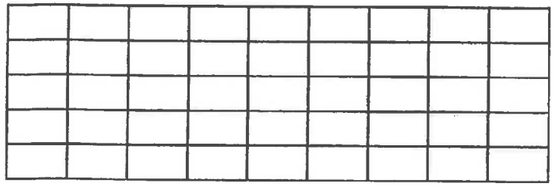
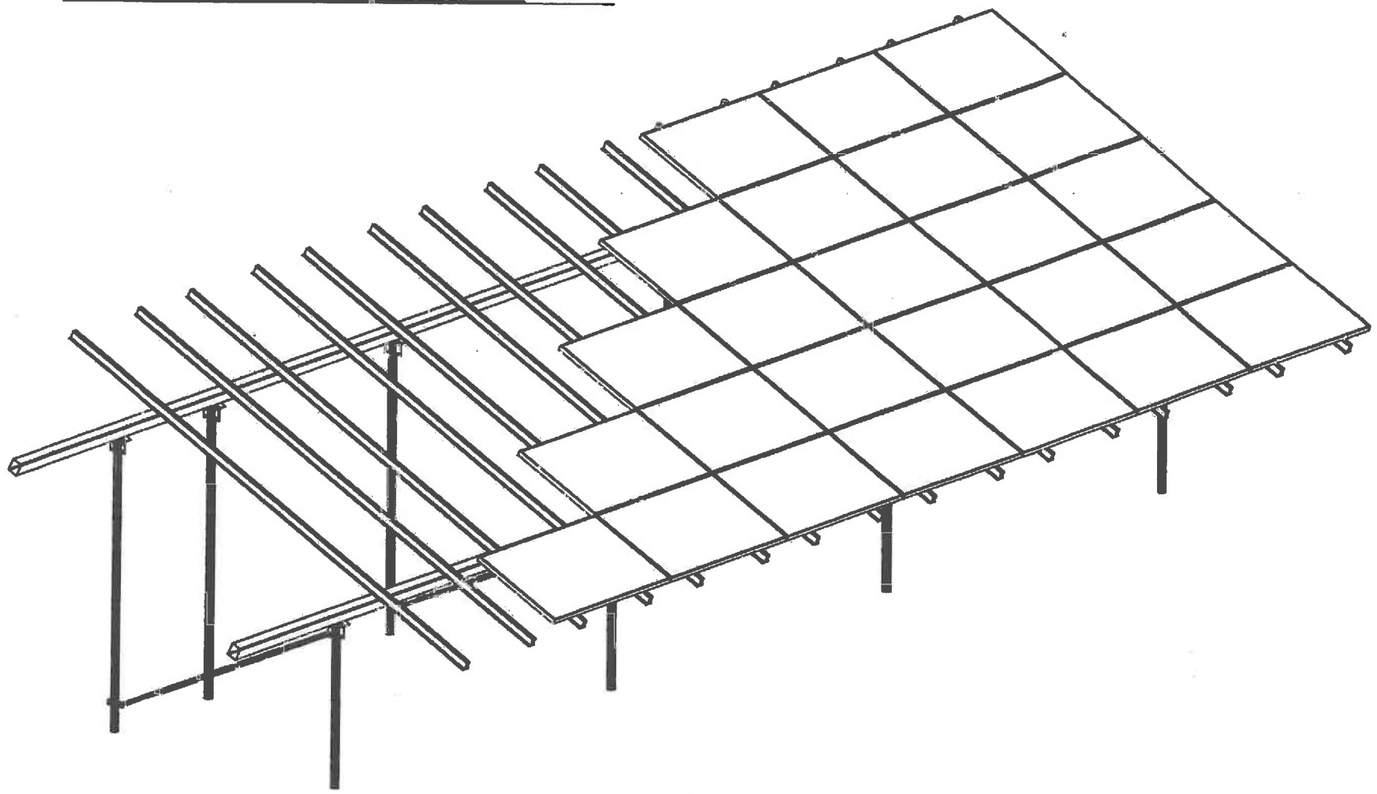


Plan View

NOT TO SCALE



Site Design Conditions

Basic Wind Speed:	105 MPH (Risk Category I)	Max. Leg Axial Bearing:	3,770 lbs.
Ground Snow Load:	30 PSF	Max. Leg Uplift:	2,405 lbs.
Exposure Category:	C	Max. Lateral Resistance:	1,725 lbs.
Site Contour:	<5 Degree Slope	Top Rail Max. Loading:	90.9 plf
Helical Pile Depth:	60" Min	Lateral Resistance Plate Size:	Not Req'd

All design work has been performed in accordance with the 2015 International Building Code and 2017 Uniform Code Supplement that includes but not limited to the New York State directed increases in ground snow load.

