

# ROOF REPLACEMENT

## J. Hal and Allyne Machat Music Facility (Band Hall)

Blinn College - Brenham Campus  
1005 College Avenue - Brenham, Texas 77833

Blinn College  
902 College Avenue  
Brenham, Texas 77833  
December 17, 2024



**AESTIMO, INC.**

Facilities Engineering Consultants

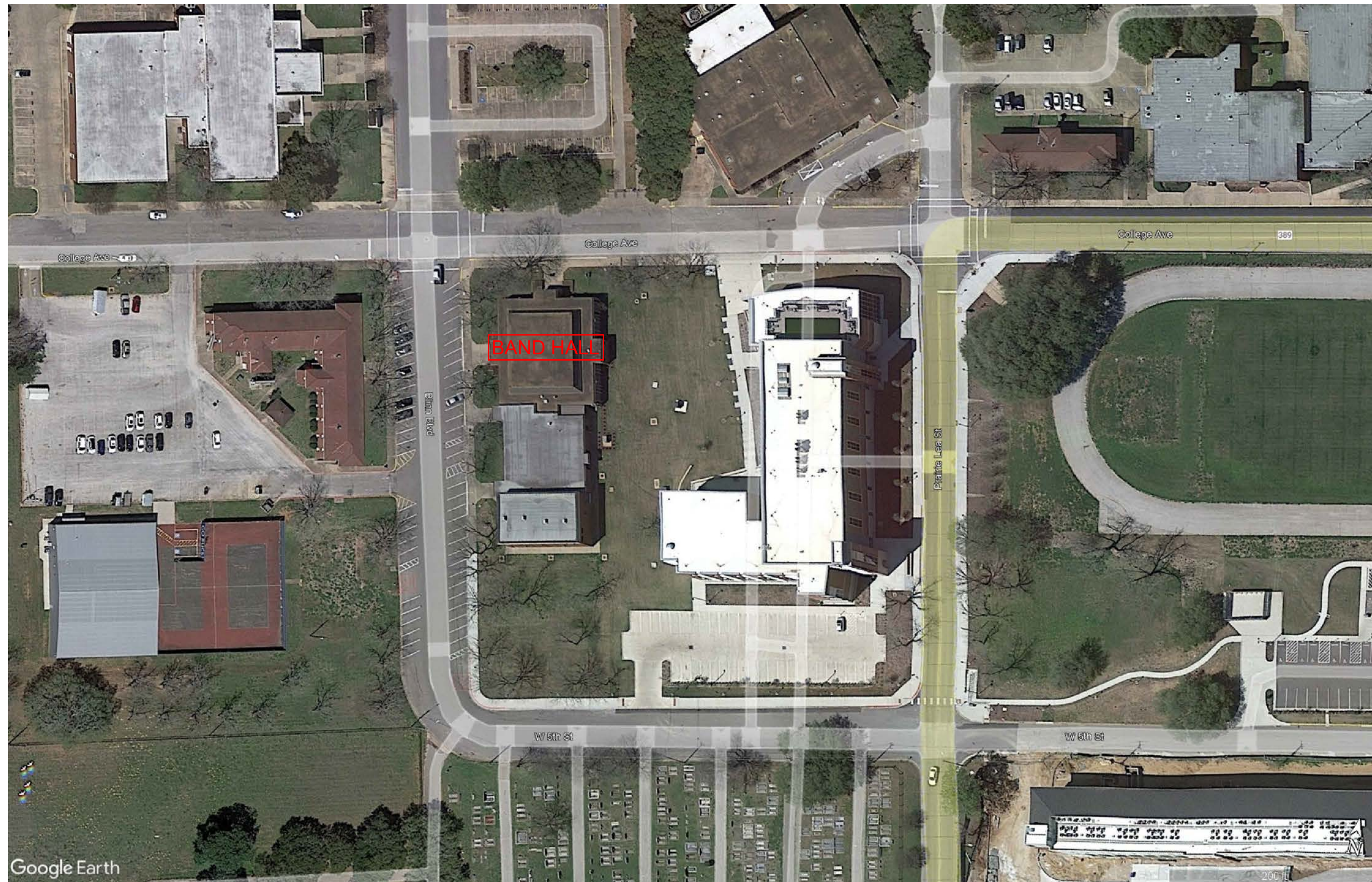
TBPE Firm Registration No. F-1695

955 Dairy Ashford, Suite 204  
Houston, Texas 77079

(281) 556-1522  
(281) 556-1546 Fax

AESTIMO PROJECT NO. 245300-01

### SITE MAP



#### GENERAL SCOPE OF WORK

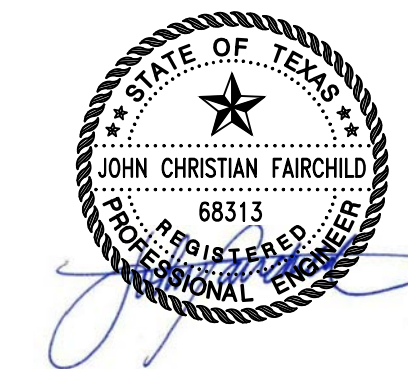
##### BASE BID:

1. REMOVE AND PROPERLY DISPOSE OF EXISTING SURFACING (GRAVEL); ROOF MEMBRANE AND FLASHINGS; INSULATION BOARD, ETC. TO PREPARE FOR THE INSTALLATION OF A NEW ROOF MEMBRANE SYSTEM.
2. IF NECESSARY TO PERFORM ROOF REPLACEMENT, REMOVE AND PROPERLY STORE THE METAL RISEWALL PANELS. RE-INSTALL METAL PANELS AFTER COMPLETION OF ROOFING OPERATIONS.
3. REPAIR/REPLACE ANY DAMAGED/DETERIORATED LIGHTWEIGHT INSULATING CONCRETE.
4. REPAIR/REPLACE ANY DAMAGED/DETERIORATED STEEL DECK.
5. RAISE EXISTING EXHAUST FAN CURBS TO ALLOW FOR A MINIMUM OF 8 INCHES IN BASE FLASHING HEIGHT AT EACH LOCATION.
6. EXTEND EXISTING PLUMBING VENTS TO ALLOW FOR A MINIMUM OF 8 INCHES IN FLASHING HEIGHT AT EACH LOCATION.
7. INSTALL 1/4" FT. TAPERED POLYISOCYANURATE INSULATION BOARD; MECHANICALLY FASTEN THROUGH LIGHTWEIGHT INSULATING CONCRETE TO EXISTING STEEL DECK.
8. INSTALL 1/2" RECOVERY BOARD (4'x4' BOARDS) OVER TAPERED POLYISOCYANURATE INSULATION BOARD; SET IN LOW-RISE FOAM URETHANE ADHESIVE.
9. INSTALL SBS MODIFIED BITUMEN BASE SHEET MEMBRANE; TORCH APPLIED.
10. INSTALL FIRE-RATED, GRANULE-SURFACED SBS MODIFIED BITUMEN COOL ROOF CAP SHEET MEMBRANE; TORCH APPLIED.
11. INSTALL FIRE-RATED, GRANULE-SURFACED SBS MODIFIED BITUMEN BASE FLASHING MEMBRANE; TORCH APPLIED.
12. INSTALL NEW 16 OZ. COPPER EDGE FLASHINGS ON ROOF AREA A. EXISTING TWO-PIECE COPPER FASCIA FLASHING TO REMAIN IN PLACE.
13. INSTALL NEW 16 OZ. COPPER EDGE FLASHINGS ON ROOF AREA B. EXISTING COPPER GUTTERS AND DOWNSPOUTS TO REMAIN IN PLACE.
14. INSTALL NEW COPPER EXPANSION JOINT FLASHING AND EXPANSION JOINT COVER AT THE SOUTH PERIMETER OF ROOF AREA B.
15. INSTALL NEW COUNTER-FLASHINGS, PENETRATION FLASHINGS, AND OTHER SHEET METAL COMPONENTS.
16. REMOVE CORROSION FROM, PROPERLY PREPARE AND APPLY NEW PAINT TO ALL ROOF-TOP APPURTENANCES.

##### ALTERNATES:

1. REMOVE AND PROPERLY DISPOSE OF EXISTING METAL RISEWALL PANELS. INSTALL NEW PRE-FINISHED SHEET METAL RISEWALL PANELS, PROFILE TO MATCH EXISTING, COLOR TO BE SELECTED BY OWNER.
2. REMOVE AND PROPERLY DISPOSE OF EXISTING TWO-PIECE FASCIA FLASHING AT PERIMETER OF ROOF AREA A AND EXISTING GUTTERS AND DOWNSPOUTS AT THE PERIMETER OF ROOF AREA B. INSTALL NEW TWO-PIECE COPPER FASCIA FLASHING ON ROOF AREA A, PROFILE TO MATCH EXISTING. INSTALL NEW COPPER GUTTERS AND DOWNSPOUTS ON ROOF AREA B, SIZE AND DOWNSPOUT LOCATIONS TO MATCH EXISTING.

THIS DOCUMENT CONTAINS AN ELECTRONICALLY-APPLIED SEAL AND SIGNATURE AUTHORIZED BY JOHN C. FAIRCHILD, P.E. ON DECEMBER 17, 2024.



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- NOTES:
1. NON-FRIABLE ASBESTOS CONTAINING MATERIALS WERE FOUND IN THE ROOFING MATERIALS ON ROOF AREA A. THE ASBESTOS REPORT IS PROVIDED IN SECTION 003126 OF THE PROJECT MANUAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROPERLY ABATING AND DISPOSING OF ASBESTOS CONTAINING MATERIALS ACCORDING TO ALL APPLICABLE CODES AND REGULATIONS.
  2. ANY CONDITIONS NOT SPECIFICALLY ADDRESSED IN THESE DRAWINGS OR REFERENCED SPECIFICATIONS TO BE DETAILED IN ACCORDANCE WITH ACCEPTED INDUSTRY STANDARDS, ROOF SYSTEM MANUFACTURER'S RECOMMENDATIONS AND AS APPROVED BY CONSULTANT TO PROVIDE A WATER-TIGHT ROOF SYSTEM THAT QUALIFIES FOR THE SPECIFIED WARRANTY PERIOD.
  3. CONTRACTOR IS REQUIRED TO MAINTAIN THE BUILDING IN A WATER-TIGHT CONDITION THROUGHOUT THE CONSTRUCTION PROCESS.
  4. FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS.



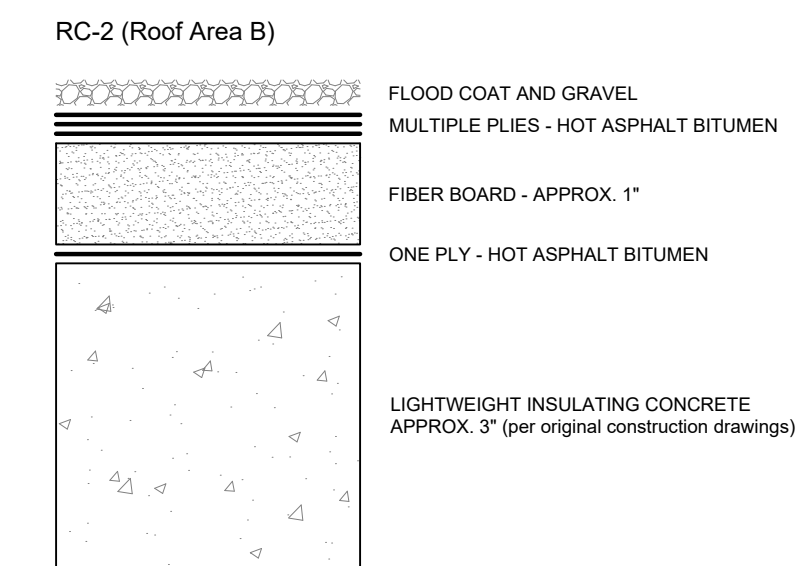
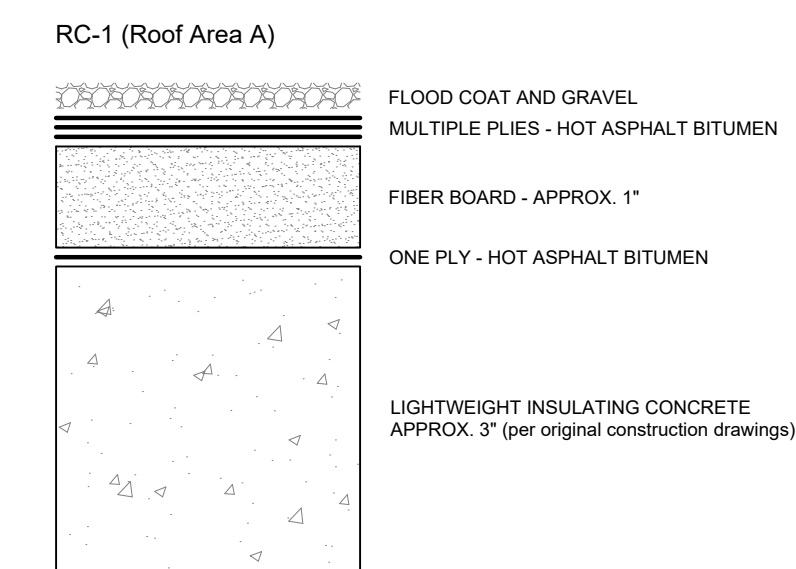
LEGEND	
	PLUMBING VENT / SIZE
	LARGE DIA. CIRCULAR PENETRATION
	CURB-MOUNTED PENETRATION
	GUTTER
	DOWNSPOUT
	EXPANSION JOINT
	APPROX. ROOF CORE LOCATION

- SUMMARY OF WORK -- DEMOLITION**
- TEMPORARILY DISMANTLE AND STORE EXISTING ROOF-TOP EQUIPMENT AND APPURTENANCES, AS NECESSARY, TO PERFORM ALL SPECIFIED ROOF REPLACEMENT AND ASSOCIATED WORK. HOWEVER, THE BUILDING IS TO REMAIN IN OPERATION AT ALL TIMES FOR THE DURATION OF THE PROJECT.
  - REMOVE AND PROPERLY DISPOSE OF EXISTING ROOF MEMBRANE, INSULATION, BASE FLASHINGS, ETC., DOWN TO EXPOSED LIGHTWEIGHT INSULATING CONCRETE DECK OR STEEL ROOF DECK.
  - METAL RISEWALL PANELS TO REMAIN IN-PLACE. REMOVE AND PROPERLY STORE PANELS AS NECESSARY TO INSTALL THE NEW ROOF SYSTEM. REINSTALL PANELS AFTER COMPLETION OF ROOFING OPERATIONS.

- NOTES**
- NON-FRIABLE ASBESTOS CONTAINING MATERIALS WERE FOUND IN THE ROOFING MATERIALS ON ROOF AREA A. THE ASBESTOS REPORT IS PROVIDED IN SECTION 003126 OF THE PROJECT MANUAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROPERLY ABATING AND DISPOSING OF ASBESTOS CONTAINING MATERIALS ACCORDING TO ALL APPLICABLE CODES AND REGULATIONS.
  - ANY CONDITIONS NOT SPECIFICALLY ADDRESSED IN THESE DRAWINGS SHALL BE DETAILED IN ACCORDANCE WITH SMACNA, NRCA, AND ACCEPTED GOOD INDUSTRY PRACTICES. BEFORE PROCEEDING WITH SUCH WORK, SUBMIT SHOP DRAWINGS OR PROPOSED DETAILS FOR REVIEW BY CONSULTANT.
  - CONTRACTOR IS REQUIRED TO MAINTAIN THE BUILDING IN A WATER-TIGHT CONDITION THROUGHOUT CONSTRUCTION.
  - FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS.

**ROOF CORE INFORMATION**

- NOTES:**
- ROOF CORE INFORMATION IS REPRESENTATIVE OF EXISTING CONDITIONS AT ROOF CORE LOCATIONS ONLY. THIS INFORMATION IS PROVIDED FOR GENERAL INFORMATION PURPOSES AND IS NOT INTENDED TO BE USED AS THE SOLE BASIS FOR ESTABLISHING THE COST OF ROOF SYSTEM DEMOLITION.
  - NON-FRIABLE ASBESTOS CONTAINING MATERIALS WERE FOUND IN THE ROOFING MATERIALS ON ROOF AREA A. THE ASBESTOS REPORT IS PROVIDED IN SECTION 003126 OF THE PROJECT MANUAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROPERLY ABATING AND DISPOSING OF ASBESTOS CONTAINING MATERIALS ACCORDING TO ALL APPLICABLE CODES AND REGULATIONS.



REVISIONS		
NO.	DESCRIPTION	DATE
1	ISSUED FOR PROPOSALS	12/17/24
0	ISSUED FOR REVIEW	12/16/24

**ROOF DEMOLITION PLAN**

J. HAL & ALLYNE  
MACHAT MUSIC FACILITY  
(BAND HALL)  
1005 COLLEGE AVENUE  
BRENNHAM, TEXAS 77833

BLINN COLLEGE

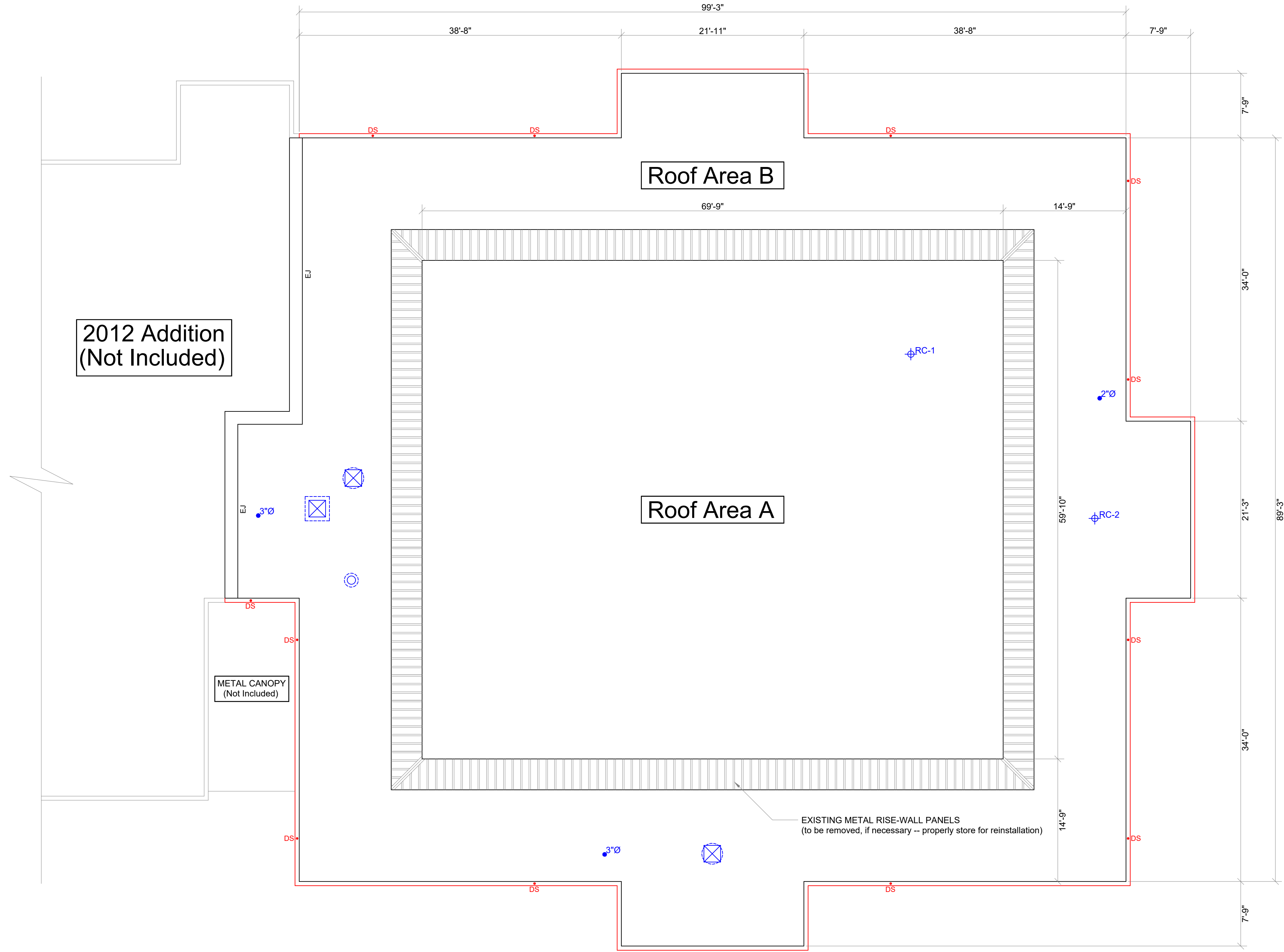
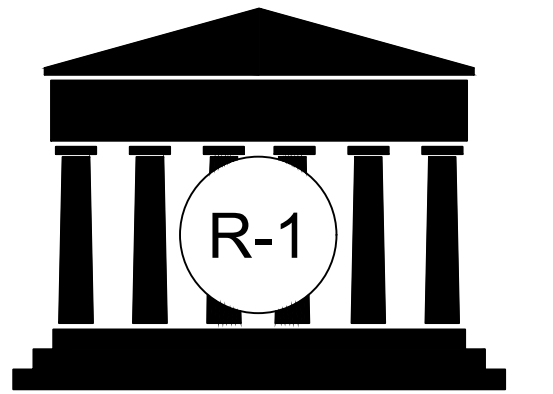
AESTIMO PROJECT NO.  
245300-01

