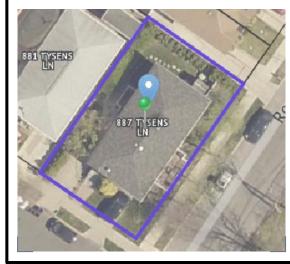
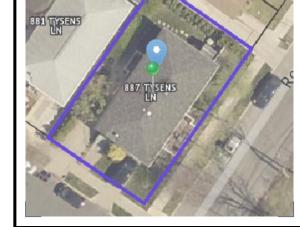
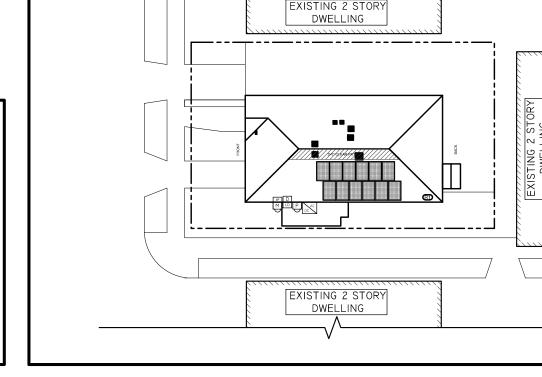
# **INSTALLATION OF NEW ROOF MOUNTED PV SOLAR SYSTEM**

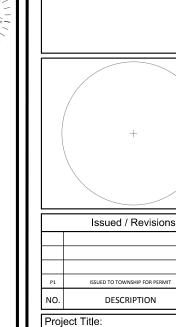
887 TYSENS LANE STATEN ISLAND, NY 10306











O'BRIEN, WILLIAM AND MARY

DATE

TRINITY ACCT #: 2017-10-196879

Engineer

#### Project Address:

887 TYSENS LANE STATEN ISLAND, NY 10306 40.558678,-74.106663

#### Drawing Title:

**COVER SHEET** 

## Drawing Information

DRAWING DATE 11/1/2017 DRAWN BY IC / DMR REVISED BY

System Information:

DC SYSTEM SIZE AC SYSTEM SIZE: TOTAL MODULE COUNT MODULES USED:

3.48kW HANWHA 290

MODULE SPEC #: UTILITY COMPANY: UTILITY ACCT #:

O.PEAK-BLK G4.1 290 CON EDISON 7015 2122 550 0005 4675664

SUNNOVA

UTILITY METER # DEAL TYPE

DWG No:

T-001.00 **PAGE: 1 OF 5** 



2211 Allenwood Road Wall, New Jersey 07719

## SATELLITE VIEW

#### **GENERAL NOTES**

1. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTIONS CONTAINED IN THE DRAWING PACKAGE AND INFORMATION RECEIVED FROM TRINITY

SCALE: NTS

- 2 THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL EQUIPMENT AND FOLLOWING ALL DIRECTIONS AND INSTRUCTION CONTAINED IN THE COMPLETE MANUAL.
- 3. THE INSTALLATION CONTRACTOR IS RESPONSIBLE FOR READING AND UNDERSTANDING ALL DRAWINGS, COMPONENT AND INVERTER MANUALS PRIOR TO INSTALLATION. THE INSTALLATION CONTRACTOR IS ALSO REQUIRED TO HAVE ALL COMPONENT SWITCHES IN THE OFF POSITION AND FUSES REMOVED PRIOR TO THE INSTALLATION OF ALL FUSE BEARING SYSTEM COMPONENTS.
  4. ONCE THE PHOTOVOLTAIC MODULES ARE
- MOUNTED, THE INSTALLATION CONTRACTOR SHOULD HAVE A MINIMUM OF ONE ELECTRICIAN WHO HAS ATTENDED A SOLAR PHOTOVOLTAIC INSTALLATION COURSE ON SITE.
- 5 FOR SAFETY IT IS RECOMMENDED THAT THE INSTALLATION CREW ALWAYS HAVE A MINIMUM OF TWO PERSONS WORKING TOGETHER AND THAT EACH OF THE INSTALLATION CREW MEMBERS BE TRAINED IN FIRST AID AND CPR.
- 6 THIS SOLAR PHOTOVOLTAIC SYSTEM IS TO BE INSTALLED FOLLOWING THE CONVENTIONS OF THE NATIONAL ELECTRICAL CODE. ANY LOCAL CODE WHICH MAY SUPERSEDE THE NEC SHALL
- 7 ALL SYSTEM COMPONENTS TO BE INSTALLED WITH THIS SYSTEM ARE TO BE "UL" LISTED. ALL EQUIPMENT WILL BE NEMA 3R OUTDOOR RATED UNLESS INDOORS.

