Permits: 410-313-2455
Inspections: 410-313-1810
Automated Line: 410-313-3800

Howard County Building/Fire Permit Application

Department of Inspections, Licenses & Permits
3430 Court House Drive
Ellicott City, MD 21043

Permit Number:

Building Address: 13011 WAINWRIGHT RD HIGHLAND MD 20777

Suite/Apt. #_____ SDP/WP/BA #: _____

Census Tract: _____ Subdivision: _____

Section: _____ Area: _____ Lot: _____

Tax Map: 40 Parcel: 424 Grid: 8

Zoning: _____ Map Coordinates: _____ Lot Size: _____

Existing Use: SFD

Proposed Use: SFD

Estimated Construction Cost: $ 24,000.-

Description of Work: INSTALL 2 POLE MOUNT SOLAR ARRAYS (12 PANELS EACH)

Occupant or Tenant: HAROLD GOLDSTEIN

Was tenant space previously occupied? ☑ Yes ☐ No

Contact Name: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: 301-854-0388 Fax: _____

Email: _____

Property Owner's Name: HAROLD GOLDSTEIN

Address: 13011 WAINWRIGHT RD

City: HIGHLAND State: MD Zip Code: 20777

Home Phone: 301-854-0388 Work Phone: _____

Applicant's Name & Mailing Address, (If other than stated herein):

Phone: _____ Fax: _____

Email: _____

Contractor Company: SOLAR ENERGY WORLD

Contact Person: DANNY POLK

Address: 8265 PATUXENT RANGE RD

City: JESSUP State: MD Zip Code: 20794

License No.: MHIC 127353

Phone: 301-497-3232 Fax: 301-497-3251

Email: dannyp@greenelect.com

Engineer/Architect Company: _____

Responsible Design Prof.: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ Fax: _____

Email: _____

BUILDING DESCRIPTION - COMMERCIAL

Building Characteristics	Utilities
Height:	***Water Supply***
No. of stories:	☐ Public
Gross area, sq. ft./floor:	☐ Private
	Sewage Disposal
Area of construction (sq. ft.):	☐ Public
	☐ Private
Use group:	Electric: ☐ Yes ☐ No
	Gas: ☐ Yes ☐ No
Construction type:	***Heating System***
☐ Reinforced Concrete	☐ Electric ☐ Oil
☐ Structural Steel	☐ Natural Gas ☐ Propane Gas
☐ Masonry	***Sprinkler System:***
☐ Wood Frame	☐ N/A
☐ State Certified Modular	☐ Full
	☐ Partial
	☐ Other Suppression
	No. of Heads:

BUILDING DESCRIPTION – RESIDENTIAL

Building Characteristics	***Utilities***
☑ SF Dwelling ☐ SF Townhouse	***Water Supply***
Depth ***Width***	☐ Public
1st floor:	☑ Private
2nd floor:	***Sewage Disposal***
Basement:	☐ Public
☐ Finished Basement	☑ Private
☐ Unfinished Basement	Electric: ☐ Yes ☐ No
☐ Crawl Space	Gas: ☐ Yes ☐ No
☐ Slab on Grade	***Heating System***
No. of Bedrooms:	☐ Electric
Multi-family Dwelling	☐ Oil
No. of efficiency units:	☐ Natural Gas
No. of 1 BR units:	☐ Propane Gas
No. of 2 BR units:	
No. of 3 BR units:	
Other Structure:	
Dimensions:	
Footings:	
Roof:	
☐ State Certified Modular	
☐ Manufactured Home	

THE UNDERSIGNED HEREBY CERTIFIES AND AGREES AS FOLLOWS: (1) THAT HE/SHE IS AUTHORIZED TO MAKE THIS APPLICATION; (2) THAT THE INFORMATION IS CORRECT; (3) THAT HE/SHE WILL COMPLY WITH ALL REGULATIONS OF HOWARD COUNTY WHICH ARE APPLICABLE THERETO; (4) THAT HE/SHE WILL PERFORM NO WORK ON THE ABOVE REFERENCED PROPERTY NOT SPECIFICALLY DESCRIBED IN THIS APPLICATION; (5) THAT HE/SHE GRANTS COUNTY OFFICIALS THE RIGHT TO ENTER ONTO THIS PROPERTY FOR THE PURPOSE OF INSPECTING THE WORK PERMITTED AND POSTING NOTICES.

Danny Polk
Applicant's Signature

DANNY POLK
Print Name

dannyp@greenelect.com
Email Address

11-19-10
Date

Proj Mgr SEW
Title/Company

Checks Payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY

PLEASE WRITE NEATLY & LEGIBLY

-FOR OFFICE USE ONLY-

AGENCY	DATE	SIGNATURE OF APPROVAL
State Highways		
Building Officials		
PSZA (Zoning)		
PSZA (Engineering)		
Health	11/19/10	Patrick J. Dawe
Fire Protection		

Is Sediment Control approval required for issuance? ☐ Yes ☐ No

☐ CONTINGENCY CONSTRUCTION START

☐ ONE STOP SHOP

DPZ SETBACK INFORMATION
Front:
Rear:
Side:
Side St.:
All minimum setbacks met? ☐ Yes ☐ No
Is Entrance Permit Required? ☐ Yes ☐ No
Historic District? ☐ Yes ☐ No
Lot Coverage for New Town Zone:
SDP/Red-line approval date:

Filing Fee	$
Permit Fee	$
Tech Fee	$
Excise Tax	$
PSFS	$
Guaranty Fund	$
Add'l per Fee	$
Total Fees	$
Sub- Total Paid	$
Balance Due	$

Distribution of Copies: White: Building Officials Green: PSZA,Zoning Yellow: PSZA,Engineering Pink: Health Gold: SHA

T:\Operations\Updated Forms\Building App. 6/2010

POWER-FAB®
Quality Hardware for the PV Industry

MOUNTING POLE GUIDE FOR TOP-OF-POLE MOUNTS

The following table provides "rule-of-thumb" guidelines for an average installation. Soil type varies widely from one region to another. The actual depth and diameter of the hole and the amount of concrete used is very dependent on soil type. Installations in loose, sandy soil will require a larger, deeper hole with more concrete than an installation in hard, rocky soil. The amount of pole sticking out of the ground and the wind speeds in your area also play an important role in determining the depth and diameter of the hole. If in doubt, we recommend that you consult a civil engineer in your area that is familiar with local soil conditions.

