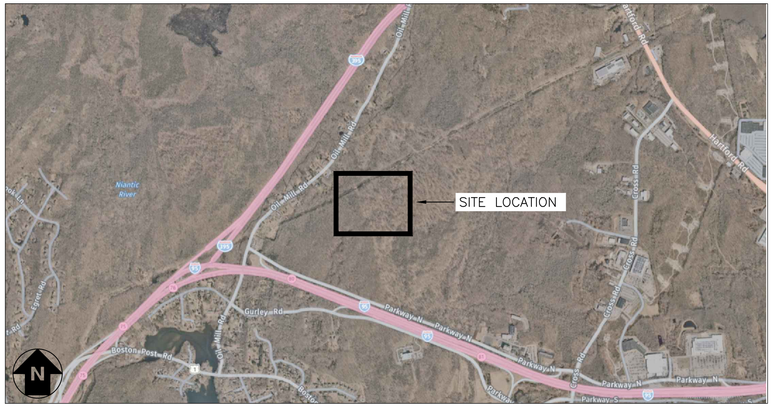
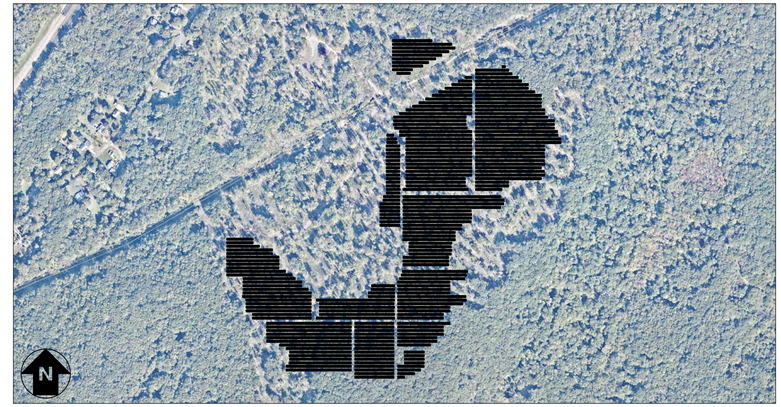
GROUND MOUNT SYSTEM AT

WATERFORD SOLAR

117 OIL MILL ROAD, WATERFORD, CT 06385



LOCATION MAP
SCALE: 1" = 1500'



SYSTEM PLAN
SCALE: 1" = 500'

TOTAL SYSTEM SUMMARY:

TOTAL DC SYSTEM SIZE:	18,683.340 kWDC
AC SYSTEM SIZE:	16,000.000 kWAC / 19,200.000 KVA
MODULE MANUFACTURER:	CANADIAN SOLAR / HT-SAAE
MODULE MODEL:	CS3W-400PB-AG & CS3W-405PB-AG HT72-166M-450W
MODULES PER STRING:	26
MODULE QUANTITY:	15,288 / 2,548 / 25,636
STRING QUANTITY:	588 / 98 / 986
MODULE TILT:	25°
MODULE AZIMUTH:	0°
INVERTER MANUFACTURER:	SOLECTRIA
INVERTER MODEL:	XGI 1500-125/150
INVERTER QUANTITY:	128

SUBSYSTEM SUMMARIES:

SYSTEM 1

TOTAL DC SIZE:	3868.800 kWDC
AC SYSTEM SIZE:	3250.000 kWAC
MODULE QUANTITY:	9672 (400W)
STRING QUANTITY:	372

SYSTEM 2

TOTAL DC SIZE:	3851.640 kWDC
AC SYSTEM SIZE:	3250.000 kWAC
MODULE QUANTITY:	5616 (400W) 2548 (405W) 1274 (450W)
STRING QUANTITY:	363

SYSTEM 3

TOTAL DC SIZE:	3720.600 kWDC
AC SYSTEM SIZE:	3250.000 kWAC
MODULE QUANTITY:	8268 (450W)
STRING QUANTITY:	318

SYSTEM 4

TOTAL DC SIZE:	3685.500 kWDC
AC SYSTEM SIZE:	3125.000 kWAC
MODULE QUANTITY:	8190 (450W)
STRING QUANTITY:	315

SYSTEM 5

TOTAL DC SIZE:	3556.800 kWDC
AC SYSTEM SIZE:	3125.000 kWAC
MODULE QUANTITY:	7904 (450W)
STRING QUANTITY:	304

SCOPE OF WORK SUMMARY

GROUND MOUNT PV ARRAY:
- INSTALL SOLAR MODULES AND RACKING SYSTEM ON GROUND LEVEL.
- INSTALL INVERTERS AND ELECTRICAL DISTRIBUTION EQUIPMENT.
- INTERCONNECT AT NEW ELECTRICAL SERVICE & DISTRIBUTION EQUIPMENT.

DEVELOPER:

Greenskies
a Clean Focus company

127 WASHINGTON AVENUE
WEST BUILDING, GARDEN LEVEL
NORTH HAVEN, CT 06473

ENGINEERED BY:

PUREPOWER ENGINEERING

111 RIVER STREET, SUITE 1110
HOBOKEN, NEW JERSEY, 07030

DRAWING INDEX

		PERMIT REVIEW SET (03/17/2021)				
GENERAL						
G001	TITLE SHEET	●				
ELECTRICAL						
E001	ELECTRICAL NOTES & SYMBOL LIST	●				
E100	AC ELECTRICAL PLAN	●				
E101	PARTIAL ELECTRICAL PLAN – SYSTEM 1	●				
E102	PARTIAL ELECTRICAL PLAN – SYSTEM 2	●				
E103	PARTIAL ELECTRICAL PLAN – SYSTEM 3	●				
E104	PARTIAL ELECTRICAL PLAN – SYSTEM 4	●				
E105	PARTIAL ELECTRICAL PLAN – SYSTEM 5	●				
E106	TYP. INVERTER & ELECTRICAL EQUIP. PLAN	●				
E107	EQUIPMENT MOUNTING DETAILS	●				
E108	MEDIUM VOLTAGE EQUIPMENT PLAN	●				
E200	PARTIAL DC ELECTRICAL PLAN – SYSTEM 1	●				
E201	PARTIAL DC ELECTRICAL PLAN – SYSTEM 2	●				
E202	PARTIAL DC ELECTRICAL PLAN – SYSTEM 3	●				
E204	PARTIAL DC ELECTRICAL PLAN – SYSTEM 4	●				
E205	PARTIAL DC ELECTRICAL PLAN – SYSTEM 5	●				
E300	ONE LINE DIAGRAM – MEDIUM VOLTAGE	●				
E301	ONE LINE DIAGRAM – SYSTEM 1	●				
E302	ONE LINE DIAGRAM – SYSTEM 2	●				
E303	ONE LINE DIAGRAM – SYSTEM 3	●				
E304	ONE LINE DIAGRAM – SYSTEM 4	●				
E305	ONE LINE DIAGRAM – SYSTEM 5	●				
E310	SCHEDULES & CALCULATIONS	●				
E311	SCHEDULES & CALCULATIONS	●				
E312	SCHEDULES & CALCULATIONS	●				
E313	SCHEDULES & CALCULATIONS	●				
E314	SCHEDULES & CALCULATIONS	●				
E315	SCHEDULES & CALCULATIONS	●				
E316	SCHEDULES & CALCULATIONS	●				
E317	SCHEDULES & CALCULATIONS	●				
E318	SCHEDULES & CALCULATIONS	●				
E319	SCHEDULES & CALCULATIONS	●				
E401	GROUNDING DETAILS	●				
E402	ELECTRICAL DETAILS	●				
E500	LABELS & SIGNAGE	●				
E600	EQUIPMENT DATA SHEETS	●				

LEGEND:

UPDATED DRAWING ISSUED	●
UNCHANGED, PREVIOUSLY ISSUED DRAWING STILL CURRENT	○
DRAWING REMOVED FROM SET	×

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	JD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR 117 OIL MILL ROAD WATERFORD, CT 06385

DRAWING TITLE: TITLE SHEET

DRAWING #: G001

PLOT DATE: 3/17/2021 4:02 PM

RULER IN INCHES:

SOLAR PV GENERAL NOTES

1. INSTALL A COMPLETE AND OPERATIONAL SOLAR PHOTOVOLTAIC SYSTEM INCLUDING THE RECONNECTION OF ANY EXISTING ELECTRICAL EQUIPMENT DISTURBED DURING SOLAR PHOTOVOLTAIC ARRAY INSTALLATION.
2. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL LOCATION AND ARRANGEMENT OF THE SOLAR PV SYSTEM. THEY DO NOT SHOW ALL MATERIALS NEEDED. CONTRACTOR IS REQUIRED TO PROVIDE ANY AND ALL CONDUITS, CONNECTORS, SWEEPS, SUPPORTS, BENDS, FITTINGS, HANGERS, COVER PLATES, AND ADDITIONAL PULL AND JUNCTION BOXES WHICH THE CONTRACTOR MUST PROVIDE TO COMPLETE THE SOLAR PV SYSTEM IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE (NEC).
3. THE DEFINITION OF ELECTRICAL TERMS USED SHALL BE AS DEFINED STATES' ADOPTED EDITION OF THE NEC.
4. THE TERM "SIZE" SHALL MEAN ONE OR MORE OF THE FOLLOWING: "LENGTH, CURRENT AND VOLTAGE RATING, NUMBER OF POLES, NEMA SIZE, AND OTHER SIMILAR ELECTRICAL CHARACTERISTICS".
5. CONTRACTOR IS REQUIRED TO SURVEY AND INSPECT ALL AREAS PRIOR TO PERFORMING SERVICES TO ENSURE CLEARANCES CAN BE MET AND NO INTERFERENCES EXIST. NO CUTTING OR DRILLING IS TO BE PERFORMED PRIOR TO LOCATING EXISTING STRUCTURAL MEMBERS AND UTILITIES.
6. SERVICE ENTRANCE RATED EQUIPMENT, C/T CABINETS, AND METER SOCKETS ARE TO BE APPROVED FOR USE BY THE LOCAL UTILITY COMPANY.
7. ELECTRICAL EQUIPMENT INSTALLED MUST BE LABELED, UL LISTED, AND INSTALLED ACCORDINGLY.
8. REQUIRED PERMITS AND INSPECTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE COORDINATED WITH THE AUTHORITY HAVING JURISDICTION (AHJ).
9. ALL WORK IS TO BE PERFORMED BY LICENSED WORKMEN AND COMPLETED IN ACCORDANCE WITH THE STATES' ADOPTED NEC.
10. THE SOLAR PV SYSTEM EQUIPMENT ON THE DC SIDE IS RATED FOR 1500V AND IS IN COMPLIANCE WITH NEC 690.80. THE INVERTERS, MODULES, STRING FEEDERS, AND RELATED COMPONENTS ARE ALL RATED AND LABELED AS 1000V.
11. EMT CONDUIT IS ALLOWED IN EXTERIOR LOCATIONS WHEN RAIN-TIGHT CONNECTORS AND FITTINGS ARE USED, AND THE CONDUIT IS NOT EXPOSED TO ANY POTENTIAL PHYSICAL DAMAGE. ALL SUPPORTS, BOLTS, STRAPS, AND SCREWS SHALL BE CORROSION RESISTANT.
12. ALL RACEWAYS ARE TO BE METALLIC UNLESS OTHERWISE NOTED. APPLY AN ADHESIVE LABEL ALONG ALL RACEWAYS SHEET E500. LABEL SHALL BE APPLIED EVERY 10', AT EVERY TURN, AND ABOVE AND BELOW ALL PENETRATIONS.
13. ALL CONDUCTORS SHALL BE LISTED FOR USE IN APPROPRIATE RACEWAY.
14. ALL BREAKERS INSTALLED AS PART OF THE NEW SOLAR PV SYSTEM MUST BE RATED FOR REVERSE FEED.
15. COMMUNICATIONS CABLES INSTALLED BETWEEN MONITORING EQUIPMENT AND CLIENT NETWORK EQUIPMENT (SWITCHES, ROUTERS, SERVERS, ETC.) SHALL HAVE A GREEN OUTER JACKET. CABLES SHALL HAVE CABLE TAGS INSTALLED AT BOTH ENDS OF CABLE TO SHOW PROPER IDENTIFICATION.
16. CONTRACTOR SHALL TORQUE TEST ALL FIELD TERMINATED WIRES PER MANUFACTURER'S SPECS AND PROVIDE PERMANENT MARKINGS ACROSS THE BOLT AND WASHER INDICATING ACHIEVED TORQUE.
17. BARE COPPER GROUND CONDUCTORS SHALL BE SIZED PER NEC. EQUIPMENT GROUNDING CONDUCTORS (EGC) SHALL BE INSTALLED IN CONDUIT.
18. POLARIS SPLICES SHALL NOT BE USED ON THIS PROJECT IN ANY CAPACITY.
19. CONTRACTOR SHALL SUBMIT A FORMAL RFI (REQUEST FOR INFORMATION) FOR ANY CONFUSION OR DISCREPANCY ON THE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR ANY INSTALLATION DEVIATIONS WITHOUT APPROVAL FROM GREENSKIES OR THE ENGINEER OF RECORD.
20. MOGUL LB CONDUIT BODIES SHALL NOT BE USED ON THIS PROJECT.
21. TEMPERATURE RATINGS OF ALL CONDUCTORS, TERMINATIONS, BREAKERS, OR OTHER DEVICES ASSOCIATED WITH THE SOLAR PV SYSTEM SHALL BE RATED FOR AT LEAST 75 DEGREE C.
22. ALL METALLIC CONDUITS SHALL HAVE BOND BUSHINGS ON BOTH ENDS AND EQUIPMENT GROUNDING CONDUCTORS (EGC) ROUTED THROUGH CONDUIT.

