

Project Details			
Name	ELLIS ROYSTER	Date	04/16/2023
Location	646 Melody Lane, Cameron, NC 28326	Total modules	25
Module	Mission Solar Energy: MSE395SX9R (40mm)	Total watts	9,875
Dimensions	Dimensions: 75.08" x 41.5" x 1.57" (1907.0mm x 1054.0mm x 40.0mm)	Attachments	55
ASCE	7-10	Rails per row	2

System Weight	
Total system weight	1,372.9 lbs
Weight/attachment	25.0 lbs
Racking weight	160.4 lbs
Distributed weight	2.5 psf

Load Assumptions	
Wind exposure	C
Wind speed	119 mph
Ground snow load	15 psf
Attachment spacing portrait	4.0'
Attachment spacing landscape	4.0'

Roof Information			
Roof Material Family	Comp Shingle	Roof material	Comp Shingle
Building height	15 ft	Roof attachment	Flashfoot2
		Staggered attachments	Yes
Roof slope	26 °	Attachment hardware	Square
Risk category	II		

Span Details XR10 - Portrait		
Zone	Max span	Max cantilever
1	5' 11"	2' 4"
2	5' 5"	2' 2"
3	4' 4"	1' 9"

Reaction Forces XR10 - Portrait			
Zone	Down (lbs)	Uplift (lbs)	Lateral (lbs)
1	203	154	67
2	203	309	67
3	203	486	67

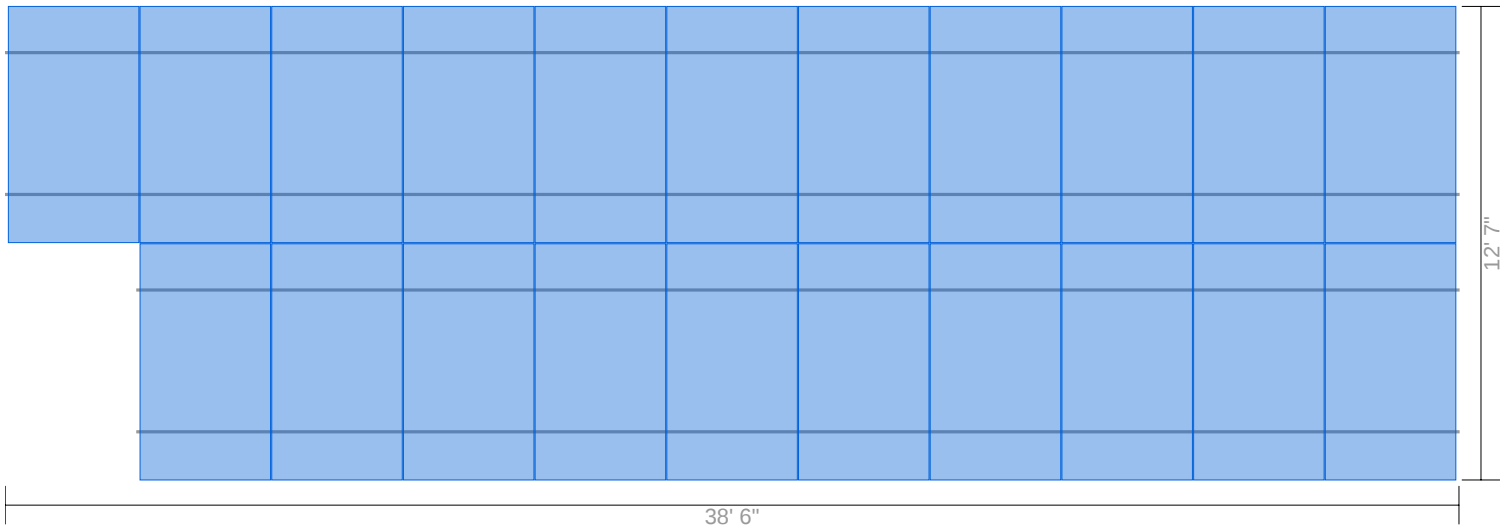
Span Details XR10 - Landscape		
Zone	Max span	Max cantilever
1	7' 5"	3'
2	6' 11"	2' 9"
3	5' 8"	2' 3"

Reaction Forces XR10 - Landscape			
Zone	Down (lbs)	Uplift (lbs)	Lateral (lbs)
1	112	85	37
2	112	172	37
3	112	270	37

Roof Section 1

Details		Weights
Panels: 21	Provided rail: 168' [12 x 168"]	Total weight: 1,138.0 lbs
Rail orientation: East-West	Attachments: 40	Weight/attachment: 28.5 lbs
Panel orientation: Portrait	Splices: 8	Total Area: 460.2 sq ft
Entry type: Graphical	Clamps: 46	Distributed weight: 2.5 psf

