

ECOFASTEN CLICKFIT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH CLICKFIT SMART FOOT ROOF ATTACHMENT

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 ECOFASTEN CLICKFIT 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.

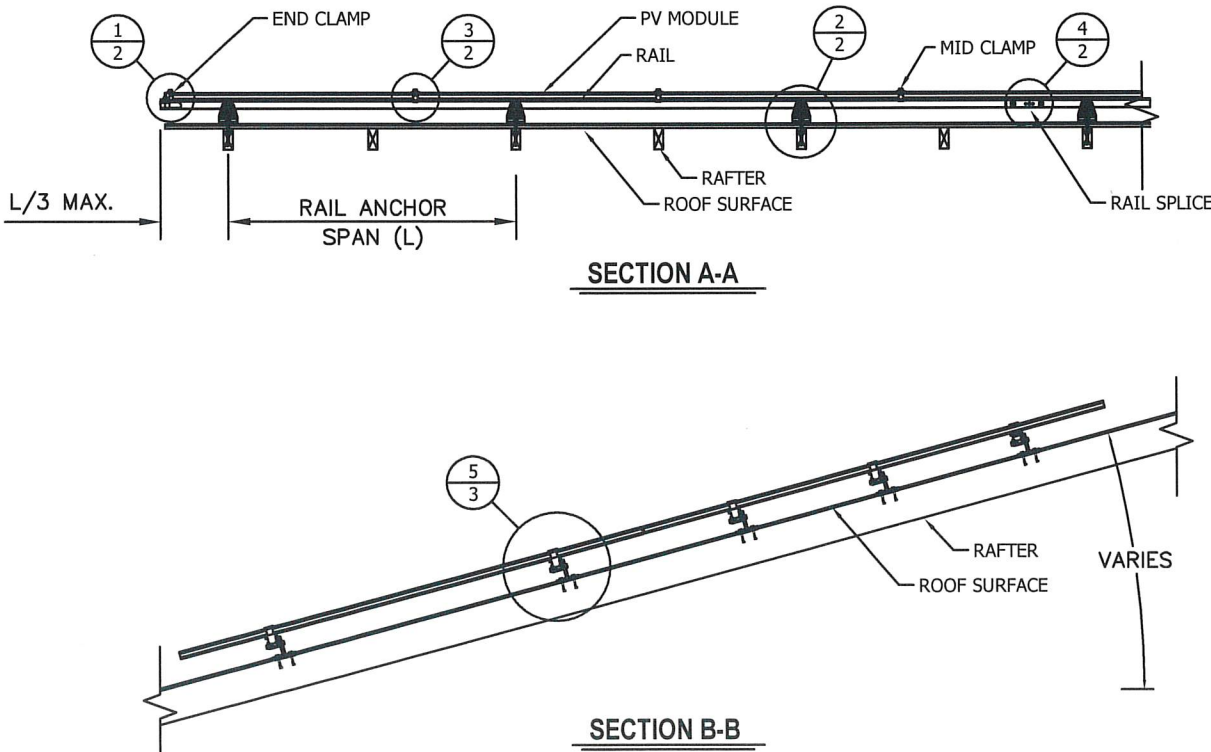
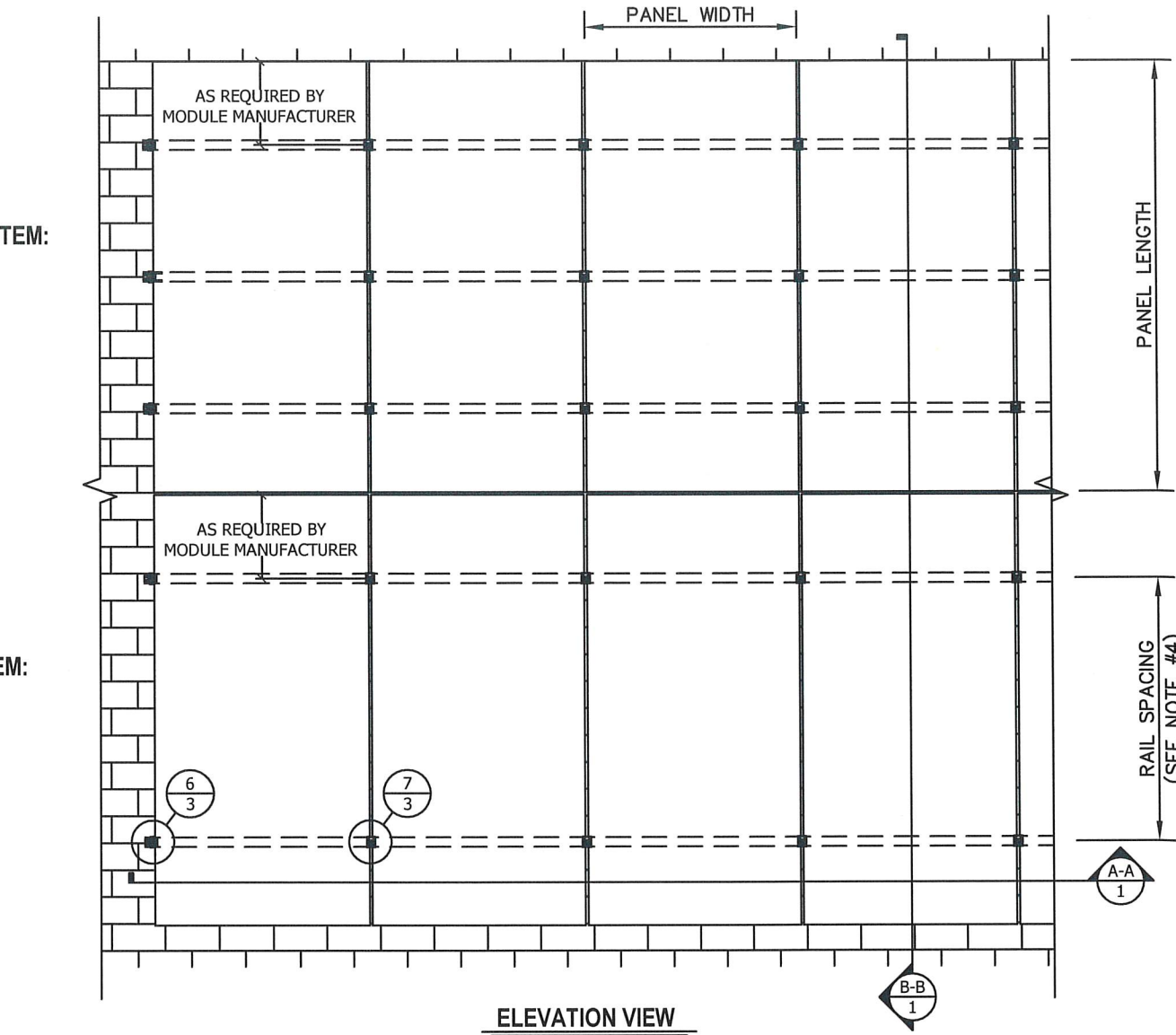
WINDLOAD NOTES:

- 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 WINDLOADS (ASD) MAY NOT EXCEED THE ALLOWABLE WINDLOADS SHOWN IN THE CHARTS ON THIS SHEET OR SHEET 5.
- 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 BELOW ARE BASED ON ANCHORING IN WOOD RAFTERS WITH S.G.=0.42 MIN. SEE SHEET 5 FOR ALLOWABLE FASTENER PATTERNS, AND FOR ALLOWABLE LOADS FOR FASTENING INTO THE DECK ONLY.

