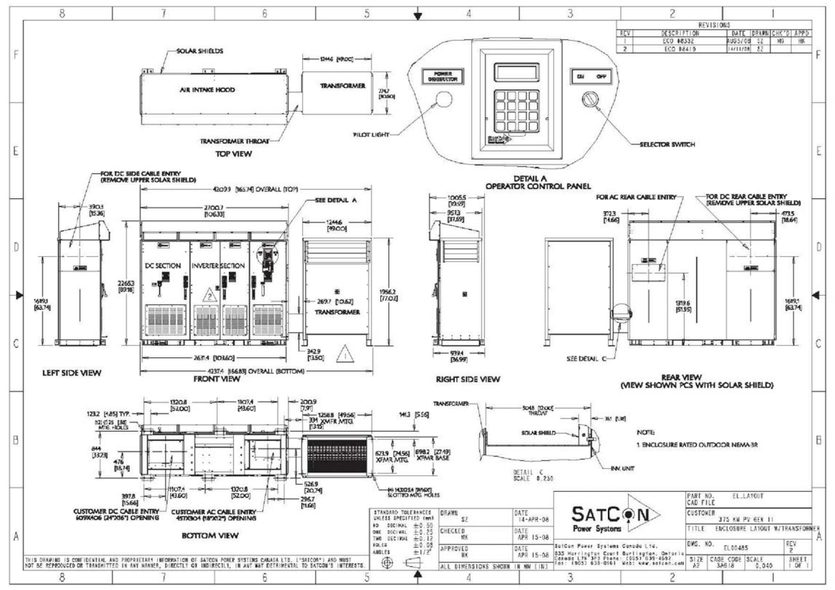
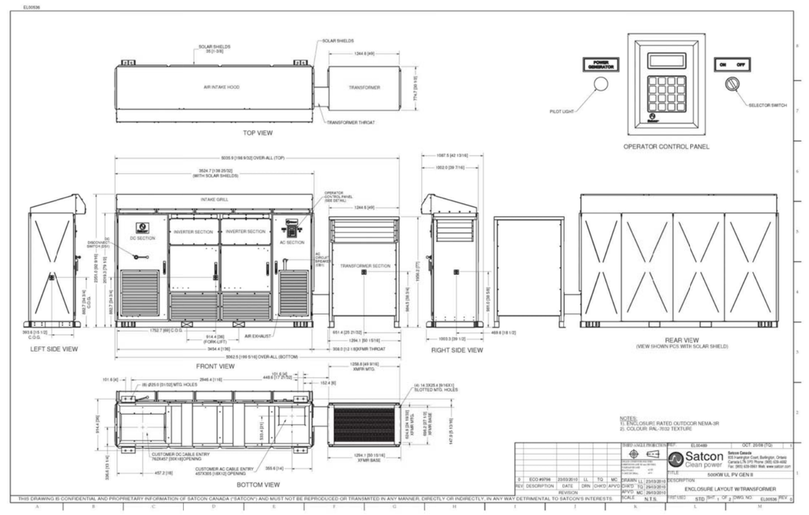
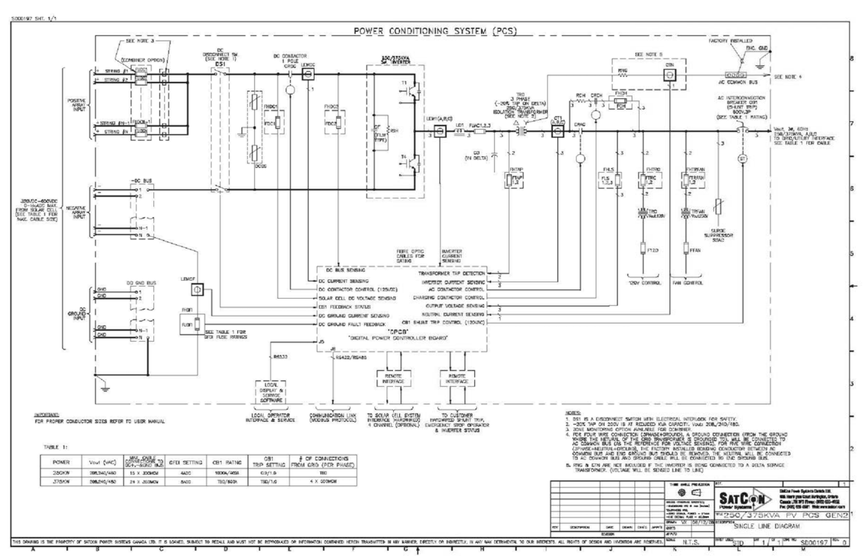
Know what's **below.**
Call before you dig.



