

SHEET INDEX:

| SHEET NO. | SHEET TITLE      |
|-----------|------------------|
| S-01      | ARRAY A LAYOUT   |
| S-02      | ARRAY B LAYOUT   |
| S-03      | ASSEMBLY DETAILS |
| R-01      | RESOURCES        |
| R-02      | RESOURCES        |

AUTHORITIES HAVING JURISDICTION:

BUILDING: HARNETT COUNTY  
ZONING: HARNETT COUNTY  
ELECTRICAL: HARNETT COUNTY  
UTILITY: CENTRAL EMC

REFERENCE CODES:

|                   |   |
|-------------------|---|
| ELECTRICAL CODE:  | 2017 NEC                                |
| BUILDING CODE(S): | 2018 IRC WITH NORTH CAROLINA AMENDMENTS |
| FIRE CODE:        | 2018 IFC WITH NORTH CAROLINA AMENDMENTS |
| ENGINEERING:      | ASCE 7-10                               |

DESIGN CRITERIA:

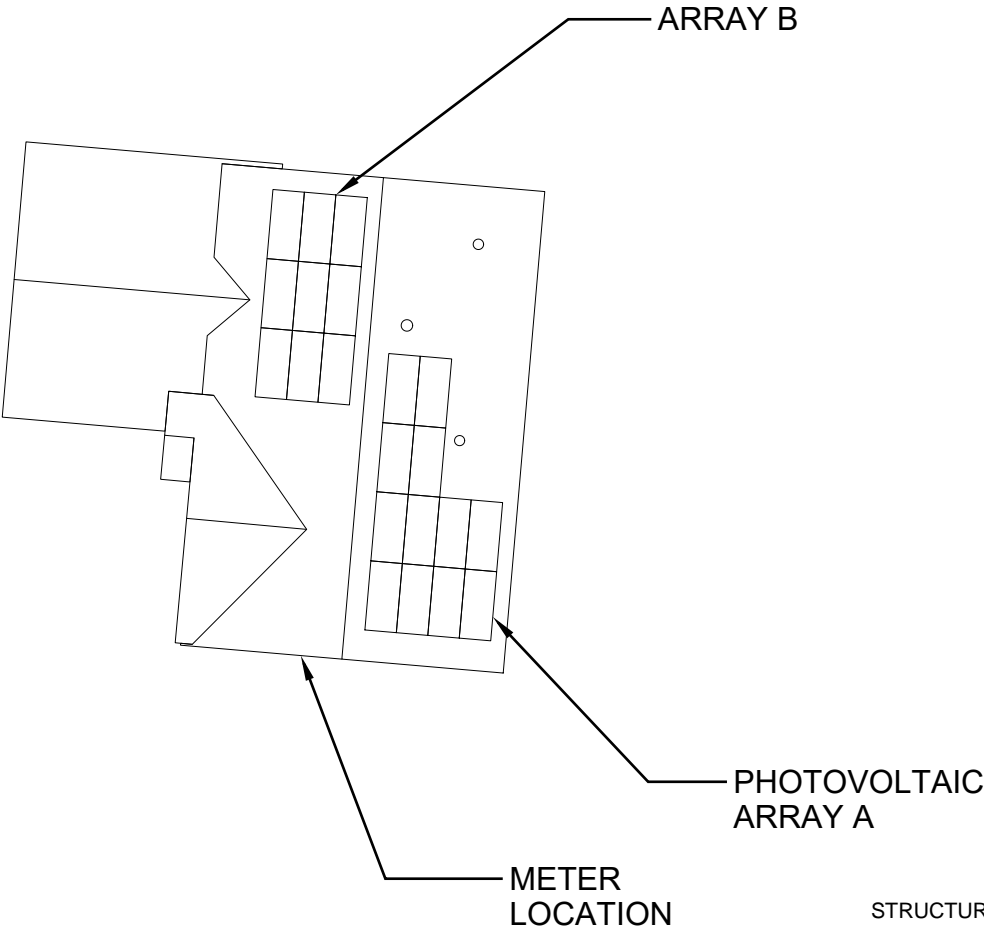
|                           |      |     |
|---------------------------|------|-----|
| GROUND SNOW LOAD:         | 10   | PSF |
| DESIGN WIND SPEED:        | 120  | MPH |
| DESIGN EXPOSURE CATEGORY: | B    |     |
| DEAD LOAD:                | 2.97 | PSF |
| AVERAGE HIGH TEMPERATURE: | 34°C |     |
| ASHRAE LOW TEMPERATURE:   | -9°C |     |

| SYSTEM ATTRIBUTES          | QTY |
|----------------------------|-----|
| Trina 420                  | 21  |
| TESLA 7.6KW SOLAR INVERTER | 1   |