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.

5Lx9C Sub-Array Design Conditions

Front Leg Height:	38½"	Array Tilt Angle:	25 Degrees
Rear Leg Height:	86"	Overall Array East-West Dim:	46'-2"
North-South Leg Spacing:	102"	Number of Modules/Sub-Array:	45
West Span Leg Spacing:	12'-3"	Number of Sub-Arrays:	1
East Span Leg Spacing:	12'-3"	Module Columns/Sub-Array:	9
Quantity Center Spans:	1	Number of Module Rows:	5
Center Span Leg Spacing:	12'-3"	Module Orientation:	Landscape
East & West Overhang:	4'-3"	Module Column Spacing	¼"
Overall Beam Length:	45'-3"	Module Row Spacing	¼"
Front Edge Ground Clearance:	28"	Module Model:	SPR-E20-327-E-AC
Horizontal Rail Material:	5"x4"x⅛" HSS	Module Size:	41.18" x 61.34"
Top Rail Material:	SF Rails	Individual Module Rating:	327 watt
Qty Rails per Panel:	2	Sub Array Power Rating:	14.715 kw
Top Rail Length:	212"	Total Power Rating:	14.715 kw
Top Rail Center Span:	112½"		
Top Rail Overhangs:	49¾"		

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.

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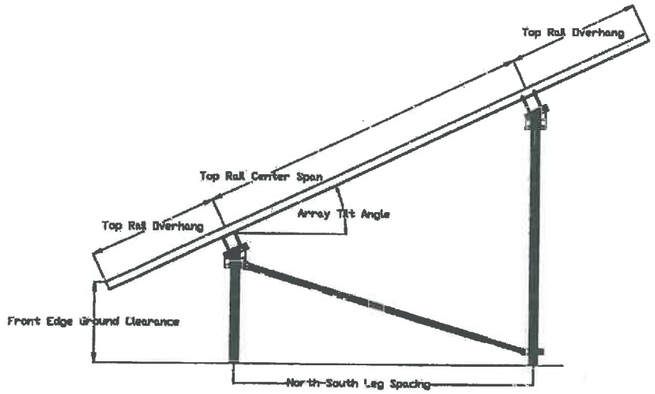
03/27/2019	Original	ML	JD

New York State Solar Farm

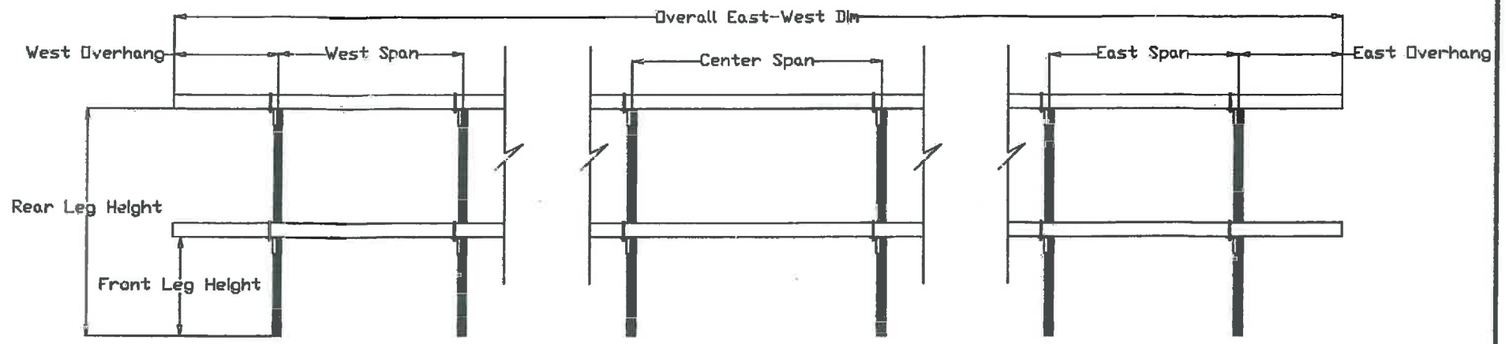
Project:
Endico-Fugett Residence
1386 Kings Hwy
Sugar Loaf, NY 10918