MODULE AREA	POLE SIZE (STEEL PIPE)	LENGTH IN GROUND	HEIGHT * ABOVE GROUND	HOLE DIAMETER
15 SQ. FT.	2" SCH40 (2-3/8" OD)	30"-36"	48"-72"	8"-12"
20 SQ. FT.	2.5" SCH40 (2-7/8" OD)	34"-40"	48"-72"	10"-14"
28 SQ. FT.	3" SCH40 (3-1/2" OD)	36"-42"	48"-72"	12"-16"
35 SQ. FT.	3" SCH40 (3-1/2" OD)	38"-44"	60"-72"	12"-16"
60 SQ. FT.	4" SCH40 (4-1/2" OD)	42"-48"	60"-72"	16"-24"
90 SQ. FT.	6" SCH40 (6-5/8" OD)	48"-60"	60"-84"	24"-30"
120 SQ. FT.	6" SCH40 (6-5/8" OD)	48"-72"	72"-84"	24"-30"
160 SQ. FT.	8" SCH40 (8-5/8" OD)	60"-78"	84"-102"	30"-36"
180 SQ. FT.	8" SCH40 (8-5/8" OD)	60"-78"	84"-102"	30"-36"
225 SQ. FT	8" SCH80 (8-5/8" OD)	72"-84"	96"-120"	36"
260 SQ. FT.	8" SCH80 (8-5/8" OD)	72"-84"	96"-120"	36"

* If you need a taller pole for snow clearance or to clear nearby obstructions you will need to have more pole in the ground. For each extra foot that you add above ground you will need approximately 6" in the ground in concrete.

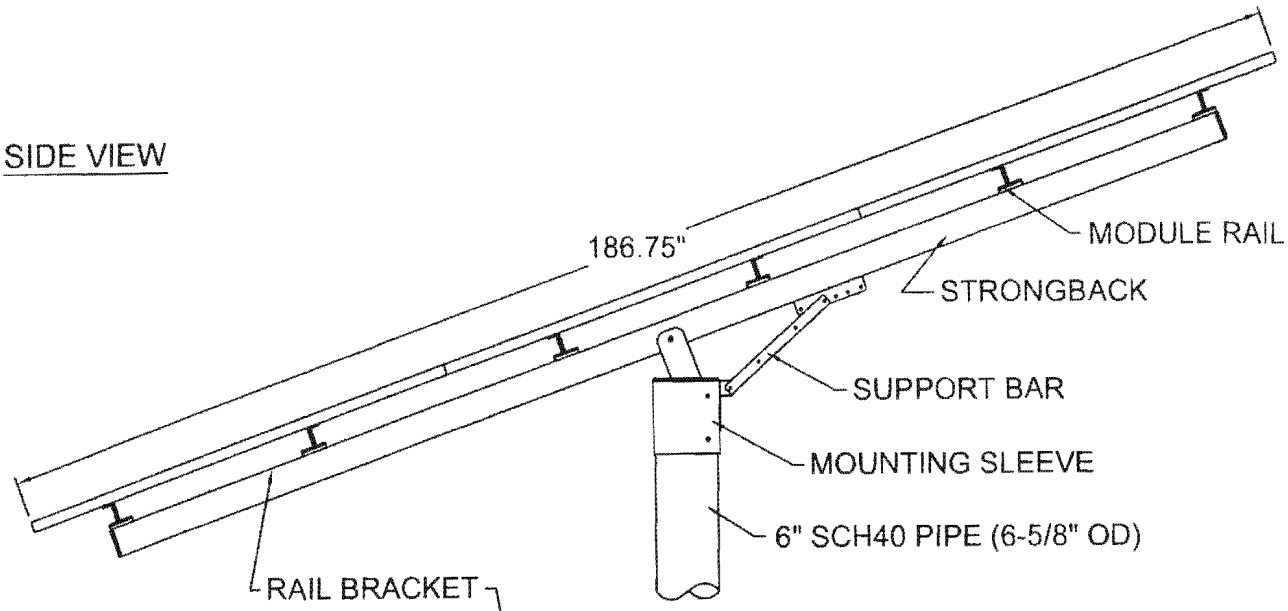
If you have to go more than 2ft-3ft higher than what is shown in the table you may need a larger diameter pole. Please consult the factory.

General Procedure: When your hole is ready place the piece of pipe in it so that it is resting on the bottom of the hole - it is a good idea to fill the bottom 2"-4" of the hole with rocks. Brace the pole plumb and pour concrete around it. Fill the hole to ground level, add a little extra concrete and use a trowel to form a mound around the pole so that the concrete slopes down away from the pole. Allow the concrete to set up for at least 24 hours before installing your rack.