PV ARRAY WORK NOTES

1. WORK INCLUDES INSTALLING PROPOSED SOLAR PANEL ARRAY PER THE MANUFACTURERS INSTALLATION PROCEDURES AND INSTRUCTIONS, ALONG WITH ASSOCIATED ELECTRICAL WIRING.
2. WORK AREAS SHALL BE MARKED, FENCED, AND OTHERWISE SECURED SO AS TO PROVIDE PROPER PROTECTION FOR THE PUBLIC AND AS REQUIRED BY THE BUILDING INSPECTOR.
3. DIMENSION OF EXISTING ELEMENTS SHOWN WERE DETERMINED THROUGH A COMBINATION OF EXISTING DRAWINGS AND FIELD INVESTIGATIONS, AND SHOULD BE USED FOR INFORMATIONAL PURPOSES ONLY. ALL EXISTING CONDITIONS AND DIMENSIONS SHALL BE FIELD VERIFIED BY THE CONTRACTOR.
4. ARRAY LAYOUT IS BASED ON A COMBINATION OF SHADING, AND STRINGING. THE CONTRACTOR SHALL NOT DEVIATE FROM THE LAYOUT SHOWN WITHOUT APPROVAL FROM THE ENGINEER.
5. ELECTRICAL RUNS SHOWN ON PLAN REPRESENT THE PROPOSED LAYOUT. THE CONTRACTOR SHALL NOT RELOCATE INVERTERS OR PANELBOARDS WITHOUT APPROVAL FROM THE ENGINEER.
6. THE INSTALLER SHALL VERIFY THE PROJECT SOUTH DIRECTION IN THE FIELD, AND INSTALL THE MODULES AS INDICATED ON THE PLANS. THE MODULES SHALL BE INSTALLED AS TILTED TOWARDS THE GENERAL DIRECTION OF PROJECT SOUTH.
7. THE FRONT OF THE INVERTER SHALL NOT FACE PROJECT SOUTH. ORIENT THE INVERTER SUCH THAT IT IS FACING NORTH WHEN POSSIBLE. IF SPACE IS A LIMITING FACTOR THEN THE INVERTER SHALL BE ALLOWED TO FACE PROJECT EAST OR WEST.
8. NO CONDUCTOR OR CONNECTOR SHALL BE EXPOSED TO THE ELEMENTS OUTSIDE OF THE BOUNDARIES OF EACH SUB-ARRAY.
9. CONDUIT ABOVE GRADE SHALL ENTER UNDERNEATH RACKING, WHERE APPLICABLE, IN ORDER TO PROTECT CONDUCTORS.
10. CONDUIT BETWEEN SUB-ARRAYS SHALL BE SECURED TO THE RACKING SYSTEM VIA CONDUIT CLAMPS.
11. CONTRACTOR SHALL ENSURE DC WIRING IS SECURED UNDERNEATH THE ARRAY.
12. IN ADDITION TO HEAT SHRINK LABELING ON THE STRING HOMERUN CONDUCTORS, PLACARDS SHALL BE AFFIXED TO THE CROSS BEAMS OF THE RACKING.
13. CONTRACTOR SHALL UTILIZE SUNBUNDLER STAINLESS STEEL CABLE TIES FOR WIRE MANAGEMENT. STANDARD NYLON/PLASTIC CABLE TIES ARE NOT ACCEPTABLE.

INVERTER INFORMATION

MANUFACTURER			SOLECTRIA	
MODEL			XGI-1500 125/150	
DC RATING				
V-MAX			1500V	
I-MAX OPERATING			148.3A	
AC RATING				
P-OUT			125.0kW / 150KVA	
V-NOM			600V, 3Ø	
I-OUT			144A	
CONFIGURATION			WYE + N	
DESIGN CRITERIA				
STRINGS PER INVERTER			16	
MODULES PER STRING			26	
MODULE WATTS			400	
MODULE QUANTITY			416	
INVERTER/COMBINER BOX WATTS (WDC)			166400	
INVERTER/COMBINER BOX CURRENT (ADC)			234.18	
INVERTER STRING FUSE SIZE (ADC)			20	
TRIP SETTINGS				
PROTECTIVE DEVICE		TRIP SETTING	VALUE	M
UNDER VOLTAGE - FAST	27-1	50%	300 V	0.16 SEC.
UNDER VOLTAGE - SLOW	27-2	88%	528 V	2.0 SEC.
OVER VOLTAGE - SLOW	59-1	110%	600 V	1.00 SEC.
OVER VOLTAGE - FAST	59-2	120%	720 V	0.16 SEC.
UNDER-FREQUENCY	81-U	57.0 Hz	57.0 Hz	0.16 SEC.
OVER-FREQUENCY	81-O	60.5 Hz	60.5 Hz	0.16 SEC.

INVERTER INFORMATION

MANUFACTURER			SOLECTRIA	
MODEL			XGI-1500 125/150	
DC RATING				
V-MAX			1500V	
I-MAX OPERATING			148.3A	
AC RATING				
P-OUT			125.0kW / 150KVA	
V-NOM			600V, 3Ø	
I-OUT			144A	
CONFIGURATION			WYE + N	
DESIGN CRITERIA				
STRINGS PER INVERTER			15	
MODULES PER STRING			26	
MODULE WATTS			405	
MODULE QUANTITY			390	
INVERTER/COMBINER BOX WATTS (WDC)			157950	
INVERTER/COMBINER BOX CURRENT (ADC)			219.54	
INVERTER STRING FUSE SIZE (ADC)			20	
TRIP SETTINGS				
PROTECTIVE DEVICE		TRIP SETTING	VALUE	M
UNDER VOLTAGE - FAST	27-1	50%	300 V	0.16 SEC.
UNDER VOLTAGE - SLOW	27-2	88%	528 V	2.0 SEC.
OVER VOLTAGE - SLOW	59-1	110%	600 V	1.00 SEC.
OVER VOLTAGE - FAST	59-2	120%	720 V	0.16 SEC.
UNDER-FREQUENCY	81-U	57.0 Hz	57.0 Hz	0.16 SEC.
OVER-FREQUENCY	81-O	60.5 Hz	60.5 Hz	0.16 SEC.

INVERTER INFORMATION

MANUFACTURER			SOLECTRIA	
MODEL			XGI-1500 125/150	
DC RATING				
V-MAX			1500V	
I-MAX OPERATING			148.3A	
AC RATING				
P-OUT			125.0kW / 150KVA	
V-NOM			600V, 3Ø	
I-OUT			144A	
CONFIGURATION			WYE + N	
DESIGN CRITERIA				
STRINGS PER INVERTER			14	
MODULES PER STRING			26	
MODULE WATTS			450	
MODULE QUANTITY			364	
INVERTER/COMBINER BOX WATTS (WDC)			163800	
INVERTER/COMBINER BOX CURRENT (ADC)			227.48	
INVERTER STRING FUSE SIZE (ADC)			20	
TRIP SETTINGS				
PROTECTIVE DEVICE		TRIP SETTING	VALUE	M
UNDER VOLTAGE - FAST	27-1	50%	300 V	0.16 SEC.
UNDER VOLTAGE - SLOW	27-2	88%	528 V	2.0 SEC.
OVER VOLTAGE - SLOW	59-1	110%	600 V	1.00 SEC.
OVER VOLTAGE - FAST	59-2	120%	720 V	0.16 SEC.
UNDER-FREQUENCY	81-U	57.0 Hz	57.0 Hz	0.16 SEC.
OVER-FREQUENCY	81-O	60.5 Hz	60.5 Hz	0.16 SEC.

LEGEND – GENERAL

LIGHT LINE INDICATES EXISTING OR BEYOND THE SCOPE OF PROJECT

DARK LINE INDICATES NEW OR WITHIN THE SCOPE OF PROJECT

DASHED LINE INDICATES EQUIPMENT AT A DIFFERENT ELEVATION

EXISTING TEXT — LIGHT TEXT INDICATES EXISTING OR BEYOND THE SCOPE OF PROJECT

NEW TEXT — DARK TEXT INDICATES NEW OR WITHIN THE SCOPE OF PROJECT

LEGEND – PLAN SYMBOLS

SOLAR MODULE

RACEWAY TURNING UP OR TOWARDS OBSERVER

RACEWAY TURNING DOWN OR AWAY FROM OBSERVER

CABLE TRAY

P OR P — PULLBOX

J OR J — JUNCTION BOX

PANEL BOARD

LOCAL DISCONNECT SWITCH

SIMPLEX RECEPTACLE, RATED: 125–VOLTS AC, 20A

DUPLEX RECEPTACLE, RATED: 125–VOLTS AC, 20A

W — WEATHERPROOF DUPLEX RECEPTACLE, RATED: 125–VOLTS AC, 20A

GFCI — GROUND FAULT CIRCUIT INTERRUPTER DUPLEX RECEPTACLE, RATED: 125–VOLTS AC, 20A

DOUBLE DUPLEX (QUAD) RECEPTACLE

CEILING/PENDANT–MOUNT LIGHT, SEE FIXTURE SCHEDULE FOR TYPE

WALL–MOUNT LIGHT, SEE FIXTURE SCHEDULE FOR TYPE

GROUND ROD

GROUND ROD W/ TEST WELL

LEGEND – ONE LINE DIAGRAM AND WIRING DIAGRAM SYMBOLS

CIRCUIT BREAKER, FRAME SIZE AND TRIP SETTING AS NOTED

DISCONNECT SWITCH

INVERTER

BUS CONNECTION POINT

CROSSING POINT (NO CONNECTION)

NORMALLY CLOSED – NORMALLY OPEN CONTACTS

TRANSFORMER CONTROL/POWER, SIZE AND RATING AS NOTED

CURRENT TRANSFORMER

POTENTIAL TRANSFORMER

FUSE, SIZE/RATING AS NOTED

FUSED DISCONNECT SWITCH

EARTH GROUND

NC NO — PUSHBUTTON SWITCHES; NUMBER AND TYPE OF CONTACT BLOCKS MAY VARY

NC NO — PUSHBUTTON SWITCHES MUSHROOM HEAD; NUMBER AND TYPE OF CONTACT BLOCKS MAY VARY

K — KEYED INTERLOCK (KIRK KEY OR EQ.)

ST — SHUNT TRIP COIL

ABBREVIATIONS

A	AMPERES
AERMS	ARC ENERGY REDUCING MAINTENANCE SWITCH
AF	AMPERE FRAME
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
AFDI	ARC FAULT DETECTION & INTERRUPTER
AIC	AMPS INTERRUPTING CAPACITY
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BKR	CIRCUIT BREAKER
C	CONDUIT
CB	COMBINER BOX
CKT	CIRCUIT
CP	CONTROL PANEL
CU	COPPER
DISC	DISCONNECT
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEC	ELECTRIC, ELECTRICAL
EMERG	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EQUIP	EQUIPMENT
EXIST	EXISTING
G, GND	GROUND
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND–FAULT CIRCUIT INTERRUPTER
GFPE	GROUND–FAULT PROTECTION OF EQUIPMENT
HID	HIGH–INTENSITY DISCHARGE (LIGHTING)
HZ	HERTZ
IMC	INTERMEDIATE METALLIC CONDUIT
kAIC	1000 AMPS INTERRUPT CAPACITY
kCMIL	1000 CIRCULAR MILLS
kVA	KILO–VOLT AMPERE
kW	KILOWATT
LA	LIGHTNING & SURGE ARRESTOR
LED	LIGHT–EMITTING DIODE
LSIG	LONG, SHORT, INSTANTANEOUS, & GROUND FAULT
LTG	LIGHTING
MAX	MAXIMUM
MFG	MANUFACTURER
MLO	MAIN LUGS ONLY
MPPT	MAXIMUM POWER POINT TRACKING
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NTS	NOT TO SCALE
P	POLE
PF	POWER FACTOR
PLC	PROGRAMMABLE LOGIC CONTROLLER
POI	POINT OF INTERCONNECTION
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE
PWR	POWER
RCPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL CONDUIT
RMC	RIGID METAL CONDUIT
SA	SURGE ARRESTOR
SEC	SECONDARY
SPD	SURGE PROTECTION DEVICE
SSBJ	SUPPLY SIDE BONDING JUMPER
ST	SHUNT TRIP
STP	SHIELDED TWISTED PAIR
SW	SWITCH
TBD	TO BE DETERMINED
TP	TWISTED PAIR
TYP	TYPICAL
V	VOLT
VA	VOLT–AMPERE
W	WATT
WP	WEATHERPROOF
XFMR	TRANSFORMER
ø	DIAMETER OR PHASE

NOTES SPECIFIC TO CONNECTICUT

ADOPTED NEC VERSION: 2017

UTILITY: EVERSOURCE

UTILITY DISCONNECT SWITCH REQUIREMENTS:
AN EXTERNAL DISCONNECT AT THE PCC OR AT ANOTHER MUTUALLY AGREEABLE POINT THAT IS ACCESSIBLE TO COMPANY PERSONNEL AT ALL HOURS OF ALL DAYS AND THAT CAN BE OPENED FOR ISOLATION IF REQUIRED. THE SWITCH SHALL BE GANG OPERATED, HAVE A VISIBLE AIR GAP BETWEEN SWITCH CONTACTS, BE RATED TO INTERRUPT THE MAXIMUM GENERATOR OUTPUT AND BE CAPABLE OF BEING LOCKED OPEN, TAGGED AND GROUNDED ON COMPANY SIDE BY COMPANY PERSONNEL. THIS DEVICE MAY BE OPERATED MANUALLY, REMOTELY OR THROUGH THE OPERATION OF A COMPANY TRANSFER TRIP SCHEME.

