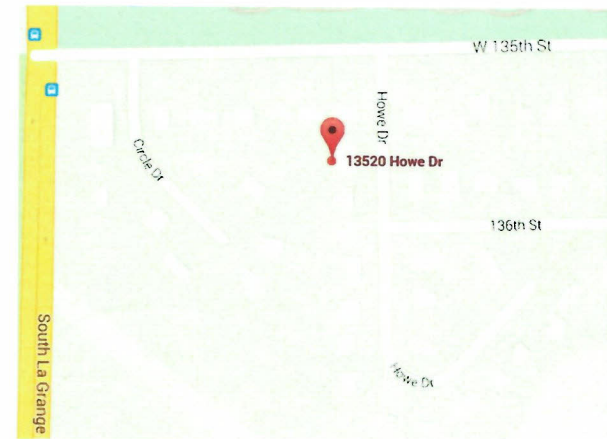
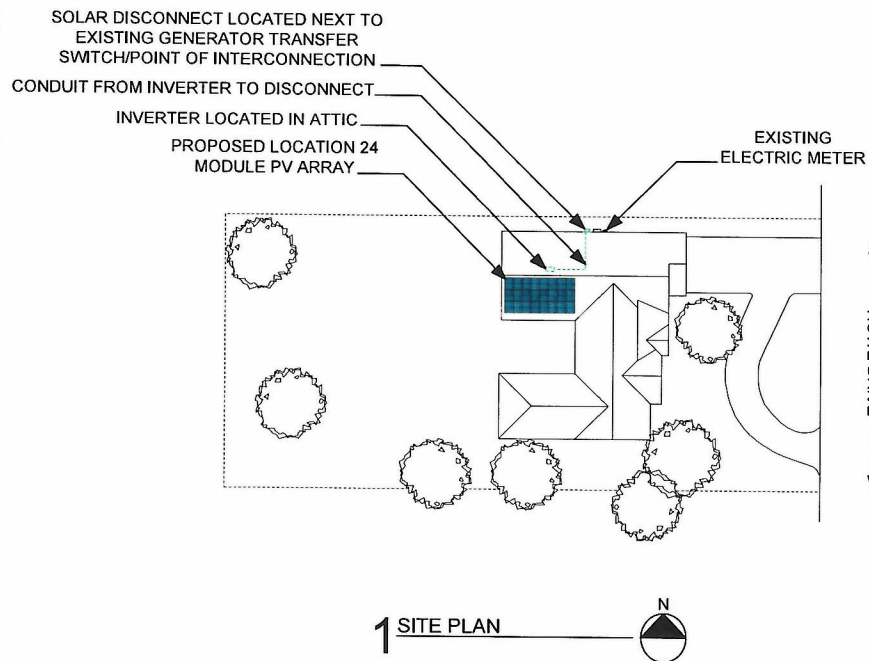


PLAN SET FOR PROPOSED PHOTOVOLTAIC INSTALLATION

- 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.

1.0		PROPOSED PLANS FOR 6.72kW PHOTOVOLTAIC SYSTEM	
DATE	2/16/2015	EXISTING	
REV.		DATE	
HULSE RESIDENCE		GRID-TIED PHOTOVOLTAIC, SOLAR ELECTRIC	
SITE ADDRESS	13520 HOWE DRIVE		
REGION	ORLAND PARK, IL 60462		
SOLAR SERVICE INC.			
7312 North Milwaukee Avenue			
Niles, IL 60714			
847-677-0950			