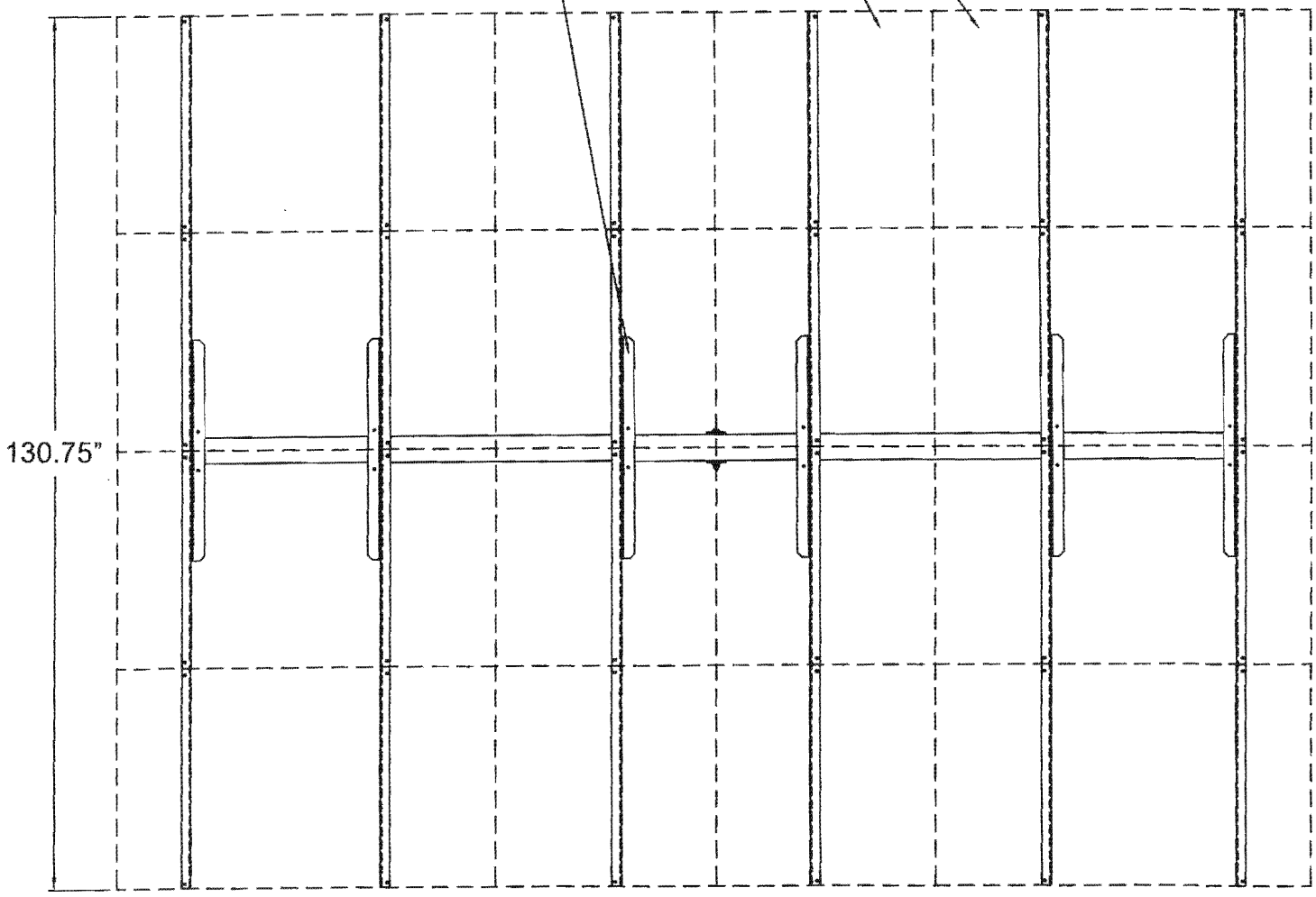
DIRECT POWER AND WATER CORPORATION
4000-B Vassar Drive NE
Albuquerque, NM 87107
Ph: 800-260-3792 Fax: 505-889-3548

DP-TPM12-SH165/175/185-3X4 ARRAY

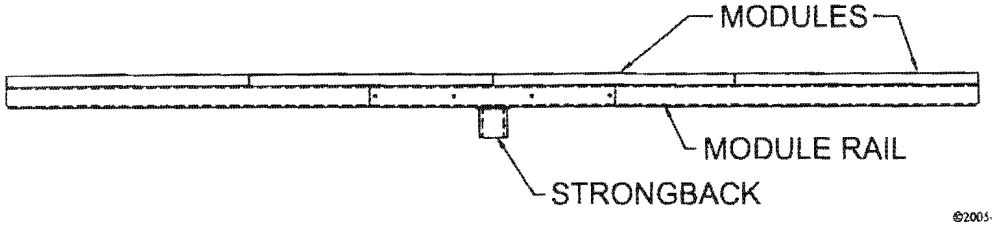
SIDE VIEW



TOP VIEW



END VIEW



INSTALLATION INSTRUCTIONS FOR MODEL DP-TPM12-SH165/175 TOP-OF-POLE MOUNTS

Components:

- 1ea. Strongback with Support Bar
- 6 ea. Rail Brackets, 3"x2" angle 34.5" long
- 1ea. Mounting Sleeve with Pivot Bolt
- 6 ea. Module Rails – 3"x1.5" aluminum channel 130.75" long
- 1 lot rack assembly hardware
- 1 lot module mounting hardware
- 1 Support Bar

1. You will need a piece of 8" SCH40 steel pipe (8-5/8" OD) for a mounting pole. This piece of pipe should be 14-15 feet long. Dig a hole about 30"-36" in diameter and 60"-78" deep. Put the pole into the hole and pour concrete around it, filling the hole to the top. Brace the pole so that it is straight and let the concrete harden. If you live in an area with deep snow build-up you may want a taller pole. For every extra foot above ground you need to have about 8" more in the ground in concrete. [These are just guidelines. The actual depth and diameter of the hole and the amount of concrete used is very dependent on soil type and local wind conditions. Installations in loose, sandy soil will require a larger, deeper hole with more concrete than in hard, rocky soil. If in doubt, we recommend that you consult a civil engineer in your area that is familiar with local soil conditions.] If you live in an area that can get winds in the 80mph-90mph range and your site is flat, open ground with no trees, buildings, etc to break up the wind you may need to go up to an 8" SCH80 pipe for your mounting pole. Please consult the factory if in doubt.
2. Bolt the Mounting Sleeve to the Strongback and attach the free end of the Support Bar to the Angle Adjustment Plate on the Strongback. Bolt it to the hole farthest away from the pivot bolt in the Strongback.
3. Place the Strongback/Mounting Sleeve Assembly on the mounting pole, aim it south and lock it in place by tightening the set bolts on the sleeve.
4. This rack has six elevation angle set points. They are: 15, 25, 35, 45, 55 and 65 degrees. For assembly and module mounting it is probably easiest to lock the rack in the flattest (15-degree) position.
5. Bolt the Rail Brackets to the ½" thick plates that are welded on top of the Strongback and the using the 1/2"x1-3/4" bolts and hardware positioned as shown in the drawings (you must install them as shown in the drawings or the rails will not be positioned properly).
6. Bolt the Module Rails to the Rail Brackets using the 3/8" x 1-1/4" bolts and hardware. The Module Rails must be positioned as shown in the drawings. There are left-hand and right-hand rail sections that butt together centered on the Strongback.
7. Attach your photovoltaic modules to the module rails as shown in the drawings using the ¼" or 5/16" stainless steel hardware provided.
8. Be sure all rack and module bolts are tight.
9. When changing the elevation setting, loosen the pivot bolt before adjusting the rack. After changing the position of the Support Arm and tightening the two 1/2" bolts **be sure to tighten the pivot bolt – this bolt must be tight – the uprights on the mounting sleeve have to clamp against the Strongback.**

SUNPOWER

230 SOLAR PANEL

EXCEPTIONAL EFFICIENCY AND PERFORMANCE

BENEFITS

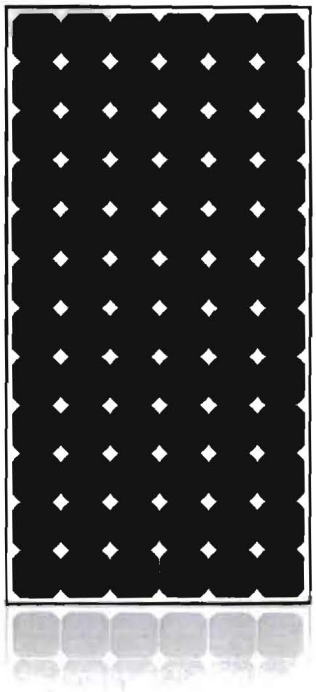
Highest Efficiency
SunPower™ Solar Panels are the most efficient photovoltaic panels on the market today.

More Power
Our panels produce more power in the same amount of space—up to 50% more than conventional designs and 100% more than thin film solar panels.

Reduced Installation Cost
More power per panel means fewer panels per install. This saves both time and money.

Reliable and Robust Design
Proven materials, tempered front glass, and a sturdy anodized frame allow panel to operate reliably in multiple mounting configurations.

SPR-230-WHT-U



The SunPower™ 230 Solar Panel provides today's highest efficiency and performance. Utilizing 72 all back-contact solar cells, the SunPower 230 delivers a total panel conversion efficiency of 18.5%. The panel's reduced voltage-temperature coefficient and exceptional low-light performance attributes provide outstanding energy delivery per peak power watt.

SunPower's High Efficiency Advantage - Up to Twice the Power

	Thin Film	Conventional	SunPower
Peak Watts / Panel	65	170	230
Efficiency	9.0%	13.0%	18.5%
Peak Watts / ft² (m²)	**8 (90)**	**12 (130)**	**17 (185)**

About SunPower

SunPower designs, manufactures and delivers high-performance solar electric technology worldwide. Our high-efficiency solar cells generate up to 50% more power than conventional solar cells. Our high-performance solar panels, roof tiles and trackers deliver significantly more energy than competing systems.

c UL us

SUNPOWER

230 SOLAR PANEL

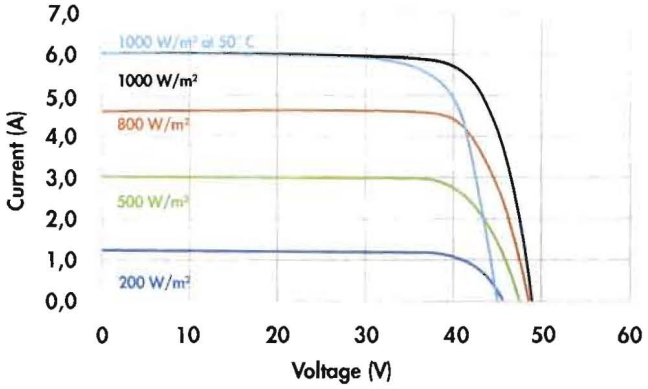
EXCEPTIONAL EFFICIENCY AND PERFORMANCE

Electrical Data

Measured at Standard Test Conditions (STC): irradiance of 1000W/m², AM 1.5, and cell temperature 25° C

Peak Power (+/-5%)	P_{mox}	230 W
Rated Voltage	V_{mpp}	41.0 V
Rated Current	I_{mpp}	5.61 A
Open Circuit Voltage	V_{oc}	48.7 V
Short Circuit Current	I_{sc}	5.99 A
Maximum System Voltage	UL	600 V
Temperature Coefficients		
	Power	-0.38% / K
	Voltage (V_{oc})	-132.5mV / K
	Current (I_{sc})	3.5mA / K
NOCT		45° C +/-2° C
Series Fuse Rating		20 A

I-V Curve



Current/voltage characteristics with dependence on irradiance and module temperature.

Mechanical Data

Solar Cells	72 SunPower all-back contact monocrystalline
Front Glass	High transmission tempered glass
Junction Box	IP-65 rated with 3 bypass diodes Dimensions: 32 x 155 x 128 (mm)
Output Cables	1000mm length cables / MultiContact (MC4) connectors
Frame	Anodized aluminum alloy type 6063 (black)
Weight	33.1 lbs. (15.0 kg)

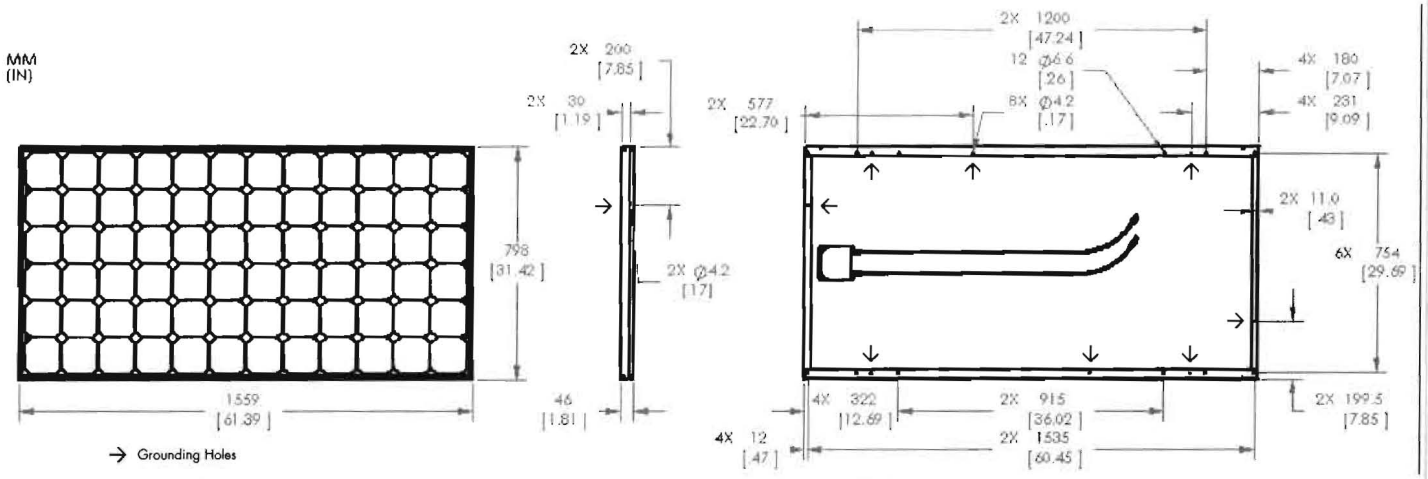
Tested Operating Conditions

Temperature	-40° F to +185° F (-40° C to + 85° C)
Max load	113 psf 550kg/m² (5400 Pa) front – e.g. snow; 50 psf 245kg/m² (2400 Pa) front and back – e.g. wind
Impact Resistance	Hail 1 in (25 mm) at 52mph (23 m/s)

