

ENGINEER:

MODEL ENERGY
 300 FAYETTEVILLE ST.
 #1430
 RALEIGH, NC 27602
 919-274-9905
 MODELENERGY.COM
 P-1194

JOB TITLE:

NEW SOLAR PV SYSTEM
 13.8 kW DC INPUT
 13.6 kW AC EXPORT

JANET ROSE
 401 W K STREET
 ERWIN, NC 28339

- ### CONSTRUCTION NOTES
- ALL WORK AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST NATIONAL, STATE, AND LOCAL CODES AND ORDINANCES
 - FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS, BEST PRACTICES, AND SPECIFICATIONS
 - WIRES SHALL BE RATED AND LABELED "SUNLIGHT RESISTANT" WHERE EXPOSED TO AMBIENT CONDITIONS
 - THE PHOTOVOLTAIC SYSTEM SHALL NOT EXCEED 600 VOLTS OR 800 AMPS
 - EACH ELECTRICAL APPLIANCE SHALL BE PROVIDED WITH A NAMEPLATE GIVING THE IDENTIFYING NAME AND THE RATING IN VOLTS AND AMPERES, OR VOLTS AND WATTS. IF THE APPLIANCE IS TO BE USED ON A SPECIFIC FREQUENCY OR FREQUENCIES, IT SHALL BE SO MARKED. WHERE MOTOR OVERLOAD PROTECTION EXTERNAL TO THE APPLIANCES IS REQUIRED, THE APPLIANCE SHALL BE SO MARKED
 - WHERE APPLICABLE, GROUNDING ELECTRODE CONDUCTOR TO BE CONTINUOUS. GROUNDING CRIMPS TO BE IRREVERSIBLE
 - GROUNDING DC PHOTOVOLTAIC ARRAYS SHALL BE PROVIDED WITH DC GROUND-FAULT PROTECTION THAT MEETS THE REQUIREMENTS OF NEC SECTION 690.5. UNGROUNDED DC PHOTOVOLTAIC ARRAYS SHALL COMPLY WITH NEC SECTION 690.35
 - IN ONE- AND TWO-FAMILY DWELLINGS, LIVE PARTS IN PHOTOVOLTAIC SOURCE CIRCUITS AND PHOTOVOLTAIC OUTPUT CIRCUITS OVER 150 VOLTS TO GROUND, SHALL ONLY BE ACCESSIBLE TO QUALIFIED PERSONS WHILE ENERGIZED.
 - PHOTOVOLTAIC SYSTEMS SHALL BE PERMANENTLY MARKED AT VARIOUS EQUIPMENT LOCATIONS TO IDENTIFY THAT A PHOTOVOLTAIC SYSTEM IS INSTALLED AND THAT VARIOUS DANGERS ARE PRESENT.
 - EACH PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS SHALL BE PERMANENTLY MARKED TO IDENTIFY IT AS A PHOTOVOLTAIC SYSTEM DISCONNECT
 - WHERE ALL TERMINALS OF A DISCONNECTING MEANS MAY BE ENERGIZED IN THE OPEN POSITION, A WARNING SIGN SHALL BE MOUNTED ON OR ADJACENT TO THE DISCONNECT
 - A PERMANENT LABEL FOR THE DIRECT-CURRENT PHOTOVOLTAIC POWER SOURCE SHALL BE PROVIDED BY THE INSTALLED AT THE DC DISCONNECT MEANS
 - A PERMANENT PLAQUE OR DIRECTORY, DENOTING ALL ELECTRIC POWER SOURCES SERVING THE PREMISES, SHALL BE INSTALLED AT EACH SERVICE EQUIPMENT LOCATION AND AT LOCATIONS OF ALL POWER PRODUCTION SOURCES.
 - A PERMANENT PLAQUE OR DIRECTORY SHALL BE PROVIDED DENOTING THE LOCATIONS OF THE SERVICE DISCONNECT MEANS AND THE PHOTOVOLTAIC SYSTEM DISCONNECT MEANS IF THEY ARE NOT LOCATED AT THE SAME LOCATION.
 - ALL MODULE GROUND CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH NEC SECTION 690.4 (C)

ABBREVIATIONS

A	AMPERE
AC	ALTERNATING CURRENT
DC	DIRECT CURRENT
ECC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELECTRICAL METAL TUBING
GALV	GALVANIZED
GEC	GROUNDING ELECTRODE CONDUCTOR
GND	GROUND
I	CURRENT
IHP	CURRENT AT MAXIMUM POWER
Isc	SHORT-CIRCUIT CURRENT
kVA	KILOVOLT AMPERE
kW	KILOWATT
MAX	MAXIMUM
MIN	MINIMUM
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUG ONLY
NOM	NOMINAL
NTS	NOT TO SCALE
Pnom	NOMINAL POWER
PV	PHOTOVOLTAIC
PVC	POLYVINYL CHLORIDE
SN	SOLAR NOON
STC	STANDARD TEST CONDITIONS
TYP	TYPICAL
V	VOLT
Vmp	VOLTAGE AT MAXIMUM POWER
Voc	OPEN-CIRCUIT VOLTAGE
W	WATT