#### GENERAL NOTES CONTINUED

- THE DC VOLTAGE FROM THE PANELS IS ALWAYS PRESENT AT THE DC DISCONNECT ENCLOSURE AND THE DC TERMINALS OF THE INVERTER DURING DAYLIGHT HOURS. ALL PERSONS WORKING ON OR INVOLVED WITH THE PHOTOVOLTAIC SYSTEM ARE WARNED THAT THE SOLAR MODULES ARE ENERGIZED WHENEVER THEY ARE
- EXPOSED TO LIGHT. ALL PORTIONS OF THIS SOLAR PHOTOVOLTAIC SYSTEM SHALL BE MARKED CLEARLY IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE
- ARTICLE 690 & 705.
  PRIOR TO THE INSTALLATION OF THIS PHOTOVOLTAIC SYSTEM, THE INSTALLATION CONTRACTOR SHALL ATTEND A PRE-INSTALLTION MEETING. FOR THE REVIEW OF THE INSTALLATION PROCEDURES, SCHEDULES, SAFETY AND COORDINATION
- PRIOR TO THE SYSTEM START UP THE INSTALLATION CONTRACTOR SHALL ASSIST IN PERFORMING ALL INITIAL HARDWARE CHECKS AND DC WIRING CONDUCTIVITY CHECKS.
- FOR THE PROPER MAINTENANCE AND ISOLATION OF THE INVERTERS REFER TO THE ISOLATION PROCEDURES IN THE OPERATION MANUAL.
- THE LOCATION OF PROPOSED ELECTRIC AND TELEPHONE UTILITIES ARE SUBJECT TO FINAL APPROVAL OF THE APPROPRIATE UTILITY COMPANIES AND **OWNERS** ALL MATERIALS. WORKMANSHIP AND
- CONSTRUCTION FOR THE SITE IMPROVEMENTS SHOWN HEREIN SHALL BE IN ACCORDANCE WITH: A) CURRENT PREVAILING MUNICIPAL AND/OR COUNTY SPECIFICATIONS,

STANDARDS AND REQUIREMENTS

#### GENERAL NOTES CONTINUED

- B) CURRENT PREVAILING UTILITY COMPANY SPECIFICATIONS, STANDARDS, AND REQUIREMENTS
- THIS SET OF PLANS HAVE BEEN PREPARED FOR THE PURPOSE OF MUNICIPAL AND AGENCY REVIEW AND APPROVAL THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DRAWINGS UNTIL REVISED TO INDICATE "ISSUED FOR CONSTRUCTION".
- ALL INFORMATION SHOWN MUST BE CERTIFIED PRIOR TO USE FOR CONSTRUCTION ACTIVITIES.

- 1. PV INSTALLATION TO COMPLY WITH ARTICLE 690 OF THE NEC
- 2. PV INSTALLATION TO COMPLY WITH NYSERDA REQUIREMENTS.
- 3 PV INSTALLATION TO COMPLY WITH NEW YORK STAT STANDARDIZED

1. PV INSTALLATION TO COMPLY WITH NYC ELECTRIC CODE 2011.

#### PLAN NOTES

1 SCOPE OF WORK IS SOLEY FOR THE INSTALLATION OF THE SOLAR ELECTRONIC GENERATING SYSTEM, ALL OTHER WORK IS NOT TO BE RELIED UPON AS BEING APPROVED AND/OR PERMITTED BY THE DOB

SPECIAL INSPECTIONS: STABILITY FIRE STOP

PROGRESS INSPECTIONS: **ENERGY CODE** COMPLIANCE FINAL INSPECTION VISUAL AIR SEALING

# SCALE: 1"=300'

- 1. CONSTRUCTION WORK WILL BE CONFINED TO THE ROOF / OUTSIDE & WILL NOT CREATE DUST, DIRT OR OTHER INCONVENIENCES TO NEIGHBORING PROPERTIES OR APARTMENT UNITS WITHIN
- 2. CONSTRUCTION WORK WILL NOT BLOCK HALLWAYS OR MEANS OF EGRESS FOR NEIGHBORING PROPERTIES OR TENANTS OF
- 3. CONSTRUCTION WORK WILL NOT INVOLVE INTERRUPTION OF HEATING, WATER OR ELECTRIC SERVICES TO NEIGHBORING
- TO NORMAL WORKING HOURS, 8AM 5PM MONDAY THRU FRIDAY EXCEPT LEGAL HOLIDAYS.

