

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

## GENERAL NOTES:

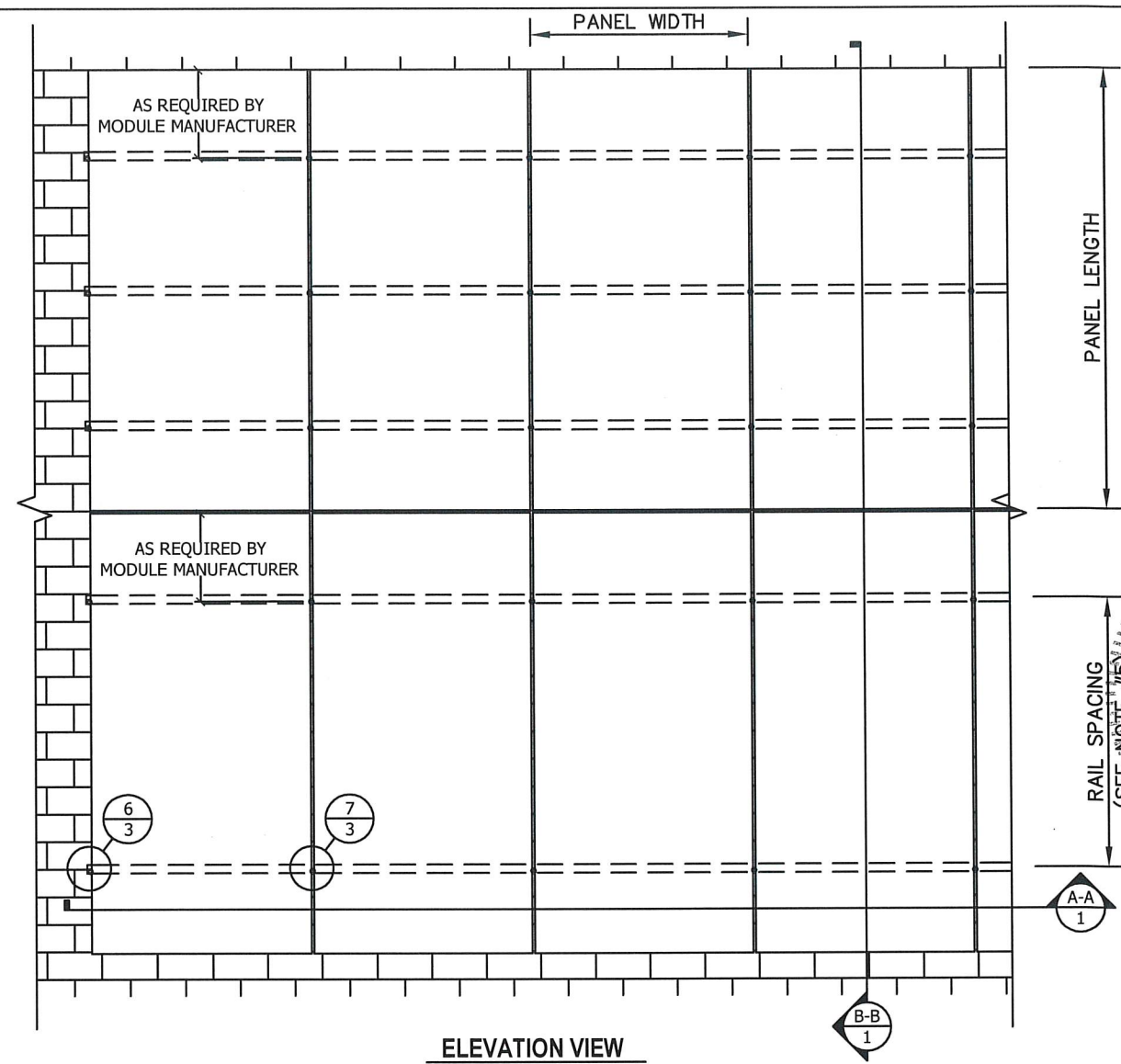
1. THIS SYSTEM MEETS ALL OF THE REQUIREMENTS OF THE 7TH EDITION (2020) FLORIDA BUILDING CODE, INCLUDING THE HVHZ PROVISIONS.
2. THIS SYSTEM HAS BEEN TESTED PER TAS 100(A) AND ASTM D7147. IT IS NOT A PART OF THE BUILDING ENVELOPE, AND IMPACT RESISTANCE IS NOT REQUIRED.
3. THIS SYSTEM SHALL BE INSTALLED 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:

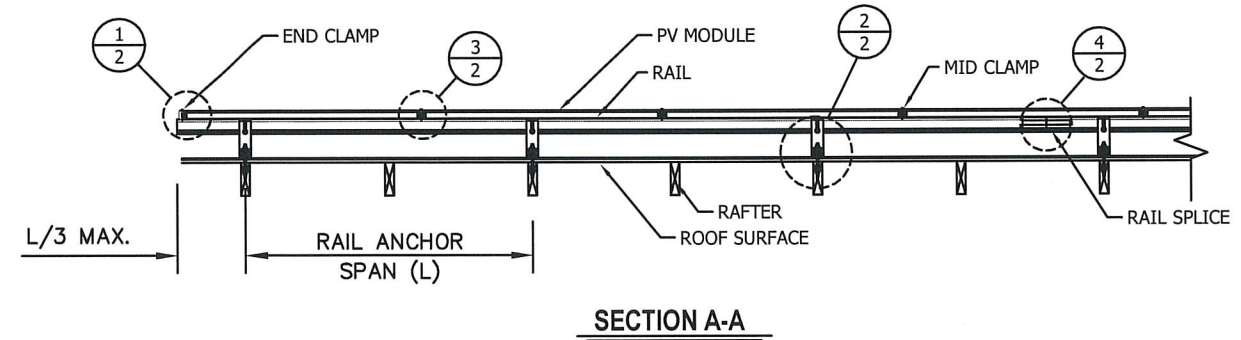
1. DESIGN WINDLOADS MUST BE CALCULATED BY A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT FOR EACH PROJECT, PER ASCE 7-16 SECTION 29.4.4. DESIGN WINDLOADS MAY NOT EXCEED THE ALLOWABLE WINDLOADS SHOWN IN THIS CHART.
2. PANEL SYSTEM LOCATION, HEIGHT, AND SPACING MUST MEET THE REQUIREMENTS OF ASCE 7-16 SECTION 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 WINDLOADS ARE BASED ON ANCHORING IN WOOD RAFTERS WITH S.G.=0.42 MIN.

THREE RAIL SYSTEM:

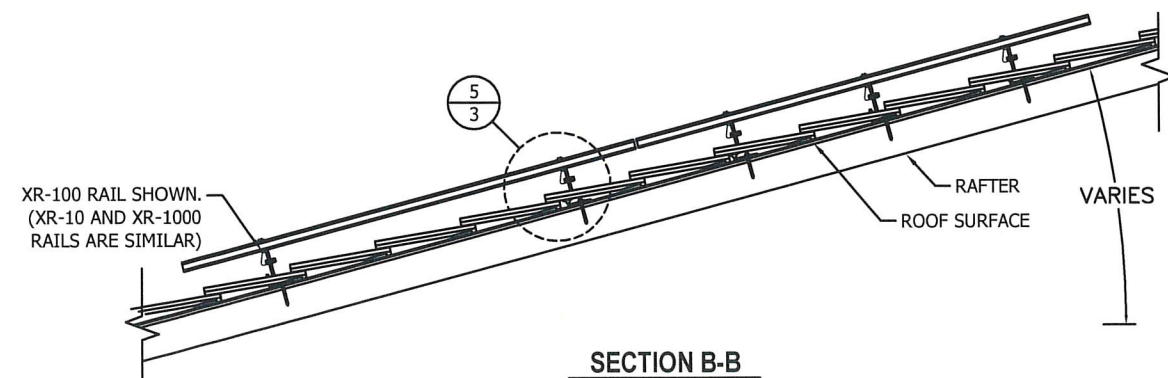
TWO RAIL SYSTEM:



ELEVATION VIEW



SECTION A-A



SECTION B-B

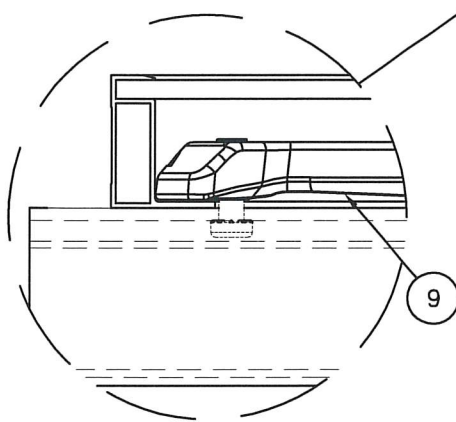
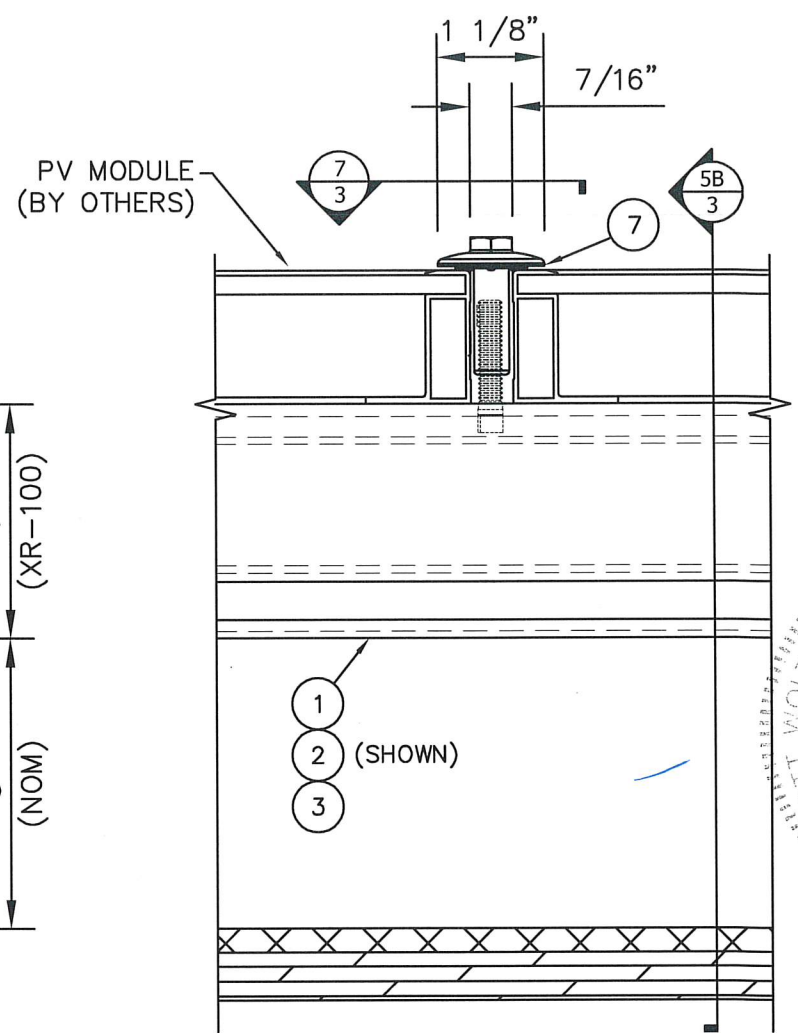
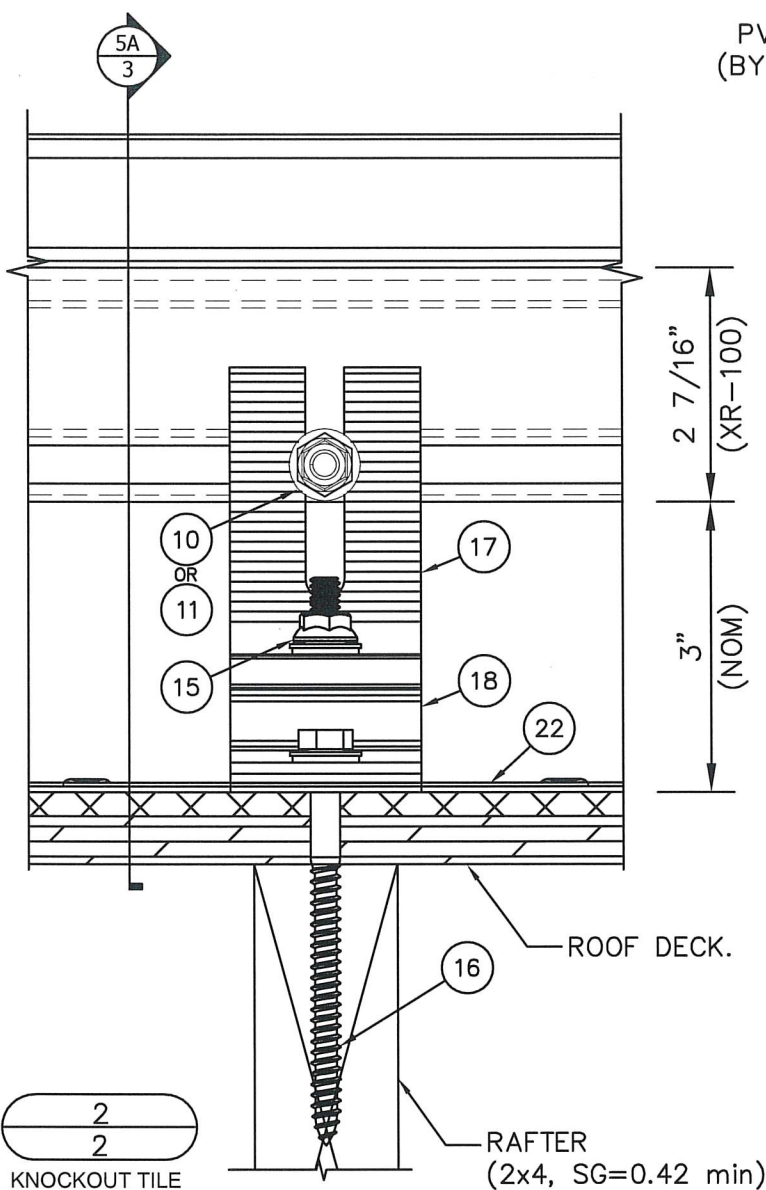
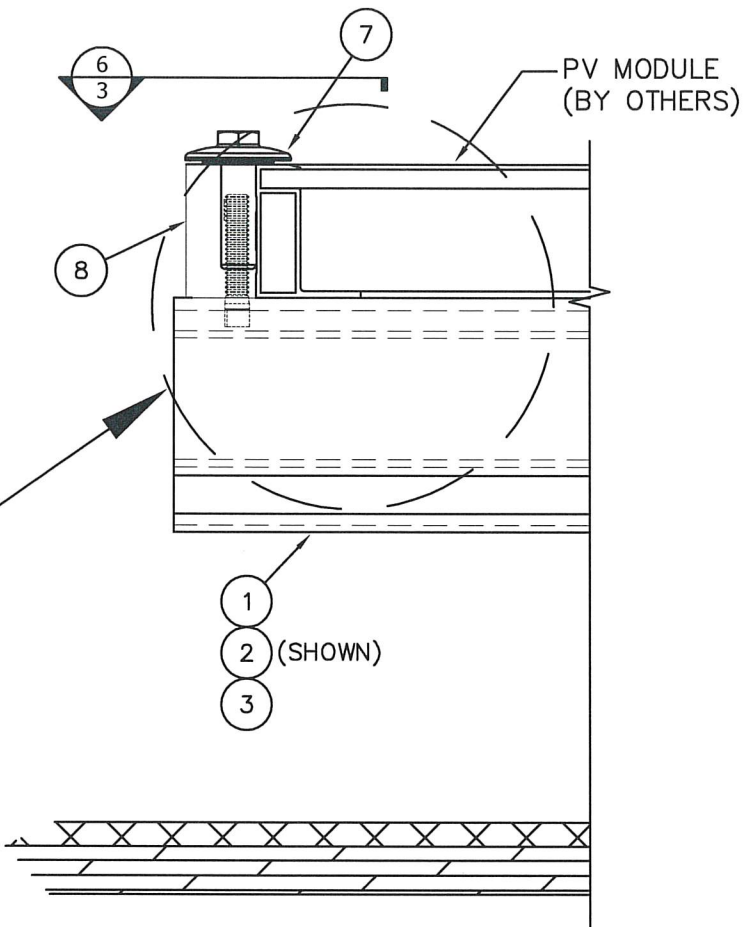
## ALLOWABLE WINDLOADS

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	
	64	23.7	43.9	43.9	64			35.6	65.9	65.9		
	86	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	
	64	22	40.9	40.9	64			33.0	61.4	61.4		
	92 1/2	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				
LANDSCAPE LAYOUT:	45	92 1/2	72	17.3	33	33	45	92 1/2	72	26.0	49.5	49.5
			16	60.4	60.4	60.4			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					

12/19/22 DATE  
 REV.#  
 PRINTS ISSUED FOR  
 1ST SUBMITTAL  
 SCOTT WOLTERS  
 FL PE# 62354  
 WOLTERS ENGINEERING  
 (COA# 27194)  
 15211 97TH ROAD N  
 WEST PALM BEACH, FL 33412  
 (561) 225-1982  
 STATE OF FLORIDA  
 PROFESSIONAL ENGINEER  
 DEC 19 2022  
 SEAL: SCOTT WOLTERS  
 No. 62354

**IRONRIDGE**  
 DWG: XR-TKO  
 SHEET: 1/8  
 PHONE: (800) 227-9523  
 info@ironridge.com  
 28357 INDUSTRIAL BLVD.  
 HAYWARD, CA 94545

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WITH IRONRIDGE KNOCKOUT TILE AND L-FOOT ROOF ATTACHMENTS**

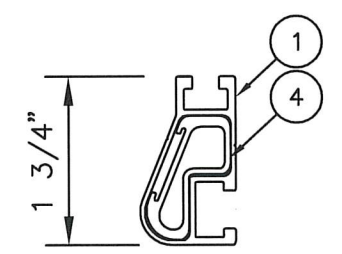
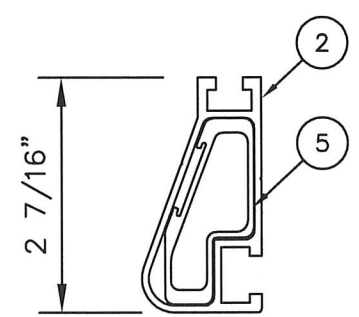
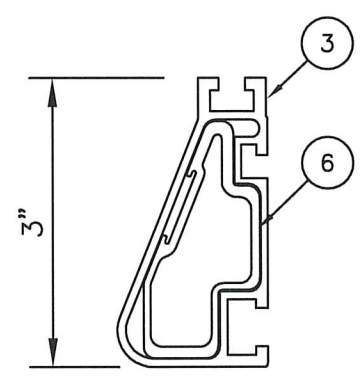
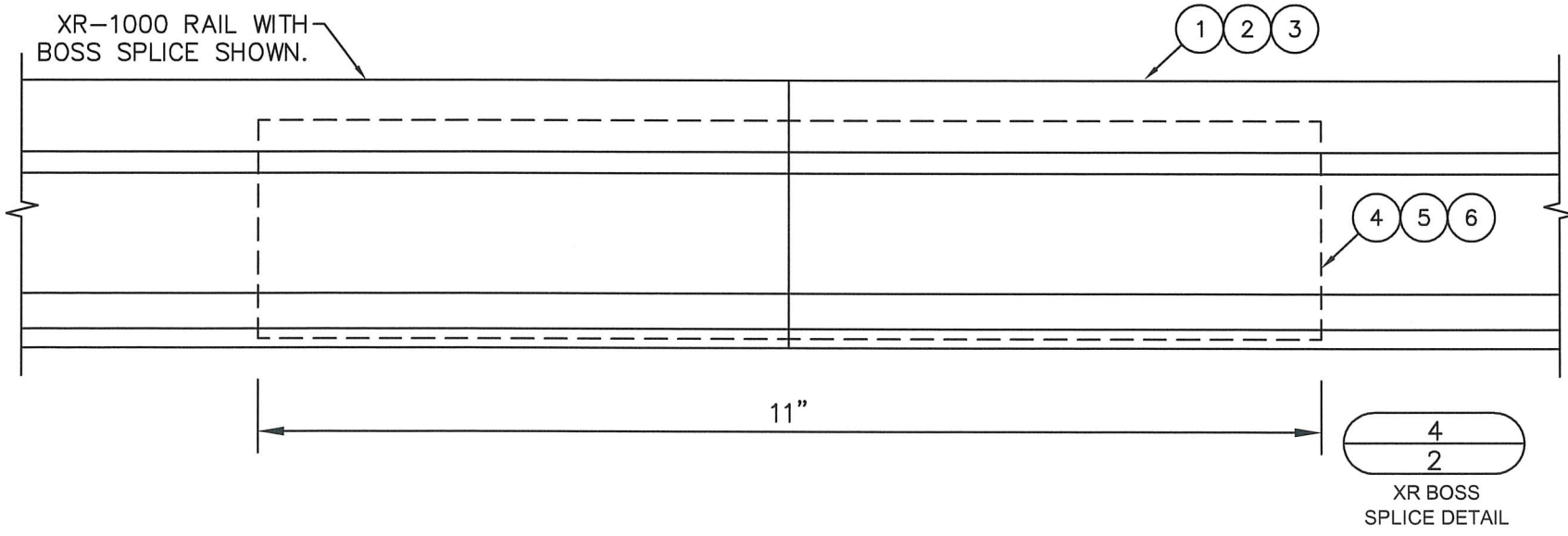


1B  
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ALTERNATE CAMO  
END-CLAMP DETAIL

1  
2  
UFO END-CLAMP  
WITH STOPPER SLEEVE

2  
2  
KNOCKOUT TILE  
DETAIL

3  
2  
XR RAIL WITH  
MID-CLAMP DETAIL



SPLICE MAY NOT BE  
LOCATED IN A CANTILEVER.

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STATE OF FLORIDA  
PROFESSIONAL ENGINEER  
SEAL: [Signature]  
No. 62354  
DEC 15 2022

DATE: 12/19/22  
REV.#: [Blank]  
PRINTS ISSUED FOR: [Blank]

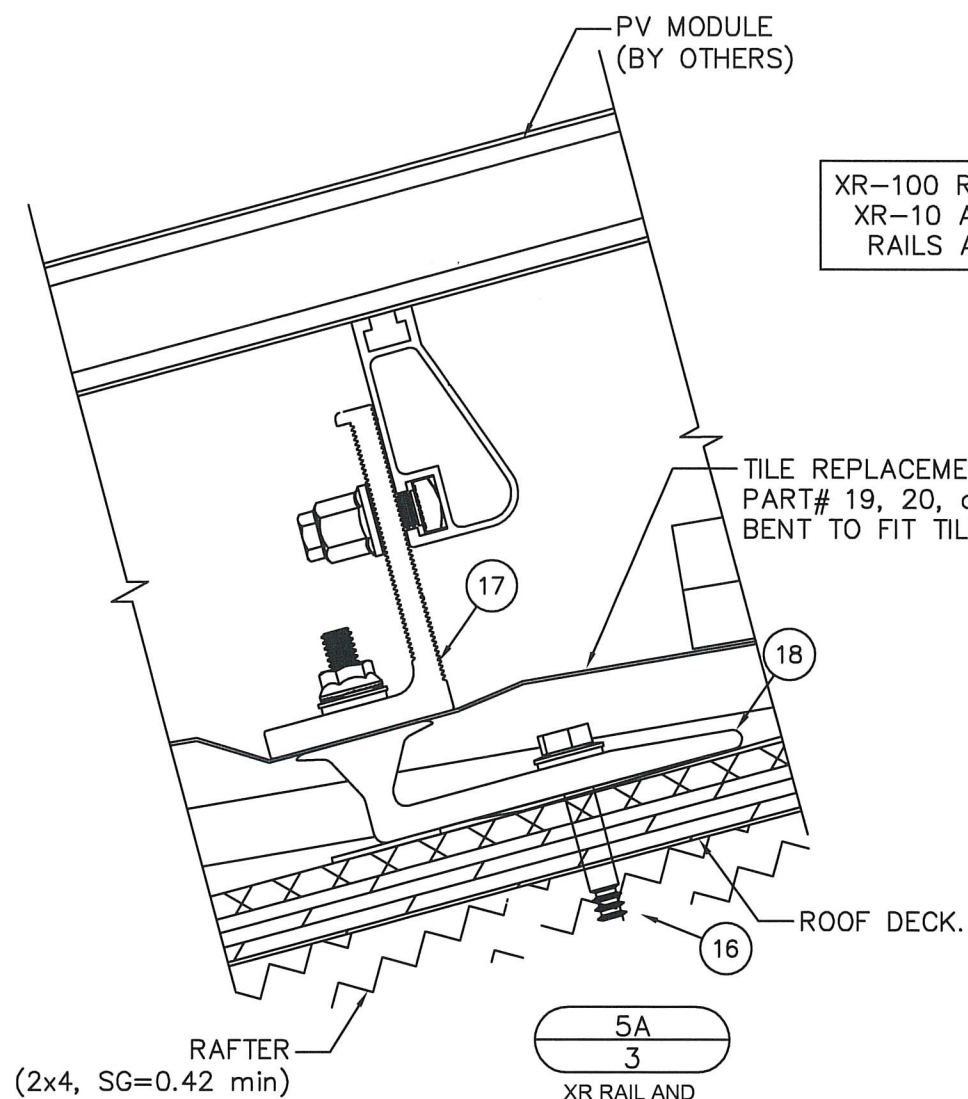
**IRONRIDGE**

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HAYWARD, CA 94545

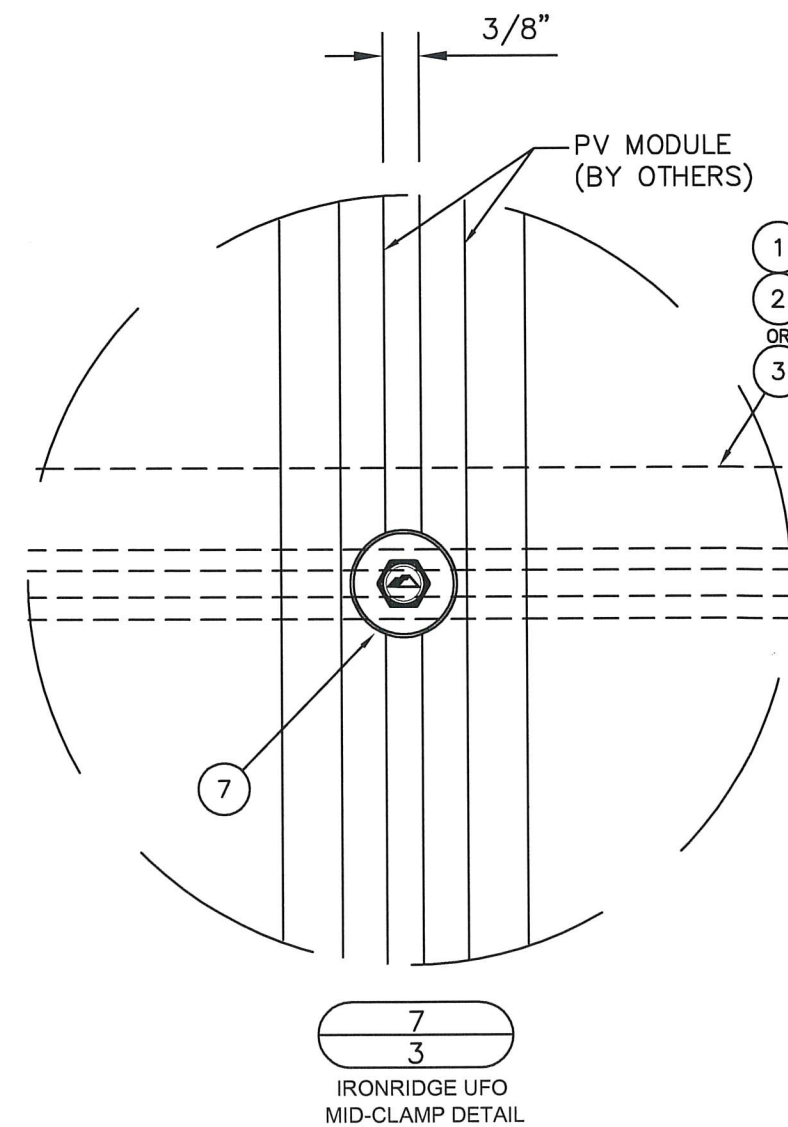