CODE REFERENCES

2017 NATIONAL ELECTRIC CODE
 2012 NORTH CAROLINA BUILDING CODE
 2012 NORTH CAROLINA RESIDENTIAL CODE
 2012 NORTH CAROLINA FIRE CODE

SHEET INDEX

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SITE CONDITIONS

ASCE 7-10 WIND SPEED - 119 MPH
 EXPOSURE CATEGORY - B
 RISK CATEGORY - II

LEGEND

	DISCONNECT SWITCH
	FUSE
	CIRCUIT BREAKER
	EQUIP. GROUND

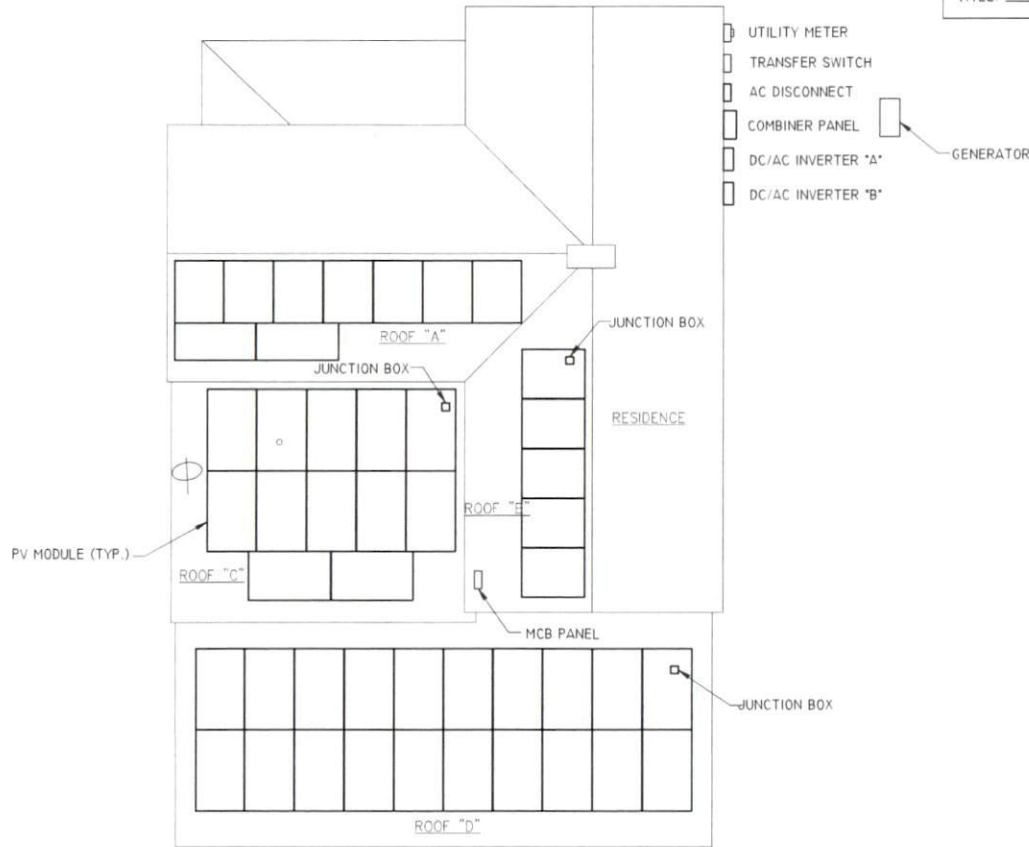
CLIENT:

ISSUED FOR:	DATE:
PERMIT	9/20/18

PROJECT INFORMATION

PV1.1

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STATEMENT OF STRUCTURAL COMPLIANCE

THE EXISTING ROOF STRUCTURE HAS BEEN DESIGNED TO SUPPORT THE ADDITIONAL LOADS OF THE PURPOSED PV SYSTEM. IN ADDITION, THE RACKING AND FASTENING SYSTEM SHALL BE CAPABLE OF SECURING THE SYSTEM TO THE STRUCTURE UNDER DESIGN CONDITIONS WHEN INSTALLED PROPERLY AND IN ACCORDANCE WITH THE RACKING AND FASTENING ARRANGEMENT DETAILED WITHIN THESE DRAWINGS.

SIGNED: *Andrew W. King*
 NAME: ANDREW W. KING, PE
 TITLE: PROFESSIONAL ENGINEER

ROOF ZONES "A" & "B":	
ALL ZONES	MAX. OVERHANG = 8"
ZONE 1	MAX. FASTENER SPAN ZONE 1 = 54"
ZONE 2	MAX. FASTENER SPAN ZONE 2 = 45"
ZONE 3	MAX. FASTENER SPAN ZONE 3 = 9"

ROOF ZONES "C":	
ALL ZONES	MAX. OVERHANG = 8"
ZONE 1	MAX. FASTENER SPAN ZONE 1 = 54"
ZONE 2	MAX. FASTENER SPAN ZONE 2 = 27"
ZONE 3	MAX. FASTENER SPAN ZONE 3 = 9"

ROOF ZONES "D":	
ALL ZONES	MAX. OVERHANG = 8"
ZONE 1	MAX. FASTENER SPAN ZONE 1 = 45"
ZONE 2	MAX. FASTENER SPAN ZONE 2 = 27"
ZONE 3	MAX. FASTENER SPAN ZONE 3 = 9"

