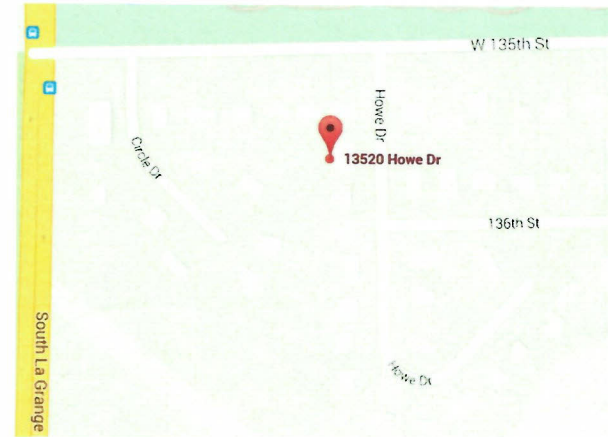
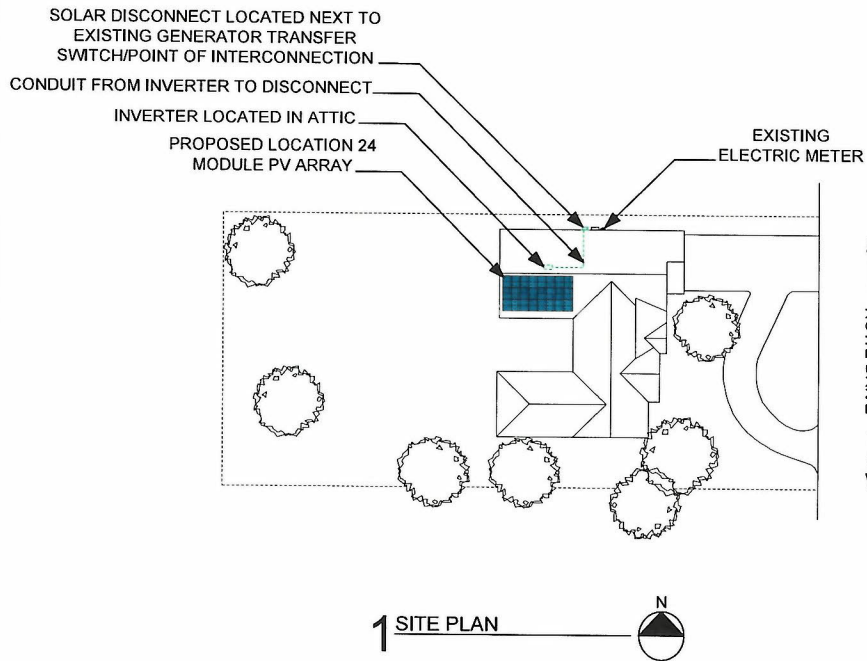


PLAN SET FOR PROPOSED PHOTOVOLTAIC INSTALLATION

- 13520 HOWE DRIVE -



PROJECT DESCRIPTION:

PROPOSED IS A 6.72kW, GRID-TIED, PHOTOVOLTAIC (PV) INSTALLATION AT 13520 HOWE DRIVE. (24) SOLARWORLD 280W MODULES WILL BE INSTALLED IN ONE ROOF MOUNTED ARRAY. THE PV MODULES WILL BE SUPPORTED BY AN IRONRIDGE XR100 FLUSH MOUNT RACKING SYSTEM. THE LOW PROFILE SYSTEM WILL BE CONNECTED TO THE RAFTERS WITH GRK RSS STRUCTURAL SCREWS, AND ALL ATTACHMENTS WILL BE FLASHED WITH IRONRIDGE FASTFOOT FLASHINGS. A SOLAREEDGE OPTIMIZER WILL BE LOCATED UNDER EACH MODULE IN THE ARRAY THAT WILL MAXIMIZE ENERGY PRODUCTION, AND ALSO ALLOW FOR THE SYSTEM TO BE DISCONNECTED AT THE MODULE LEVEL WHEN ANY AC OR DC DISCONNECT IS SWITCHED OFF.

