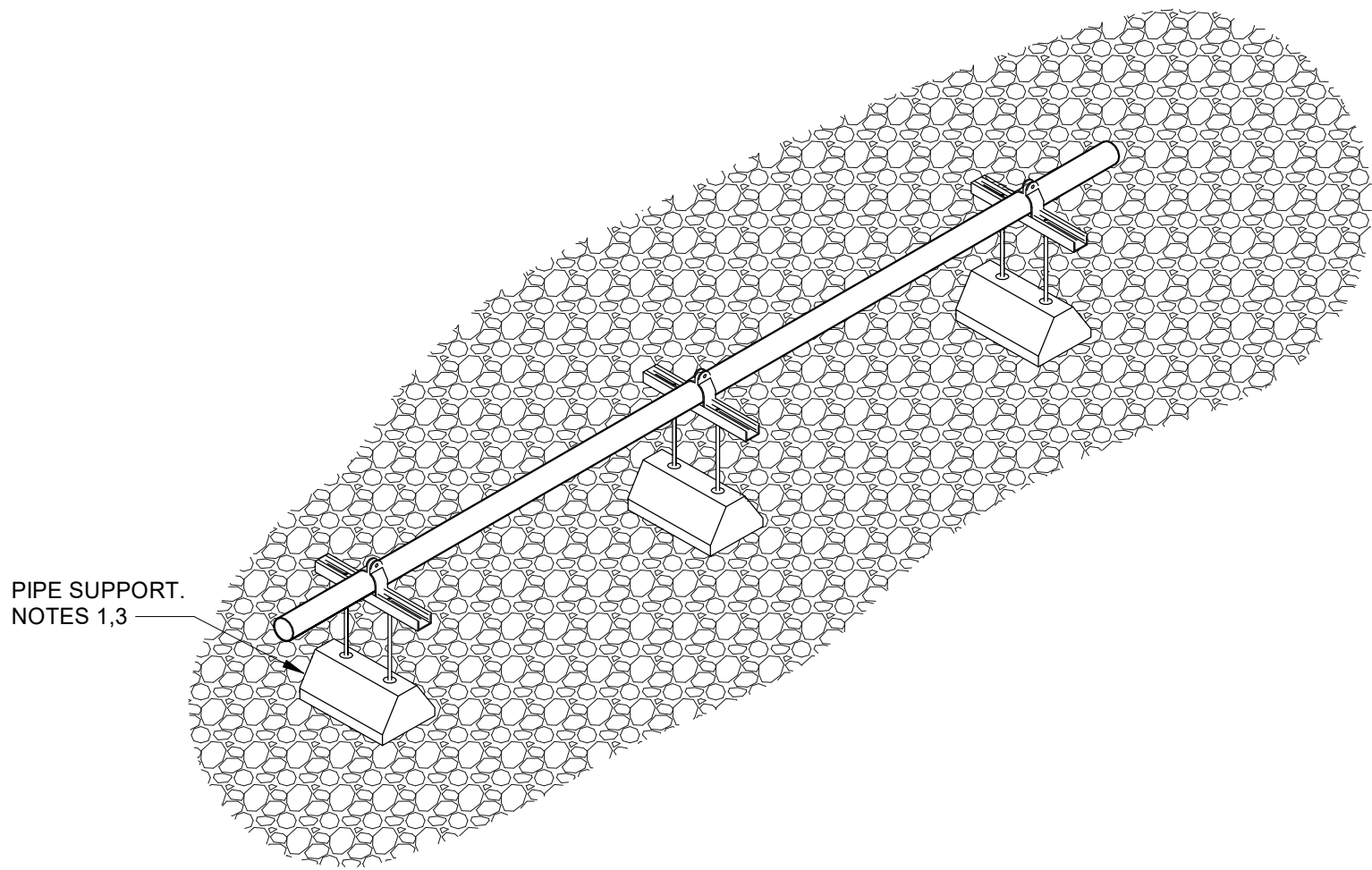


**NOTES:**

- SERVICE LABEL SHALL BE ON FRONT AND BACK OF PIPE (TEN FEET AND LESS AFF) AND BOTTOM AND TOP OF PIPE (MORE THAN TEN FEET AFF).
- MAXIMUM SPACING SHALL BE TWENTY FEET ON CENTER. MINIMUM ONE PER ROOM.
- LABEL PIPING AT EVERY CHANGE OF DIRECTION.

**PIPING IDENTIFICATION DETAIL**

3302 NOT TO SCALE 09/93

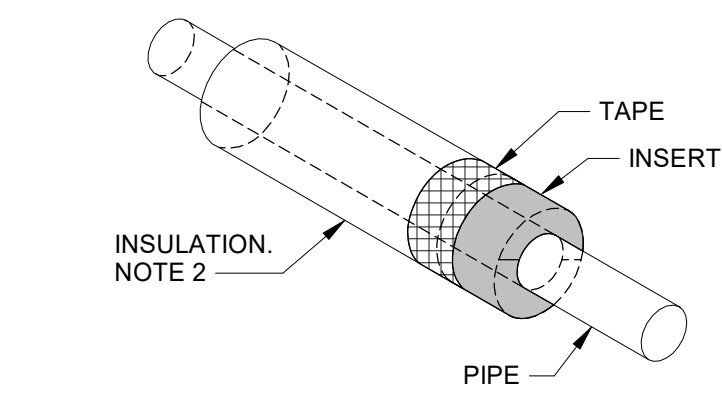


**NOTES:**

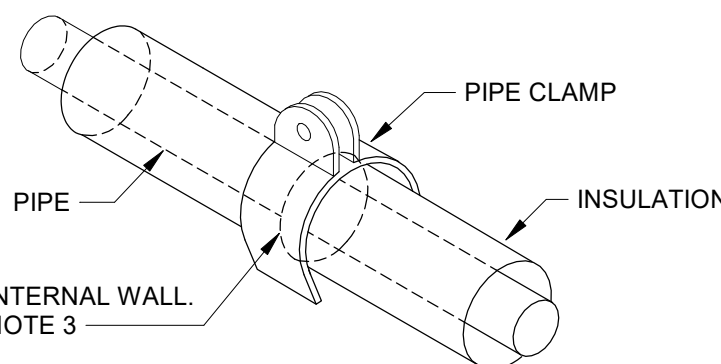
- PROVIDE SUPPORT 4'-0" ON CENTER.
- SEE SPECIFICATIONS FOR SUPPORT REQUIREMENTS.
- SET SUPPORTS IN HEAVY BED OF MASTIC.
- HEIGHT OF SUPPORT SHALL BE ADJUSTED TO PROVIDE A 1/4" PER FOOT SLOPE TOWARD THE DRAIN.