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SITE & STRUCTURAL INFORMATION

PV2.1

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SITE & STRUCTURAL INFORMATION

PV2.2

ROOF MOUNT & FASTENER	
ROOF MOUNT:	DPW
NAME:	EZ-FEET
MATERIAL:	ALUMINUM
FASTENER:	ORX FASTENER
MODEL:	PHENIX RL
MAKE:	305 SS
MATERIAL:	#9 X 2"
SIZE:	
GENERAL:	1 LBS
FASTENERS PER MOUNT:	5
MAX. PULL-OUT FORCE:	525 LBS. / MOUNT
SAFETY FACTOR:	2.0
DESIGN PULL-OUT FORCE:	262 LBS. / MOUNT

ROOF 'A' S/M/MARY	
STRUCTURE:	RATERS
TYPE:	SOUTHERN PINE #2
MATERIAL:	2" X 4"
SIZE:	24' 0" C.
SPACING:	8'-6"
EFF. SPAN:	10' / 12
PITCH:	30 LBS./CU.FT
DENSITY:	
DECKING:	PURLINS
TYPE:	WOOD COMPOSITE
MATERIAL:	7/16"
THICKNESS:	1.6 LBS./SQFT.
WEIGHT:	
ROOFING:	ARCH SHINGLE
TYPE:	ASPHALT
MATERIAL:	2.3 LBS./SQFT.
WEIGHT:	

ROOF 'B' S/M/MARY	
STRUCTURE:	RATERS
TYPE:	SOUTHERN PINE #2
MATERIAL:	2" X 4"
SIZE:	24' 0" C.
SPACING:	8'-5"
EFF. SPAN:	10' / 12
PITCH:	30 LBS./CU.FT
DENSITY:	
DECKING:	PURLINS
TYPE:	WOOD COMPOSITE
MATERIAL:	7/16"
THICKNESS:	1.6 LBS./SQFT.
WEIGHT:	
ROOFING:	ARCH SHINGLE
TYPE:	ASPHALT
MATERIAL:	2.3 LBS./SQFT.
WEIGHT:	

ROOF 'C' S/M/MARY	
STRUCTURE:	TRUSSES
TYPE:	SOUTHERN PINE #2
MATERIAL:	2" X 6"
SIZE:	24' 0" C.
SPACING:	15'-10"
EFF. SPAN:	2 / 12
PITCH:	30 LBS./CU.FT
DENSITY:	
DECKING:	PURLINS
TYPE:	WOOD COMPOSITE
MATERIAL:	7/16"
THICKNESS:	1.6 LBS./SQFT.
WEIGHT:	
ROOFING:	ARCH SHINGLE
TYPE:	ASPHALT
MATERIAL:	2.3 LBS./SQFT.
WEIGHT:	

ROOF 'D' S/M/MARY	
STRUCTURE:	TRUSSES
TYPE:	SOUTHERN PINE #2
MATERIAL:	2" X 6"
SIZE:	24' 0" C.
SPACING:	15'-6"
EFF. SPAN:	2 / 12
PITCH:	30 LBS./CU.FT
DENSITY:	
DECKING:	PURLINS
TYPE:	WOOD COMPOSITE
MATERIAL:	7/16"
THICKNESS:	1.6 LBS./SQFT.
WEIGHT:	
ROOFING:	HEAT
TYPE:	CORRUGATED METAL
MATERIAL:	1.6 LBS./SQFT.
WEIGHT:	

ROOF 'A' LOADING	
DEAD LOAD:	3.9 LBS./SQFT
ROOFING:	2.8 LBS./SQFT
PV ARRAY:	6.7 LBS./SQFT
TOTAL:	
WIND LOAD:	
UP-LIFT ZONE 1:	-24.6 LBS./SQFT
UP-LIFT ZONE 2:	-29.0 LBS./SQFT
UP-LIFT ZONE 3:	-29.0 LBS./SQFT
DOWNWARD:	23.0 LBS./SQFT
FASTENER LOAD:	
UP-LIFT ZONE 1:	-262 LBS.
UP-LIFT ZONE 2:	-257 LBS.
UP-LIFT ZONE 3:	-51 LBS.
DOWNWARD:	250 LBS.

ROOF 'B' LOADING	
DEAD LOAD:	3.9 LBS./SQFT
ROOFING:	2.8 LBS./SQFT
PV ARRAY:	6.7 LBS./SQFT
TOTAL:	
WIND LOAD:	
UP-LIFT ZONE 1:	-24.6 LBS./SQFT
UP-LIFT ZONE 2:	-29.0 LBS./SQFT
UP-LIFT ZONE 3:	-29.0 LBS./SQFT
DOWNWARD:	23.0 LBS./SQFT
FASTENER LOAD:	
UP-LIFT ZONE 1:	-300 LBS.
UP-LIFT ZONE 2:	-295 LBS.
UP-LIFT ZONE 3:	-59 LBS.
DOWNWARD:	259 LBS.