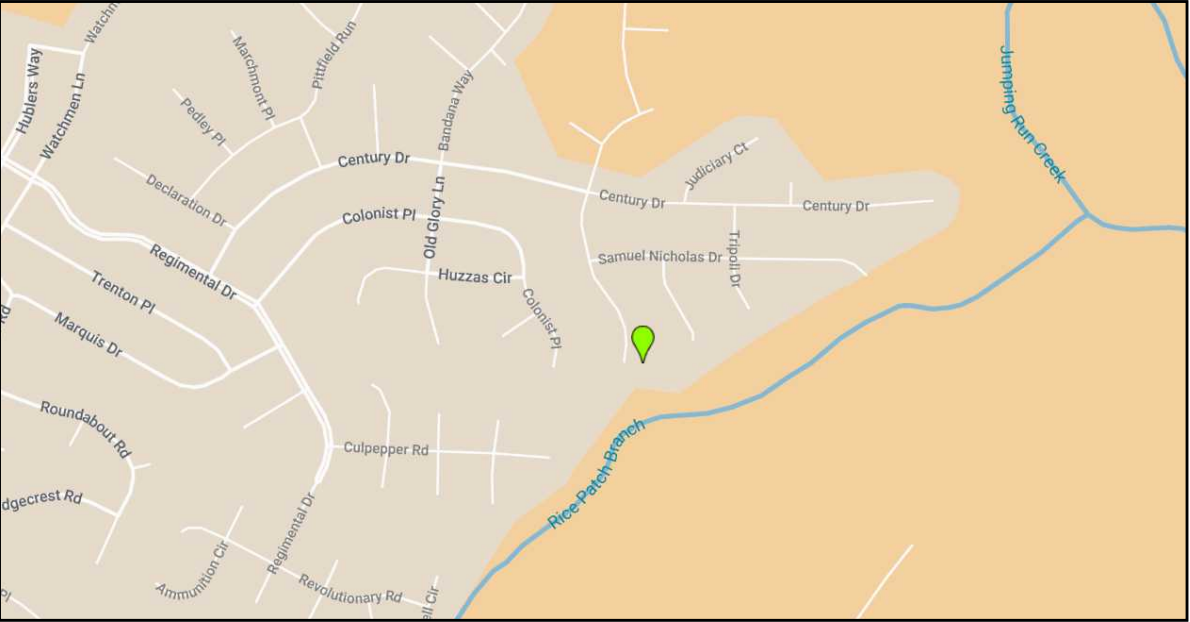
|             |
|-------------|
| SYSTEM SIZE |
|-------------|

7.600 kW-AC/ 8.820 kW-DC

| NAME            | EMAIL                                    | PHONE        | TITLE                           |
|-----------------|--|--------------|---------------------------------|
| ROBERT PARKER   | ROBERT.PARKER@CAPEFEARSOLARSYSTEMS.COM   | 910-232-6288 | CHIEF OPERATING OFFICER         |
| DANIEL CAVANAGH | DANIEL.CAVANAGH@CAPEFEARSOLARSYSTEMS.COM | 910-599-0428 | RESIDENTIAL PROJECT MANAGER     |
| WILLIAM PARKER  | WILLIAM.PARKER@CAPEFEARSOLARSYSTEMS.COM  | 910-777-3749 | COMMERCIAL PROJECT ASSOCIATE    |
| MICHAEL HORAN   | MICHAEL.HORAN@CAPEFEARSOLARSYSTEMS.COM   | 336-404-0511 | PROJECT DEVELOPMENT COORDINATOR |
| JOHN NOVAK      | JOHN.NOVAK@CAPEFEARSOLARSYSTEMS.COM      | 910-622-7361 | SOLAR DESIGNER                  |
| DEREK MADRID    | DEREK.MADRID@CAPEFEARSOLARSYSTEMS.COM    | 910-574-4229 | SOLAR SITE SURVEYOR             |