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DRAWING NO.	R-1	SCALE	1/8"=1'-0"
DRAWN BY	C.D.S.	DATE	11/25/24
CHECKED BY	J.C.F.	DATE	

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Facilities Engineering Consultants  
TBPE Firm Registration No. F-1695  
955 Dairy Ashford, Suite 204  
Houston, Texas 77079  
(281) 556-1522  
(281) 556-1546 Fax



**BUILDING CODE REQUIREMENTS**

Project: Blinn College - Band Hall  
1005 College Avenue  
Brenham, Texas 77833

Engineer: Aestimo, Inc. (TBPE Firm Registration No. F-1695)  
John C. Fairchild, P.E. (TBPE No. 68313)  
955 Dairy Ashford, Suite 204  
Houston, Texas 77079

Aestimo Project No.: 245300-01  
Revision Date: November 27, 2024

- Notes:
1. Provided roof elevations are approximate and in relation to adjacent ground elevation.
  2. The design is for an ENCLOSED structure - openings protected or impact resistant.
  3. Roof slope is less than 1:12.
  4. The design wind forces/pressures under this criteria have been calculated in accordance with ANSI/ASCE 7-16 "Minimum Design Loads for Buildings and Other Structures" and meets requirements of IRC 2021.
  5. Height of roof areas less than 60 feet, use factors as appropriate for height.

Design Information:

Load Combinations: (Allowable Stress Design) (per ANSI/ASCE 7-16 - 2.4.1)

1. D
2. D + L
3. D + (Lr or S or R)
4. D + 0.75L + 0.75(Lr or S or R)
5. D + (0.6W)
6. D + 0.75L + 0.75(0.6W) + 0.75(Lr or S or R)
7. 0.6D + 0.6W

For Uplift - Conservatively Assume D = 0.0; therefore Design Uplift Pressure = 0.6W

Design Pressure for Comp & Cladding: (p) =  $q_n(GCp) - (GCpi)$  (ANSI/ASCE 7-16 Equation 30.3.1 - h=60 feet)

For simplicity, conservatively assume  $q_n = q - p = q_n(GCp) - (GCpi)$

Design Wind Velocity Pressure ( $q$ ) =  $q = q_z K_z K_{zt} K_{d} K_{e} K_{f} K_{g} K_{h} K_{i} K_{j} K_{l} K_{m} K_{n} K_{o} K_{p} K_{q} K_{r} K_{s} K_{t} K_{u} K_{v} K_{w} K_{x} K_{y} K_{z}$  (ANSI/ASCE 7-16 Equation 26.10-1) (conservatively evaluate  $q = q_z$ )

Velocity Pressure Coefficient ( $K_z$ ) = 2.01 ( $z/z_g$ )<sup>2.97</sup> for 15 ft < z <= z\_g (ANSI/ASCE 7-16 Table 26.10-1, Note 1)

Topographic Factor ( $K_{zt}$ ) = 1 (ANSI/ASCE 7-16 Section 26.8.2)

Internal Pressure Coefficient ( $GCp$ ): 0.18 (ANSI/ASCE 7-16 Table 26.13-1)

Site Specific Data:

Wind Directionality Factor ( $K_d$ ) = 0.85 (ANSI/ASCE 7-16 Table 26.6-1)

Basic Wind Velocity ( $V$ ) = 126 (MFR = 1,700YR.) (ANSI/ASCE 7-16 Fig. 26.5-1B)

Risk Category = III (ANSI/ASCE 7-16 Table 1.5-1)

Exposure = B (ANSI/ASCE 7-16 Section 26.7.3)

Exposure Constant ( $alpha$ ) = 7 (ANSI/ASCE 7-16 Table 26.11-1)

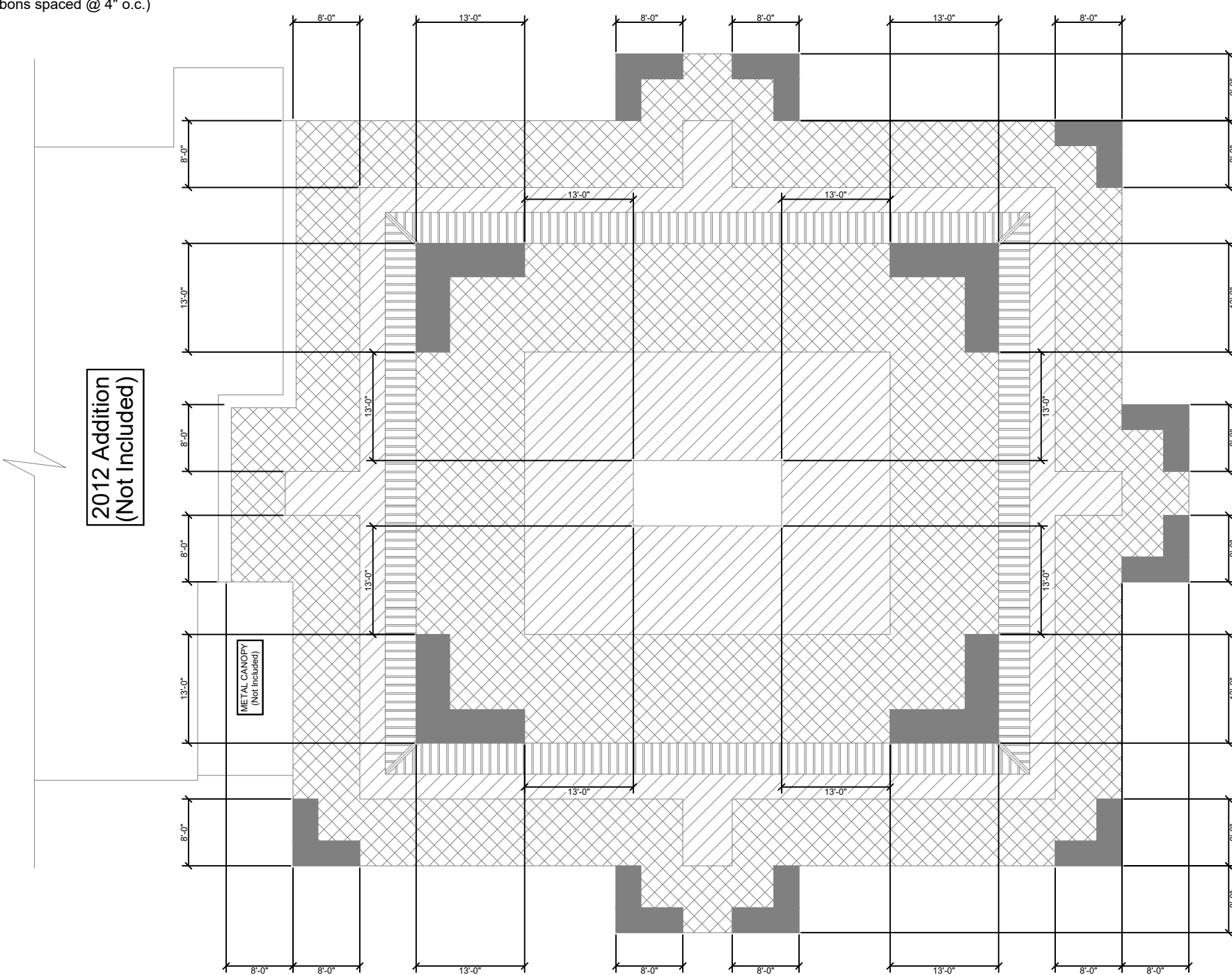
Exposure Constant ( $z_g$ ) = 1200 (ANSI/ASCE 7-16 Table 26.11-1)

Gust Effect Factor ( $G$ ) = 0.85 (ANSI/ASCE 7-16 Section 26.11.1)

Internal Pressure Coefficient ( $GCpi$ ): 0.18 -0.18 (ANSI/ASCE 7-16 Table 26.13-1)

Roof Area	Approx. Mean Roof Height (ft)	Wind Velocity Pressure Coefficient (Kz)	Wind Velocity Pressure (psf)	Dimensional Data				Roof Component Design Pressures														
				Least Horizontal Dimension (ft)	Zone Width (ft)	Corner Zone Depth (ft)	Step Height (ft)	Field Zone (1)			Perimeter Zone (1)			Perimeter Zone (2)			Corner Zone (3)					
								GCp	p	GCp	GCp	p	GCp	p	GCp	p	GCp	p	GCp	p		
ROOF AREA A (Roof Slope = 1/4"FT)																						
Outward/Uplift	22	0.64	22.2	60	13	4	4	D	6	-0.9	-24	-14	-17	-42	-25	-33	-32	-75	-45			
Inward Pressure								E	13	19.5	0.3	11	6	0.3	11	6	0.3	11	6			
ROOF AREA B (Roof Slope = 1/4"FT)																						
Outward/Uplift	13	0.57	19.9	99	8	3	4	D	6	-0.9	-21	-13	-17	-37	-22	-23	-49	-30	-32	-47	-40	
Inward Pressure								E	13	19.5	0.3	10	6	0.3	10	6	0.3	10	6	0.3	10	6

- LEGEND**
- FIELD ZONE 1 (8 fasteners per 4'x4' board) (adhesive ribbons spaced @ 12" o.c.)
  - PERIMETER ZONE 1 (8 fasteners per 4'x4' board) (adhesive ribbons spaced @ 12" o.c.)
  - PERIMETER ZONE 2 (8 fasteners per 4'x4' board) (adhesive ribbons spaced @ 6" o.c.)
  - CORNER ZONE 3 (8 fasteners per 4'x4' board) (adhesive ribbons spaced @ 4" o.c.)



1 ROOF PLAN -- WIND ZONES

SCALE: 1/16"=1'-0"

**ROOF DRAINAGE REVIEW**

(per 2021 International Plumbing Code and 2021 International Existing Building Code - Section 705.1 - Exemption 2)

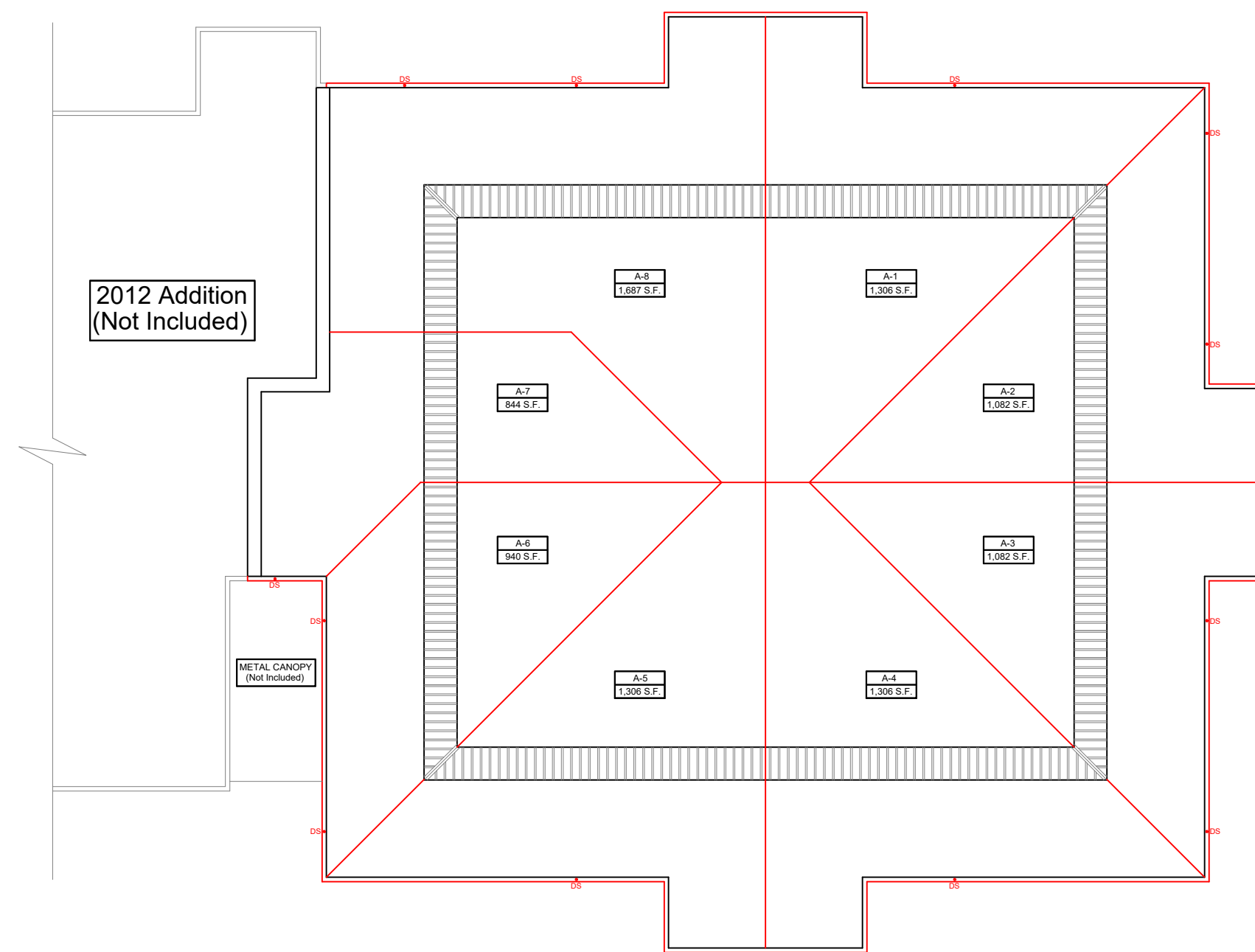
**Primary Gutters and Downspouts:**

Roof Area	Total Contributing Area (sq ft)	Rainfall Intensity (in/hr)	IA	Proposed Gutter Dimensions (Depth x Width)	Max Length to Closest Downspout (ft)	Proposed Gutter M (Depth/Width)	Required M (Depth/Width) per SMACNA Chart 1-1	Compliance with Plumbing Code	Proposed Downspouts	Required Flow Rate per Downspout (GPM)	Actual Flow Rate per Downspout (GPM)	Compliance with Plumbing Code
A-1	1,306	4.5	5,877	5" x 5"	30	1.00	0.70	YES	(1) 3" Round	61	92	YES
A-2	1,082	4.5	4,869	5" x 5"	24	1.00	0.65	YES	(2) 3" Round	25	92	YES
A-3	1,082	4.5	4,869	5" x 5"	24	1.00	0.70	YES	(2) 3" Round	25	92	YES
A-4	1,306	4.5	5,877	5" x 5"	30	1.00	0.70	YES	(1) 3" Round	61	92	YES
A-5	1,306	4.5	5,877	5" x 5"	30	1.00	0.70	YES	(1) 3" Round	61	92	YES
A-6	940	4.5	4,230	5" x 5"	12	1.00	0.50	YES	(2) 3" Round	22	92	YES
A-7	844	4.5	3,798	5" x 5"	6	1.00	.050	YES	(1) 3" Round	39	92	YES
A-8	1,687	4.5	7,582	5" x 5"	30	1.00	0.85	YES	(2) 3" Round	39	92	YES

**ENERGY CONSERVATION CODE REVIEW**

(per 2021 International Energy Conservation Code)

Code Requirement	Proposed		Compliance with Energy Code
	Code Requirement	Proposed	
R-Value (Long Term - LTRR)	R-25	Modified Bitumen Membrane (Soprema ELASTOPHENE FLAM FR GR (SG) TAPERED PLAN	Yes
Solar Reflectance (Membrane) - 3-Year Aged	0.55	0.52	Yes
Thermal Emittance (Membrane) - 3-Year Aged	0.75	0.90	Yes



2 ROOF PLAN -- DRAINAGE

SCALE: 1/16"=1'-0"



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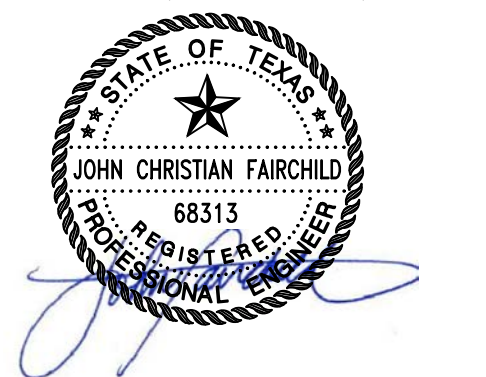
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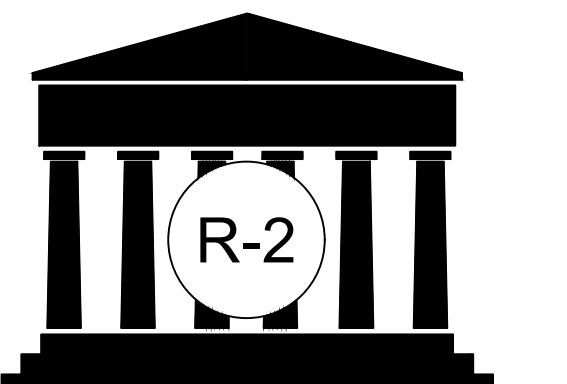
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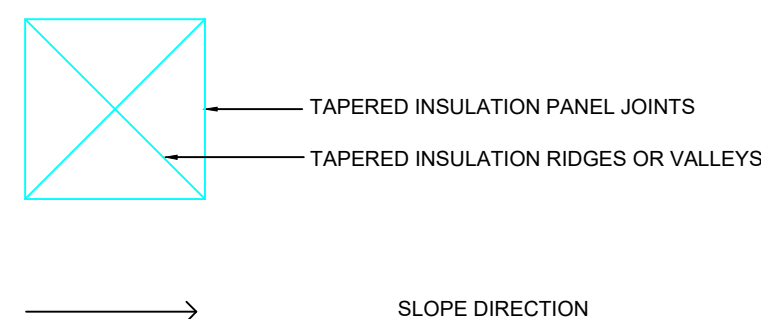
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5-2	1/16"=1'-0"
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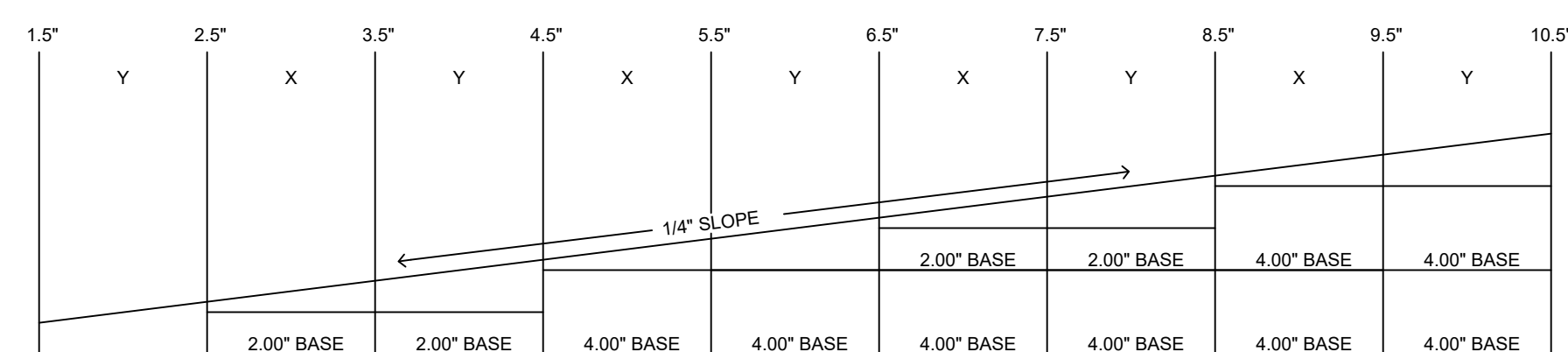