ROOF 'C' LOADING	
DEAD LOAD:	3.9 LBS./SQFT
ROOFING:	2.9 LBS./SQFT
PV ARRAY:	6.8 LBS./SQFT
TOTAL:	
WIND LOAD:	
UP-LIFT ZONE 1:	-23.0 LBS./SQFT
UP-LIFT ZONE 2:	-38.0 LBS./SQFT
UP-LIFT ZONE 3:	-57.1 LBS./SQFT
DOWNWARD:	13.6 LBS./SQFT
FASTENER LOAD:	
UP-LIFT ZONE 1:	-253 LBS.
UP-LIFT ZONE 2:	-209 LBS.
UP-LIFT ZONE 3:	-105 LBS.
DOWNWARD:	148 LBS.

ROOF 'D' LOADING	
DEAD LOAD:	3.2 LBS./SQFT
ROOFING:	2.8 LBS./SQFT
PV ARRAY:	6.0 LBS./SQFT
TOTAL:	
WIND LOAD:	
UP-LIFT ZONE 1:	-23.0 LBS./SQFT
UP-LIFT ZONE 2:	-38.0 LBS./SQFT
UP-LIFT ZONE 3:	-57.1 LBS./SQFT
DOWNWARD:	13.6 LBS./SQFT
FASTENER LOAD:	
UP-LIFT ZONE 1:	-234 LBS.
UP-LIFT ZONE 2:	-232 LBS.
UP-LIFT ZONE 3:	-16 LBS.
DOWNWARD:	136 LBS.

PV MODULES	
MAKE:	CAN. SOLAR
MODEL:	CS6K-300WS
WIDTH:	39 IN.
LENGTH:	65 IN.
THICKNESS:	1.6 IN.
WEIGHT:	4.0 LBS.

ARRAY 'A' S/M/MARY	
# MODULES:	9
MOD. ATT. MID:	14
MOD. ATT. END:	8
ROOF MOUNTS:	18
RAIL LENGTH:	71 FT.
ARRAY AREA:	163 SQFT
ARRAY WEIGHT:	162 LBS.
AZIMUTH @ SN:	180°
TILT ANGLE:	40°

ARRAY 'C' S/M/MARY	
# MODULES:	12
MOD. ATT. MID:	18
MOD. ATT. END:	12
ROOF MOUNTS:	32
RAIL LENGTH:	91 FT.
ARRAY AREA:	217 SQFT
ARRAY WEIGHT:	621 LBS.
AZIMUTH @ SN:	180°
TILT ANGLE:	7°

ARRAY 'B' S/M/MARY	
# MODULES:	5
MOD. ATT. MID:	8
MOD. ATT. END:	4
ROOF MOUNTS:	9
RAIL LENGTH:	34 FT.
ARRAY AREA:	90 SQFT
ARRAY WEIGHT:	250 LBS.
AZIMUTH @ SN:	270°
TILT ANGLE:	40°

ARRAY 'D' S/M/MARY	
# MODULES:	20
MOD. ATT. MID:	36
MOD. ATT. END:	8
ROOF MOUNTS:	48
RAIL LENGTH:	135 FT.
ARRAY AREA:	361 SQFT
ARRAY WEIGHT:	1020 LBS.
AZIMUTH @ SN:	180°
TILT ANGLE:	5°

PV MODULES	
MAKE	CAN. SOLAR
MODEL	CS6K-300MS
TECHNOLOGY	MONO-CRYST.
NOM. POWER (P _{nom})	300 WATTS
NOM. VOLT. (V _{mp})	32.5 VOLTS
O.C. VOLT. (V _{oc})	39.7 VOLTS
MAX. SYS. VOLT.	1000 V (UL)
TEMP. COEF. (V _{TC})	-0.30 %/°C
NOM. CURR. (I _{mp})	9.24 AMPS
S.C. CURR. (I _{sc})	9.83 AMPS
MAX. SERIES FUSE	15 AMPS

JUNCTION BOX	
MAKE	SOLADECK
MODEL	0783-3R
PRO. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
AMP RATING	120 AMPS
UL LISTING	UL 50

DC/AC INVERTER "A"	
MAKE	SOLAREDDGE
MODEL	SE7600H-US
TECHNOLOGY	TRANSFORMER-LESS
DC INPUT:	
MAX. POWER	11800 WATTS
VOLT. RANGE	380-480 VOLTS
NOM. VOLT.	380 VOLTS
MAX. CURRENT	20 AMPS
STRING INPUTS	2 STRINGS
AC OUTPUT:	
NOM. POWER	7600 WATTS
NOM. VOLT.	240 VOLTS
MAX. POWER	7600 WATTS
MAX. CURR.	32 AMPS
GFP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	YES
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 3R

MODULE OPTIMIZER	
MAKE	SOLAR EDGE
MODEL	P320
DC INPUT:	
NOM. POWER	320 WATTS
VOLT. RANGE	8-48
MAX. CURR.	10.0 AMPS
DC OUTPUT:	
NOM. POWER	320 WATTS
MAX. VOLT.	60 VOLTS
MAX. CURR.	15.0 AMPS
MIN. STRING	8 OPTIMIZERS
MAX. STRING	25 OPTIMIZERS
MAX. POWER	5700 WATTS

