

Project Name	Smith Residence
Customer Name	David Smith
Project Address	2104 Queensway Court Creedmoor, NC 27522
Phone Number	919-306-9087
System Size	5.89 kW DC

Inverter Schedule					
Inverter	Brand	Model	String(s)	Modules Per String	Total Modules
#1	SunPower	SPR-5000m-TL	3	6	18

Module Schedule				
Brand	Model	Dimensions (Inch)	Amount	Rated Power
SunPower	E20-327	61.4 x 41.2 x 1.81	18	327 W

Array 1		Array 2	
True Azimuth	160 degrees 250 degrees	True Azimuth	
Magnetic Azimuth	169 degrees 259 degrees	Magnetic Azimuth	
Tilt Angle	26 degrees 40 degrees	Tilt Angle	

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PV 3	Penetrations & Grounding
PV 4	Load Calculations
PV 5	Single Line Diagram
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Module Spec Sheet	
Inverter Spec Sheet	

Scope of Work

Install 18 PV modules on roof of building to produce 5,886 Wp DC. Connect PV modules to 1 inverter through DC disconnect. Connect AC lines from inverter to main power supply of building through an AC disconnect and a back-fed breaker.

Comply with: 2011 NEC, 2012 NCBC
Occupancy Group Division: Residential

**PV 1
Cover**

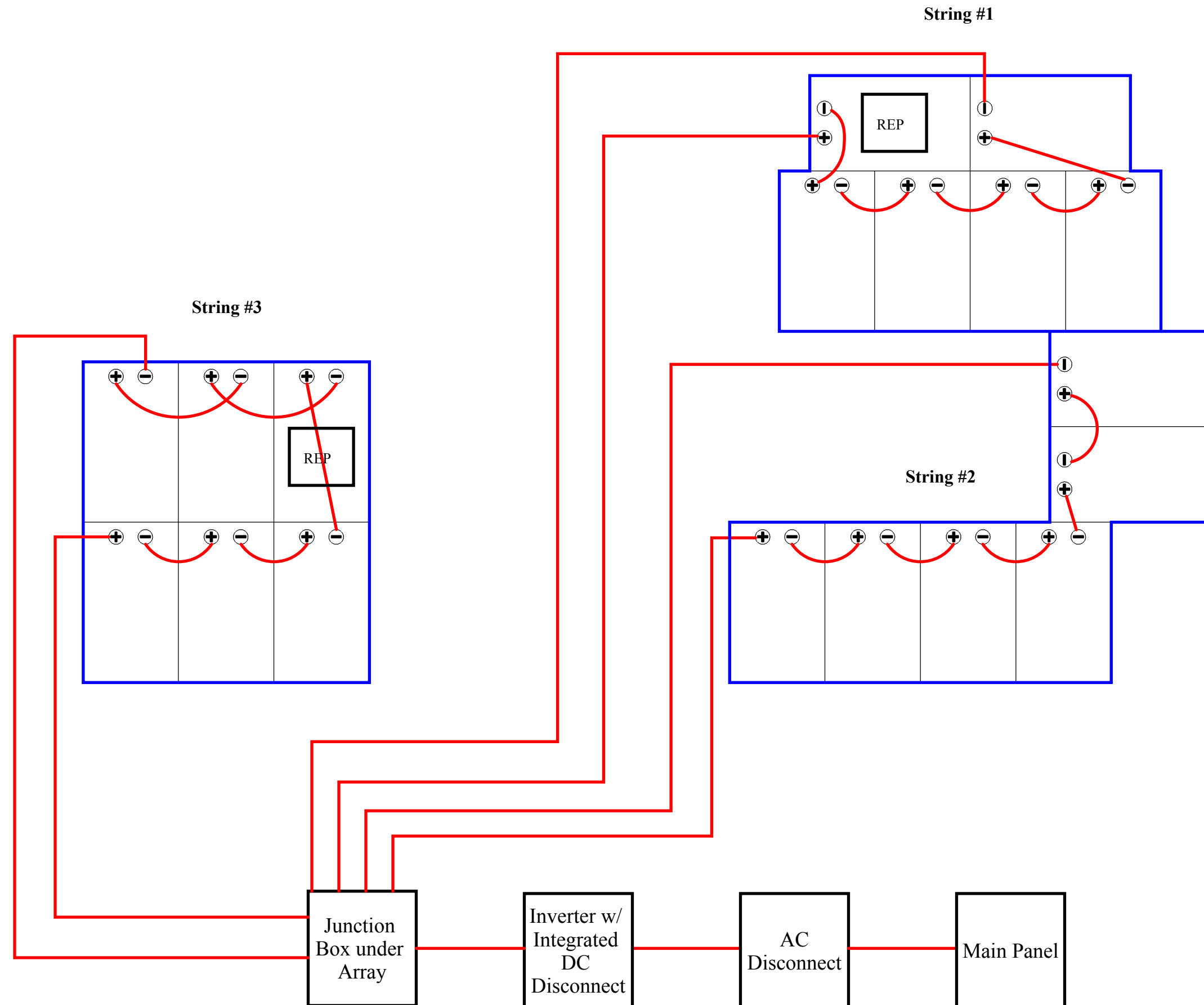
Drawn By: Dylan Greenleaf
Approved By: Rob Smith
Date: 04/20/2015
Rev. Date:
Rev. Number:
Scale: NTS