TENANT SAFETY NOTES

- THE BUILDING. THE BUILDING.
- PROPERTIES OR TENANTS OF THE BUILDING
- 4. CONSTRUCTION WORK WILL BE CONFINED

### **ABBREVIATIONS**

ALTERNATING CURRENT ALUMINUM AMP. FRAME ABOVE FINISHED FLOOR AFF AFG

ABOVE FINISHED GRADE AMERICAN WIRE GAUGE CONDUIT (GENERIC TERM OF RACEWAY PROVIDE AS SPECIFIED) COMBINER BOX

CKT CIRCUIT CURRENT TRANSFORMER CU COPPER DIRECT CURRENT

DC DISC DISCONNECT SWITCH DWG DRAWING ELECTRICAL SYSTEM INSTALLER EC EMT ELECTRICAL METALLIC TUBING

FS FU FUSIBLE SWITCH FUSE GROUND

GFI GROUND FAULT INTERRUPTER FREQUENCY (CYCLES PER

#### TENANT PROTECTION PLAN

SPECIAL PRECAUTION SHALL BE TAKEN BY THE CONTRACTOR SO THAT EQUIPMENT ON THIS APPLICATION AND ITS INSTALLATION WILL NOT AFFECT THE FALLOWING

- A. TENANT EGRESS TO AND FROM THE BUILDING. B. FIRE SAFETY, OR CREATE A FIRE HAZARD.
- C. STRUCTURAL SAFETY OF THE BUILDING.
- D. ACCUMULATION OF DUST. THE CONTRACTOR SHALL LEAVE THE WORK SITE BROOM CLEAN EACH DAY. IN THE EVENT THAT ASBESTOS IS FOUND ON THE JOBSITE, ITS REMOVAL SHALL TAKE PLACE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS OF O.S.H.A SECTION 1901.1, INCLUDING STAT AND FEDERAL DUMPING GROUNDS
- THERE SHALL BE NO CREATION OF NOISE OUTSIDE THE NORMAL HOURS OF 8AM TO 5PM MONDAY THRU FRIDAY EXCEPT LEGAL HOLIDAYS

#### PLAN NOTES

ABBREVIATIONS CONTINUED

KILO-WATT

kVA

kWH

MDP

MLO

MTG

NIC

NO#

OCP

PB

QTY

JUNCTION BOX

KILO-VOLT AMPERE

KILO-WATT HOUR

MAIN LUG ONLY

NOT IN CONTRACT

NOT TO SCALE

MOUNTED

NEUTRAL

NUMBER

POLE

PHASE

POWER

QUANTITY

PULL BOX

MOUNTING

THOUSAND CIRCULAR MILS

MAIN CIRCUIT BREAKER

MAIN DISTRIBUTION PANEL

NATIONAL ELECTRICAL CODE

OVER CURRENT PROTECTION

POLY-VINYL CHLORIDE CONDUIT

RIGID GALVANIZED STEEL

1. SCOPE OF WORK IS SOLEY FOR THE NOT TO BE RELIED UPON AS BEING

ABBREVIATIONS CONTINUED

UNLESS OTHERWISE

MOUNT 72 INCHES TO

BOTTOM OF ABOVE FINISHED

WEATHERPROOF

FLOOR OR GRADE

S- 002 00 - FLEVATION DRAWING

S- 003.00 - ELEVATION DRAWING

DEPARTMENT OF BUILDING NOTES

RCNY 5000-01 (H) (IA6) IIA6)

NYC FC504 EXEMPT - PITCH GREATER

28-116.2.4.2 AND DIRECTIVE 14 OF 1975

E-001.00 - ELECTRICAL 3-LINE

DRAWING

JSWBD SWITCHBOARD

INDICATED

XFMR TRANSFORMER

T-001.00 - COVER SHEET

S- 001.00 - ROOF LAYOUT

U.O.I.