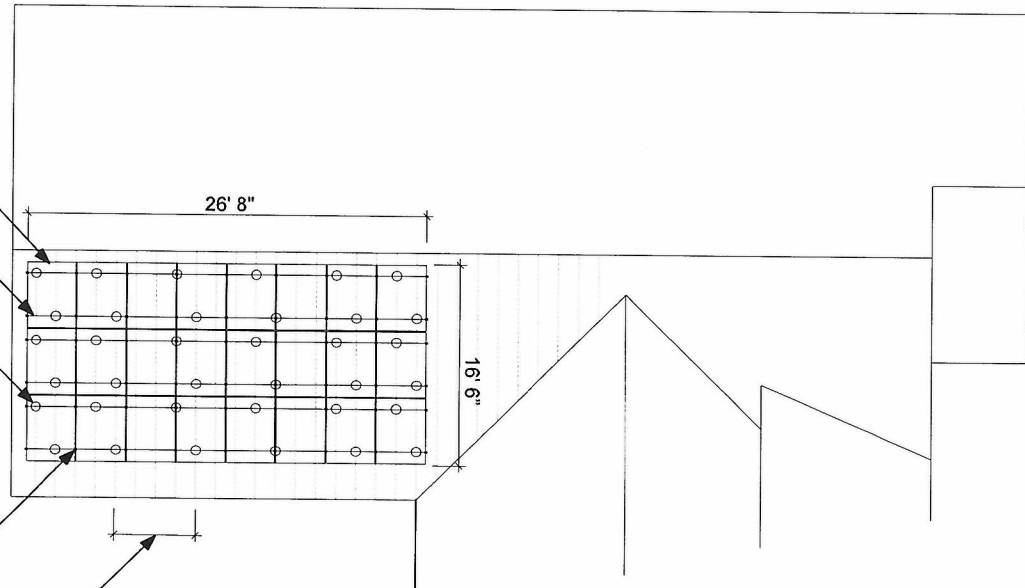
SOLARWORLD SW280
MONOCRYSTALLINE
PHOTOVOLTAIC MODULE