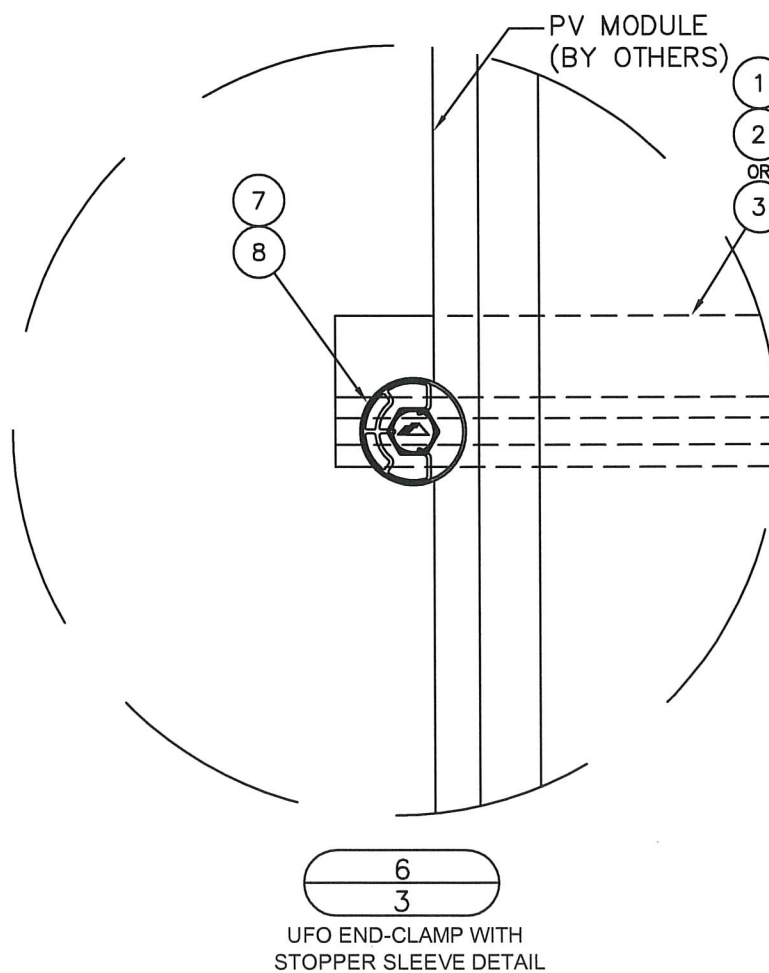
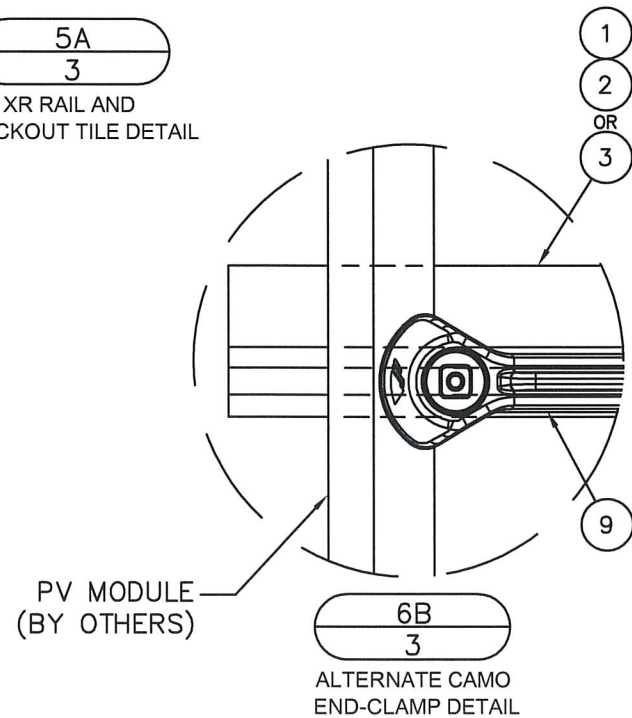
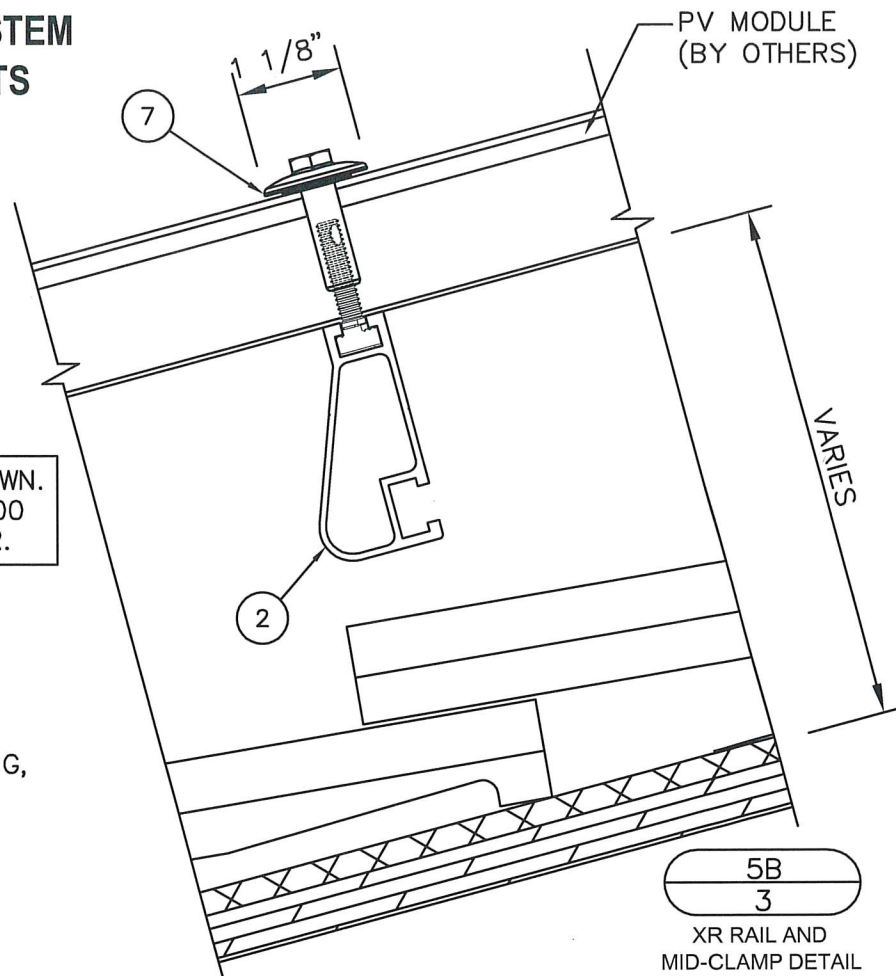
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DWG: XR-TKO  
SHEET: 2/8

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



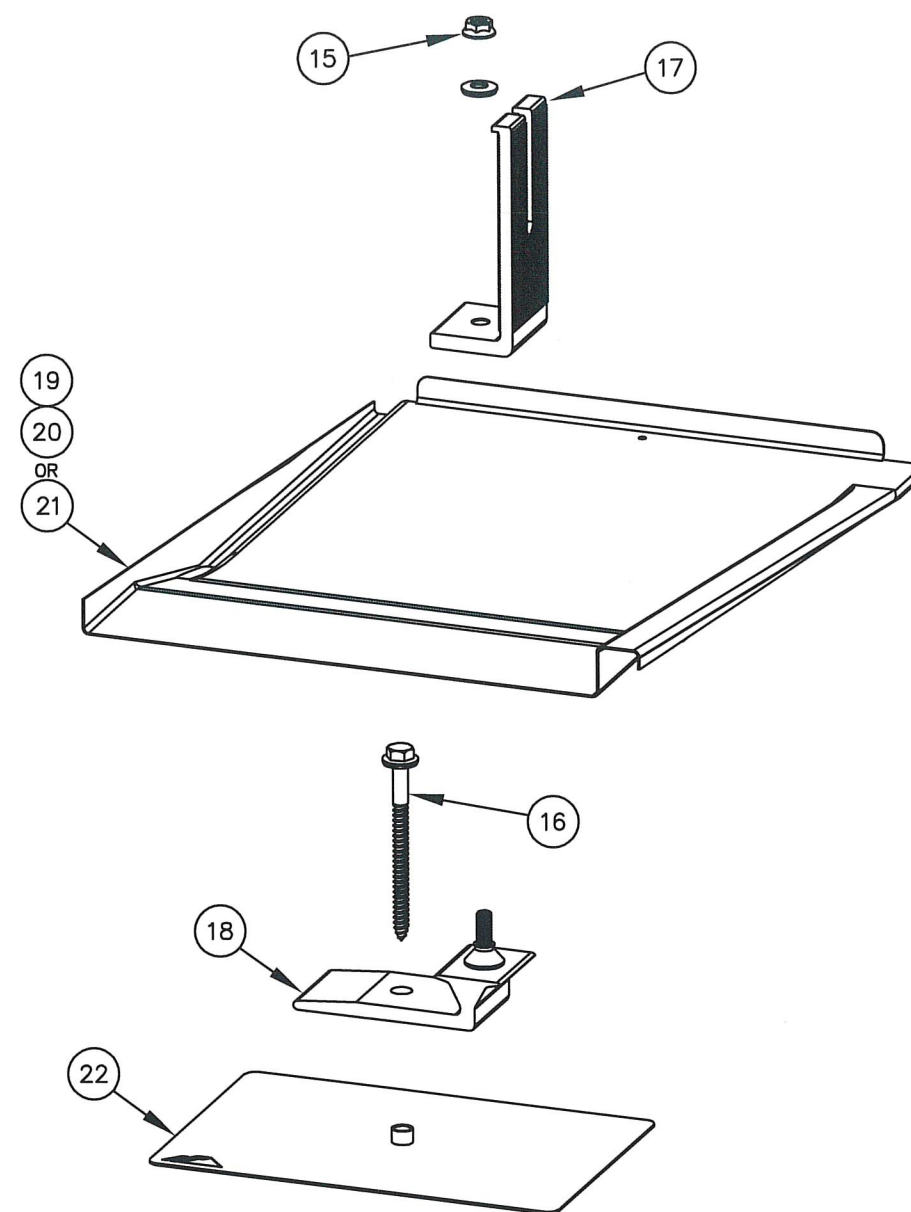
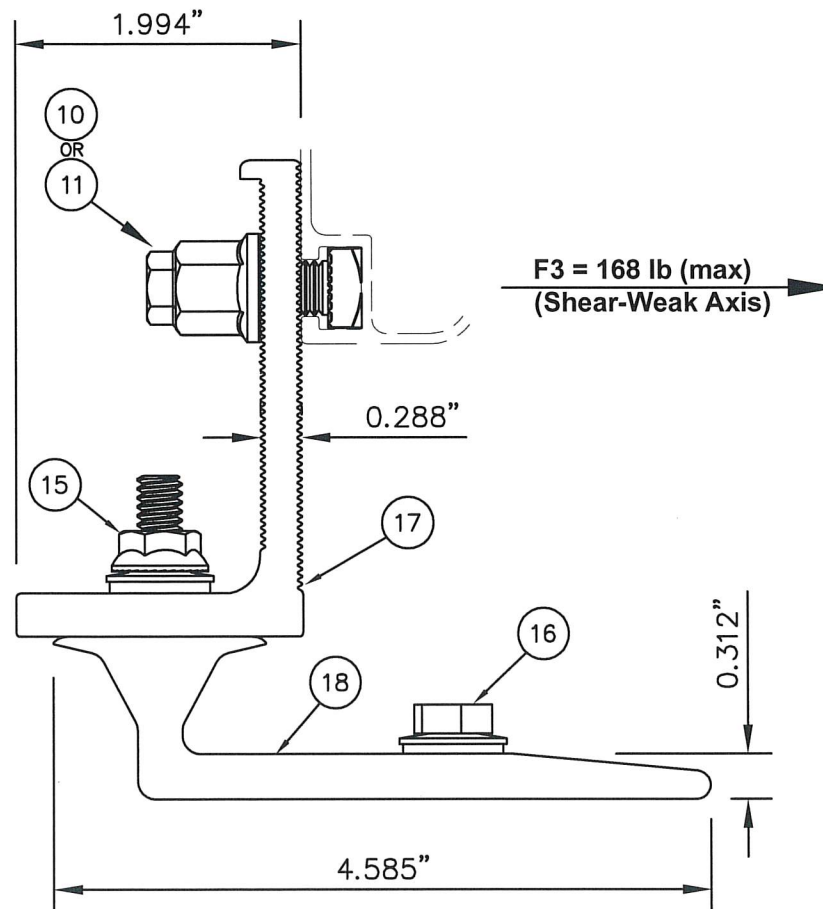
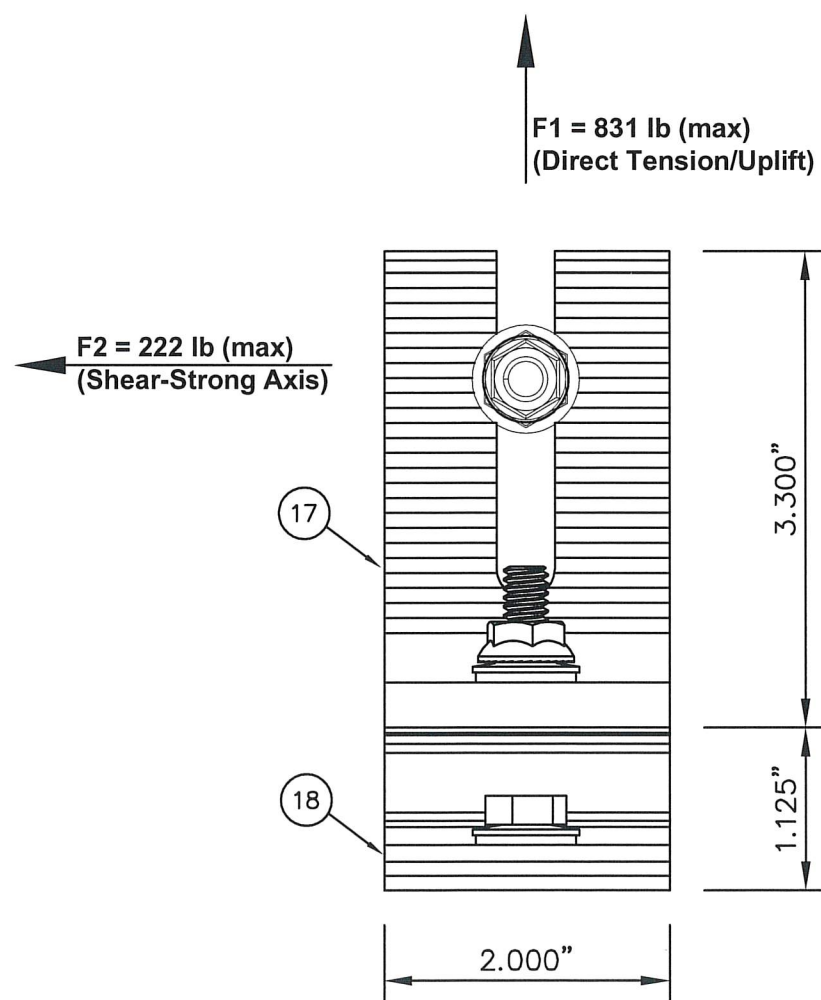
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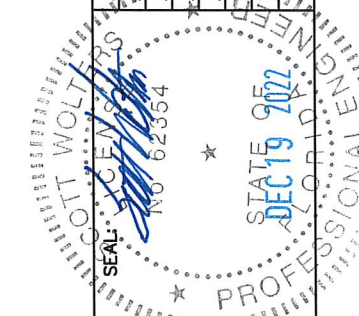
# IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM WITH IRONRIDGE KNOCKOUT TILE AND L-FOOT ROOF ATTACHMENTS

