



Building Permit Application

Howard County Maryland
Department of Inspections, Licenses and Permits
3430 Court House Drive
Permits: 410-313-2455
www.howardcountymd.gov

Date Received: _____

Permit No.: _____

Building Address: 2896 Rt. 97
 City: Glenwood State: MD Zip Code: 21738
 Suite/Apt. #: _____ SDP/WP/BA #: _____
 Subdivision: 0000
 Lot: 2 Tax Map: 0014 Parcel: 0216
 Existing Use: _____
 Proposed Use: _____
 Estimated Construction Cost: \$ 27,000
 Description of Work: Installation of 72 solar panels ground mounted. 22.68KW
 Occupant/Tenant Name: _____
 Was tenant space previously occupied? Yes No
 Contact Name: _____
 Address: _____
 City: _____ State: _____ Zip Code: _____
 Phone: _____ Fax: _____
 Email: _____

Property Owner's Name: Marc + Elizabeth Barron
 Address: 2896 Rt. 97
 City: Glenwood State: MD Zip Code: 21738
 Phone: 410-489-5618 Fax: _____
 Email: MKB2996@aol.com
 Applicant's Name & Mailing Address, (If other than stated herein)
 Applicant's Name: Zachary Guesfeird
 Address: 4371 Nicole Dr
 City: Lanham State: MD Zip Code: 20706
 Phone: 410-714-2213 Fax: _____
 Email: Zachary.guesfeird@suntutty.com
 Contractor Company: Suntutty Solar
 Contact Person: Zachary Guesfeird
 Address: 4371 Nicole Dr
 City: Lanham State: MD Zip Code: 20706
 License No.: 116962
 Phone: 732-979-2400 Fax: _____
 Email: mdpermitting@suntutty.com
 Engineer/Architect Company: _____
 Responsible Design Prof.: _____
 Address: _____
 City: _____ State: _____ Zip Code: _____
 Phone: _____ Fax: _____
 Email: _____

Commercial Building Characteristics	Residential Building Characteristics	
Height:	<input checked="" type="checkbox"/> SF Dwelling <input type="checkbox"/> SF Townhouse	
No. of stories:	<u>Depth</u>	<u>Width</u>
Gross area, sq. ft./floor:	1 st floor:	
	2 nd floor:	
Area of construction (sq. ft.):	Basement:	
	<input type="checkbox"/> Finished Basement	
Use group:	<input type="checkbox"/> Unfinished Basement	
	<input type="checkbox"/> Crawl Space	
<u>Construction type:</u>	<input type="checkbox"/> Slab on Grade	
<input type="checkbox"/> Reinforced Concrete	No. of Bedrooms:	
<input type="checkbox"/> Structural Steel	<u>Multi-family Dwelling</u>	
<input type="checkbox"/> Masonry	No. of efficiency units:	
<input type="checkbox"/> Wood Frame	No. of 1 BR units:	
<input type="checkbox"/> State Certified Modular	No. of 2 BR units:	
	No. of 3 BR units:	
	Other Structure:	
	Dimensions:	
<input checked="" type="checkbox"/> Roadside Tree Project Permit	Footings:	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Roof:	
<u>Roadside Tree Project Permit #</u>	<input type="checkbox"/> State Certified Modular	
	<input type="checkbox"/> Manufactured Home	

Utilities	
Electric:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Gas:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Water Supply	
<input type="checkbox"/> Public	
<input checked="" type="checkbox"/> Private	
Sewage Disposal	
<input type="checkbox"/> Public	
<input checked="" type="checkbox"/> Private	
Heating System	
<input type="checkbox"/> Electric	<input type="checkbox"/> Oil
<input type="checkbox"/> Natural Gas	<input type="checkbox"/> Propane Gas
<input type="checkbox"/> Other:	
Sprinkler System:	
<input type="checkbox"/> Yes	<input type="checkbox"/> No
Grading Permit Number:	
Building Shell Permit Number:	

