



# Building Permit Application

Howard County Maryland  
Department of Inspections, Licenses and Permits  
3430 Court House Drive  
Permits: 410-313-2455  
www.howardcountymd.gov

Date Received: 1/27/15

Permit No.: B15000344

Building Address: 7266 GUILFORD RD  
City: CLARKSVILLE State: MD Zip Code: 21029  
Suite/Apt. # \_\_\_\_\_ SDP/WP/BA #: \_\_\_\_\_  
Census Tract: \_\_\_\_\_ Subdivision: \_\_\_\_\_  
Section: \_\_\_\_\_ Area: \_\_\_\_\_ Lot: \_\_\_\_\_  
Tax Map: 0035 Parcel: 0286 Grid: 0021  
Zoning: \_\_\_\_\_ Map Coordinates: \_\_\_\_\_ Lot Size: 2 AC

Existing Use: SFD  
Proposed Use: SFD WITH SOLAR  
Estimated Construction Cost: \$ 84,000.00  
Description of Work: INSTALL 30 ROOF MOUNTED,  
78 GROUND MOUNTED PV SOLAR PANELS,  
27.54 KW

Occupant or Tenant: \_\_\_\_\_  
Was tenant space previously occupied?  Yes  No  
Contact Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

Property Owner's Name: DOUGLAS DOUGLAS  
Address: 7266 GUILFORD RD  
City: CLARKSVILLE State: MD Zip Code: 21029  
Phone: 443-804-5534 Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

Applicant's Name & Mailing Address. (If other than stated herein)  
Applicant's Name: SOLAR ENERGY WORLD/JEFF PROVINI  
Address: 5681 MAIN ST.  
City: ELKRIDGE State: MD Zip Code: 21075  
Phone: 443-616-1386 Fax: \_\_\_\_\_  
Email: JPROVINI@SOLARENERGYWORLD.COM

Contractor Company: SOLAR ENERGY WORLD  
Contact Person: GEOFF MURKIN  
Address: 5681 MAIN ST.  
City: ELKRIDGE State: MD Zip Code: 21075  
License No.: 127353  
Phone: 410-579-2009 Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

Engineer/Architect Company: \_\_\_\_\_  
Responsible Design Prof.: \_\_\_\_\_  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_  
Email: \_\_\_\_\_

Commercial Building Characteristics	Residential Building Characteristics	
Height:	<input checked="" type="checkbox"/> SF Dwelling <input type="checkbox"/> SF Townhouse	
No. of stories:	Depth	Width
Gross area, sq. ft./floor:	1 <sup>st</sup> floor:	
	2 <sup>nd</sup> floor:	
Area of construction (sq. ft.):	Basement:	
	<input type="checkbox"/> Finished Basement	
Use group:	<input type="checkbox"/> Unfinished Basement	
	<input type="checkbox"/> Crawl Space	
<b>Construction type:</b>	<input type="checkbox"/> Slab on Grade	
<input type="checkbox"/> Reinforced Concrete	No. of Bedrooms:	
<input type="checkbox"/> Structural Steel	<b>Multi-family Dwelling</b>	
<input type="checkbox"/> Masonry	No. of efficiency units:	
<input type="checkbox"/> Wood Frame	No. of 1 BR units:	
<input type="checkbox"/> State Certified Modular	No. of 2 BR units:	
	No. of 3 BR units:	
	Other Structure:	
	Dimensions:	
<input checked="" type="checkbox"/> <b>Roadside Tree Project Permit</b>	Footings:	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Roof:	
<b>Roadside Tree Project Permit #</b>	<input type="checkbox"/> State Certified Modular	
	<input type="checkbox"/> Manufactured Home	

Utilities	
<b>Water Supply</b>	
<input type="checkbox"/> Public	
<input checked="" type="checkbox"/> Private	
<b>Sewage Disposal</b>	
<input type="checkbox"/> Public	
<input checked="" type="checkbox"/> Private	
Electric: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Gas: <input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>Heating System</b>	
<input checked="" type="checkbox"/> Electric <input type="checkbox"/> Oil	
<input type="checkbox"/> Natural Gas <input type="checkbox"/> Propane Gas	
<input type="checkbox"/> Other:	
<b>Sprinkler System:</b>	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Grading Permit Number:	
Building Shell Permit Number:	

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.

Applicant's Signature: [Signature]  
Email Address: JPROVINI@SOLARENERGYWORLD.COM  
Title/Company: \_\_\_\_\_

Print Name: JEFFREY J. PROVINI  
Date: 1-22-15  
**RECEIVED**  
JAN 27 2015  
LICENSES & PERMITS DIVISION

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	<u>2/10/15</u>	<u>H. Oswald</u>

Is Sediment Control approval required for issuance?  Yes  No  
 CONTINGENCY CONSTRUCTION START

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

Filing Fee	\$
Permit Fee	\$ <u>50.00</u>
Tech Fee	\$ <u>5.00</u>
Excise Tax	\$
PSFS	\$
Guaranty Fund	\$
Add'l per Fee	\$
Total Fees	\$ <u>55.00</u>
Sub-Total Paid	\$
Balance Due	\$
Check	# <u>13052</u>

2/16/15. Site plan approved  
 as shown for 30 roof mounted  
 and 78 ground mounted solar  
 panels. H.O.



PROPOSED ARRAY LOCATION




- NOTES:**
- THIS DRAWING IS TO PROVIDE REFERENCE FOR THE INSTALLATION OF ROOF AND GROUND MOUNT PHOTOVOLTAIC ARRAYS.
  - THE SYSTEM SHALL INCLUDE 108 (30 ON ROOF AND 78 ON GROUND) CANADIAN SOLAR 255W MODULES [DIMENSIONS: 64.57 (L) x 38.7 (W) x 1.57 (D)] AND WEIGHING 41.9 LBS (PANEL DEAD LOAD = 2.41 PSF).



I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND, LICENSE NO. 41161, EXPIRATION DATE OCTOBER 18, 2015.

**General Notes**



**SolarEnergyWorld**  
 Tomorrow's Energy Today

Solar Energy World LLC.  
 5681 Main Street  
 Elkridge, MD 21075  
 (888) 497-3233

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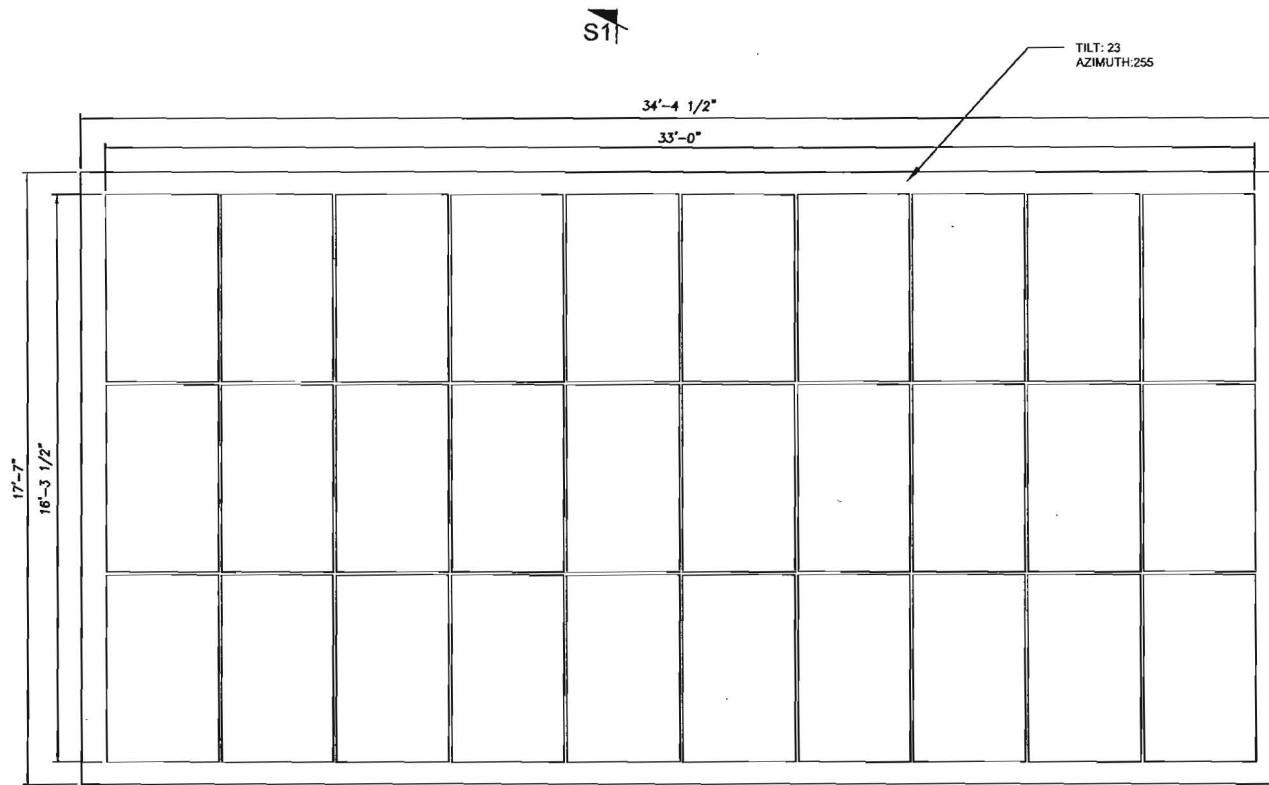
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**Project Name and Address**