CONDUCTOR SCHEDULE													
TAG	CURRENT CARRYING CONDUCTORS				GROUNDING CONDUCTORS				CONDUIT/RACEWAY				NOTES
	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	INSULATION	QTY.	SIZE	MATERIAL	LOCATION	
C1	4	10 AWG	COPPER	PV WIRE	1	6 AWG	COPPER	BARE	-	-	-	FREE AIR	1
C2	4	10 AWG	COPPER	THWN-2	1	10 AWG	COPPER	THWN-2	1	1/2"	EMT	EXTERIOR	2.4
C3	3	8 AWG	COPPER	THWN	1	10 AWG	COPPER	THWN	1	3/4"	EMT	EXTERIOR	2.4
C4	3	4 AWG	COPPER	THWN	1	8 AWG	COPPER	THWN	1	1"	EMT	EXTERIOR	2.4
C5	3	4 AWG	COPPER	THWN	-	-	-	-	-	-	EMT	EXTERIOR	2.4
XC	-	-	-	-	-	-	-	-	-	-	-	-	3

NOTES:

1. MANUFACTURER PROVIDED, UL LISTED WIRING HARNESS FOR USE ON EXPOSED ROOFS
2. CONDUIT SIZE SHOWN IS CODE MINIMUM. LARGER SIZES ARE ALLOWED.
3. EXISTING CONDUCTORS, FIELD VERIFY
4. EQUIPMENT TERMINAL RATING SHALL BE A MINIMUM OF 75°C AT BOTH END OF CONDUCTOR

DC/AC INVERTER "B"	
MAKE	SOLAREDDGE
MODEL	SE6000H-US
TECHNOLOGY	TRANSFORMER-LESS
DC INPUT:	
MAX. POWER	9500 WATTS
VOLT. RANGE	380-480 VOLTS
NOM. VOLT.	380 VOLTS
MAX. CURRENT	16.5 AMPS
STRING INPUTS	2 STRINGS
AC OUTPUT:	
NOM. POWER	6000 WATTS
NOM. VOLT.	240 VOLTS
MAX. POWER	6000 WATTS
MAX. CURR.	25 AMPS
GFP (Y/N)	YES
GFCI (Y/N)	YES
AFCI (Y/N)	YES
DC DISC. (Y/N)	YES
RAPID SHUTDOWN	YES
FUSE RATING	15 AMPS
PROTECT. RATING	NEMA 3R

AC DISCONNECT (NEW)	
MAKE	GENERIC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	240 VOLTS
AMP RATING	100 AMPS
UL LIST. (Y/N)	YES
FUSED (Y/N)	YES
FUSE RATING	80 AMPS

NOTES:

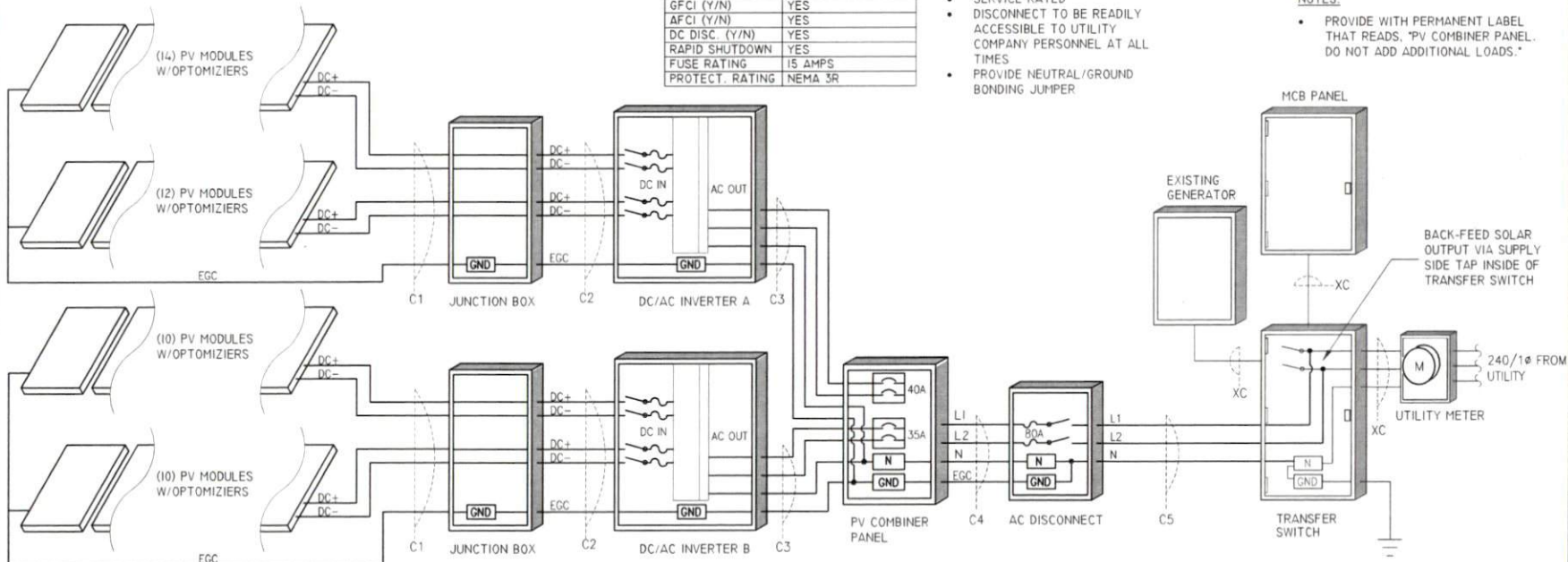
- LOAD-BREAK RATED
- VISIBLE OPEN
- LOCKABLE IN OPEN POSITION
- INSTALL ADJACENT TO METER
- SERVICE RATED
- DISCONNECT TO BE READILY ACCESSIBLE TO UTILITY COMPANY PERSONNEL AT ALL TIMES
- PROVIDE NEUTRAL/GROUND BONDING JUMPER

