

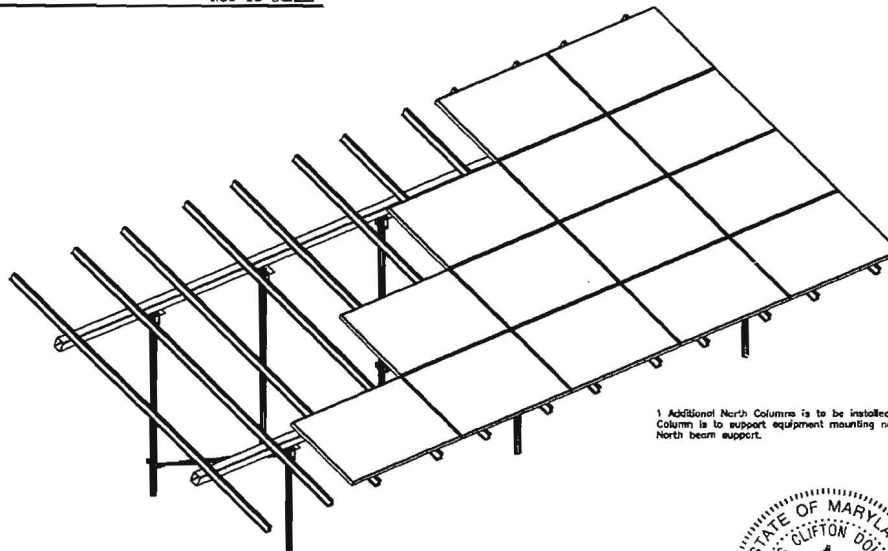
Typ (1) Array



Typ (2) Arrays

Plan View

NOT TO SCALE



1 Additional North Column is to be installed per field direction. The Column is to support equipment mounting needs. It is not required for North beam support.



Site Design Conditions

Basic Wind Speed: 105 MPH (FEMA Category I) Max. Leg Axial Bearing: 3,460 lbs.  
 Ground Snow Load: 30 PSF Max. Leg Uplift: 2,210 lbs.  
 Exposure Category: C Max. Lateral Resistance: 1,850 lbs.  
 Site Contour: <math>\le 5</math> Degree Slop Top Rail Max. Loading: 95.1 plf  
 Helical Pile Depth: 60" Min Lateral Resistance Pile Size: Not Req'd

All design work has been performed in accordance with the Maryland Building Performance Standards List of Applicable Codes and Standards dated January 1, 2018 including, but not limited to, the 2015 International Building Code with the Department of Housing and Community Development modifications (ref: COMAR 05.02.07).

Net design pressures were calculated in accordance with ASCE 7-10 section 27.4.3, "Open Buildings with Monoslope, Pitched, or Troughed Roofs". All load cases were evaluated in determining the limiting design conditions. The data table above provides the results for the limiting load case. Maximum leg reaction forces represent the highest load condition seen by any leg in the structure. All legs in the structure are designed to meet the maximum load conditions.

4Lx6C Sub-Array Design Conditions

Front Leg Height: 365" Array Tilt Angle: 30 Degree  
 Rear Leg Height: 785" Overall Array East-West Dim: 32'-11"  
 North-South Leg Spacing: 746" Number of Modules/Sub-Array: 24  
 West Span Leg Spacing: 11'-9" Number of Sub-Arrays: 1  
 East Span Leg Spacing: 11'-9" Module Columns/Sub-Array: 6  
 Quantity Center Spans: 0 Number of Module Rows: 4  
 Center Span Leg Spacing: N/A Module Orientation: Landscape  
 East & West Overhang: 4'-0" Module Column Spacing: 1'  
 Overall Beam Length: 31'-6" Module Row Spacing: 1'  
 Front Edge Ground Clearance: 28" Module Model: REC280TP  
 Horizontal Rail Material: 5"x4" HSS Module Size: 38.02" x 65.55"  
 Top Rail Material: SF Rails Individual Module Rating: 280 watt  
 Qty Rails per Panel: 2 Sub Array Power Rating: 6.72 kw  
 Top Rail Length: 162" Total Power Rating: 17.92 kw  
 Top Rail Center Span: 86"  
 Top Rail Overhangs: 38"

(2) 4Lx5C Sub-Array Design Conditions

Front Leg Height: 365" Array Tilt Angle: 30 Degree  
 Rear Leg Height: 785" Overall Array East-West Dim: 27'-5"  
 North-South Leg Spacing: 746" Number of Modules/Sub-Array: 20  
 West Span Leg Spacing: N/A Number of Sub-Arrays: 2  
 East Span Leg Spacing: N/A Module Columns/Sub-Array: 5  
 Quantity Center Spans: 1 Number of Module Rows: 4  
 Center Span Leg Spacing: 15'-3" Module Orientation: Landscape  
 East & West Overhang: 5'-6" Module Column Spacing: 1'  
 Overall Beam Length: 26'-3" Module Row Spacing: 1'  
 Front Edge Ground Clearance: 28" Module Model: REC280TP  
 Horizontal Rail Material: 5"x4" HSS Module Size: 38.02" x 65.55"  
 Top Rail Material: SF Rails Individual Module Rating: 280 watt  
 Qty Rails per Panel: 2 Sub Array Power Rating: 5.60 kw  
 Top Rail Length: 162" Total Power Rating: 17.92 kw  
 Top Rail Center Span: 86"  
 Top Rail Overhangs: 38"

Sheet 1 of 3

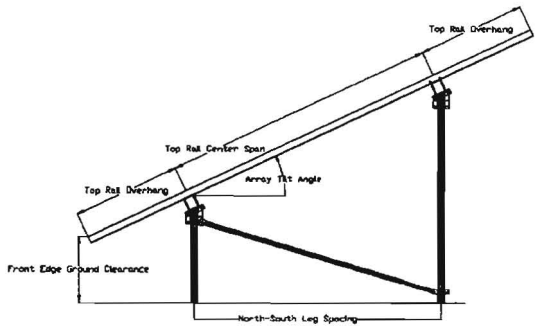
Sunrun

Solar Foundations USA

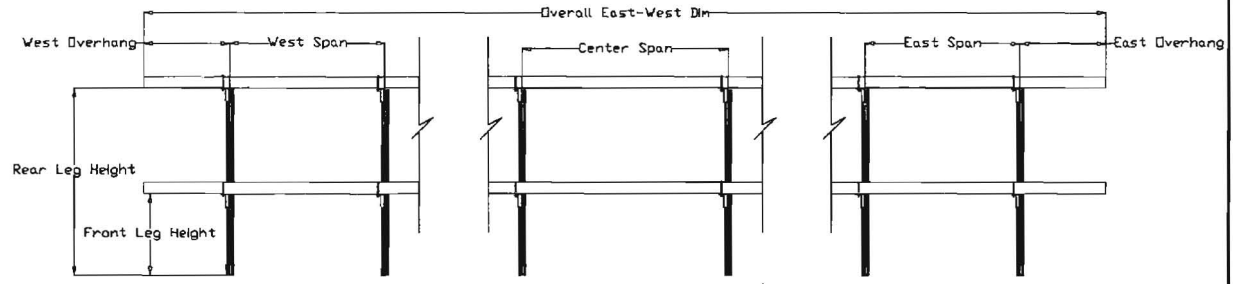
Date	Revision	Drawn By:	Review By:
01/30/2017	Original		MZ

Project:  
 McCollam Residence  
 14115 Clarksville Pike  
 Highland, MD 20777

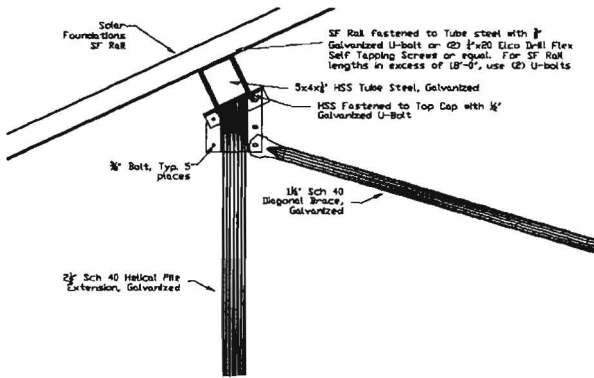
6103 Winterhaven Drive Newark, DE 19702 P: (855) 738-7200 F: (866) 611-5665



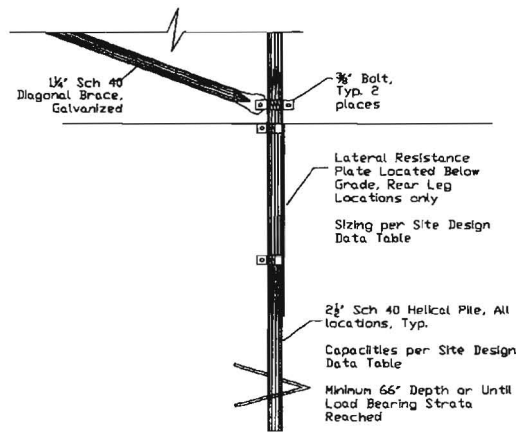
**SIDE ELEVATION DETAIL** NOT TO SCALE



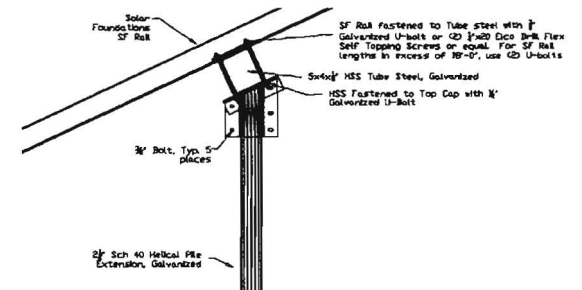
**POST SPACING ELEVATION DETAIL** NOT TO SCALE



**LOWER CAP DETAIL** NOT TO SCALE



**HELICAL PILE AND LATERAL RESISTANCE PLATE DETAIL** NOT TO SCALE



**UPPER CAP DETAIL** NOT TO SCALE



**Sheet 2 of 3**

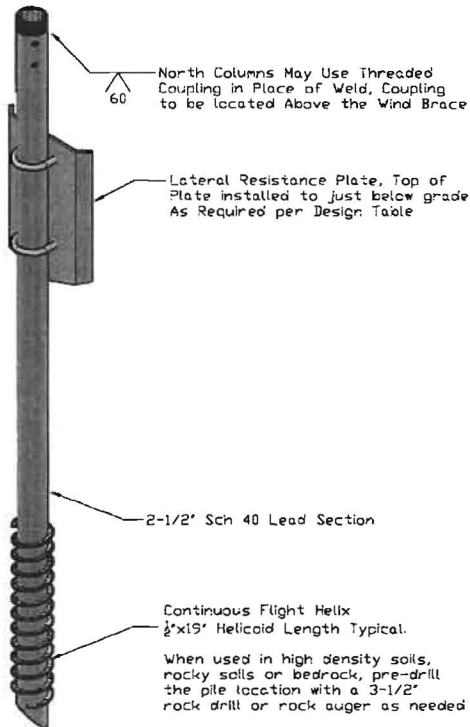
**Sunrun**

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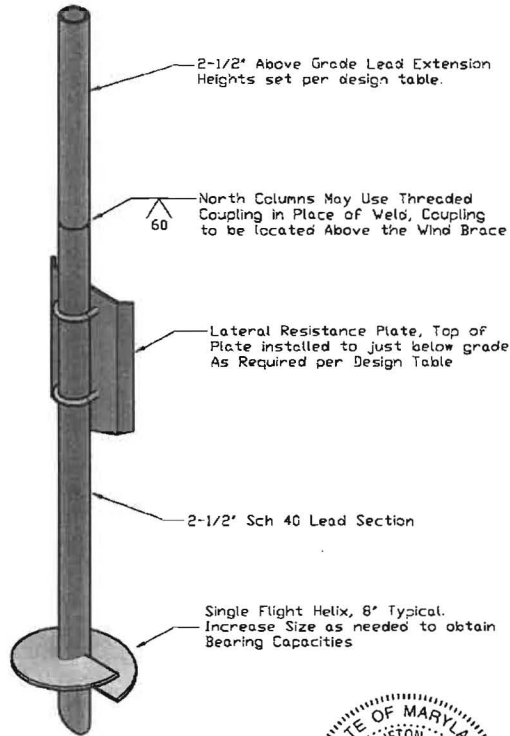
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**Helical Pile Detail**

NOT TO SCALE



**Specification Requirements:**

The following material specification requirements pertain to the fabrication of the Solar Foundations USA ground mount solar support structure as indicated on these drawings.

1. Solar Foundation aluminum rails shall conform to ASTM B221.
2. Structural steel tubing shall be ASTM A500 Grade C.
3. Steel pipe for piles shall conform to ASTM A500 Grade C.
4. Steel pile extensions shall be ASTM A53 Grade B.
5. Fabricated steel plate for column cap assemblies, bracing clamps, etc. shall be ASTM A36 or A1011.
6. Steel bolts for cap fasteners shall conform to SAE J429 Grade 5. All other bolts shall conform to SAE J429 Grade 2 or better.
7. Steel U-bolts shall conform to ASTM 1018.
8. USS Flat steel washers shall conform to ASTM F844 and nuts for steel connections shall conform to ASTM A563 Grade A.
9. All field welding shall conform to AWS D11/D11M -Structural Welding Code requirements.
10. All steel shall be hot-dip galvanized per ASTM A123 or A153 after all fabrication has been completed.

**Installation Requirements:**

1. The minimum average installation torque required to obtain the required indicated capacities and the minimum installation depth shown on the plans shall be satisfied prior to termination of the installation. The installation torque shall be an average of the installation torques indicated during the last 1 foot of installation.
2. The torsional strength rating of the torque anchor shall not be exceeded during the installation. If the torsional strength limit of the anchor has been reached, but the anchor has not reached the target depth, perform the following:
  - 2.1. If the torsional strength limit is achieved prior to reaching the target depth, the installation may be acceptable if reviewed and approved by the engineer and/or owner.
  - 2.2. The installer may remove the torque anchor and install a new one with smaller diameter helical plate.
  - 2.3. If using a continuous flight pile, pre-drill the pile location with a 3-1/2" rock auger or rock drill as needed.
3. If the target depth is achieved, but the torsional requirement has not been met the installer may do one of the following:
  - 3.1. Install the torque anchor deeper to obtain the required capacity.
  - 3.2. Remove the torque anchor and install a new one with a larger diameter helical plate or one with multiple helical plates.
  - 3.3. Reduce the load capacity on the individual torque anchor by providing additional torque anchors at a reduced spacing.

**Sheet 3 of 3**

**Sunrun**

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