

SITE VERIFICATION NOTES:

1. PRIOR TO SUBMISSION TO MUNICIPALITY OF THE PLANS, THIS CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN THE ACTUAL FIELD CONDITIONS AS THEY RELATE TO THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED HEREIN. DISCREPANCIES, IF ANY, SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO SUBMISSION OF THE PLANS. SUBMISSION OF PLANS SHALL BE EVIDENCE THAT SITE VERIFICATION HAS BEEN PERFORMED AS DESCRIBED ABOVE.
2. CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS PRIOR TO THE START OF WORK. IF EXISTING CONDITIONS VARY FROM PLANS, THE CONTRACTOR SHALL STOP WORK AND NOTIFY PROJECT ENGINEER A.S.A.P. CONTRACTOR ASSUMES ALL RESPONSIBILITY AND LIABILITY THEREFROM.
3. THE OWNER/CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, VERIFY ALL CONDITIONS, EXAMINE THE DESIGN DOCUMENTS AND BE RESPONSIBLE FOR ALL MEASUREMENTS, DIMENSIONS AND CONDITIONS.
4. COMMENCEMENT OF CONSTRUCTION WILL SIGNIFY THAT THE CONTRACTOR WILL HOLD THE DESIGN ENGINEER HARMLESS FOR ANY AND ALL ERRORS, OMISSIONS AND PERSONAL LIABILITY.

ARRAY NOTES:

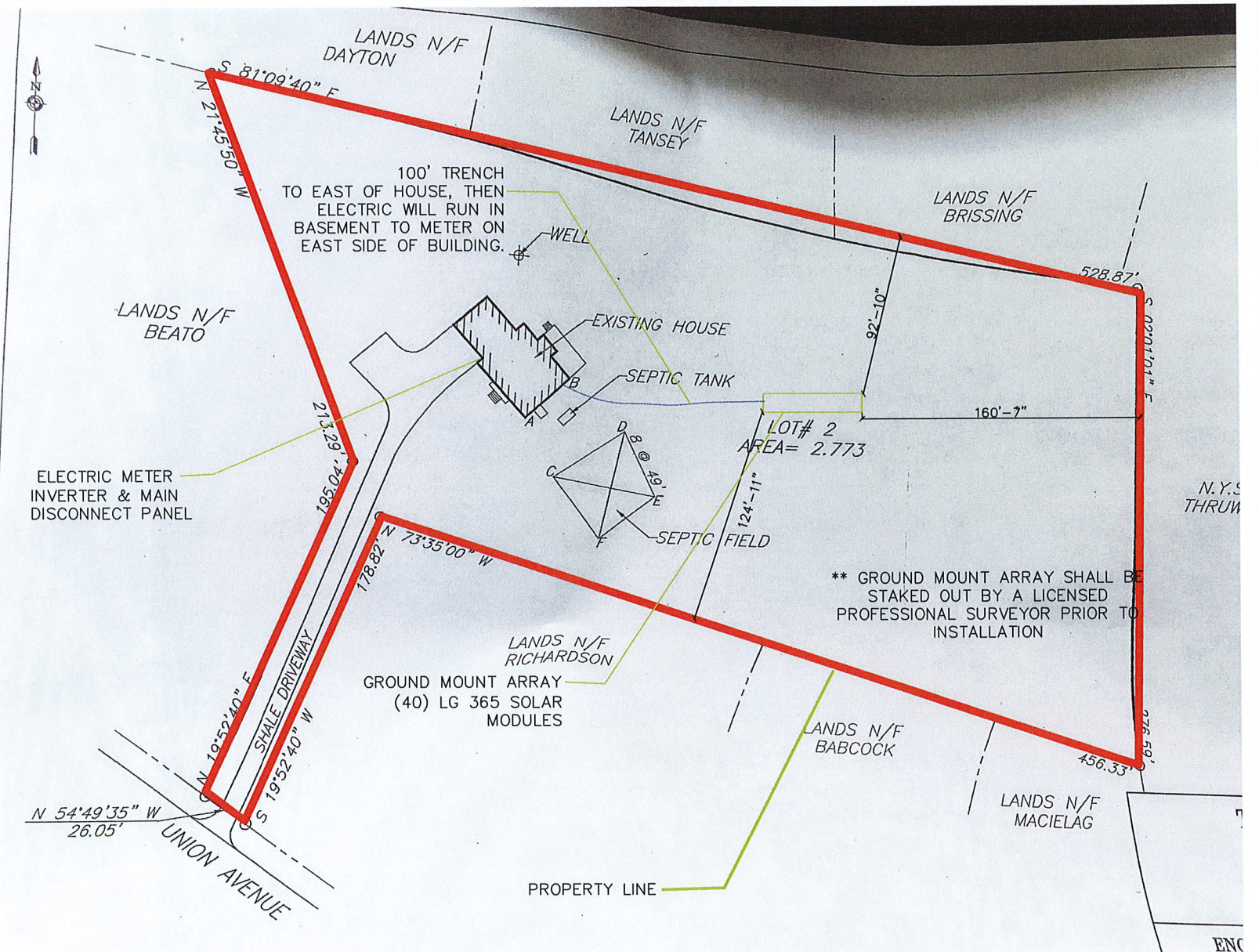
THERE IS (1) GROUND MOUNT ARRAYS, FOR A TOTAL OF 760 SQ.FT.