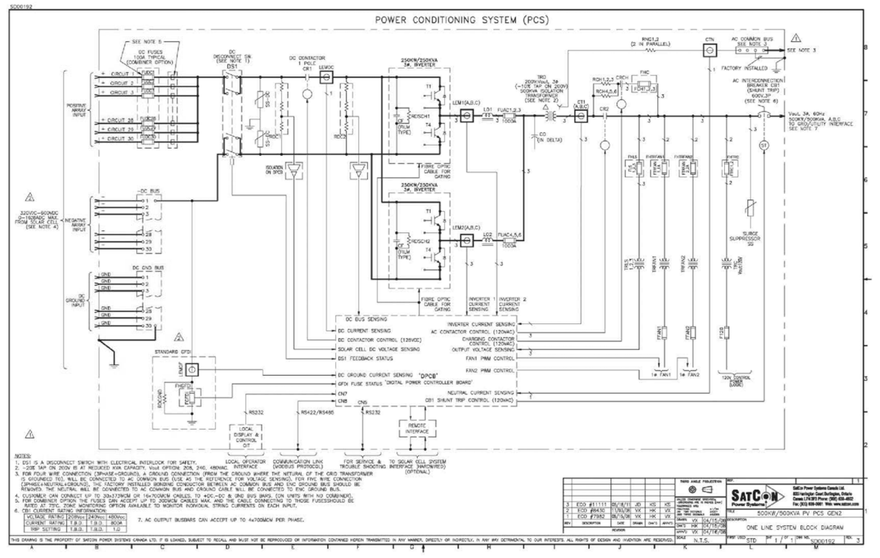
1 PVS 375 CABINET DIMS
SCALE: N.T.S.



2 PVS 500 CABINET DIMS
SCALE: N.T.S.



3 PVS 375 SINGLE LINE
SCALE: N.T.S.



4 PVS 500 SINGLE LINE
SCALE: N.T.S.

NEC 2011 LABELING REQUIREMENTS, 3/8" MIN TEXT HEIGHT, WEATHERPROOF LABEL:

- COMBINER BOX, DISCONNECT(S) (110.16)

WARNING ARC FLASH HAZARD
QUALIFIED PERSONS ONLY

- PHOTOVOLTAIC SYSTEM CONDUCTORS SHALL BE IDENTIFIED AND GROUPED AS REQUIRED BY 690.4(B)(1) THROUGH (4). THE MEANS OF IDENTIFICATION SHALL BE PERMITTED BY SEPARATE COLOR CODING, MARKING TAPE, TAGGING, OR OTHER APPROVED METHODS.

- COMBINER BOX OUTPUT (690.53)

9 STRING:

RATED COMBINED CURRENT	*72.3 A*
RATED COMBINED VOLTAGE	*419 Vdc*
MAX SYSTEM VOLTAGE	*588 Vdc*
SHORT-CIRCUIT CURRENT	*120.7 Adc*

10 STRING:

RATED COMBINED CURRENT	*81 Adc*
RATED COMBINED VOLTAGE	*419 Vdc*
MAX SYSTEM VOLTAGE	*588 Vdc*
SHORT-CIRCUIT CURRENT	*134 Adc*