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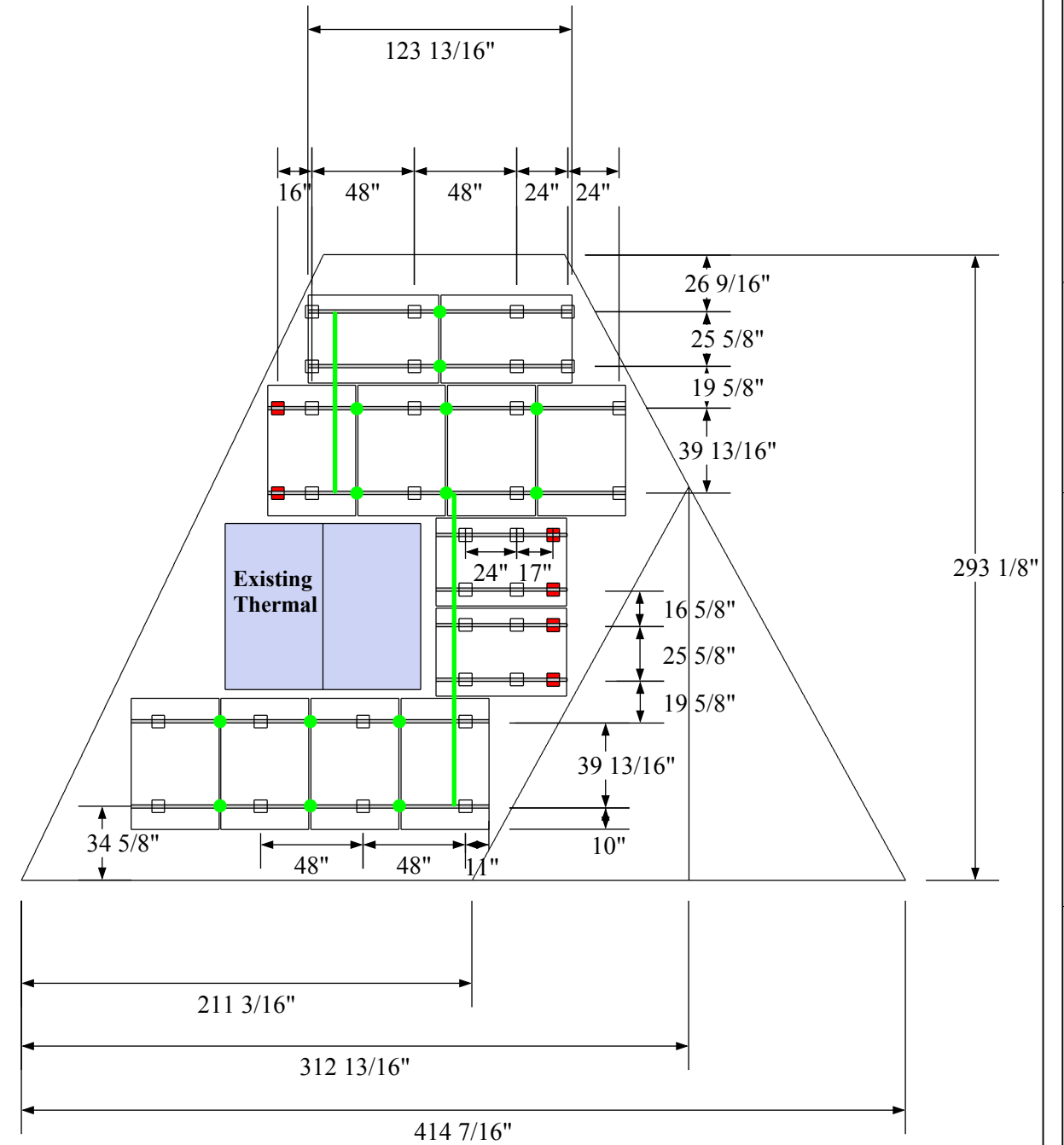
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PV 