+72

THAN 5/12

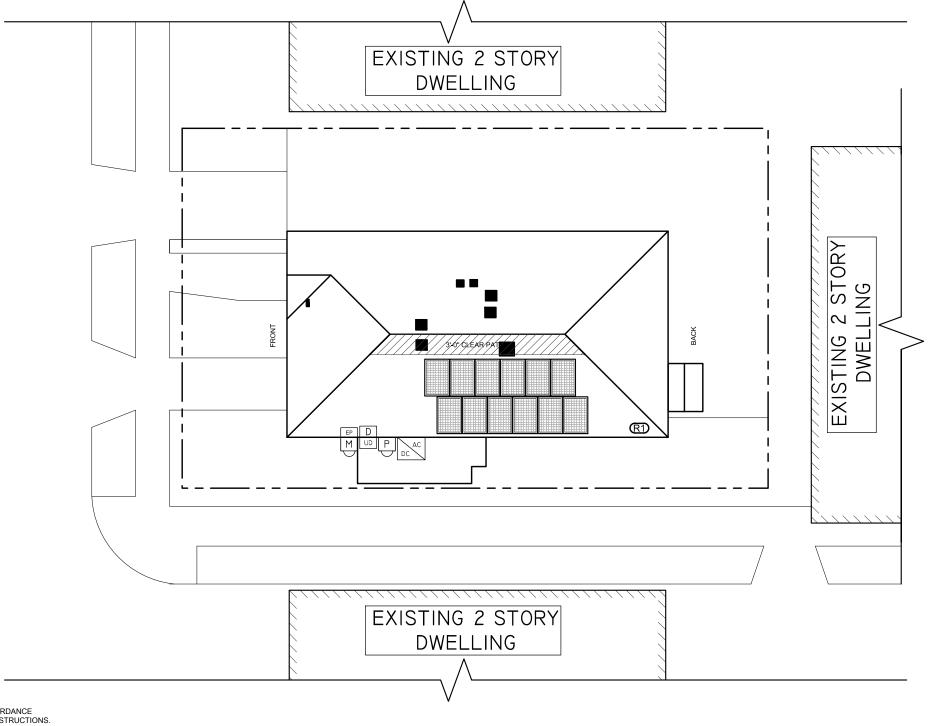
BC 109.3.3

INSTALLATION OF THE SOLAR ELECTRONIC GENERATING SYSTEM, ALL OTHER WORK IS APPROVED AND/OR PERMITTED BY THE DOE

THE WORK PROPOSED IN THIS APPLICATION IS COMPLIANT WITH THE ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK CITY TO THE BEST OF MY KNOWLEDGE, BELIEF AND PROFESSIONAL JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK CITY 2010

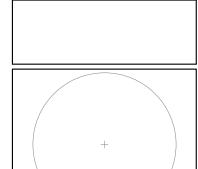
APPLICATION TYPE: ALT-2 SCOPE OF WORK: INSTALL NEW ROOF MOUNTED SOLAR ELECTRICITY (PV-PHOTOVOLTAIC) GENERATING SYSTEM CERTIFY THAT ANY BUILDING CONSTRUCTION ASSOCIATED WITH THE INSTALLATION OF THE SOLAR ELECTRIC GENERATING SYSTEM, OTHER THAN THAT SHOWN IN THIS ENERGY ANALYSIS. HAS BEEN INCLUDED IN AN ASSOCIATED PLAN APPROVAL AND WORK PERMIT APPLICATION ROPOSED VALUE: RESCRIPTIVE VALUE DESCRIPTION: AND CITATION: DOCUMENTATION 01 00 SOLAR PANEL PENETRATIONS AS WEATHERSTRIPPING OR OTHER NCHORAGE DETAILS AND PECTION OF OPENINGS AND PENETRATIONS IN THE UILDING STRUCTURE BY ESCRIBED IN SECTION ECC MATERIALS IN ACCORDANCE BUILDING ENVELOPE TO VERIEY THAT THEY ARE PROPERL DI TING TO STRUCTURAL R402.4.2 SEALED, IN ACCORDANCE WITH ECC TABLE R402.4.2, SECTION MFMBERS, AND SHOWN ON ND ECC TABLE R402.4.2 CC R402.4 AND APPROVED DRAWINGS

SIZE OF EXISTING RAFTER: 2" x 8" RAFTER SPACING: 16" o.c.
ROOF PITCH R1: 23 ° (ASPHALT SHINGLE) ADDITIONAL SUPPORT PROVIDED: NO THE EXISTING ROOF RAFTERS AT THIS RESIDENCE CAN ADEQUATELY SUPPORT THE PROPOSED SOLAR PV PANEL ASSEMBLY (4.3 LBS. PSF) AND THE SNOW LOADS (16 LBS. PSF) . IN ADDITION, THE 3" STAINLESS STEEL LAG SCREWS INSTALLED AT 4' o.c. MEET THE UPLIFT REQUIREMENTS OF 4 SCREW MINIMUM PER ASSEMBLY, 6 SCREWS ARE PROVIDED. THIS INSTALLATION MEETS THE REQUIREMENTS OF THE RESIDENTIAL CODE OF NEW YORK STATE AND HAS BEEN FOUND TO BE ACCEPTABLE BY MY



### PLAN NOTES

 SCOPE OF WORK IS SOLEY FOR THE
 INSTALLATION OF THE SOLAR ELECTRONIC GENERATING SYSTEM. ALL OTHER WORK IS NOT TO BE RELIED UPON AS BEING APPROVED AND/OR PERMITTED BY THE DOB



Engineer:

Issued / Revisions		
P1	ISSUED TO TOWNSHIP FOR PERMIT	11/1/2017
NO.	DESCRIPTION	DATE

#### Project Title:

O'BRIEN, WILLIAM AND MARY

TRINITY ACCT #: 2017-10-196879

#### Project Address:

887 TYSENS LANE STATEN ISLAND, NY 10306 40.558678,-74.106663

#### Drawing Title:

### **ROOF LAYOUT**

Drawing Information		
DRAWING DATE:	11/1/2017	
DRAWN BY:	JC / DMR	
REVISED BY:		

#### System Information: DC SYSTEM SIZE: 3.48kW AC SYSTEM SIZE: TOTAL MODULE COUNT: MODULES USED: HANWHA 290 MODULE SPEC #: O.PEAK-BLK G4.1 290 CON EDISON UTILITY COMPANY: UTILITY ACCT #: 7015 2122 550 0005 UTILITY METER #: 4675664 DEAL TYPE: SUNNOVA

DWG No.