11 STRING:

RATED COMBINED CURRENT	*89 Adc*
RATED COMBINED VOLTAGE	*419 Vdc*
MAX SYSTEM VOLTAGE	*588 Vdc*
SHORT-CIRCUIT CURRENT	*148 Adc*

12 STRING:

RATED COMBINED CURRENT	*97 Adc*
RATED COMBINED VOLTAGE	*419 Vdc*
MAX SYSTEM VOLTAGE	*588 Vdc*
SHORT-CIRCUIT CURRENT	*161 Adc*

- SWITCH OR CIRCUIT BREAKER (690.17)

(2a)

- DC DISCONNECT @ INVERTER (690.53)

WARNING: DC VOLTAGE IS ALWAYS PRESENT WHEN MODULES ARE EXPOSED TO SUNLIGHT

(PVS 500) *INVERTER*

OPERATING CURRENT (Imp @ STC)	*1245 A*
OPERATING VOLTAGE (Vmp @ STC)	*419 Vdc*
MAX SYSTEM VOLTAGE (Voc @ Tmin)	*588 Vdc*
MAX SYSTEM CURRENT (Isc @ STC)	*1332 Adc*

(PVS 375) *INVERTER*

OPERATING CURRENT (Imp @ STC)	*836 A*
OPERATING VOLTAGE (Vmp @ STC)	*419 Vdc*
MAX SYSTEM VOLTAGE (Voc @ Tmin)	*588 Vdc*
MAX SYSTEM CURRENT (Isc @ STC)	*894 Adc*

NEC 2011 LABELING REQUIREMENTS, 3/8" MIN TEXT HEIGHT, WEATHERPROOF LABEL:

- UTILITY INTERACTIVE INVERTER (690.5)

WARNING ELECTRIC SHOCK HAZARD
IF A GROUND FAULT IS INDICATED, NORMALLY GROUNDED CONDUCTORS MAY BE UNGROUNDED AND ENERGIZED

- AC DISCONNECT AND INVERTER DISCONNECT (690.54)

(PVS500)
WARNING: DISCONNECT IS ENERGIZED FROM TWO SOURCES -- SOLAR SYSTEM AND UTILITY GRID

AC OPERATING VOLTAGE	*480 Vac*
MAXIMUM AC CURRENT	*602 Aac, per phase*

(PVS375)
WARNING: DISCONNECT IS ENERGIZED FROM TWO SOURCES -- SOLAR SYSTEM AND UTILITY GRID

AC OPERATING VOLTAGE	*480 Vac*
MAXIMUM AC CURRENT	*451 Aac, per phase*

- AC CIRCUIT BREAKER (690.64)

WARNING: CIRCUIT BREAKER IS ENERGIZED FROM TWO SOURCES -- SOLAR SYSTEM AND UTILITY GRID

- POINT OF INTERCONNECTION (690.54)

WARNING: PV SYSTEM BACKFEED POINT
NOMINAL OPERATING VOLTAGE *480 Vac*

(2b)

- MAIN SYSTEM DISCONNECT (690.56(B))

WHERE DISCONNECTING MEANS FOR UTILITY AND PV POWER ARE NOT AT SAME LOCATION, A PLAQUE OR DIRECTORY IS REQUIRED PROVIDING LOCATION OF OTHER POWER SOURCE ON PROPERTY.

PSEG LABELING REQUIREMENTS:

LABEL SHOULD BE OF PERMANENT MATERIAL, MECHANICALLY FASTENED, AND OF YELLOW BACKGROUND W/ BLACK LETTERING.