A SOLAREEDGE SE6000 INVERTER WILL BE LOCATED IN THE ATTIC THAT WILL CONVERT THE DC ELECTRICITY FROM THE PV MODULES/OPTIMIZERS TO AC BEFORE IT ENTERS THE BUILDING. SOLAR DC AND AC DISCONNECTS WILL BE LOCATED AT THE INVERTER, AND AN INVERTER DISCONNECT WILL BE LOCATED AT GROUND LEVEL NEXT TO THE EXISTING GENERATOR TRANSFER SWITCH AND ELECTRIC METER. DUE TO A WHOLE HOUSE GENERATOR ON PREMISES THE PV SYSTEM WILL INTERCONNECT ON THE UTILITY SIDE OF THE TRANSFER SWITCH. THIS WAY THE INVERTER WILL SAFELY SHUTDOWN DURING A GRID OUTAGE OR ANYTIME THE GENERATOR IS RUNNING.

		7312 North Milwaukee Avenue Niles, IL 60714 847-877-0950	
TITLE SYSTEM TYPE NOTES	PROPOSED PLANS FOR 6.72KW PHOTOVOLTAIC SYSTEM GRID-TIED PHOTOVOLTAIC, SOLAR ELECTRIC	DATE 2/16/2015	REV. 1.0
SITE ADDRESS 13520 HOWE DRIVE ORLAND PARK, IL 60462	HOUSE RESIDENCE	DESIGN SOLAR SERVICE INC.	

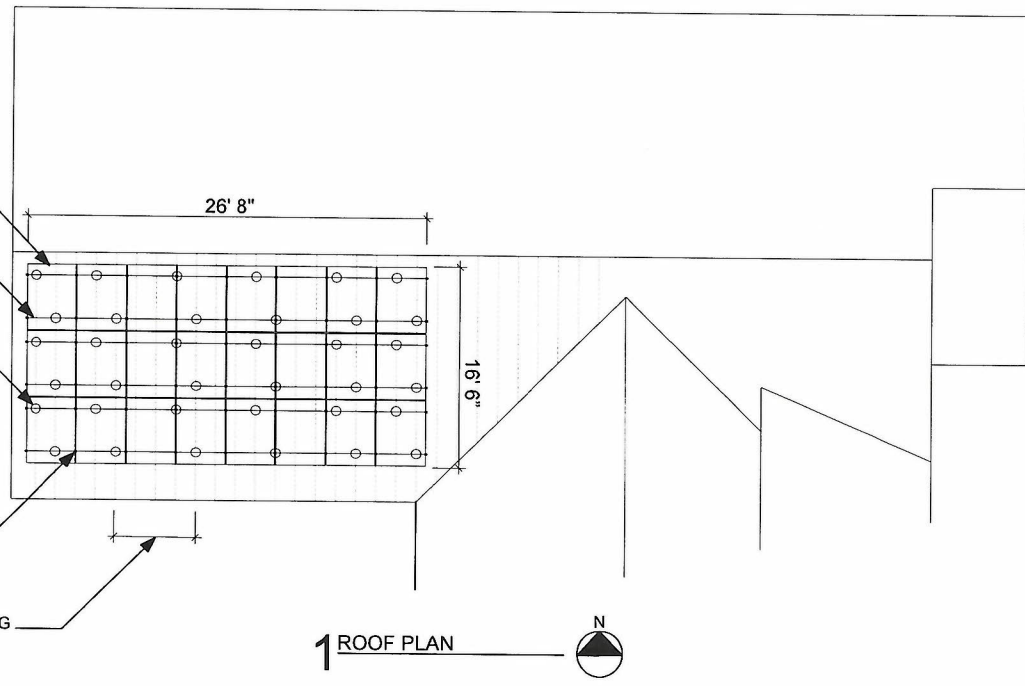
SOLARWORLD SW280
MONOCRYSTALLINE
PHOTOVOLTAIC MODULE