S-001.00 PAGE: 2 OF 5



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1.) ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE

WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

ARRAY BONDING TO COMPLY WITH MANUFACTURER SPECIFICATION. 3.) ALL LOCATIONS ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.

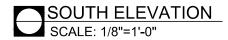
4.) AN AC DISCONNECT SHALL BE GROUPED WITH INVERTER (S) NEC 690.13 (E)

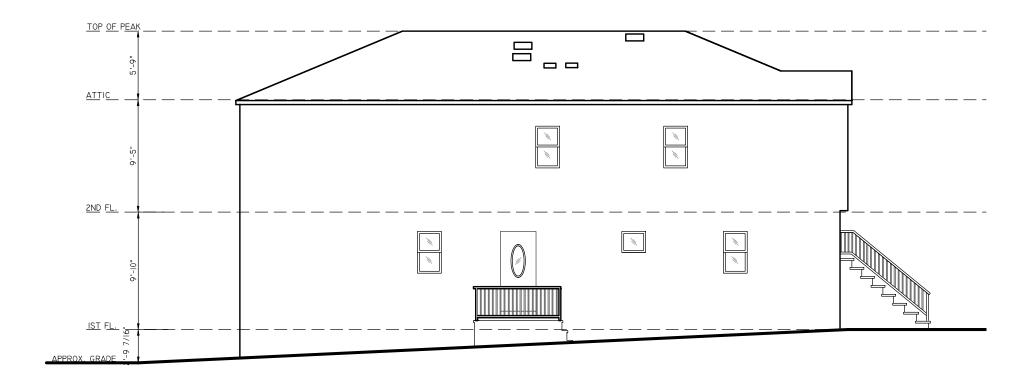
5.) ALL OUTDOOR EQUIPMENT SHALL BE RAIN TIGHT WITH MINIMUM NEMA 3R RATING.

3) ROOFTOP SOLAR INSTALLATION ONLY PV ARRAY SHALL NOT EXTEND BEYOND THE EXISTING ROOF EDGE.

SYMBOL LEGEND PLUMBING SCHEDULE | EQUIPMENT SCHEDULE ARRAY SCHEDULE INDICATES ROOF DESIGNATION . REFER TO QTY SPEC# INDICATES NEW UTILITY DISCONNECT TO BE ARRAY ORIENTATION = 125° ARRAY SCHEDULE FOR MORE INFORMATION INSTALLED OUTSIDE HANWHA 290 (Q.PEAK-BLK G4.1 290 12 MODULE PITCH = 23° M INDICATES NEW PV SOLAR MODULE. RED MODULES SE3000H-US000NNC2 INDICATES EXISTING METER LOCATION INDICATE PANELS THAT USE MICRO INVERTERS. REFER TO EQUIPMENT SCHEDULE FOR SPECS. INDICATES EXISTING ELECTRICAL PANEL INDICATES NEW PRODUCTION METER TO BE LOCATION: IN GARAGE INSTALLED OUTSIDE. INDICATES NEW INVERTER TO BE D INDICATES NEW MAIN DISCONNECT INSTALLED OUTSIDE REFER TO EQUIPMENT SCHEDULE FOR SPECS. NYC DEPT OF BUILDING APPROVAL STAMP







WEST ELEVATION
SCALE: 1/8"=1'-0"

### PLAN NOTES

SCOPE OF WORK IS SOLEY FOR THE
 INSTALLATION OF THE SOLAR ELECTRONIC
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Engineer:

Issued / Revisions		
P1	ISSUED TO TOWNSHIP FOR PERMIT	11/1/2017
NO.	DESCRIPTION	DATE

### Project Title:

O'BRIEN, WILLIAM AND MARY

TRINITY ACCT #: 2017-10-196879

#### Project Address:

887 TYSENS LANE STATEN ISLAND, NY 10306 40.558678,-74.106663

Drawing Title:

### ELEVATION DRAWING

Drawing Informatio	n
DRAWING DATE:	11/1/2017
DRAWN BY:	JC / DMR
REVISED BY:	

System Information:		
DC SYSTEM SIZE:	3.48kW	
AC SYSTEM SIZE:	3kW	
TOTAL MODULE COUNT:	12	
MODULES USED:	HANWHA 290	
MODULE SPEC #:	Q.PEAK-BLK G4.1 290	
UTILITY COMPANY:	CON EDISON	
UTILITY ACCT #:	7015 2122 550 0005	
UTILITY METER #:	4675664	
DEAL TYPE:	SUNNOVA	

DWG No.

