GENERAL NOTES

1.1.1 **PROJECT NOTES:**

1.1.2 THIS PHOTOVOLTAIC (PV) SYSTEM SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE (NEC) ARTICLE 690, ALL MANUFACTURERS'S LISTING AND INSTALLATION INSTRUCTIONS, AND THE RELEVANT CODES AS SPECIFIED BY THE AUTHORITY HAVING JURISDICTION'S (AHJ) APPLICABLE CODES.

1.1.3 THE UTILITY INTERCONNECTION APPLICATION MUST BE APPROVED AND PV SYSTEM INSPECTED PRIOR TO PARALLEL OPERATION

1.1.4 ALL PV SYSTEM COMPONENTS; MODULES, UTILITY-INTERACTIVE INVERTERS, AND SOURCE CIRCUIT COMBINER BOXES ARE IDENTIFIED AND LISTED FOR USE IN PHOTOVOLTAIC SYSTEMS AS REQUIRED BY NEC 690.4: **PV MODULES:** UL1703, IEC61730, AND IEC61215, AND NFPA 70 CLASS C FIRE I**NVERTERS:** UL 1741 CERTIFIED, IEEE 1547, 929, 519 **COMBINER BOX(ES):** UL 1703 OR UL 1741 ACCESSORY

1.1.8 MAX DC VOLTAGE CALCULATED USING MANUFACTURER PROVIDED TEMP COEFFICIENT FOR VOC. IF UNAVAILABLE, MAX DC VOLTAGE CALCULATED ACCORDING TO NEC 690.7.

1.1.9 ALL INVERTERS, PHOTOVOLTAIC MODULES, PHOTOVOLTAIC PANELS, AND SOURCE CIRCUIT COMBINERS INTENDED FOR USE IN A PHOTOVOLTAIC POWER SYSTEM WILL BE IDENTIFIED AND LISTED FOR THE APPLICATION PER 690.4 (D). SHALL BE INSTALLED ACCORDING TO ANY INSTRUCTIONS FROM LISTING OR LABELING [NEC 110.3].

1.1.10 ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL BUILDING CODE. IF EXPOSED TO SUNLIGHT, IT SHALL BE UV RESISTANT. ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS REQUIRED BY THE NEC AND AHJ.

1.2.1 **SCOPE OF WORK:**

1.2.2 PRIME CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND SPECIFICATIONS OF THE GRID-TIED PHOTOVOLTAIC SYSTEM RETROFIT. PRIME CONTRACTOR WILL BE RESPONSIBLE FOR COLLECTING EXISTING ONSITE REQUIREMENTS TO DESIGN, SPECIFY, AND INSTALL THE GROUND MOUNT ARRAY PORTION OF THE PHOTOVOLTAIC SYSTEMS DETAILED IN THIS DOCUMENT.

1.3.1 **WORK INCLUDES:**

1.3.2 GROUND MOUNT RACKING - SOLAR FOUNDATIONS GROUND MOUNT SYSTEM

1.3.3 PV MODULE AND INVERTER INSTALLATION - HANWHA Q-CELLS Q.PEAK DUO-G5 320 / SOLAR EDGE SE10000H-US (240V)

1.3.4 PV EQUIPMENT GROUNDING

1.3.5 PV INSTALLING SYSTEM MONITORING EQUIPMENT

1.3.6 PV LOAD CENTERS (IF NEC.)

1.3.7 PV METERING (IF NEC.)

1.3.8 PV DISCONNECTS

1.3.9 PV GROUNDING ELECTRODE & BONDING TO (E) GEC

1.3.10 PV FINAL COMMISSIONING

1.3.11 (E) ELECTRICAL EQUIPMENT RETROFIT FOR PV

1.3.12 TRENCHING (IF NECESSARY)

SCOPE OF WORK

SYSTEM SIZE:	STC: 48 x 320W = 15.360kW PTC: 48 x 295.9W = 14.203kW DC (48) HANWHA Q-CELLS Q.PEAK DUO-G5 320 (1) SOLAR EDGE SE10000H-US (240V)
ATTACHMENT TYPE:	SOLAR FOUNDATIONS GROUND MOUNT SYSTEM
MSP UPGRADE:	NO

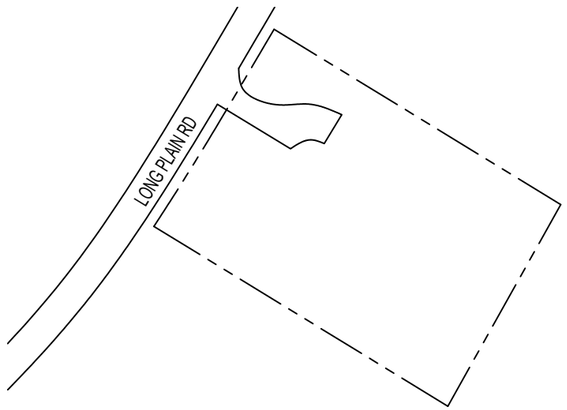
NEW PV SYSTEM: 15.360 kWp

LAMBERT RESIDENCE

90 LONG PLAIN RD
WHATELY, MA 01093
ASSESSOR'S #: WHATM:0006B:0000L:396

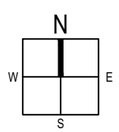
01 AERIAL PHOTO

NOT TO SCALE



02 PLAT MAP

NOT TO SCALE



SHEET LIST TABLE

PROJECT INFORMATION

OWNER

NAME: MICHAEL LAMBERT

PROJECT MANAGER

NAME: ERIC WILSON
PHONE: 413-338-7555

CONTRACTOR

NAME: INSIGHT SOLAR
PHONE: 413-338-7555

AUTHORITIES HAVING JURISDICTION

BUILDING: FRANKLIN COUNTY
ZONING: FRANKLIN COUNTY
UTILITY:

DESIGN SPECIFICATIONS

OCCUPANCY: II
CONSTRUCTION: SINGLE-FAMILY
ZONING: RESIDENTIAL
GROUND SNOW LOAD: 40 PSF
WIND EXPOSURE: B
WIND SPEED: 116 MPH

APPLICABLE CODES & STANDARDS

BUILDING: MASSACHUSETTS RESIDENTIAL BUILDING CODE, 9TH EDITION, AS AMENDED (780 CMR)
ELECTRICAL: NEC 2020
FIRE: MASSACHUSETTS COMPREHENSIVE FIRE SAFETY CODE (527 CMR 1.00)

INSIGHT SOLAR

CONTRACTOR

INSIGHT SOLAR

PHONE: 413-338-7555
ADDRESS: 89 MARKET ST
NORTHAMPTON, MA 01060

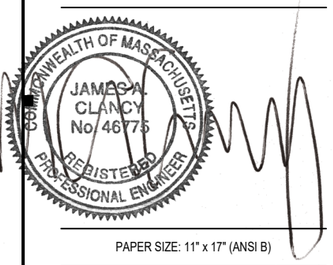
LIC. NO.: HIC - MA 192102
HIC. NO.:
ELE. NO.:

NEW PV SYSTEM: 15.360 kWp

LAMBERT RESIDENCE

90 LONG PLAIN RD
WHATELY, MA 01093
APN:
WHATM:0006B:0000L:396

ENGINEER OF RECORD



PAPER SIZE: 11" x 17" (ANSI B)

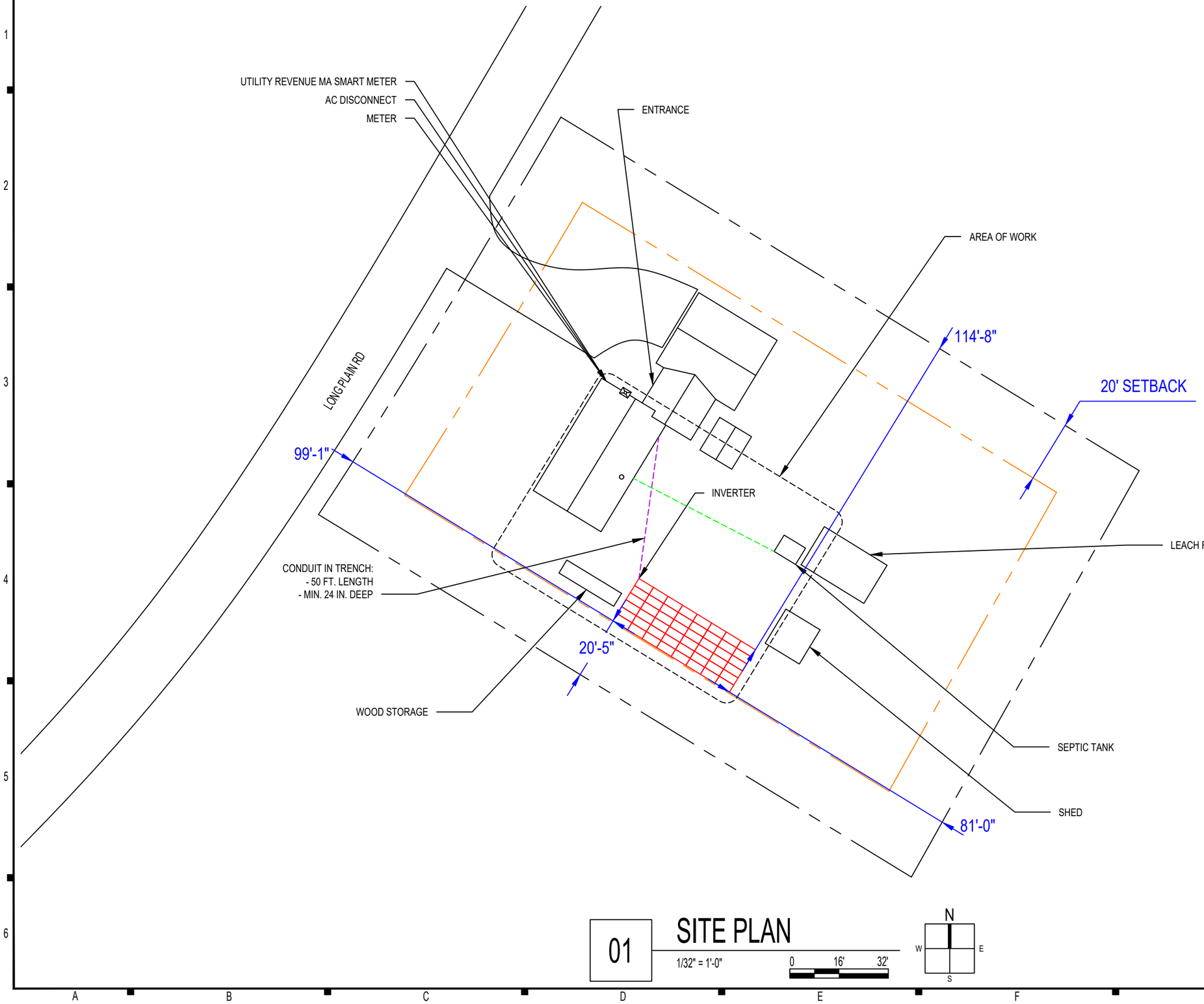
COVER PAGE

DATE: 03.29.2020
DESIGN BY: A.C.
CHECKED BY: M.M.

REVISIONS

T-001.00

(SHEET 1)



GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

PROPERTY LINE

SETBACK

CONDUIT

SEPTIC LINE

01 SITE PLAN

1/32" = 1'-0"

0 16' 32'

N W E S

INSIGHT SOLAR

CONTRACTOR

INSIGHT SOLAR

PHONE: 413-338-7555

ADDRESS: 89 MARKET ST
NORTHAMPTON, MA 01060

LIC. NO.: HIC - MA 192102
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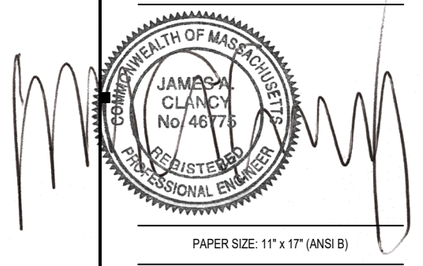
ENGINEER OF RECORD



PAPER SIZE: 11" x 17" (ANSI B)

SITE PLAN

DATE: 03.29.2020

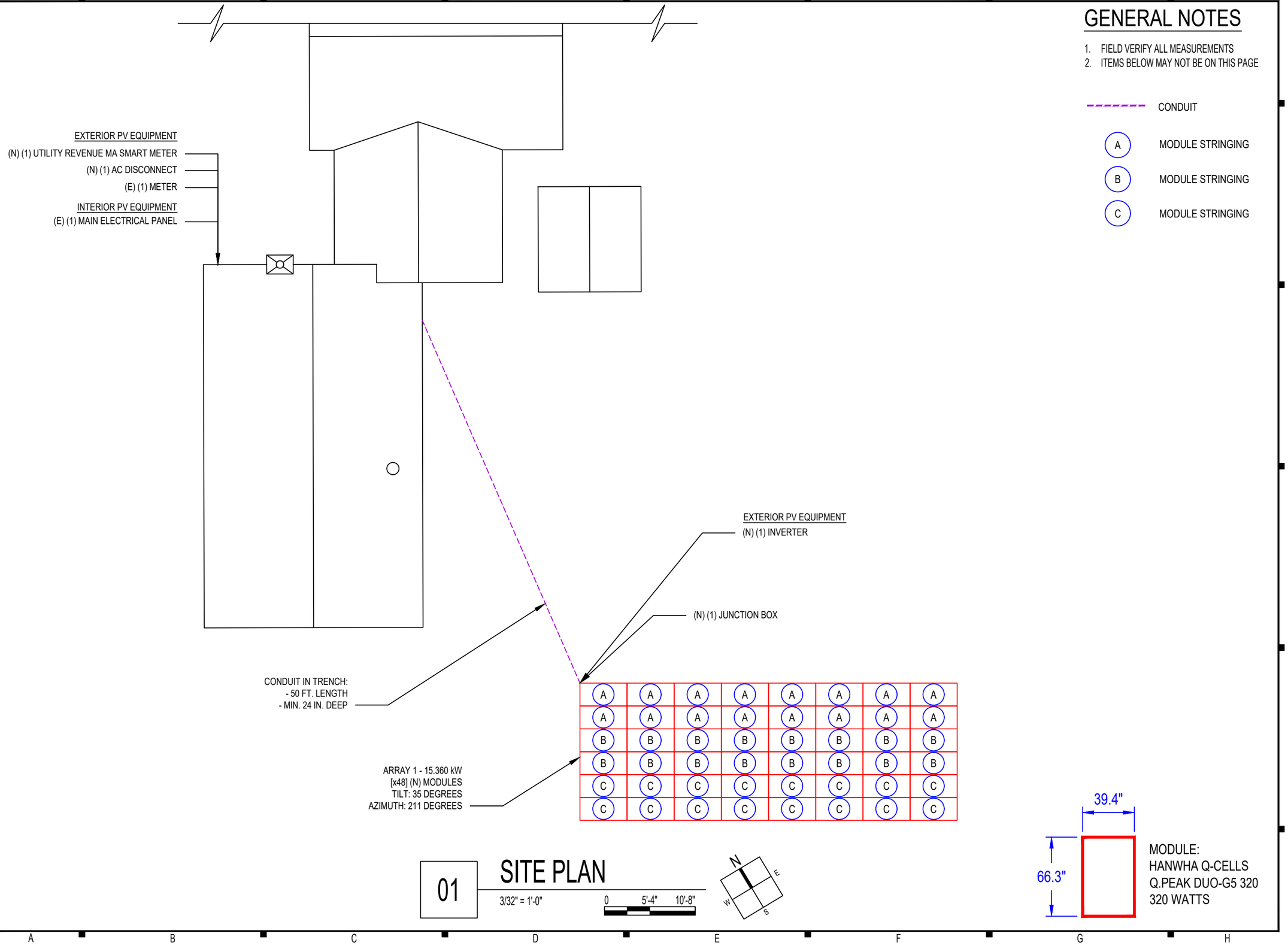
DESIGN BY: A.C.

CHECKED BY: M.M.

REVISIONS

A-101.00

(SHEET 3)



01 **SITE PLAN**

3/32" = 1'-0"

0 5'-4" 10'-8"

MODULE:
HANWHA Q-CELLS
Q.PEAK DUO-G5 320
320 WATTS

GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE

CONDUIT

A MODULE STRINGING

B MODULE STRINGING

C MODULE STRINGING

INSIGHT SOLAR

CONTRACTOR

INSIGHT SOLAR

PHONE: 413-338-7555

ADDRESS: 89 MARKET ST
NORTHAMPTON, MA 01060

LIC. NO.: HIC - MA 192102
HIC. NO.:
ELE. NO.:

NEW PV SYSTEM: 15.360 kWp

LAMBERT RESIDENCE

90 LONG PLAIN RD
WHATELY, MA 01093
APN:
WHATM:0006B:0000L:396

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

ELECTRICAL PLAN

DATE: 03.29.2020

DESIGN BY: A.C.

CHECKED BY: M.M.