01  
G-01  
SITE SKETCH  
SCALE: 1:240



02  
G-01  
LOCATION MAP (VICINITY)



CAPE FEAR  
SOLAR SYSTEMS

910 S. 2nd St.  
Wilmington, NC 28401  
910-409-5533



GC LIC. NO. : 65677  
ELEC. LIC. NO. : U-33321

8.82 kW DC PV SYSTEM  
REUBEN FORNAH

183 Tun Tavern Dr, Cameron,  
NC 28326

COVER



STRUCTURAL  
03.06.2025

REVISION LIST

| # | REV. DATE | DESC. |
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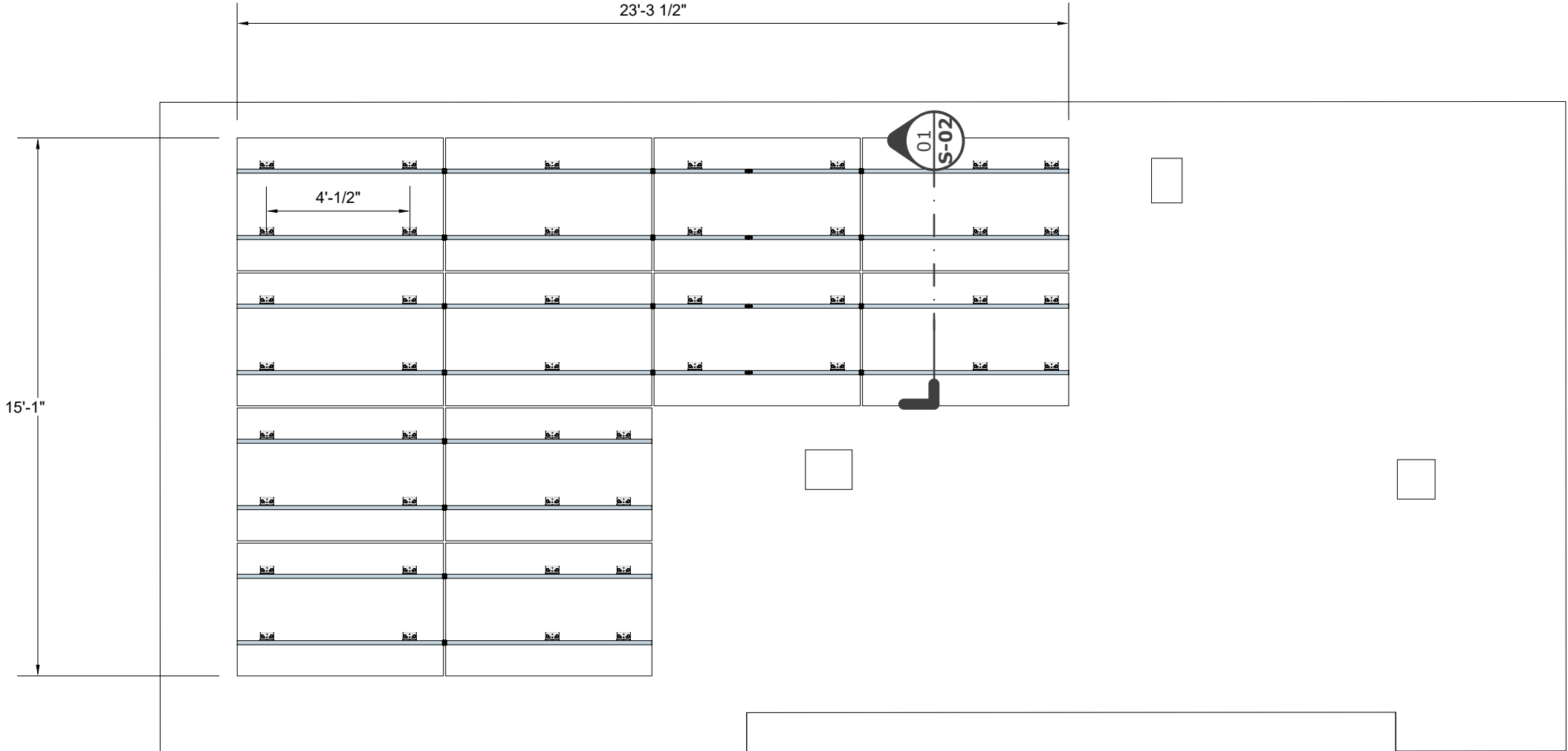
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| DRAWN BY: | JPN           |

Sheet No.

G-01

STRUCTURAL NOTES

1. ROOF MOUNT RACKING SYSTEM & PV ARRAY TO BE INSTALLED IN STRICT ACCORDANCE WITH THESE DRAWINGS & MFG'S RECOMMENDATIONS. MINOR SPACING MODIFICATIONS ARE ACCEPTABLE TO ACCOMODATE EXISTING ROOF STRUCTURE MEMBERS
2. EXISTING ROOF STRUCTURE HAS BEEN INCLUDED IN THE STRUCTURAL EVALUATION AND FOUND SUITABLE FOR THIS INSTALLATION
3. ALL ATTACHMENT BOLTS SHALL BE INSTALLED IN THE MIDDLE THIRD OF THE RAFTER (OR TRUSS) THICKNESS



01  
S-01

PLAN - ARRAY A LAYOUT  
SCALE: 1/4" = 1'

CAPE FEAR  
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8.82 kW DC PV SYSTEM  
REUBEN FORNAH

183 Tun Tavern Dr, Cameron,  
NC 28326

ARRAY A LAYOUT



03.06.2025

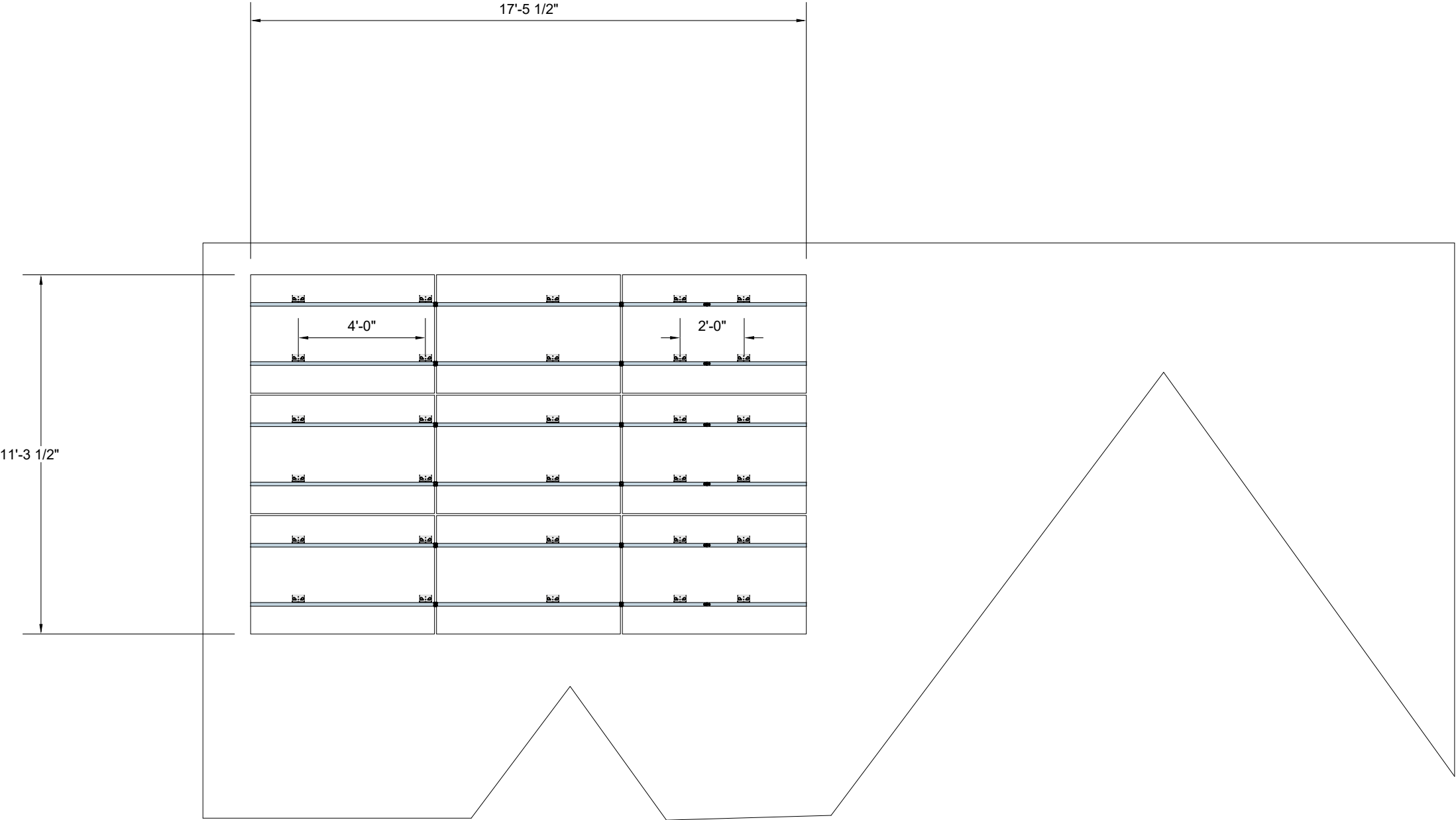
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Sheet No.