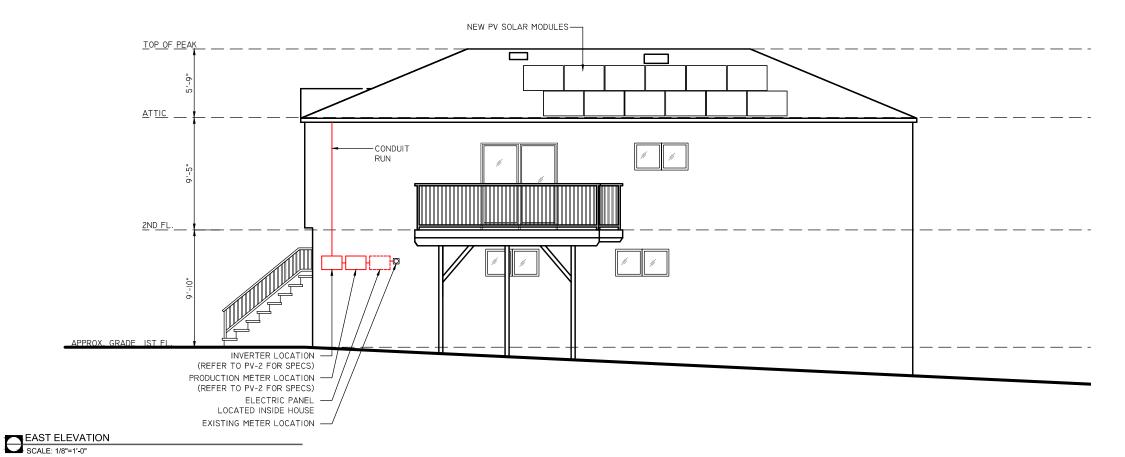
S-002.00 PAGE: 3 OF 5



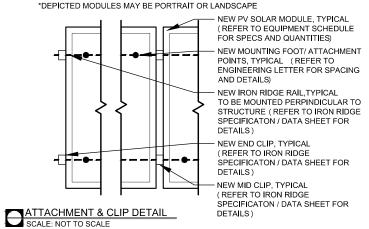
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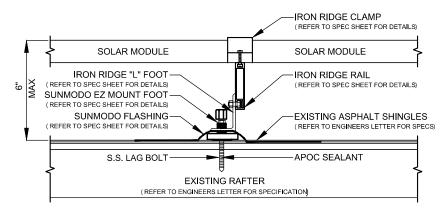
od Road 877-797-2978 sey 07719 www.Trinity-Solar.com

#### ZR 23-62 (m) - PANEL PLACEMENT COMPLIES WITH ALL SECTIONS OF ZR 23-62 (m)



NOTES: \*REFER TO MODULE SPECS FOR MODULE DIMENSIONS





PV MODULE ATTACHMENT ON ASPHALT SHINGLE ROOF SCALE: NOT TO SCALE

#### PLAN NOTES

 SCOPE OF WORK IS SOLEY FOR THE INSTALLATION OF THE SOLAR ELECTRONIC GENERATING SYSTEM. ALL OTHER WORK IS NOT TO BE RELIED UPON AS BEING APPROVED AND/OR PERMITTED BY THE DOB Engineer:

Issued / Revisions			
P1	ISSUED TO TOWNSHIP FOR PERMIT	11/1/2017	
NO.	DESCRIPTION	DATE	

### Project Title:

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TRINITY ACCT #: 2017-10-196879

#### Project Address:

887 TYSENS LANE STATEN ISLAND, NY 10306 40.558678,-74.106663

Drawing Title:

### **ELEVATION DRAWING**

Drawing Informa	ation	
DRAWING DATE:	11/1/2017	
DRAWN BY:	JC / DMR	
REVISED BY:		

System Information:		
DC SYSTEM SIZE:	3.48kW	
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MODULES USED:	HANWHA 290	
MODULE SPEC #:	Q.PEAK-BLK G4.1 290	
UTILITY COMPANY:	CON EDISON	
UTILITY ACCT #:	7015 2122 550 0005	
UTILITY METER #:	4675664	
DEAL TYPE:	SUNNOVA	

DWG No.

S-003.00 PAGE: 4 OF 5



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ARRAY CIRCUIT WIRING NOTES
1.) LICENSED ELECTRICIAN ASSUMES ALL RESPONSIBILITY FOR DETERMINING ONSITE CONDITIONS AND **EXECUTING INSTALLATION IN ACCORDANCE WITH NEC** 

2.) LOWEST EXPECTED AMBIENT TEMPERATURE BASED ON ASHRAE MINIMUM MEAN EXTREME DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. LOWEST EXPECTED AMBIENT

3.) HIGHEST CONTINUOUS AMBIENT TEMPERATURE BASED ON ASHRAE HIGHEST MONTH 2% DRY BULB TEMPERATURE FOR ASHRAE LOCATION MOST SIMILAR TO INSTALLATION LOCATION. HIGHEST CONTINUOUS TEMP =