2 Modules & Strings	
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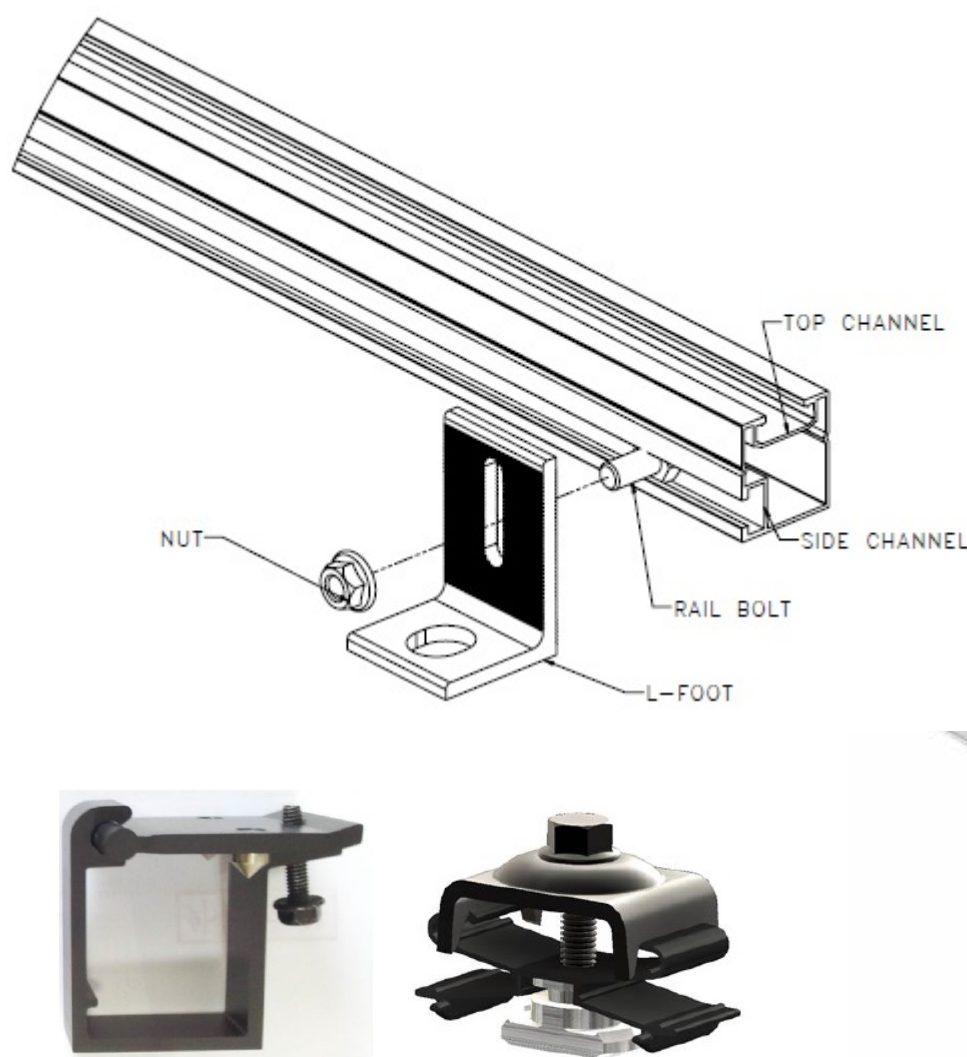