THE UNDERSIGNED HEREBY CERTIFIES AND AGREES AS FOLLOWS: (1) THAT HE/SHE IS AUTHORIZED TO MAKE THIS APPLICATION; (2) THAT THE INFORMATION IS CORRECT; (3) THAT HE/SHE WILL COMPLY WITH ALL REGULATIONS OF HOWARD COUNTY WHICH ARE APPLICABLE THERETO; (4) THAT HE/SHE WILL PERFORM NO WORK ON THE ABOVE REFERENCED PROPERTY NOT SPECIFICALLY DESCRIBED IN THIS APPLICATION; (5) THAT HE/SHE GRANTS COUNTY OFFICIALS THE RIGHT TO ENTER ONTO THIS PROPERTY FOR THE PURPOSE OF INSPECTING THE WORK PERMITTED AND POSTING NOTICES.

Zachary Guesfeird Applicant's Signature
Print Name
Samuels, 0311412019 Date
High Samuels Jr
0311412019 Date
Suntutty Title/Company
Zachary.guesfeird@phco.com Email Address

Checks Payable to: DIRECTOR OF FINANCE OF HOWARD COUNTY
 PLEASE WRITE NEATLY & LEGIBLY
 -FOR OFFICE USE ONLY-

AGENCY	DATE	SIGNATURE OF APPROVAL
State Highways		
<input checked="" type="checkbox"/> Building Officials		
<input checked="" type="checkbox"/> PSZA (Zoning)		
<input checked="" type="checkbox"/> PSZA (Engineering)		
Health		<u>3/21/19 RB</u>

Is Sediment Control approval required for issuance? Yes No
 CONTINGENCY CONSTRUCTION START

DPZ SETBACK INFORMATION	
Front:	
Rear:	
Side:	
Side St.:	
All minimum setbacks met?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is Entrance Permit Required?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Historic District?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Lot Coverage for New Town Zone:	
SDP/Red-line approval date:	

Filing Fee	\$
Permit Fee	\$
Tech Fee	\$
Excise Tax	\$
PSFS	\$
Guaranty Fund	\$
Add'l per Fee	\$
Total Fees	\$
Sub- Total Paid	\$
Balance Due	\$
Check	#



REFERENCE DIMENTATIONS	
NO.	TITLE
A	250'
B	180'
C	315'
D	360'
E	50'
F	310'

Electrical Conductor to be installed in Plastic Conduit at about 18 inches depth.

H.S 03/28/19

SITE MAP (N.T.S)

2896 Rt. 97

PROPOSED SYSTEM SPECIFICATIONS:

Q-CELLS 315 W PANEL: QTY (72), TOTAL: 22.680 kWp
 72 PANELS ON ARRAY AT GROUND, 20° PITCH, 185° AZIMUTH (TRUE)
 BRANCH CIRCUIT: 1 CIRCUIT OF 13 MODULES,
 1 CIRCUIT OF 14 MODULES,
 3 CIRCUITS OF 15 MODULES
 INVERTER USED : ENPHASE IQ7 MICRO-INVERTER (72)
 RACKING: SOLAR FOUNDATION

ELECTRICAL SPECIFICATIONS SYSTEM :

SERVICE PANEL DETAILS: 200A MCB WITH 200A BUSBAR RATING
 INTERCONNECTION METHOD: LINE-SIDE TAP
 PV OCPD SIZE: 100A AC DISCONNECT WITH 90A FUSES

ROOF SPECIFICATIONS:

ROOF TYPE: N/A (GROUND MOUNT)
 ROOF CONDITION: N/A (GROUND MOUNT)

APPROVED

WALK-THRU BUILDING PERMIT

BP# _____ A# _____

APP SAN R. Bricker DATE: 3/21/2019

DESC. OF WORK: Install array of 72 ground-mounted solar panels.

NOTE: THE PROPOSED ARRAY LAYOUT SHOWN IS DESIGNED TO FIT EXISTING CONDITIONS AS THEY ARE DESCRIBED IN THE DRAWING. KWP AND MODULE QUANTITY, TYPE AND LAYOUT ARE SUBJECT TO CHANGE BASED ON SUNTUITY VERIFICATION OF ACTUAL SITE CONDITIONS, AS WELL AS ON MODULE AVAILABILITY ON THE DATE OF THE ORDER.