PROJECT DESIGN DATA:

WORK SHALL BE COMPLETED AS PER 2020 RESIDENTIAL CODE OF NEW YORK STATE, PUBLICATION DATE: NOVEMBER 2019, NFPA 70, 2020 NATIONAL ELECTRICAL CODE AND 2018 WOOD FRAME CONSTRUCTION MANUAL LOAD CRITERIA AS FOLLOWS
 EXPOSURE CATEGORY: "B"
 GROUND SNOW LOAD: 40 PSF
 WIND SPEED: 120 MPH, 35SPF

GENERAL NOTES:

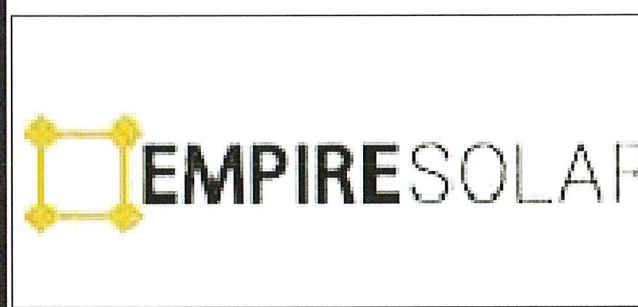
1. ALL SOLAR MODULES TO BE LG 365W AND SHALL BE INSTALLED AS PER LG INSTALLATION MANUAL.
2. ALL INVERTERS TO BE SOLAR EDGE INVERTERS ALL RACKING AS PER DETAILS FOR GROUND MOUNT INSTALLATION



RESIDENTIAL SOLAR PANEL INSTALLATION
 LOCATED AT 1326 UNION AVENUE, NEWBURGH, NY 12550
 TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK

GROUND MOUNT LOCATION SURVEY:

NTS



SOLAR PANEL INSTALLATION
LIPPI-BURBRIDGE RESIDENCE
 1326 UNION AVENUE
 NEWBURGH
 NEW YORK 12550

REVISIONS NOTES

DWG. BY: MEM		SCALE: AS-NOTED	
CHECKED BY: MEM		PROJECT #: ES-1330-21	
DATE: APRIL 20, 2021		SBL #: 111-1-3.2	
MUNICIPALITY: TOWN OF NEWBURGH		COUNTY: ORANGE	