Warranties and Certifications

Warranties	25 year limited power warranty
	10 year limited product warranty
Certifications	Tested to UL 1703. Class C Fire Rating

Dimensions



CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

Visit sunpowercorp.com for details

sunpowercorp.com

Document #001-42190 Rev*A / LTR_EN

SUNPOWER

BENEFITS

Reliable and Robust Design
Proven track record for durability and longevity

Effective Power Range
Enables most systems to use a single inverter rather than multiple units

Commercial Use
Flexible AC voltage output and scalable building blocks create an easy solution for commercial applications

High Efficiency
Weighted CEC efficiency over 95.5% and peak efficiency over 97%

Reduced Installation Cost
Integrated AC-DC disconnect with fuses lowers material costs and labor requirements

Attractive Aesthetics
Integrated disconnect eliminates need for visible conduits to inverter

SPR-5000m, SPR-6000m & SPR-7000m

5000m, 6000m & 7000m INVERTERS

EXCEPTIONAL RELIABILITY AND PERFORMANCE

The SunPower inverters 5000m, 6000m & 7000m provide exceptional reliability and market-leading design flexibility. The SPRm line of Solar Inverters can be easily applied in residential or commercial installations. All models come with a 10-year warranty.

SUNPOWER

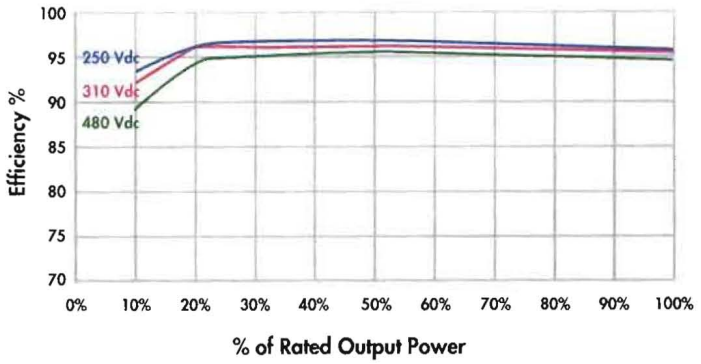
5000m, 6000m & 7000m INVERTERS

EXCEPTIONAL RELIABILITY AND PERFORMANCE

Electrical Data

	SPR–5000m	SPR–6000m	SPR–7000m
AC Power	5000 W	6000 W	7000 W
AC Max Output Current (@ 208V, 240V, 277V):	24A, 20.8A, 18A	29A, 25A, 21.6A	34A, 29A, 25.3A
AC Nominal Voltage / Range	183 – 229 V @ 208 VAC 211 – 264 V @ 240 VAC 244 – 305 V @ 277 VAC	183 – 229 V @ 208 VAC 211 – 264 V @ 240 VAC 244 – 305 V @ 277 VAC	183 – 229 V @ 208 VAC 211 – 264 V @ 240 VAC 244 – 305 V @ 277 VAC
AC Freq / Range	60 Hz / 59.3 Hz – 60.5 Hz	60 Hz / 59.3 Hz – 60.5 Hz	60 Hz / 59.3 Hz – 60.5 Hz
Power Factor	1	1	1
Peak Inverter Efficiency	96.8%	97.0%	97.1%
CEC Weighted Efficiency	95.5 % @ 208 V 95.5 % @ 240 V 95.5 % @ 277 V	95.5 % @ 208 V 95.5 % @ 240 V 96.0 % @ 277 V	96.0 % @ 208 V 96.0 % @ 240 V 96.0 % @ 240V
Recommended Array Input Power (DC @ STC)	5300 W	6400 W	7500 W
DC Input Voltage Range	250 – 600 V	250 – 600 V	250 – 600 V
Peak Power Tracking Voltage	250 – 480 V	250 – 480 V	250 – 480 V
DC Max. Input Current	21 A	25 A	30 A
DC Voltage Ripple	< 5%		
No. of Fused String Inputs	4		
Power Consump: Standby / Nighttime	< 7 W / 0.25 W		
Fused DC & AC Disconnect	Standard; Complies with NEC Standards		
Grounding	Positive Ground		

SPRm Efficiency Curves

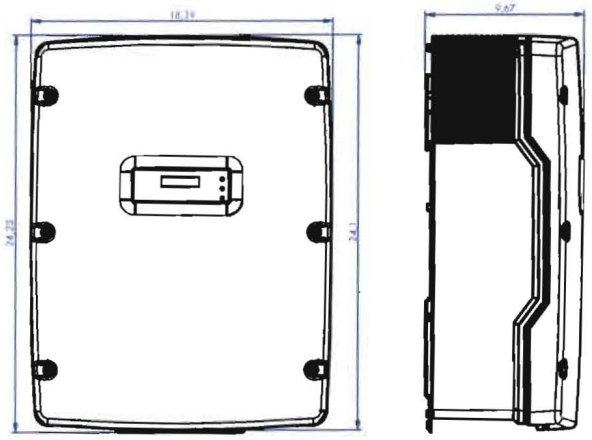


Mechanical Data

Shipping Dimensions W x H x D inches	23.5" x 31.0" x 16.0"
Unit Dimensions W x H x D inches	18.4" x 24.1" x 9.5"
Inverter Weight	143 lbs
Shipping Weight	154 lbs
Cooling	Forced Air / Sealed Electronics Enclosure
Enclosure	NEMA 3R
Mounting	Wall Mount Bracket Standard
Ambient Temperature Range	–13 to +113 °F

Warranty and Certifications

Warranty	10 year limited warranty
Certifications	Compliance: IEEE–929, IEEE–1547, UL 1741–2005, UL 1998, FCC Part 15 A & B

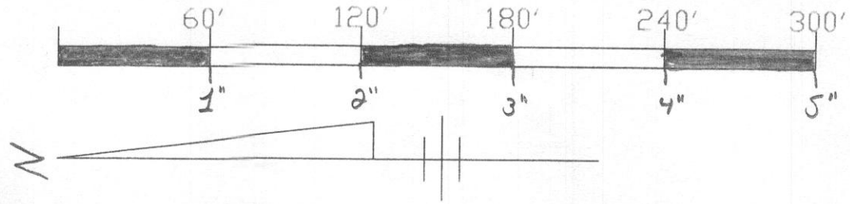


About SunPower

SunPower designs, manufactures and delivers high-performance solar electric technology worldwide. Our high-efficiency solar cells generate up to 50 percent more power than conventional solar cells. Our high-performance solar panels, roof tiles and trackers deliver significantly more energy than competing systems.

Document # 001–16967 Rev **

www.sunpowercorp.com



67'

99.86'

159.65'

293.25'

81.47'

℄20' Right of Way

132.96'

83.18'

61.48'

131.09'

159.14'

20'-5"

Proposed
PV Array
Location

BRL
10' Rear
30' Side

Utility Pole

419.77'

Parcel 12
7.123 AC±

Fence

Riding Arena

Fence

Barn
2700-ft²

Well

Septic Area

A.G.
Pool

Primary
Structure
2300-ft²

49'-5"

285.43'

Gravel Drive

67.25'

Garage
308-ft²

83.87'

67.70'

152'-0"

Stone
Driveway

73'-0"

℄25' Right of Way

109.53'

APPROVED
WALK-THRU BUILDING PERMIT
BP# _____ A# _____
APP. SAN M. Dawn DATE: 11/19/10
DESC. OF WORK: 2 pole mount
solar arrays

General Notes

This drawing is to provide reference for the installation of 2 top of pole mount Photovoltaic Arrays.

Proposed arrays shall cover 7ft² of property per footing.

Arrays shall have a clear distance of 8ft minimum from the ground to the lowest part of the array.

Footing shall be minimum 8' deep with a diameter of 36".

Electrical conduit shall run from the array to the barn. Private under ground marking may be required.

Dwelling has private water and sewer.