Douglas Residence  
 7266 Guildford Rd.  
 Clarksville, MD 21029  
 27.54 kW- Roof+Ground Mount

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<b>Drawn by</b> MDM	<b>Sheet</b> 02
<b>Date</b> 1/21/15	
<b>Scale</b> 1"=40'-0"	



**ROOF PLAN**

PROPOSED ARRAY LOCATIONS  
(SEE PG. S1 STRUCTURAL SECTION)



**NOTES:**

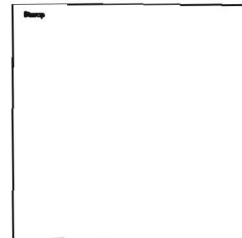
1. THE SYSTEM SHALL INCLUDE 30 CANADIAN SOLAR 255P MODULES (DIMENSIONS: 84.5 (L) x 38.7 (W) x 1.57 (D)) AND WEIGHING 41.9 LBS (PANEL DEAD LOAD = 2.42 PSF).
2. UNIRAC SOLARMOUNT RAIL WILL BE INSTALLED IN ACCORDANCE WITH UNIRAC INSTALLATION MANUAL 227.3.
3. PV PANELS SHALL BE BOLTED TO THE ROOF TRUSSES USING 3" x 5/16" S/S LAG BOLTS.

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**Project Name and Address**

Douglas Residence  
7266 Gifford Road  
Clarksville, MD 21029  
7.655 kW Roof Mount

Drawn by  
**MDM**

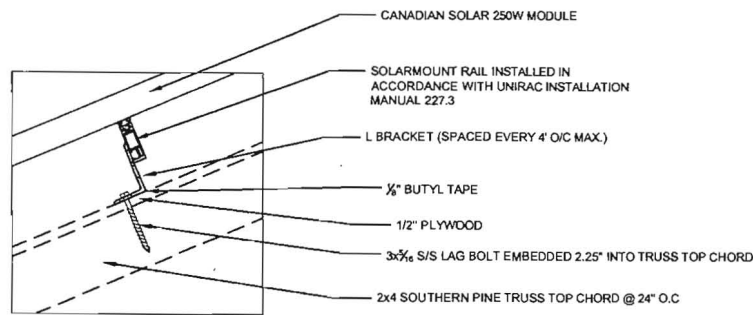
Date  
1/21/15

Scale  
1/4" = 1'-0"