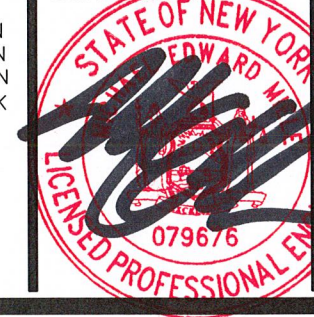
SYSTEM NOTES:

TOTAL SYSTEM SIZE: 14.6KW DC SYSTEM
 PANEL TYPE: LG 365W
 # OF PANELS: 40
 INVERTER: ENPHASE IQ7 PLUS
 OF INVERTERS: 40
 ARRAY #1
 AZIMUTH: 180
 TILT: 40
 # OF PANELS 40

PROFESSIONAL NOTES:

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SEAL & SIGNATURE



DWG# **S-1**
PROJECT SITE PLAN AND NOTES

1 OF 5

original

LG NeON[®]R

LG380Q1C-V5 | LG375Q1C-V5 | LG370Q1C-V5 | LG365Q1C-V5

General Data

Cell Properties (Material / Type)	Monocrystalline / N-type
Cell Maker	LG
Cell Configuration	60 Cells (6 x 10)
Module Dimensions (L x W x H)	1,700mm x 1,016mm x 40mm
Weight	17.5 kg
Glass (Thickness / Material)	2.8mm / Tempered Glass with AR Coating
Backsheet (Color)	White
Frame (Material)	Anodized Aluminum
Junction Box (Protection Degree)	IP68 with 3 Bypass Diodes
Cables (Length)	1,000mm x 2EA
Connector (Type / Maker)	MC4 / MC

Certifications and Warranty

Certifications	IEC 61215-1/-1-1/2:2016, IEC 61730-1/2:2016 UL 1703 ISO 9001, ISO 14001, ISO 50001 OHSAS 18001
Salt Mist Corrosion Test	IEC 61701:2012 Severity 6
Ammonia Corrosion Test	IEC 62716:2013
Module Fire Performance	Type 1 (UL 1703)
Fire Rating	Class C (UL 790, UL/CORD C 1703)
Product Warranty	25 Years
Output Warranty of Pmax	Linear Warranty*

Temperature Characteristics

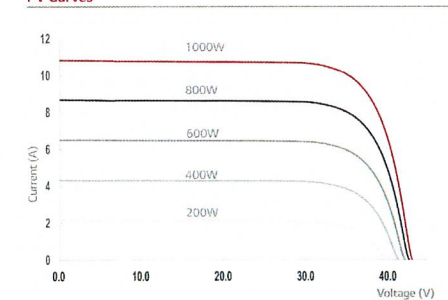
NMOT*	[°C]	-44 ± 3
Pmax	[%/°C]	-0.30
Voc	[%/°C]	-0.24
Isc	[%/°C]	0.037

* NMOT (Nominal Module Operating Temperature): Irradiance 800 W/m², Ambient temperature 20 °C, Wind speed 1 m/s, Spectrum AM 1.5

Electrical Properties (NMOT)

Model	LG380Q1C-V5	LG375Q1C-V5	LG370Q1C-V5	LG365Q1C-V5	
Maximum Power (Pmax)	[W]	286	282	279	275
MPP Voltage (Vmpp)	[V]	37.3	37.1	36.9	36.6
MPP Current (Impp)	[A]	7.67	7.61	7.55	7.51
Open Circuit Voltage (Voc)	[V]	40.3	40.3	40.3	40.2
Short Circuit Current (Isc)	[A]	8.73	8.72	8.71	8.70

I-V Curves



Electrical Properties (STC*)

Model	LG380Q1C-V5	LG375Q1C-V5	LG370Q1C-V5	LG365Q1C-V5	
Maximum Power (Pmax)	[W]	380	375	370	365
MPP Voltage (Vmpp)	[V]	37.4	37.2	37.0	36.7
MPP Current (Impp)	[A]	10.17	10.09	10.01	9.95
Open Circuit Voltage (Voc, ±5%)	[V]	42.9	42.8	42.6	42.8
Short Circuit Current (Isc, ±5%)	[A]	10.84	10.83	10.82	10.80
Module Efficiency	[%]	22.0	21.7	21.4	21.1