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



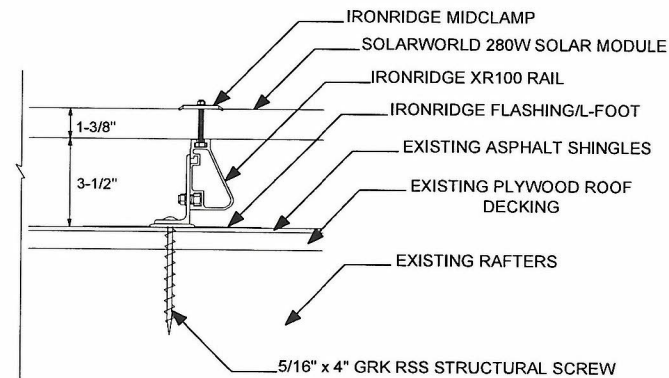
MODULE SPECIFICATIONS

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

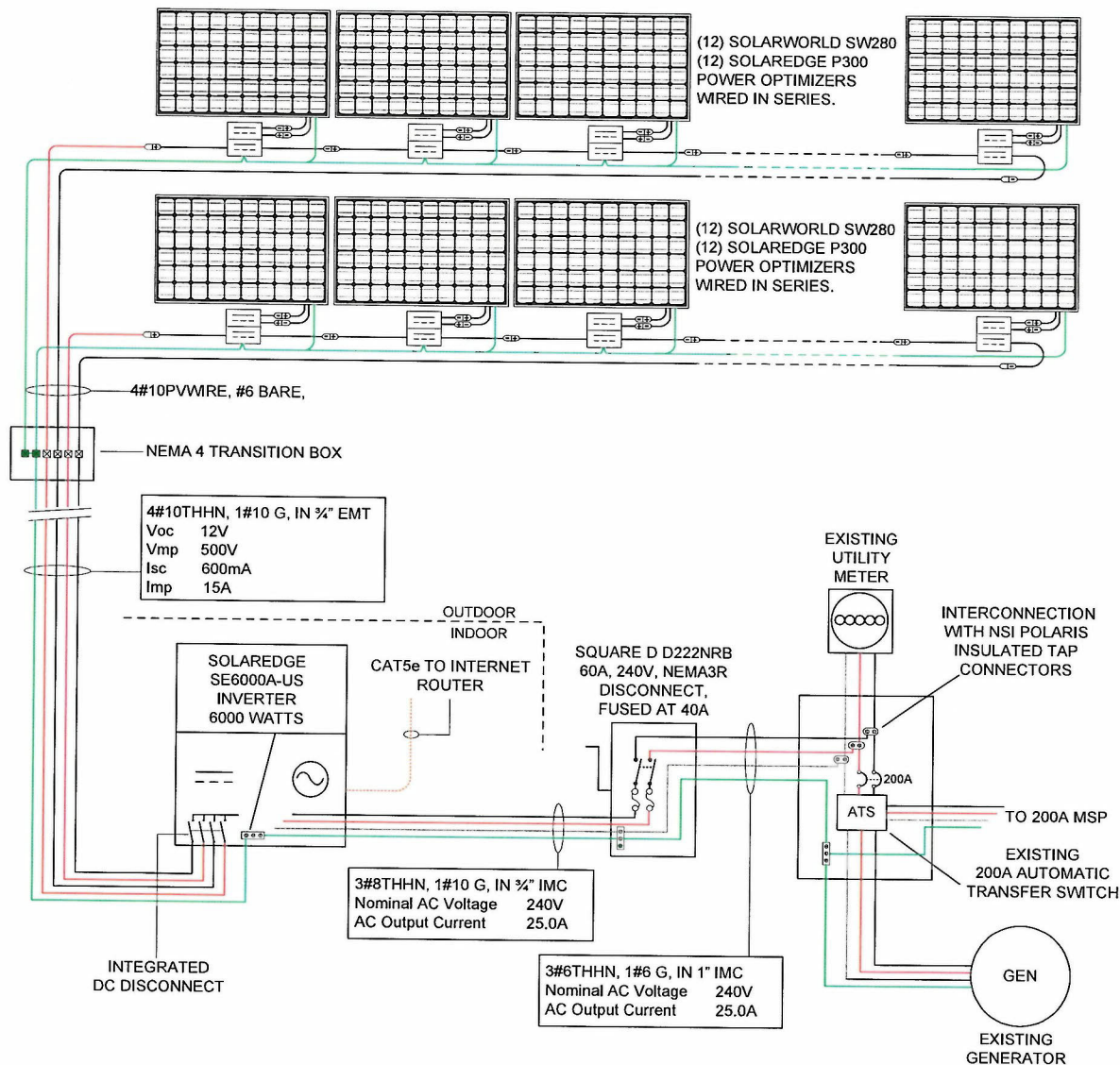
Wind: 90 mph
Snow: 30 psf
Exposure Category: B
Building Height: 25'
Roof Pitch: 34°
Maximum attachment spacing 64"

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

 7312 North Milwaukee Avenue Niles, IL 60714 847-677-0950		SOLAR SERVICE INC.		2.0	
		DATE	REV.	DATE	REV.
HULSE RESIDENCE		GRID-TIED PHOTOVOLT. INC. SOLAR ELECTRIC		EXISTING	
13520 HOWE DRIVE ORLAND PARK, IL 60462		TITLE		2/16/2015	
SITE ADDRESS		SYSTEM NAME		DATE	
DESIGN		NOTES		REV.	
ROOF PLAN FOR 6.72kW PHOTOVOLTAIC SYSTEM					



1 ELECTRICAL SCHEMATIC

MODULE SPECIFICATIONS – SOLARWORLD SW280

Maximum Power	P _{max}	280 Wp
Open Circuit Voltage	V _{oc}	39.5 Vdc
Maximum Power Point Voltage	V _{mp}	31.2 Vdc
Short Circuit Current	I _{sc}	9.71 A
Maximum Power Point Current	I _{mp}	9.07 A
Maximum Series Fuse Rating		15.0 A
TCV _{oc}		-0.30 %/°C
TCP _{mp}		-0.45 %/°C

UL1703, UL790 CLASS C

INVERTER SPECIFICATIONS – SOLAREDEGE 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 – SOLAREDEGE 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 SOLAREDEGE P300 OPTIMIZERS, AND 1 SOLAREDEGE 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 TkV_{oc} = 45.3 VDC
- 7) NEC ART. 690.8(A)(1) PHOTOVOLTAIC SOURCE CIRCUIT CURRENT:
I_{sc} = 9.71A x 1.25 = 12.14A
- 8) NEC ART. 690.8(A)(2) MAXIMUM PHOTOVOLTAIC OUTPUT CIRCUIT CURRENT:
I_{sc} = 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 I_{sc} = 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



Residential
Commercial
ALTA

PLAT OF SURVEY

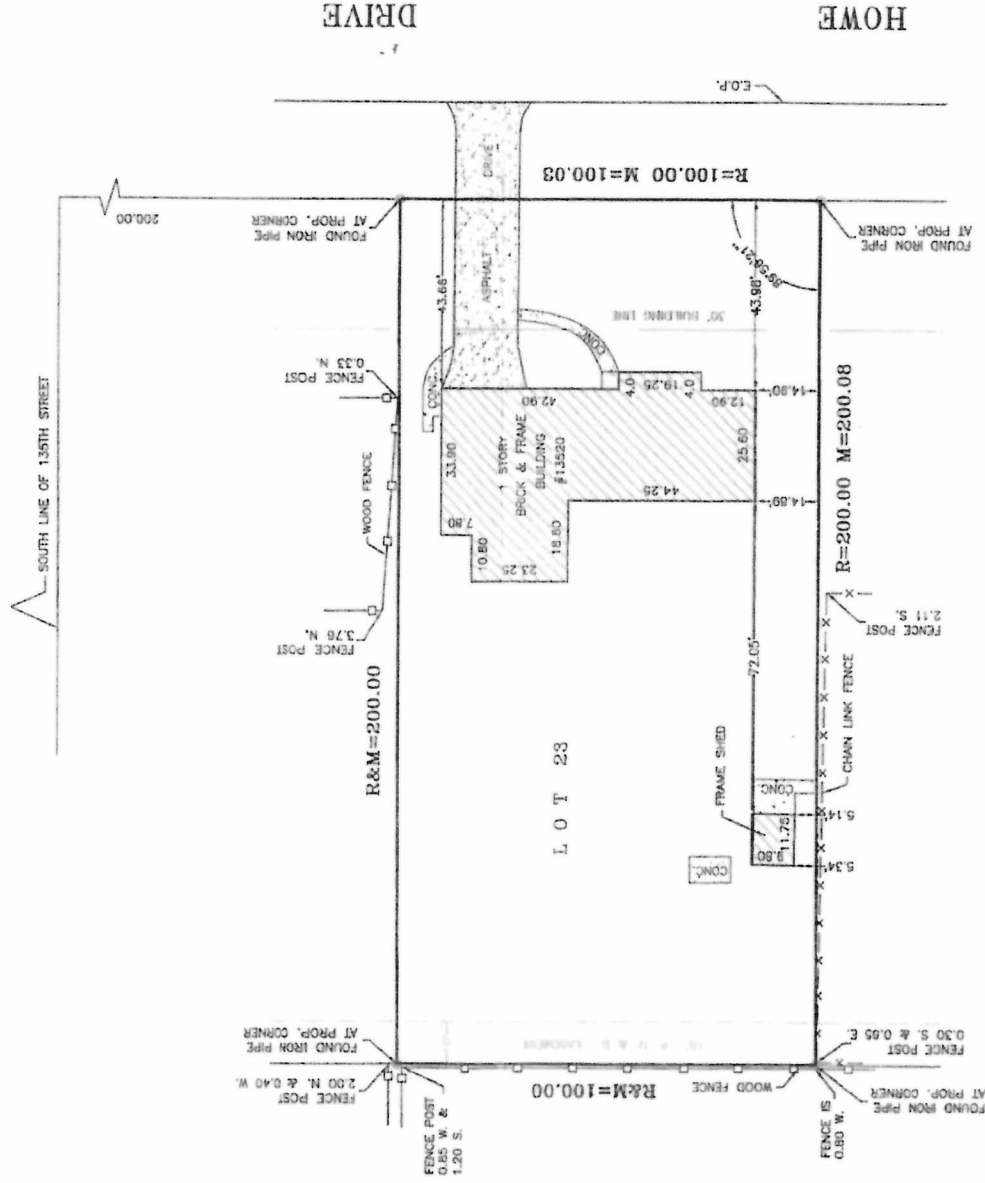
Studnicka and Associates, Ltd.

Topographical
Condominium
Site Plans

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