Diagram



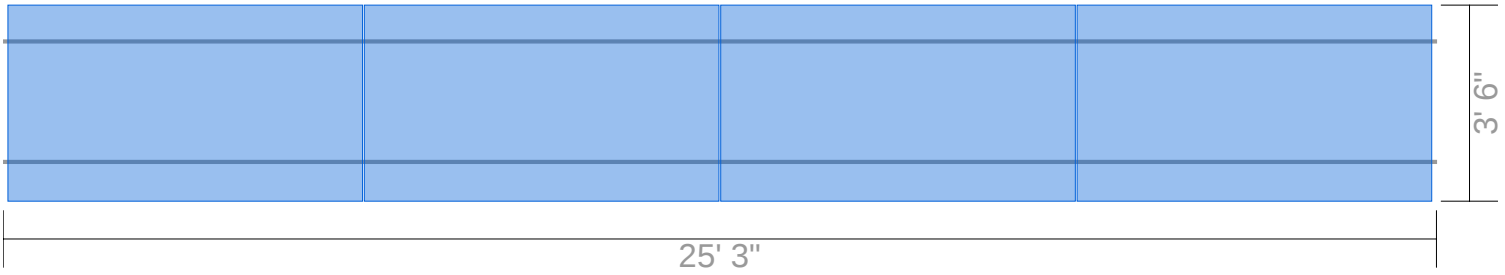
Segments

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	11	38' 6"	38' 6"	1' 3"	84' [6 x 168"]	21	4	24
B	10	35'	35'	1' 6"	84' [6 x 168"]	19	4	22

Roof Section 2

Details		Weights
Panels: 4	Provided rail: 56' [4 x 168"]	Total weight: 234.9 lbs
Rail orientation: East-West	Attachments: 15	Weight/attachment: 15.7 lbs
Panel orientation: Landscape	Splices: 2	Total Area: 87.5 sq ft
Entry type: Graphical	Clamps: 10	Distributed weight: 2.7 psf

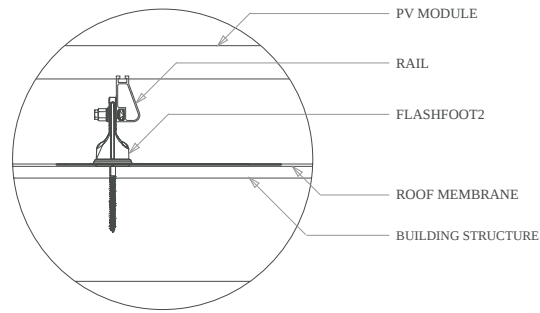
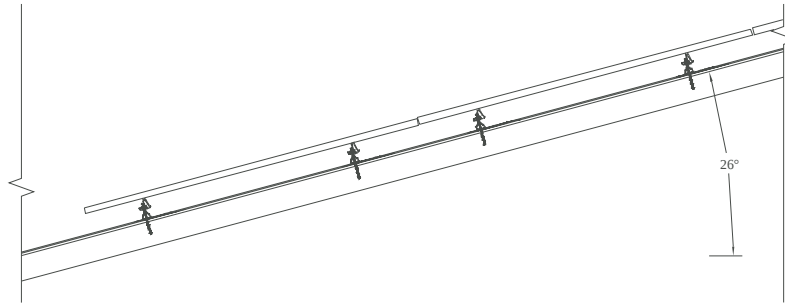
Diagram



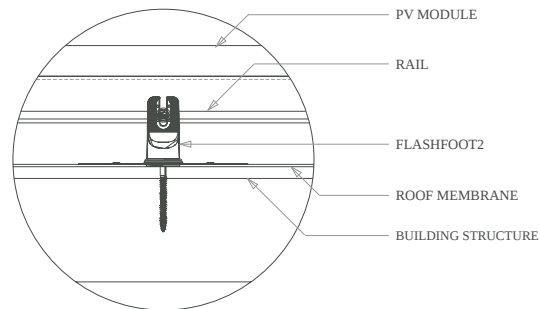
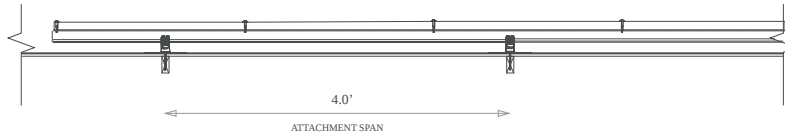
Segments

Identifier	Columns	Row length	Rail length	Cantilever	Rail	Attachments	Splices	Clamps
A	4	25' 3"	25' 3"	8"	56' [4 x 168"]	15	2	10