**EQUIPMENT DRAIN PIPE SUPPORT ON ROOF DETAIL**

3179C NOT TO SCALE 04/18



**RIGID INSERT FOR ELASTOMERIC INSULATION (HANGERS AND CLAMPS)**



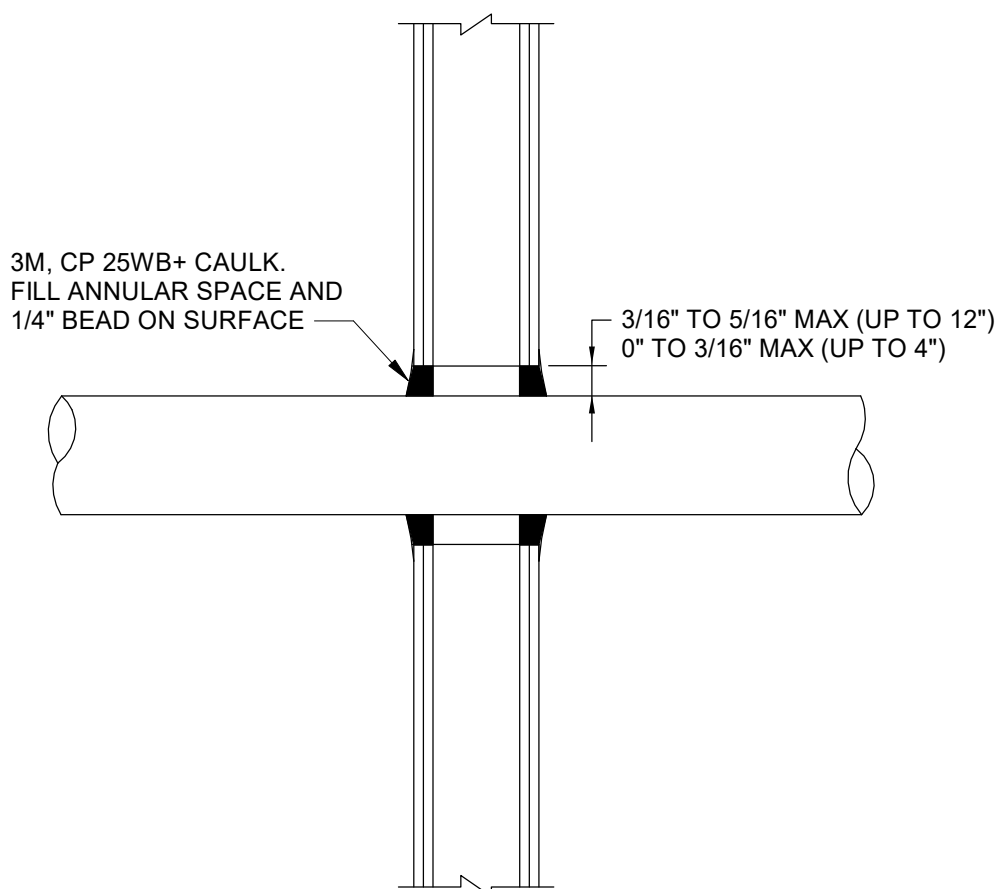
**REFRIGERANT PIPE CLAMP**

**NOTES:**

- RIGID INSULATION INSERT SHALL OCCUR AT EVERY HANGER OR PIPE CLAMP UNLESS A REFRIGERANT PIPE CLAMP IS USED.
- INSULATION SHALL BUTT UP TIGHT TO INSERT. SEAL WITH MANUFACTURER'S TAPE TO PROVIDE AN AIRTIGHT SEAL.
- INSERT INSULATION INTO THE PIPE CLAMP POCKETS ON BOTH SIDES UP TO THE INTERNAL WALL TO CREATE A CONTINUOUSLY INSULATED ASSEMBLY. SEAL AROUND CLAMP WITH MANUFACTURER'S APPROVED TAPE.

**REFRIGERANT PIPE SUPPORT DETAIL**

3183 NOT TO SCALE 04/18

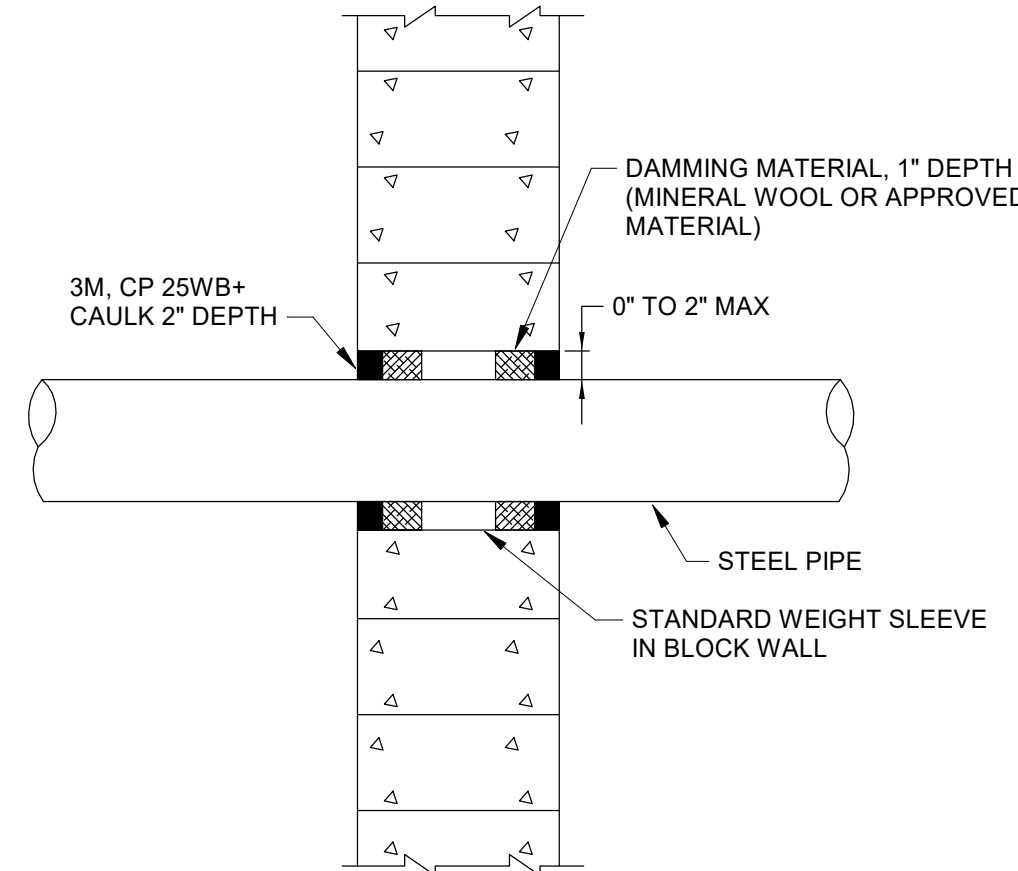


**NOTES:**

- REFER TO THE LATEST EDITION OF UL BUILDING MATERIAL DIRECTORY.
- WALL OPENING SHALL BE CUT NEATLY. PROVIDE A SLEEVE IF THE WALL OPENING IS NOT CUT PROPERLY.