Power Tolerance [%] 0 ~ +3

* STC (Standard Test Conditions): Irradiance 1000 W/m², Cell Temperature 25 °C, AM 1.5

** Measure Tolerance: ± 3%

Operating Conditions

Operating Temperature	[°C]	-40 ~ +90
Maximum System Voltage	[V]	1,000
Maximum Series Fuse Rating	[A]	20
Mechanical Test Load (Front)	[Pa / psf]	5,400 / 113
Mechanical Test Load (Rear)	[Pa / psf]	4,000 / 83.5

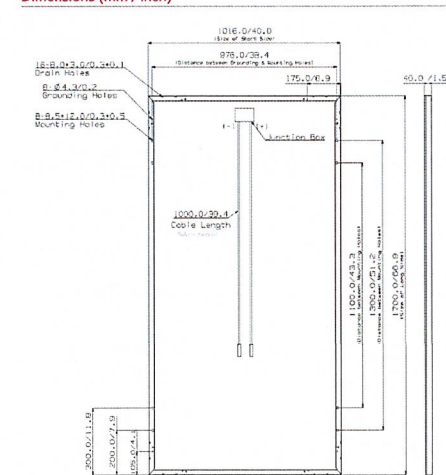
⊗ Mechanical Test Load 5,400Pa / 4,000Pa based on IEC 61215-2 : 2016

(Test Load = Design Load x Safety Factor (1.5))

Packaging Configuration

Number of Modules Per Pallet	[EA]	25
Number of Modules Per 40ft HQ Container	[EA]	650
Packaging Box Dimensions (L x W x H)	[mm]	1,750 x 1,120 x 1,221
Packaging Box Gross Weight	[kg]	473

Dimensions (mm / inch)



Enphase IQ 7 and IQ 7+ Microinverters

INPUT DATA (DC)	IQ7-60-2-US	IQ7PLUS-72-2-US
Commonly used module pairings ¹	235 W - 350 W +	235 W - 440 W +
Module compatibility	60-cell PV modules only	60-cell and 72-cell PV modules
Maximum input DC voltage	48 V	60 V
Peak power tracking voltage	27 V - 37 V	27 V - 45 V
Operating range	16 V - 48 V	16 V - 60 V
Min/Max start voltage	22 V / 48 V	22 V / 60 V
Max DC short circuit current (module Isc)	15 A	15 A
Overvoltage class DC port	II	II
DC port backfeed current	0 A	0 A
PV array configuration	1 x 1 ungrounded array; No additional DC side protection required; AC side protection requires max 20A per branch circuit	

OUTPUT DATA (AC)	IQ 7 Microinverter	IQ 7+ Microinverter
Peak output power	250 VA	295 VA
Maximum continuous output power	240 VA	290 VA
Nominal (L-L) voltage/range ²	240 V / 211-264 V	240 V / 211-264 V
Maximum continuous output current	1.0 A (240 V)	1.21 A (240 V)
Nominal frequency	60 Hz	60 Hz
Extended frequency range	47 - 68 Hz	47 - 68 Hz
AC short circuit fault current over 3 cycles	5.8 Arms	5.8 Arms
Maximum units per 20 A (L-L) branch circuit ³	16 (240 VAC)	13 (240 VAC)
Overvoltage class AC port	III	III
AC port backfeed current	18 mA	18 mA
Power factor setting	1.0	1.0
Power factor (adjustable)	0.85 leading ... 0.85 lagging	0.85 leading ... 0.85 lagging