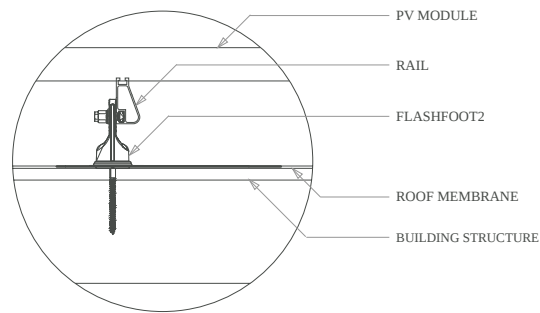
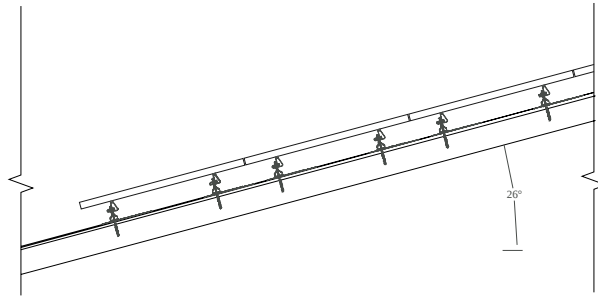
Side View (portrait)



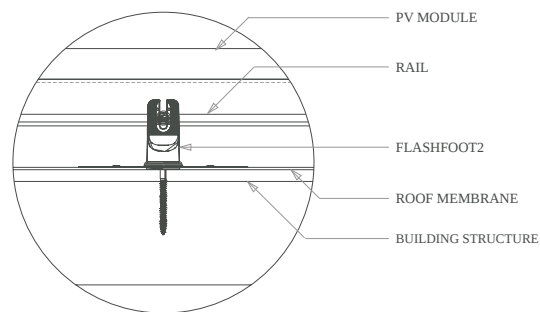
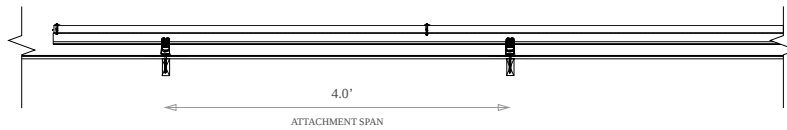
Front View (portrait)



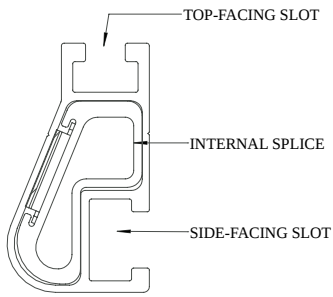
Side View (landscape)



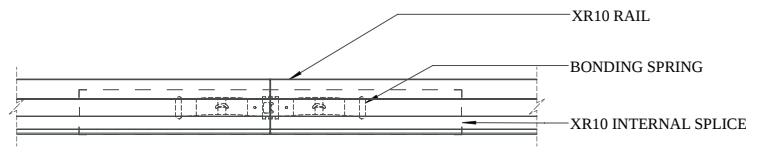
Front View (landscape)