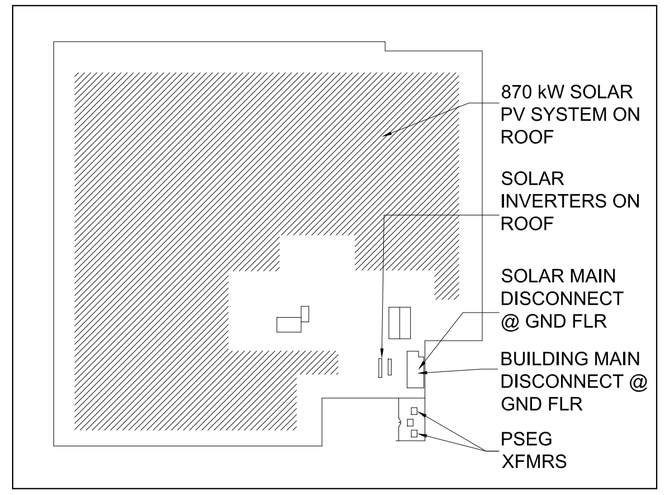
- SOLAR SERVICE DISCONNECT

CUSTOMER-OWNED PARALLEL GENERATION

PSEG SAFETY DISCONNECT SWITCH

5"x7" PERMANENT PLACARD TO BE INSTALLED AT THE FOLLOWING LOCATIONS, FOLLOW PSEG LABELING REQUIREMENTS:

- PSEG SREC METER
- UTILITY METER
- BLDG SERVICE MAIN DISCONNECT
- SOLAR MAIN SERVICE DISCONNECT



MODULE

- CANADIAN SOLAR, CS6P-245P

Pstc	245 W
Pcec	W
Ptol	+5/-0%
Vmp	30 V
Imp	8.17 A
Voc	37.1 V
Isc	8.74 A
NOCT	45°C
Tvoc	-0.34%/°C
Tisc	+0.065%/°C
Tpmax	-0.43%/°C
EFF	15.23%
CELL#	60
WEIGHT	41.9 LBS
DIM	65x39x2
UL 790	-

INVERTER A:

- (1) SATCON PVS 375 kW

- INPUT [DC]

NEGATIVE GROUNDED	
MAX Voc	600V
MAX I	1277A
MPT V	320-600V
DC COMBINER	15@160 A

- OUTPUT [AC]

POWER	375 kW
PHASE	3φ
VOLTAGE	480V WYE
CURRENT	451A (@480V)
CEC EFF.	95.5%
MAX EFF.	96.3%

- PHYSICAL

SIZE (H x W x D)	89"x166"x40"
WEIGHT	5,811 LB
NEMA	3R/IP44

INVERTER B:

- (1) SATCON PVS 500 kW

- INPUT [DC]

NEGATIVE GROUNDED	
MAX Voc	600V
MAX I	1628A
MPT V	320-600V
DC COMBINER	20@160 A

- OUTPUT [AC]

POWER	500 kW
PHASE	3φ
VOLTAGE	480V WYE
CURRENT	602A (@480V)
CEC EFF.	96%
MAX EFF.	96.5%

- PHYSICAL

SIZE (H x W x D)	92"x199"x43"
WEIGHT	10,150 LB
NEMA	3R/IP44

PV NOTES:

1. ALL EQUIPMENT TO BE UL LISTED.

2. ALL WORKMANSHIP SHALL BE PER NEC 2008, ARTICLE 110.

3. ALL DC MATERIAL & EQUIPMENT TO BE RATED FOR 600VDC.

4. ALL DC CONDUCTORS TO BE COPPER AND RATED FOR 600 VDC.

5. ALL EXPOSED CONDUCTORS NOT IN CONDUIT SHALL HAVE SUNLIGHT RESISTANCE INSULATION.

6. EXPOSED NON-CURRENT CARRYING METAL PARTS OF MODULE FRAMES, RACKING, ENCLOSURES, CONDUIT, ETC. SHALL BE GROUNDED IN ACCORDANCE WITH NEC2008.

7. GROUND CONTINUITY SHALL BE MAINTAINED ACROSS RACKING, CONDUIT, ENCLOSURE, ETC. INTERFACE USING APPROVED JUMPER METHODS.

8. PHOTOVOLTAIC MODULES TO BE GROUNDED USING MANUFACTURER PROVIDED GROUND POINT ONLY.

9. PHOTOVOLTAIC MODULES LEADS TO BE STRAPPED TO MODULE FRAME AWAY FROM SUNLIGHT AND ENVIRONMENTAL CONDITIONS, AND PROPER BENDING RADII SHALL BE MAINTAINED.