IRONRIDGE XR100 RAIL
(2) PER MODULE ROW

ATTACHMENT TO RAFTERS WITH
4" GRK RSS STRUCTURAL SCREW,
IRONRIDGE FASTFOOT FLASHING
AT EACH CONNECTION

IRONRIDGE RAIL CLAMP

64" MAXIMUM
ATTACHMENT SPACING



1 ROOF PLAN

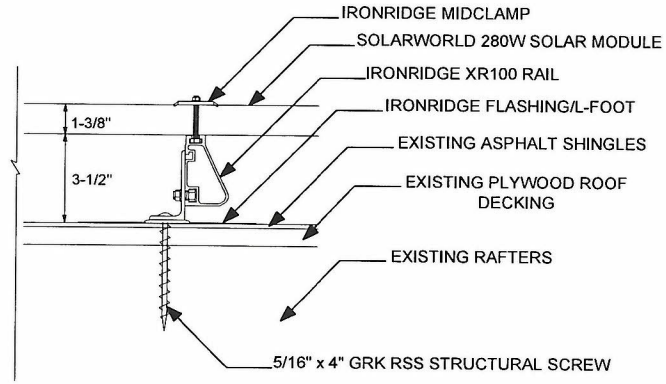
MODULE SPECIFICATIONS

Manufacturer: SolarWorld
Model: SW280 Mono 2.5
Output: 280 WATTS
Size (LxWxD): 65.94"x39.41"x1.22"
Weight: 46.7 lbs.
Area: 18.05 ft²

LOAD ASSUMPTIONS

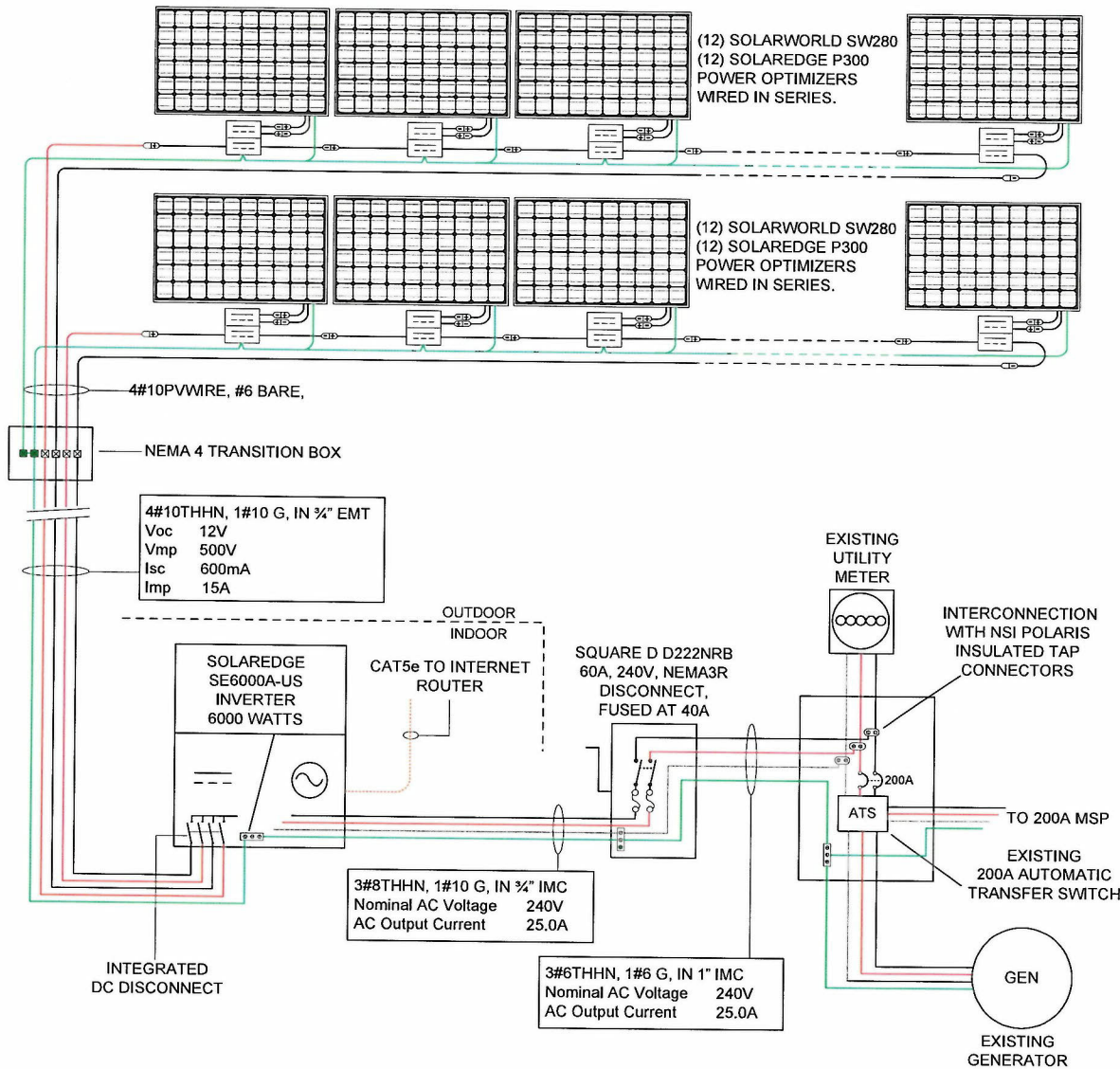
Wind: 90 mph
Snow: 30 psf
Exposure Category: B
Building Height: 25'
Roof Pitch: 34°
Maximum attachment spacing 64"

ARRAY DEAD LOAD	24 MODULE ARRAY
Racking (lbs)	183.2
PV Modules (lbs)	1,120.8
Total Weight (lbs)	1,304.0
Total Area (ft ²)	438.4
Weight/Attachment (lbs)	31.0
Distributed Load (lbs/ft ²)	2.97



2 ATTACHMENT DETAIL

2.0											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; font-size: 8pt;">TITLE</td> <td style="width: 50%; font-size: 8pt;">REV.</td> </tr> <tr> <td style="font-size: 8pt;">SYSTEM</td> <td style="font-size: 8pt;">DATE</td> </tr> <tr> <td style="font-size: 8pt;">NOTES</td> <td style="font-size: 8pt;">REV.</td> </tr> </table>	TITLE	REV.	SYSTEM	DATE	NOTES	REV.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; font-size: 8pt;">DATE</td> <td style="width: 50%; font-size: 8pt;">DATE</td> </tr> <tr> <td style="font-size: 8pt;">2/16/2015</td> <td style="font-size: 8pt;">2/16/2015</td> </tr> </table>	DATE	DATE	2/16/2015	2/16/2015
TITLE	REV.										
SYSTEM	DATE										
NOTES	REV.										
DATE	DATE										
2/16/2015	2/16/2015										
ROOF PLAN FOR 6.72kW PHOTOVOLTAIC SYSTEM											
GRID-TIED PHOTOVOLTAIC, SOLAR ELECTRIC											
HULSE RESIDENCE											
13520 HOWE DRIVE											
ORLAND PARK, IL 60462											
SOLAR SERVICE INC.											
7312 North Milwaukee Avenue Niles, IL 60714 847-877-0950											



1 ELECTRICAL SCHEMATIC

MODULE SPECIFICATIONS – SOLARWORLD SW280	
Maximum Power	Pmax 280 Wp
Open Circuit Voltage	Voc 39.5 Vdc
Maximum Power Point Voltage	Vmp 31.2 Vdc
Short Circuit Current	Isc 9.71 A
Maximum Power Point Current	Imp 9.07 A
Maximum Series Fuse Rating	15.0 A
TCVoc	-0.30 %/°C
TCPmp	-0.45 %/°C
UL1703, UL790 CLASS C	
INVERTER SPECIFICATIONS – SOLAREEDGE SE6000A-US	
Max DC Input Voltage	500 Vdc
Nominal Input Voltage	350Vdc
Max Input Current	18.0 A
Output Current at 240 Vac	25.0 A
Output Voltage	240 Vac
AC Overcurrent Protection	35 A
UL1741, IEEE1547, UL1998, CSA C22.2, FCC Part15 Class B	
OPTIMIZER SPECIFICATIONS – SOLAREEDGE P300	
Max DP Input Power	300W
Max DC Input Voltage	48 Vdc
MPPT Range	8-48 Vdc
Max Input Current	12.5 A
Output Current	15.0 A
Max Output Voltage	60 Vdc
IEC62109-1 (class II safety), UL1741	

GENERAL NOTES

- 1) ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE REQUIREMENTS OF ORLAND PARK, IL.
- 2) ALL EQUIPMENT IS LISTED AND LABELED PER RECOGNIZED ELECTRICAL TESTING LABORATORY AND INSTALLED PER THE LISTING REQUIREMENTS AND THE MANUFACTURER'S INSTRUCTIONS
- 3) ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R MINIMUM
- 4) ARRAY SHALL CONSIST OF 24 SOLARWORLD SW280 MONOCRYSTALLINE MODULES, 24 SOLAREEDGE P300 OPTIMIZERS, AND 1 SOLAREEDGE SE-6000A-US INVERTER.
- 5) ALL EQUIPMENT SHALL BE PROPERLY GROUNDED PER THE REQUIREMENTS OF NEC ART 250
- 6) NEC ART. 690.7(A) MAXIMUM PHOTOVOLTAIC SYSTEM VOLTAGE:
V = 39.5 VOLTS X 1 MODULE X TkVoc = 45.3 VDC
- 7) NEC ART. 690.8(A)(1) PHOTOVOLTAIC SOURCE CIRCUIT CURRENT:
Isc = 9.71A x 1.25 = 12.14A
- 8) NEC ART. 690.8(A)(2) MAXIMUM PHOTOVOLTAIC OUTPUT CIRCUIT CURRENT:
Isc = 12.14A x 1 PV SOURCE CIRCUIT = 12.14A
REQUIRED WIRE SIZE: #14 AWG MIN.
- 9) NEC ART. 690.8(B) PHOTOVOLTAIC AMPACITY AND OVERCURRENT DEVICE RATINGS
Isc = 12.14A x 1.25 = 15.15A
OCPD SIZE WHERE REQUIRED 15A.
- 10) NEC ART690.8(A)(3) INVERTER OUTPUT CIRCUIT CURRENT
I = 25.0A PER INVERTER x 1 INVERTERS = 25.0A
- 11) SWITCH AND CIRCUIT BREAKER REQUIREMENTS OF NEC ART. 690.17, AND ALL OTHER APPLICATION ARTICLES OF SECTION 690 SHALL BE MET.
- 12) ALL WIRE SHALL BE COPPER

3.0	
TITLE ROOF PLAN FOR 6.72kW PHOTOVOLTAIC SYSTEM	EXISTING DATE 2/16/2015
SYSTEM GRID-TIED PHOTOVOLTAIC, SOLAR ELECTRIC	DATE REV.
HULSE RESIDENCE 13520 HOWE DRIVE ORLAND PARK, IL 60462	NOTES SOLAR SERVICE INC.
SOLAR SERVICE INC.	
7312 North Milwaukee Avenue Niles, IL 60714 847-877-0950	

Residential
Commercial
ALTA

Topographical
Condominium
Site Plans

PLAT OF SURVEY

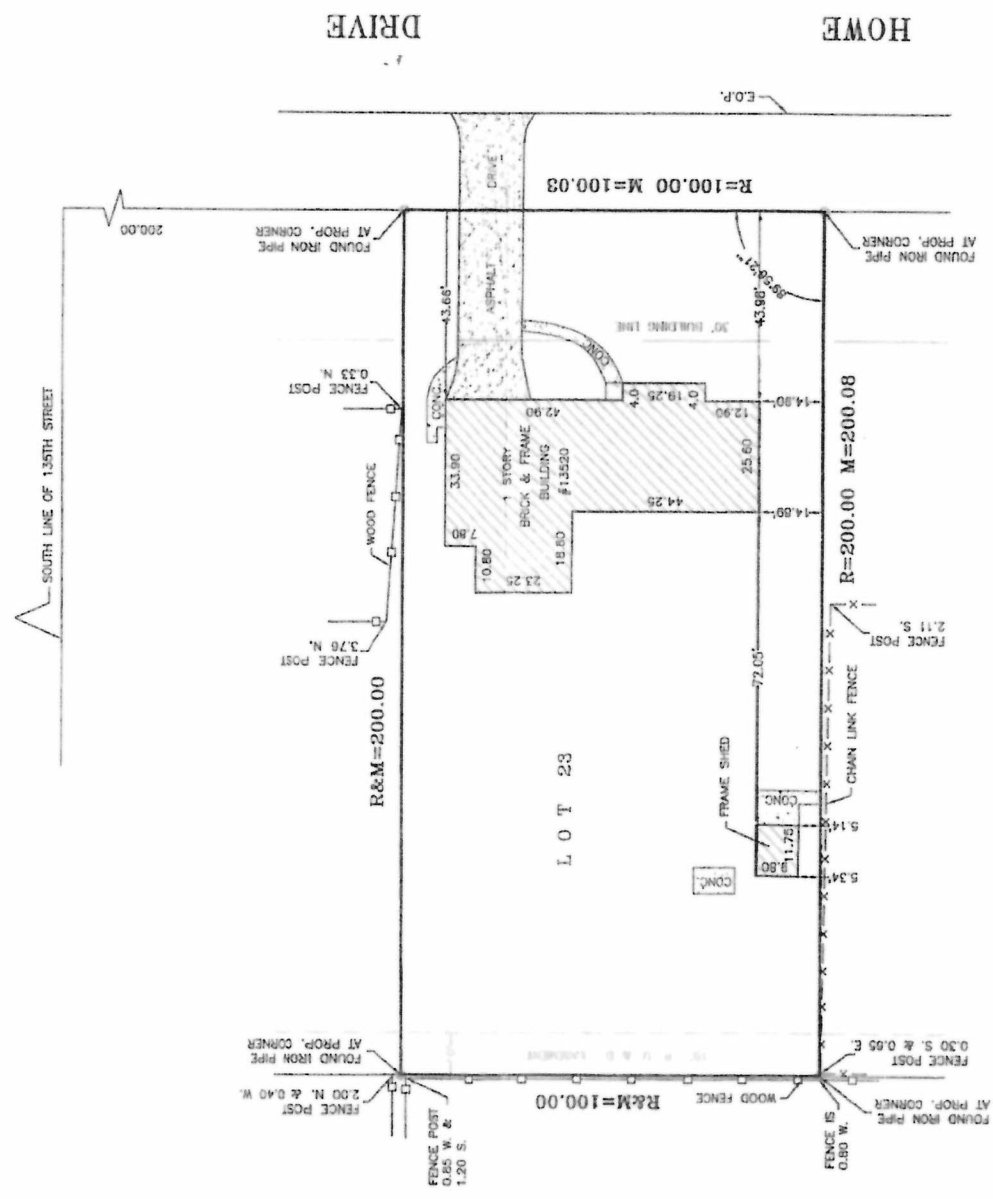
Studnicka and Associates, Ltd.

Tel. 815 485-0445
Fax 815 485-0528

17901 Haas Road
Mokena, Illinois 60448



LOT 23 IN BLOCK 4 IN ORLAND HILLS SECOND ADDITION, A SUBDIVISION OF PART OF THE WEST 1/2 OF SECTION 3, TOWNSHIP 36 NORTH, RANGE 12, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.



BLOCK 4

Scale: 1" = 30 feet
 Distances are marked in feet and decimals.
 Ordered by: Gary J. Mazian
 Order No.: 00-4-122
 Compare all points before building by same and at once report any difference.
 For building lines, restrictions, or easements not shown hereon, refer to abstract, deed or ordinance.
 Field work completed: 5/5/00
 Drawn by: S. K.
 Proofed by: T.S.
 Design Firm Registration # 184-002791

STATE OF ILLINOIS } ss
 COUNTY OF WILL }

Studnicka and Associates, Ltd., an Illinois Land Surveying Corporation does hereby certify that this professional service conforms to the current Illinois standards for boundary survey.

Mokena, Il. May 6, A.D. 2009
 by *[Signature]*
 License No. 3304 Expires 11/30/10