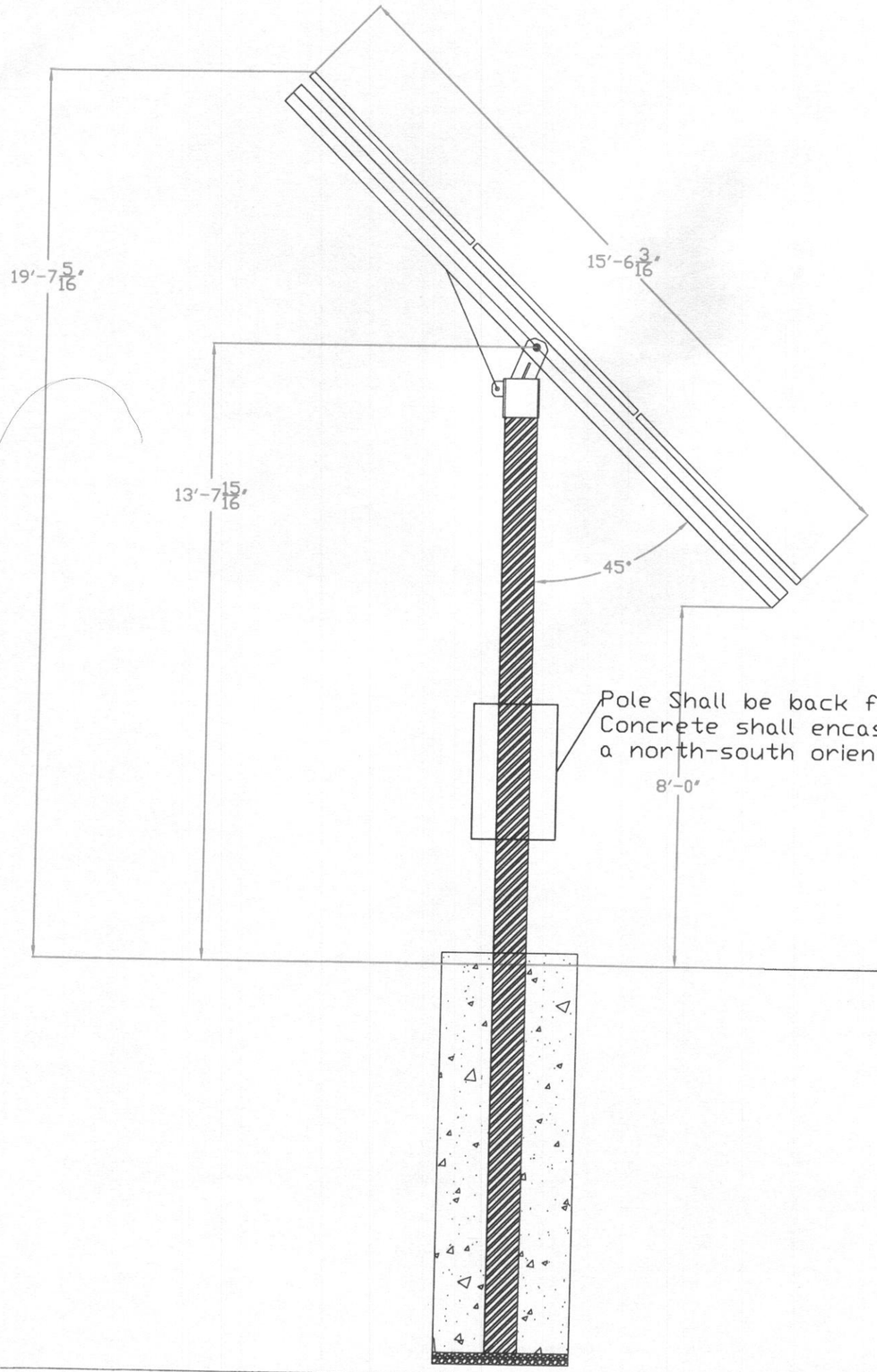
No.	Revision/Issue	Date

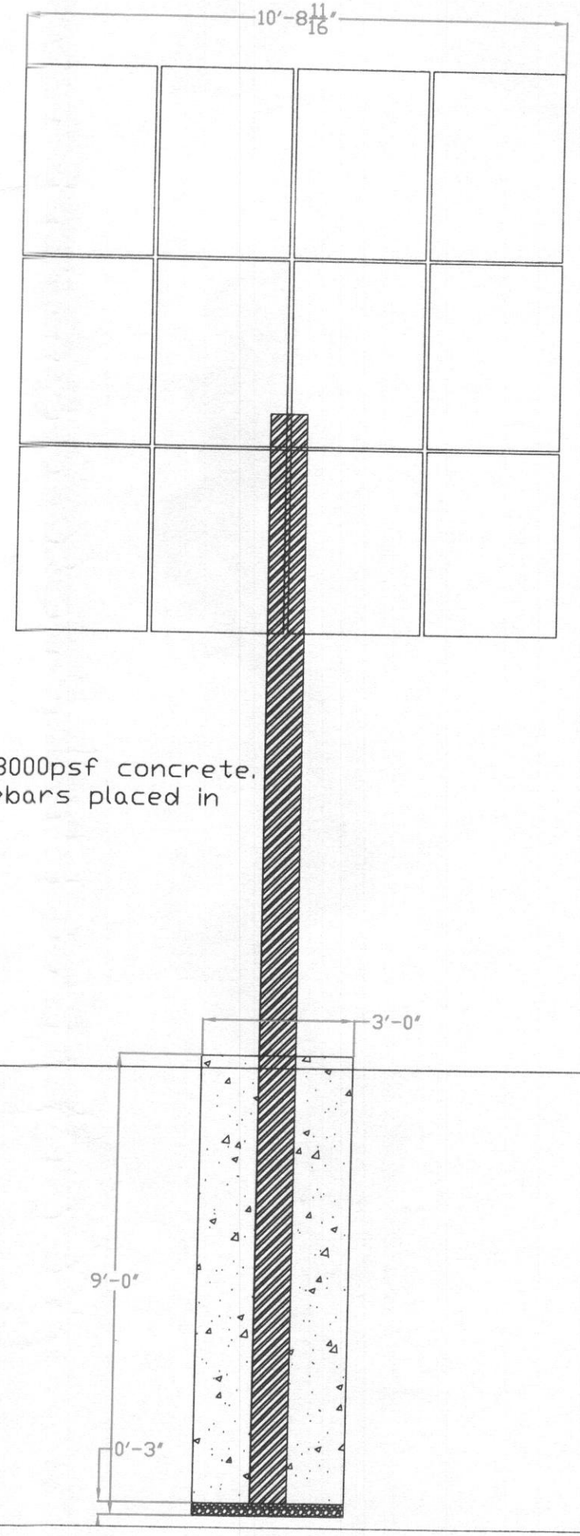
SolarEnergyWorld
Tomorrow's Energy Today

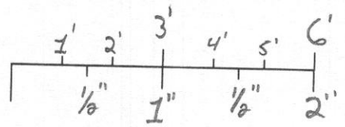
Project Name and Address

Goldstein Residence
13011 Wainwright Rd
Highland, MD 20777
5.52 kW

Drawn by	Sheet
JMC	01
Date: 11.16.2010	
Scale: 1"=60'	







General Notes

This drawing is to provide reference for the installation of 2 top of pole mount Photovoltaic Arrays.

Proposed arrays shall cover 7ft² of property per footing.

Arrays shall have a clear distance of 8ft minimum from the ground to the lowest part of the array.

Pole shall be 8" in diameter schedule 80**. Footing shall be minimum 9' deep with a diameter of 36". The base shall have 3" of crushed stone. Concrete shall be a minimum 3000 psf compression strength.

Dwelling has private water and sewer.