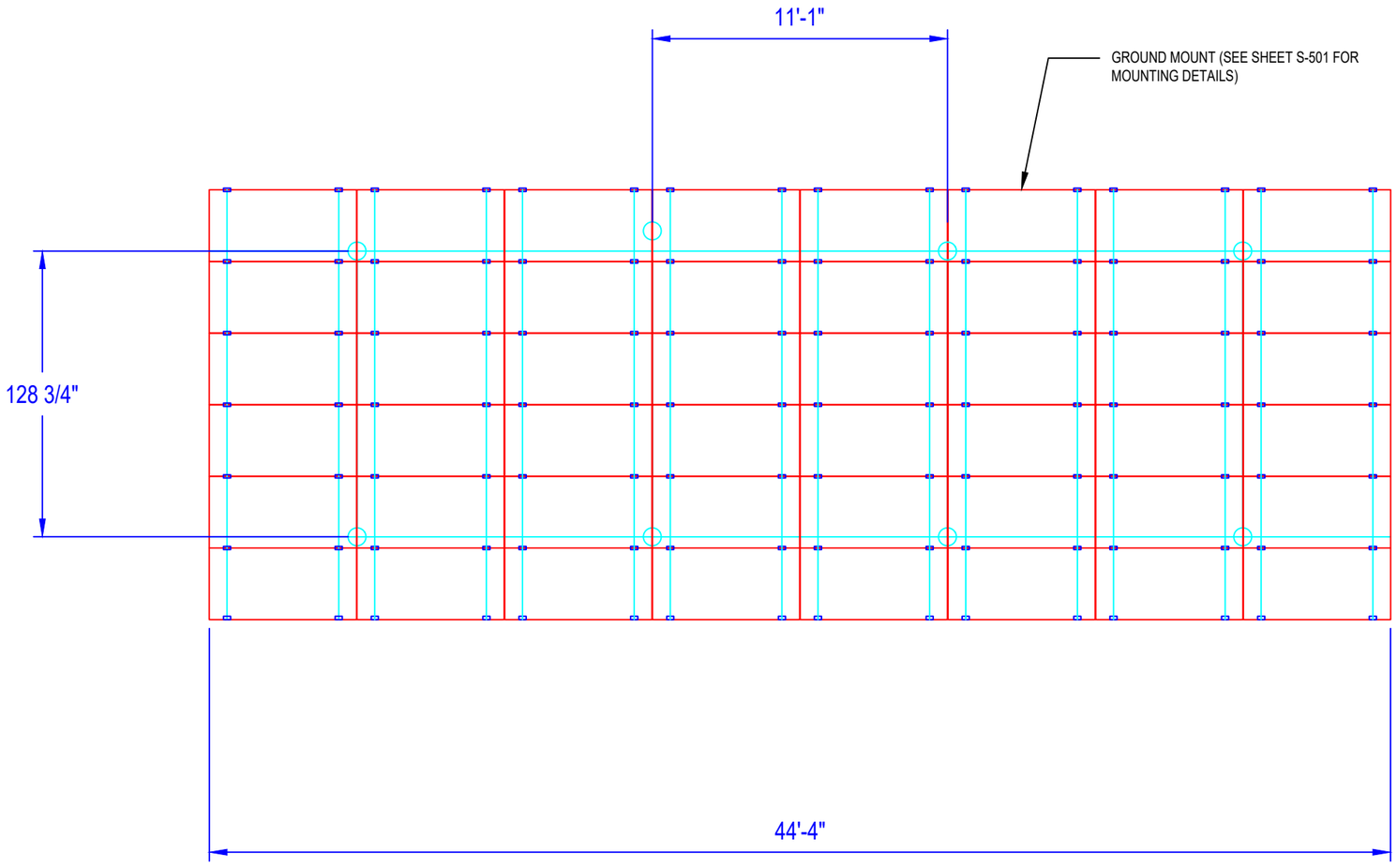
REVISIONS

A-102.00

(SHEET 4)

GENERAL NOTES

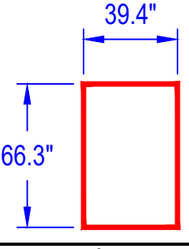
1. FIELD VERIFY ALL MEASUREMENTS
2. ITEMS BELOW MAY NOT BE ON THIS PAGE



01 SOLAR ATTACHMENT PLAN

3/16" = 1'

0 2'-8" 5'-4"



MODULE:
HANWHA Q-CELLS
Q.PEAK DUO-G5 320
320 WATTS

INSIGHT SOLAR

CONTRACTOR

INSIGHT SOLAR

PHONE: 413-338-7555

ADDRESS: 89 MARKET ST
NORTHAMPTON, MA 01060

LIC. NO.: HIC - MA 192102
HIC. NO.:
ELE. NO.:

NEW PV SYSTEM: 15.360 kWp

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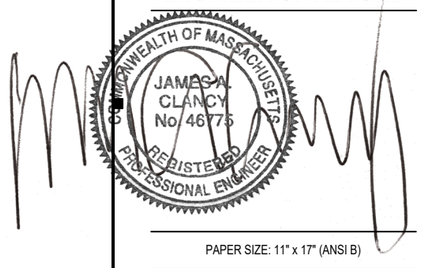
APN:
WHATM:0006B:0000L:396