EFFICIENCY	@240 V	@208 V	@240 V	@208 V
Peak efficiency	97.6 %	97.6 %	97.5 %	97.3 %
CEC weighted efficiency	97.0 %	97.0 %	97.0 %	97.0 %

MECHANICAL DATA

Ambient temperature range	-40°C to +65°C
Relative humidity range	4% to 100% (condensing)
Connector type	MC4 (or Amphenol H4 UTX with additional Q-DCC-5 adapter)
Dimensions (HxWxD)	212 mm x 175 mm x 30.2 mm (without bracket)
Weight	1.08 kg (2.38 lbs)
Cooling	Natural convection - No fans
Approved for wet locations	Yes
Pollution degree	PD3
Enclosure	Class II double-insulated, corrosion resistant polymeric enclosure
Environmental category / UV exposure rating	NEMA Type 6 / outdoor

FEATURES

Communication	Power Line Communication (PLC)
Monitoring	Enlighten Manager and MyEnlighten monitoring options. Both options require installation of an Enphase IQ Envoy.
Disconnecting means	The AC and DC connectors have been evaluated and approved by UL for use as the load-break disconnect required by NEC 690.
Compliance	CA Rule 21 (UL 1741-SA) UL 62109-1, UL1741/IEE1547, FCC Part 15 Class B, ICES-0003 Class B, CAN/CSA-C22.2 NO. 107.1-01 This product is UL Listed as PV Rapid Shut Down Equipment and conforms with NEC-2014 and NEC-2017 section 690.12 and C22.1-2015 Rule 64-218 Rapid Shutdown of PV Systems, for AC and DC conductors, when installed according manufacturer's instructions.

- No enforced DC/AC ratio. See the compatibility calculator at <https://enphase.com/en-us/support/module-compatibility>
- Nominal voltage range can be extended beyond nominal if required by the utility.
- Limits may vary. Refer to local requirements to define the number of microinverters per branch in your area.

To learn more about Enphase offerings, visit enphase.com

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Product specifications are subject to change without notice.
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SOLAR PANEL INSTALLATION
LIPPI-BURBRIDGE RESIDENCE
1326 UNION AVENUE
NEWBURGH
NEW YORK 12550

REVISIONS NOTES

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CHECKED BY:	MEM	PROJECT #:	ES-1330-21
DATE:	APRIL 20, 2021	SBL #:	111-1-3.2
MUNICIPALITY:	TOWN OF NEWBURGH	COUNTY:	ORANGE

SYSTEM NOTES:

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PANEL TYPE:	LG 365W
# OF PANELS:	40
INVERTER:	ENPHASE IQ7 PLUS
OF INVERTERS:	40
ARRAY	#1
AZIMUTH:	180
TILT:	40
# OF PANELS	40

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DWG# **S-3**
SOLAR PANEL & INVERTER SPECIFICATIONS
DWG. 3 OF 5

WARNING
ELECTRIC SHOCK HAZARD !
 THE DIRECT CURRENT CIRCUIT CONDUCTORS OF THIS PHOTOVOLTAIC POWER SYSTEM ARE UNGROUNDED BUT MAY BE ENERGIZED WITH RESPECT TO GROUND DUE TO LEAKAGE PATHS AND/OR GROUND FAULTS

DC WARNING LABEL

WARNING
 INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS OVERCURRENT DEVICE

UTILITY DISCONNECT LABEL

CAUTION
SOLAR ELECTRIC SYSTEM CONNECTED

AC PANELS

GROUND MOUNT NOTES:

ARRAY RACK ASSEMBLY
 SOLAR GROUND MOUNT RACKING SHOWN FOR ARRANGEMENT ONLY
 RACKING MANUFACTURER TO PROVIDE SEALED SHOP DRAWINGS OF FINAL RACKING ASSEMBLY.
 INSTALL AS PER MANUFACTURER STANDARD INSTALLATION DETAILS.
 POST SUPPORTED RACKING FOUNDATION AS SHOWN
 18" ØX 48" DEEP CONCRETE FOUNDATION WITH EMBEDDED POST.

INSTALLATION NOTES:
 BRACKET TO POST INSTALLATION HEIGHT MAY VARY WITH SITE GRADING. IT IS NOT NECESSARY FOR ALL POST TOP BRACKETS TO ALIGN AT A COMMON ELEVATION FOR EACH ROW (+/-2")
 INSTALLATION CONTRACTOR SHALL ENSURE THAT ALL GRADING AND COMPACTION OF SITE IS COMPLETED PRIOR TO INSTALLATION OF THE RACKING SYSTEM TO AVOID POTENTIAL DISTURBANCE OF FOUNDATION AND ALIGNMENT.

SEALED SHOP DRAWINGS SHALL BE PROVIDED BY RACKING MANUFACTURER PRIOR TO THE INSTALLATION OF THE PV ARRAY.

THIS DRAWING IS DIAGRAMMATIC FOR THE MODULE/RACK ARRANGEMENT. FINAL RACKING DETAILS AND ASSEMBLY MAY VARY WITH FINAL INSTALLATION.

PHOTOVOLTAIC INVERTER INPUT DC DISCONNECT

WARNING
ELECTRIC SHOCK HAZARD !

DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

INTERACTIVE SOLAR PV SYSTEM RATING

RATED DC CURRENT	AMP
RATED DC VOLTAGE	VDC
MAXIMUM SYSTEM VOLTAGE	VDC
SHORT CIRCUIT CURRENT	AMP

SYSTEM INSTALLER: _____
 FOR SERVICE CALL: _____

DC INPUT WARNING LABEL #1
INVERTER 1

PHOTOVOLTAIC SYSTEM DISCONNECT FOR UTILITY OPERATION

WARNING
ELECTRIC SHOCK HAZARD !

DO NOT TOUCH TERMINALS. TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

INTERACTIVE SOLAR PV SYSTEM RATING

RATED OPERATING CURRENT	AMP
NORMAL OPERATING VOLTAGE	240 VAC

SYSTEM INSTALLER: _____
 FOR SERVICE CALL: _____

UTILITY DISCONNECT WARNING LABEL

6" (width)
 1 1/2" (height)

WARNING
DC SOLAR CIRCUIT

DC CIRCUIT LABEL

WARNING
 THIS METER IS ALSO SERVED BY A PHOTOVOLTAIC SYSTEM

PV CIRCUITS ONLY
 NO OTHER LOADS SHALL BE APPLIED TO THIS PANEL OTHER THAN PV COMPONENTS AS PER NEC ARTICLE 690



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DWG#
S-4
SOLAR PANEL SIGNAGE
 DWG. 4 OF 5

AC & DC GROUNDING CONDUCTORS PER
NEC ARTICLE 690.47(c)(2)
CONNECTED AS PER 250.64(c)(2)

ALL CONDUCTORS ARE TO BE
COPPER UNLESS NOTED OTHERWISE

ALL EXTERIOR MOUNTED COMBINERS,
JUNCTION BOXES, TROUGHS, DISCONNECTS,
ETC. SHALL BE NEMA 3R RATED.

- CB1
AMPACITY: 20 AMP BREAKER
VOLTAGE: 240V
SINGLE PHASE + GROUND
- CB2
AMPACITY: 20 AMP BREAKER
VOLTAGE: 240V
SINGLE PHASE + GROUND
- CB3
AMPACITY: 20 AMP BREAKER
VOLTAGE: 240V
SINGLE PHASE + GROUND
- CB4
AMPACITY: 20 AMP BREAKER
VOLTAGE: 240V
SINGLE PHASE + GROUND
- CB5
AMPACITY: 10 AMP BREAKER
VOLTAGE: 240V
SINGLE PHASE + GROUND