S-01



01  
S-02

**PLAN - ARRAY B LAYOUT**  
**SCALE: 1/4" = 1'**

**CAPE FEAR  
SOLAR SYSTEMS**

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Wilmington, NC 28401  
910-409-5533



GC LIC. NO. : 65677  
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**8.82 kW DC PV SYSTEM**  
**REUBEN FORNAH**

183 Tun Tavern Dr, Cameron,  
NC 28326

**ARRAY B LAYOUT**



03.06.2025

**REVISION LIST**

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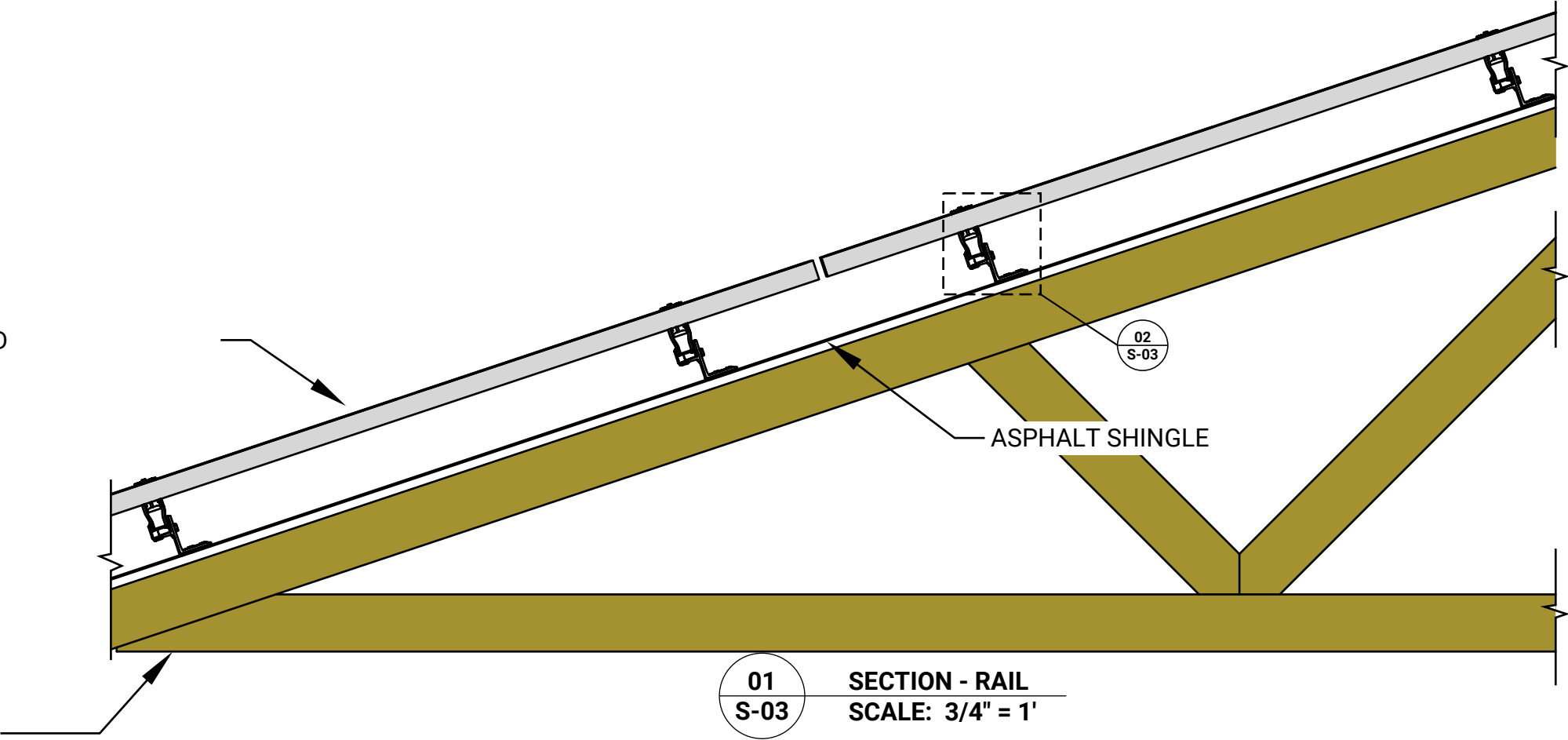
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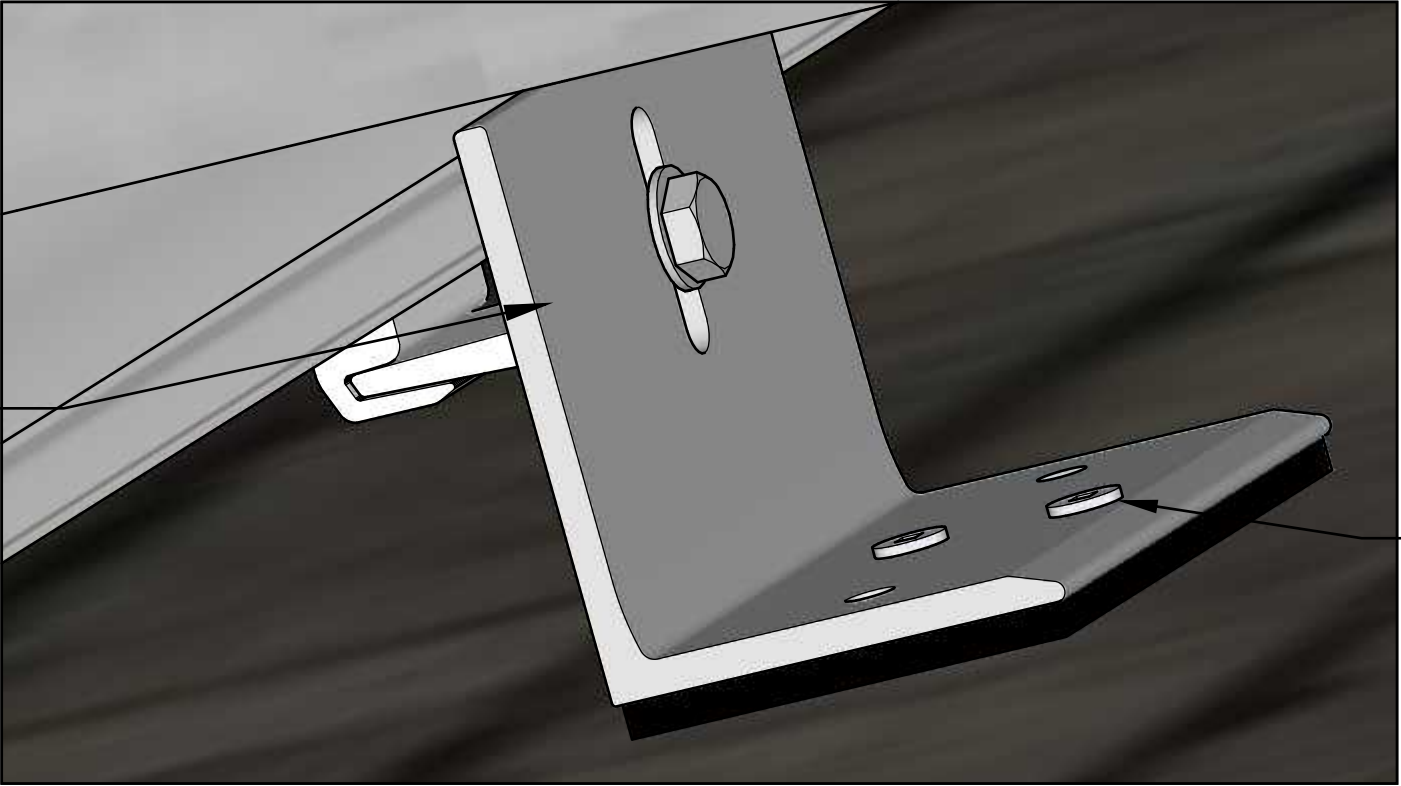
**S-02**

(N)TSM-NE09RC.05, 21 REQ'D

2x6" Trusses @ 24" O.C



SNAPNRACK  
ANCHORFOOT



02  
S-03

DETAIL - ANCHORFOOT  
SCALE: 3" = 1'

CAPE FEAR  
SOLAR SYSTEMS

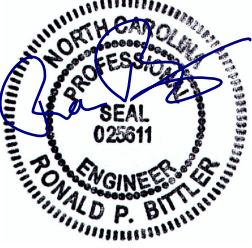
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Wilmington, NC 28401  
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ASSEMBLY DETAILS



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| #   | REV. DATE | DESC.         |
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Sheet No.