4.) 2005 ASHRAE FUNDAMENTALS 2% DESIGN TEMPERATURES DO NOT EXCEED 47°C IN THE UNITED STATES (PALM SPRINGS, CA IS 44.1°C). FOR LESS THAN 9 CURRENT-CARRYING CONDUCTORS IN A ROOF-MOUNTED SUNLIT CONDUIT AT LEAST 0.5" ABOVE ROOF AND USING THE OUTDOOR DESIGN TEMPERATURE OF 47°C OR LESS (ALL OF UNITED STATES)

5.) PV SYSTEM CIRCUITS INSTALLED ON OR IN BUILDINGS SHALL INCLUDE A RAPID SHUTDOWN FUNCTION THAT CONTROLS SPECIFIC CONDUCTORS IN ACCORDANCE WITH NEC 690.12(1) THROUGH (5)

5.) PHOTOVOLTAIC POWER SYSTEMS SHALL BE PERMITTED TO OPERATE WITH UNGROUNDED PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUIT AS PER NEC 690.35

7.) UNGROUNDED DC CIRCUIT CONDUCTORS SHALL BE IDENTIFIED WITH THE FOLLOWING OUTER FINISH: POSITIVE CONDUCTORS = RED NEGATIVE CONDUCTORS = BLACK NEC 210.5(C)(2)

8.) ARRAY AND SUB ARRAY CONDUCTORS SHALL BE #10 PV WIRE TYPE RHW-2 OR EQUIVELANT AND SHALL BE PROTECTED BY CONDUIT WHERE EXPOSED TO DIRECT SUNLIGHT. SUB ARRAY CONDUIT LONGER THAN 24" SHALL CONTAIN ≤ 20 CURRENT CARYING CONDUCTORS AND WHERE EXPOSED TO DIRECT SUNLIGHT SHALL CONTAIN ≤ 9 CURRENT CARRYING CONDUCTORS.

9.) ALL WIRE LENGTHS SHALL BE LESS THAN 100' UNLESS OTHERWISE NOTED

10 ) FLEXIBLE CONDUIT SHALL NOT BE INSTALLED ON ROOFTOP AND SHALL BE LIMITED TO 12" IF USED OUTDOORS

11.)OVERCURRENT PROTECTION FOR CONDUCTORS CONNECTED TO THE SUPPLY SIDE OF A SERVICE SHALL BE LOCATED WITHIN 10' OF THE POINT OF CONNECTION NEC

12.) WHERE TWO SOURCES FEED A BUSSBAR, ONE A UTILITY AND THE OTHER AN INVERTER, PV BACKFEED BREAKER(S) SHALL BE LOCATED OPPOSITE FROM UTILITY NEC 705.12(D)(2)(3)(b)

13.) ALL SOLAR SYSTEM LOAD CENTERS TO CONTAIN ONLY GENERATION CIRCUITS AND NO UNUSED POSITIONS OR

14.) ALL EQUIPMENT INSTALLED OUTDOORS SHALL HAVE A **NEMA 3R** RATING

CALCULATIONS FOR CURRENT CARRYING CONDUCTORS REQUIRED CONDUCTOR AMPACITY PER STRING [NEC 690.8(B)(1)]: (15.00\*1.25)1 = 18.75A

AWG #10, DERATED AMPACITY AMBIENT TEMP: 33°C, TEMP DERATING FACTOR: .96 RACEWAY DERATING = 2 CCC: 1.00 (40\*.96)1.00 = 38.40A