Solar Foundations USA

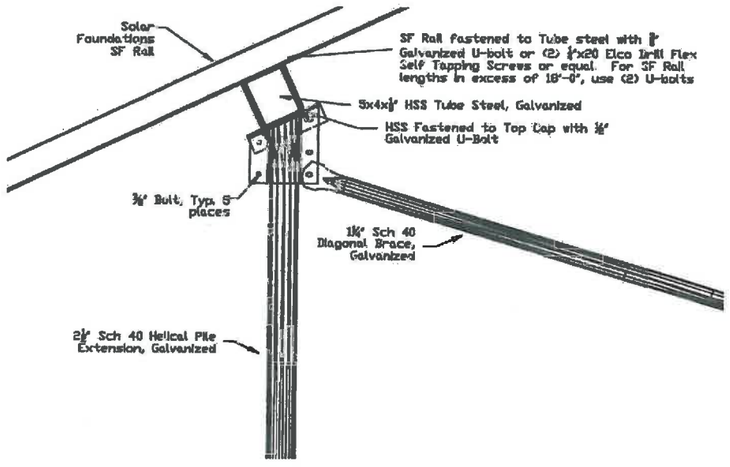
1142 River Road, New Castle, DE 19720 Ph: (855) 738-7200 Fax: (866) 644-5665



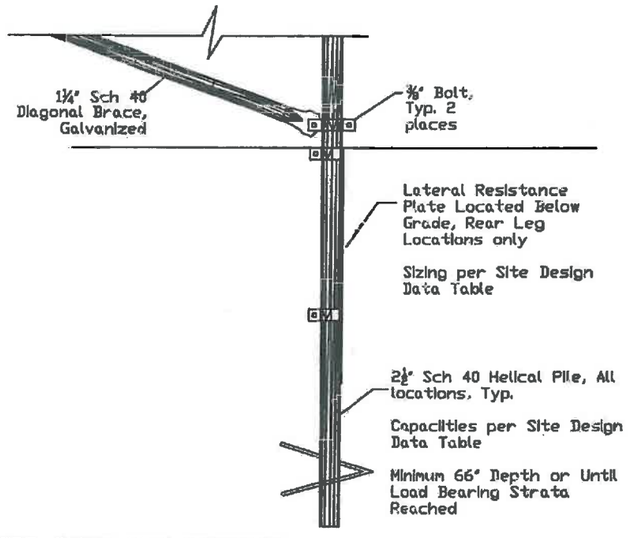
SIDE ELEVATION DETAIL NOT TO SCALE



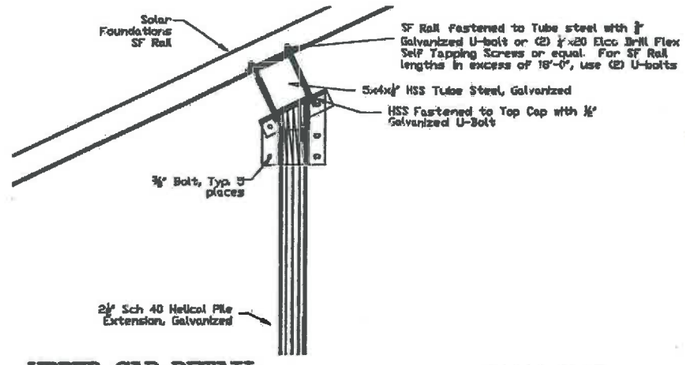
POST SPACING ELEVATION DETAIL NOT TO SCALE