Sheet

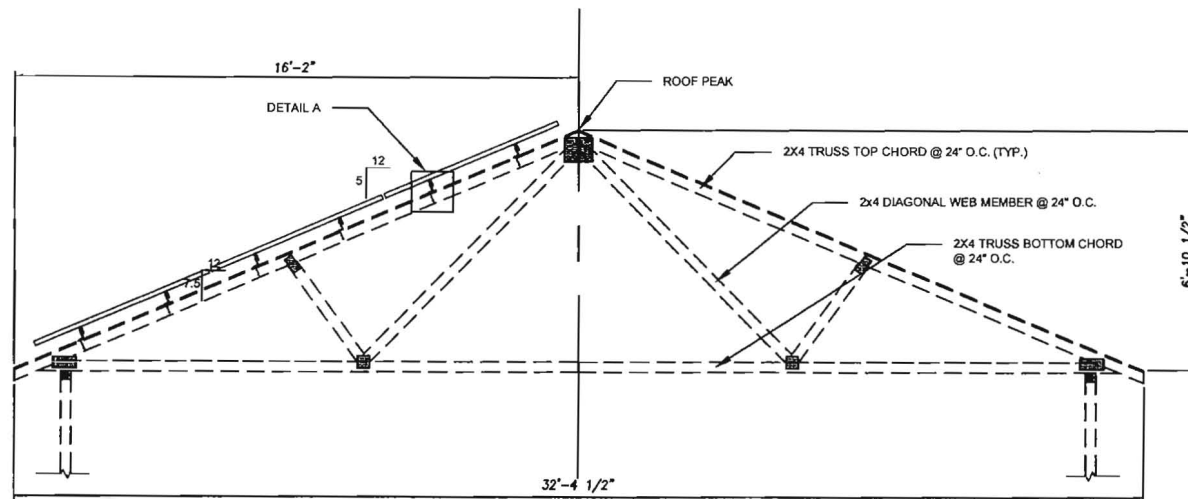
**01**





DETAIL A  
 1 1/2" = 1'-0"

1  
 S1



STRUCTURAL SECTION I

**NOTES:**

- ALL WORK SHALL COMPLY WITH THE INTERNATIONAL RESIDENTIAL BUILDING CODE (IRC 2012).
- THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ELECTRICAL DRAWINGS.
- LOAD CRITERIA PER IRC 2012 AND ASCE 7-10:  
 EXPOSURE CATEGORY B  
 GROUND SNOW LOAD, Pg = 25 PSF  
 LATERAL LOAD:  
 RISK CATEGORY II
  - WIND LOADS (BASE WIND SPEED = 98 MPH)
- EXISTING ROOF CONSTRUCTION IS NOTED THUS:
  - ASPHALT SHINGLES
  - 1/2" PLYWOOD
  - 2x4 SOUTHERN PINE CERTIFIED TRUSSES @ 24" O.C.

General Notes



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Stamp

Project Name and Address

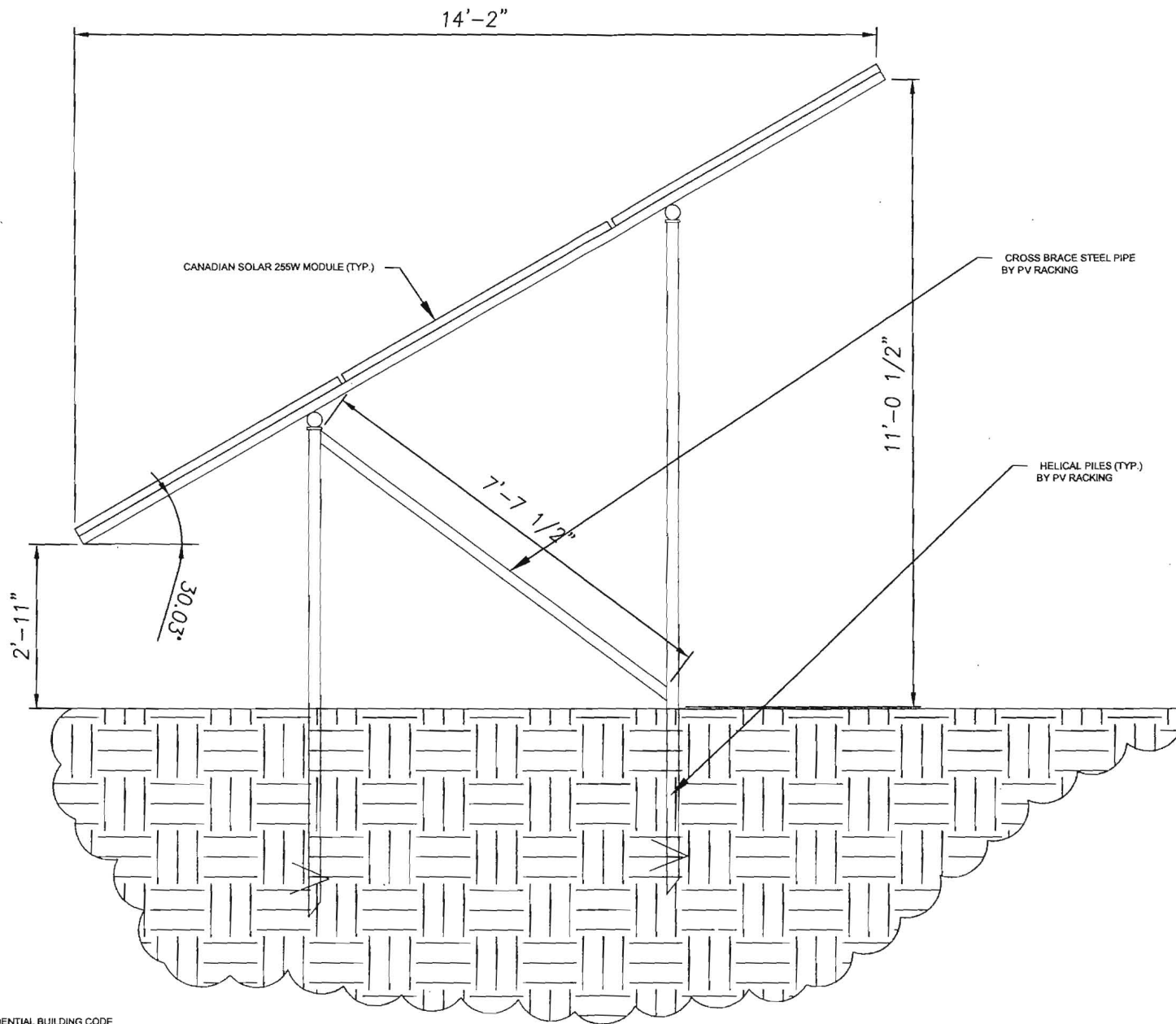
Douglas Residence  
 7266 Gilford Road  
 Clarksville, MD 21029  
 7.655 kW Roof Mount