38.40A <sup>></sup> 18.75A, THEREFORE WIRE SIZE IS VALID

TOTAL AC REQUIRED CONDUCTOR AMPACITY 12.50A\*1.25 = 15.63A

AWG #10, DERATED AMPACITY AMBIENT TEMP: 30°C, TEMP DERATING: 1.0 RACEWAY DERATING 5 3 CCC: N/A 40A\*1.0 = 40A

40A - 15.63A, THEREFORE AC WIRE SIZE IS VALID

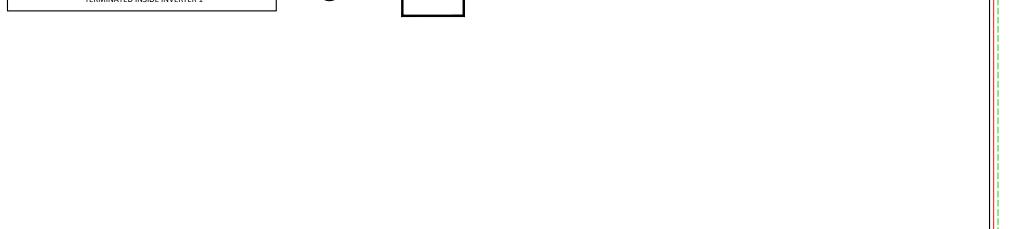
CALCULATION FOR PV OVERCURRENT PROTECTION TOTAL INVERTER CURRENT: 12.50A

12 50A\*1 25 = 15 63A --> 20A OVERCURRENT PROTECTION IS VALID

SOLAR MODULES MOUNTED TO ROOF ON 1 ARRAY 12 - 290W MODULES W/ 1 SOLAR EDGE P300 PER MODULE

1 STRING OF 12 MODULES IN SERIES - 350 Vmax

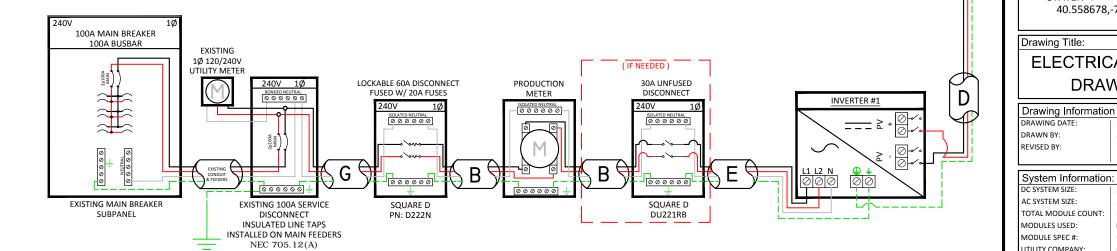
\*TERMINATED INSIDE INVERTER 1



JUNCTION

BOX

(F)



HANWHA 290 (Q.PEAK-BLK G4.1 290)	
Vmp	31.96
Voc 39.19	
Isc	9.56

INVERTER #1 - SE3000H-US00			NNC2	
DC			AC	
Imp	8.5	Pout	3000	
Vmp	380	Imax	12.5	
Voc	480	OCPDmin	15.625	
Isc	15	Vnom	240	

FC 504.4.7 - ALL CONDUITS AND PIPING INSTALLATIONS SHALL BE COLOR-CODED WITH CONTINUOUS, DURABLE, AND WEATHERPROOF REFLECTIVE TO MEET OR EXCEED NEC AND LOCAL AHID REQUIREMENTS OR LUMINESCENT MARKINGS AS FOLLOWS, AND FOR CONDUIT AND PIPING INSTALLED AFTER JULY 1, 2014, SHALL BE CONTINUOUSLY LABELED IN AN APPROVED MANNER TO INDICATES ITS CONTENTS:

HIGH VOLTAGE WIRING - RED
 LOW VOLTAGE WIRING - ORANGE

3. NATURAL GAS PIPING - YELLOW

FC 512.4.2 - INDOOR AND OUTDOOR DIRECT CURRENT CONDUIT, ENCLOSURE,  ${\tt RACEWAYS, CABLE \ ASSEMBLIES, JUNCTION \ BOXES, COMBINER}$ BOXES, AND MAIN SERVICE AND OTHER DISCONNECTS SHALL HAVE DURABLE, RETOREFLECTIVE, AND, IF OUTDOORS, WEATHERPROOF MARKINGS, IN WHITE CAPITAL LETTERS WITH A HEIGHT OF NOT LESS THAN \$ INCH (9.5 MM) ON A RED BACKGROUND, READING "WARNING: PHOTOVOLTAIC POWER SOURCE."

	Α	#6 THWN-2 GEC TO EXISTING GROUND ROD
	В	1" CONDUIT W/ 3-#10 THWN-2, 1-#10 THWN-2 GROUND
	С	1" CONDUIT W/ 2-#10 THWN-2, 1-#10 THWN-2 GROUND
	D	1" CONDUIT W/ 2-#10 THWN-2, 1-#10 THWN-2 GROUND
	E	1" CONDUIT W/ 3-#10 THWN-2, 1-#10 THWN-2, 1-#10 THWN-2 GROUND
s	F	#10 PV WIRE (FREE AIR) W/ #6 BARE COPPER BOND TO ARRAY
	G	1" CONDUIT W/ 3-#6 THWN-2, 1-#8 THWN-2 GROUND

#### PLAN NOTES

 SCOPE OF WORK IS SOLEY FOR THE
 INSTALLATION OF THE SOLAR ELECTRONIC GENERATING SYSTEM. ALL OTHER WORK IS NOT TO BE RELIED UPON AS BEING APPROVED AND/OR PERMITTED BY THE DOE



Engineer:

Issued / Revisions

DESCRIPTION

O'BRIEN, WILLIAM AND MARY

TRINITY ACCT #: 2017-10-196879

887 TYSENS LANE

STATEN ISLAND, NY 10306 40.558678,-74.106663

**ELECTRICAL 3-LINE** 

DRAWING

11/1/2017

JC / DMR

3.48kW

HANWHA 290

CON FDISON

4675664

SUNNOVA

Q.PEAK-BLK G4.1 290

7015 2122 550 0005

12

Project Title:

Project Address:

DATE

2211 Allenwood Road Wall, New Jersey 07719

UTILITY ACCT #:

UTILITY METER #:

DEAL TYPE:

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DWG No. E-001.00 PAGE: 5 OF 5