**LEGEND**



**NOTES**

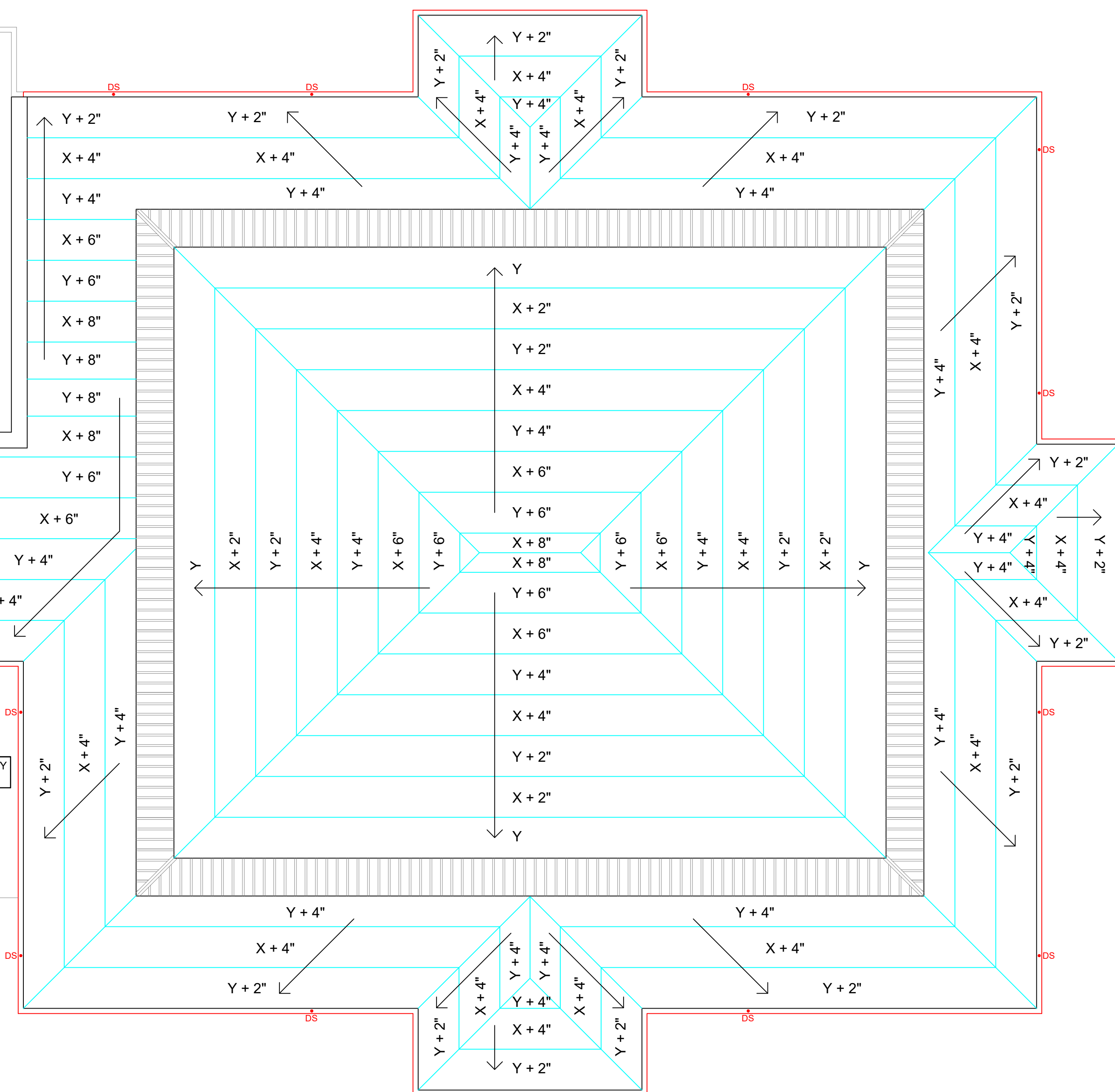
1. ROOF-TOP EQUIPMENT NOT SHOWN FOR CLARITY.
2. CONTRACTOR IS TO PROVIDE CRICKETS ON THE UP-SLOPE SIDE OF ALL ROOF-TOP CURBS AND EQUIPMENT TO ENSURE POSITIVE DRAINAGE.
3. FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS.



INSULATION PROFILE - 1/4" / FT.  
SCALE: HORIZONTAL: 1/4"=1'-0" VERTICAL: 1 1/2"=1'-0"

2012 Addition  
(Not Included)

METAL CANOPY  
(Not Included)



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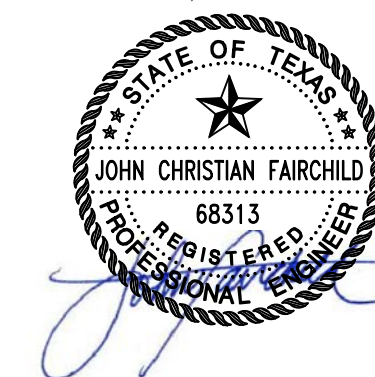
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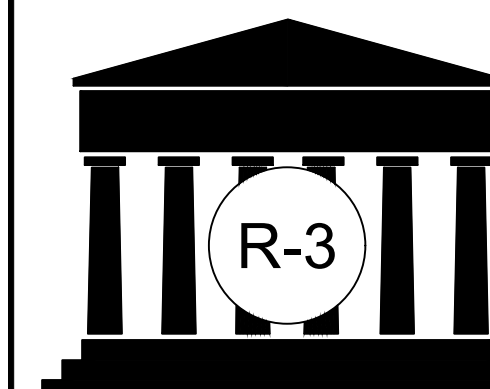
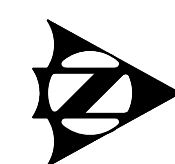
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LEGEND	
	PLUMBING VENT / SIZE (SEE DETAIL (5/R-5))
	LARGE DIA. CIRCULAR PENETRATION (SEE DETAIL (5/R-5) SIM.)
	CURB-MOUNTED PENETRATION (SEE DETAIL (6/R-5))
	EXISTING COPPER GUTTER
	EXISTING COPPER DOWNSPOUT
	EXPANSION JOINT (SEE DETAIL (4/R-5))

**GENERAL SCOPE OF WORK**

- BASE BID:**
- REMOVE AND PROPERLY DISPOSE OF EXISTING SURFACING (GRAVEL); ROOF MEMBRANE AND FLASHINGS; INSULATION BOARD, ETC. TO PREPARE FOR THE INSTALLATION OF A NEW ROOF MEMBRANE SYSTEM.
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  - RAISE EXISTING EXHAUST FAN CURBS TO ALLOW FOR A MINIMUM OF 8 INCHES IN BASE FLASHING HEIGHT AT EACH LOCATION.
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  - REMOVE CORROSION FROM, PROPERLY PREPARE AND APPLY NEW PAINT TO ALL ROOF-TOP APPURTENANCES.

- ALTERNATES:**
- REMOVE AND PROPERLY DISPOSE OF EXISTING METAL RISEWALL PANELS. INSTALL NEW PRE-FINISHED SHEET METAL RISEWALL PANELS, PROFILE TO MATCH EXISTING, COLOR TO BE SELECTED BY OWNER.
  - REMOVE AND PROPERLY DISPOSE OF EXISTING TWO-PIECE FASCIA FLASHING AT PERIMETER OF ROOF AREA A AND EXISTING GUTTERS AND DOWNSPOUTS AT THE PERIMETER OF ROOF AREA B. INSTALL NEW TWO-PIECE COPPER FASCIA FLASHING ON ROOF AREA A, PROFILE TO MATCH EXISTING. INSTALL NEW COPPER GUTTERS AND DOWNSPOUTS ON ROOF AREA B, SIZE AND DOWNSPOUT LOCATIONS TO MATCH EXISTING.

**NOTES:**

- NON-FRIABLE ASBESTOS CONTAINING MATERIALS WERE FOUND IN THE ROOFING MATERIALS ON ROOF AREA A. THE ASBESTOS REPORT IS PROVIDED IN SECTION 003126 OF THE PROJECT MANUAL. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROPERLY ABATING AND DISPOSING OF ASBESTOS CONTAINING MATERIALS ACCORDING TO ALL APPLICABLE CODES AND REGULATIONS.
- ANY CONDITIONS NOT SPECIFICALLY ADDRESSED IN THESE DRAWINGS OR REFERENCED SPECIFICATIONS TO BE DETAILED IN ACCORDANCE WITH ACCEPTED INDUSTRY STANDARDS, ROOF SYSTEM MANUFACTURER'S RECOMMENDATIONS AND AS APPROVED BY CONSULTANT TO PROVIDE A WATER-TIGHT ROOF SYSTEM THAT QUALIFIES FOR THE SPECIFIED WARRANTY PERIOD.
- CONTRACTOR IS REQUIRED TO MAINTAIN THE BUILDING IN A WATER-TIGHT CONDITION THROUGHOUT THE CONSTRUCTION PROCESS.
- FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS.