REVISIONS

REV	DESCRIPTION	DATE	DRW BY	REV BY

DRAWING TITLE
SITE MAP

DATE DRAWN 11/28/2018

DRAWN BY PRASHANTI

REVIEWED BY BHAVESH

DRAWING NO.

PV-4.0



2137 Route 35
 Holmdel, NJ 07733
 Tel: (732) 979-2400
 Fax: (732) 979-2401

Marc Barron
 2896 Maryland 97,
 Glenwood, MD 21738 USA
 (Lat/Long: 39.292907, -77.027373)

Vincent Vellucci

VINCENT VELLUCCI
 ELECTRIC #34EB01572800

SIGN: _____
 NAME: _____
 DATE: _____

INVERTER SPECIFICATIONS	
MANUFACTURER	ENPHASE
MODEL NO.	IQ7-60-B-US
MAX DC INPUT VOLTAGE	48 V
MAX OUTPUT POWER	250 VA
NOMINAL AC OUTPUT VOLTAGE	240 V
NOMINAL AC OUTPUT CURRENT	1 A

PHOTOVOLTAIC AC OUTPUT LABEL	
AC OUTPUT CURRENT	90 A
NOMINAL AC VOLTAGE	240 V

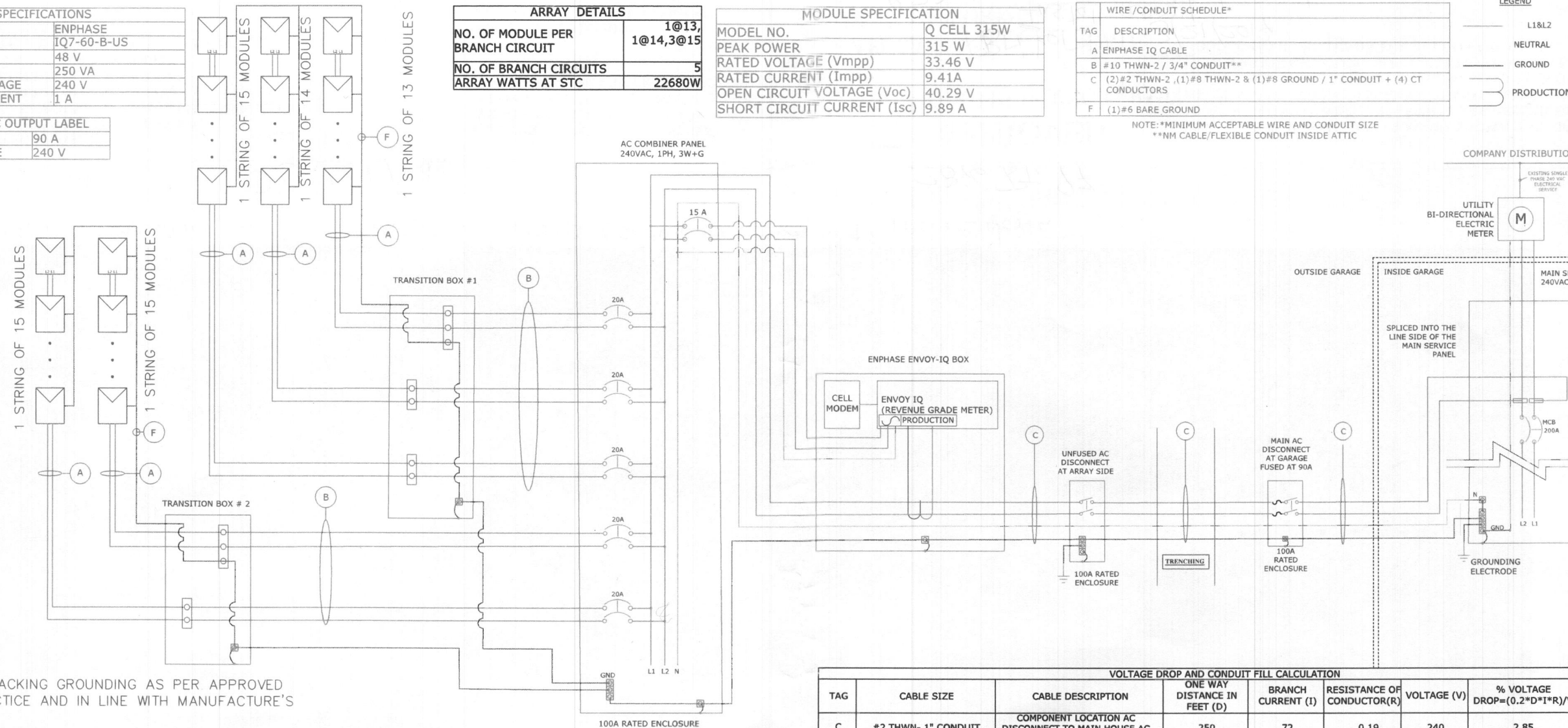
ARRAY DETAILS	
NO. OF MODULE PER BRANCH CIRCUIT	1@13, 1@14, 3@15
NO. OF BRANCH CIRCUITS	5
ARRAY WATTS AT STC	22680W