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262
STATE OF CONNECTICUT RICHARD A. IVINS PEN.0029262 LICENSED PROFESSIONAL ENGINEER

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

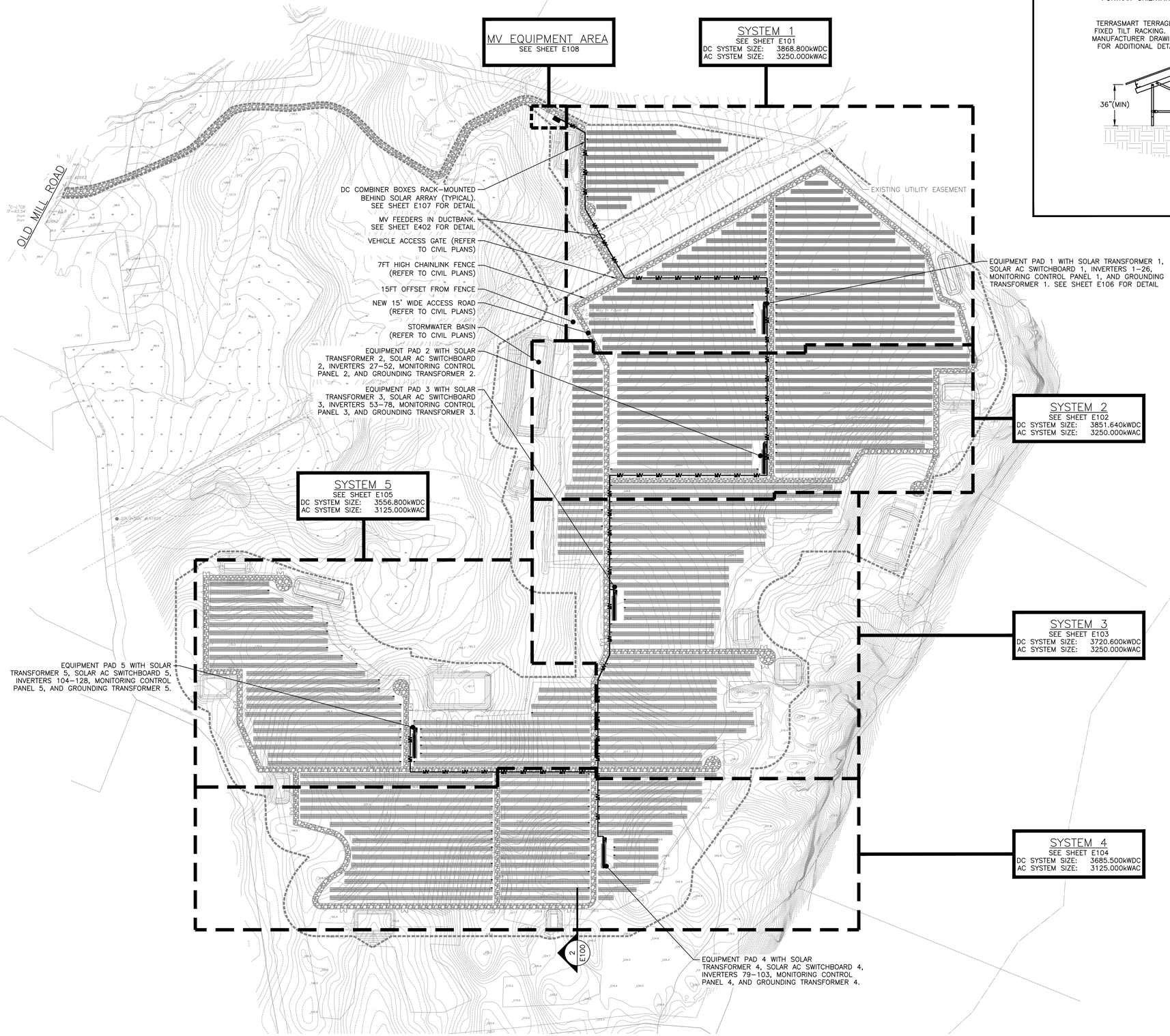
DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
ELECTRICAL NOTES & SYMBOL LIST

DRAWING #
E001

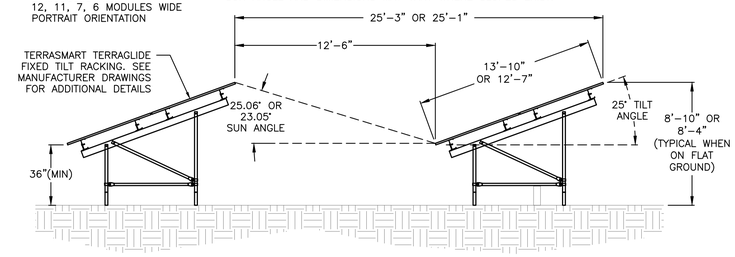
PLOT DATE: 3/17/2021 4:03 PM



1 E100 AC ELECTRICAL PLAN
SCALE: 1" = 150'-0"

TYPICAL TABLE SIZE
2 MODULES HIGH
12, 11, 7, 6 MODULES WIDE
PORTRAIT ORIENTATION

RACKING DIMENSIONS SHOWN ARE TYPICAL FOR FLAT GRADE. SUN ANGLE AND DIMENSIONS MAY VARY WHERE SLOPES EXIST.



2 E100 RACKING DETAIL
SCALE: NONE

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	JD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. MINS
CT LICENSE No. 0023452

DEVELOPER

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT 0° AZIMUTH

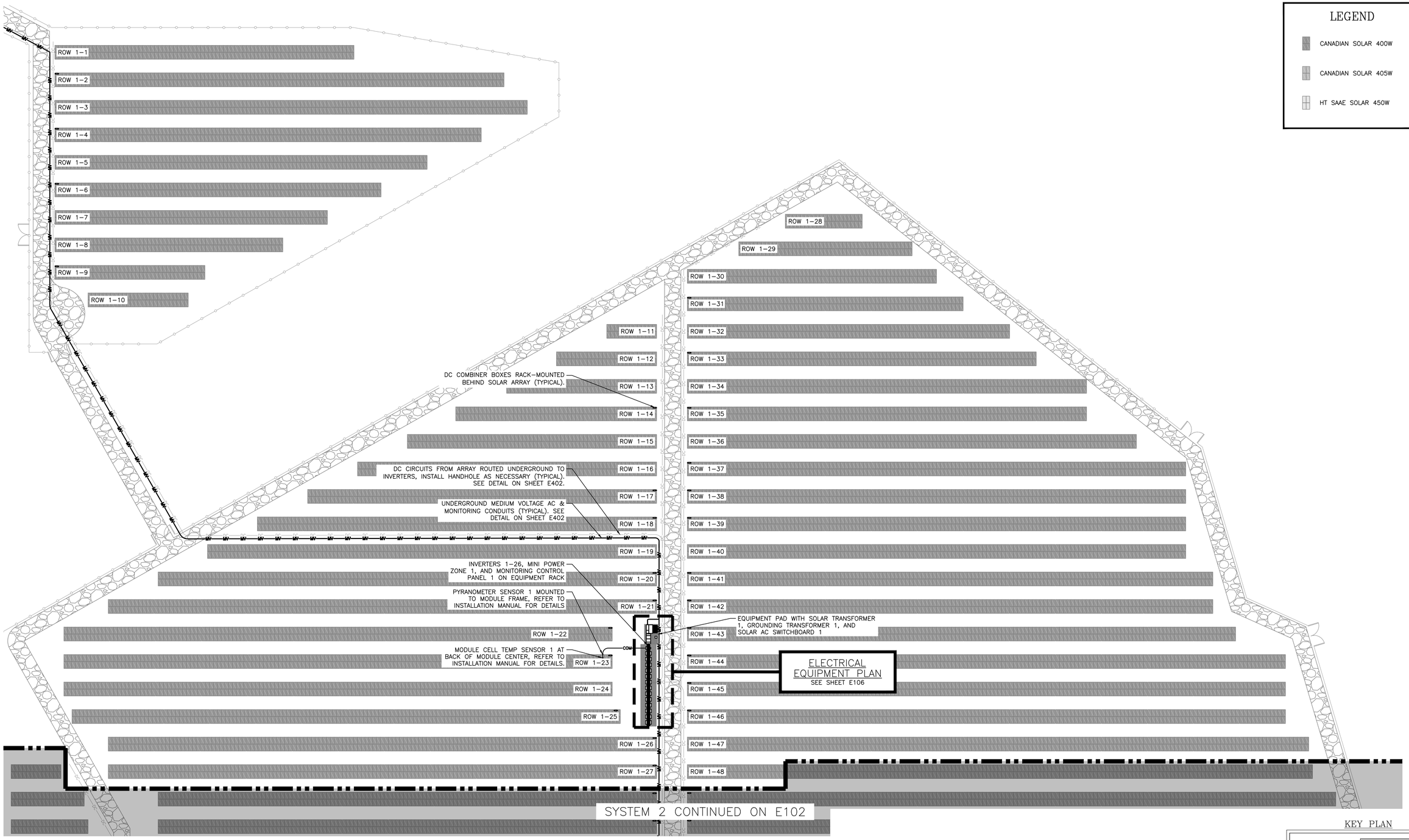
PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
AC ELECTRICAL PLAN

DRAWING #
E100

RULER IN INCHES:

PLOT DATE: 3/17/2021 4:03 PM



LEGEND

- CANADIAN SOLAR 400W
- CANADIAN SOLAR 405W
- HT SAAE SOLAR 450W

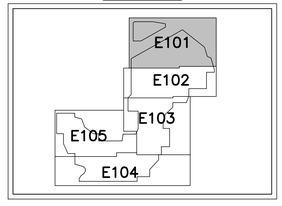
1 / E101 PARTIAL ELECTRICAL PLAN – SYSTEM 1
SCALE: 1" = 40'–0"

N

LINETYPE LEGEND

- —DC— DC CIRCUIT IN CONDUIT
- —MV— MV CIRCUIT IN CONDUIT
- —COM— COMMUNICATIONS

KEY PLAN



DRAWING TITLE
PARTIAL ELECTRICAL PLAN
SYSTEM 1

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

DEVELOPER
Greenskies
a Clean Focus company

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 13,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

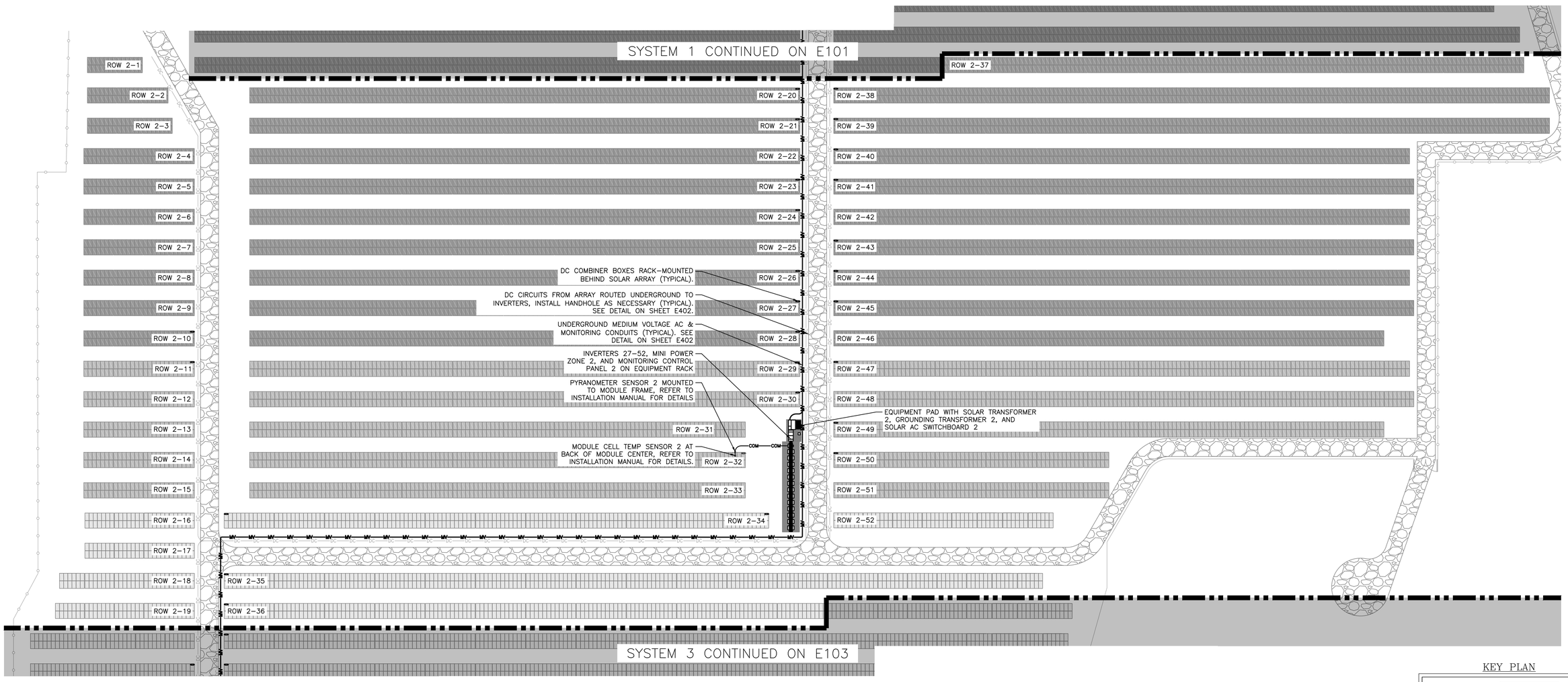
DRAWING #
E101

RULER IN INCHES:

PLOT DATE: 3/17/2021 4:04 PM

LEGEND

- CANADIAN SOLAR 400W
- CANADIAN SOLAR 405W
- HT SAAE SOLAR 450W



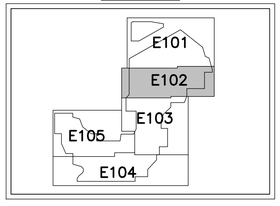
1 / E102 PARTIAL ELECTRICAL PLAN – SYSTEM 2
SCALE: 1" = 40'-0"

N

LINETYPE LEGEND

- —DC— DC CIRCUIT IN CONDUIT
- —MV— MV CIRCUIT IN CONDUIT
- —COM— COMMUNICATIONS

KEY PLAN



DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023262

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683,340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

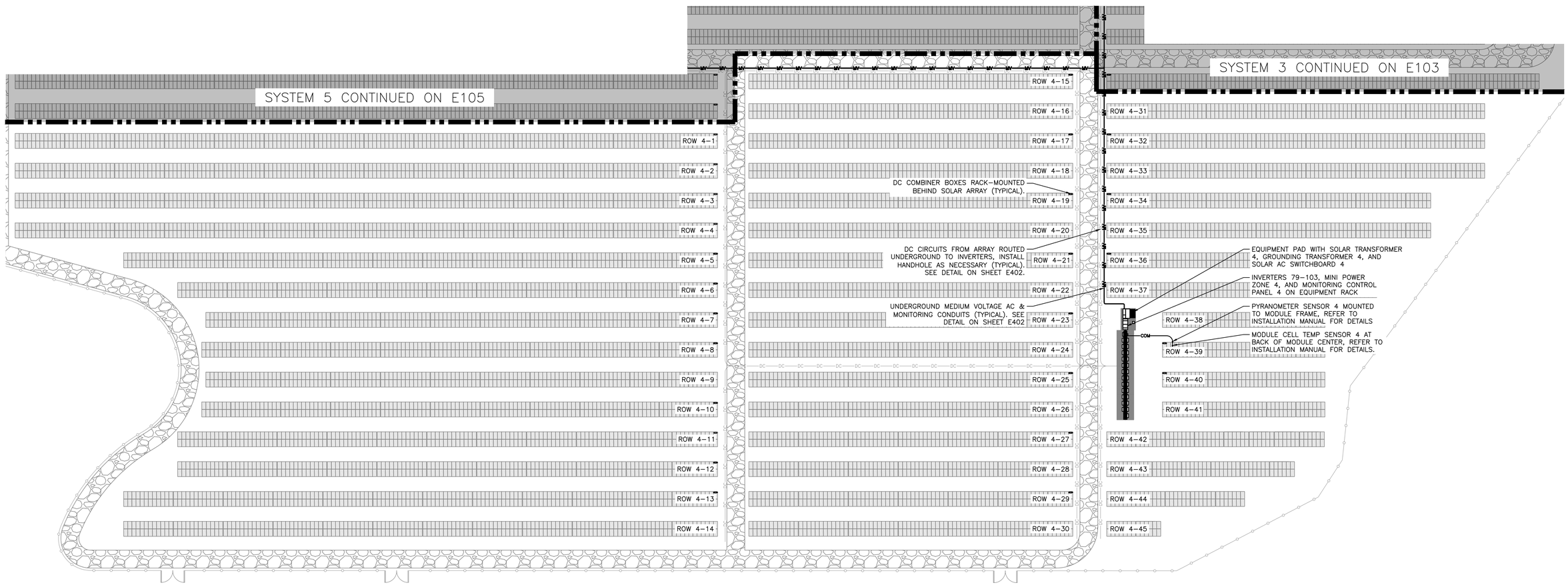
PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
PARTIAL ELECTRICAL PLAN
SYSTEM 2

DRAWING #
E102

RULER IN INCHES:

PLOT DATE: 3/17/2021 4:04 PM



LEGEND

- CANADIAN SOLAR 400W
- CANADIAN SOLAR 405W
- HT SAAE SOLAR 450W

1 / E104 PARTIAL ELECTRICAL PLAN – SYSTEM 4

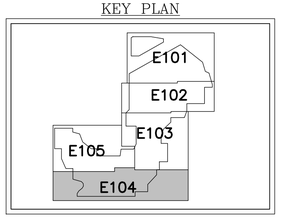
SCALE: 1" = 40'-0"

N

LINETYPE LEGEND

- —DC— DC CIRCUIT IN CONDUIT
- —MV— MV CIRCUIT IN CONDUIT
- —COM— COMMUNICATIONS

KEY PLAN



DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0029362

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

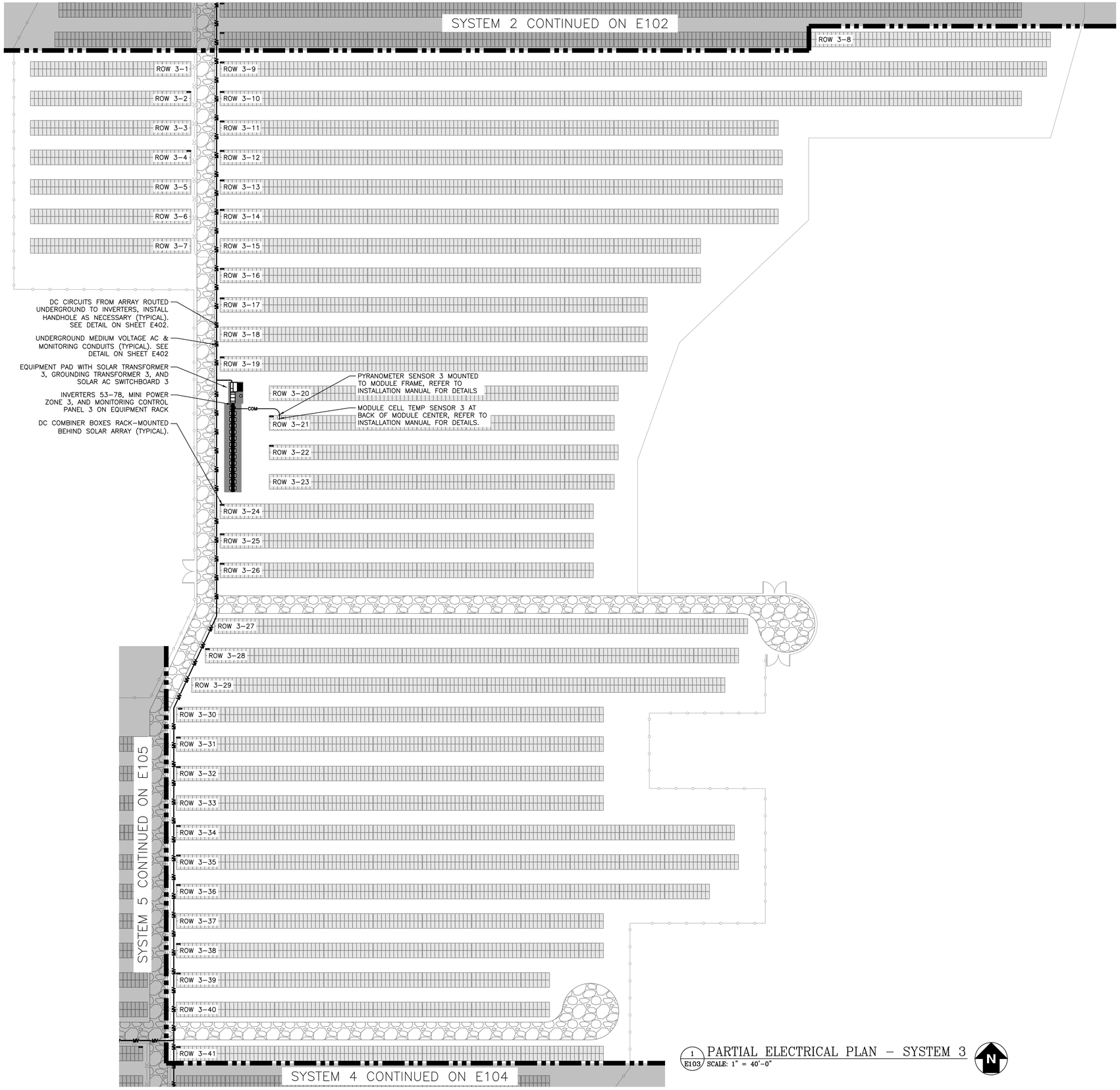
DC SYSTEM SIZE: 18,683,340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
PARTIAL ELECTRICAL PLAN
SYSTEM 4

DRAWING #
E104

RULER IN INCHES:



1 E103 PARTIAL ELECTRICAL PLAN – SYSTEM 3
SCALE: 1" = 40'-0"

N

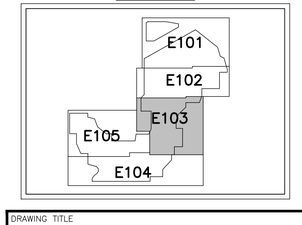
LEGEND

- CANADIAN SOLAR 400W
- CANADIAN SOLAR 405W
- HT SAAE SOLAR 450W

LINETYPE LEGEND

- DC — DC CIRCUIT IN CONDUIT
- MV — MV CIRCUIT IN CONDUIT
- COM — COMMUNICATIONS

KEY PLAN



DRAWING TITLE
PARTIAL ELECTRICAL PLAN
SYSTEM 3

DRAWING #
E103

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0029362

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

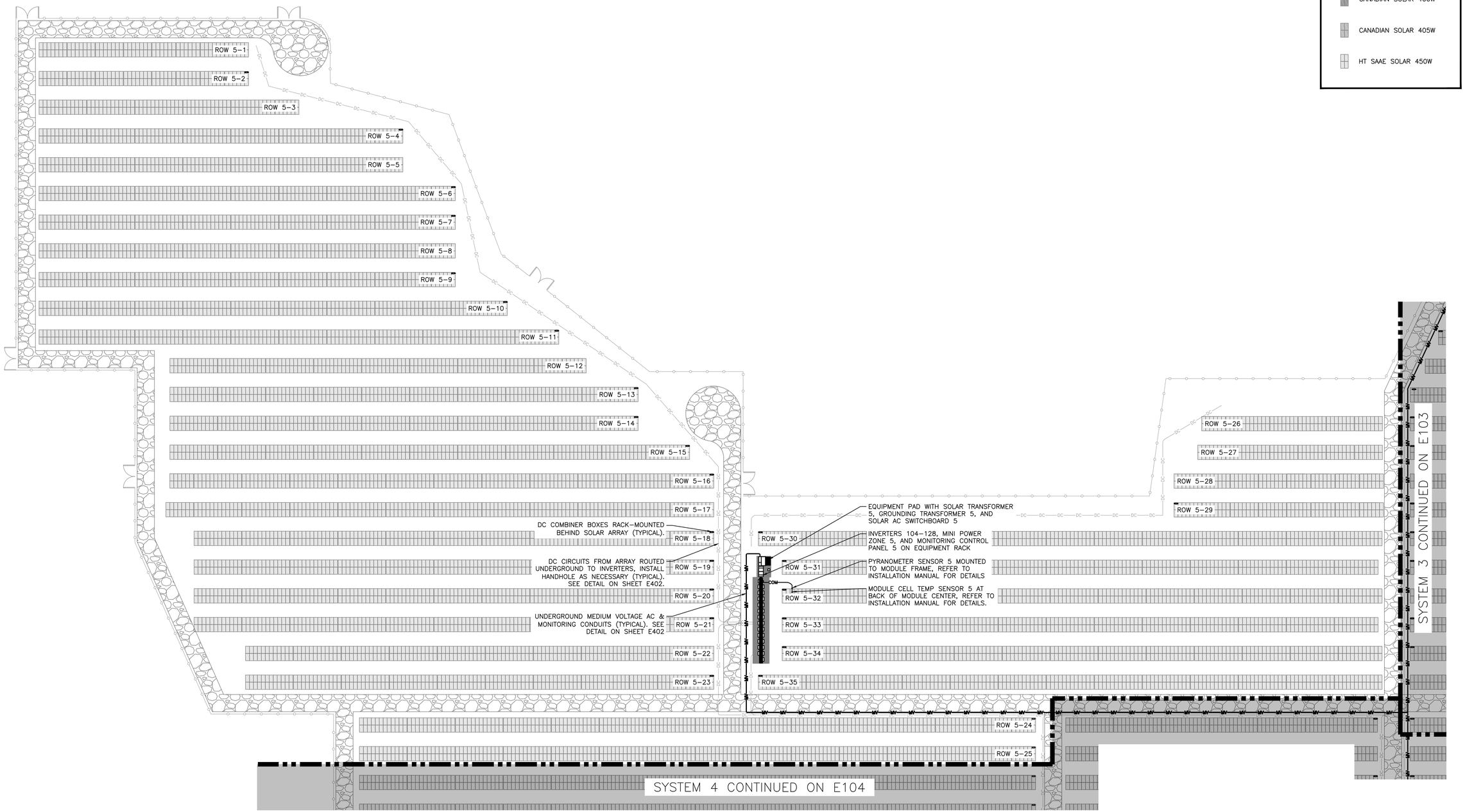
PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

PLOT DATE: 3/17/2021 4:05 PM
RULER IN INCHES:

PLOT DATE: 3/17/2021 4:05 PM



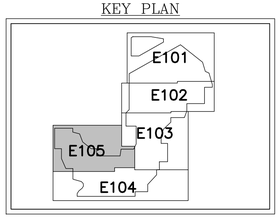
LEGEND

- CANADIAN SOLAR 400W
- CANADIAN SOLAR 405W
- HT SAAE SOLAR 450W

1 (E105) PARTIAL ELECTRICAL PLAN – SYSTEM 5
SCALE: 1" = 40'-0"

N

KEY PLAN



LINETYPE LEGEND

- —DC— DC CIRCUIT IN CONDUIT
- —MV— MV CIRCUIT IN CONDUIT
- —COM— COMMUNICATIONS

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,883,340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

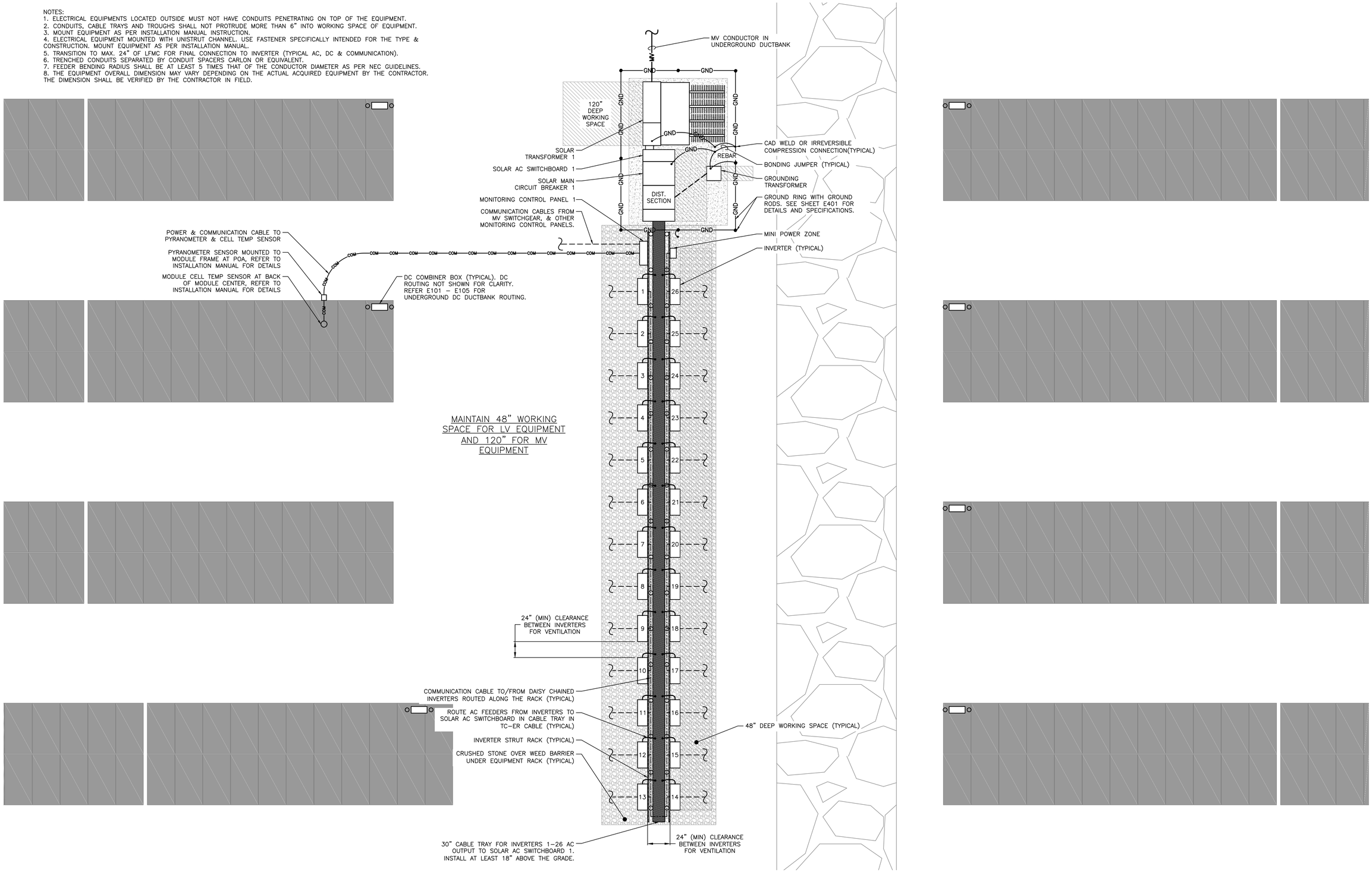
PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
PARTIAL ELECTRICAL PLAN
SYSTEM 5

DRAWING #
E105

RULER IN INCHES:

NOTES:
1. ELECTRICAL EQUIPMENTS LOCATED OUTSIDE MUST NOT HAVE CONDUITS PENETRATING ON TOP OF THE EQUIPMENT.
2. CONDUITS, CABLE TRAYS AND TROUGHS SHALL NOT PROTRUDE MORE THAN 6" INTO WORKING SPACE OF EQUIPMENT.
3. MOUNT EQUIPMENT AS PER INSTALLATION MANUAL INSTRUCTION.
4. ELECTRICAL EQUIPMENT MOUNTED WITH UNISTRUT CHANNEL. USE FASTENER SPECIFICALLY INTENDED FOR THE TYPE & CONSTRUCTION. MOUNT EQUIPMENT AS PER INSTALLATION MANUAL.
5. TRANSITION TO MAX. 24" OF LFMC FOR FINAL CONNECTION TO INVERTER (TYPICAL AC, DC & COMMUNICATION).
6. TRENCHED CONDUITS SEPARATED BY CONDUIT SPACERS CARLON OR EQUIVALENT.
7. FEEDER BENDING RADIUS SHALL BE AT LEAST 5 TIMES THAT OF THE CONDUCTOR DIAMETER AS PER NEC GUIDELINES.
8. THE EQUIPMENT OVERALL DIMENSION MAY VARY DEPENDING ON THE ACTUAL ACQUIRED EQUIPMENT BY THE CONTRACTOR. THE DIMENSION SHALL BE VERIFIED BY THE CONTRACTOR IN FIELD.



1 E106 TYPICAL INVERTER & ELECTRICAL EQUIPMENT PLAN
SCALE: 3/16" = 1'-0"

LINETYPE LEGEND
- ABOVE-GROUND CONDUIT
- UNDER-GROUND CONDUIT
- DC — DC CIRCUIT IN CONDUIT
- AC — AC CIRCUIT IN CONDUIT
- MV — MV CIRCUIT IN CONDUIT
- COM — COMMUNICATIONS
- GND — GROUND RING

DRAWING TITLE: TYPICAL INVERTER & ELECTRICAL EQUIPMENT PLAN

DRAWING #: E106

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

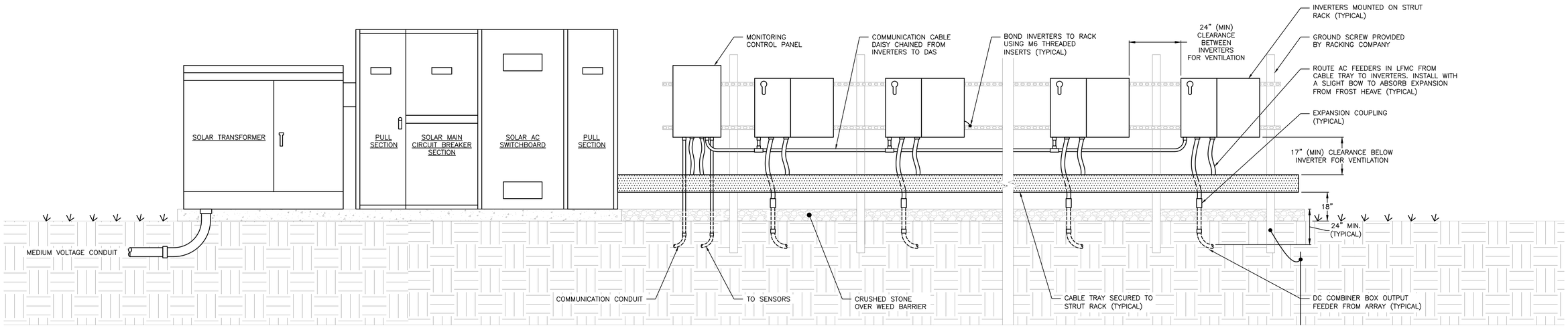
PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683,340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

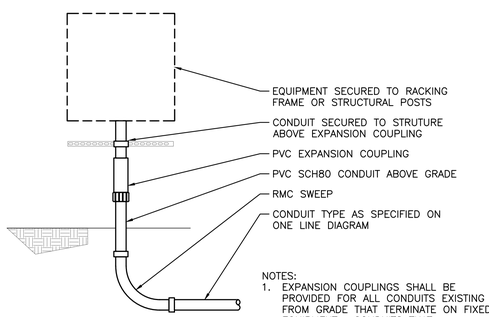
PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

PLOT DATE: 3/17/2021 4:05 PM

RULER IN INCHES:

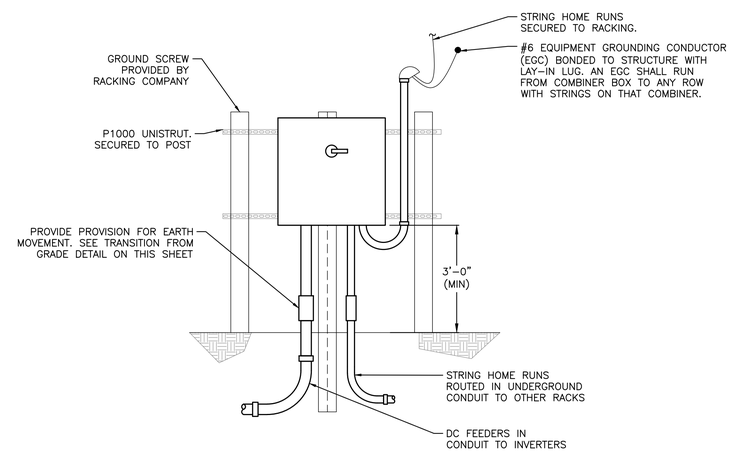


1 / E107 TYPICAL ELECTRICAL EQUIPMENT AREA ELEVATION
SCALE: NONE



NOTES:
1. EXPANSION COUPLINGS SHALL BE PROVIDED FOR ALL CONDUITS EXISTING FROM GRADE THAT TERMINATE ON FIXED EQUIPMENT. CONDUITS THAT TERMINATE AT WEATHER HEADS DO NOT REQUIRE EXPANSION COUPLING.
2. RMC SWEEPS REQUIRED IF WIRE PULL IS MADE AT THIS END. PVC SCH80 SWEEPS ALLOWED AT OPPOSITE END OF PULL (SOURCE OF WIRE)

2 / E107 TYPICAL CONDUIT TRANSITION ABOVE GRADE
SCALE: NONE



3 / E107 TYPICAL COMBINER BOX ELEVATION – FRONT VIEW
SCALE: NONE

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0029362

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

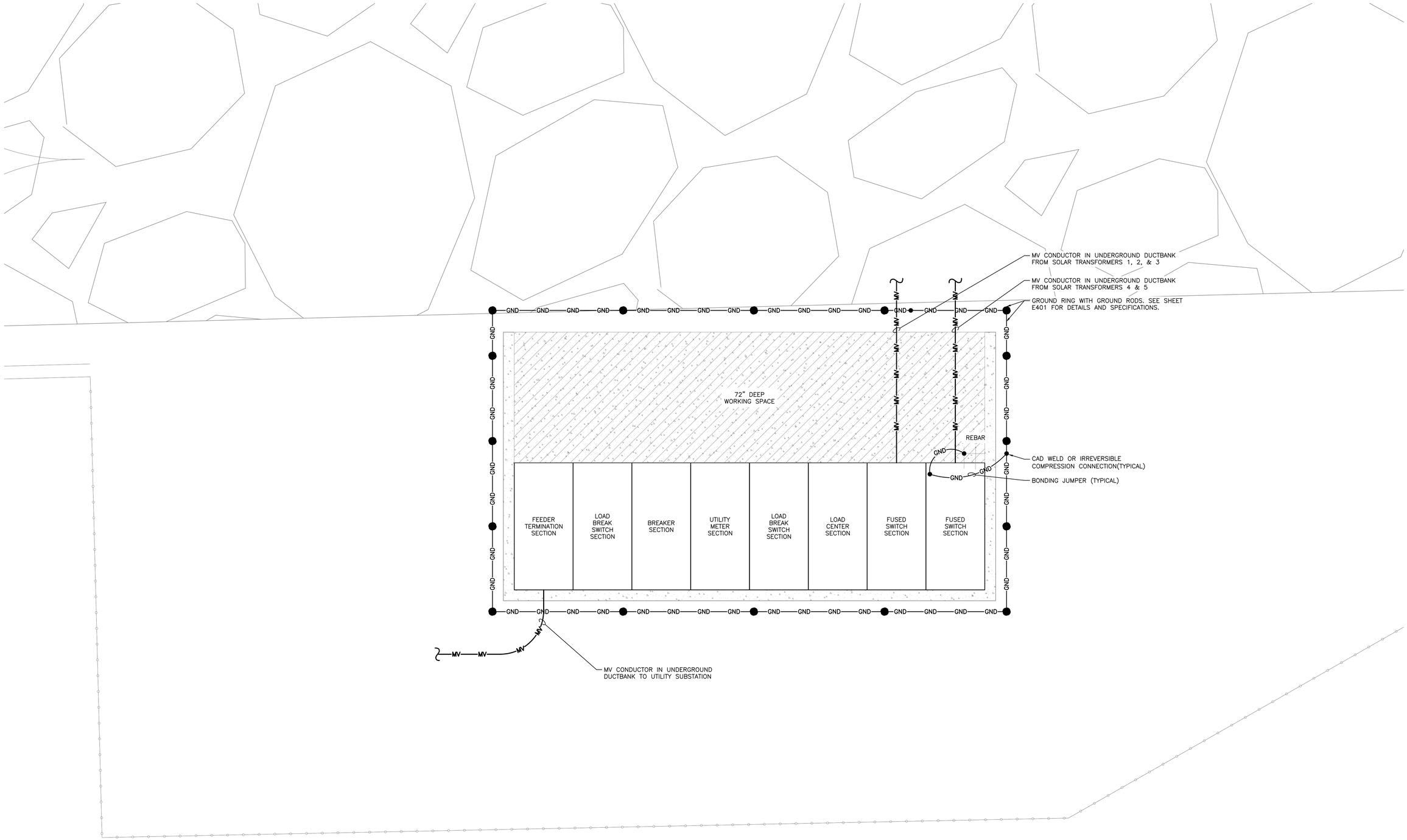
PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE: EQUIPMENT MOUNTING DETAILS

DRAWING #: E107

PLOT DATE: 3/17/2021 4:06 PM

RULER IN INCHES:



1 E108 MEDIUM VOLTAGE EQUIPMENT PLAN
SCALE: 1/2" = 1'-0"

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0029362

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

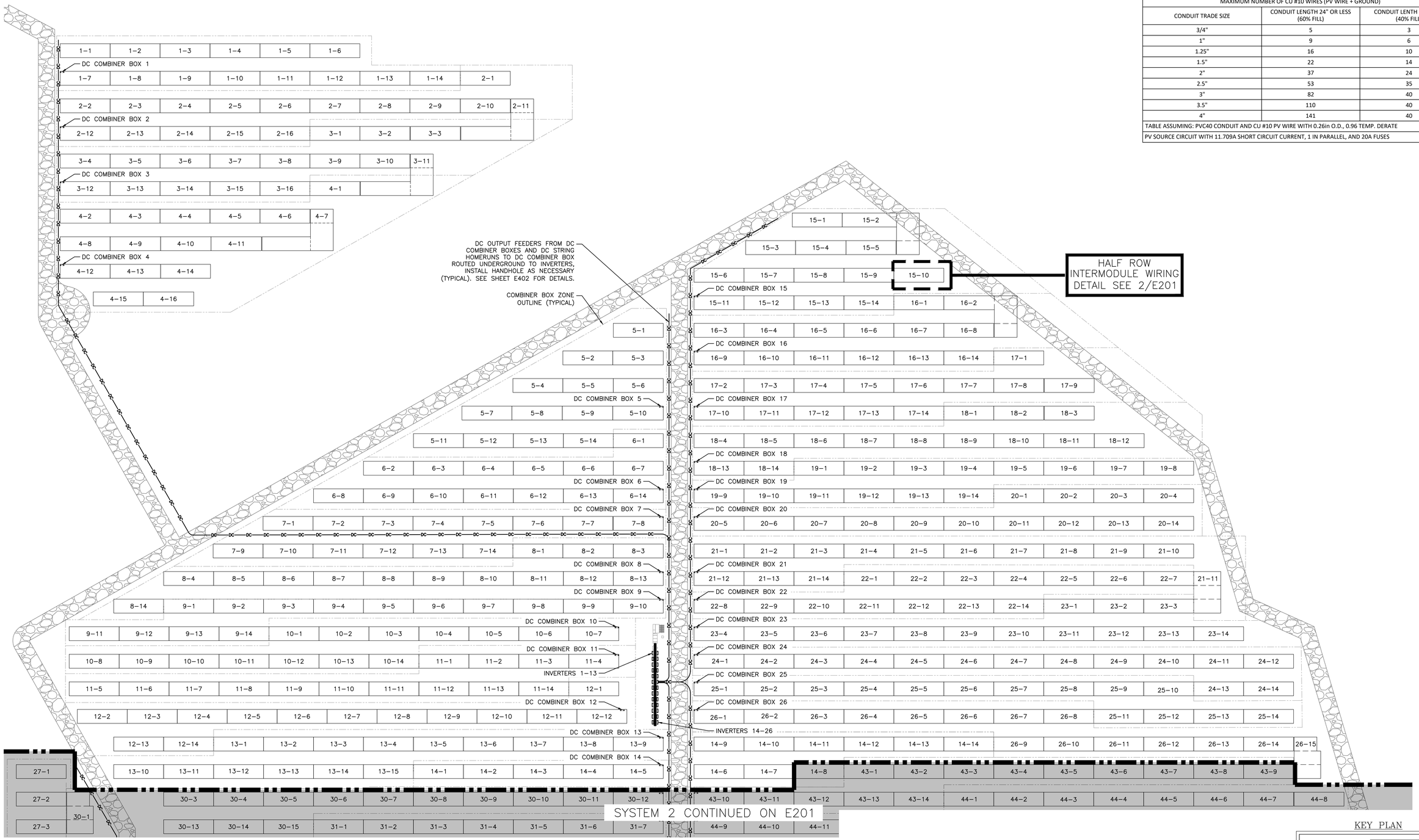
DRAWING TITLE
MEDIUM VOLTAGE EQUIPMENT PLAN

DRAWING #
E108

PLOT DATE: 3/17/2021 4:07 PM

RULER IN INCHES:

CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENTH OVER 24" (40% FILL)
3/4"	5	3
1"	9	6
1.25"	16	10
1.5"	22	14
2"	37	24
2.5"	53	35
3"	82	40
3.5"	110	40
4"	141	40
TABLE ASSUMING: PVC40 CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 0.96 TEMP. DERATE		
PV SOURCE CIRCUIT WITH 11.709A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND 20A FUSES		



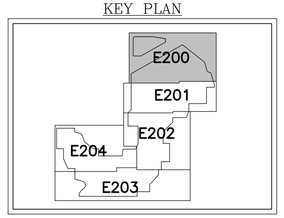
1 E200 PARTIAL DC ELECTRICAL PLAN – SYSTEM 1
SCALE: 1" = 40'-0"

STRING LABEL KEY

2–3
STRING #
INVERTER #

IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

KEY PLAN



DRAWING TITLE
PARTIAL DC ELECTRICAL PLAN SYSTEM 1

DRAWING #
E200

PROJECT
GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DEVELOPER
Greenskies a Clean Focus company

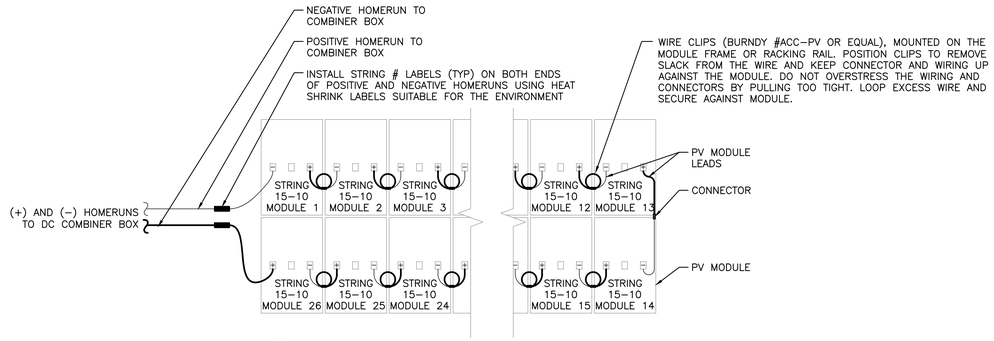
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0029362

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

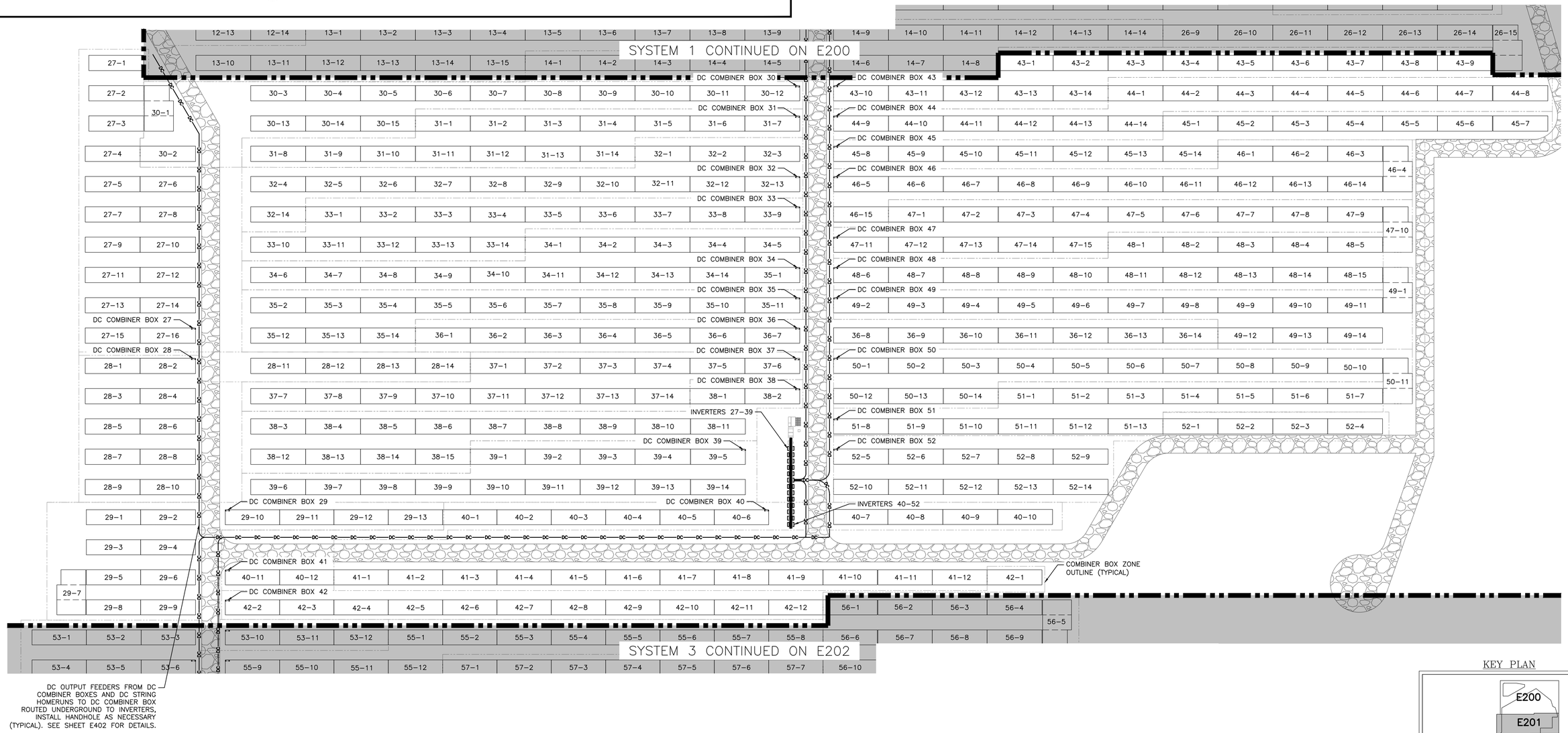
PLOT DATE: 3/17/2021 4:07 PM

RULER IN INCHES:



1 E201 HALF ROW INTERMODULE WIRING DETAIL
SCALE: NONE

CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENTH OVER 24" (40% FILL)
3/4"	5	3
1"	9	6
1.25"	16	10
1.5"	22	14
2"	37	24
2.5"	53	35
3"	82	40
3.5"	110	40
4"	141	40
TABLE ASSUMING: PVC40 CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 0.96 TEMP. DERATE		
PV SOURCE CIRCUIT WITH 11.709A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND 20A FUSES		



1 E201 PARTIAL DC ELECTRICAL PLAN – SYSTEM 2
SCALE: 1" = 40'-0"

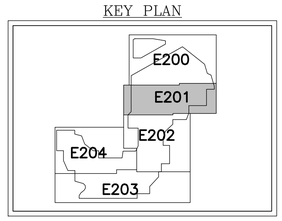
N

STRING LABEL KEY

2–3
STRING #
INVERTER #

IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

KEY PLAN



DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
PARTIAL DC ELECTRICAL PLAN SYSTEM 2

DRAWING #
E201

PLOT DATE: 3/17/2021 4:07 PM

RULER IN INCHES:

1 E202 PARTIAL DC ELECTRICAL PLAN – SYSTEM 3
SCALE: 1" = 40'-0"

N

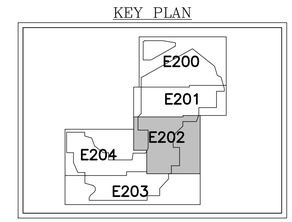
STRING LABEL KEY

2–3
STRING #
INVERTER #

CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENTH OVER 24" (40% FILL)
3/4"	5	3
1"	9	6
1.25"	16	10
1.5"	22	14
2"	37	24
2.5"	53	30
3"	82	30
3.5"	110	30
4"	141	30
TABLE ASSUMING: PVC40 CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 0.96 TEMP. DERATE		
PV SOURCE CIRCUIT WITH 12.999A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND 20A FUSES		

IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

KEY PLAN



DRAWING TITLE
PARTIAL DC ELECTRICAL PLAN
SYSTEM 3

DRAWING #
E202

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DEVELOPER
Greenskies
a Clean Focus company

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

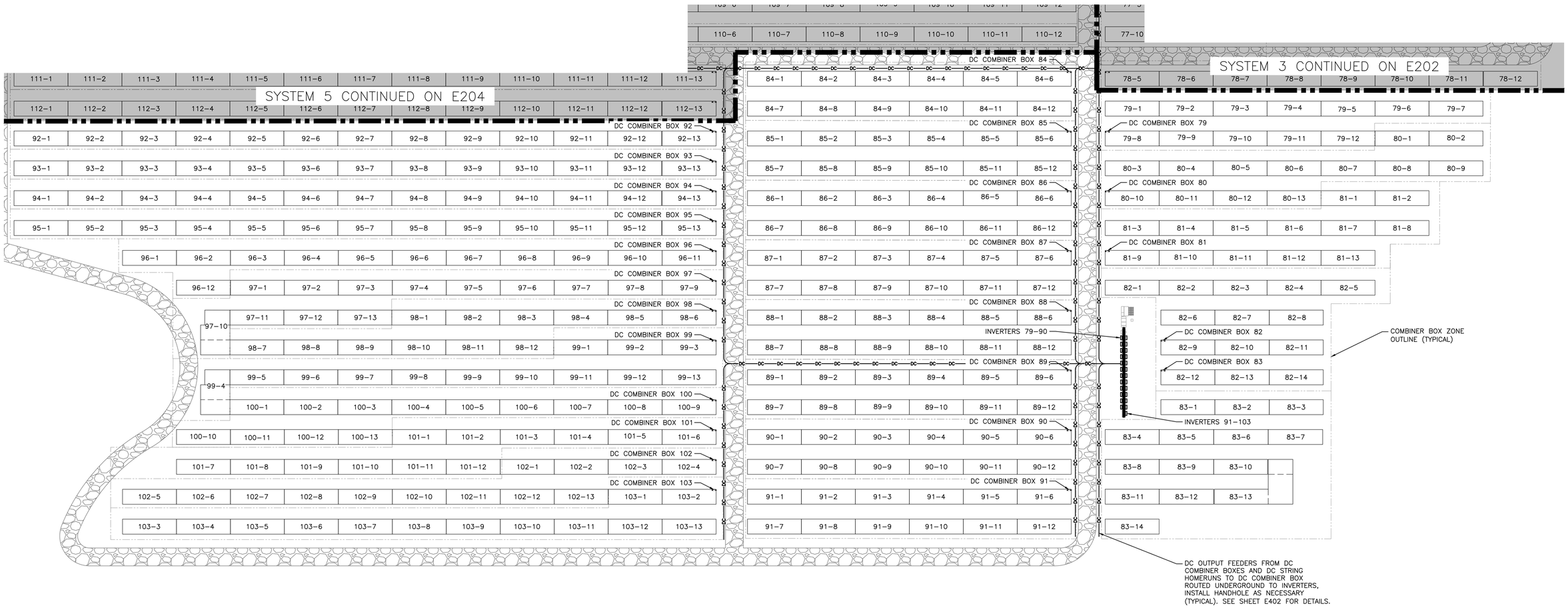
PUREPOWER ENGINEERING
111 RIVER STREET HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0029362

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PLOT DATE: 3/17/2021 4:07 PM

RULER IN INCHES:

CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENTH OVER 24" (40% FILL)
3/4"	5	3
1"	9	6
1.25"	16	10
1.5"	22	14
2"	37	24
2.5"	53	30
3"	82	30
3.5"	110	30
4"	141	30
TABLE ASSUMING: PVC40 CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 0.96 TEMP. DERATE		
PV SOURCE CIRCUIT WITH 12.999A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND 20A FUSES		

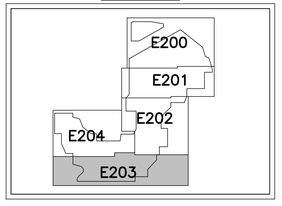


1 E203 PARTIAL DC ELECTRICAL PLAN – SYSTEM 4
SCALE: 1" = 40'-0"

STRING LABEL KEY
2–3
STRING #
INVERTER #

IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

KEY PLAN



DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 00293562

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

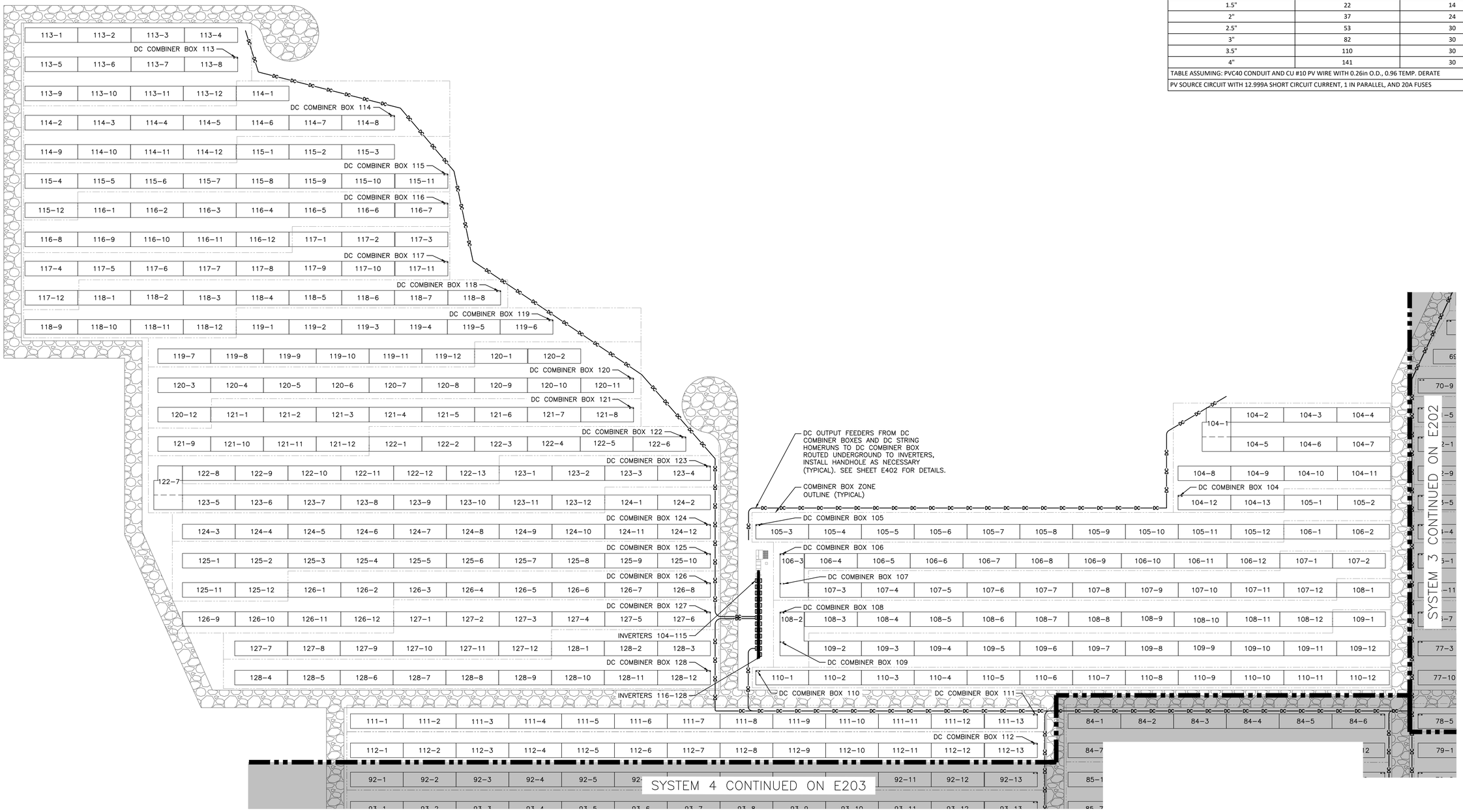
DRAWING TITLE
PARTIAL DC ELECTRICAL PLAN
SYSTEM 4

DRAWING #
E203

PLOT DATE: 3/17/2021 4:07 PM

RULER IN INCHES:

CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENTH OVER 24" (40% FILL)
3/4"	5	3
1"	9	6
1.25"	16	10
1.5"	22	14
2"	37	24
2.5"	53	30
3"	82	30
3.5"	110	30
4"	141	30
TABLE ASSUMING: PVC40 CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 0.96 TEMP. DERATE		
PV SOURCE CIRCUIT WITH 12.999A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND 20A FUSES		



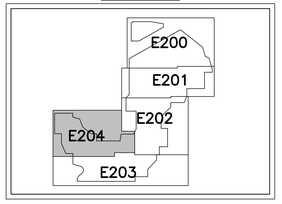
1 E204 PARTIAL DC ELECTRICAL PLAN – SYSTEM 5
SCALE: 1" = 40'-0"

STRING LABEL KEY

2–3
STRING #
INVERTER #

IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

KEY PLAN



DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023262

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683,340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT 0° AZIMUTH

PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE: PARTIAL DC ELECTRICAL PLAN SYSTEM 5

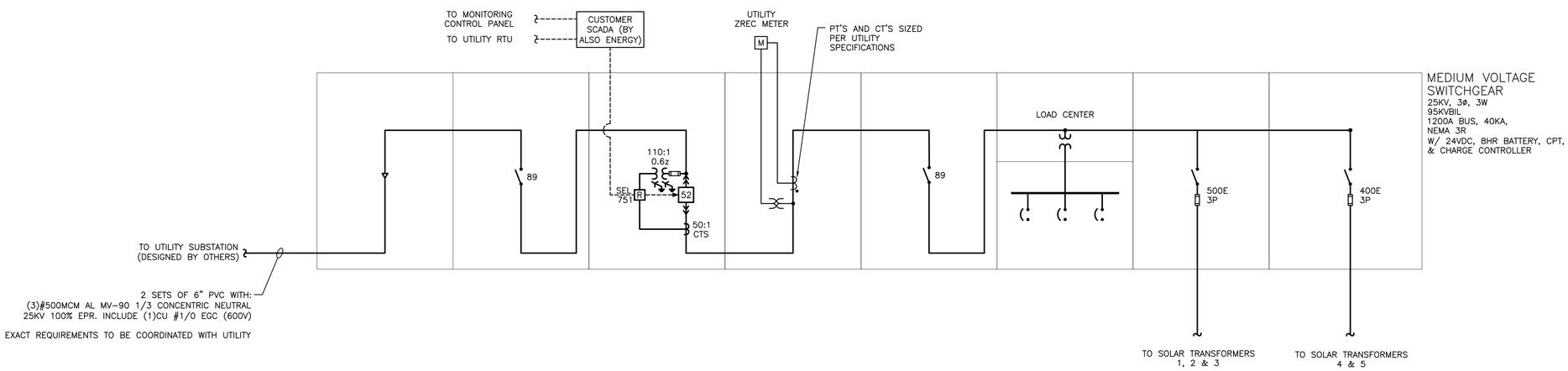
DRAWING #: E204

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

EXTERNAL RELAY SETTINGS								
ANSI ELEMENT #	Pickup	Real	Units	Level	Delay (sec)	Total Clear Time (sec)*	Curve	Description
27	2.33	11650	V	88%	1.95	2.00		Slow UV
27	1.32	6600	V	50%	1.05	1.10		Fast UV
59	2.92	14600	V	110%	1.95	2.00		Slow OV
59	3.18	15900	V	120%	0.11	0.16		Fast OV
59N	0.34	1700	V	13%	1.95	2.00		Neutral Shift
81U-1	56.50	56.50	Hz	94%	0.11	0.16		Fast UF
81U-2	58.50	58.50	Hz	98%	299.95	300.00		Slow UF
81O-1	62.00	62.00	Hz	103%	0.11	0.16		Fast OF
81O-2	61.20	61.20	Hz	102%	299.95	300.00		Slow OF
51N	0.50	100	A	25%	1.95	2.00	U4	Timed Neutral OC
50P	30.12	6024	A	1500%	0.00	0.05		Instant. Phase OC
51P	3.01	602	A	150%	1.95	2.00	U4	Timed Phase OC
79	2.52	12600	V	95%	299.95	300.00		Min Reclosing Voltage Value
79	2.78	13900	V	105%	299.95	300.00		Max Reclosing Voltage Value
79	59.50	59.50	Hz	99%	299.95	300.00		Min Reclosing Frequency Value
79	60.50	60.50	Hz	101%	299.95	300.00		Max Reclosing Frequency Value
401.63A USED FOR 50/51 ELEMENTS				13279V USED FOR 27/59 ELEMENTS				
CT RATIO FACTOR = 200				LEA RATIO FACTOR = 5000				
				* total clear time includes 0.05 sec breaker opening time				

OVERALL SYSTEM SUMMARY	
DC SYSTEM SIZE	18,683.340 KW
AC SYSTEM SIZE	16,000.000 KW/19,200.000 KVA
MODULE	CANADIAN SOLAR CS3W-400PB-AG CANADIAN SOLAR CS3W-405PB-AG HT-SAAE HT72-166M 450W
MODULE QTY	15,288 / 2,548 / 25,636
INVERTER	SOLECTRIA XGI-1500 125/150
INVERTER QTY	128



1 E300 ONE LINE DIAGRAM – MEDIUM VOLTAGE
SCALE: NONE

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	JD	RI

PUREPOWER ENGINEERING
111 RIVER STREET HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023262

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
ONE LINE DIAGRAM
MEDIUM VOLTGAE