DIAGRAM 1
L-foot mount
assembly

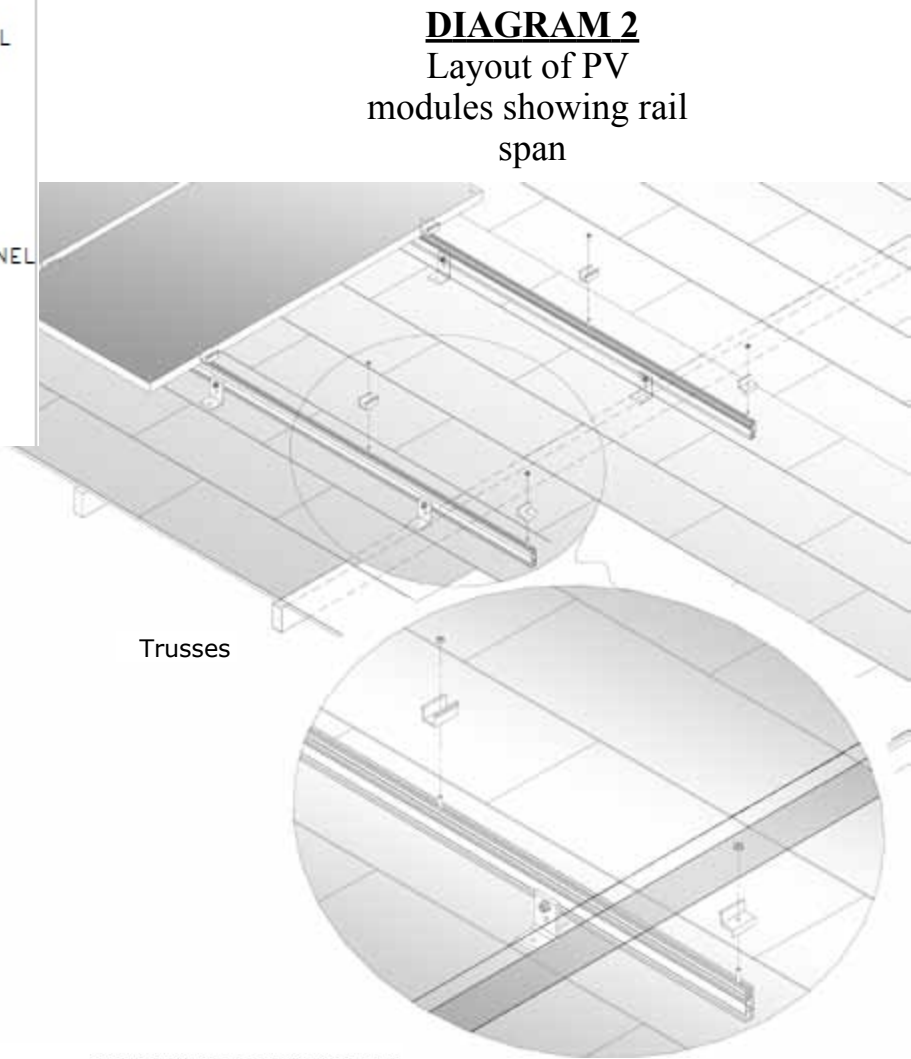


DIAGRAM 2
Layout of PV
modules showing rail
span

DIAGRAM 3
Universal End Clamp
and Mid Clamp

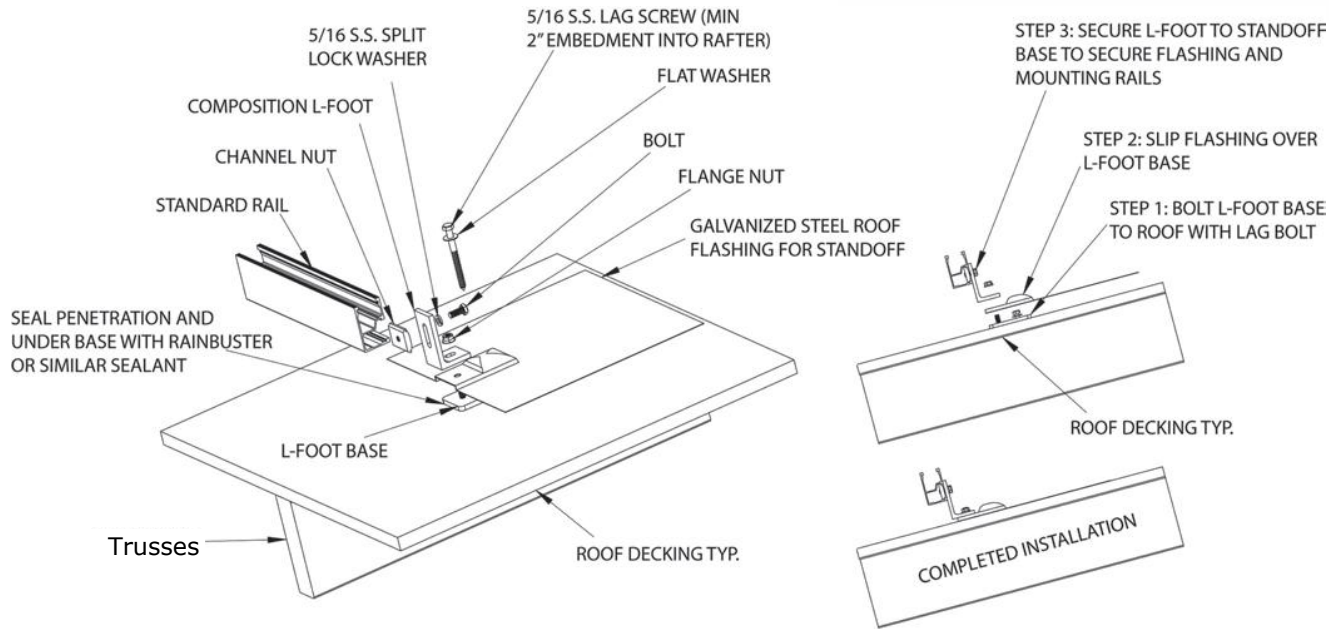


DIAGRAM 4
L-foot mount
assembly

Load Calculations for InvisiMount		
Quantity of Modules	18.00	pcs
Module Weight	41.00	lbs
Module Area	17.57	SF
Weight per System	738.00	lbs
Area per System	316.26	SF
Quantity of 129" Rails	15.00	pcs
Each Weight	6.05	lbs
Weight per System	90.75	lbs
Quantity of Mid Clamps	24.00	pcs
Each Weight	0.14	lbs
Weight per System	3.30	lbs
Quantity of End Clamps	24.00	pcs
Each Weight	0.25	lbs
Weight per System	6.00	lbs
Quantity of Splices	6.00	pcs
Each Weight	0.50	lbs
Weight per System	3.00	lbs
Quantity of Flashed L-feet	48.00	pcs
Each Weight	1.00	lbs
Weight per System	48.00	lbs
Quantity of Roof Blocks	0.00	pcs
Each Weight	0.50	lbs
Weight per System	0.00	lbs
Total Weight of System	889.05	lbs
System Weight per SF	2.81	lbs/SF
Weight per footing	18.52	lbs/footing

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PV Module Information
SunPower E20-327
Open circuit voltage = 64.9 V
Maximum permissible system voltage = 600 V
Short circuit current = 6.46 A
Maximum power at STC = 327 W
Maximum power voltage = 54.7 V
Maximum power current = 5.98 A

Inverter #1 Information
SunPower SPR-5000m-TL
Maximum output power = 5000 W
Operating DC Voltage range = 125 - 600 VDC
Maximum useable DC input Current = 30 A
Nominal AC output Voltage = 240 V
Maximum AC Current = 22 A

Array 1 Information
SPR-E20-327/ 5,886 W PV Array
3 Strings - 6 Modules Each

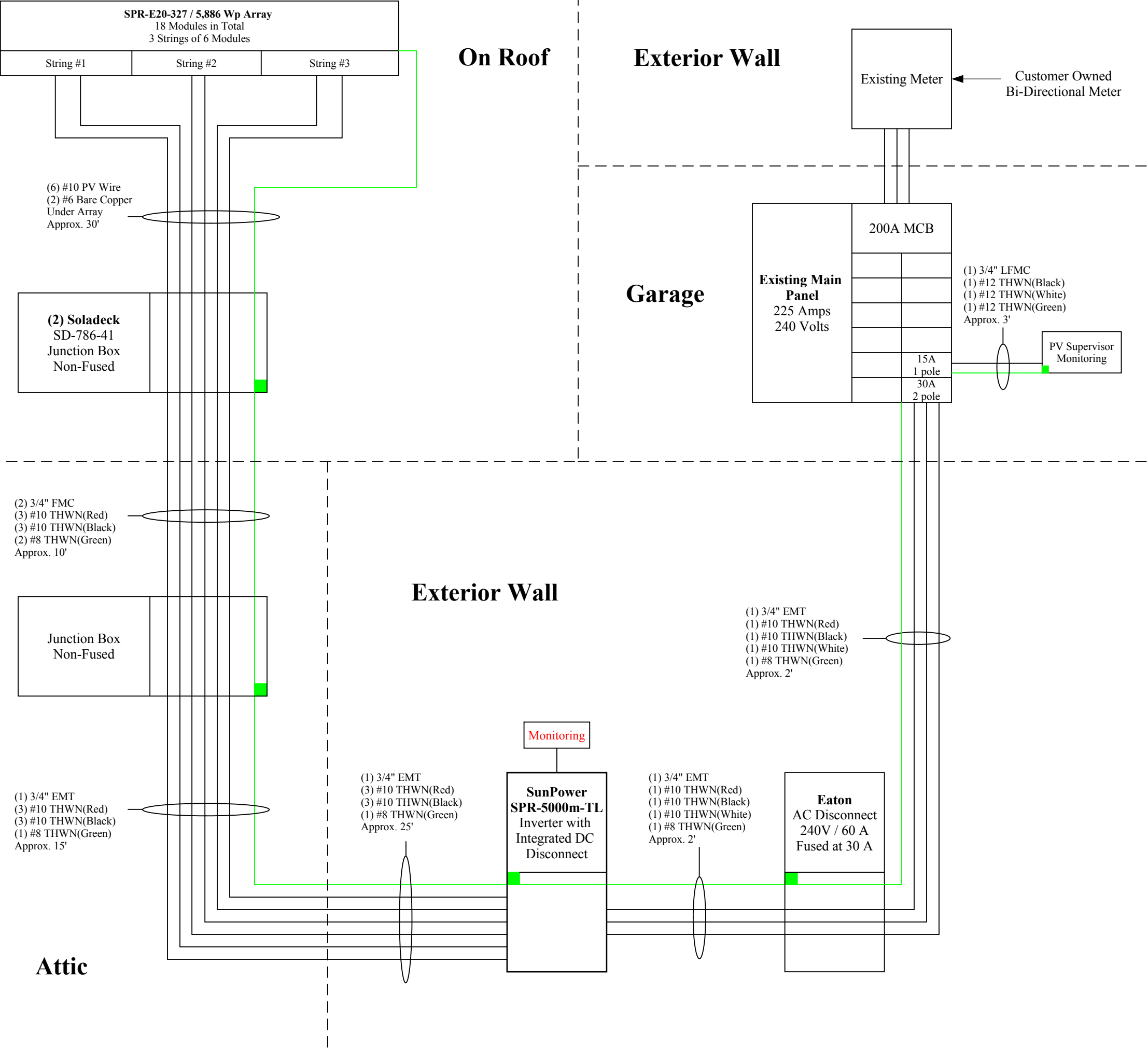
Label per 690.53 on inverter #1
Each String (6 Modules each)
Operating Voltage = 328.2 V
Operating Current = 5.98 A
Max. system voltage @ STC = 389.4 V
Max. system voltage @ 0° F = 428.8 V
Short circuit current = 6.46 A

All work shall comply with the 2011 National Electrical Code (NEC) and all applicable local electrical code requirements.

Labeling
Contractor will supply labels per NEC Article 225.37, 690, and 705.

Interconnection Standards Compliance
The inverters listed have been tested to be in compliance with UL1741 Statistic Inverters and Charge Controllers for use in Photovoltaic Power Systems, as well as IEEE-929-2000 Recommended Practice for Utility Interface of Photovoltaic (PV) Systems.

IEEE-929-2000 provides guidance regarding equipment and function necessary to ensure compatible operation of photovoltaic systems which are connected in parallel with the electric utility. UL 1741 is the standard applied by Underwriters Labatory to the Inverter to verify it meets the recommendations of IEEE-929-2000. refer to both documents for details of these recommendations and test procedures.



PV 5

Single Line Diagram

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