MODULE SPECIFICATION	
MODEL NO.	Q CELL 315W
PEAK POWER	315 W
RATED VOLTAGE (Vmpp)	33.46 V
RATED CURRENT (Impp)	9.41A
OPEN CIRCUIT VOLTAGE (Voc)	40.29 V
SHORT CIRCUIT CURRENT (Isc)	9.89 A

WIRE / CONDUIT SCHEDULE*	
TAG	DESCRIPTION
A	ENPHASE IQ CABLE
B	#10 THWN-2 / 3/4" CONDUIT**
C	(2)#2 THWN-2, (1)#8 THWN-2 & (1)#8 GROUND / 1" CONDUIT + (4) CT CONDUCTORS
F	(1)#6 BARE GROUND

NOTE: *MINIMUM ACCEPTABLE WIRE AND CONDUIT SIZE
**NM CABLE/FLEXIBLE CONDUIT INSIDE ATTIC

LEGEND	
---	L1&L2
---	NEUTRAL
---	GROUND
---	PRODUCTION CT



NOTES:
PV MODULE AND RACKING GROUNDING AS PER APPROVED INSTALLATION PRACTICE AND IN LINE WITH MANUFACTURER'S GUIDELINES.

GENERAL ELECTRICAL NOTES:

- EQUIPMENT USED SHALL BE NEW AND "UL" LISTED AND SHALL BE INSTALLED AS PER MANUFACTURERS INSTALLATION MANUAL.
- EQUIPMENT SHALL BE INSTALLED PROVIDING ADEQUATE PHYSICAL WORKING SPACE AROUND THE EQUIPMENT AND SHALL COMPLY WITH NEC.
- PHOTOVOLTAIC POWER SYSTEMS SHALL BE PERMITTED TO OPERATE WITH UNGROUNDED PHOTOVOLTAIC SOURCE AND OUTPUT CIRCUIT AS PER NEC 690.35.
- COPPER CONDUCTORS SHALL BE USED AND SHALL BE SIZED NOT TO EXCEED THE TEMPERATURE RATING OF THEIR INSULATION OR OF THE EQUIPMENT TO WHICH THEY ARE CONNECTED.
- CONDUCTORS SHALL BE SIZED IN ACCORDANCE TO NEC. CONDUCTORS AMPACITY SHALL BE DE-RATED FOR TEMPERATURE CHANGE, CONDUIT FILL AND VOLTAGE DROP.
- ALL EQUIPMENT INSTALLED OUTDOORS SHALL HAVE A NEMA 3R RATING.
- EXPOSED NON-CURRENT CARRYING METAL PARTS SHALL BE GROUNDED AS PER NEC 690.43.
- LOAD / LINE SIDE INTER-CONNECTION SHALL COMPLY WITH NEC.
- ALL SOLAR SYSTEM LOAD CENTERS TO CONTAIN ONLY GENERATION CIRCUITS AND NO UNUSED POSITIONS OR LOADS.
- 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)
- ALL CURRENT CARRYING CONDUCTORS SHALL BE PROTECTED BY CONDUIT WHERE EXPOSED TO SUNLIGHT.
- FLEXIBLE CONDUIT SHALL NOT BE INSTALLED ON ROOFTOP. FLEXIBLE CONDUIT / NM CABLE SHALL BE USED INSIDE THE ATTIC IF REQUIRED.
- CONDUIT TYPE / SIZE SHALL BE CHOSEN BY THE INSTALLATION CONTRACTOR TO MEET OR EXCEED NEC AND LOCAL REQUIREMENTS.
- ALL PORTIONS OF THE PHOTOVOLTAIC SYSTEM SHALL BE MARKED CLEARLY IN ACCORDANCE WITH NEC ARTICLE 690.
- THE ENPHASE MICROINVERTER MODEL IQ 7 DO NOT REQUIRE GROUNDING ELECTRODE CONDUCTORS (GEC) OR EQUIPMENT GROUNDING CONDUCTORS (EGC). THE MICROINVERTER HAS A CLASS II DOUBLE-INSULATED RATING, WHICH INCLUDES GROUND FAULT PROTECTION (GFP).
- CT CONDUCTORS TO BE INSTALLED AS PER MANUFACTURER'S INSTALLATION GUIDELINES. DO NOT TRIM CT CONDUCTORS