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:**

- 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.



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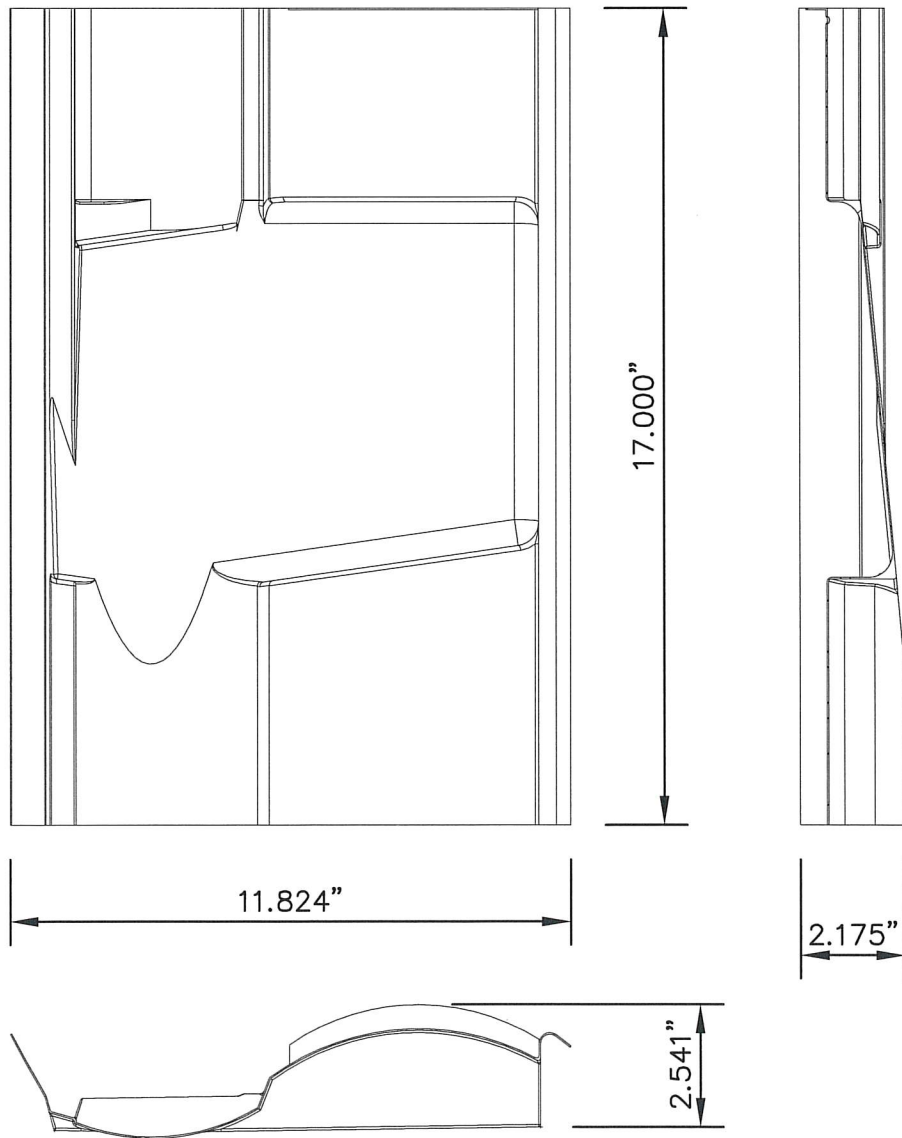
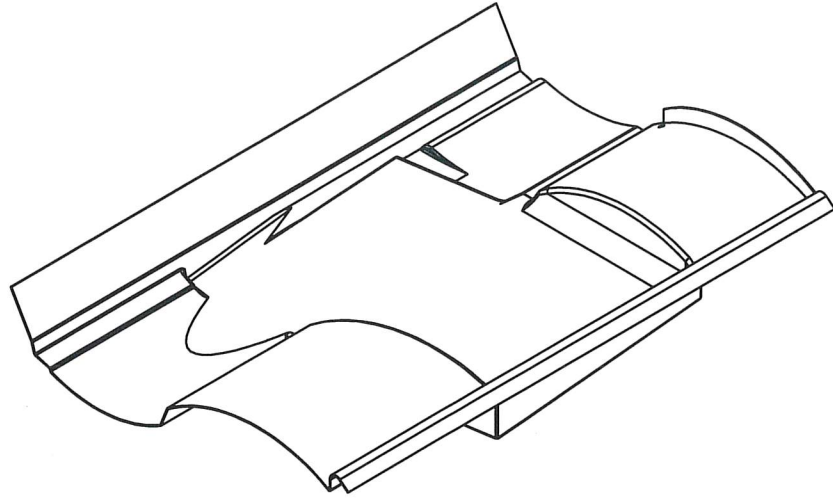
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 info@ironridge.com

DWG: XR-TKO  
 SHEET: 4/8

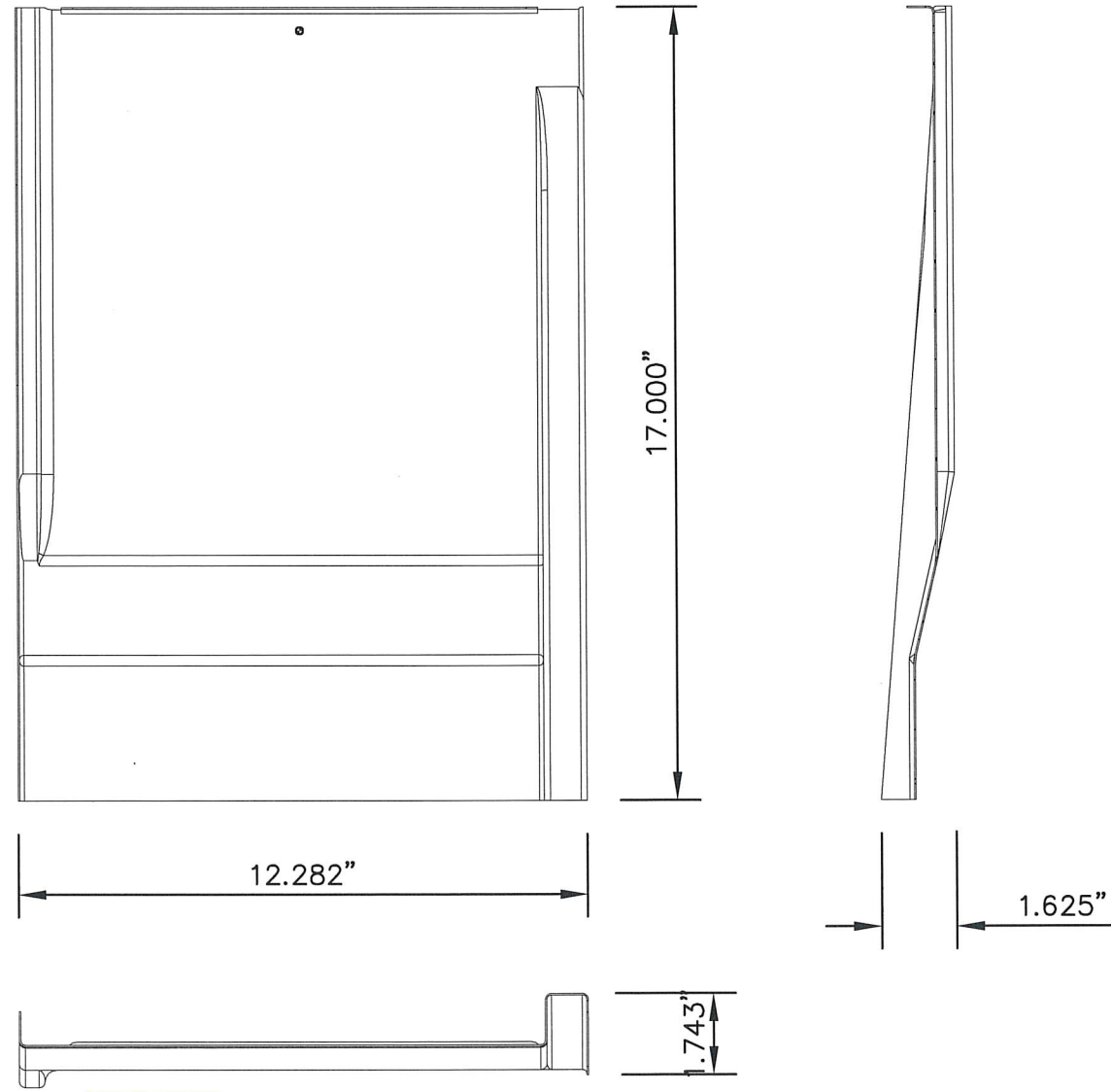
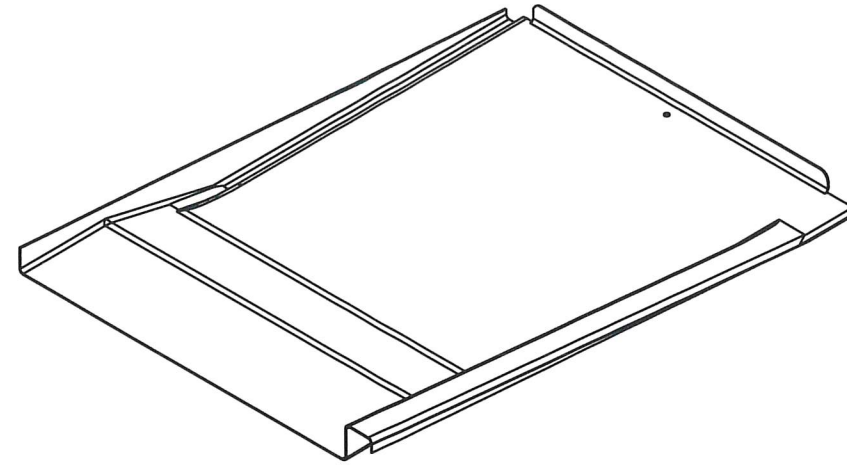
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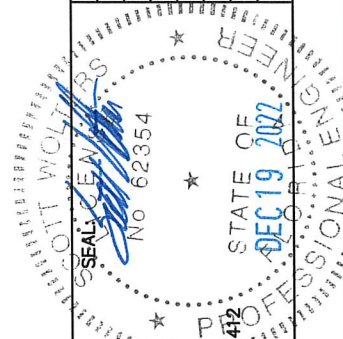
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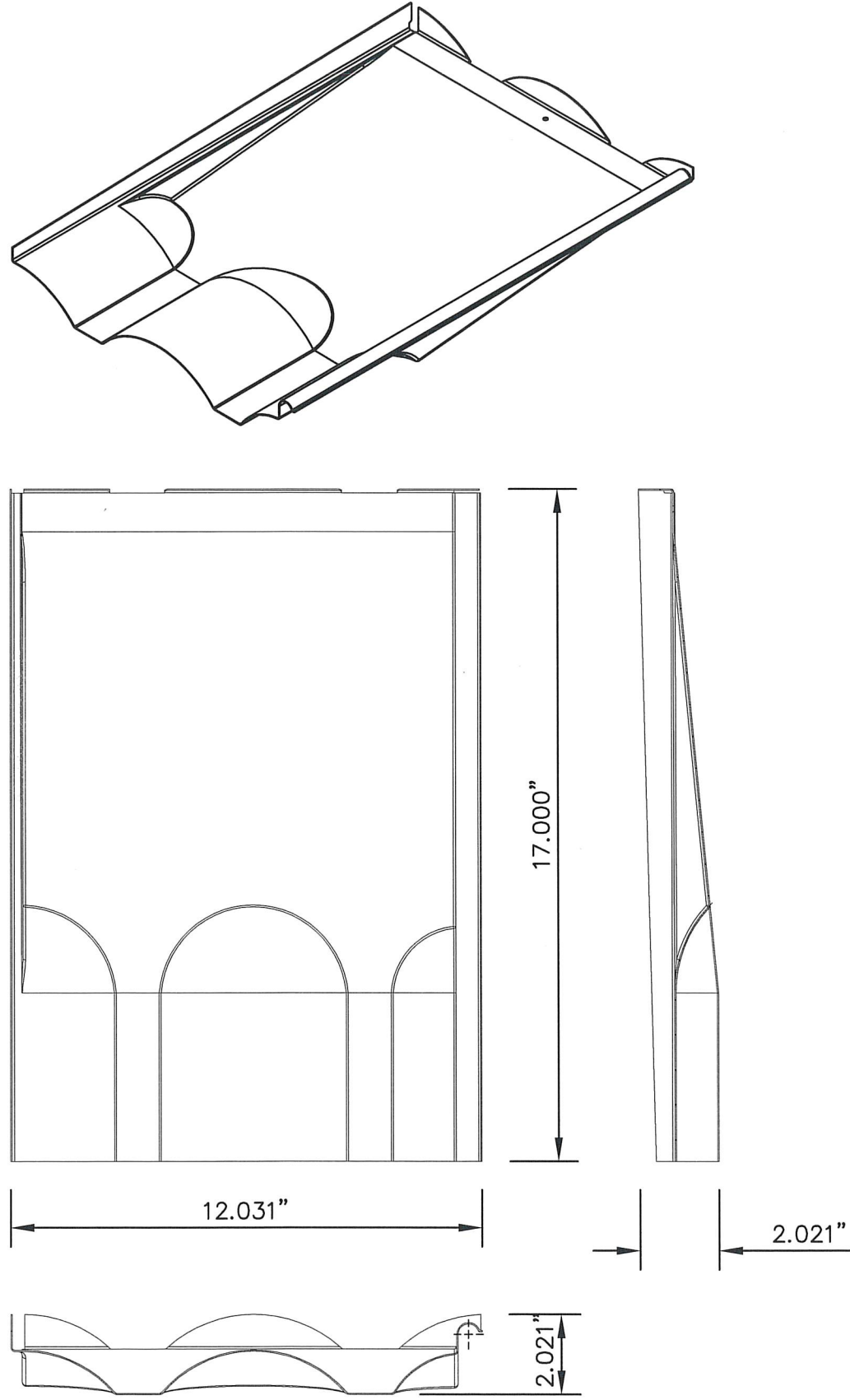
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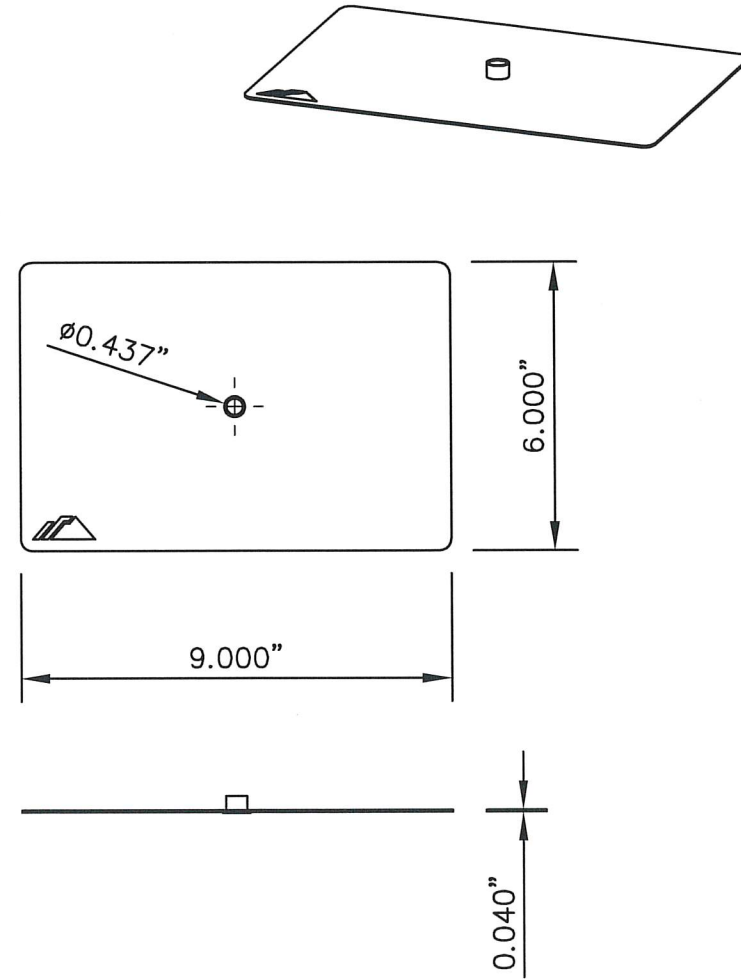
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DWG: XR-TKO  
 SHEET: 5/8