S-03





## Ultra Rail

UR-40  
UR-60

### SnapNrack Ultra Rail System

A sleek, straightforward rail solution for mounting solar modules on all roof types. Ultra Rail features two rail profiles; UR-40 is a lightweight rail profile that is suitable for most geographic regions and maintains all the great features of SnapNrack rail, while UR-60 is a heavier duty rail profile that provides a larger rail channel and increased span capabilities. Both are compatible with all existing mounts, module clamps, and accessories for ease of install.

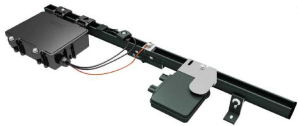
#### The Entire System is a Snap to Install

- New Ultra Rail Mounts include snap-in brackets for attaching rail
- Compatible with all the SnapNrack Mid Clamps and End Clamps customers love
- Universal End Clamps and snap-in End Caps provide a clean look to the array edge



#### Unparalleled Wire Management

- Open rail channel provides room for running wires resulting in a long-lasting quality install
- Industry best wire management offering includes Junction Boxes, Universal Wire Clamps, MLPE Attachment Kits, and Conduit Clamps
- System is fully bonded and listed to UL 2703 Standard



#### Heavy Duty UR-60 Rail

- UR-60 rail profile provides increased span capabilities for high wind speeds and snow loads
- Taller, stronger rail profile includes profile-specific rail splice and end cap
- All existing mounts, module clamps, and accessories are retained for the same great install experience



## Quality. Innovative. Superior.

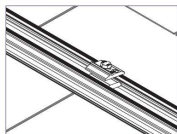
SnapNrack Solar Mounting Solutions are engineered to optimize material use and labor resources and improve overall installation quality and safety.

877-732-2860    [www.snapnrack.com](http://www.snapnrack.com)    [contact@snapnrack.com](mailto:contact@snapnrack.com)  
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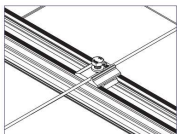
### Grounding Specifications

[snapnrack.com](http://snapnrack.com)

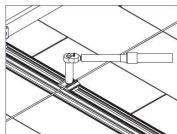
#### INSTALLATION INSTRUCTIONS - SNAPNRACK GROUND LUG



1) Snap the SnapNrack Ground Lug into the rail channel on one rail per module row.



2) Place grounding conductor into slot underneath split ring washer.

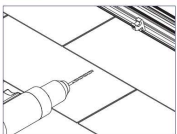


3) Tighten hardware to 16 ft.-lbs.

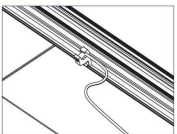
**Install Note:**  
SnapNrack Ground Lug may be used in side or top channel, and may be rotated 90 degrees relative to slot to facilitate running copper across top of rails.

**Install Note:**  
SnapNrack Ground Lug only Listed for use with 6-12 AWG solid copper conductor.

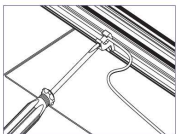
#### INSTALLATION INSTRUCTIONS - ILSCO LAY-IN LUG



1) Drill and deburr a 1/4" hole in the back side of the rail for the IlSCO lug to attach to, place the bolt through the hole, and attach the lug assembly on one rail per module row.



2) Place grounding conductor into slot.



**Install Note:**  
Torque set screw to 20 in.-lbs for #10-#14 solid and stranded copper, 25 in.-lbs for #8 stranded copper, and 35 in.-lbs for #4-#6 stranded copper.