VOLTAGE DROP AND CONDUIT FILL CALCULATION								
TAG	CABLE SIZE	CABLE DESCRIPTION	ONE WAY DISTANCE IN FEET (D)	BRANCH CURRENT (I)	RESISTANCE OF CONDUCTOR (R)	VOLTAGE (V)	% VOLTAGE DROP=(0.2*D*I*R)/V	CONDUIT FILL %
C	#2 THWN- 1" CONDUIT	COMPONENT LOCATION AC DISCONNECT TO MAIN HOUSE AC DISCONNECT	250	72	0.19	240	2.85	36.76

CALCULATIONS:

1. CURRENT CARRYING CONDUCTOR

(A) BEFORE IQ COMBINER PANEL
 AMBIENT TEMPERATURE - (34+22)°C= 56°C ...NEC 310.15(B)(3)(c)
 TEMPERATURE DERATE FACTOR - 0.71 ...NEC 310.15(B)(2)(a)
 GROUPING FACTOR - 0.8 ...NEC 310.15(B)(3)(a)

CONDUCTOR AMPACITY
 = (INV O/P CURRENT) x 1.25 / A.T.F / G.F ...NEC 690.8(B)
 = [(15 x 1) x 1.25] / 0.71 / 0.8
 = 33,010 A
 SELECTED CONDUCTOR - #10 THWN-2 ...NEC 310.15(B)(16)

2. PV OVER CURRENT PROTECTION ...NEC 690.9(B)
 = TOTAL INVERTER O/P CURRENT x 1.25
 = (72 x 1) x 1.25 = 90A
 SELECTED OCPD = 90A ...NEC 240.6

(B) AFTER IQ COMBINER PANEL
 TEMPERATURE DERATE FACTOR - 0.96
 GROUPING FACTOR - 1

CONDUCTOR AMPACITY
 = (TOTAL INV O/P CURRENT) x 1.25 / 0.96 / 1 ...NEC 690.8(B)
 = [(72 x 1) x 1.25] / 0.96 / 1
 = 93.75 A
 SELECTED CONDUCTOR - #2 THWN-2 ...NEC 310.15(B)(16)

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 VINCENT VELLUCCI
 ELECTRIC #34EB01572800

SIGN: NAME: DATE:

REV	DESCRIPTION	DATE	REV BY	REV BY

DRAWING TITLE
ELECTRICAL LINE DIAGRAM
 DATE DRAWN 11/28/2018
 DRAWN BY PRASHANTI
 REVIEWED BY BHAVESH
 DRAWING NO.
PV-3.0