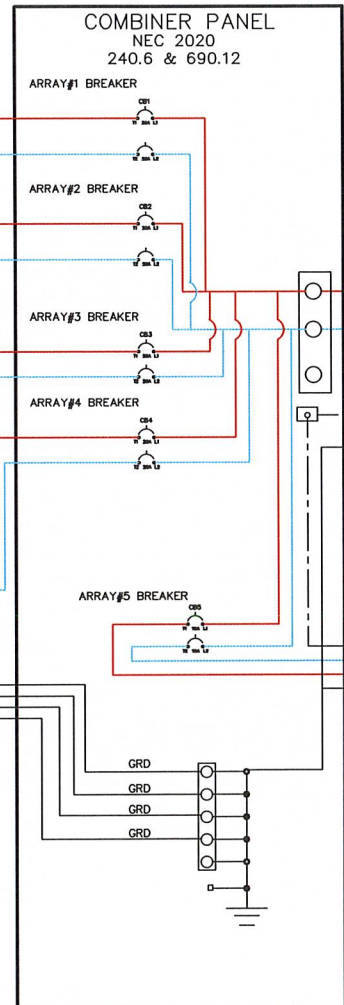
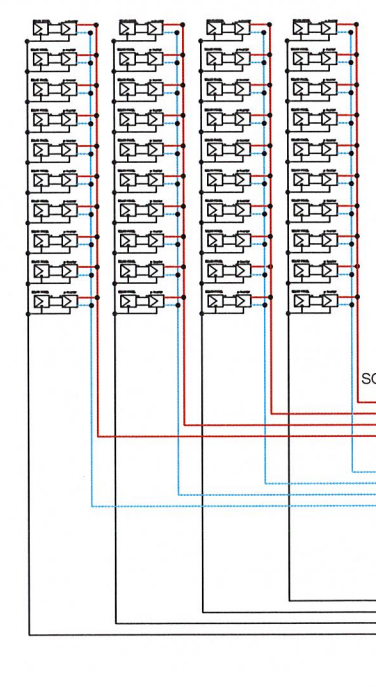
WARNING
ELECTRIC SHOCK HAZARD
DO NOT TOUCH TERMINALS
ON BOTH THE LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION

CIRCUIT 4
1 STRING
X 10
MODULES
10 TOTAL
PANELS

CIRCUIT 3
1 STRING
X 10
MODULES
10 TOTAL
PANELS

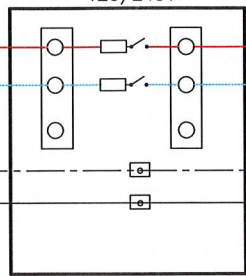
CIRCUIT 2
1 STRING
X 10
MODULES
10 TOTAL
PANELS