10. ALL CONDUCTORS NOT IN CONDUIT, CONSIDERED "FREE AIR", MUST HAVE SUNLIGHT RESISTANT INSULATION.

11. ALL CONDUIT, COMBINER BOXES, AND JUNCTION/PULL BOXES ON ROOF TO BE ELEVATED GREATER THAN 3-1/2" ABOVE ROOF SURFACE.

ELECTRICAL NOTES:

1. ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT, AND WORKMANSHIP, SHALL CONFORM WITH THE LATEST LOCAL ADOPTED EDITION OF THE NATIONAL ELECTRIC CODE, WILL ALL APPLICABLE LAWS, LOCAL CODES AND REGULATIONS AND REGULATORY BODIES HAVING JURISDICTION OVER THIS WORK.

2. ALL MATERIAL AND EQUIPMENT INSTALLED TO BE UL LISTED.

3. THE MANUFACTURER'S DIRECTION SHALL BE FOLLOWED IN INSTALLING, TESTING, AND PLACING INTO OPERATION ALL MATERIAL AND EQUIPMENT.

4. ALL RACEWAY AND WIRING SHALL BE CONCEALED IN FINISHED AREAS.

5. ALL RACEWAYS ENTERING AND LEAVING THE BUILDING SHALL BE SEALED TO PREVENT WATER INTRUSION AND FIRE PROTECTION.

6. PROVIDE JUNCTION BOXES AND WIRING TROUGHS, SIZED PER NEC, WHERE SHOWN OR WHERE NECESSARY TO FACILITATE PULLING OF CONDUCTORS.

7. PROVIDE GROUNDING IN ACCORDANCE WITH NEC ARTICLE 250. ALL GROUNDING WIRE, LUGS, FEEDER AND BUS SHALL BE COPPER. NO FLEXIBLE METAL CONDUIT OF ANY KIND SHALL BE USED AS AN EQUIPMENT GROUNDING CONDUCTOR.

8. WEATHERPROOF & SUNLIGHT RESISTANT LABELS/IDENTIFICAITON PLATES SHALL BE PROVIDED ON ALL EQUIPMENT AND MATERIAL, EITHER EXISTING OR PROPOSED, THAT RELATES TO THE GENERATION SYSTEM.

CALCULATIONS:

CANADIAN SOLAR 240 MODULES

- MPP CURRENT: Imp = 8.03 x 9 = 72.3 A
  Imp = 8.03 x 10 = 80.3 A
  Imp = 8.03 x 11 = 88.4 A
  Imp = 8.03 x 12 = 96.4 A

- MPP VOLTAGE: Vmp = 29.9 x 14 = 418.6 V

- MAX CURRENT: Isc = 8.59 x 1.56 x 9 = 120.7 A
  Isc = 8.59 x 1.56 x 10 = 134.1 A
  Isc = 8.59 x 1.56 x 11 = 147.5 A
  Isc = 8.59 x 1.56 x 12 = 160.9 A

- MAX VOLTAGE: Voc = [37 + 37 x -0.0034/°C x (-15°C - 25°C)] x 14
  = 588.5 V

  - LOW TEMP = -15°C (5°F)
  - HIGH TEMP [AMBIENT] = 35°C (95°F)

  Voc = [37 + 37 x -0.0034/°C x (35°C - 25°C)] x 14
  = 500.4 V

- POWER: Wmp = 8.03 x 29.9 = 240.097 W

E-3.4

13 OF 14 SHEETS

ELEC NOTES

DRAFTED BY: G.R.
06-27-2012

REVIEWED BY: J.H.
07-05-2012

ISSUE 1: PERMITTING
07-06-2012

ISSUE 2: PERMITTING
07-31-2012

PROFESSIONAL SEAL:

SITE LOCATION:

OWNER:

ENGINEER:

CONTRACTOR: