

IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH IRONRIDGE KNOCKOUT TILE AND L-FOOT ROOF ATTACHMENTS

GENERAL NOTES:

- 1. THIS SYSTEM MEETS ALL OF THE REQUIREMENTS OF THE 8TH EDITION (2023) FLORIDA BUILDING CODE, INCLUDING THE HVHZ PROVISIONS.
- 2. THIS SYSTEM HAS BEEN TESTED PER TAS 100(A) AND ASTM D7147. IT IS NOT A PART OF THE BUILDING ENVELOPE, AND IMPACT RESISTANCE IS NOT REQUIRED.
- 3. THIS SYSTEM SHALL BE INSTALLED PER THE IRONRIDGE XR FLUSH MOUNT INSTALLATION MANUAL.
- 4. THE PV PANELS ARE BY OTHERS AND ARE NOT A PART OF THIS APPROVAL.
- 5. RAIL SPACING TO BE AS SPECIFIED BY THE PV PANEL MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 6. THE DESIGN OF THE ROOF SUBSTRATE IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD OR OTHER SPECIALTY ENGINEER, AND IS NOT A PART OF THIS APPROVAL. THE SUBSTRATE MUST SAFELY TRANSMIT THE LOADS APPLIED TO THIS SYSTEM TO THE BUILDING STRUCTURE.
- 7. FIRE RATINGS OR FIRE RESISTANCE IS NOT A PART OF THIS REVIEW.
- 8. ALL ANCHORS SECURING THE SYSTEM TO PRESSURE TREATED WOOD SHALL BE CAPABLE OF RESISTING CORROSION CAUSED BY THE CHEMICALS IN THE WOOD.
- 9. MATERIALS INCLUDING BUT NOT LIMITED TO STEEL/METAL SCREWS THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL BE PROTECTED PER FBC REQUIREMENTS.
- 10. NO INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS PRODUCT. Cd=1.6 WAS USED FOR WOOD SCREWS ONLY.

WINDLOAD NOTES:

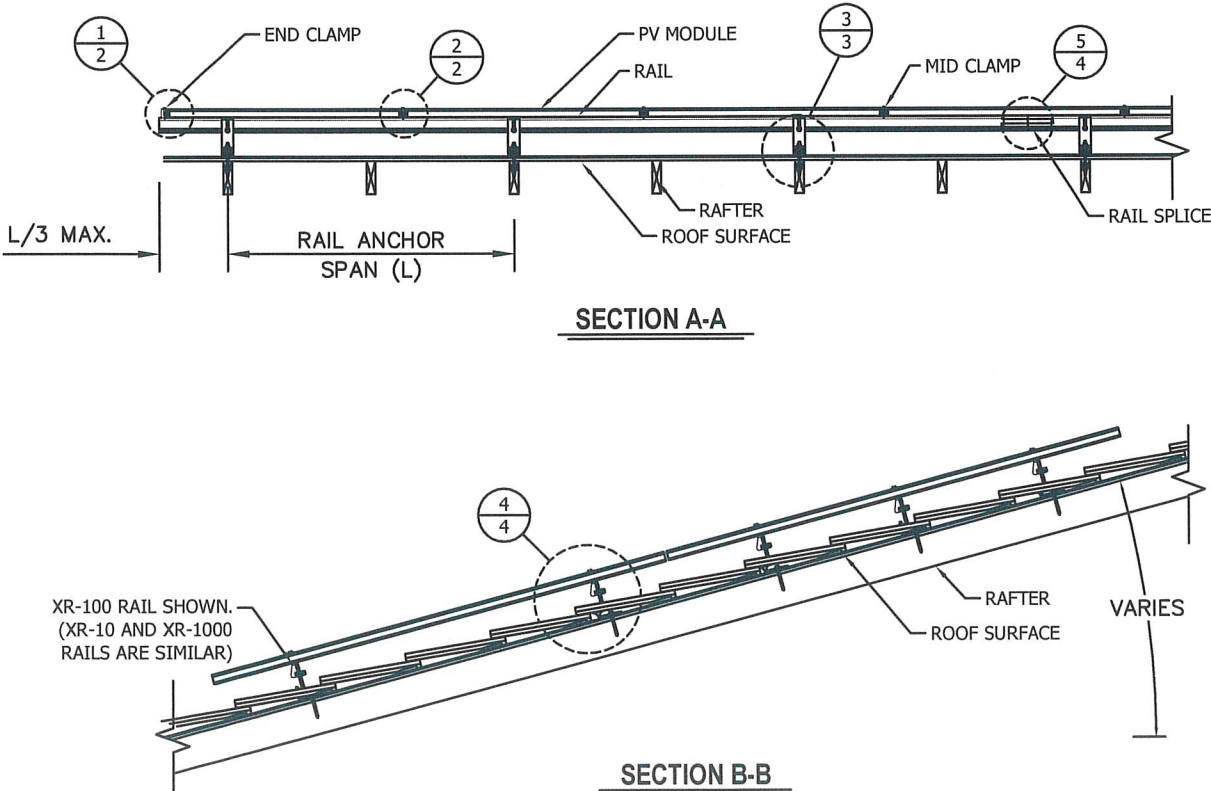
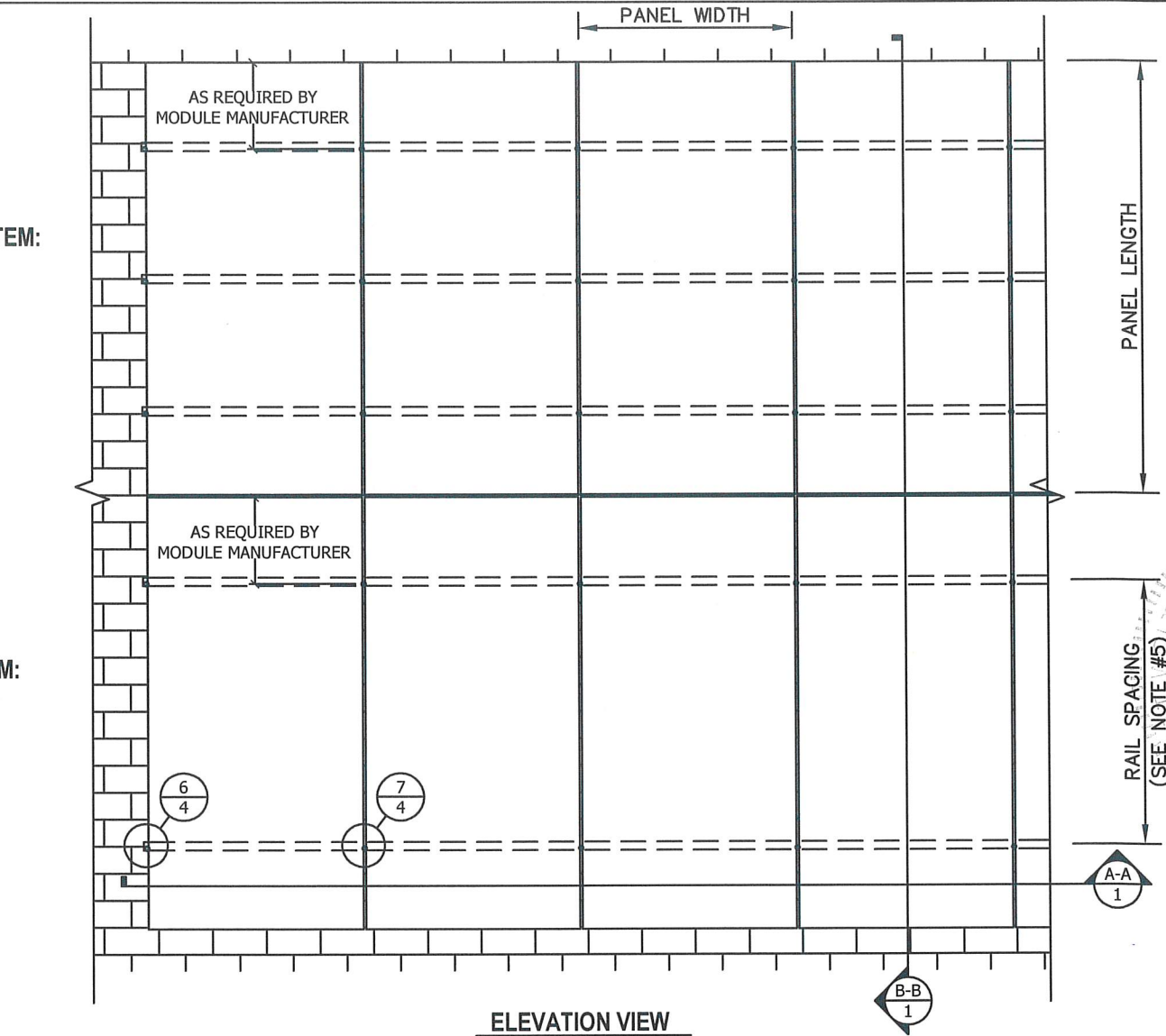
- 1. DESIGN WINDLOADS MUST BE CALCULATED BY A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT FOR EACH PROJECT, PER ASCE 7-22 SECTION 29.4.4. DESIGN (ASD) WINDLOADS MAY NOT EXCEED THE ALLOWABLE WINDLOADS SHOWN IN THIS CHART.
- 2. PANEL SYSTEM LOCATION, HEIGHT, AND SPACING MUST MEET THE REQUIREMENTS OF ASCE 7-22 SECTION 29.4.4. WINDLOADS ACT NORMAL TO THE SURFACE OF THE PV PANEL SYSTEM.
- 3. OTHER CONFIGURATIONS REQUIRE PROJECT SPECIFIC ANALYSIS BY A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT.
- 4. ALLOWABLE (ASD) WINDLOADS ARE BASED ON ANCHORING IN WOOD RAFTERS WITH S.G.=0.42 MIN.

ALLOWABLE WINDLOADS

TWO RAIL SYSTEM						THREE RAIL SYSTEM					
PANEL WIDTH (in)	PANEL LENGTH (in)	ANCHOR SPAN (L) (in)	XR-10 RAIL (+/- psf)	XR-100 RAIL (+/- psf)	XR-1000 RAIL (+/- psf)	PANEL WIDTH (in)	PANEL LENGTH (in)	ANCHOR SPAN (L) (in)	XR-10 RAIL (+/- psf)	XR-100 RAIL (+/- psf)	XR-1000 RAIL (+/- psf)
45	67 1/2	16	82.7	82.7	82.7	45	67 1/2	16	124.1	124.1	124.1
		24	65.4	82.7	82.7			24	98.1	124.1	124.1
		32	56.1	82.7	82.7			32	84.2	124.1	124.1
		36	49.9	78.8	78.8			36	74.9	118.2	118.2
		48	37.4	73.9	73.9			48	56.1	110.9	110.9
		64	28.1	52.1	52.1			64	42.2	78.2	78.2
	80	72	23.7	45.3	45.3		72	35.6	68.0	68.0	
		16	69.8	69.8	69.8		80	16	104.7	104.7	104.7
		24	55.2	69.8	69.8			24	82.8	104.7	104.7
		32	47.3	69.8	69.8			32	71.0	104.7	104.7
		36	42.1	66.5	66.5			36	63.2	99.8	99.8
		48	31.6	62.3	63.5			48	47.4	93.5	95.3
	86	64	23.7	43.9	43.9			64	35.6	65.9	65.9
		72	20	38.3	38.3		72	30.0	57.5	57.5	
		16	64.9	64.9	64.9		86	16	97.4	97.4	97.4
		24	51.3	64.9	64.9			24	77.0	97.4	97.4
		32	44	64.9	64.9			32	66.0	97.4	97.4
		36	39.1	61.8	61.8			36	58.7	92.7	92.7
	48	29.4	58	58	48			44.1	87.0	87.0	
	92 1/2	64	22	40.9	40.9			64	33.0	61.4	61.4
		72	18.6	35.6	35.6		72	27.9	53.4	53.4	
		16	60.4	60.4	60.4		92 1/2	16	90.6	90.6	90.6
		24	47.7	60.4	60.4			24	71.6	90.6	90.6
		32	40.9	60.4	60.4			32	61.4	90.6	90.6
		36	36.4	57.5	57.5			36	54.6	86.3	86.3
	48	27.3	53.9	53.9	48			41.0	80.9	80.9	
	64	20.5	38	38	64			30.8	57.0	57.0	
	72	17.3	33	33	72		26.0	49.5	49.5		
LANDSCAPE LAYOUT:											
45	92 1/2	16	60.4	60.4	60.4	45	92 1/2	16	90.6	90.6	90.6
		24	52.9	60.4	60.4			24	79.4	90.6	90.6
		32	40.8	60.4	60.4			32	61.2	90.6	90.6
		36	36	57.5	57.5			36	54.0	86.3	86.3
		48	24.2	55	57.5			48	36.3	82.5	86.3
		64	20.5	46.9	57.5			64	30.8	70.4	86.3
72	18.2	41.7	57.5	72	27.3	62.6	86.3				

THREE RAIL SYSTEM:

TWO RAIL SYSTEM:



REVISION

4/24/25

REVISION

4/29/24

2023 CODE UPDATE

10/18/23

1ST SUBMITTAL

12/19/22

REV.#

DATE

SEAL: [Signature]

NO. 62354

STATE OF FLORIDA

APR 24 2025

PROFESSIONAL ENGINEER

SCOTT WOLTERS

FL PE# 62354

WOLTERS ENGINEERING

(COA# 27194)

15211 97TH ROAD N

WEST PALM BEACH, FL 33412

(561) 225-1982

IRONRIDGE

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info@ironridge.com

28357 INDUSTRIAL BLVD.

HAYWARD, CA 94545

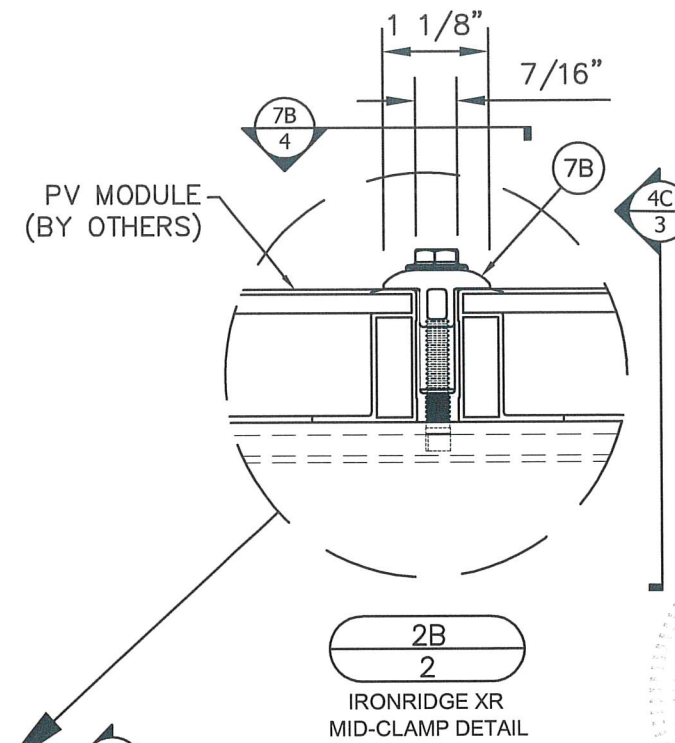
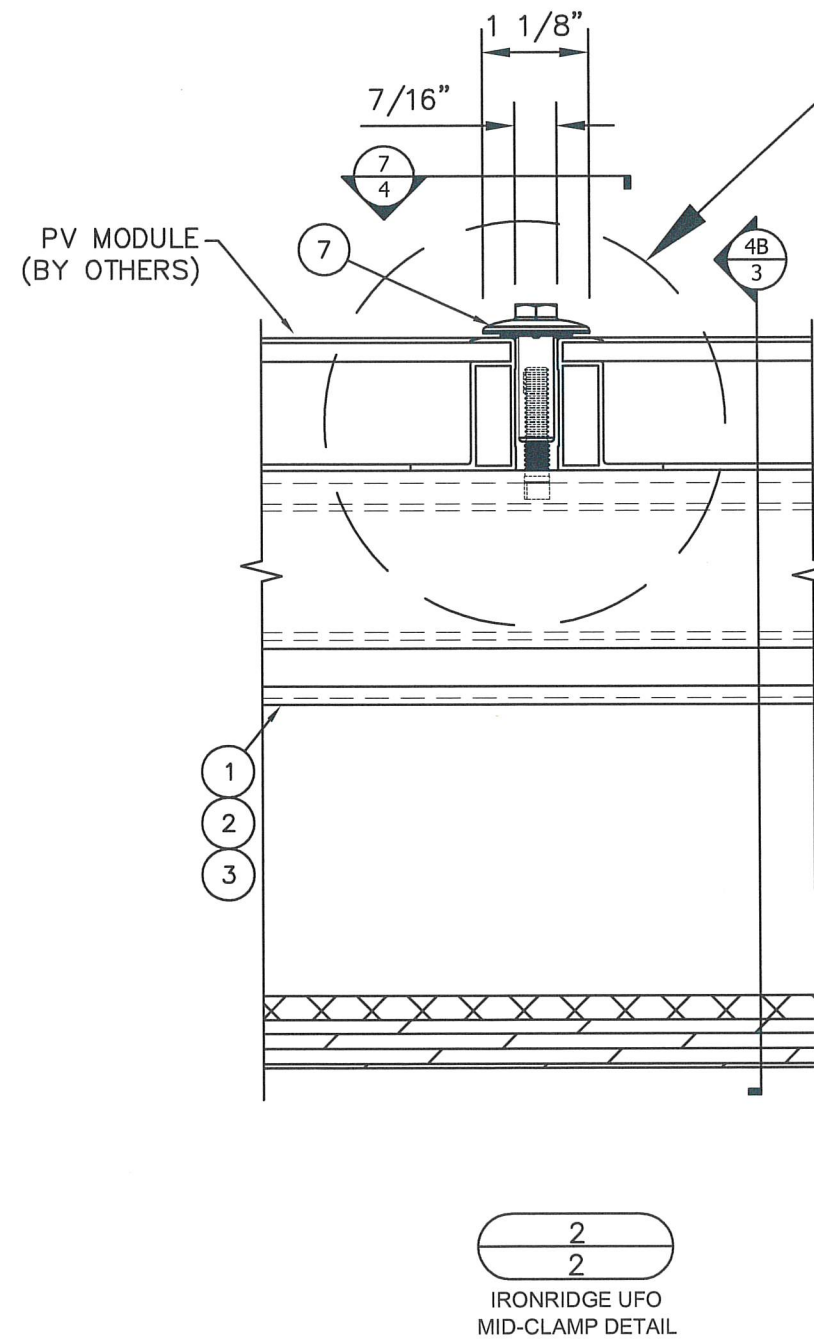
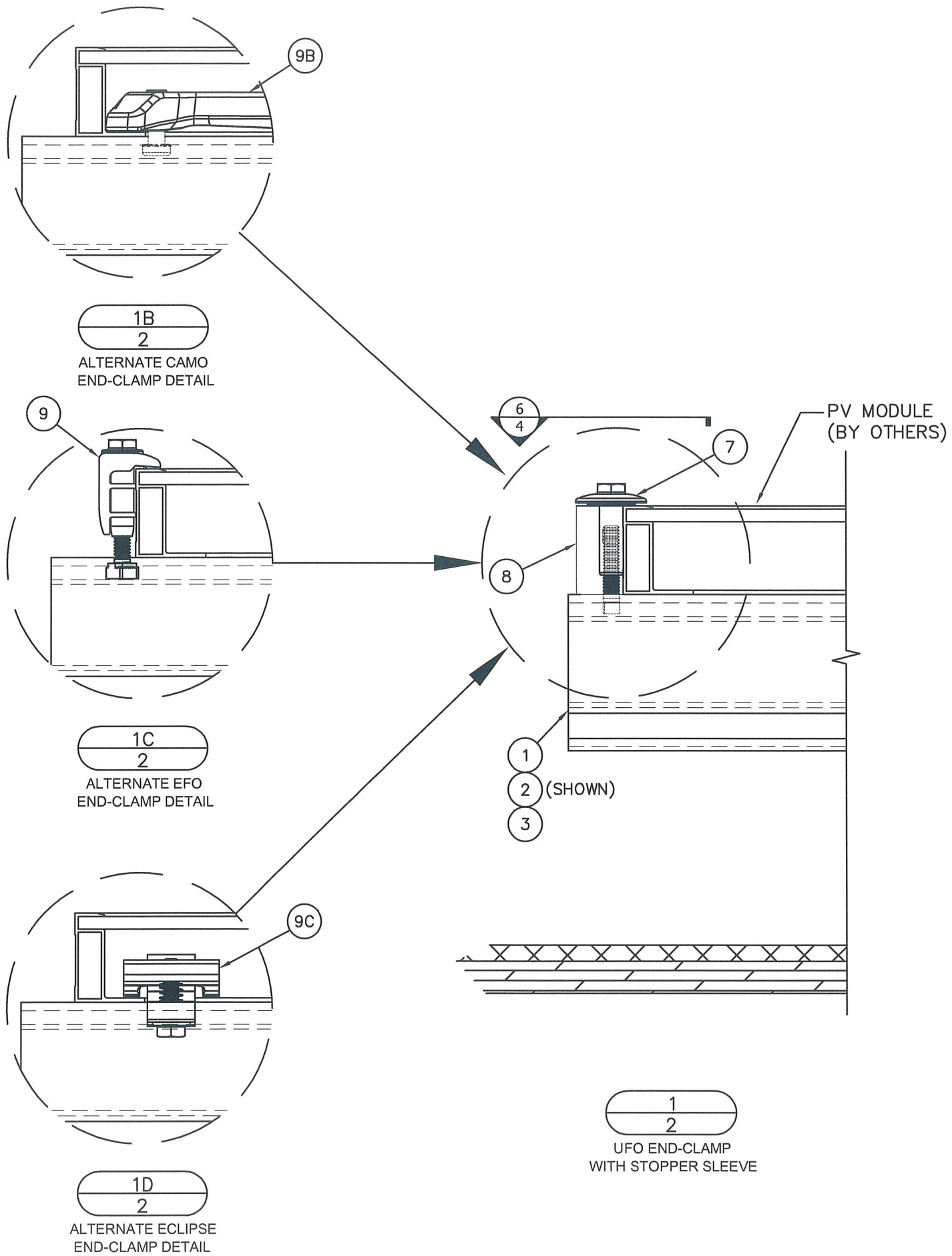
DWG:

XR-TKO

SHEET:

1/10

IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM WITH IRONRIDGE KNOCKOUT TILE AND L-FOOT ROOF ATTACHMENTS



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REVISION	3	4/24/25
REVISION	2	4/29/24
2023 CODE UPDATE	1	10/18/23
1ST SUBMITTAL	—	12/19/22
PRINTS ISSUED FOR	REV.#	DATE

SEAL:  NO 62354 ★ STATE OF TENNESSEE APR 24 2025

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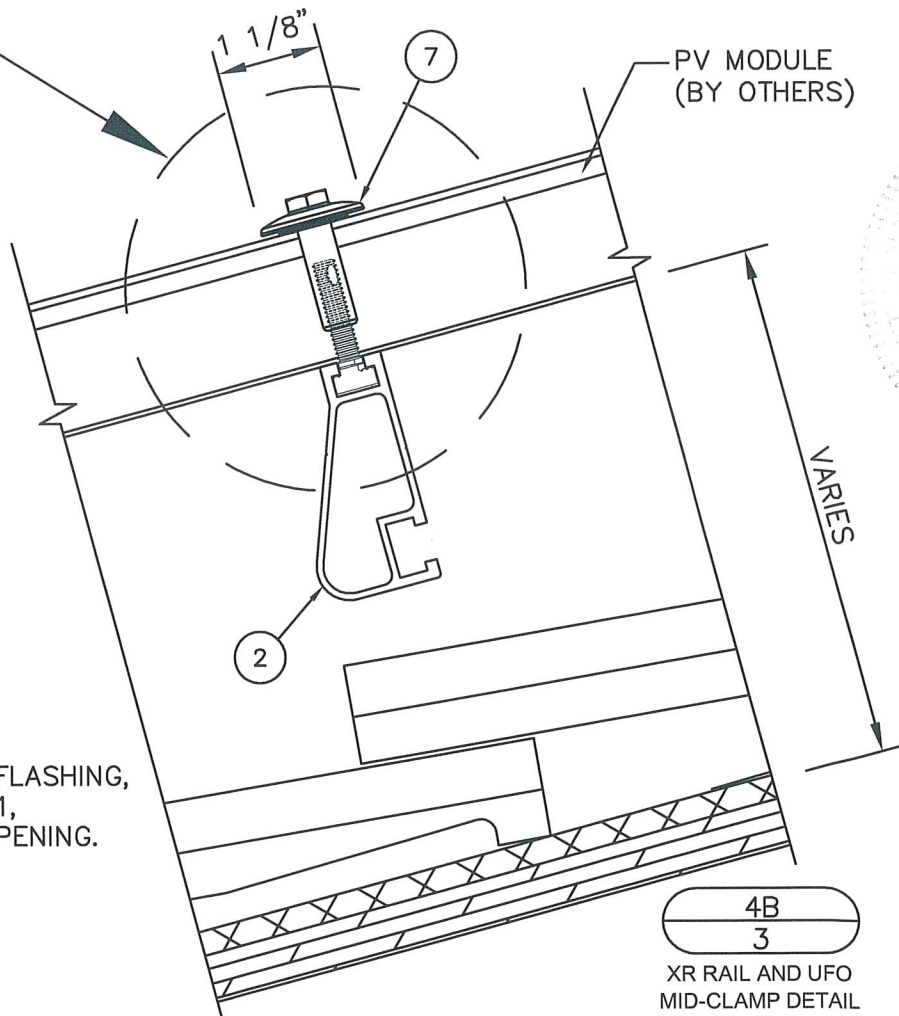
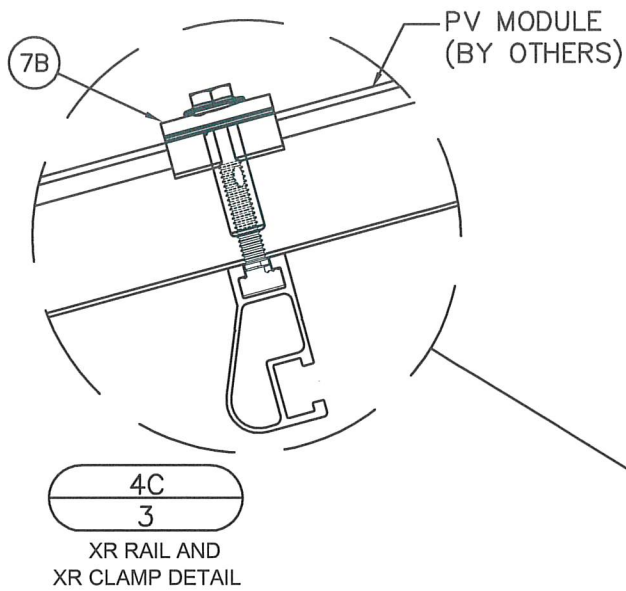
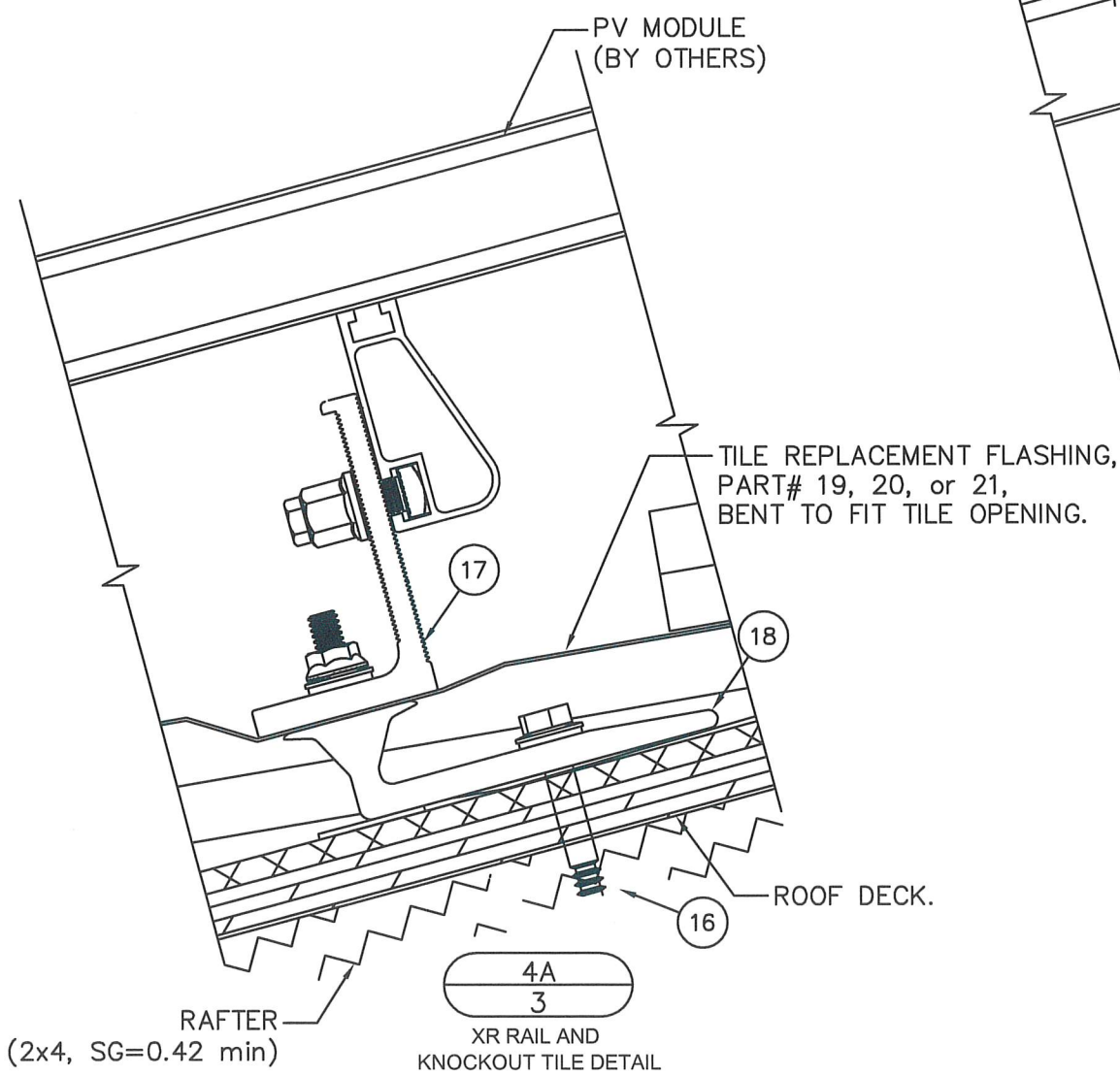
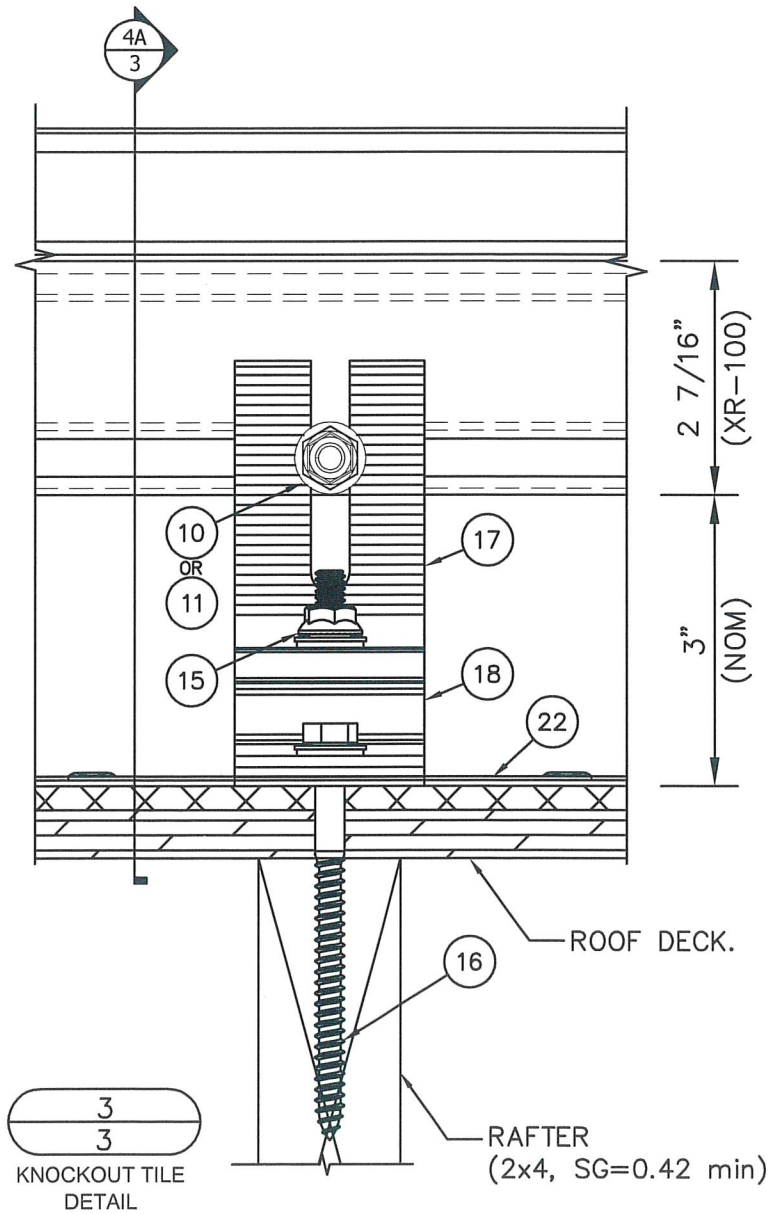
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DWG:	XR-TKO
SHEET:	2/10

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XR-100 RAIL IS SHOWN.
XR-10 AND XR-1000
RAILS ARE SIMILAR.

DWG: XR-TKO
SHEET: 3/10

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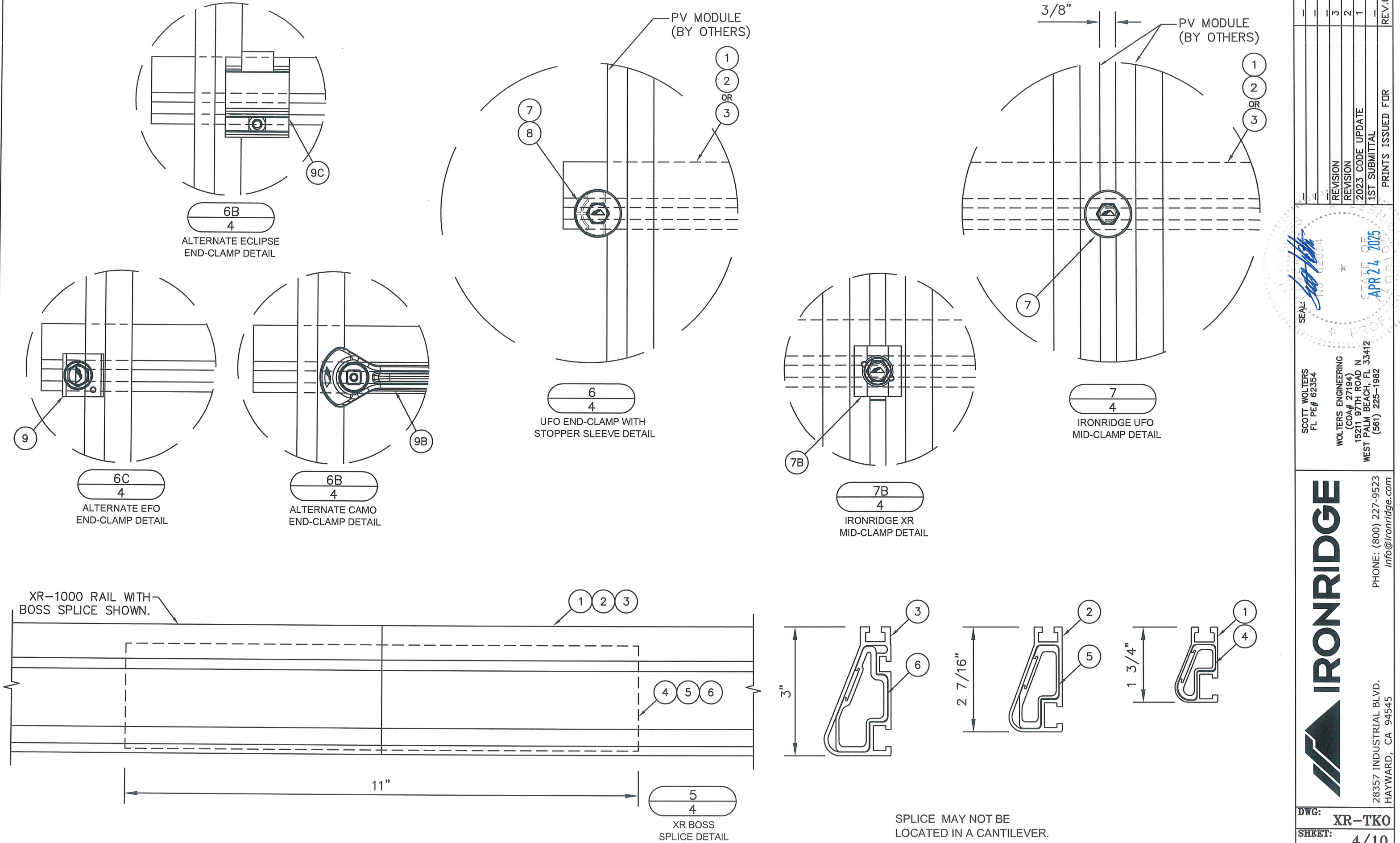
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STATE OF
FLORIDA
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REVISION
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2 4/29/24
1 10/18/23
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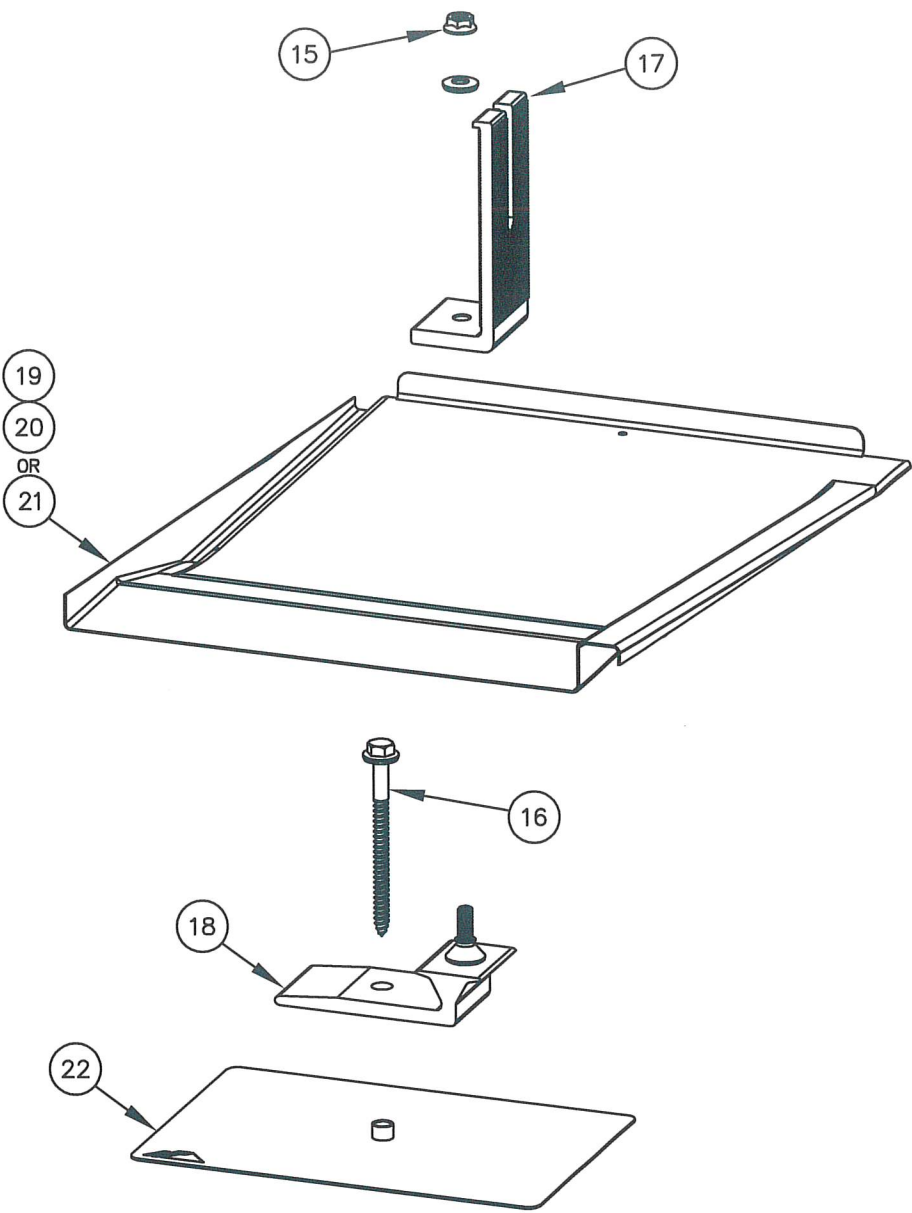
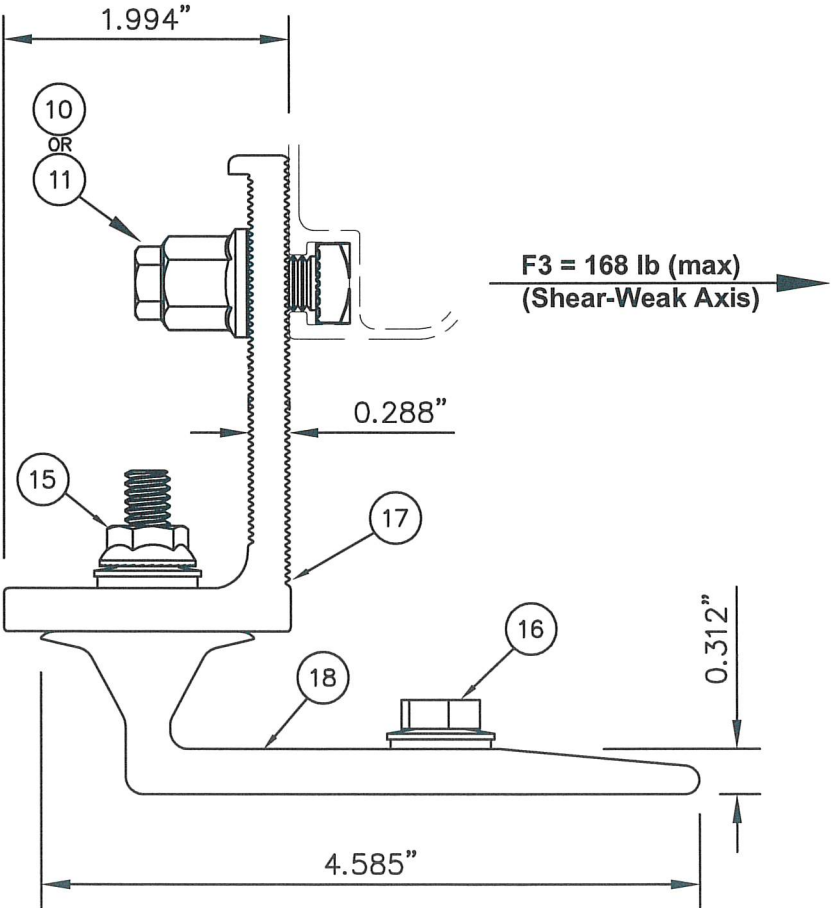
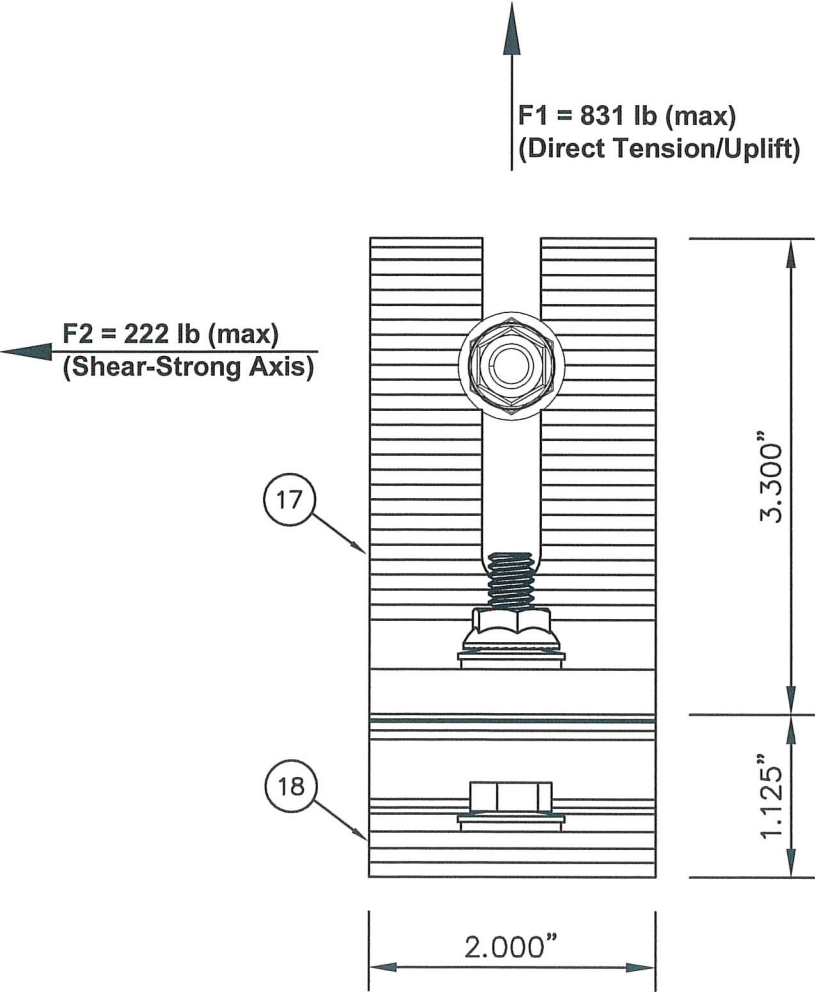
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BILL OF MATERIALS- IronRidge Knockout Tile with Open Slot L-Foot		
#	DESCRIPTION	MATERIALS/NOTES
15	NUT, FLANGE, HEX, 5/16"	300 SERIES SS
16	5/16" X 4" HH LAG SCREW WITH EPDM WASHER	300 SERIES SS & EPDM
17	L-FOOT, OPEN SLOT L-FOOT	6000 SERIES AL
18	ASSY, BASE	6000 SERIES AL & 300 SERIES SS
19	FLASHING, TILE REPLACEMENT, S-TILE	1000 SERIES AL
20	FLASHING, TILE REPLACEMENT, FLAT TILE	1000 SERIES AL
21	FLASHING, TILE REPLACEMENT, W-TILE	1000 SERIES AL
22	SUB FLASHING (OPTIONAL)	5000 SERIES AL



ANCHOR NOTES:
1. CAPACITIES APPLY TO RAFTER SIZE OF 2x4 OR GREATER, DECK THICKNESS OF 7/16" OR GREATER, AND LAG BOLTS SECURED WITHIN THE CENTER 1/3 OF RAFTER WITH 2 1/2" MIN. END DISTANCE.

IRONRIDGE

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DWG: XR-TKO

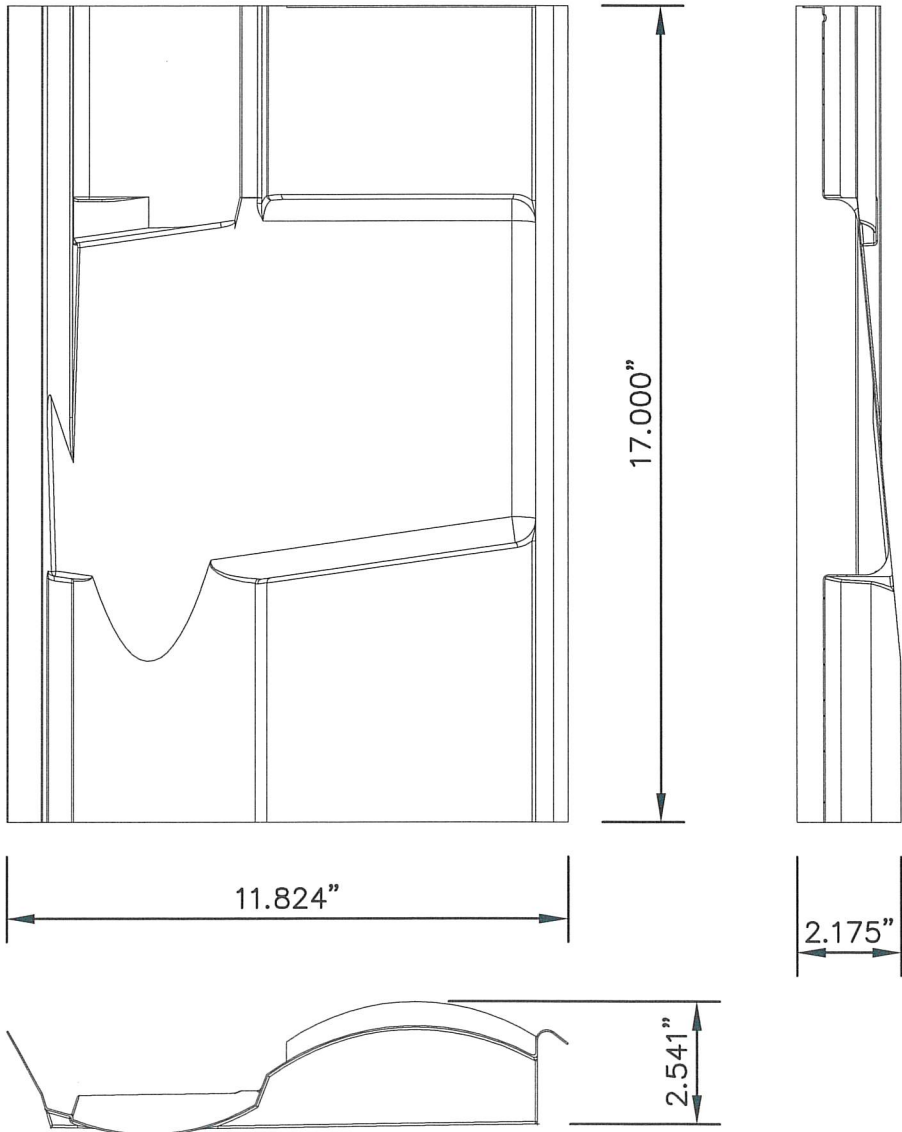
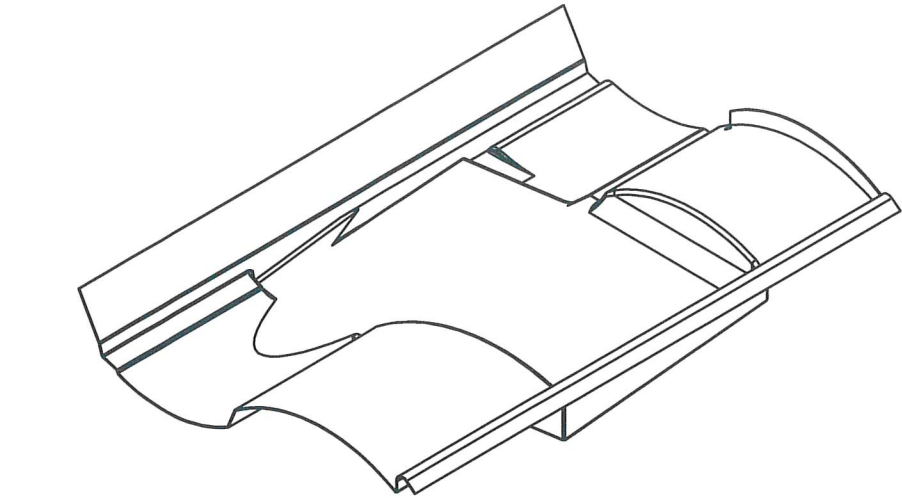
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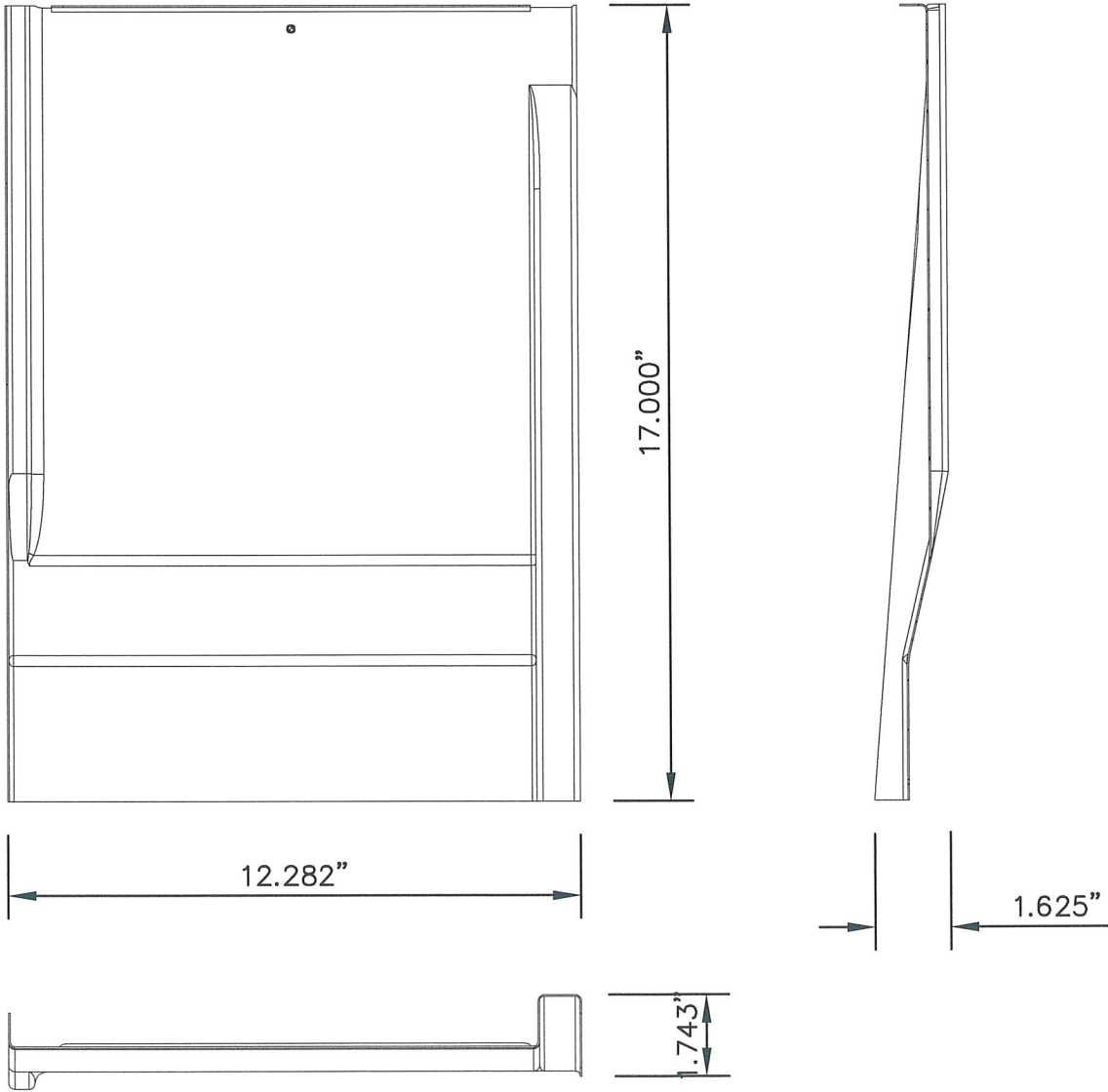
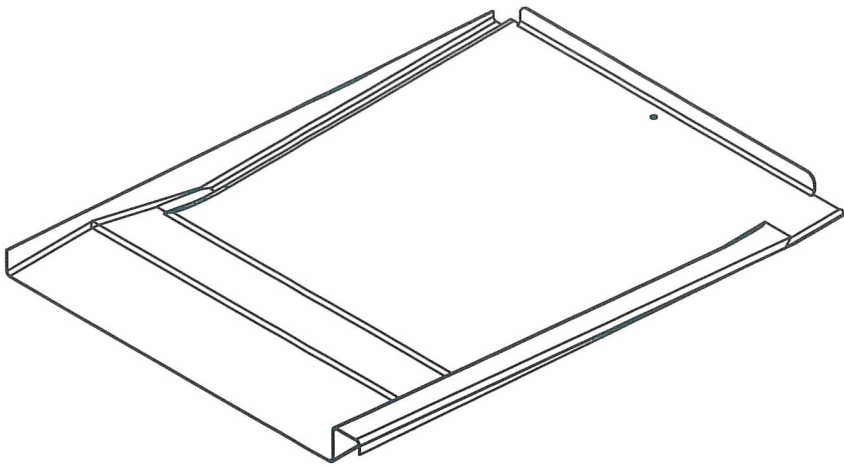
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3	4/24/25
2	4/29/24
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19