**METAL CONDUIT THROUGH PENETRATION  
FIRESTOP SYSTEM (UL#WL1001) ONE AND TWO  
HOUR GYPSUM WALL DETAIL**

3251B NOT TO SCALE 03/03

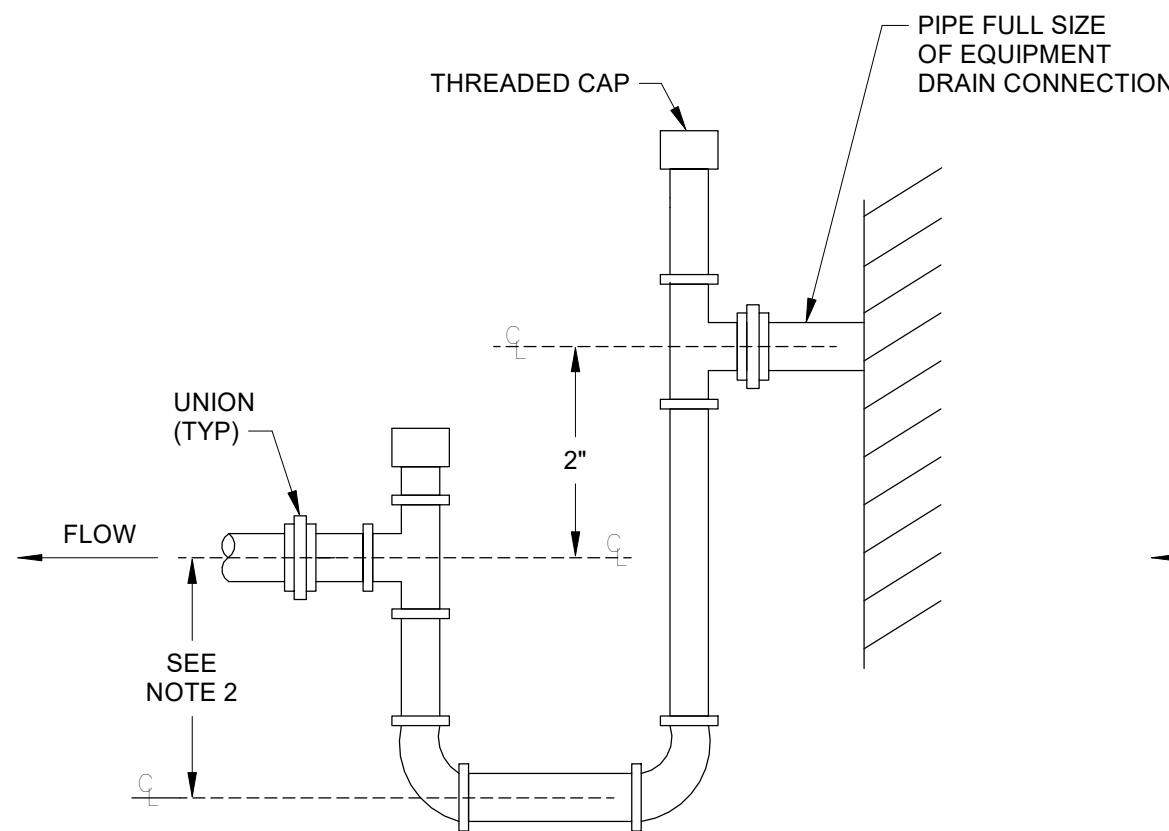


**NOTES:**

- REFER TO LATEST EDITION OF UL BUILDING MATERIAL DIRECTORY.
- COPPER TUBING (TYPE K,L) SIMILAR (UL-395), 3 HOUR.
- METAL CONDUIT SIMILAR (UL-49), 3 HOUR.

**METAL CONDUIT THROUGH PENETRATION FIRESTOP  
SYSTEM (UL#CAJ1044) ONE, TWO, AND THREE HOUR  
CONCRETE AND BLOCK WALL DETAIL**