**IRONRIDGE XR FLUSH MOUNT PHOTOVOLTAIC PANEL RACKING SYSTEM  
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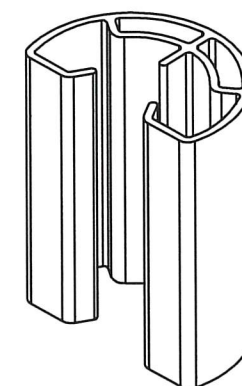
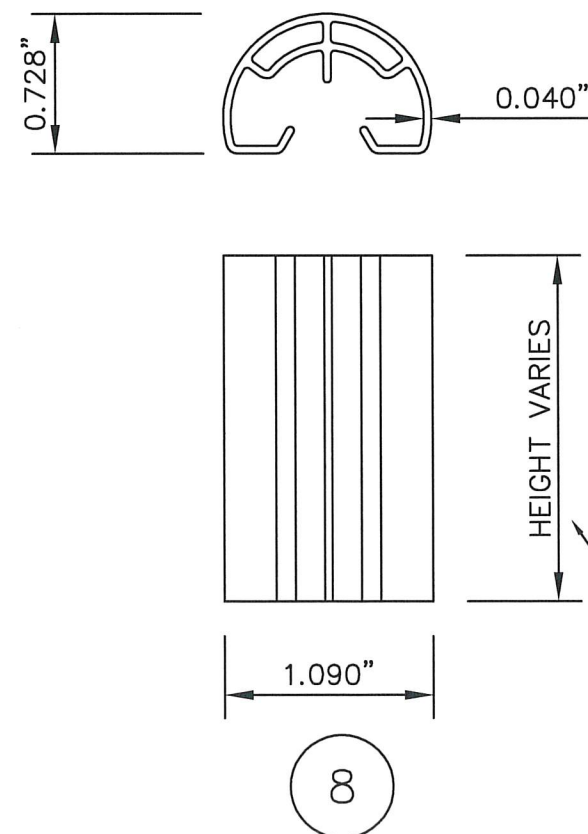
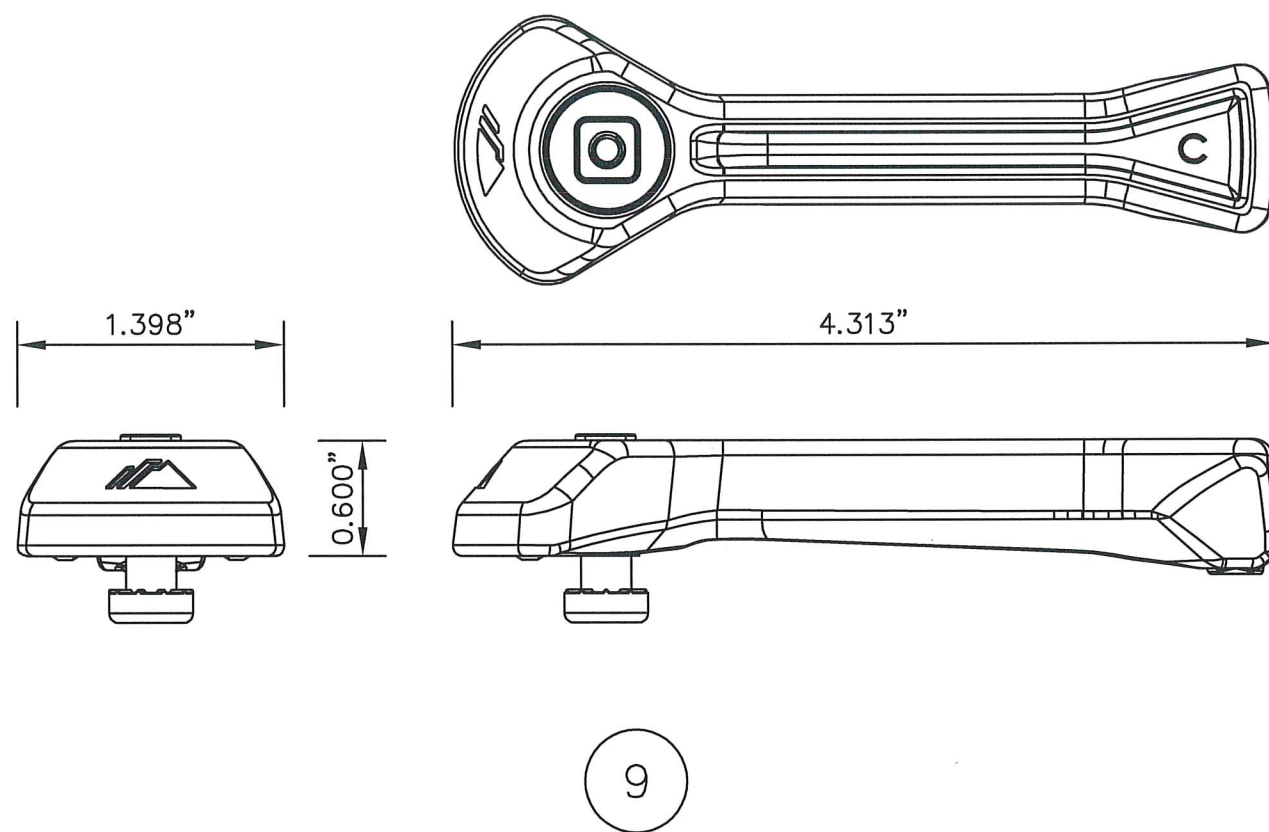
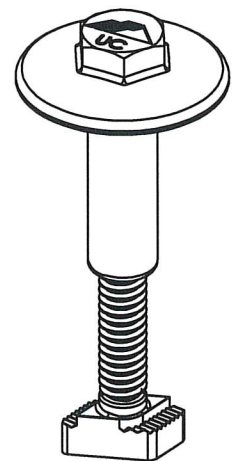
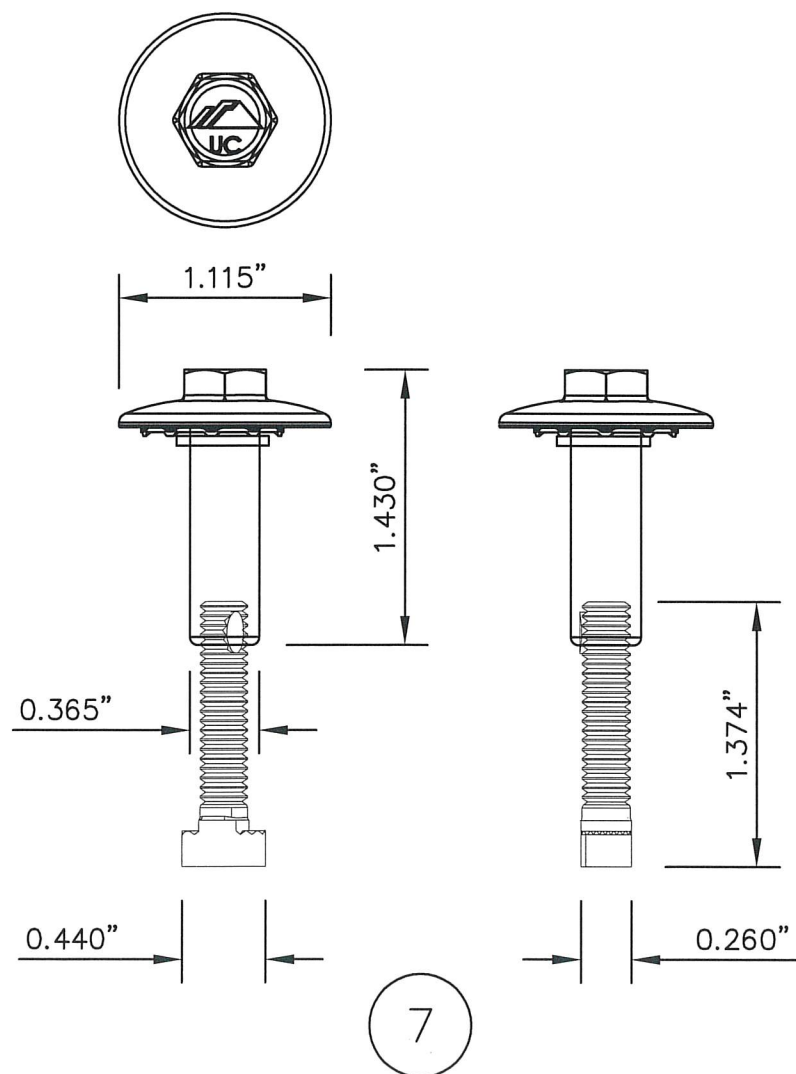
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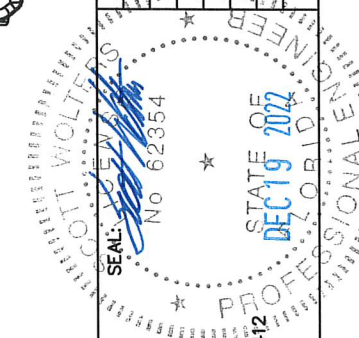
BILL OF MATERIALS- XR System		
#	DESCRIPTION	MATERIALS/NOTES
1	XR-10 RAIL	6000 SERIES AL
2	XR-100 RAIL	6000 SERIES AL
3	XR-1000 RAIL	6000 SERIES AL
4	XR-10 BOSS SPLICE	6000 SERIES AL & 300 SERIES SS
5	XR-100 BOSS SPLICE	6000 SERIES AL & 300 SERIES SS
6	XR-1000 BOSS SPLICE	6000 SERIES AL & 300 SERIES SS
7	UFO UNIVERSAL MODULE CLAMP	300 SERIES SS
8	STOPPER SLEEVE	6000 SERIES AL
9	CAMO HIDDEN END CAM	300 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.