Splice Details

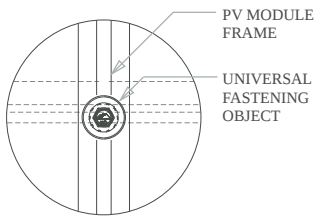


XR10

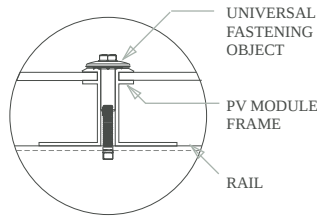


Splice Connection

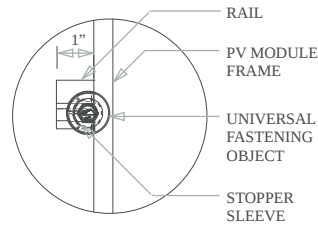
Clamp Detail



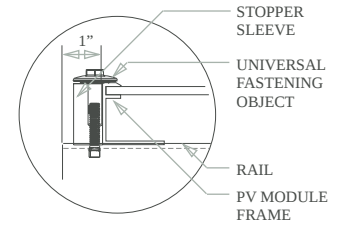
Mid Clamp, Plan



Mid Clamp, Front

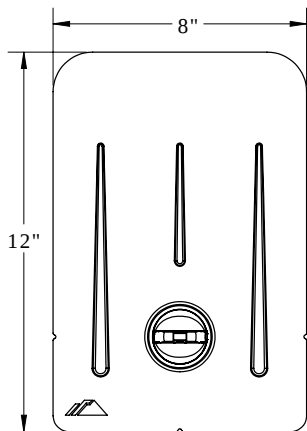


End Clamp, Plan

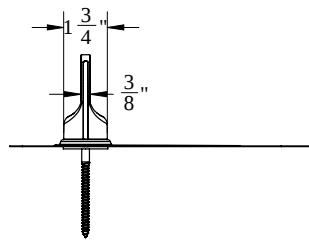


End Clamp, Front

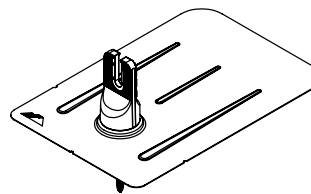
FlashFoot2 Detail



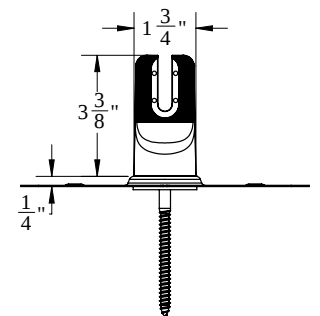
Plan View



Side View

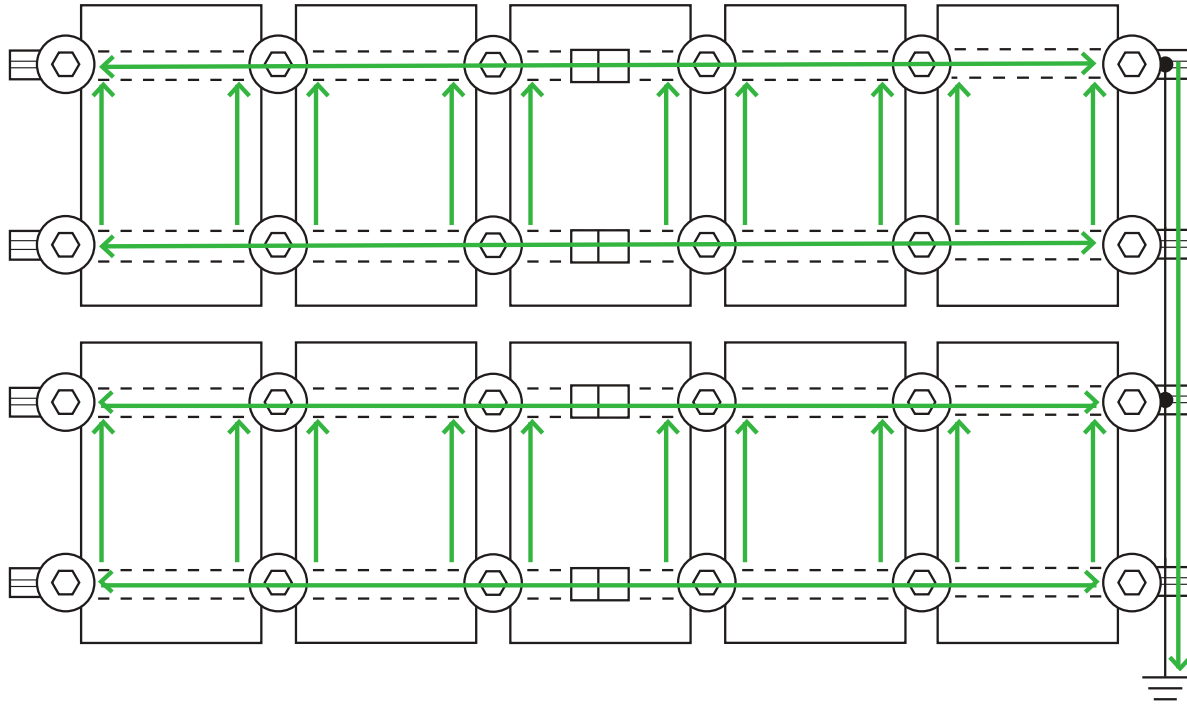


Perspective View





Front View

Grounding Diagram



 UFO Clamp

 Fault Current Ground Path

 Grounding Lug *

 Min 10 AWG Copper Wire *

 Bonded Splice (Rail Connection)

* Grounding Lugs and Wire are not required in systems using Enphase microinverters.

Bill of Materials

Part	Spares	Total Qty
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Rails & Splices

XR-10-168A XR10, Rail 168" (14 Feet) Clear	0	16
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XR10-BOSS-01-M1 Bonded Splice, XR10	0	10
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Clamps & Grounding

UFO-CL-01-A1 Universal Module Clamp, Clear	0	56
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UFO-STP-40MM-M1 Stopper Sleeve, 40MM, Mill	0	12
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XR-LUG-03-A1 Grounding Lug, Low Profile	0	3
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Attachments

FF2-02-M2 FlashFoot2, Mill	0	55
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BHW-SQ-02-A1 Square-Bolt Bonding Hardware	0	55
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