MCB PANEL (EXISTING)	
MAKE	SQUARE D
MODEL	QOC-20M
ENCL. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
BUS RATING	200 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	NO
BREAKER RATING	N/A

PV COMBINER PANEL (NEW)	
MAKE	GENERIC
MODEL	N/A
ENCL. RATING	NEMA 3R
VOLT. RATING	600 VOLTS
BUS RATING	125 AMPS
UL LIST. (Y/N)	YES
MAIN BREAKER (Y/N)	NO
BREAKER RATING	N/A

NOTES:

- PROVIDE WITH PERMANENT LABEL THAT READS, "PV COMBINER PANEL. DO NOT ADD ADDITIONAL LOADS."



1 PV SYSTEM ELECTRICAL WIRING SCHEMATIC

SCALE : NTS

ENGINEER:



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ELECTRICAL INFORMATION

PV3.1

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PHOTOVOLTAIC ARRAY AC DISCONNECT

MAXIMUM OPERATING AC VOLTAGE: 240V
MAXIMUM OPERATING CURRENT: 57 AMPS

PLACE ON COVER OF AC DISCONNECT SWITCH

WARNING!
ELECTRIC SHOCK HAZARD!
DO NOT TOUCH TERMINALS!

TERMINALS ON BOTH THE LINE AND LOAD SIDES
MAY BE ENERGIZED IN THE OPEN POSITION.

PLACE ON JUNCTION BOX

WARNING!
PHOTOVOLTAIC POWER SOURCE

PLACE ON DC CONDUIT

WARNING!
ELECTRIC SHOCK HAZARD!
DO NOT TOUCH TERMINALS!

DUAL POWER SOURCE. PHOTOVOLTAIC
SYSTEM IS SECONDARY POWER SOURCE.
TERMINALS ON BOTH THE LINE AND LOAD SIDES
MAY BE ENERGIZED IN THE OPEN POSITION.

PLACE ON MCB PANEL

WARNING!
INVERTER OUTPUT CONNECTION:
DO NOT RELOCATE THIS OVER-CURRENT DEVICE

LABEL FOR PV INPUT BREAKER

**PHOTOVOLTAIC SYSTEM EQUIPPED
WITH RAPID SHUTDOWN**

RAPID SHUTDOWN LABEL

WARNING!
**ELECTRIC SHOCK HAZARD. THE DC
CONDUCTORS OF THIS PHOTOVOLTAIC SYSTEM
ARE UNGROUNDED AND MAY BE ENERGIZED.**

PLACE ON JUNCTION BOXES, COMBINER BOXES, DISCONNECTS AND
EQUIPMENT THAT ARE CONNECTED TO UNGROUNDED CIRCUITS.

PHOTOVOLTAIC POWER SOURCE
PV COMBINER PANEL. DO NOT ADD ADDITIONAL LOADS.

PLACE ON PV COMBINER PANEL

WARNING!
ELECTRIC SHOCK HAZARD!
DO NOT TOUCH TERMINALS!

TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION. THE DC CONDUCTORS OF THIS
PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE
ENERGIZED.

PHOTOVOLTAIC POWER SOURCE

OPERATING AC VOLTAGE: 240V
MAX OPERATING AC OUTPUT CURRENT: 25 AMPS

PHOTOVOLTAIC ARRAY DC DISCONNECT

OPERATING DC VOLTAGE: 380 VOLTS
OPERATING CURRENT: 15.8 AMPS
MAX SYSTEM VOLTAGE: 500 VOLTS
SHORT-CIRCUIT CURRENT: 30 AMPS

PLACE ON THE COVER OF INVERTER/DC DISCONNECT SWITCH "A"

WARNING!
ELECTRIC SHOCK HAZARD!
DO NOT TOUCH TERMINALS!

TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION. THE DC CONDUCTORS OF THIS
PHOTOVOLTAIC SYSTEM ARE UNGROUNDED AND MAY BE
ENERGIZED.