HEIGHT VARIES TO MATCH PV PANEL HEIGHT.



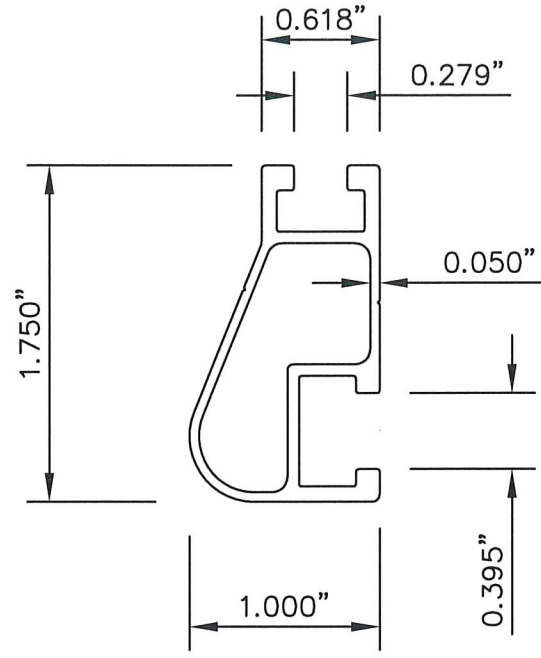
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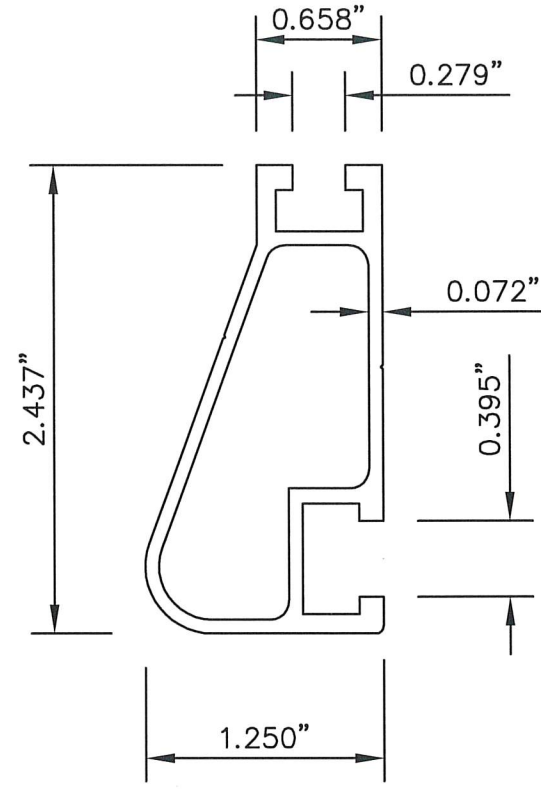
DWG: XR-TKO  
SHEET: 7/8

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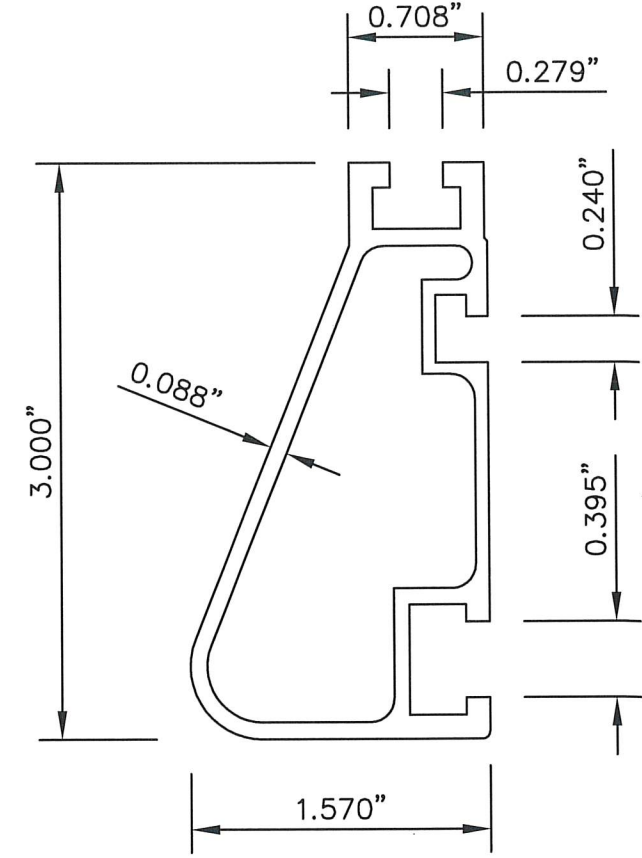
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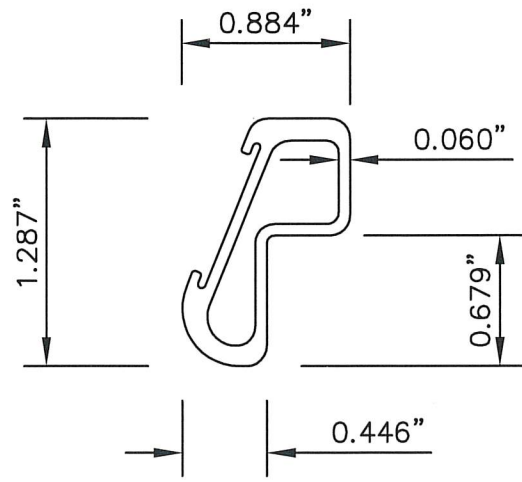
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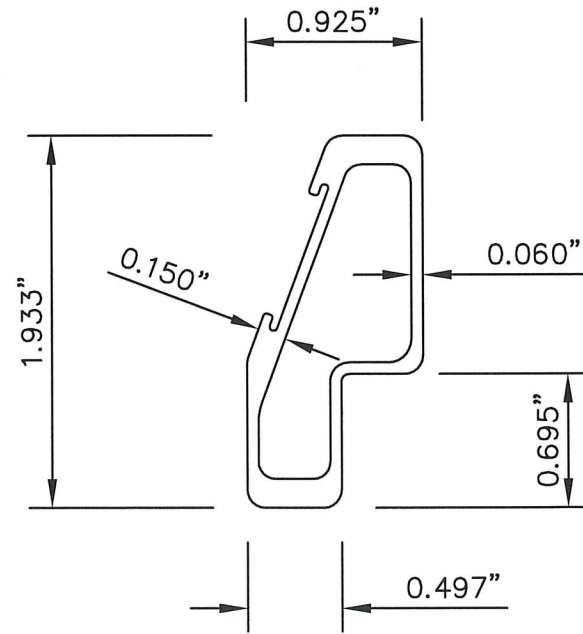
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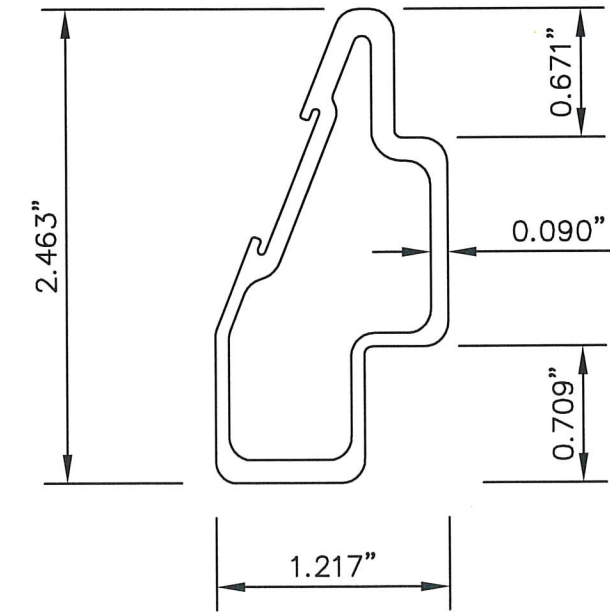
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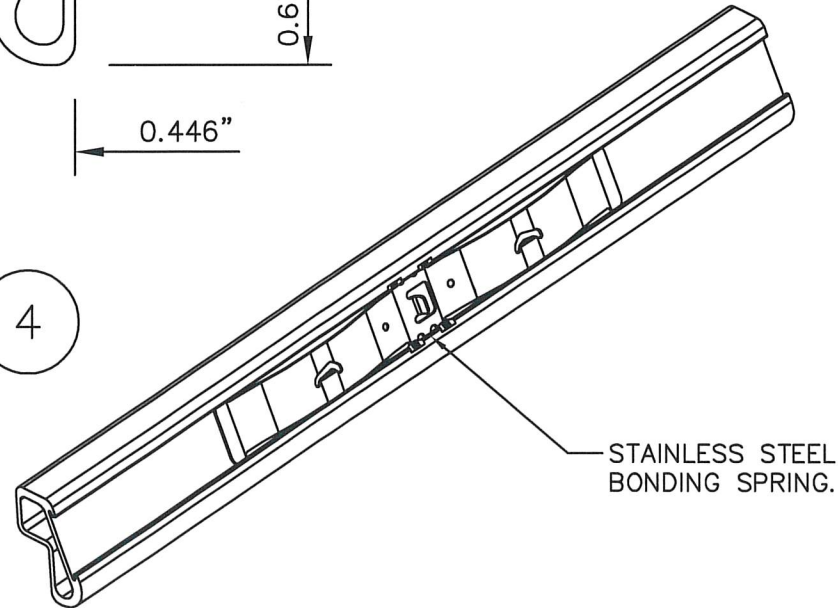
4



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