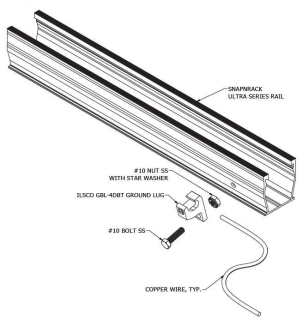
**Note:**

- System has been evaluated to a maximum overcurrent device (OCD) protection level of 20 Amps.
- Universal End Clamp (UEC) does not bond module to rail. Be sure to separately ground any modules that are only secured by UECs, especially during servicing.
- SnapNrack recommends that bare copper never come into contact with aluminum.
- SnapNrack Ground Lug: torque bolt to 16 ft.-lbs. The Ground Lug may be used in side or top channel. It may be rotated 90 degrees relative to slot to facilitate running copper across top of rails.
- Grounding with a standard IlSCO GBL-4DBT Lug is a listed alternate and requires drilling of a hole in the rail.
- IlSCO hardware connection to rail: 5 ft.-lbs. Torque for lug set screw: #10-#14 solid and stranded copper- 20 in.-lbs, #8 stranded copper- 25 in.-lbs, #4-#6 stranded copper- 35 in.-lbs.

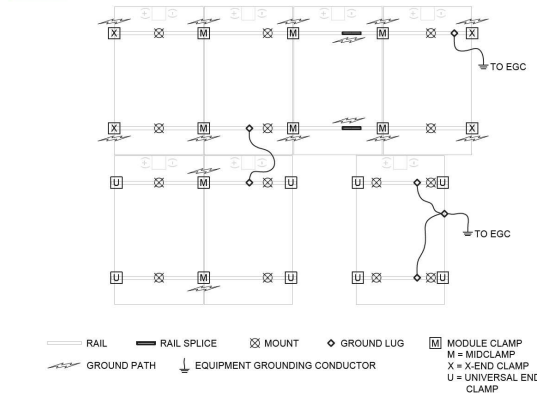
### Grounding Specifications

[snapnrack.com](http://snapnrack.com)

#### IlSCO Lay-in Lug Assembly



#### Ground Path Details



Industry leading Wire Management Solutions



Mounts available for all roof types



Single Tool Installation



All SnapNrack Module Clamps & Accessories are compatible with both rail profiles

### Start Installing Ultra Rail Today

RESOURCES  
DESIGN  
WHERE TO BUY

[snapnrack.com/resources](http://snapnrack.com/resources)  
[snapnrack.com/configurator](http://snapnrack.com/configurator)  
[snapnrack.com/where-to-buy](http://snapnrack.com/where-to-buy)

Ultra Rail

## AnchorFoot<sup>™</sup>

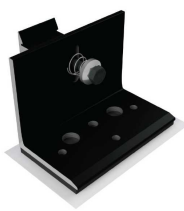


### SnapNrack AnchorFoot<sup>™</sup> & DeckAnchor<sup>™</sup>

are the latest innovation designed to reduce the number of roof fasteners when mounting direct to deck and provide maximum flexibility to mount anywhere on the roof. Engineered with butyl, now installers do not have to add sealant to the bottom of the mount, simplifying the installation process and further protecting the roof.

#### AnchorFoot<sup>™</sup>

- Pre-installed butyl for easy peel & stick installation allows for no disruption to composition shingles
- Industry-leading .200" thick butyl allows installation over shingles without cutting pieces
- Flexible direct to deck mounting options with (2) DeckAnchors or (4) #14 wood screws
- Flexible rafter mounting options with (1) 5/16" lag or (2) #14 wood screws
- Ships pre-assembled with Ultra Rail Mounting Clamp for easy rail attachment
- Rated for UL2703 Bonding & Grounding with TAS 100A Wind Driven Rain Testing for waterproof certification



#### DeckAnchor

- Proprietary fastening technology to reduce the number of screws for direct to deck mounting
- Familiar 1/2" hex head to maintain the SnapNrack tradition of a single tool install
- Wide threads securely grip the wood deck and significantly reduces the potential for over-tightening
- TAS 100A Wind Driven Rain Testing + ASTM D1761 Screw Capacities



## Quality. Performance. Innovation.

SnapNrack solutions are focused on simplifying the installation experience through intuitive products and the best wire management in the industry.

SnapNrack

877-732-2860    [www.snapnrack.com](http://www.snapnrack.com)    [contact@snapnrack.com](mailto:contact@snapnrack.com)  
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### Deck Mounting, *re-imagined.*



Flexible direct to deck mounting & rafter mounting options



Pre-installed butyl for easy worry-free sealing



Compatible with proprietary DeckAnchor<sup>™</sup> fasteners cutting the number of deck fasteners in half, from 4 to 2



Single Tool installation & snap-in features as with all SnapNrack products

Start Installing AnchorFoot<sup>™</sup> Today!

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REUBEN FORNAH

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RESOURCES

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DATE: March 6, 2025

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Sheet No.

R-02