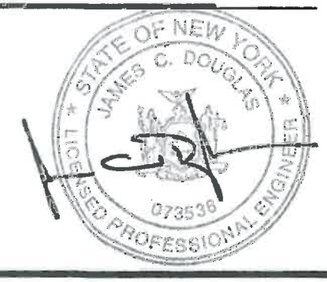
LOWER CAP DETAIL NOT TO SCALE



HELICAL PILE AND LATERAL RESISTANCE PLATE DETAIL NOT TO SCALE



UPPER CAP DETAIL NOT TO SCALE



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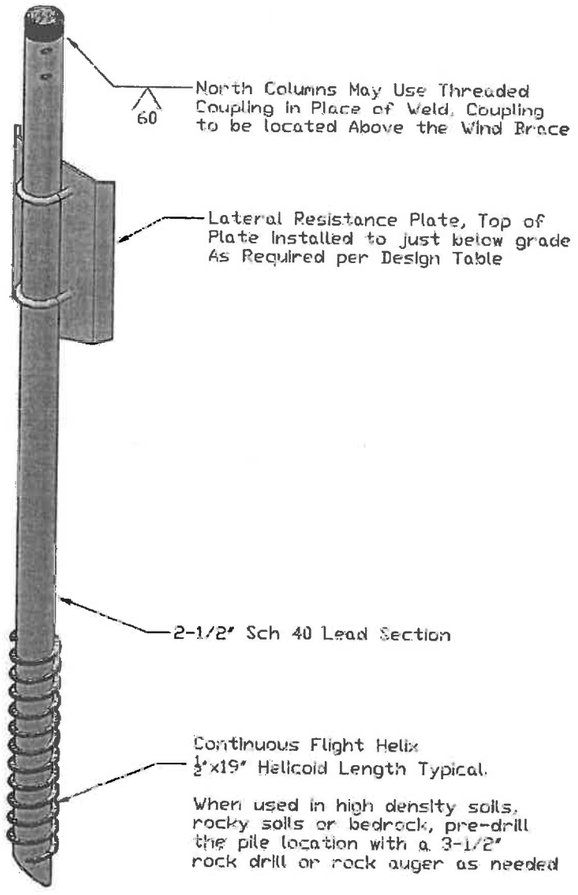

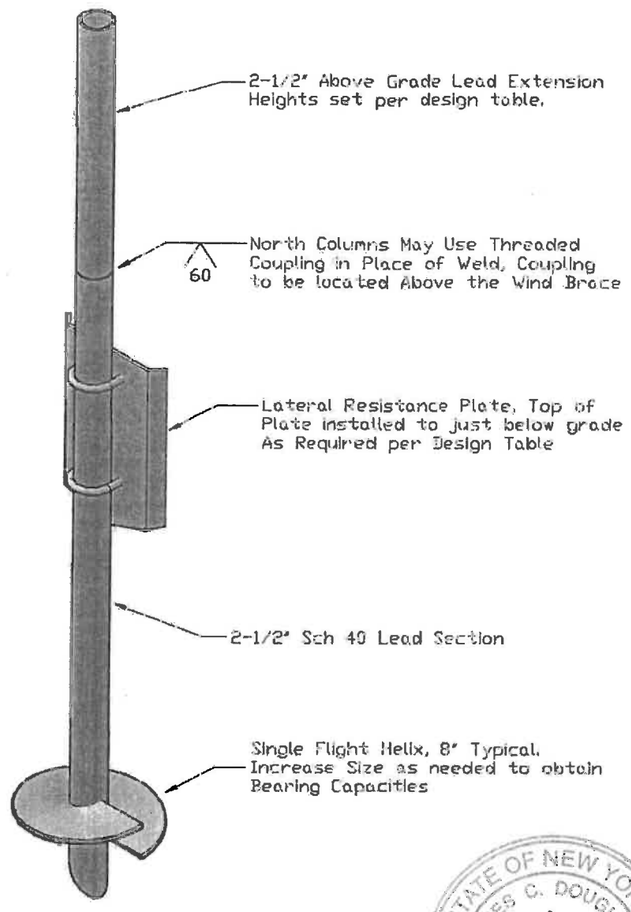

Helical Pile Detail NOT TO SCALE

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 D1.1/D1.1M -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.

STATE OF NEW YORK * JAMES C. DOUGLAS * 073536 LICENSED PROFESSIONAL ENGINEER

Sheet 3 of 3

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