3252B NOT TO SCALE 11/95



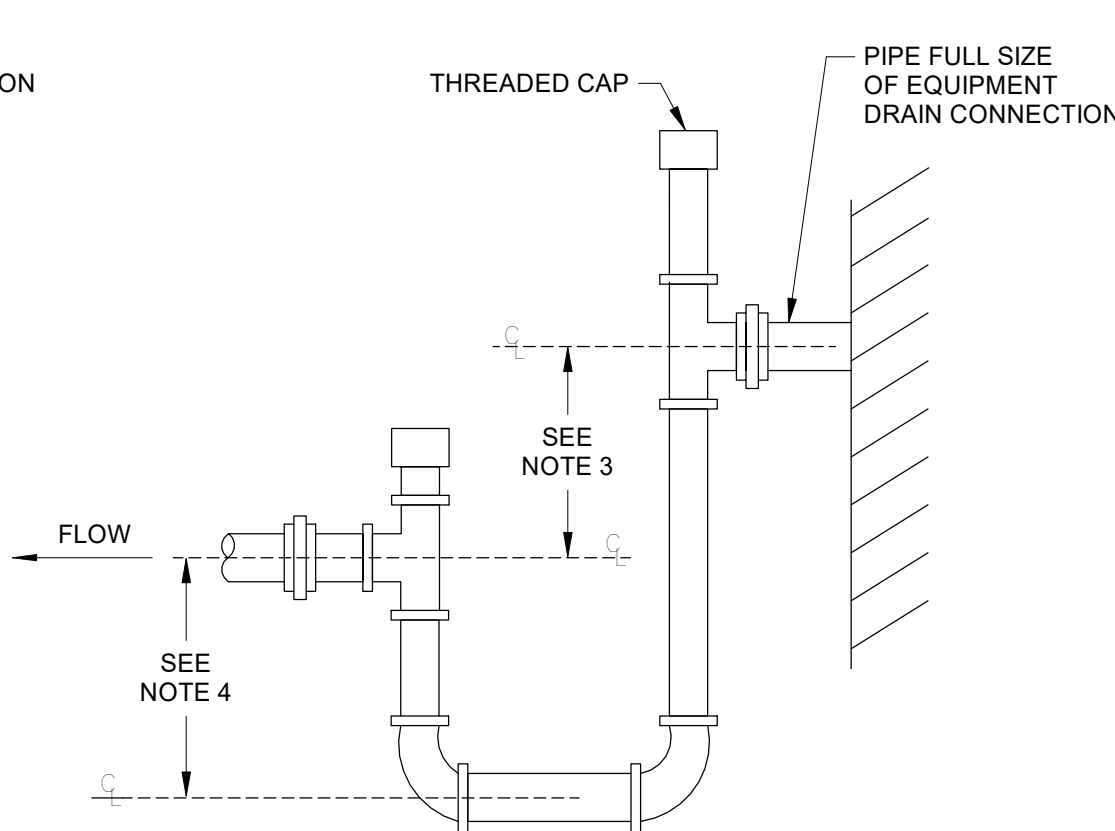
**BLOW THRU DRAIN**

**NOTES:**

- LOCATE TRAPS SO AS TO BE ACCESSIBLE FOR CLEANING.
- HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM TOTAL STATIC PRESSURE PLUS 1/2".
- HEIGHT SHALL BE EQUAL TO UNIT MAXIMUM NEGATIVE STATIC PRESSURE PLUS 1".
- HEIGHT SHALL BE 1/2 OF HEIGHT INSTALLED IN NOTE 3.
- PIPE TO NEAREST DRAIN.
- TRAP SHALL NOT BLOCK ACCESS TO EQUIPMENT.
- PROVIDE UNIONS AT INLET AND OUTLET OF TRAP.
- DRAIN LINE SHALL BE 3/4" MIN OR UNIT CONNECTION SIZE, WHICHEVER IS LARGER.

**EQUIPMENT CONDENSATE DRAIN DETAIL**

3179B NOT TO SCALE 03/16



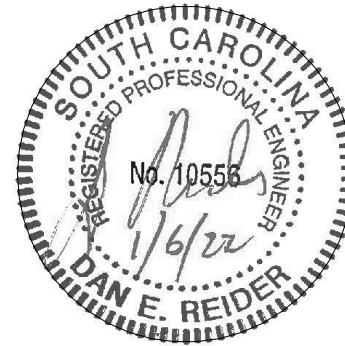
**DRAW THRU DRAIN**



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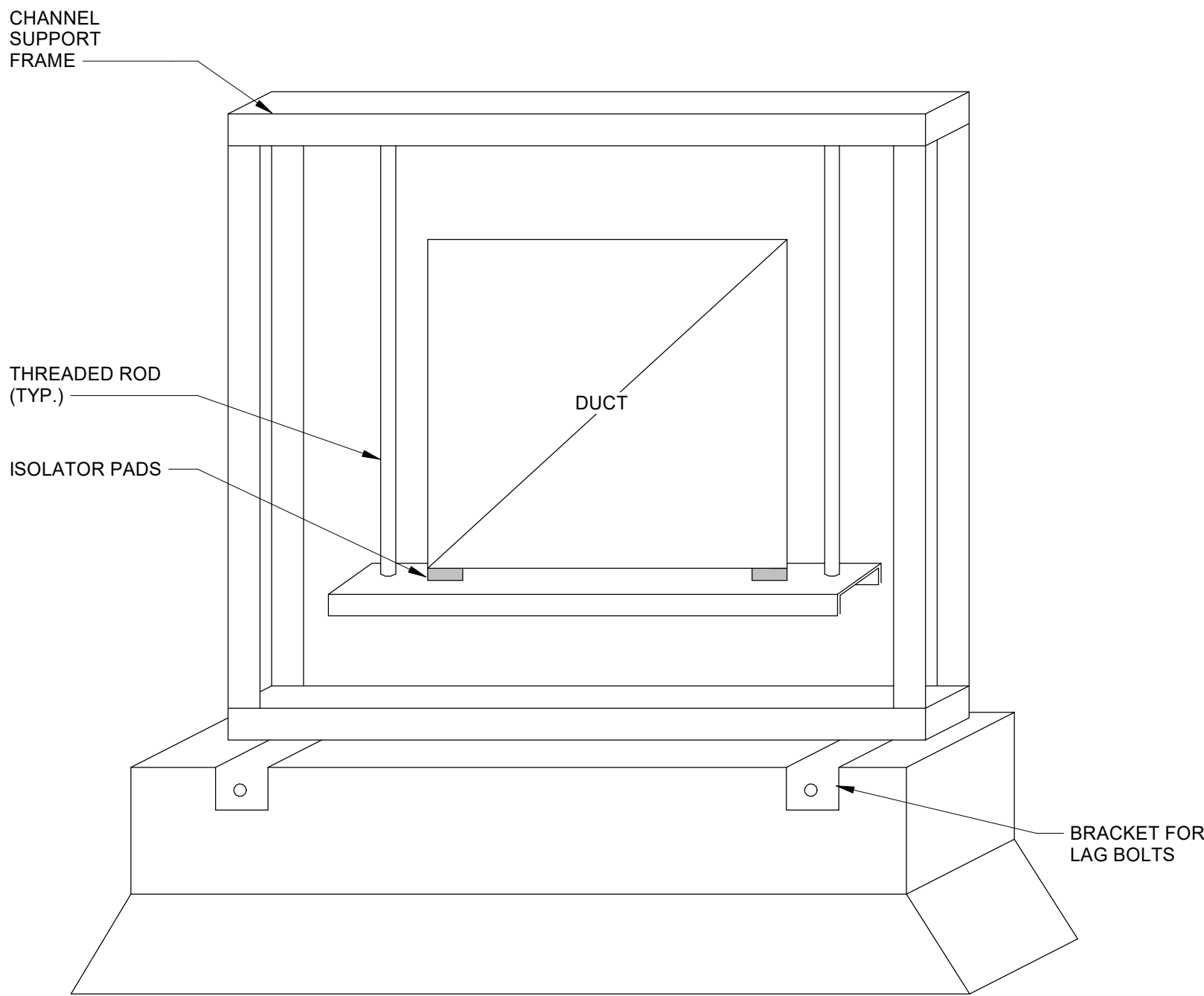
No.	Description	Date
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PROJECT: 2201-218720  
DATE: 01/06/2022

**HVAC DETAILS**

**M-401**

C:\Users\leah\Documents\21112 Mechanical Central (R22)\_leah.mumane@ugahinc.com.rvt  
1/6/2022 11:36:08 AM