PHOTOVOLTAIC POWER SOURCE

OPERATING AC VOLTAGE: 240V
MAX OPERATING AC OUTPUT CURRENT: 32 AMPS

PHOTOVOLTAIC ARRAY DC DISCONNECT

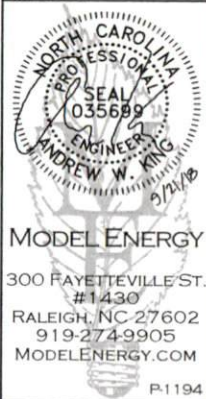
OPERATING DC VOLTAGE: 380 VOLTS
OPERATING CURRENT: 20.5 AMPS
MAX SYSTEM VOLTAGE: 500 VOLTS
SHORT-CIRCUIT CURRENT: 30 AMPS

PLACE ON THE COVER OF INVERTER/DC DISCONNECT SWITCH "B"

EQUIPMENT LABEL NOTES

1. LABELS SHALL HAVE A RED BACKGROUND COLOR WITH WHITE LETTERING. TEXT SHALL BE IN ALL CAPITAL LETTERS AND NOT BE BOLD FONT
2. LABEL MATERIAL SHALL BE SUITABLE FOR THE EQUIPMENT ENVIRONMENT
3. CONDUIT SHALL BE MARKED WITH REQUIRED LABEL EVERY 10 FEET

ENGINEER:



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EQUIPMENT LABELS

PV4.1

solar**edge**

Single Phase Inverters

for North America

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

INVERTERS



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
- High reliability without any electrolytic capacitors
- Built-in module-level monitoring
- Outdoor and indoor installation
- Optional: Revenue grade data, ANSI C12.20 Class 0.5 (0.5% accuracy)





Single Phase Inverters for North America

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

	SE3000H-US	SE3800H-US	SE5000H-US	SE6000H-US	SE7600H-US	SE10000H-US	
OUTPUT							
Rated AC Power Output	3000	3800	5000	6000	7600	10000	VA
Max. AC Power Output	3000	3800	5000	6000	7600	10000	VA
AC Output Voltage Min.-Nom.-	✓	✓	✓	✓	✓	✓	Vac
Max. (211 - 240 - 264)							
AC Frequency (Nominal)	59.3 - 60 - 60.5 ⁽¹⁾						Hz
Maximum Continuous Output	12.5	16	21	25	32	42	A
Current@240V							
GFDI Threshold	1						A
Utility Monitoring, Islanding							
Protection, Country Configurable	Yes						
Thresholds							
INPUT							
Maximum DC Power	4650	5900	7750	9300	11800	15500	W
Transformer-less, Ungrounded	Yes						
Maximum Input Voltage	480						Vdc
Nominal DC Input Voltage	380						Vdc
Maximum Input Current@240V	8.5	10.5	13.5	16.5	20	27	Adc
Max. Input Short Circuit Current	45						Adc
Reverse-Polarity Protection	Yes						
Ground-Fault Isolation Detection	600k _Ω Sensitivity						
Maximum Inverter Efficiency	99	99.2					%
CEC Weighted Efficiency	99						%
Nighttime Power Consumption	< 2.5						W
ADDITIONAL FEATURES							
Supported Communication	RS485, Ethernet, ZigBee (optional), Cellular (optional)						
Interfaces							
Revenue Grade Data, ANSI C12.20	Optional ⁽²⁾						
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	3/4" minimum / 20-4 AWG						
Range							
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			Natural convection			
Operating Temperature Range	-13 to +140 / -25 to +60 ⁽³⁾ (-40°F / -40°C option) ⁽⁴⁾						*F / °C
Protection Rating	NEMA 3R (Inverter with Safety Switch)						

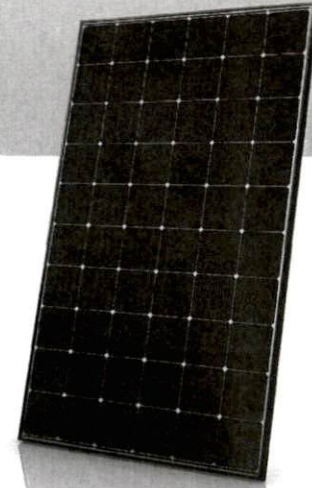
⁽¹⁾ For other regional settings please contact SolarEdge support

⁽²⁾ Revenue grade inverter P/N: SExxxxH-US000NNC2

⁽³⁾ For power de-rating information refer to: <https://www.solaredge.com/sites/default/files/se-temperature-derating-note-na.pdf>

⁽⁴⁾ -40 version P/N: SExxxxH-US000NNU4





SUPERPOWER CS6K-290 | 295 | 300MS

Canadian Solar's new SuperPower modules with Mono-PERC cells significantly improve efficiency and reliability. The innovative technology offers superior low irradiance performance in the morning, in the evening and on cloudy days, increasing the energy output of the module and the overall yield of the solar system.