CIRCUIT 1
1 STRING
X 10
MODULES
10 TOTAL
PANELS

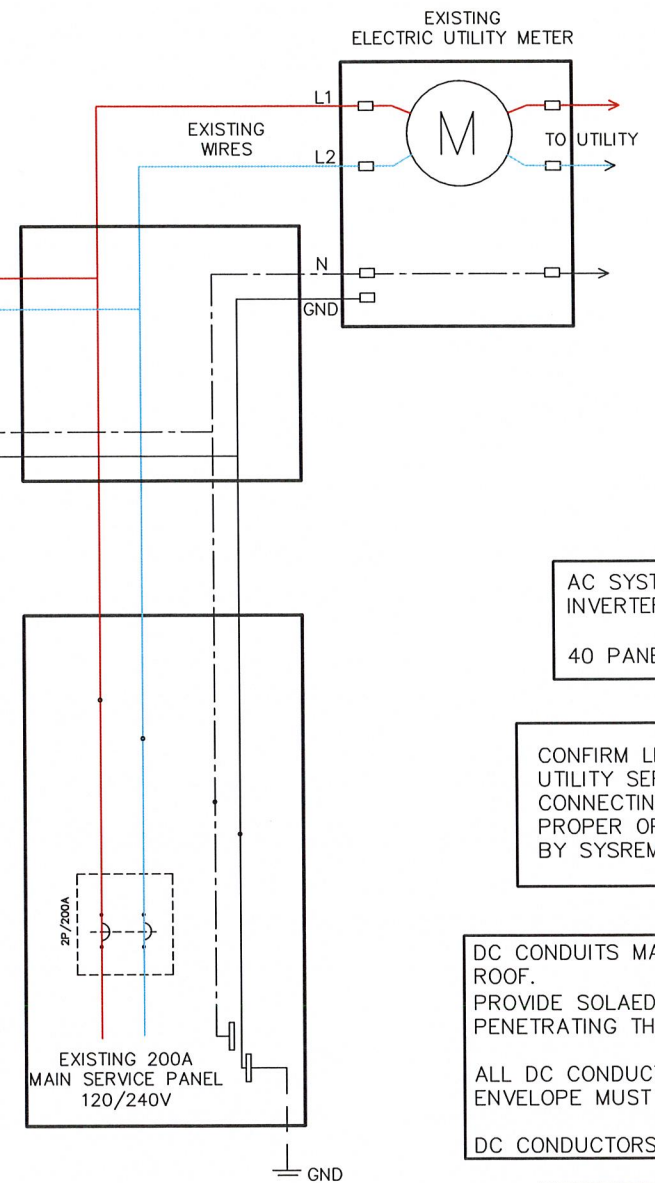


**PHOTOVOLTAIC
MAIN SOLAR SYSTEM
AC DISCONNECT**

89L DISCONNECT
100A RATED
80A FUSED
DISCONNECT
120/240V



**PHOTOVOLTAIC SYSTEM
AC DISCONNECT**
RATED AC OUTPUT CURRENT 48.4 A
NOMINAL OPERATING AC VOLTAGE 240 V



WIRE AMPACITY
NEC TABLE 310.15(B)(16)
#10 THWN Cu35A RATED
#8 THWN Cu50A RATED
#6 THWN Cu65A RATED
#4 THWN Cu85A RATED

AC SYSTEM SIZE = # OF PANELS X
INVERTER OUTPUT RATING
40 PANELS X 0.290 = 11.6KW/AC

CONFIRM LINE SIDE VOLTAGE AT ELECTRIC
UTILITY SERVICE ENTRANCE BEFORE
CONNECTING INVERTER AND ENSURE
PROPER OPERATIONAL RANGE REQUIRED
BY SYSTEM INVERTER.

DC CONDUITS MAY BE RUN ABOVE OR BELOW
ROOF.
PROVIDE SOLA DECK JUNCTION/FLASHING WHEN
PENETRATING THE ROOF WITH DC CONDUCTORS
ALL DC CONDUCTORS WITHIN THE BUILDING
ENVELOPE MUST BE IN METALLIC CONDUIT.
DC CONDUCTORS MUST BE 90° RATED.

INTERCONNECTION TO UTILITY AND SYSTEM
GROUNDING PER NEC-2020 ARTICLE 690
PROVIDE SIGNAGE AS REQUIRED BY
NEC-2020 ARTICLE 690.
ALL OUTDOOR EQUIPMENT SHALL BE A
MINIMUM OF NEMA-3R RATED.

WARNING
INVERTER OUTPUT CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE



**SOLAR PANEL
INSTALLATION**
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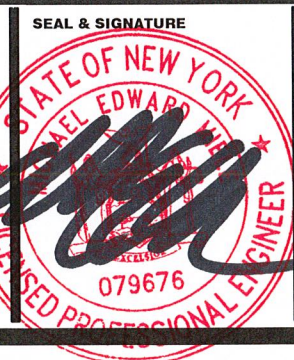
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S-5
**SOLAR
3-LINE
DIAGRAM**
DWG. 5 OF 5