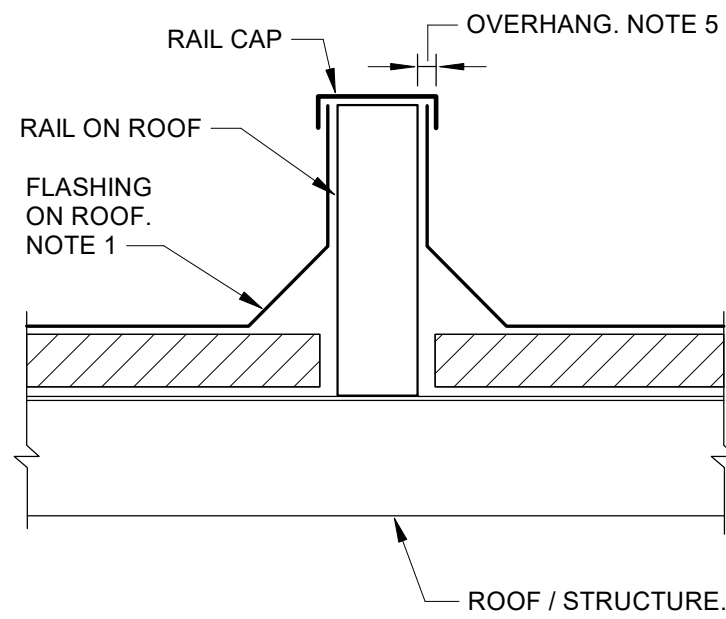


**NOTES:**

1. SUPPORT SHALL BE FABRICATED SO CHANNELS DO NOT CATCH RAIN WATER.
2. TOP CHANNEL SHALL BE DESIGNED TO BOLT TO VERTICAL CHANNELS AFTER DUCT IS SET.

**ROOF DUCT SUPPORT DETAIL**

3326A NOT TO SCALE 04/12

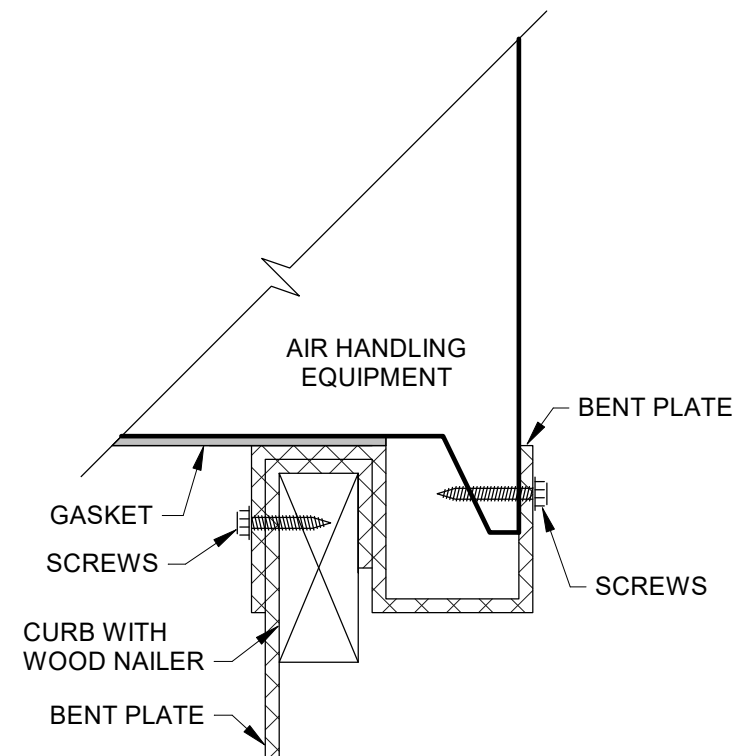


**NOTES:**

1. FLASHING ON DETAIL IS DIAGRAMMATIC ONLY. SEE ROOFING DETAILS FOR ACTUAL FLASHING AND COUNTER FLASHING REQUIRED. COORDINATE CURB INSTALLATION WITH ROOFING WORK.
2. PROVIDE ROOF CURB TO MATCH ROOF SLOPE.
3. SPOT WELD OR ANCHOR CURB TO STRUCTURE. SEE SEISMIC FOR ADDITIONAL REQUIREMENTS.
4. ATTACH CAP TO CURB 12" O.C., MINIMUM 2 PER SIDE.
5. PROVIDE 3/4" SPACE BETWEEN PLENUM OR CAP OVERHANG AND CURB FOR ROOFING AND FLASHING.
6. SEAL ALL PENETRATIONS WITH APPROVED CAULKING OR BITUMASTIC.