Drawn by  
 MDM

Date  
 1/21/15

Scale  
 1/4" = 1'-0"

S1



ARRAY SECTION

**NOTES:**

1. ALL WORK SHALL COMPLY WITH THE INTERNATIONAL RESIDENTIAL BUILDING CODE (IRC 2012).
2. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ELECTRICAL DRAWINGS.
3. LOAD CRITERIA PER IRC 2012 AND ASCE 7-10:  
 RISK CATEGORY I  
 EXPOSURE CATEGORY B  
 GROUND SNOW LOAD,  $P_g = 25$  PSF  
 LATERAL LOAD:  
 • WIND LOADS (BASE WIND SPEED = 96 MPH)

General Notes



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 27.54 kW- Roof+Ground Mount

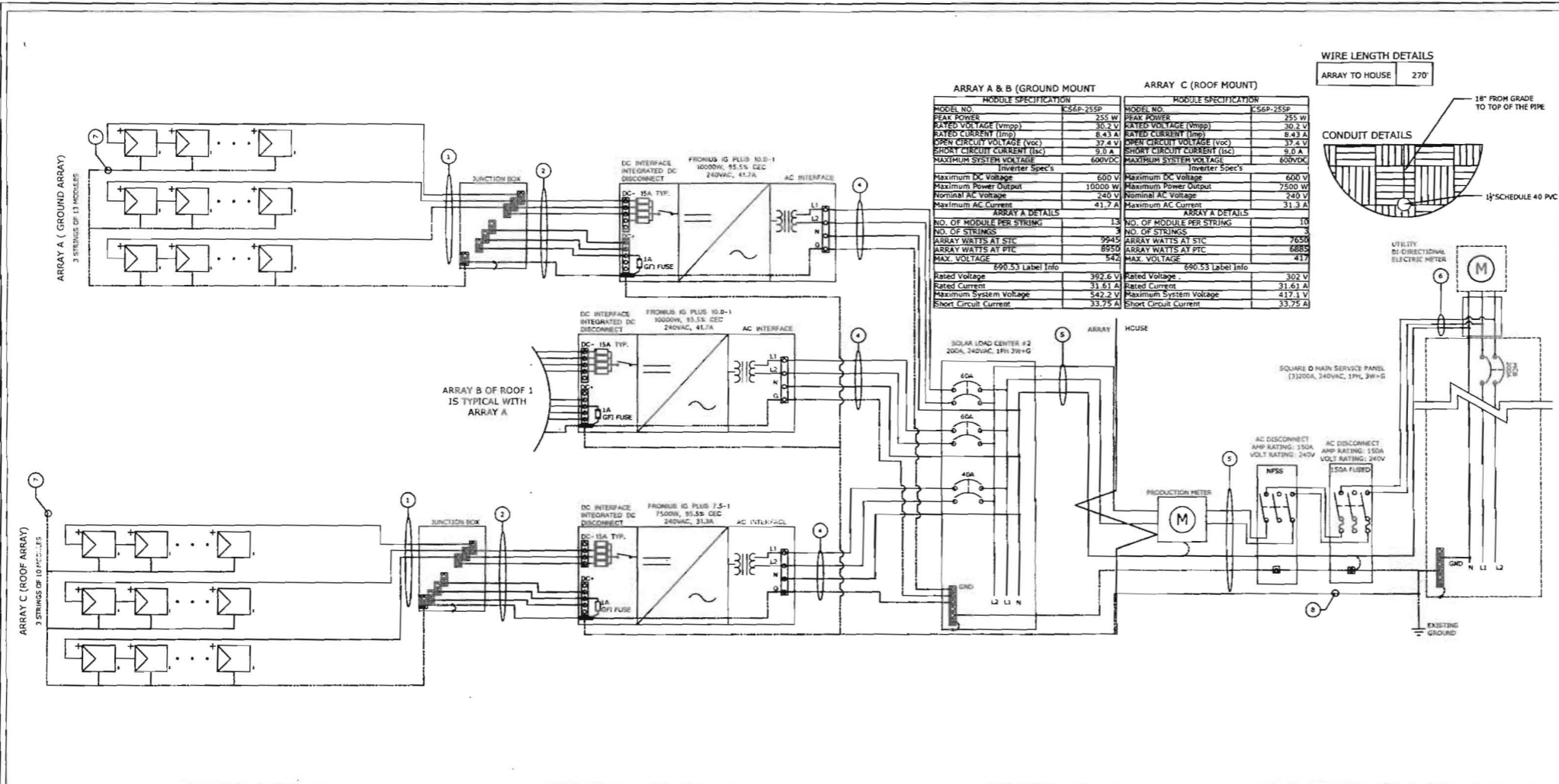
Drawn by  
 MDM

Date  
 1/21/15

Scale  
 1/2"=1'-0"

Sheet

S2



ARRAY A & B (GROUND MOUNT)		ARRAY C (ROOF MOUNT)	
MODULE SPECIFICATION		MODULE SPECIFICATION	
MODEL NO.	K56P-255P	MODEL NO.	K56P-255P
PEAK POWER	255 W	PEAK POWER	255 W
RATED VOLTAGE (Vmp)	30.2 V	RATED VOLTAGE (Vmp)	30.2 V
RATED CURRENT (Imp)	8.43 A	RATED CURRENT (Imp)	8.43 A
OPEN CIRCUIT VOLTAGE (Voc)	37.4 V	OPEN CIRCUIT VOLTAGE (Voc)	37.4 V
SHORT CIRCUIT CURRENT (Isc)	9.0 A	SHORT CIRCUIT CURRENT (Isc)	9.0 A
MAXIMUM SYSTEM VOLTAGE	600VDC	MAXIMUM SYSTEM VOLTAGE	600VDC
Inverter Spec's		Inverter Spec's	
Maximum DC Voltage	600 V	Maximum DC Voltage	600 V
Maximum Power Output	10000 W	Maximum Power Output	7500 W
Nominal AC Voltage	240 V	Nominal AC Voltage	240 V
Maximum AC Current	41.7 A	Maximum AC Current	31.3 A
ARRAY A DETAILS		ARRAY C DETAILS	
NO. OF MODULE PER STRING	13	NO. OF MODULE PER STRING	10
NO. OF STRINGS	3	NO. OF STRINGS	3
ARRAY WATTS AT STC	9945	ARRAY WATTS AT STC	7650
ARRAY WATTS AT PTC	8950	ARRAY WATTS AT PTC	6885
MAX. VOLTAGE	542	MAX. VOLTAGE	417
690.53 Label Info		690.53 Label Info	
Rated Voltage	392.6 V	Rated Voltage	302 V
Rated Current	31.61 A	Rated Current	31.61 A
Maximum System Voltage	542.2 V	Maximum System Voltage	417.1 V
Short Circuit Current	33.75 A	Short Circuit Current	33.75 A

1 SINGLE LINE DIAGRAM  
SCALE: NA

- GENERAL ELECTRICAL NOTES:
- EQUIPMENT USED SHALL BE NEW, UNLESS OTHERWISE NOTED.
  - EQUIPMENT USED SHALL BE UL LISTED, UNLESS OTHERWISE NOTED.
  - EQUIPMENT SHALL BE INSTALLED PROVIDING ADEQUATE PHYSICAL WORKING SPACE AROUND THE EQUIPMENT AND SHALL COMPLY WITH NEC.
  - MODULES SHALL BE POSITIVELY GROUNDING. GROUNDING (NEGATIVE) CONDUCTORS SHALL BE UN-FUSED AND UN-BROKEN FROM THE ARRAY TO THE INVERTER DC TERMINAL. UN-GROUNDING (POSITIVE) CONDUCTORS SHALL BE FUSED AND/OR SWITCHED.
  - COPPER CONDUCTORS SHALL BE USED AND SHALL HAVE INSULATION RATING 600V, 90°C, UNLESS OTHERWISE NOTED.
  - CONDUCTORS SHALL BE SIZED IN ACCORDANCE TO NEC. CONDUCTORS AMPACITY SHALL BE DE-RATED FOR TEMPERATURE INCREASE, CONDUIT FILL AND VOLTAGE DROP.
  - ALL CONDUCTORS, EXCEPT USE 2, SHALL BE INSTALLED IN APPROVED CONDUITS OR RACEWAY. CONDUITS SHALL BE ADEQUATELY SUPPORTED AS PER NEC.
  - AC DISCONNECT SHOWN IS REQUIRED IF THE UTILITY REQUIRES VISIBLE-BLADE SWITCH
  - EXPOSED NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDING AS PER NEC.
  - LOAD SIDE INTER-CONNECTION SHALL COMPLY WITH NEC
  - ASHRAE FUNDAMENTALS OUTDOOR DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE U.S. (PHOENIX, AZ OR PALM SPRINGS, CA)
  - FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN ROOF MOUNTED SUNLIGHT CONDUIT USING THE OUTDOOR TEMPERATURE OF 47°C
    - 12AWG CONDUCTOR ARE GENERALLY ACCEPTABLE FOR MODULES WITH AN Isc OF 6.4 AMPS WITH A 10 AMP FUSE.
    - 10AWG CONDUCTOR ARE GENERALLY ACCEPTABLE FOR MODULES WITH AN Isc OF 9.6 AMPS WITH A 15 AMP FUSE.
  - BREAKER SHALL BE INSTALLED IN ACCORDANCE WITH 690.94  
Wire sizing for OCPD  
Ex(Isc\*(1.25)(1.25)(# of strings in parallel)= wire ampacity or using NEC table 690.8)

TAG	DESCRIPTION	WIRE/CONDUIT SCHEDULE ARRAY		NOTES
		WIRE SIZE/TYPE ARRAY A & B	WIRE SIZE/TYPE ARRAY C	
1	Array to Junction Box	#10 USE-2	#10 USE-2	
2	Junction Box to DC Disconnect	#10 THHN/THWN IN EMT	#10 THHN/THWN IN EMT	
3	DC Disconnect to Inverter	NA	NA	Integrated
4	Inverter to Solar Load Center	#6 THHN/THWN IN EMT	#8 THHN/THWN IN EMT	
5	Solar Load Center to AC Disconnect	#3/0 THHN/THWN IN 1 1/2" PVC CONDUIT 40 SCHEDULE	#3/0 THHN/THWN IN 1 1/2" PVC CONDUIT 40 SCHEDULE	
6	AC Disconnect to Utility Meter	#1/0 Cu	#1/0 Cu	
7	Bare Copper Wire	#8	#8	Equipment Grounding Conductor
8	Grounding Electrode Conductor	#6	#6	To Existing Grounding Electrode

SolarEnergyWorld  
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ENGINEER'S STAMP

Douglas Residence  
27.54 kW (Roof + Ground)  
7266 Gifford Road  
Clarksville, MD 21029

SINGLE LINE DIAGRAM

REVISIONS	DATE	BY	CHK

OPPORTUNITY -

PROJECT -

DATE DRAWN 1/21/15

DRAWN BY NDM

DWG # REV. ##

SHEET E1