THREE RAIL SYSTEM:

TWO RAIL SYSTEM:

ALLOWABLE WINDLOADS							
TWO RAIL SYSTEM				THREE RAIL SYSTEM			
FASTENER PATTERN 1 or 2				FASTENER PATTERN 1 or 2			
PANEL WIDTH	PANEL LENGTH	ANCHOR SPAN (L)	ALLOWABLE WINDLOAD	PANEL WIDTH	PANEL LENGTH	ANCHOR SPAN (L)	ALLOWABLE WINDLOAD
(in)	(in)	(in)	(+/- psf)	(in)	(in)	(in)	(+/- psf)
45	67 1/2	16	100	45	67 1/2	16	150.0
		24	100			24	150.0
		32	88.7			32	133.1
		36	78.9			36	118.4
		48	59.2			48	88.8
		64	44.4			64	66.6
		72	37.5			72	56.3
	80	16	84.3		80	16	126.5
		24	84.3			24	126.5
		32	74.9			32	112.4
		36	66.7			36	100.1
		48	49.9			48	74.9
		64	37.4			64	56.1
		72	31.6			72	47.4
	86	16	78.5		86	16	117.8
		24	78.5			24	117.8
		32	69.7			32	104.6
		36	61.9			36	92.9
		48	46.4			48	69.6
		64	34.8			64	52.2
		72	29.4			72	44.1
	92 1/2	16	72.9		92 1/2	16	109.4
		24	72.9			24	109.4
		32	64.8			32	97.2
		36	57.6			36	86.4
		48	43.2			48	64.8
		64	32.4			64	48.6
		72	27.3			72	41.0
LANDSCAPE LAYOUT:							
45	92 1/2	16	72.9	45	92 1/2	16	109.4
		24	72.9			24	109.4
		32	64.8			32	97.2
		36	56.7			36	85.1
		48	39.1			48	58.7
		64	32.4			64	48.6
		72	28.8			72	43.2



SEAL

SCOTT WOLTERS
FL PE# 62354

WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

EcoFasten®
An Esdec Solar Group Company



DWG: ECO-SF

SHEET: 1/7

10/18/23
2023 CODE UPDATE
1ST SUBMITTAL
12/30/22
REV#
DATE

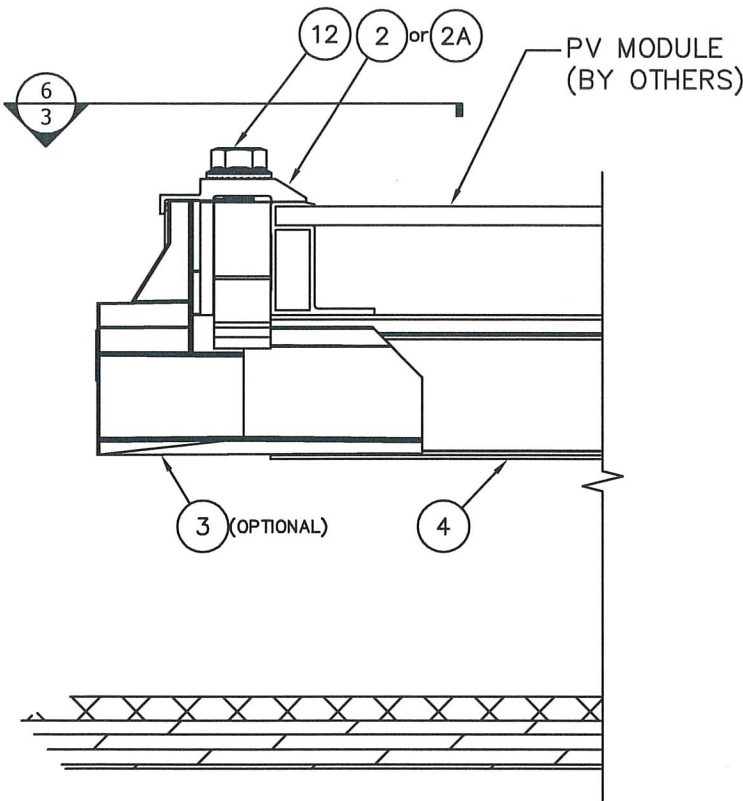
PRINTS ISSUED FOR

DATE

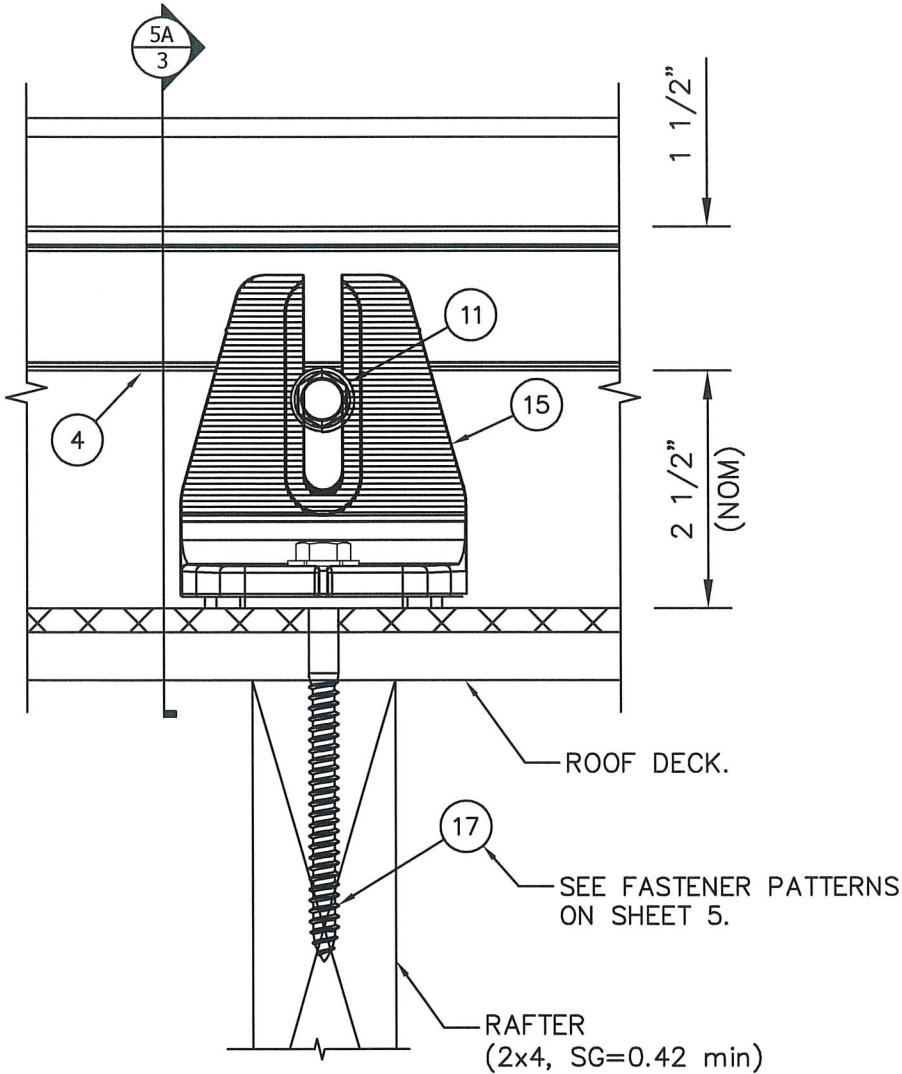
4141 W VAN BUREN ST, SUITE 2
PHOENIX, AZ 85009