**ROOFTOP DUCT SUPPORT RAIL DETAIL**

3325C NOT TO SCALE 08/19

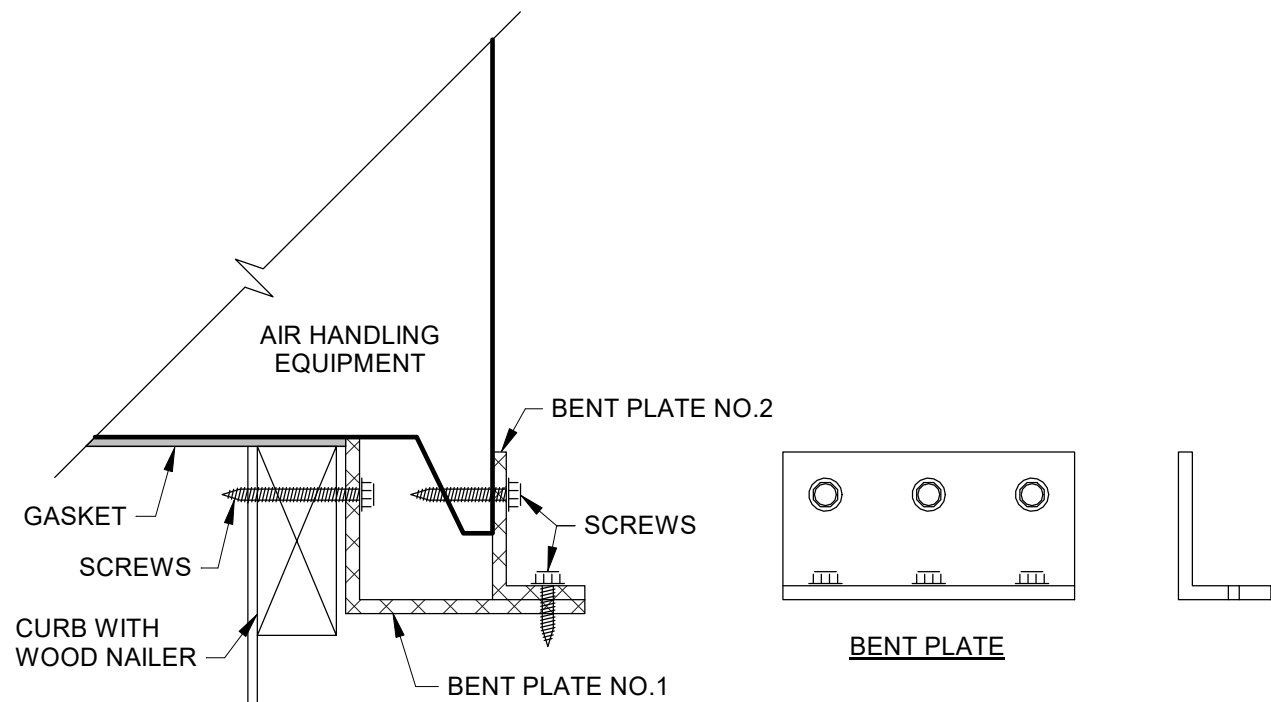


**NOTES:**

1. THIS DETAIL REPRESENTS A GENERAL INSTALLATION DETAIL. SPECIFIC SIZES OF BENT PLATES, FASTENERS, ETC., TO BE DETERMINED BY THE SEISMIC ENGINEER.
2. ALTERNATE ATTACHMENT MAY BE ACCEPTABLE WHEN SUBMITTED BY THE SEISMIC ENGINEER.

**ROOFTOP UNIT ATTACHMENT TO CURB DETAIL - TYPE 2**

3860B NOT TO SCALE 10/10

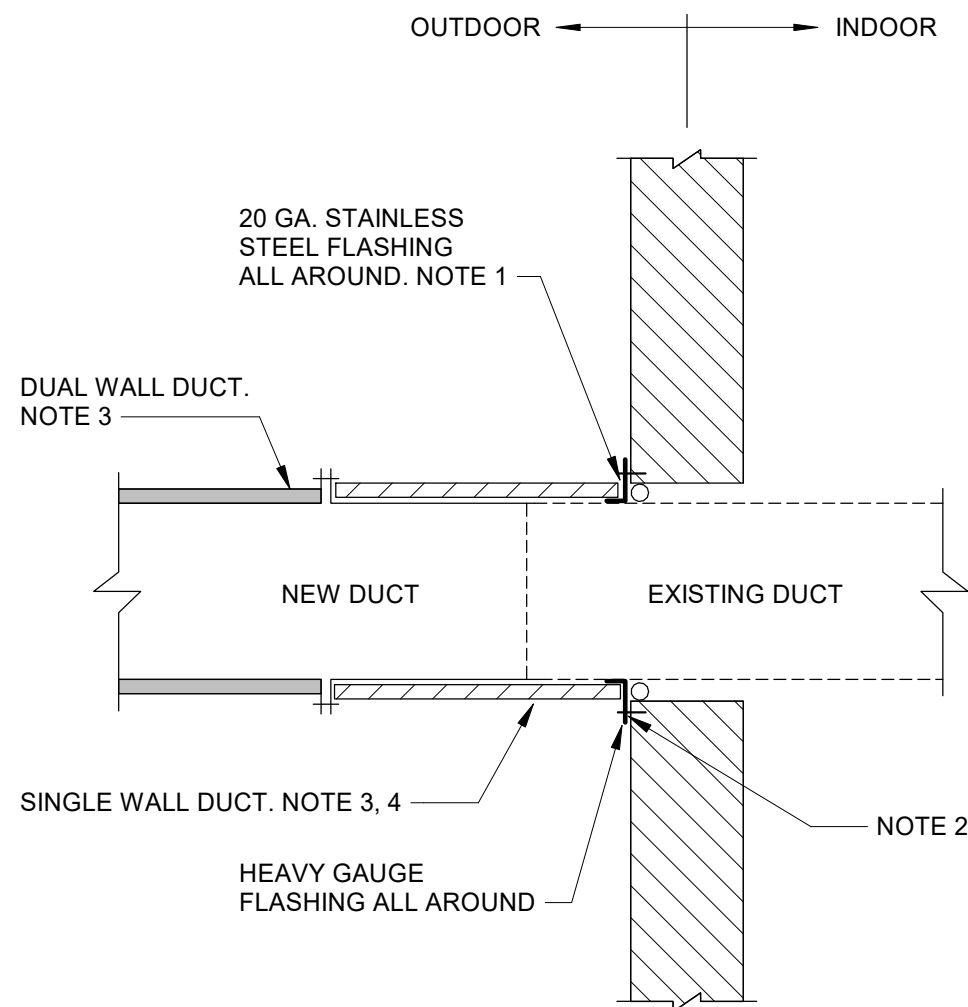


**NOTES:**

1. THIS DETAIL REPRESENTS A GENERAL INSTALLATION DETAIL. SPECIFIC SIZES OF BENT PLATES, FASTENERS, ETC., TO BE DETERMINED BY THE SEISMIC ENGINEER.
2. ALTERNATE ATTACHMENT MAY BE ACCEPTABLE WHEN SUBMITTED BY THE SEISMIC ENGINEER.