ENGINEER OF RECORD



PAPER SIZE: 11" x 17" (ANSI B)

SOLAR ATTACHMENT PLAN

DATE: 03.29.2020

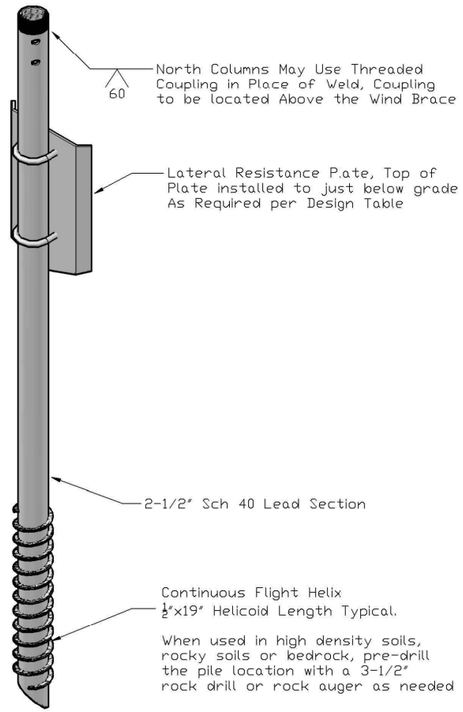
DESIGN BY: A.C.

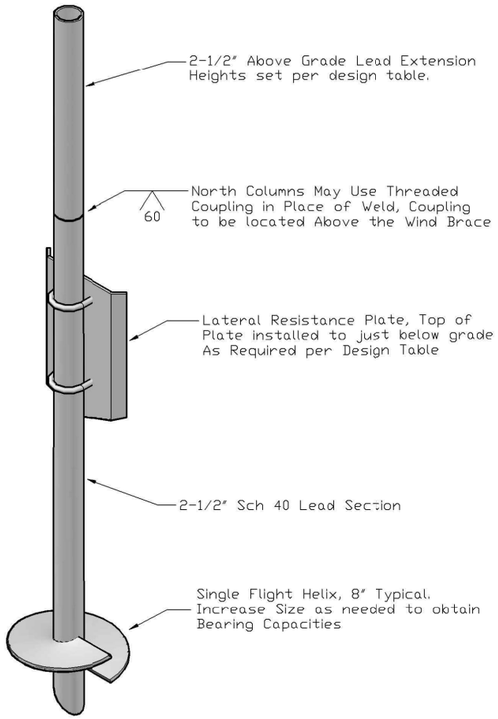
CHECKED BY: M.M.

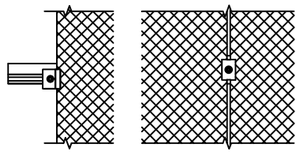
REVISIONS

A-103.00

(SHEET 5)

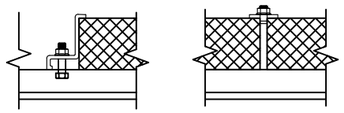






D7 DETAIL (TRANSVERSE)

NOT TO SCALE



D6 DETAIL (TRANSVERSE)