PHONE (877) 859-3947
info@ecofastensolar.com

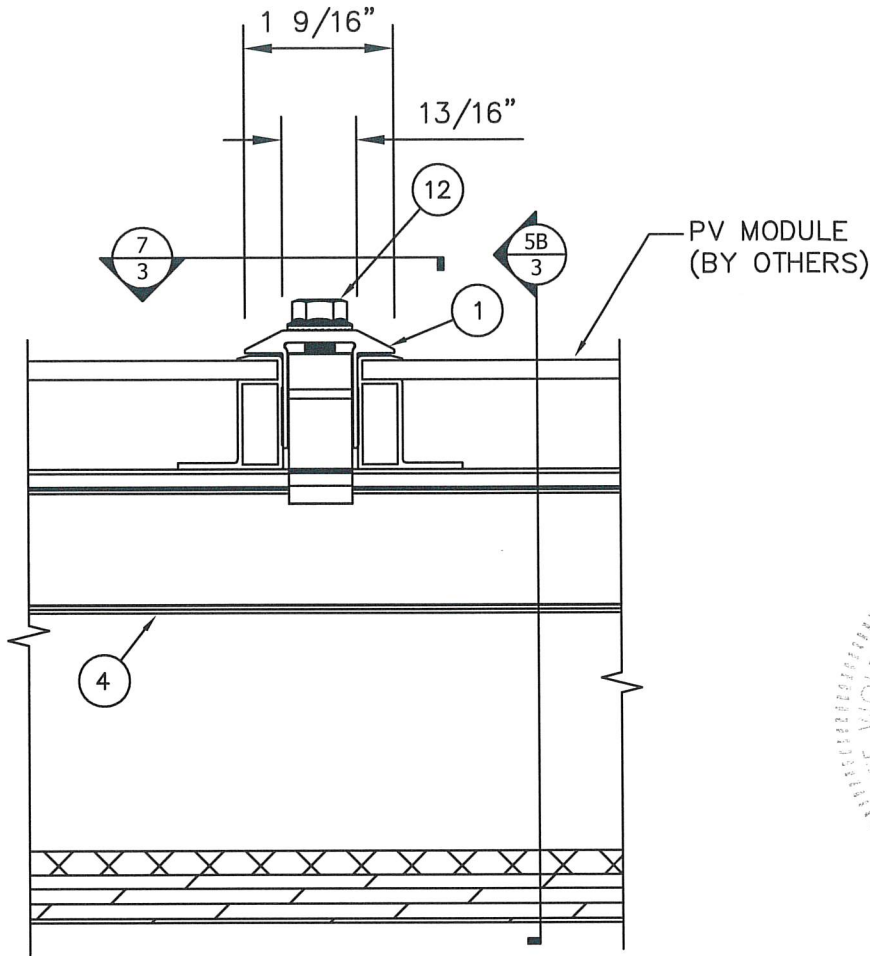
ECOFASTEN CLICKFIT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH CLICKFIT SMART FOOT ROOF ATTACHMENT



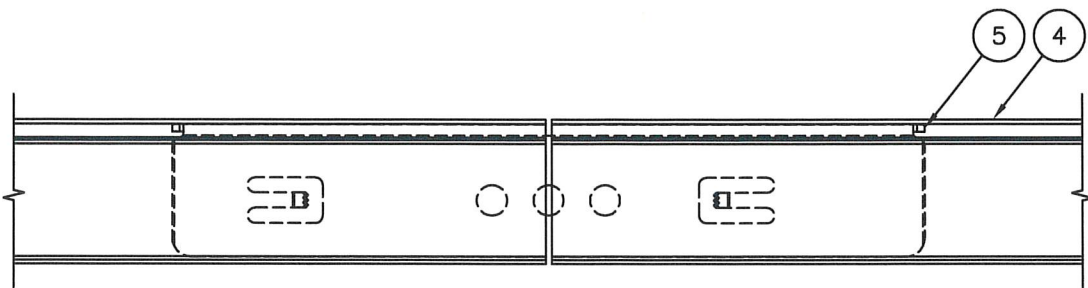
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END-CLAMP DETAIL



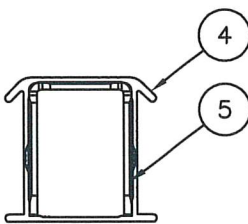
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SMART-FOOT DETAIL