**ROOFTOP UNIT ATTACHMENT TO CURB DETAIL - TYPE 1**

3860A NOT TO SCALE 10/10

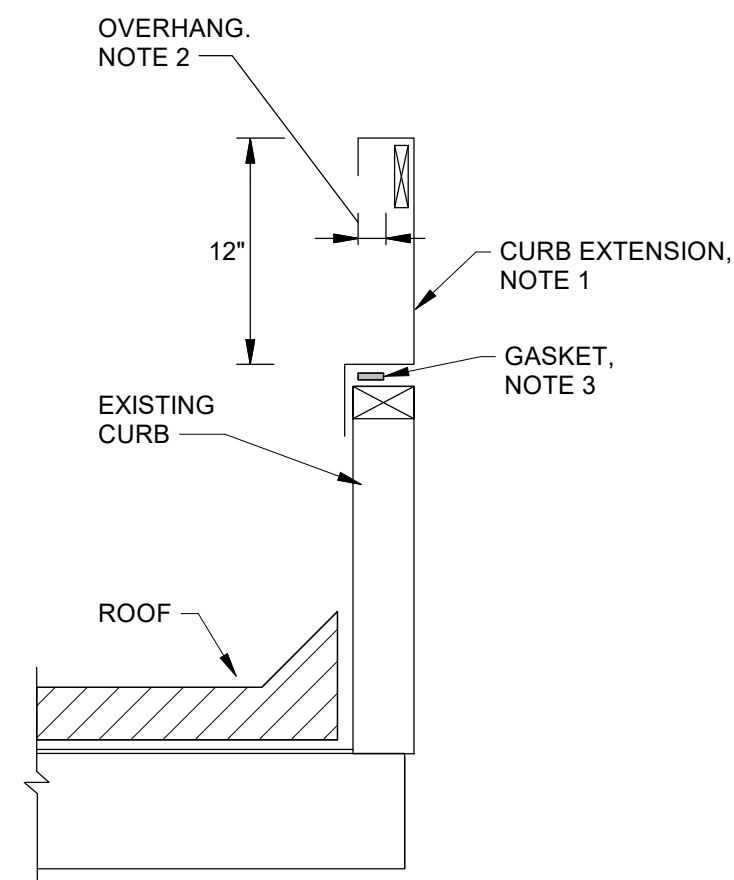


**NOTES:**

1. PROVIDE CAULKING BEHIND ANGLE.
2. PROVIDE SEALANT BETWEEN DUCT AND WALL ALL AROUND.
3. SEE SPECIFICATIONS
4. ELASTOMERIC INSULATION WITH METAL JACKET.

**DUAL WALL DUCT THROUGH EXTERIOR WALL DETAIL**

3041C NOT TO SCALE 10/09



**NOTES:**

1. SEE SPECIFICATIONS FOR MATERIALS REQUIRED.
2. PROVIDE 3/4" SPACE FOR ROOFING AND FLASHING
3. PROVIDE 1/8" NEOPRENE OR ELASTOMERIC GASKET BETWEEN CURB AND EXTENSION.
4. PROVIDE ADAPTER CURB ON TOP OF EXTENSIONS.

**ROOFTOP CURB EXTENSION**

3325E NOT TO SCALE 12/21



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**REVISIONS:**

No.	Description	Date
-----	-------------	------

PROJECT: 2201-218720  
DATE: 01/06/2022

**HVAC DETAILS**

**M-402**

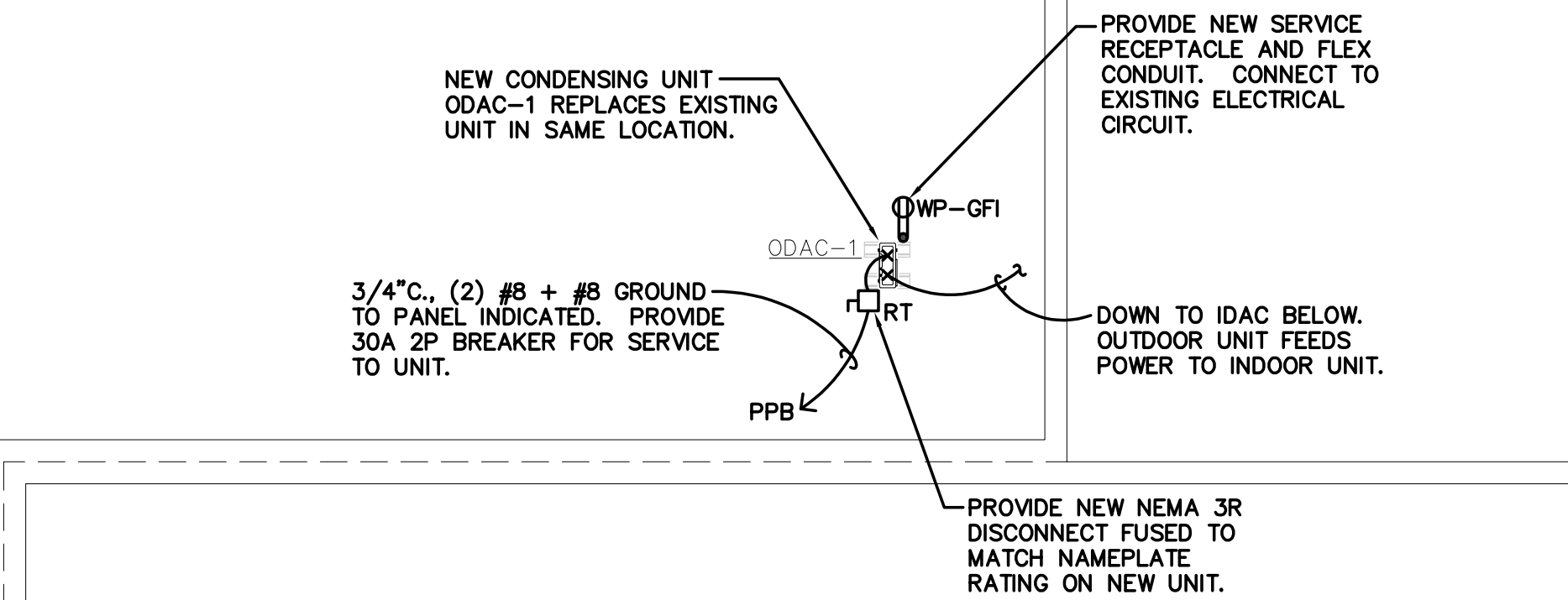
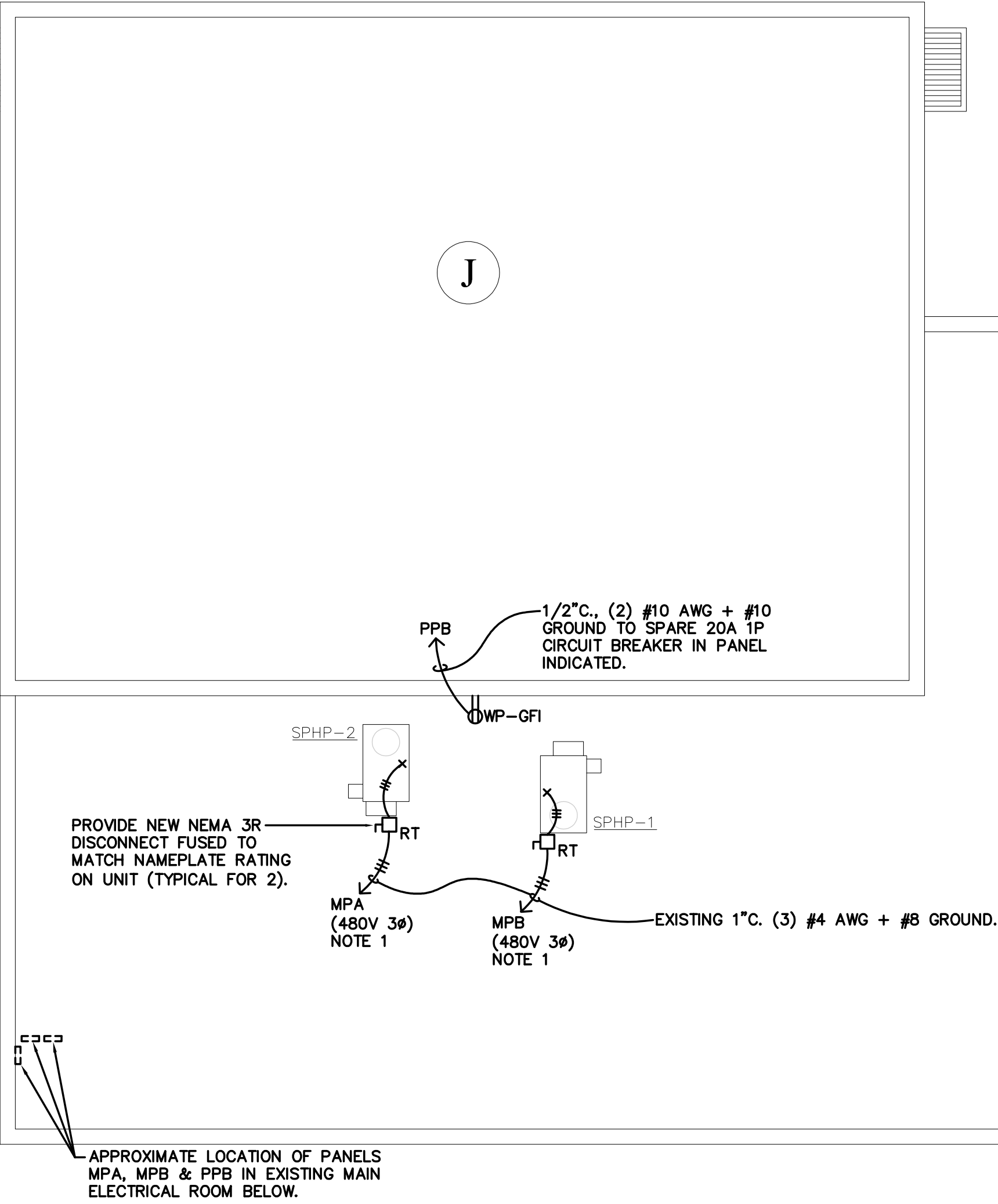
ELECTRICAL INFORMATION		
SERVICE TRANSFORMER	<input checked="" type="checkbox"/> By Utility	KVA Primary
	<input type="checkbox"/> By District	Voltage/Phase
ELECTRICAL SERVICE INFORMATION		
Service Voltage/Phase	Existing	Amperes
Service Entrance Conductors Size	Existing	Qty per Phase
Total Connected Load	Existing	KVA
Estimated Maximum Demand	Existing	KVA
Available Fault Current in Symmetrical Amperes	Existing - N/A	
Interrupting Capacity of Service Overcurrent Device	Existing - N/A	
Grounding electrode system components (NEC 250)	Existing - N/A	
EMERGENCY SERVICE INFORMATION		
Emergency Generator (Not Applicable to Scope)	<input type="checkbox"/> no <input type="checkbox"/> yes	KVA
	Fuel	Voltage/Phase
Exit/Emergency Lights Backup Power	<input type="checkbox"/> Integral Battery	
	<input type="checkbox"/> Generator	
Fire Alarm System (Not Applicable to Scope)	<input type="checkbox"/> Manual	<input type="checkbox"/> Addressable
	<input type="checkbox"/> Automatic	<input type="checkbox"/> Class A
		<input type="checkbox"/> Class B
LIGHTNING PROTECTION PROVIDED	<input checked="" type="checkbox"/> no <input type="checkbox"/> yes	