KEY FEATURES



11 % more power than conventional modules



Excellent performance at low irradiance: 97.5 %



High PTC rating of up to 91.87 %



Improved energy production due to low temperature coefficients



IP67 junction box for long-term weather endurance



Heavy snow load up to 5400 Pa, wind load up to 2400 Pa



linear power output warranty



product warranty on materials and workmanship

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001:2008 / Quality management system
ISO 14001:2004 / Standards for environmental management system
OHSAS 18001:2007 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730: VDE / CE / MCS / CEC AU
UL 1703 / IEC 61215 performance: CEC listed (US)
UL 1703: CSA / IEC 61701 ED2: VDE / IEC 62716: VDE / Take-e-way
UNI 9177 Reaction to Fire: Class 1



* As there are different certification requirements in different markets, please contact your local Canadian Solar sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

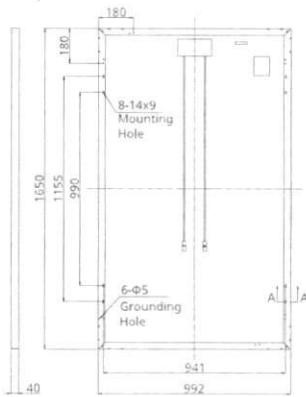
CANADIAN SOLAR INC. is committed to providing high quality solar products, solar system solutions and services to customers around the world. As a leading PV project developer and manufacturer of solar modules with over 15 GW deployed around the world since 2001, Canadian Solar Inc. (NASDAQ: CSIQ) is one of the most bankable solar companies worldwide.

CANADIAN SOLAR INC.

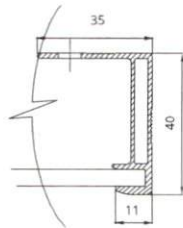
2430 Camino Ramon, Suite 240 San Ramon, CA, USA 94583-4385 | www.canadiansolar.com/na | sales.us@canadiansolar.com

ENGINEERING DRAWING (mm)

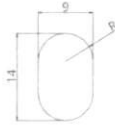
Rear View



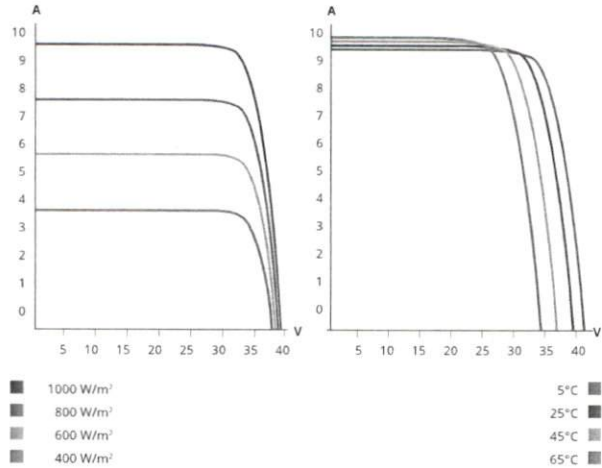
Frame Cross Section A-A



Mounting Hole



CS6K-295MS / I-V CURVES



ELECTRICAL DATA | STC*

CS6K	290MS	295MS	300MS
Nominal Max. Power (Pmax)	290 W	295 W	300 W
Opt. Operating Voltage (Vmp)	32.1 V	32.3 V	32.5 V
Opt. Operating Current (Imp)	9.05 A	9.14 A	9.24 A
Open Circuit Voltage (Voc)	39.3 V	39.5 V	39.7 V
Short Circuit Current (Isc)	9.67 A	9.75 A	9.83 A
Module Efficiency	17.72 %	18.02 %	18.33 %
Operating Temperature	-40°C ~ +85°C		
Max. System Voltage	1000 V (IEC) or 1000 V (UL)		
Module Fire Performance	TYPE 1 (UL 1703) or CLASS C (IEC 61730)		
Max. Series Fuse Rating	15 A		
Application Classification	Class A		
Power Tolerance	0 ~ + 5 W		

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

ELECTRICAL DATA | NOCT*

CS6K	290MS	295MS	300MS
Nominal Max. Power (Pmax)	210 W	213 W	216 W
Opt. Operating Voltage (Vmp)	29.0 V	29.2 V	29.4 V
Opt. Operating Current (Imp)	7.25 A	7.30 A	7.35 A
Open Circuit Voltage (Voc)	36.2 V	36.4 V	36.6 V
Short Circuit Current (Isc)	7.74 A	7.83 A	7.92 A

* Under Nominal Operating Cell Temperature (NOCT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

PERFORMANCE AT LOW IRRADIANCE

Excellent performance at low irradiance, average relative efficiency of 97.5 % from an irradiance of 1000 W/m² to 200 W/m² (AM 1.5, 25°C).

The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to on-going innovation, research and product enhancement, Canadian Solar Inc. reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.

Caution: For professional use only. The installation and handling of PV modules requires professional skills and should only be performed by qualified professionals. Please read the safety and installation instructions before using the modules.

MECHANICAL DATA

Specification	Data
Cell Type	Mono-crystalline, 6 inch
Cell Arrangement	60 (6×10)
Dimensions	1650×992×40 mm (65.0×39.1×1.57 in)
Weight	18.2 kg (40.1 lbs)
Front Cover	3.2 mm tempered glass
Frame Material	Anodized aluminium alloy
J-Box	IP67, 3 diodes
Cable	4 mm ² (IEC) or 4 mm ² & 12 AWG 1000 V (UL), 1000 mm (39.4 in)
Connector	T4 (IEC/UL)
Per Pallet	26 pieces, 520 kg (1146.4 lbs)
Per container (40' HQ)	728 pieces

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.39 % / °C
Temperature Coefficient (Voc)	-0.30 % / °C
Temperature Coefficient (Isc)	0.053 % / °C
Nominal Operating Cell Temperature	45±2 °C

PARTNER SECTION