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MID-CLAMP DETAIL



4
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SPLICE DETAIL



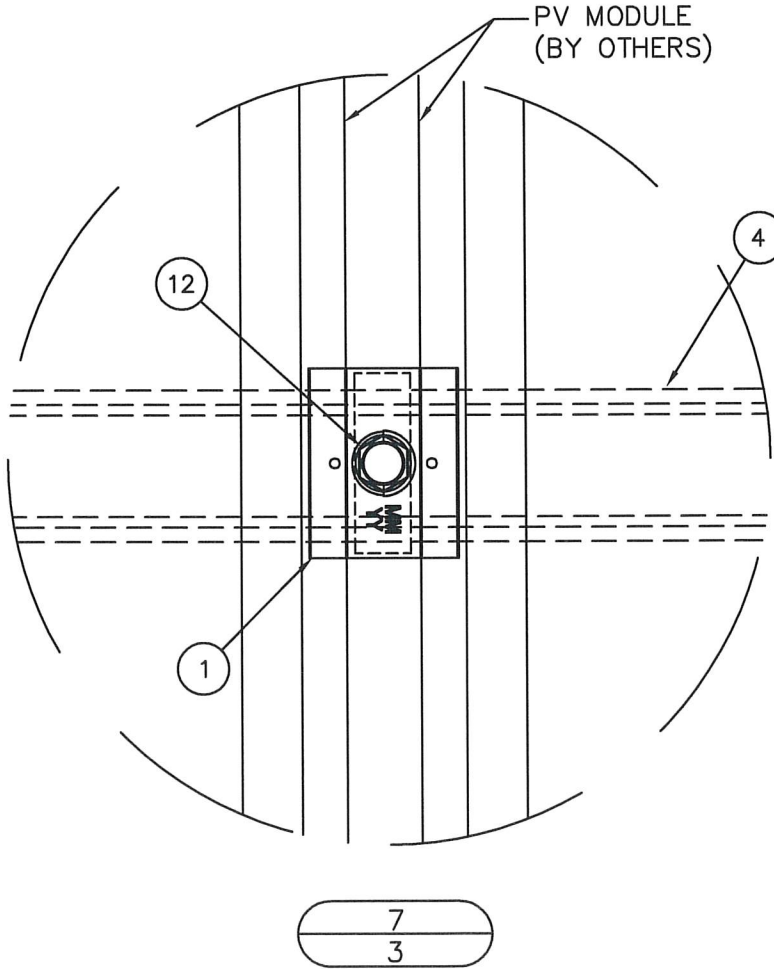
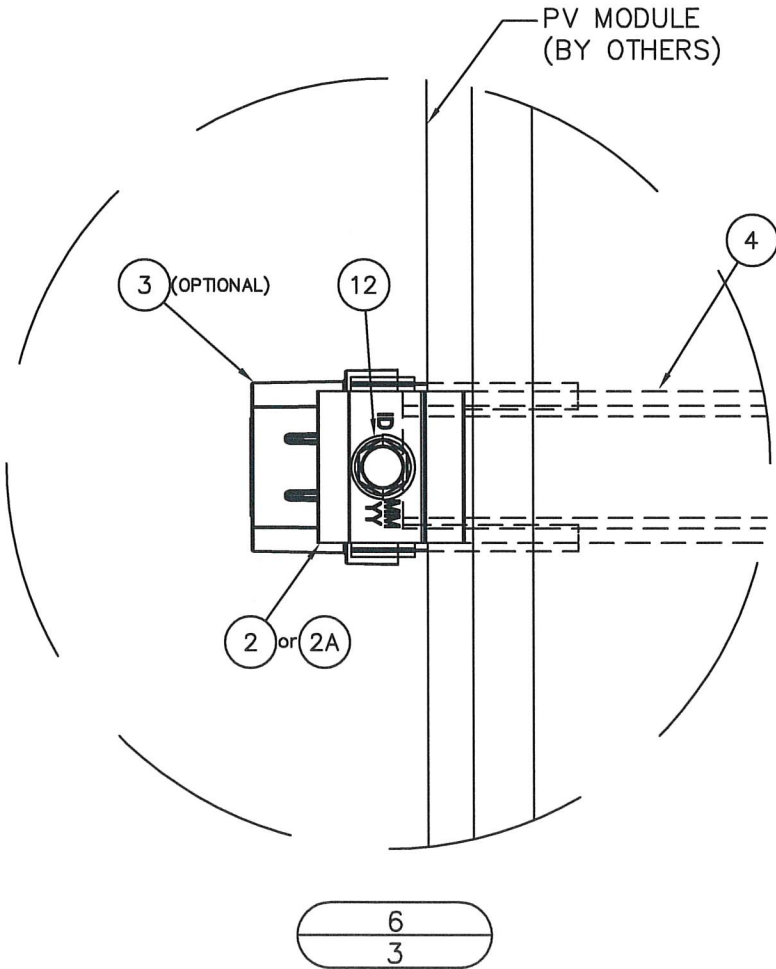
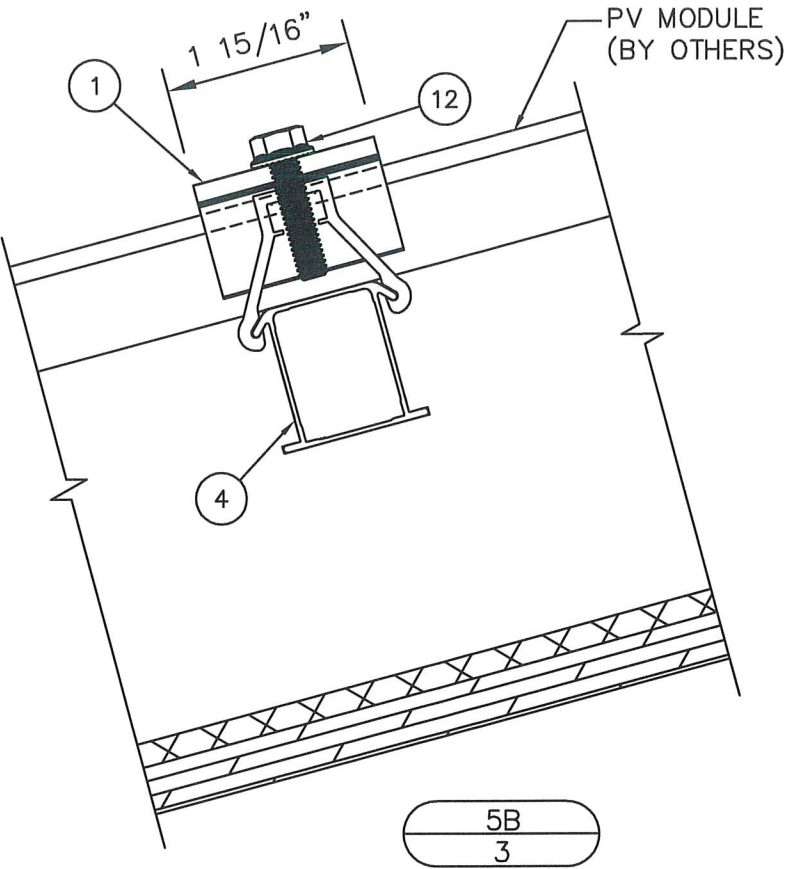
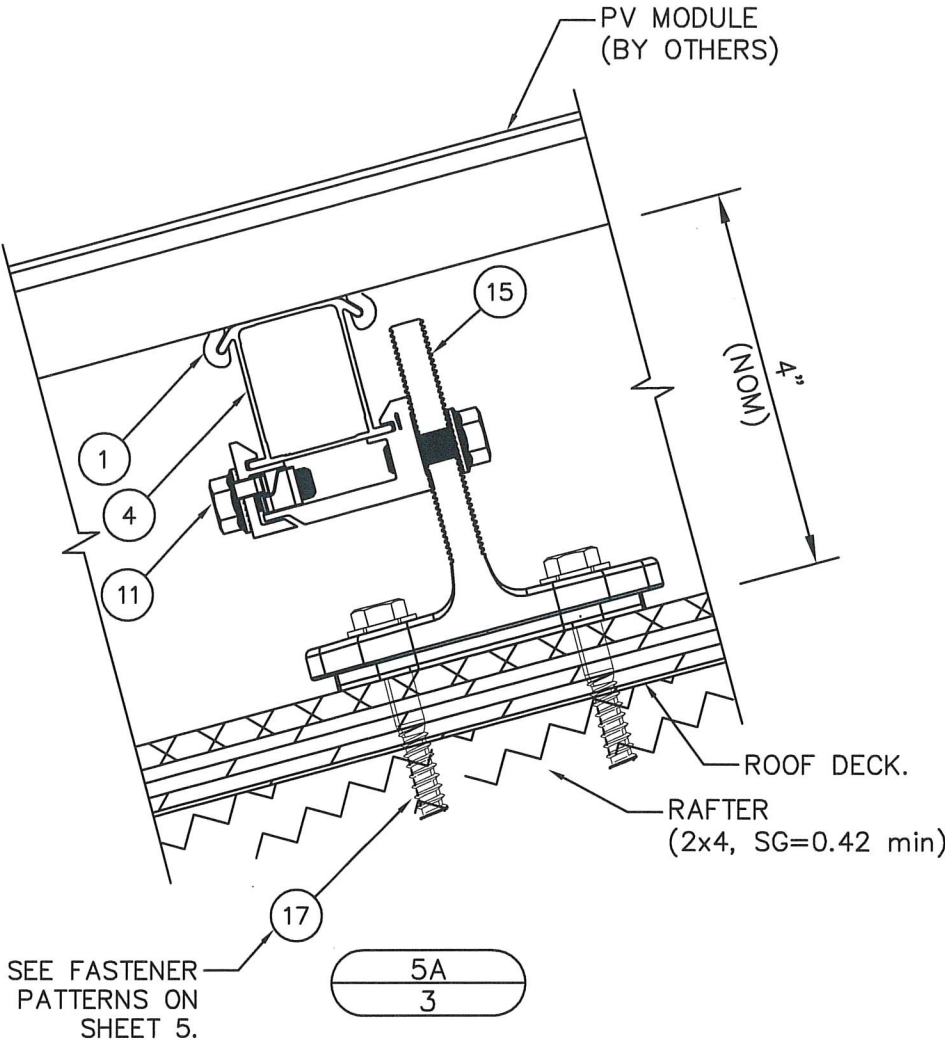
SPLICE LOCATIONS:
SPLICE LOCATIONS MAY NOT BE INSTALLED
IN THE FOLLOWING LOCATIONS:
A. IN A CANTILEVER.
B. WITHIN THE MIDDLE 1/4 OF AN ANCHOR-
TO-ANCHOR SPAN OF THE RAIL.
C. WITHIN 3" OF A ROOF ATTACHMENT.