Version April 2021

The electrical work associated with the Roof Replacement project is narrow scope and is limited to incidental work associated with the roof replacements and electrical service to (3) items of mechanical (HVAC) equipment:

1. Re-connecting (2) replacement HVAC Rooftop units to existing circuits.
2. Provide upsized electrical service to a small replacement HVAC mini-split AC unit.

ELECTRICAL SYMBOL SCHEDULE	
SYMBOL	DESCRIPTION
	120V, 20A DUPLEX RECEPTACLE
	EQUIPMENT CONDUIT/CIRCUIT CONNECTION
	JUNCTION BOX, SIZE PER NEC UNLESS SIZE NOTED
	FUSED SAFETY DISCONNECT SWITCH
	CONDUIT RUN CONCEALED OVERHEAD OR IN WALLS
	CONDUIT RUN EXPOSED
	CONDUIT RUN IN OR UNDER FLOOR SLAB OR UNDERGROUND
	ABOVE FINISHED FLOOR
	UNLESS NOTED OTHERWISE
	CONDUIT
	EMPTY CONDUIT
	GROUND FAULT INTERRUPTER
	RAINTIGHT, NEMA 3R UNO
	WEATHER PROOF
	KEYNOTE LABEL
	CONDUIT RUN, VERTICAL



- NOTES:
1. IT SHALL BE ACCEPTABLE TO REUSE EXISTING BRANCH CIRCUIT SERVING UNIT PROVIDING THE EXISTING CIRCUIT MATCHES ELECTRICAL RATINGS ON NEW REPLACEMENT UNIT NAMEPLATE.

ALTERNATE #7

ELECTRICAL WORK SHOWN ON THIS SHEET SHALL BE PROVIDED AS AN ALTERNATE BID.

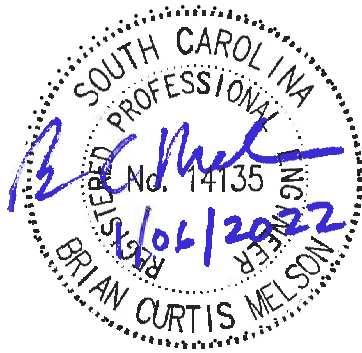
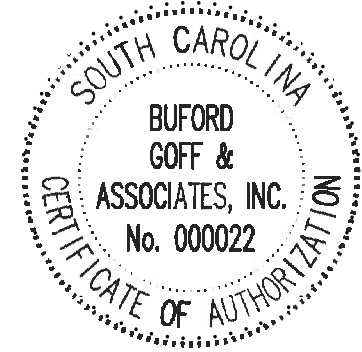
REFER TO DESCRIPTION OF ALTERNATES IN THE ALTERNATE SECTION OF THE PROJECT MANUAL.



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REVISIONS:		
No.	Description	Date

PROJECT: 2201-218720  
DATE: 01/06/2022  
DRAWN BY: MTFH  
CHECKED BY: BCM

PARTIAL EXISTING  
ROOF PLAN -  
AREAS J & I -  
ELECTRICAL  
E-101