**Schedule 40 maybe substituted if pipe is back filled as noted on drawing.

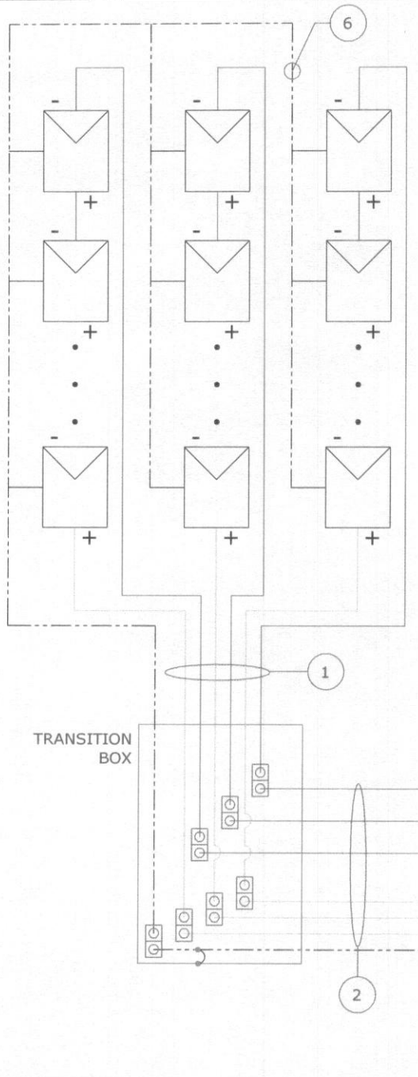
No.	Revision/Issue	Date

SolarEnergyWorld
Tomorrow's Energy Today

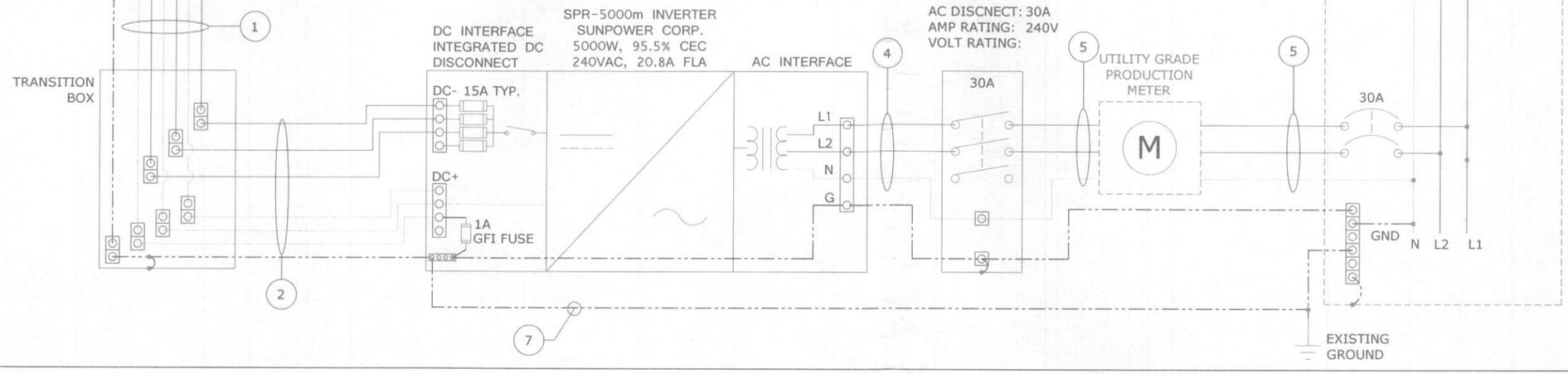
Project Name and Address

Goldstein Residence
13011 Wainwright Rd
Highland, MD 20777
5.52 kW

Drawn by: JMC
Date: 11.16.2010
Scale: 1″=3′
Sheet: 02



MODULE SPECIFICATION	
MODEL NO.	SPR-230-WHT
PEAK POWER	230 W
CEC RATED POWER	213.5 W
RATED VOLTAGE (Voc)	41.0 V
RATED CURRENT (Imp)	5.61 A
OPEN CIRCUIT VOLTAGE (Voc)	48.7 V
SHORT CIRCUIT CURRENT (Isc)	5.99 A
Inverter Specifications	
MAXIMUM DC VOLTAGE	600 VDC
MAXIMUM POWER OUTPUT	5000 W
NOMINAL AC VOLTAGE	240 VAC
MAXIMUM AC CURRENT	20.8 AAC
ARRAY DETAILS	
NO. OF MODULE PER STRING	8
NO. OF STRINGS	3
ARRAY WATTS AT STC	5520
ARRAY WATTS AT PTC	5124
690.53 Label Specifications	
RATED VOLTAGE	328 VDC
RATED CURRENT	17.07 ADC
MAXIMUM SYSTEM VOLTAGE	441.51 VDC
SHORT CIRCUIT CURRENT	22.69 ADC



* Optional

WIRE/CONDUIT SCHEDULE					
TAG	DESCRIPTION	CONDUIT TYPE/SIZE	CONDUCTOR SIZE/TYPE	1-WAY LENGTH (FEET)	NOTES
1	Array to Transition Box	N/A	#10 USE-2		
2	Transition Box to DC Disconnect		#10 THHN		
3	DC Disconnect to Inverter				INTEGRATED DISCONNECT
4	Inverter to AC Disconnect		#__ THHN or NM		
5	AC Disconnect to MSP		#__ THHN or NM		
6	Bare Copper Wire	N/A	#10		Equipment Grounding Conductor
7	Grounding Electrode Conductor		#8 THHN		To Existing Grounding Electrode

1 SINGLE LINE DIAGRAM
SCALE: NA

GENERAL ELECTRICAL NOTES:

1. EQUIPMENT USED SHALL BE NEW, UNLESS OTHERWISE NOTED.
2. EQUIPMENT USED SHALL BE UL LISTED, UNLESS OTHERWISE NOTED.
3. EQUIPMENT SHALL BE INSTALLED PROVIDING ADEQUATE PHYSICAL WORKING SPACE AROUND THE EQUIPMENT AND SHALL COMPLY WITH NEC.
4. SUNPOWER MODULES SHALL BE POSITIVELY GROUNDED. GROUNDED (POSITIVE) CONDUCTORS SHALL BE UN-FUSED AND UN-BROKEN FROM THE ARRAY TO THE INVERTER DC TERMINAL. UN-GROUDNED (NEGATIVE) CONDUCTORS SHALL BE FUSED AND/OR SWITCHED.
5. COPPER CONDUCTORS SHALL BE USED AND SHALL HAVE INSULATION RATING 600V, 90°C, UNLESS OTHERWISE NOTED.
6. CONDUCTORS SHALL BE SIZED IN ACCORDANCE TO NEC. CONDUCTORS AMPACITY SHALL BE DE-RATED FOR TEMPERATURE INCREASE, CONDUIT FILL AND VOLTAGE DROP.
7. ALL CONDUCTORS, EXCEPT USE-2, SHALL BE INSTALLED IN APPROVED CONDUITS OR RACEWAY. CONDUITS SHALL BE ADEQUATELY SUPPORTED AS PER NEC.
8. AC DISCONNECT SHOWN IS REQUIRED IF THE UTILITY REQUIRES VISIBLE-BLADE SWITCH.
9. EXPOSED NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDED AS PER NEC.
10. LOAD SIDE INTER-CONNECTION SHALL COMPLY WITH NEC
11. ASHRAE FUNDEAMENTALS OUTDOOR DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE U.S. (PHOENIX, AZ or PALM SPRINGS, CA)
12. FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN ROOF MOUNTED SUNLIGHT CONDUIT USING THE OUTDOOR TEMPERATURE OF 47°C
    - 12.1. 12AWG CONDUCTOR ARE GENERALLY ACCEPTABLE FOR MODULES WITH AN Isc OF 6.4 AMPS WITH A 10 AMP FUSE.
    - 12.2. 10AWG CONDUCTOR ARE GENERALLY ACCEPTABLE FOR MODULES WITH AN Isc OF 9.6 AMPS WITH A 15 AMP FUSE.

Wire sizing for OCPD
Ex(Isc*(1.25)(1.25)(# of strings in paralell)= wire ampacity or using NEC table 690.31

SolarEnergyWorld
Tomorrow's Energy Today
SOLAR ENERGY WORLD LLC.
8265 Patuxent Range Rd 301.497.3232 p:
Jessup, MD 20794 301.497.3251 f:

ENGINEER'S STAMP

Goldstien Residence
5.52 kW
13011 Wainwright Rd
Highland MD. 20777

SINGLE LINE DIAGRAM

REVISIONS

REV	QUOTE #	DESCRIPTION	DATE	DB CB

OPPORTUNITY	
PROJECT	
DATE DRAWN	11.17.2010
DRAWN BY	JMC
DMS #:001-54252 REV. **	
SHEET	E1