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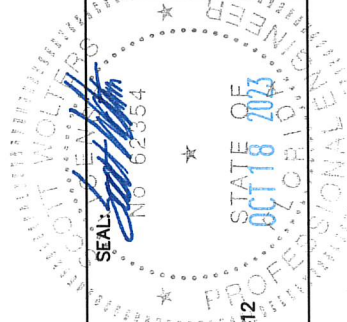
REV.#	DATE	PRINTS ISSUED FOR
1	10/18/23	2023 CODE UPDATE
1	12/30/22	1ST SUBMITTAL

ECOFASTEN CLICKFIT PHOTOVOLTAIC PANEL RACKING SYSTEM
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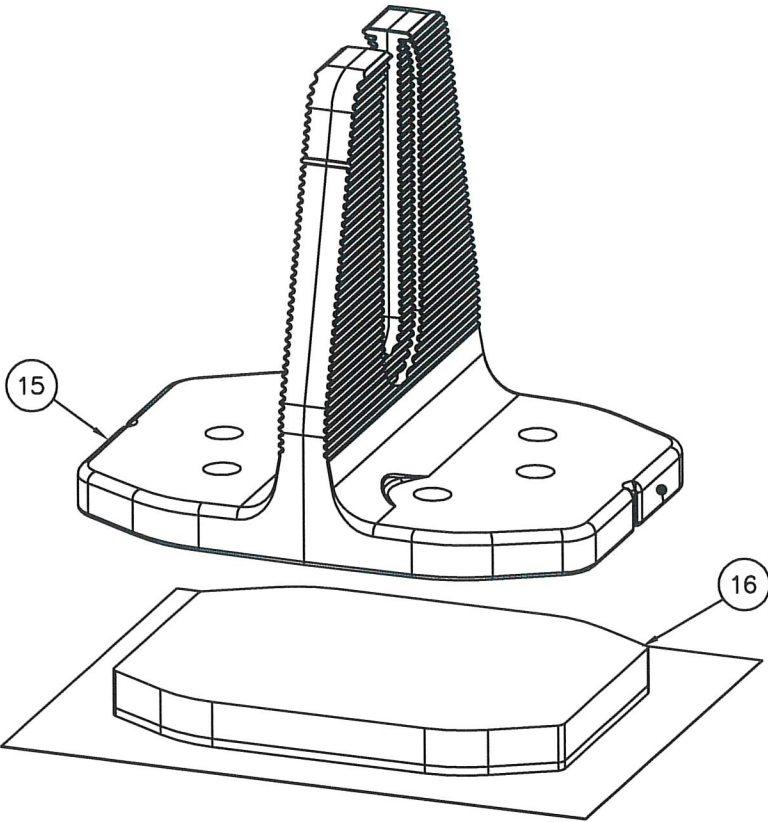
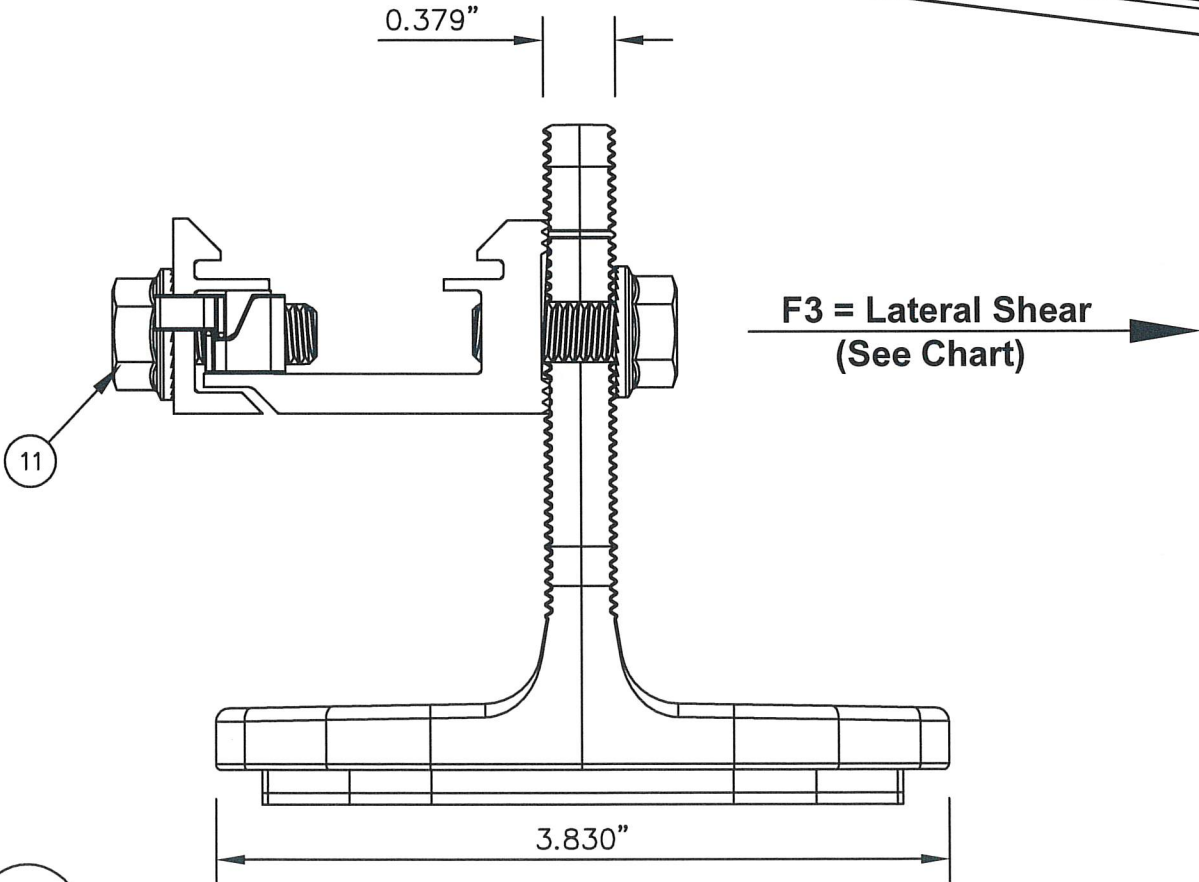
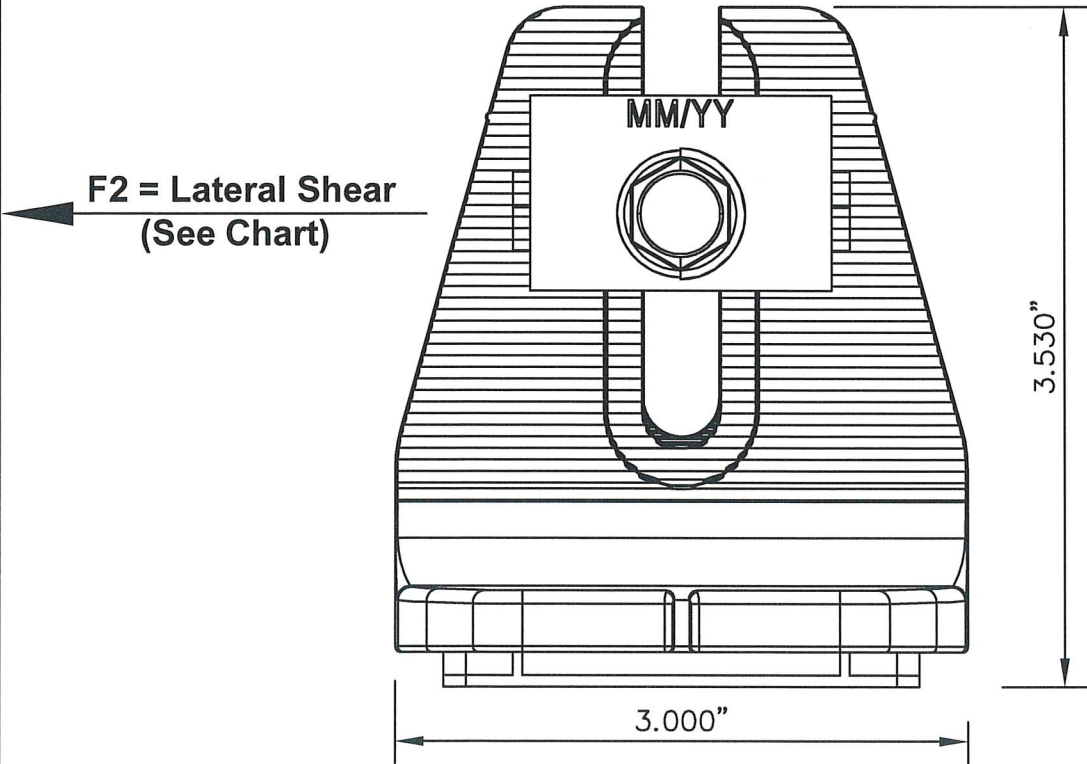
REV.#	DATE	PRINTS ISSUED FOR
1	10/18/23	2023 CODE UPDATE
1	12/30/22	1ST SUBMITTAL

ECOFASTEN CLICKFIT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH CLICKFIT SMART FOOT ROOF ATTACHMENT

BILL OF MATERIALS- ClickFit Smart Foot		
#	DESCRIPTION	MATERIALS/NOTES
15	SMARTFOOT BASE, MILL OR BLACK	300 SERIES ALUMINUM
16	ULTRAGRIP FLASHING SYSTEM	PROPRIETARY FLASHING SYSTEM
17	SCREW, #14 X 3" WITH EPDM BACKED WASHER	300 SERIES SS & EPDM

ALLOWABLE LOADS			
LOAD DIRECTION	CLICKFIT SMART FOOT		
	FASTENER PATTERN #1 or #2 (lb)	FASTENER PATTERN #3	
		7/16" or 15/32" OSB (lb)	19/32" OSB (lb)
F1 - UPLIFT	1004	195	273
F2 - SHEAR	240	117	117
F3 - SHEAR	368	117	117

Direct Tension/Uplift
(See Chart)



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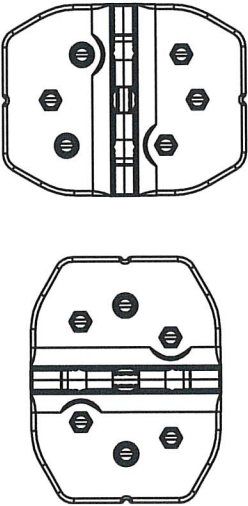
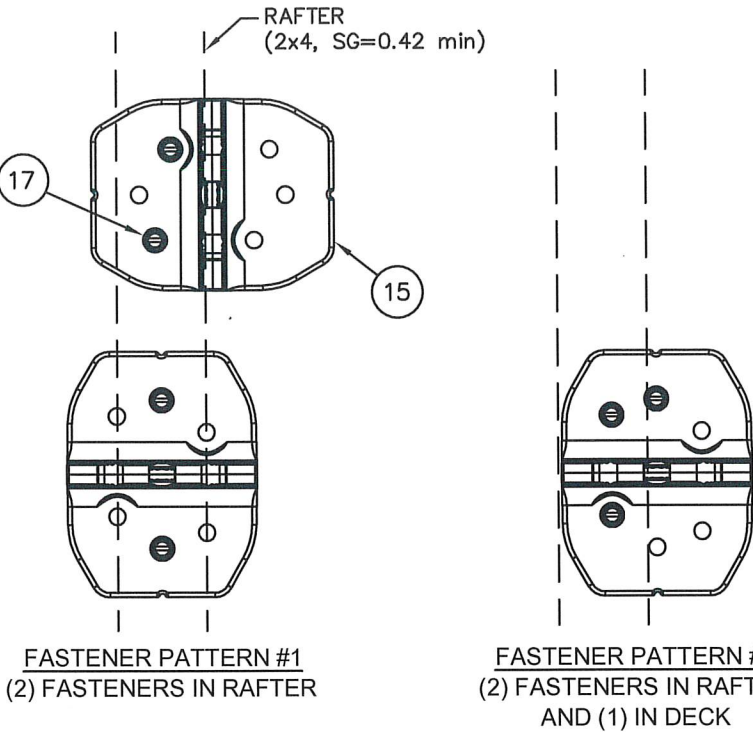
23</

ECOFASTEN CLICKFIT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH CLICKFIT SMART FOOT ROOF ATTACHMENT

ALLOWABLE WINDLOADS (+/- psf)										
TWO RAIL SYSTEM						THREE RAIL SYSTEM				
PANEL WIDTH (in)	PANEL LENGTH (in)	ANCHOR SPAN (L) (in)	FASTENER PATTERN #3			PANEL WIDTH (in)	PANEL LENGTH (in)	ANCHOR SPAN (L) (in)	FASTENER PATTERN #3	
			7/16" or 15/32" OSB (+/- psf)	19/32" OSB (+/- psf)					7/16" or 15/32" OSB (+/- psf)	19/32" OSB (+/- psf)
45	67 1/2	16	22.2	31.1		45	67 1/2	16	33.3	46.7
		24	21.3	29.8				24	32.0	44.7
		32	20.3	28.5				32	30.5	42.8
		36	18.5	25.9				36	27.8	38.9
		48	17.3	24.3				48	26.0	36.5
		64	12.2	17.1				64	18.3	25.7
		72	10.7	14.9				72	16.1	22.4
	80	16	18.7	26.2			80	16	28.1	39.3
		24	17.9	25.1				24	26.9	37.7
		32	17.2	24.0				32	25.8	36.0
		36	15.6	21.8				36	23.4	32.7
		48	14.6	20.5				48	21.9	30.8
		64	10.3	14.5				64	15.5	21.8
		72	9.0	12.6				72	13.5	18.9
	86	16	17.6	24.4			86	16	26.4	36.6
		24	16.7	23.4				24	25.1	35.1
		32	16.0	22.3				32	24.0	33.5
		36	14.5	20.3				36	21.8	30.5
		48	13.6	19.0				48	20.4	28.5
		64	9.6	13.4				64	14.4	20.1
		72	8.4	11.7				72	12.6	17.6
	92 1/2	16	16.2	22.7			92 1/2	16	24.3	34.1
		24	15.5	21.7				24	23.3	32.6
		32	14.8	20.8				32	22.2	31.2
		36	13.5	18.9				36	20.3	28.4
		48	12.6	17.7				48	18.9	26.6
		64	8.9	12.5				64	13.4	18.8
		72	7.7	10.9				72	11.6	16.4
LANDSCAPE LAYOUT:										
45	92 1/2	16	16.2	22.7		45	92 1/2	16	24.3	34.1
		24	15.5	21.7				24	23.3	32.6
		32	14.8	20.8				32	22.2	31.2
		36	13.5	18.9				36	20.3	28.4
		48	13.5	18.9				48	20.3	28.4
		64	13.5	18.9				64	20.3	28.4
		72	13.5	18.9				72	20.3	28.4

UP/DOWN SLOPE RAILS:

ACROSS SLOPE RAILS:



FASTENER PATTERN #3
(6) FASTENERS IN DECK

10/18/23

12/30/22

REV.#

DATE

2023 CODE UPDATE

1ST SUBMITTAL

PRINTS ISSUED FOR

SEAL: No 62354

STATE OF

SCOTT WOLTERS

FL PE# 62354

WOLTERS ENGINEERING

(COA# 27194)

15211 97TH ROAD N

WEST PALM BEACH, FL 33412

(561) 225-1982

An Esdec Solar Group Company

4141 W VAN BUREN ST, SUITE 2

PHOENIX, AZ 85009

PHONE (877) 859-3947

info@ecofastensolar.com

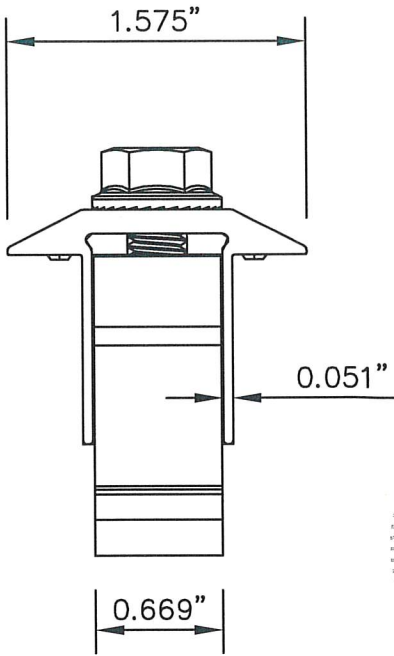
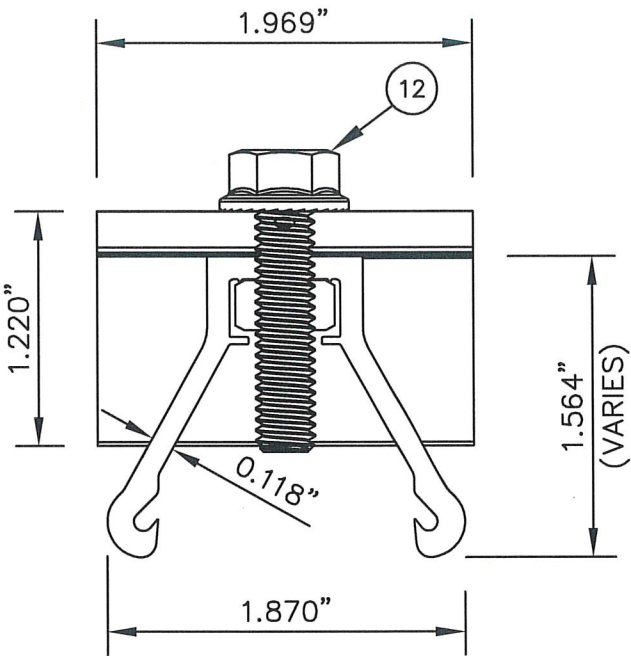
DWG: ECO-SF

SHEET: 5/7

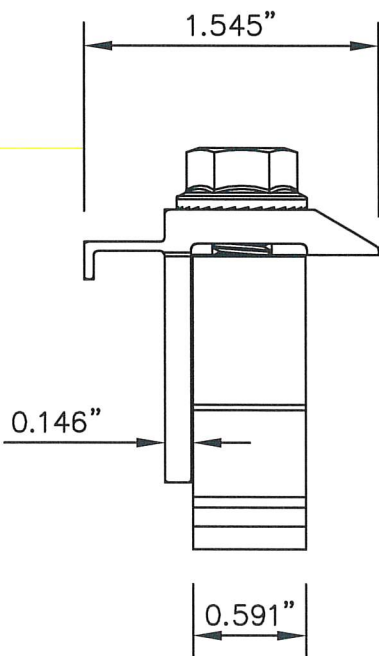
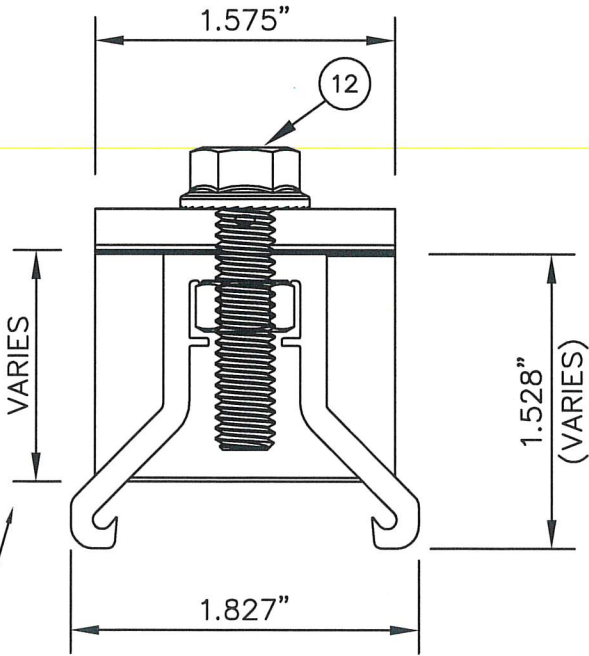
ECOFASTEN CLICKFIT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH CLICKFIT SMART FOOT ROOF ATTACHMENT

BILL OF MATERIALS- ClickFit System		
#	DESCRIPTION	MATERIALS/NOTES
1	MID-CLAMP ASSEMBLY	6000 SERIES AL
2	END-CLAMP ASSEMBLY	6000 SERIES AL
2A	UNIVERSAL END-CLAMP ASSEMBLY	6000 SERIES AL
3	END CAP (OPTIONAL)	POLYMERIC
4	CLICKFIT STANDARD RAIL	6000 SERIES AL
5	SPLICE SLEEVE	CORROSION RESISTANT STEEL
11	5/16" x 3/4" HWH CAP SCREW	300 SERIES SS
12	5/16" x 1 1/4" HWH CAP SCREW	300 SERIES SS

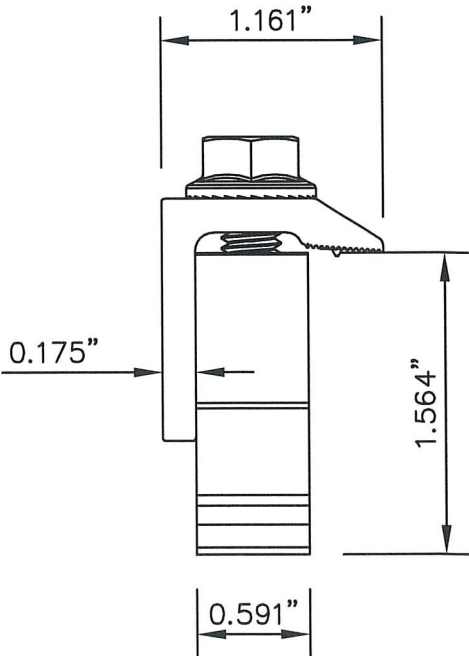
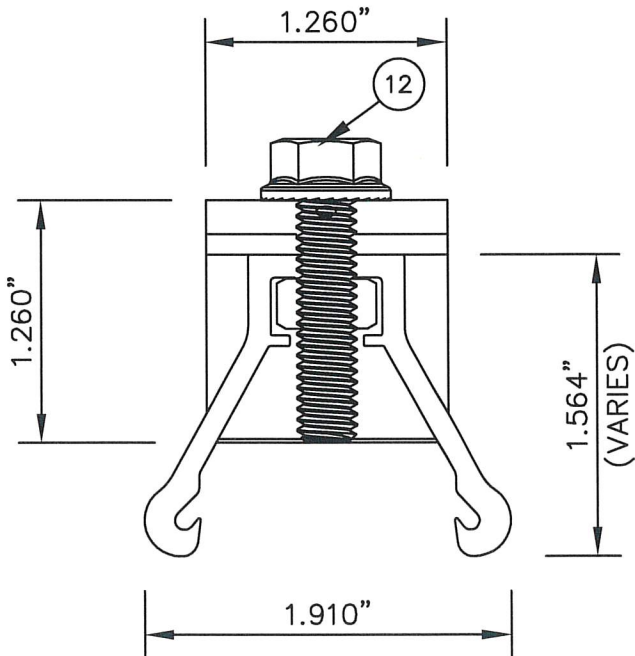
FOR 6000 SERIES EXTRUSIONS $F_{UT}=38$ ksi min, $F_Y=35$ ksi min.
FOR 300 SERIES STAINLESS STEEL $F_Y=65$ ksi min.



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2A

CLIP HEIGHT VARIES BASED
ON PV PANEL THICKNESS.

10/18/23

12/30/22

10/18/23

12/30/22

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1ST SUBMITTAL

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SCOTT WOLTERS
FL PE# 62354

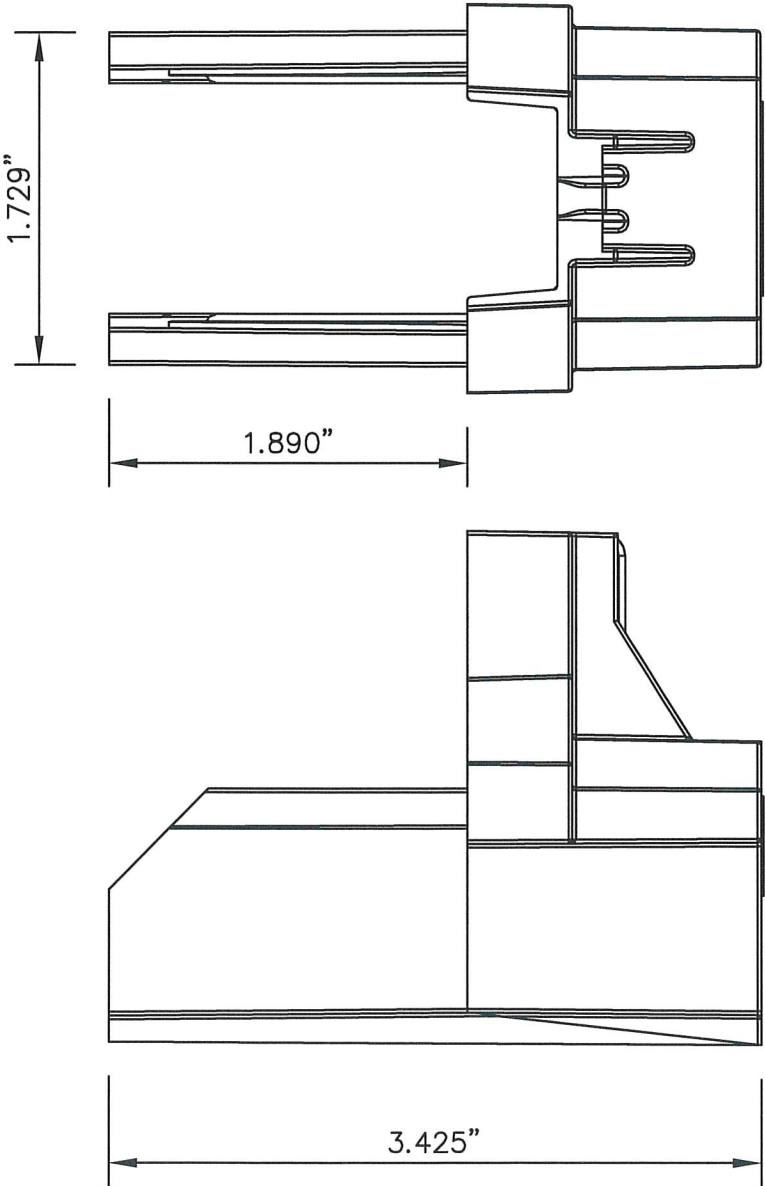
WOLTERS ENGINEERING
(COA# 27194)
15211 97TH ROAD N
WEST PALM BEACH, FL 33412
(561) 225-1982

**EcoFasten®**
An Esdec Solar Group Company

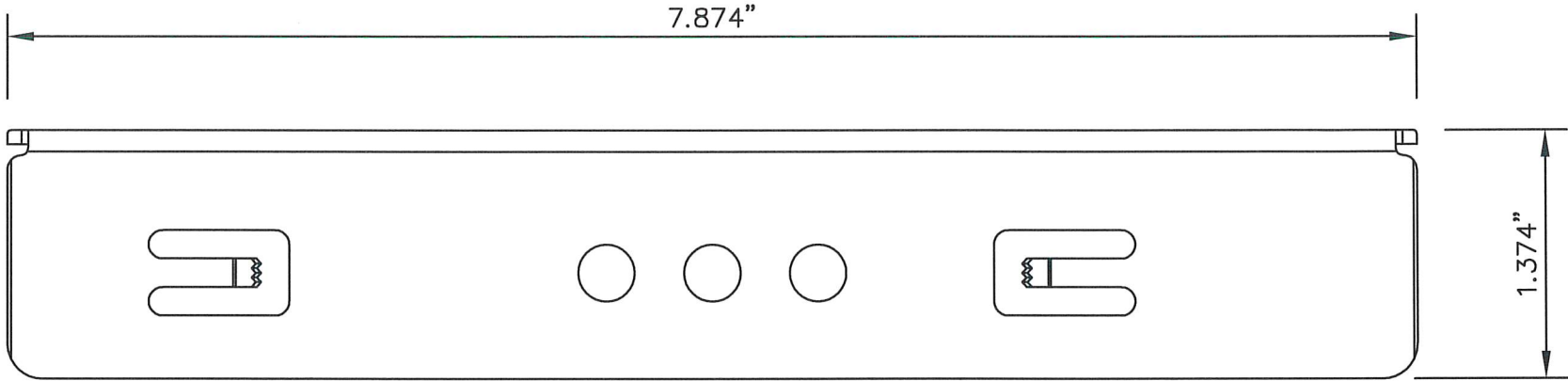
4141 W VAN BUREN ST, SUITE 2
PHOENIX, AZ 85009
PHONE (877) 859-3947
info@ecofastensolar.com

DWG: ECO-SF
SHEET: 6/7

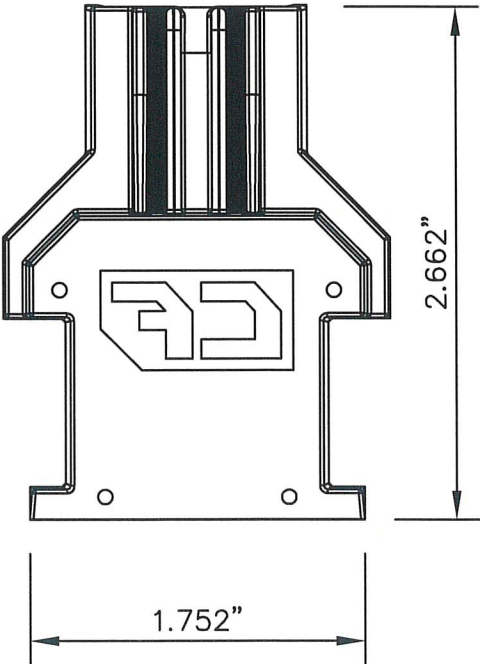
ECOFASTEN CLICKFIT PHOTOVOLTAIC PANEL RACKING SYSTEM
WITH CLICKFIT SMART FOOT ROOF ATTACHMENT



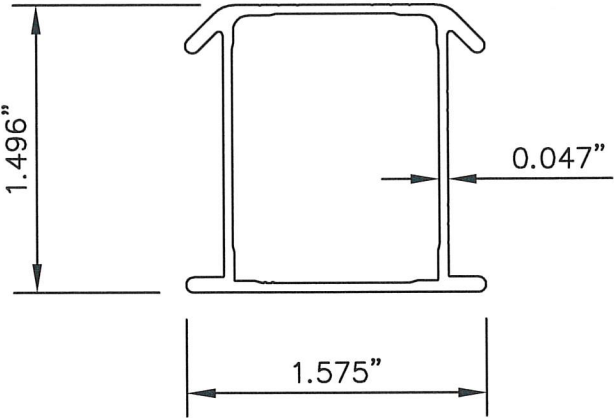
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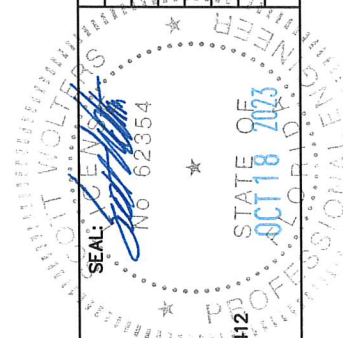


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4141 W VAN BUREN ST, SUITE 2
PHOENIX, AZ 85009
PHONE (877) 859-3947
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1	10/18/23	2023 CODE UPDATE
1	12/30/22	1ST SUBMITTAL