REVISIONS		
NO.	DESCRIPTION	DATE
1	ISSUED FOR PROPOSALS	12/17/24
0	ISSUED FOR REVIEW	12/16/24

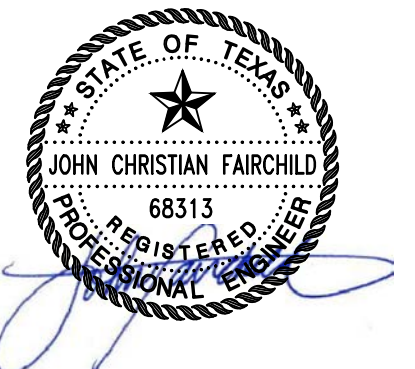
**ROOF REPLACEMENT PLAN**

J. HAL & ALLYNE  
MACHAT MUSIC FACILITY  
(BAND HALL)  
1005 COLLEGE AVENUE  
BRENNHAM, TEXAS 77833

BLINN COLLEGE

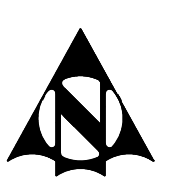
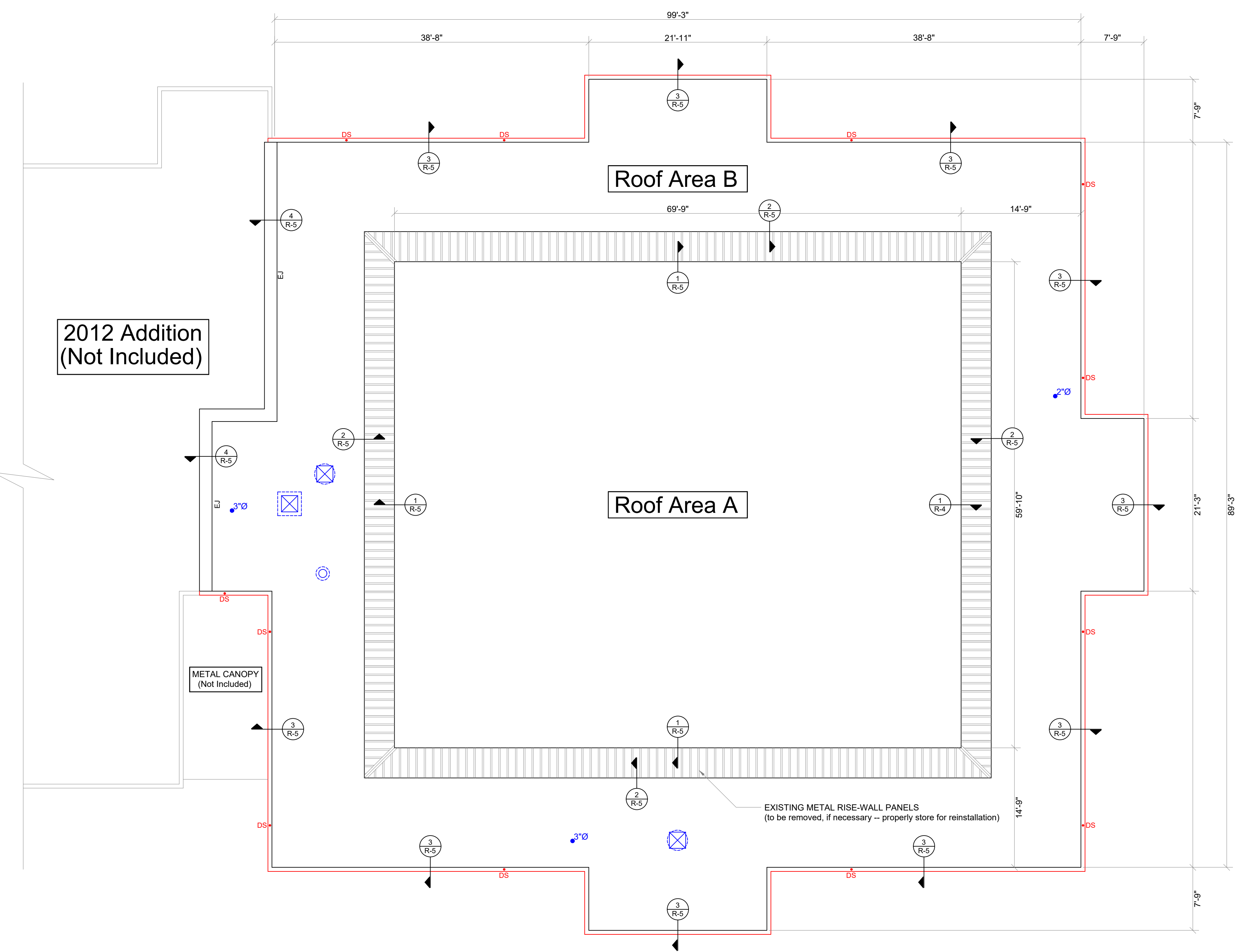
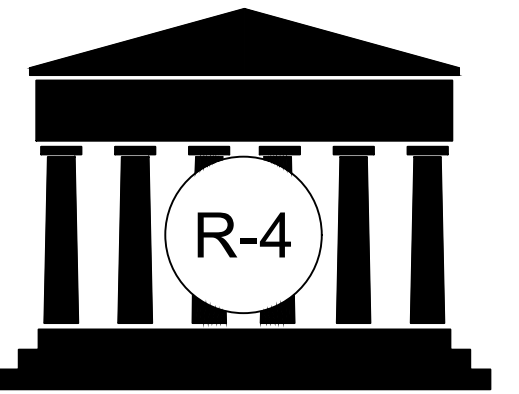
AESTIMO PROJECT NO.  
245300-01

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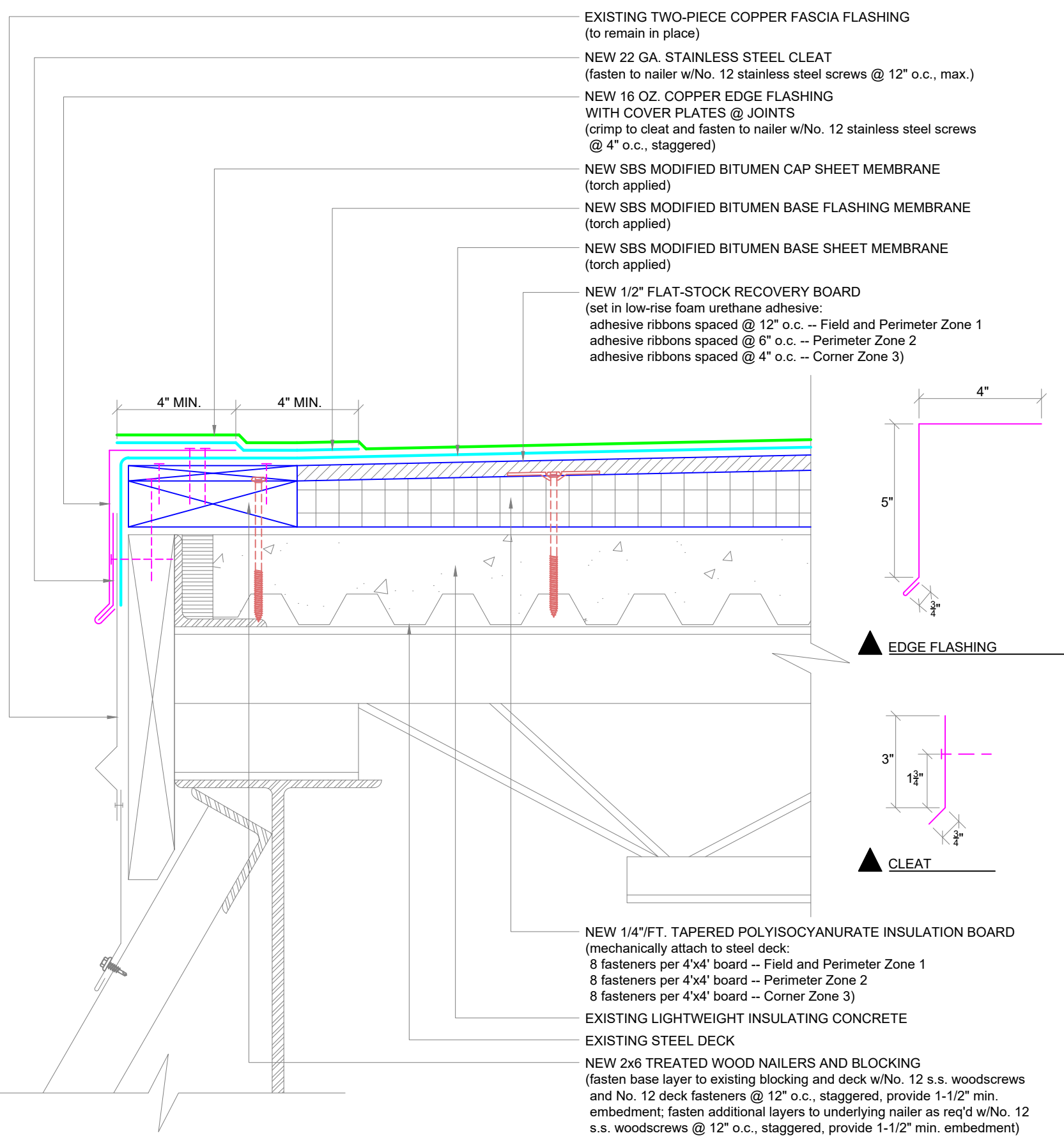
DRAWING NO. R-4	SCALE 1/8"=1'-0"
DRAWN BY C.D.S.	DATE 11/25/24
CHECKED BY J.C.F.	DATE

**AESTIMO, INC.**  
Facilities Engineering Consultants  
TBPE Firm Registration No. F-1695  
955 Dairy Ashford, Suite 204  
Houston, Texas 77079  
(281) 556-1522  
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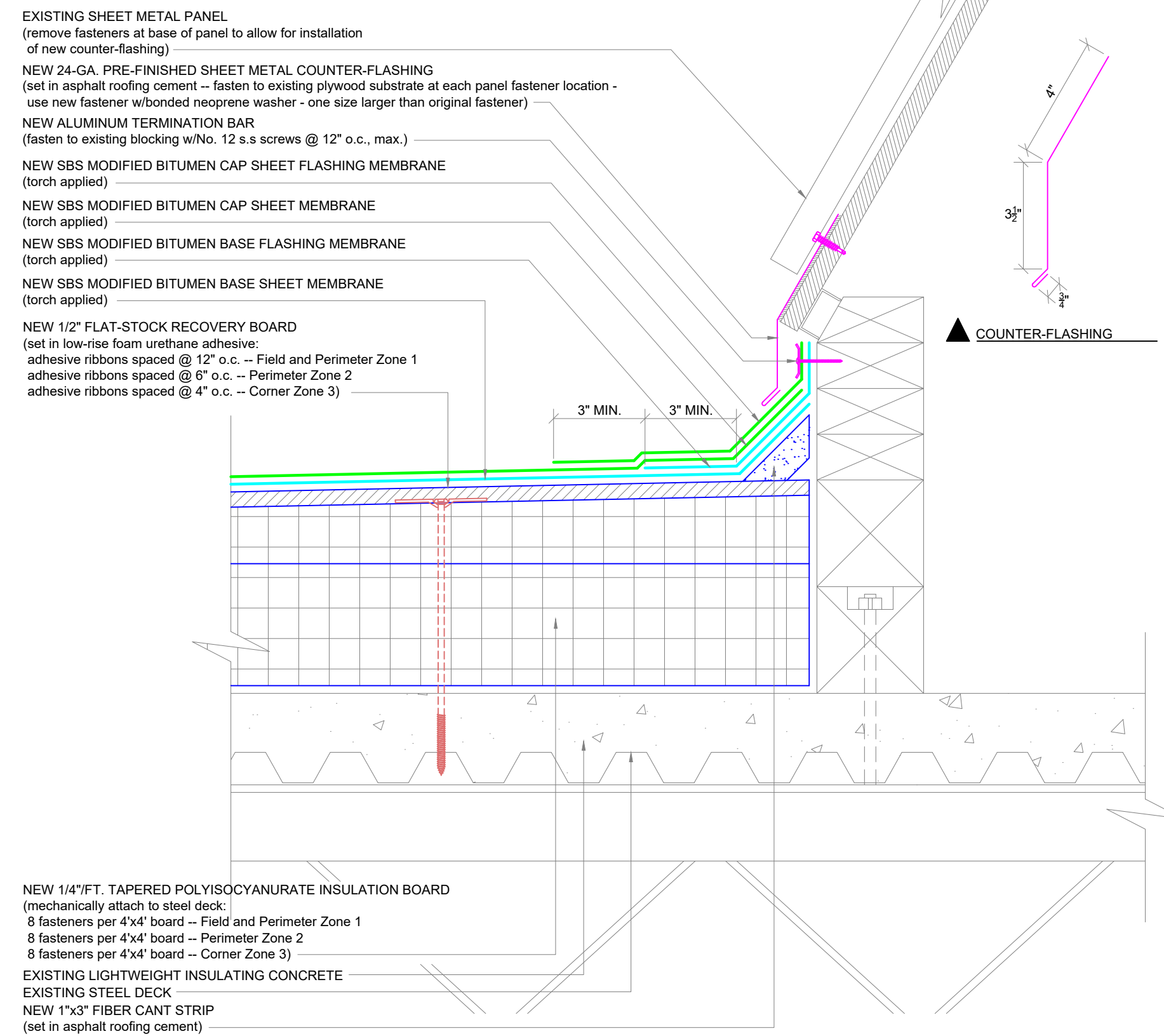


NOTE: DETAILS BASED ON ORIGINAL CONSTRUCTION DRAWINGS.  
ACTUAL CONSTRUCTION MAY DIFFER FROM DETAIL.