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DWG:XR-TKO

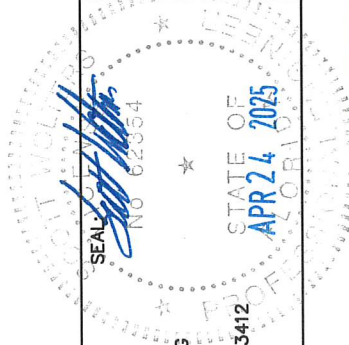
SHEET:6/10

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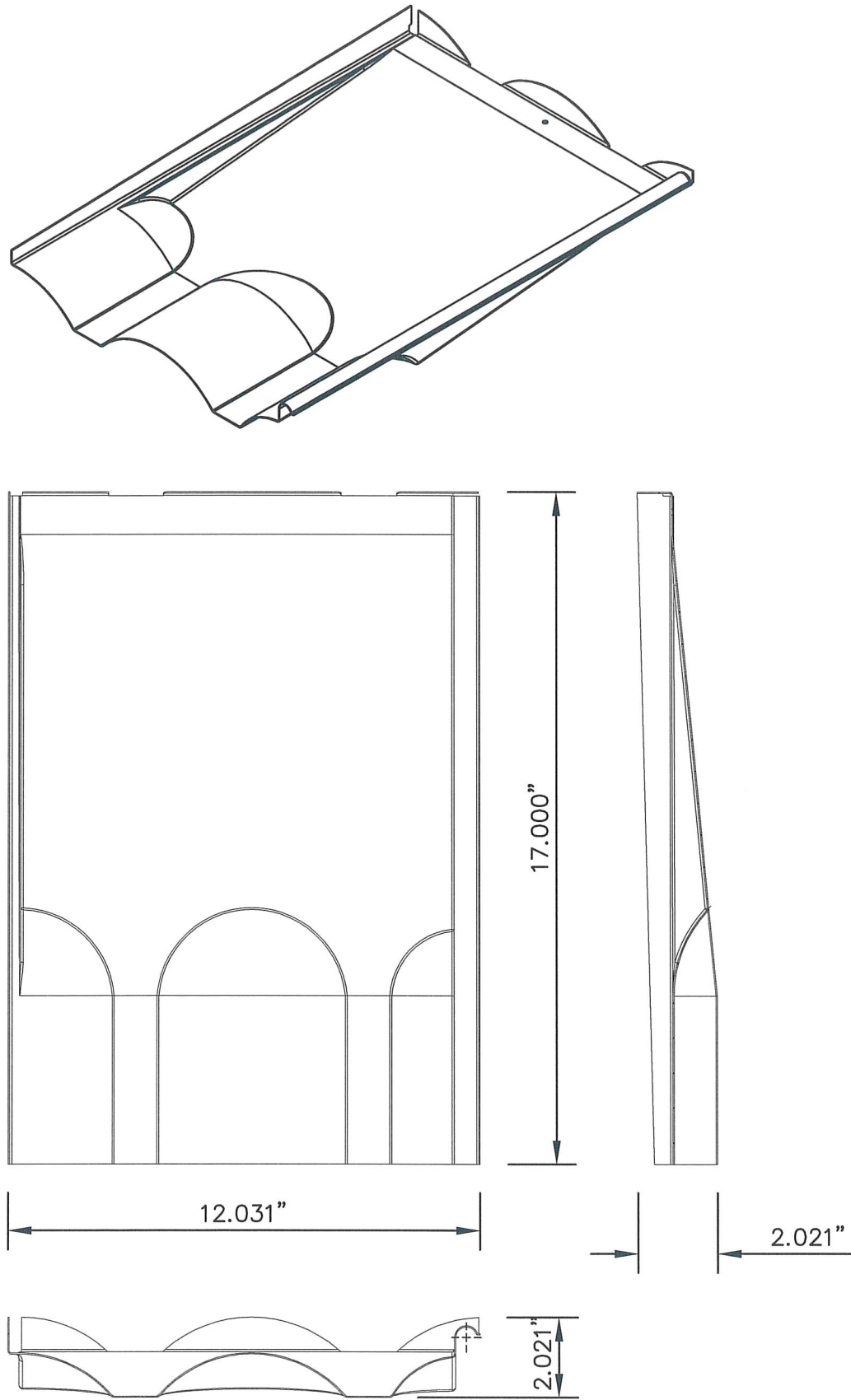
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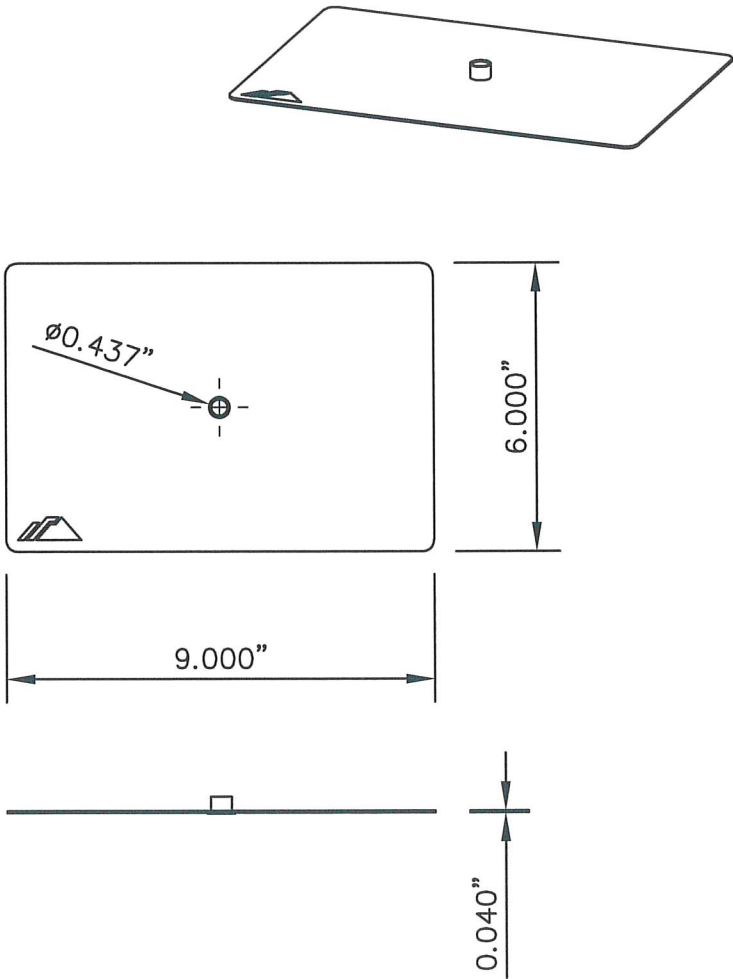


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2023 CODE UPDATE	2	4/24/25
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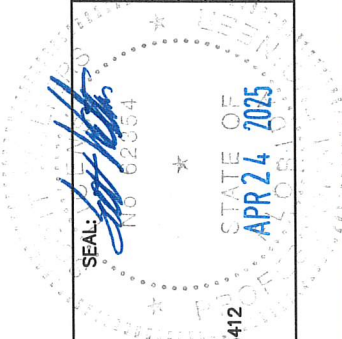


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DWG: XR-TKO
SHEET: 7/10

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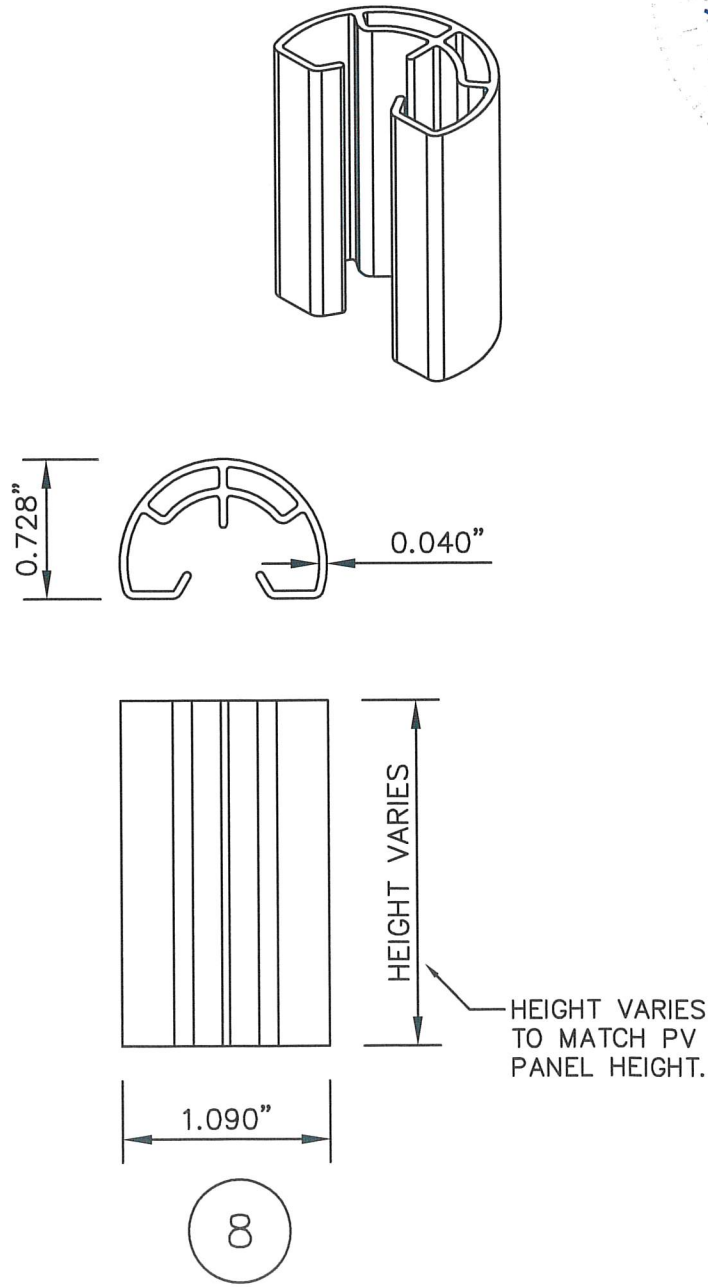
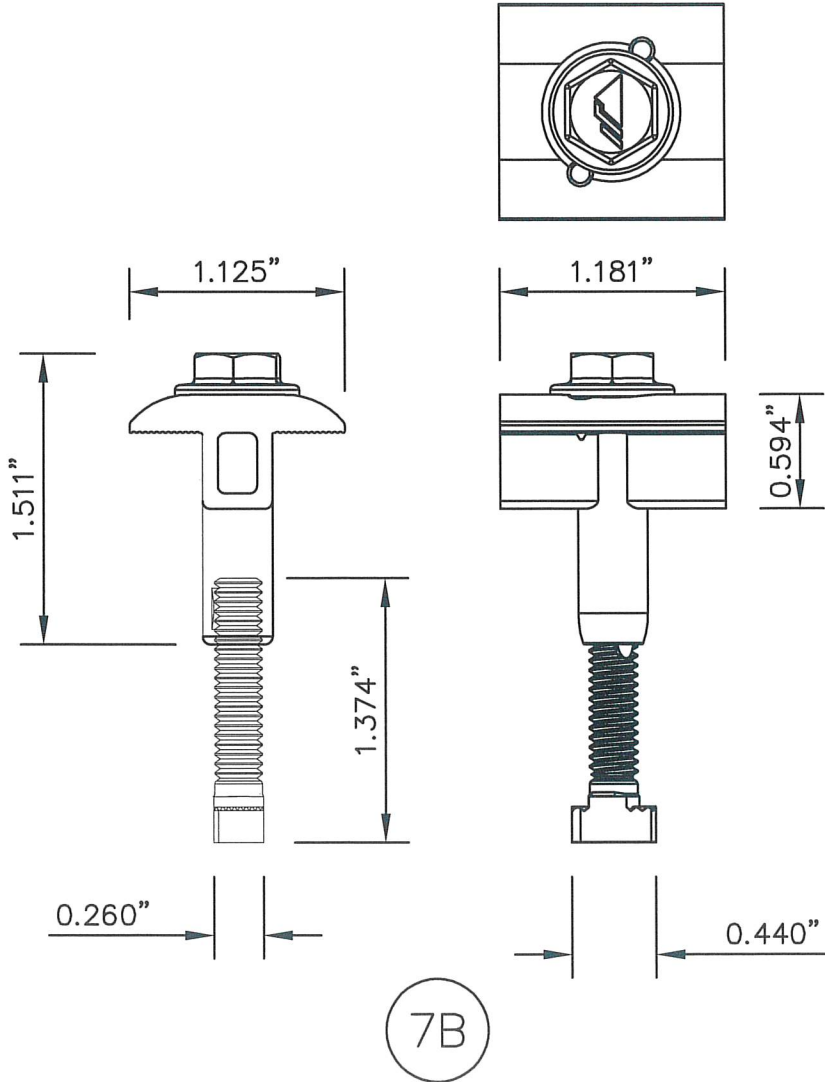
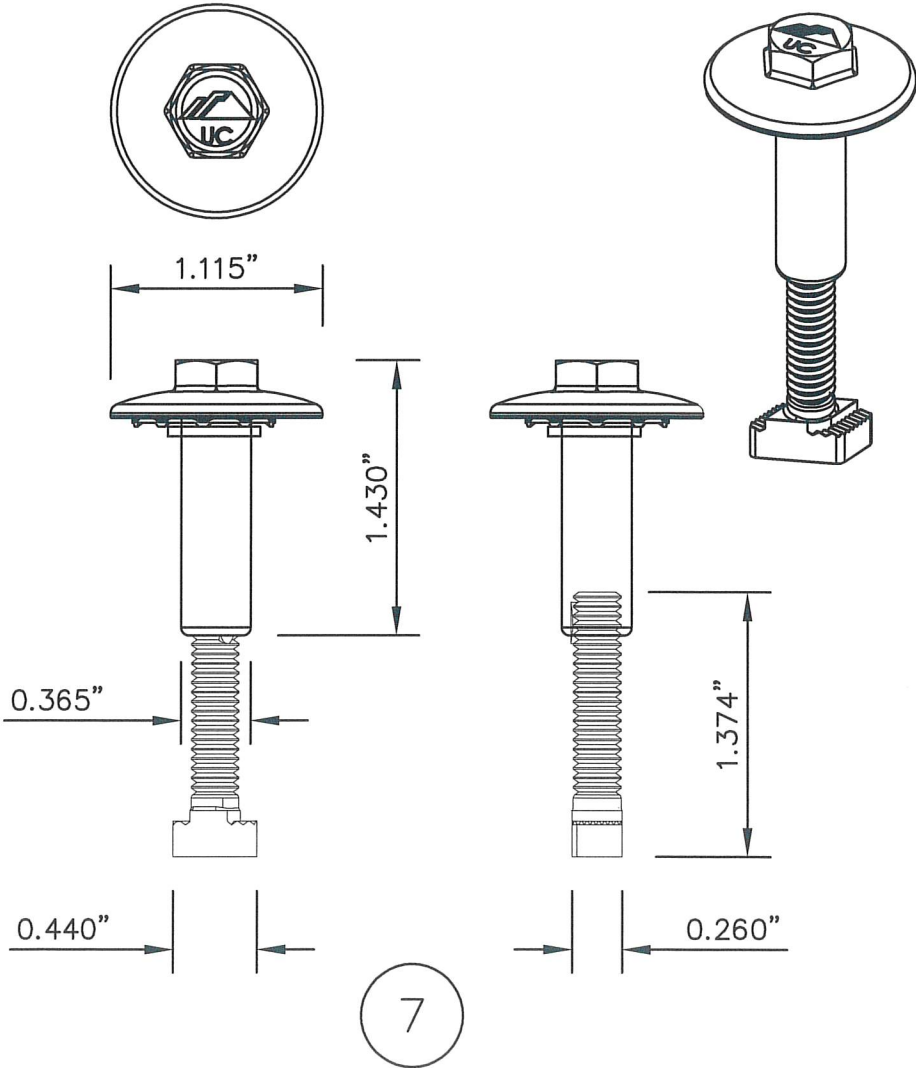
REVISION	REV.#	DATE
2023 CODE UPDATE	1	10/18/23
1ST SUBMITTAL	1	12/19/22

IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH IRONRIDGE KNOCKOUT TILE AND L-FOOT ROOF ATTACHMENTS

BILL OF MATERIALS- XR System		
#	DESCRIPTION	MATERIALS/NOTES
1	XR-10 RAIL	6000 SERIES AL
2	XR-100 RAIL	6000 SERIES AL
3	XR-1000 RAIL	6000 SERIES AL
4	XR-10 BOSS SPLICE	6000 SERIES AL & 300 SERIES SS
5	XR-100 BOSS SPLICE	6000 SERIES AL & 300 SERIES SS
6	XR-1000 BOSS SPLICE	6000 SERIES AL & 300 SERIES SS
7	UFO UNIVERSAL MODULE CLAMP	300 SERIES SS
7B	XR MID CLAMP (30-40MM), US PRODUCTION	6000 SERIES AL & 300 SERIES SS
8	STOPPER SLEEVE	6000 SERIES AL
9	EFO UNIVERSAL END CLAMP	300 SERIES AL & 300 SERIES SS
9B	CAMO HIDDEN END CAM	300 SERIES AL & 300 SERIES SS
9C	ECLIPSE HIDDEN END CLAMP ASSEMBLY	6000 SERIES AL & 300 SERIES SS
10	3/8" X 1" SQUARE BOLT BONDING HARDWARE	300 SERIES SS
11	3/8" X 1" T-BOLT BONDING HARDWARE	300 SERIES SS
12	XR-10 RAIL END CAP (OPTIONAL)	POLYMERIC
13	XR-100 RAIL END CAP (OPTIONAL)	POLYMERIC
14	XR-1000 RAIL END CAP (OPTIONAL)	POLYMERIC

FOR 6000 SERIES EXTRUSIONS F_{UT}=38 ksi min, F_y=34 ksi min.

FOR 300 SERIES STAINLESS STEEL F_y=65 ksi min.



IRONRIDGE

DWG: XR-TKO
SHEET: 8/10

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REVISION
3 4/24/25

REVISION
2 4/29/24

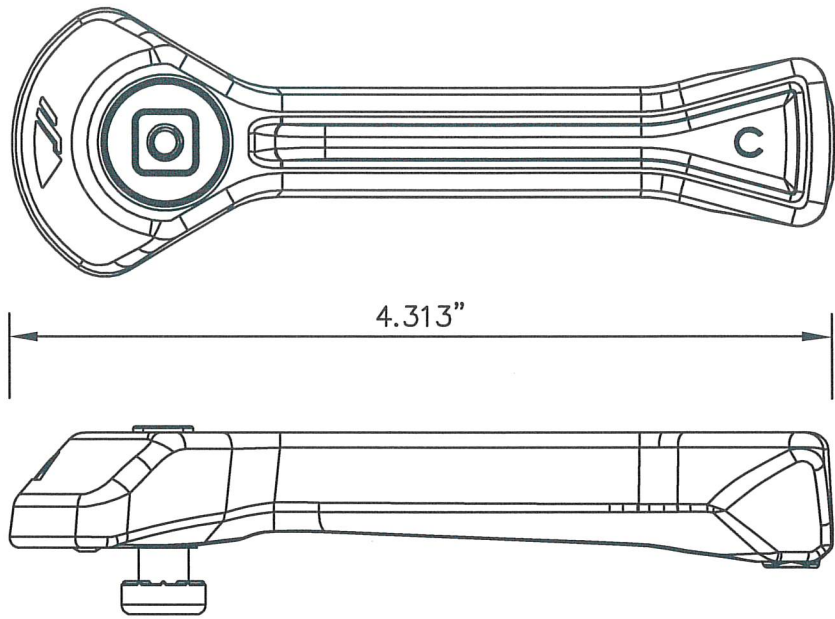
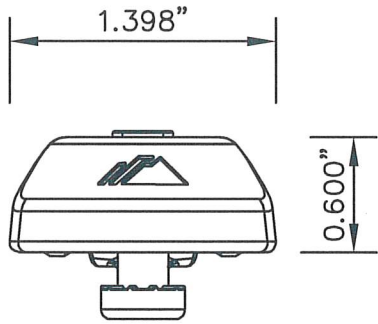
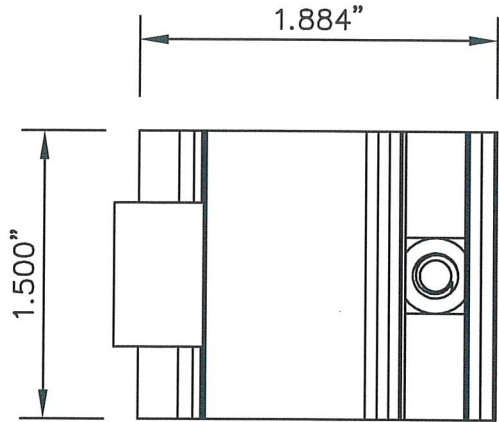
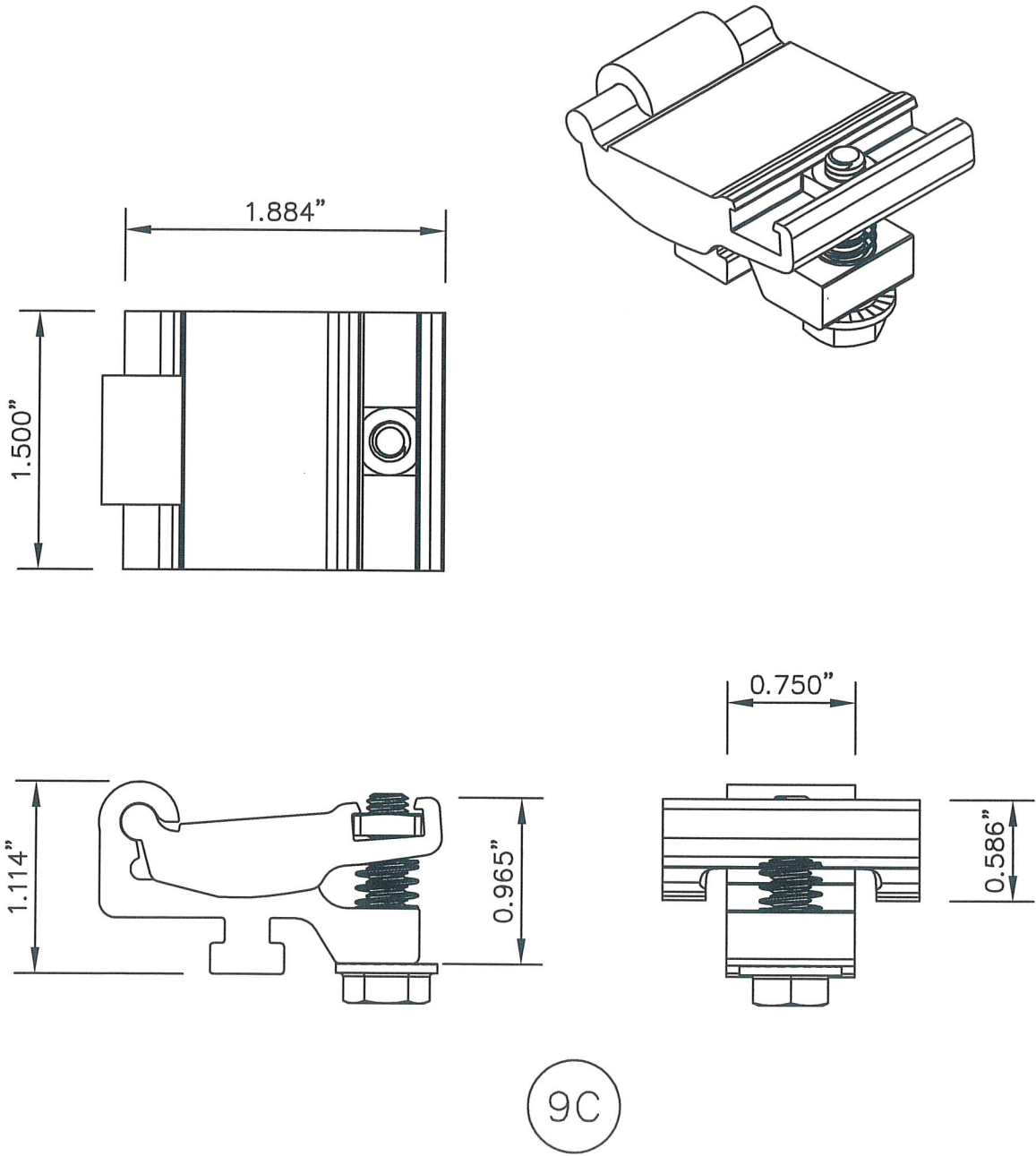
2023 CODE UPDATE
1 10/18/23