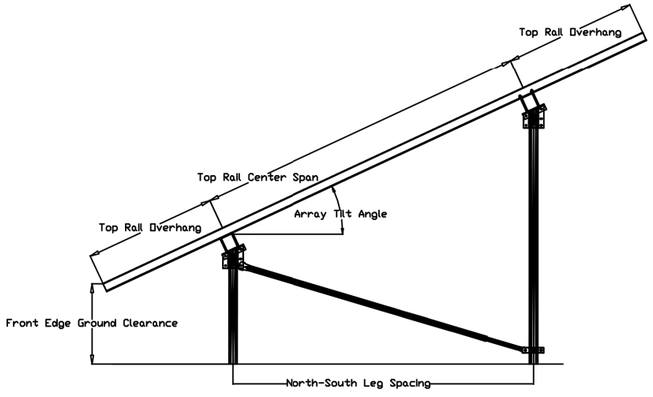
NOT TO SCALE

GENERAL NOTES

1. FIELD VERIFY ALL MEASUREMENTS

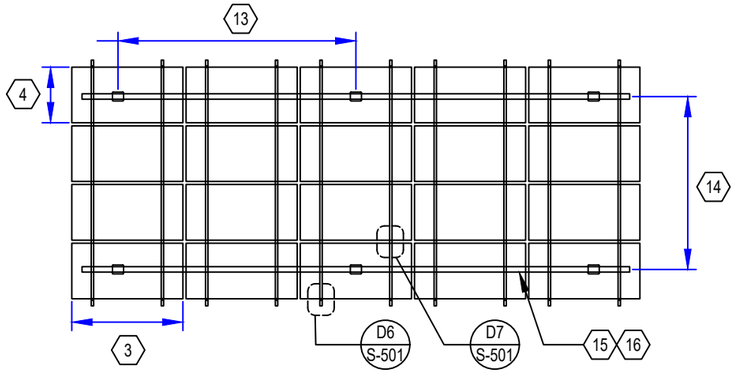
SHEET KEYNOTES

1. MODULE MANUFACTURER: HANWHA Q-CELLS
2. MODULE MODEL: Q.PEAK DUO-G5 320
3. MODULE LENGTH: 66.3 IN.
4. MODULE WIDTH: 39.4 IN.
5. MODULE WEIGHT: 41.2 LBS.
6. SEE SHEET A-103 FOR DIMENSION(S)
7. MIN. SETBACK REQUIREMENT: 20 FT.
8. FOUNDATION/ANCHOR TYPE: HELICAL PILE
9. TOTAL # OF FOUNDATION/ANCHOR: 8
10. TOTAL AREA: 870.74 SQ. FT.
11. TOTAL WEIGHT: 2044.8 LBS.
12. WEIGHT PER FOUNDATION/ANCHOR: 255.6 LBS.
13. EAST/WEST SPACING: 11 FT. 1 IN.
14. NORTH/SOUTH SPACING: 128 3/4 IN.
15. RACKING MANUFACTURER (OR EQUIV.): SOLAR FOUNDATIONS
16. RACKING MODEL (OR EQUIVALENT): SOLAR FOUNDATIONS GROUND MOUNT SYSTEM



D2 RACKING DETAIL (LONGITUDINAL)

NOT TO SCALE

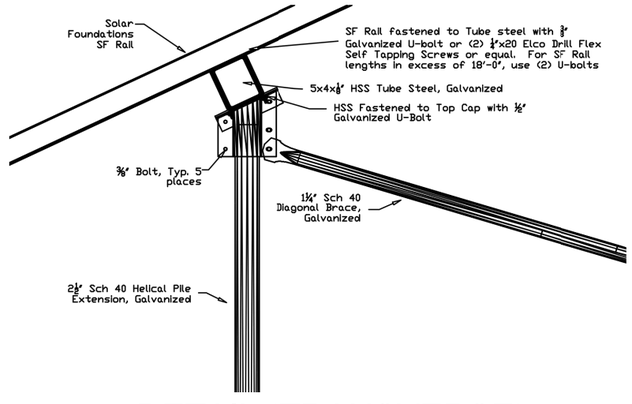


D1 RACKING DETAIL (TRANSVERSE)

NOT TO SCALE

D3 RACKING DETAIL (TOP)

NOT TO SCALE



D4 DETAIL (TRANSVERSE)

NOT TO SCALE

INSIGHT SOLAR

CONTRACTOR

INSIGHT SOLAR

PHONE: 413-338-7555

ADDRESS: 89 MARKET ST
NORTHAMPTON, MA 01060

LIC. NO.: HIC - MA 192102
HIC. NO.:
ELE. NO.:

NEW PV SYSTEM: 15.360 kWp

LAMBERT RESIDENCE

90 LONG PLAIN RD
WHATELY, MA 01093
APN:
WHAT:M:0006B:0000L:396

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

ASSEMBLY DETAILS

DATE: 03.29.2020

DESIGN BY: A.C.

CHECKED BY: M.M.

REVISIONS

S-501.00

(SHEET 9)

Single Phase Inverter with HD-Wave Technology

for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US / SE7600H-US / SE10000H-US / SE11400H-US

INVERTERS

12-25 YEAR WARRANTY

Optimized installation with HD-Wave technology

- Specifically designed to work with power optimizers
- Record-breaking efficiency
- Fixed voltage inverter for longer strings
- Integrated arc fault protection and rapid shutdown for NEC 2014 and 2017, per article 690.11 and 690.12
- UL1741 SA certified, for CPUC Rule 21 grid compliance
- Extremely small
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)

solaredge.com

solaredge

Single Phase Inverter with HD-Wave Technology for North America

SE3000H-US / SE3800H-US / SE5000H-US / SE6000H-US/ SE7600H-US / SE10000H-US / SE11400H-US

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	SE11400H-US	
OUTPUT								
Rated AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
Maximum AC Power Output	3000	3800 @ 240V 3300 @ 208V	5000	6000 @ 240V 5000 @ 208V	7600	10000	11400 @ 240V 10000 @ 208V	VA
AC Output Voltage Min.-Nom.-Max. (211 - 240 - 264)	✓	✓	✓	✓	✓	✓	✓	Vac
AC Output Voltage Min.-Nom.-Max. (183 - 208 - 229)	-	✓	-	✓	-	-	✓	Vac
AC Frequency (Nominal)	59.3 - 60 - 60.5[1]							Hz
Maximum Continuous Output Current @240V	12.5	16	21	25	32	42	47.5	A
Maximum Continuous Output Current @208V	-	16	-	24	-	-	48.5	A
GFDI Threshold	1							A
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes							
INPUT								
Maximum DC Power @240V	4650	5900	7750	9300	11800	15500	17650	W
Maximum DC Power @208V	-	5100	-	7750	-	-	15500	W
Transformer-less, Ungrounded	Yes							
Maximum Input Voltage	480							Vdc
Nominal DC Input Voltage	380					400		Vdc
Maximum Input Current @240V[2]	8.5	10.5	13.5	16.5	20	27	30.5	Adc
Maximum Input Current @208V[2]	-	9	-	13.5	-	-	27	Adc
Max. Input Short Circuit Current	45							Adc
Reverse-Polarity Protection	Yes							
Ground-Fault Isolation Detection	600kΩ Sensitivity							
Maximum Inverter Efficiency	99	99.2						%
CEC Weighted Efficiency	99						99 @ 240V 98.5 @ 208V	%
Nighttime Power Consumption	< 2.5							W
ADDITIONAL FEATURES								
Supported Communication Interfaces	RS485, Ethernet, ZigBee (optional), Cellular (optional)							
Revenue Grade Data, ANSI C12.20	Optional[3]							
Rapid Shutdown - NEC 2014 and 2017 690.12	Automatic Rapid Shutdown upon AC Grid Disconnect							
STANDARD COMPLIANCE								
Safety	UL1741, UL1741 SA, UL1699B, CSA C22.2, Canadian AFCI according to T.I.L. M-07							
Grid Connection Standards	IEEE1547, Rule 21, Rule 14 (HI)							
Emissions	FCC Part 15 Class B							
INSTALLATION SPECIFICATIONS								
AC Output Conduit Size / AWG Range	3/4" minimum / 14-6 AWG					3/4" minimum /14-4 AWG		
DC Input Conduit Size / # of Strings / AWG Range	3/4" minimum / 1-2 strings / 14-6 AWG					3/4" minimum / 1-3 strings / 14-6 AWG		
Dimensions with Safety Switch (HxWxD)	17.7 x 14.6 x 6.8 / 450 x 370 x 174					21.3 x 14.6 x 7.3 / 540 x 370 x 185		in / mm
Weight with Safety Switch	22 / 10		25.1 / 11.4	26.2 / 11.9		38.8 / 17.6		lb / kg
Noise	< 25				<50			dBA
Cooling	Natural Convection							
Operating Temperature Range	-40 to +140 / -25 to +60[4] (-40°F / -40°C option)[5]							°F / °C
Protection Rating	NEMA 4X (Inverter with Safety Switch)							

(1) For other regional settings please contact SolarEdge support
(2) A higher current source may be used; the inverter will limit its input current to the values stated
(3) Revenue grade inverter P/N: SExxxxH-US000NNC2
(4) For power de-rating information refer to: https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf
(5) -40 version P/N: SExxxxH-US000NNU4

RoHS

INSIGHT SOLAR

CONTRACTOR

INSIGHT SOLAR

PHONE: 413-338-7555

ADDRESS: 89 MARKET ST
NORTHAMPTON, MA 01060

LIC. NO.: HIC - MA 192102
HIC. NO.:
ELE. NO.:

NEW PV SYSTEM: 15.360 kWp

LAMBERT RESIDENCE

90 LONG PLAIN RD
WHATELY, MA 01093
APN:
WHATM:0006B:0000L:396

ENGINEER OF RECORD

PAPER SIZE: 11" x 17" (ANSI B)

RESOURCE DOCUMENT

DATE: 03.29.2020

DESIGN BY: A.C.

CHECKED BY: M.M.

REVISIONS

R-002.00

(SHEET 11)