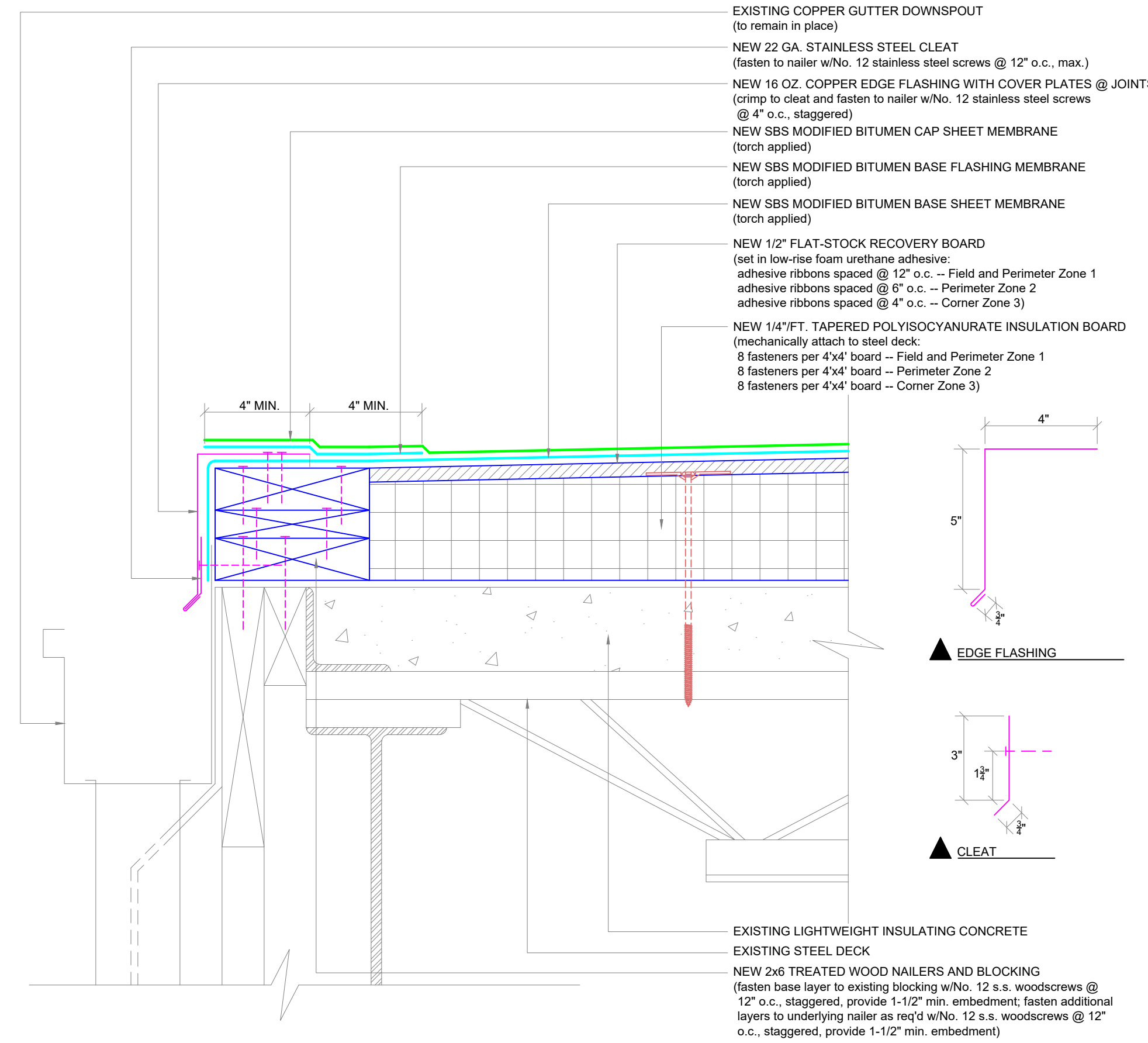
DETAIL -- EDGE FLASHING - ROOF AREA A 3"=1'-0" 1

NOTE: DETAILS BASED ON ORIGINAL CONSTRUCTION DRAWINGS.  
ACTUAL CONSTRUCTION MAY DIFFER FROM DETAIL.



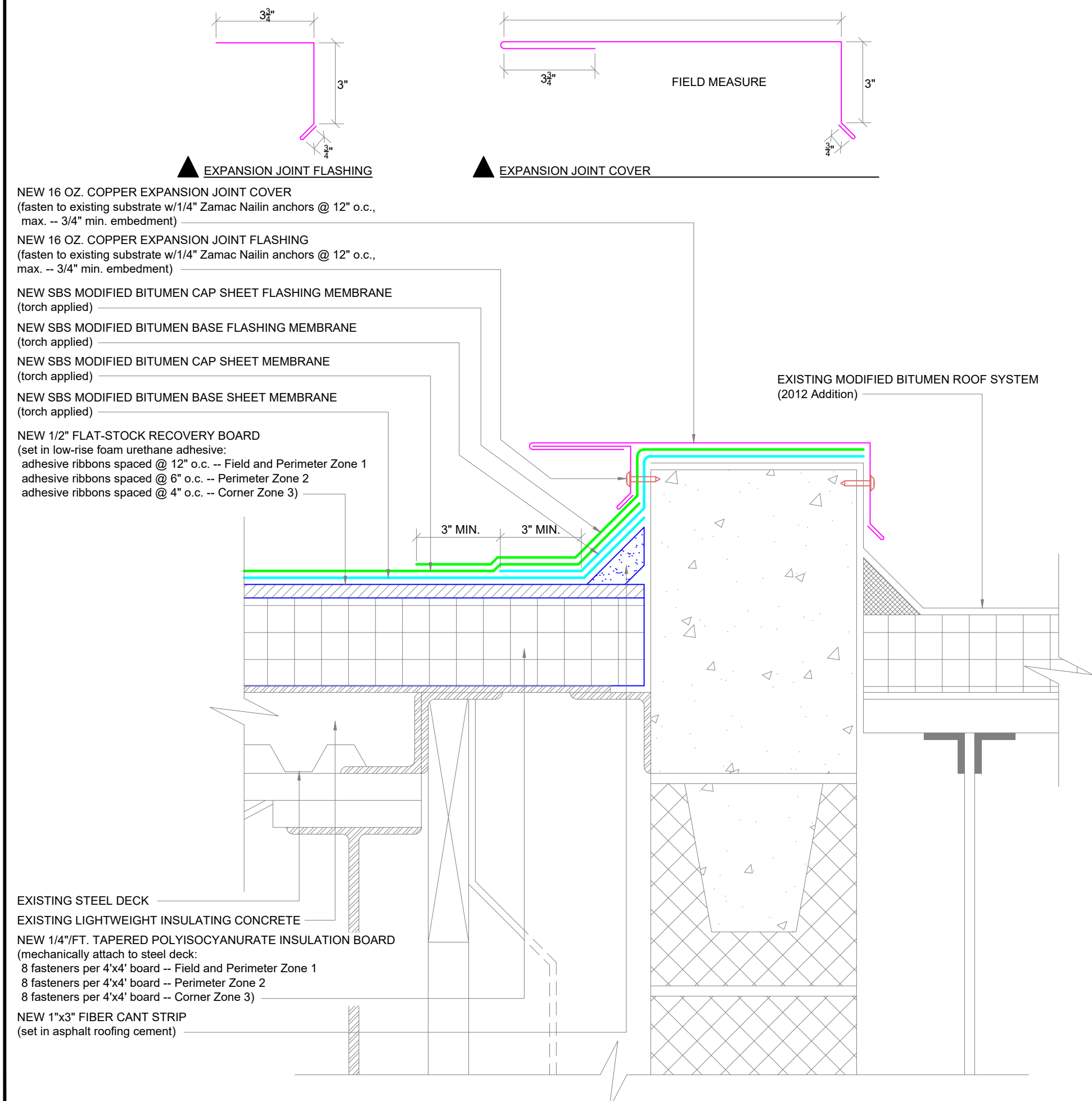
DETAIL -- RISEWALL PANEL BASE FLASHING - ROOF AREA B 3"=1'-0" 2

NOTE: DETAILS BASED ON ORIGINAL CONSTRUCTION DRAWINGS.  
ACTUAL CONSTRUCTION MAY DIFFER FROM DETAIL.