1ST SUBMITTAL
- 12/19/22

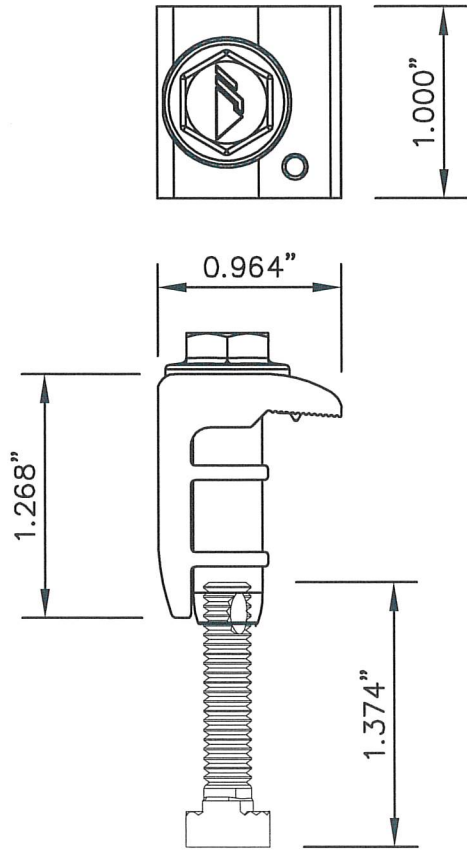
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9B



9



DWG: XR-TK0

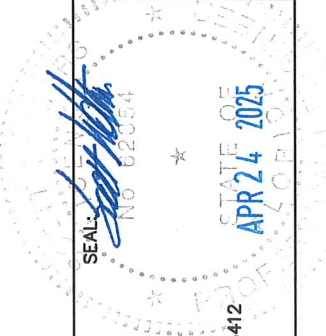
SHEET: 9/10

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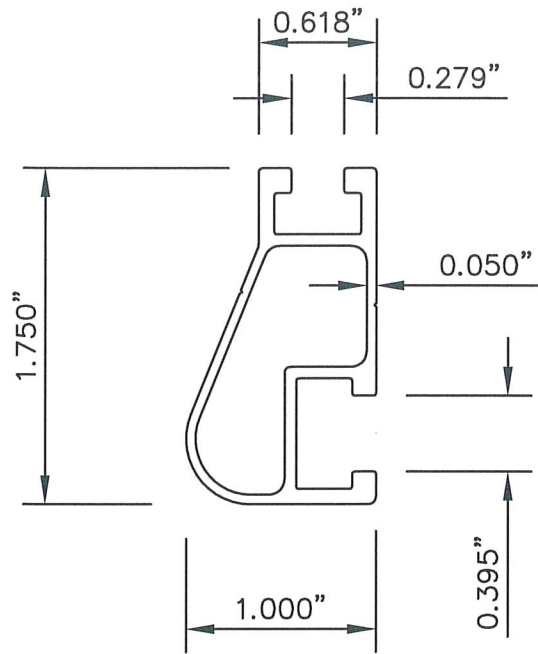
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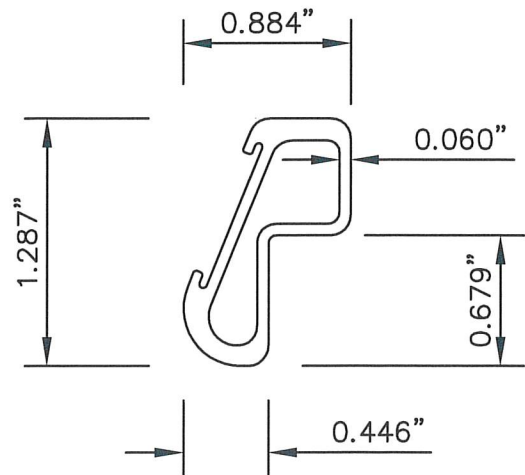


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2	4/29/24	1	1ST SUBMITTAL
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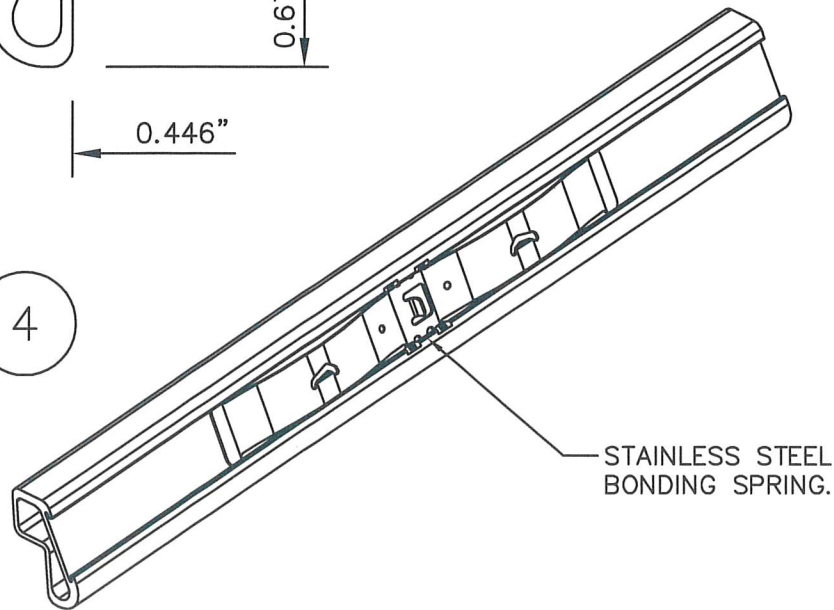
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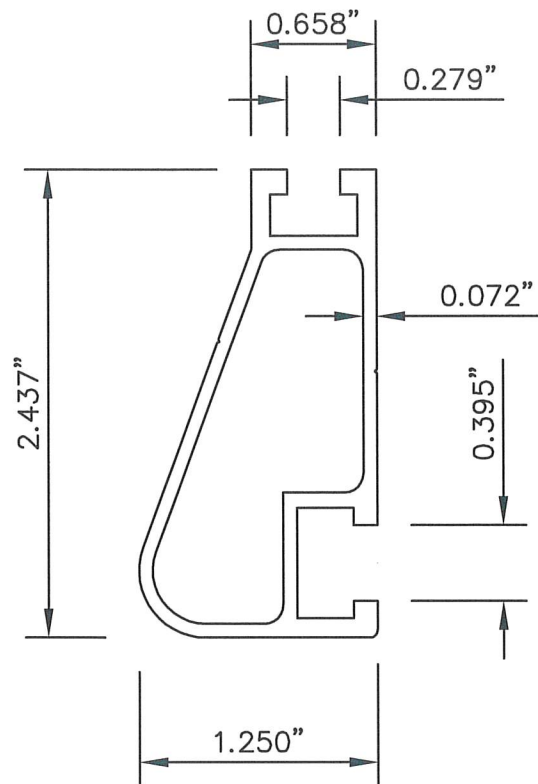
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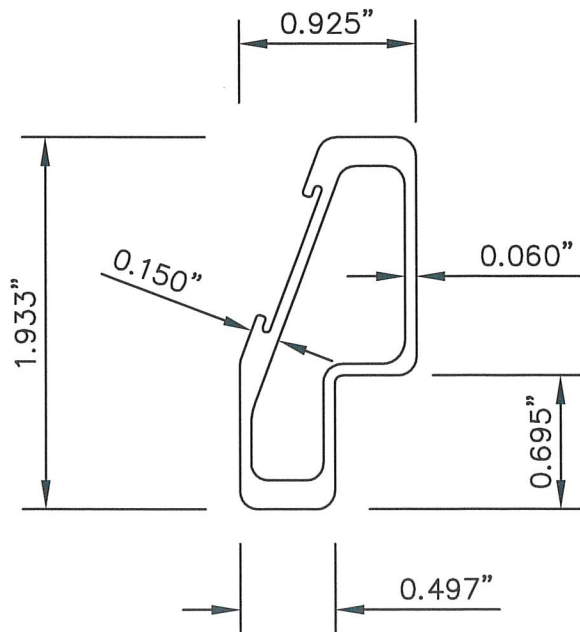
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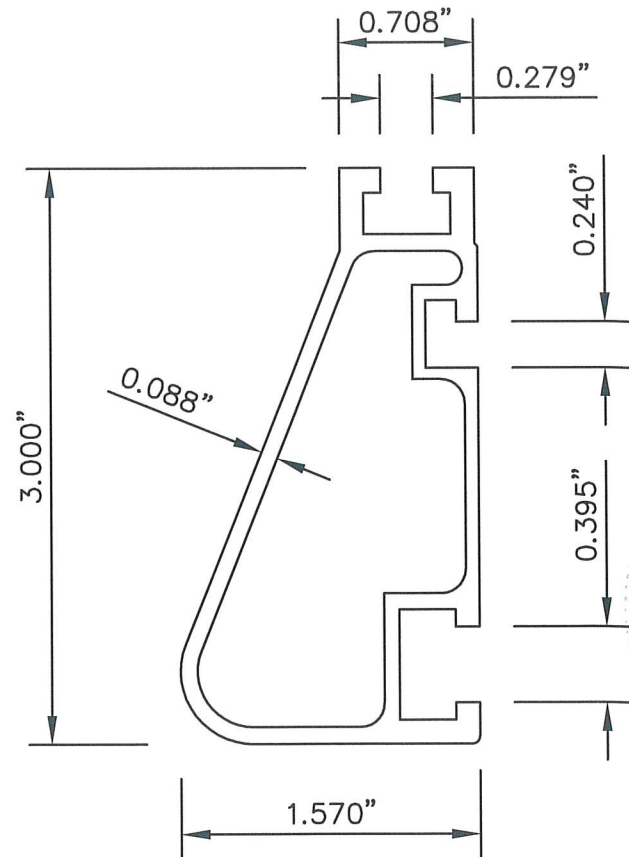
STAINLESS STEEL
BONDING SPRING.



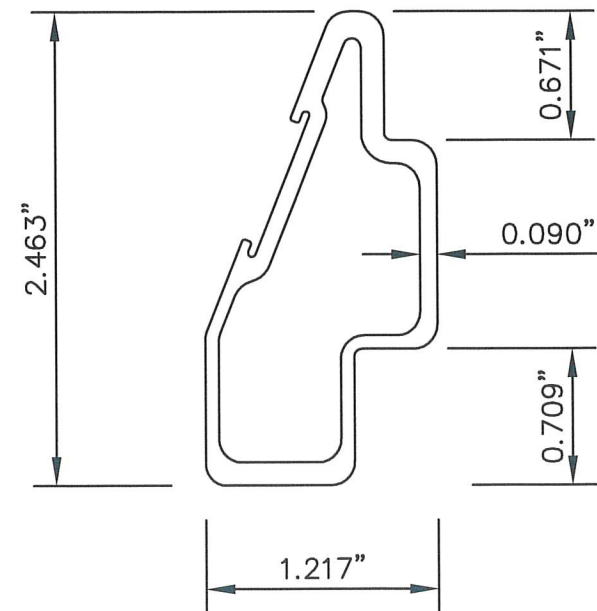
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6

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DWG: XR-TKO
SHEET: 10/10

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STATE OF FLORIDA
APR 24 2025

REV.#	DATE	PRINTS ISSUED FOR
2	4/29/24	REVISION
1	10/18/23	2023 CODE UPDATE
-	12/19/22	1ST SUBMITTAL