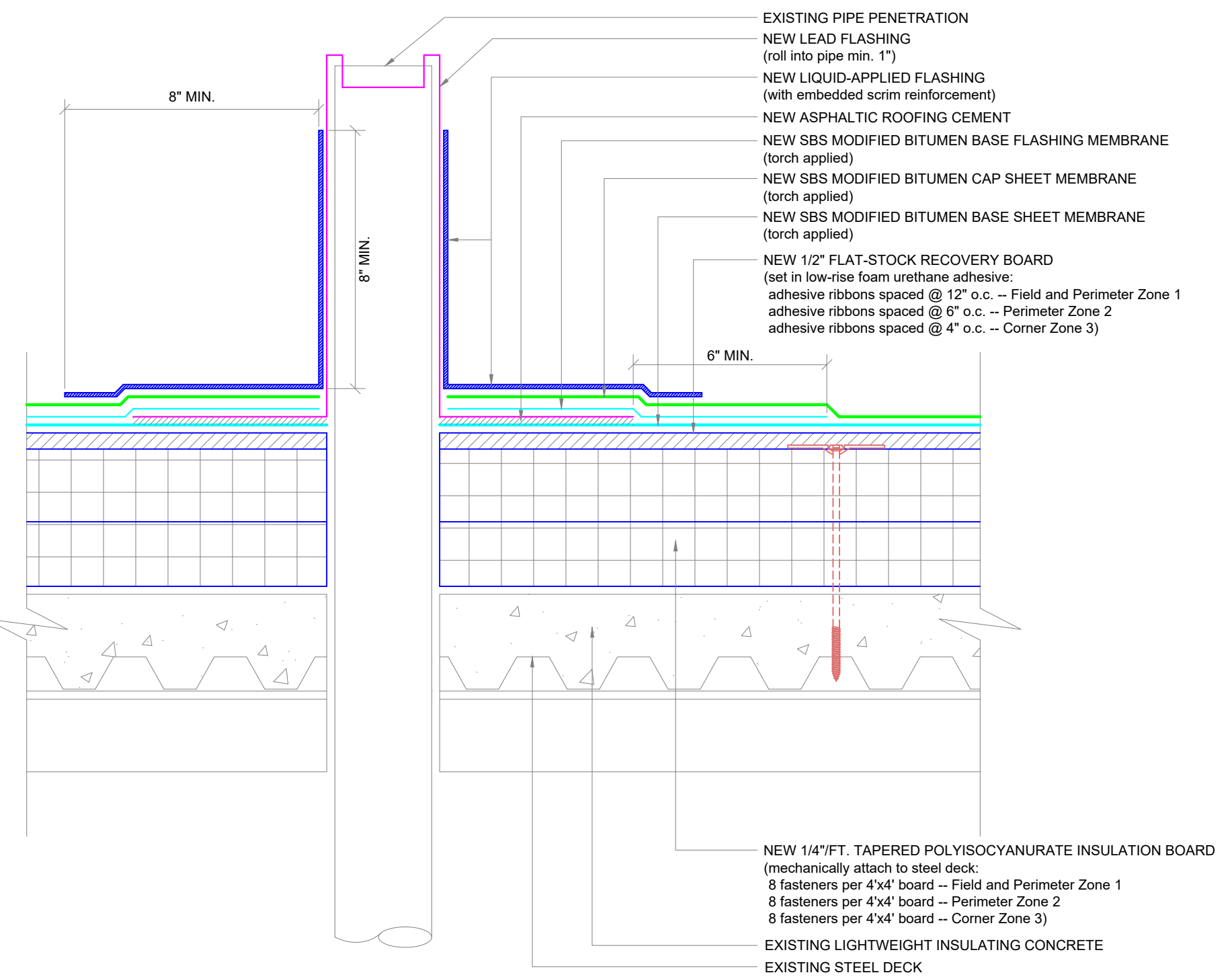
DETAIL -- EDGE FLASHING - ROOF AREA B 3"=1'-0" 3

NOTE: DETAILS BASED ON ORIGINAL CONSTRUCTION DRAWINGS.  
ACTUAL CONSTRUCTION MAY DIFFER FROM DETAIL.



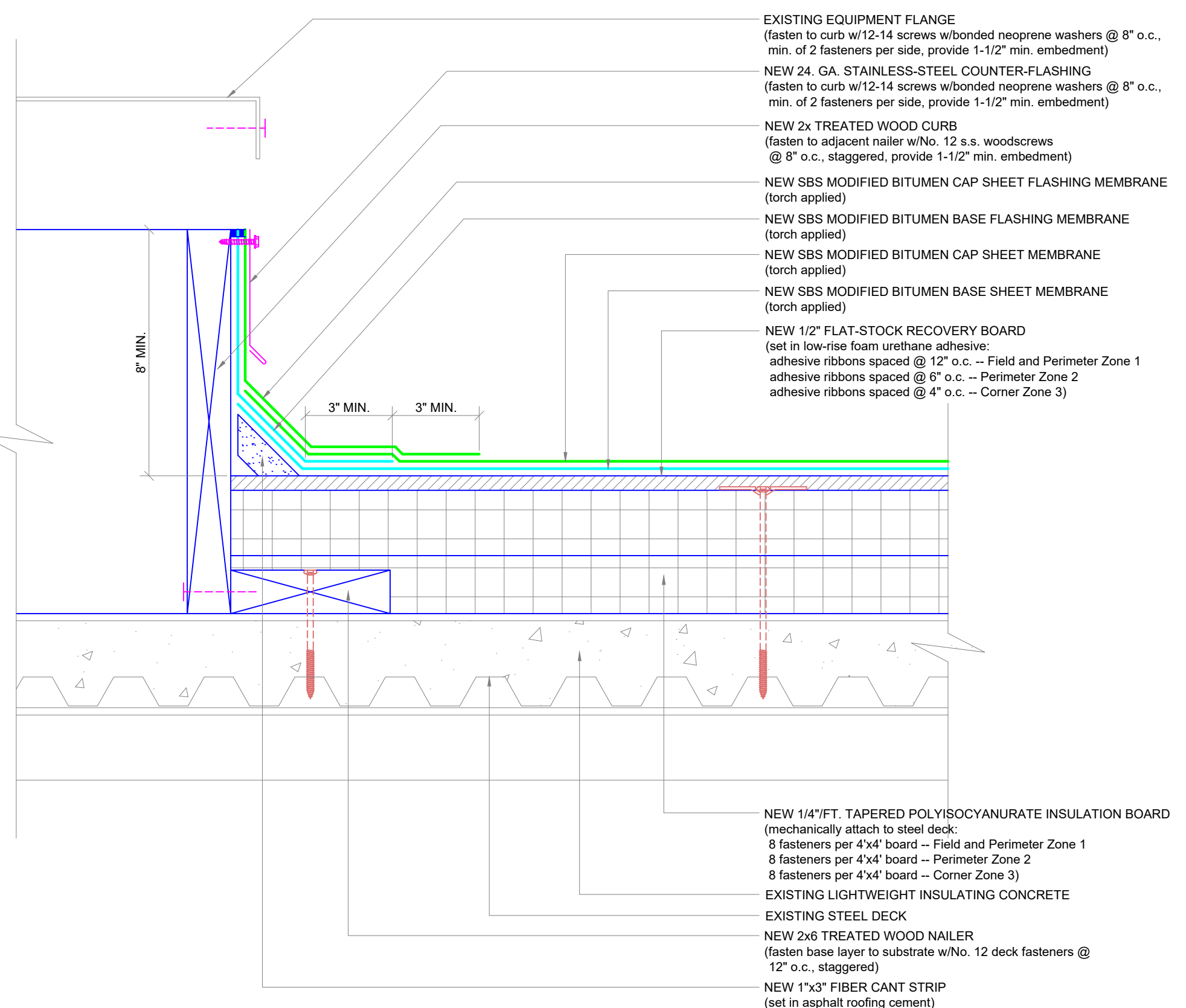
DETAIL -- EXPANSION JOINT - ROOF AREA B 3"=1'-0" 4

EXISTING PIPE PENETRATION  
NEW LEAD FLASHING (roll into pipe min. 1")  
NEW LIQUID-APPLIED FLASHING (with embedded scrim reinforcement)  
NEW ASPHALTIC ROOFING CEMENT  
NEW SBS MODIFIED BITUMEN BASE FLASHING MEMBRANE (torch applied)  
NEW SBS MODIFIED BITUMEN CAP SHEET MEMBRANE (torch applied)  
NEW SBS MODIFIED BITUMEN BASE SHEET MEMBRANE (torch applied)  
NEW 1/2" FLAT-STOCK RECOVERY BOARD (set in low-rise foam urethane adhesive; adhesive ribbons spaced @ 12" o.c. - Field and Perimeter Zone 1; adhesive ribbons spaced @ 6" o.c. - Perimeter Zone 2; adhesive ribbons spaced @ 4" o.c. - Corner Zone 3)



DETAIL -- TYPICAL PIPE VENT (CIRCULAR PENETRATION) 3"=1'-0" 5

EXISTING EQUIPMENT FLANGE (fasten to curb w/12-14 screws w/bonded neoprene washers @ 8" o.c., min. of 2 fasteners per side, provide 1-1/2" min. embedment)  
NEW 24 GA. STAINLESS-STEEL COUNTER-FLASHING (fasten to curb w/12-14 screws w/bonded neoprene washers @ 8" o.c., min. of 2 fasteners per side, provide 1-1/2" min. embedment)  
NEW 2x TREATED WOOD CURB (fasten to adjacent nailer w/No. 12 s.s. woodscrews @ 8" o.c., staggered, provide 1-1/2" min. embedment)  
NEW SBS MODIFIED BITUMEN CAP SHEET FLASHING MEMBRANE (torch applied)  
NEW SBS MODIFIED BITUMEN BASE FLASHING MEMBRANE (torch applied)  
NEW SBS MODIFIED BITUMEN CAP SHEET MEMBRANE (torch applied)  
NEW SBS MODIFIED BITUMEN BASE SHEET MEMBRANE (torch applied)  
NEW 1/2" FLAT-STOCK RECOVERY BOARD (set in low-rise foam urethane adhesive; adhesive ribbons spaced @ 12" o.c. - Field and Perimeter Zone 1; adhesive ribbons spaced @ 6" o.c. - Perimeter Zone 2; adhesive ribbons spaced @ 4" o.c. - Corner Zone 3)



DETAIL -- EQUIPMENT CURB BASE FLASHING 3"=1'-0" 6



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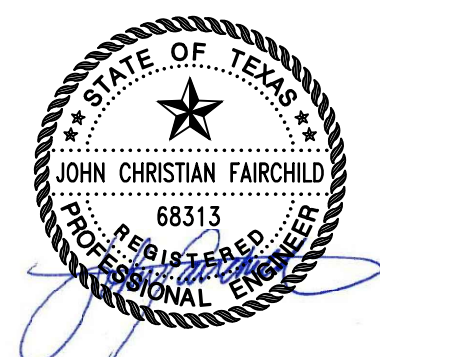
ROOF REPLACEMENT DETAILS

J. HAL & ALLYNE  
MACHAT MUSIC FACILITY  
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1005 COLLEGE AVENUE  
BRENNHAM, TEXAS 77833

BLINN COLLEGE

AESTIMO PROJECT NO.  
245300-01

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DRAWING NO.	R-5	SCALE	AS NOTED
DRAWN BY	C.D.S.	DATE	11/25/24
CHECKED BY	J.C.F.	DATE	

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