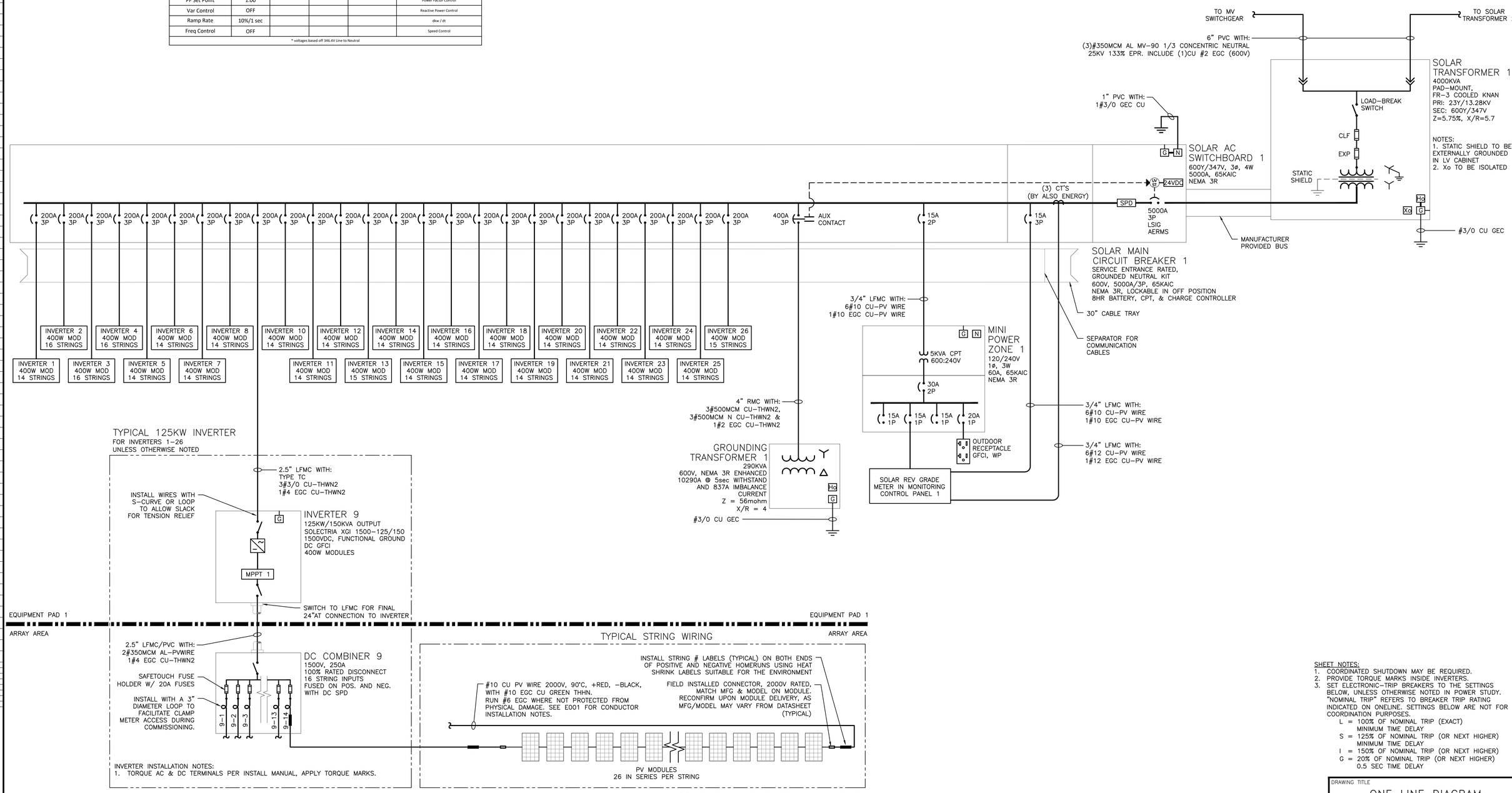
DRAWING #
E300

PLOT DATE: 3/17/2021 5:47 PM

RULER IN INCHES:

INVERTER INTERNAL PROTECTIVE SETTINGS: UL1741-SA COMPLIANT					
ANSI ELEMENT #	Pickup	Units*	Level	Total Clear Time (sec)	Description
27	304.8	V	88%	2.00	Slow UV
27	173.2	V	50%	1.10	Fast UV
59	381.1	V	110%	2.00	Slow OV
59	415.7	V	120%	0.16	Fast OV
81U-1	56.50	Hz	94%	0.16	Fast UF
81U-2	58.50	Hz	98%	300.00	Slow UF
81O-1	62.00	Hz	103%	0.16	Fast OF
81O-2	61.20	Hz	102%	300.00	Slow OF
79	329.1	V	95%	300.00	Min Reclosing Voltage Value
79	363.7	V	105%	300.00	Max Reclosing Voltage Value
79	59.6	Hz	99%	300.00	Min Reclosing Frequency Value
79	60.5	Hz	101%	300.00	Max Reclosing Frequency Value
INVERTER INTERNAL OPERATION SETTINGS					
PF Set Point	1.00				Power Factor Control
Var Control	OFF				Reactive Power Control
Ramp Rate	10%/1 sec				dkw / dt
Freq Control	OFF				Speed Control
* voltages based off 346.4V Line to Neutral					

SYSTEM 1 SUMMARY	
DC SYSTEM SIZE	3,868.800 KW
AC SYSTEM SIZE	3,250.000 KW / 3,900.000 KVA
MODULE	CANADIAN SOLAR CS3W-400PB-AG
MODULE QTY	9,672
INVERTER	SOLECTRIA XGI-1500 125/150
INVERTER QTY	26



1 E301 ONE LINE DIAGRAM – SYSTEM 1
SCALE: NONE

SHEET NOTES:
1. COORDINATED SHUTDOWN MAY BE REQUIRED.
2. PROVIDE TORQUE MARKS INSIDE INVERTERS.
3. SET ELECTRONIC-TRIP BREAKERS TO THE SETTINGS BELOW, UNLESS OTHERWISE NOTED IN POWER STUDY. "NOMINAL TRIP" REFERS TO BREAKER TRIP RATING INDICATED ON ONELINE. SETTINGS BELOW ARE NOT FOR COORDINATION PURPOSES.
   - L = 100% OF NOMINAL TRIP (EXACT) MINIMUM TIME DELAY
   - S = 125% OF NOMINAL TRIP (OR NEXT HIGHER) MINIMUM TIME DELAY
   - I = 150% OF NOMINAL TRIP (OR NEXT HIGHER)
   - G = 20% OF NOMINAL TRIP (OR NEXT HIGHER) 0.5 SEC TIME DELAY

DRAWING TITLE: ONE LINE DIAGRAM SYSTEM 1

DRAWING #: E301

DATE	REVISION DESCRIPTION	PM	ENG CHK	SK	AD	RI
03/17/2021	PERMIT REVIEW SET					

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 00232452

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"

PROJECT #: 01590.07

DC SYSTEM SIZE: 18,883.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

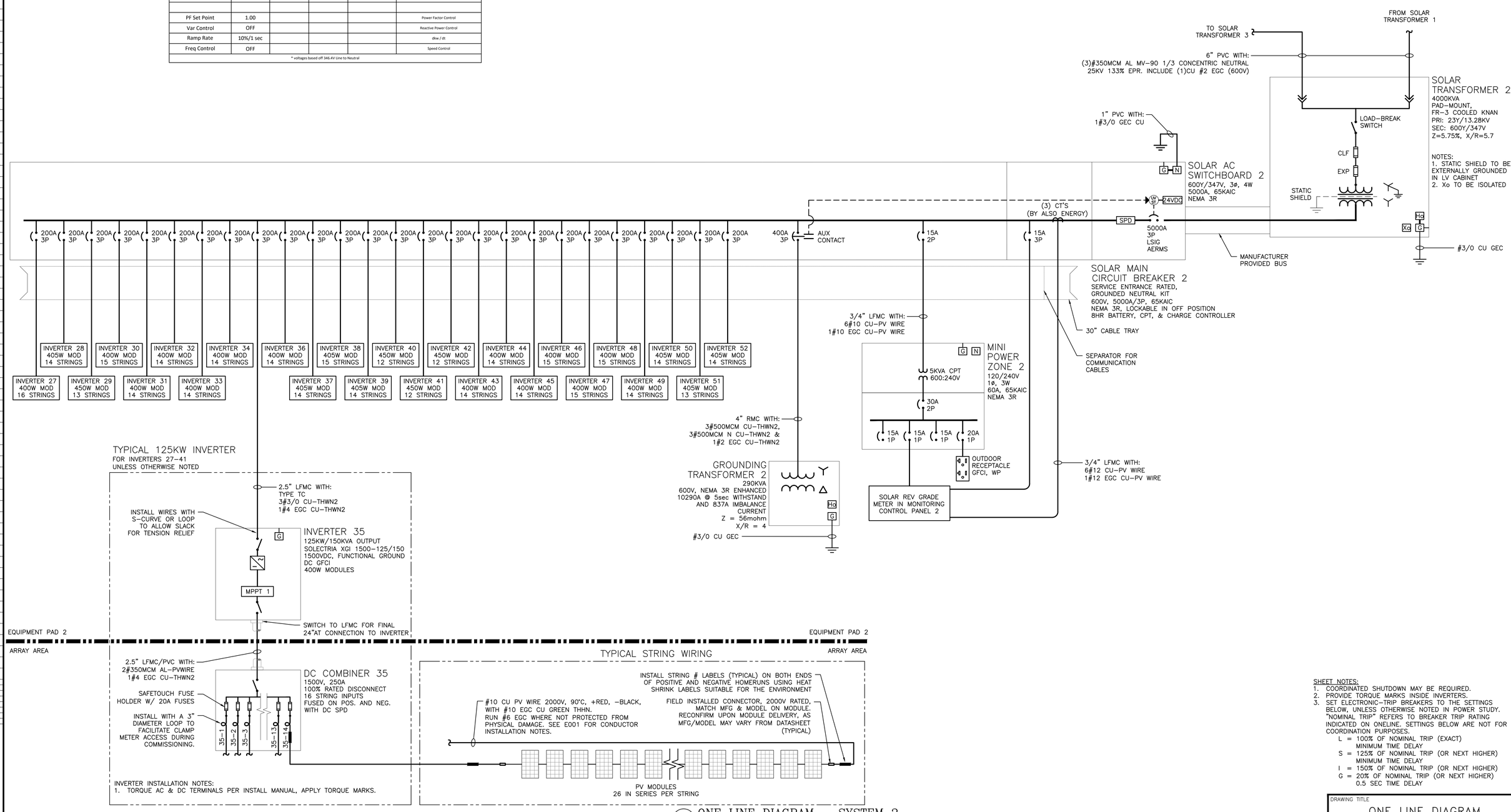
PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

INVERTER INTERNAL PROTECTIVE SETTINGS: UL1741-SA COMPLIANT					
ANSI ELEMENT #	Pickup	Units*	Level	Total Clear Time (sec)	Description
27	304.8	V	88%	2.00	Slow UV
27	173.2	V	50%	1.10	Fast UV
59	381.1	V	110%	2.00	Slow OV
59	415.7	V	120%	0.16	Fast OV
81U-1	56.50	Hz	94%	0.16	Fast UF
81U-2	58.50	Hz	98%	300.00	Slow UF
81O-1	62.00	Hz	103%	0.16	Fast OF
81O-2	61.20	Hz	102%	300.00	Slow OF
79	329.1	V	95%	300.00	Min Reclosing Voltage Value
79	363.7	V	105%	300.00	Max Reclosing Voltage Value
79	59.6	Hz	99%	300.00	Min Reclosing Frequency Value
79	60.5	Hz	101%	300.00	Max Reclosing Frequency Value
INVERTER INTERNAL OPERATION SETTINGS					
PF Set Point	1.00				Power Factor Control
Var Control	OFF				Reactive Power Control
Ramp Rate	10%/1 sec				dkw / dt
Freq Control	OFF				Speed Control
* voltages based off 346.4V Line to Neutral					

SYSTEM 2 SUMMARY	
DC SYSTEM SIZE	3,851.640 KW
AC SYSTEM SIZE	3,250.000 KW / 3,900.000 KVA
MODULE	CANADIAN SOLAR CS3W-400PB-AG CANADIAN SOLAR CS3W-405PB-AG HT-SAAE HT72-166M 450W
MODULE QTY	5,616 / 2,548 / 1,274
INVERTER	SOLECTRIA XGI-1500 125/150
INVERTER QTY	26



1 E302 ONE LINE DIAGRAM – SYSTEM 2
SCALE: NONE

SHEET NOTES:
1. COORDINATED SHUTDOWN MAY BE REQUIRED.
2. PROVIDE TORQUE MARKS INSIDE INVERTERS.
3. SET ELECTRONIC-TRIP BREAKERS TO THE SETTINGS BELOW, UNLESS OTHERWISE NOTED IN POWER STUDY. "NOMINAL TRIP" REFERS TO BREAKER TRIP RATING INDICATED ON ONELINE. SETTINGS BELOW ARE NOT FOR COORDINATION PURPOSES.
   L = 100% OF NOMINAL TRIP (EXACT) MINIMUM TIME DELAY
   S = 125% OF NOMINAL TRIP (OR NEXT HIGHER) MINIMUM TIME DELAY
   I = 150% OF NOMINAL TRIP (OR NEXT HIGHER)
   G = 20% OF NOMINAL TRIP (OR NEXT HIGHER) 0.5 SEC TIME DELAY

DRAWING TITLE
ONE LINE DIAGRAM
SYSTEM 2

DRAWING #
E302

DATE	REVISION DESCRIPTION	PM	ENG	CHK	SK	AD	RI
03/17/2021	PERMIT REVIEW SET						

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. MINS
CT LICENSE No. 00293452

DEVELOPER

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,883.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

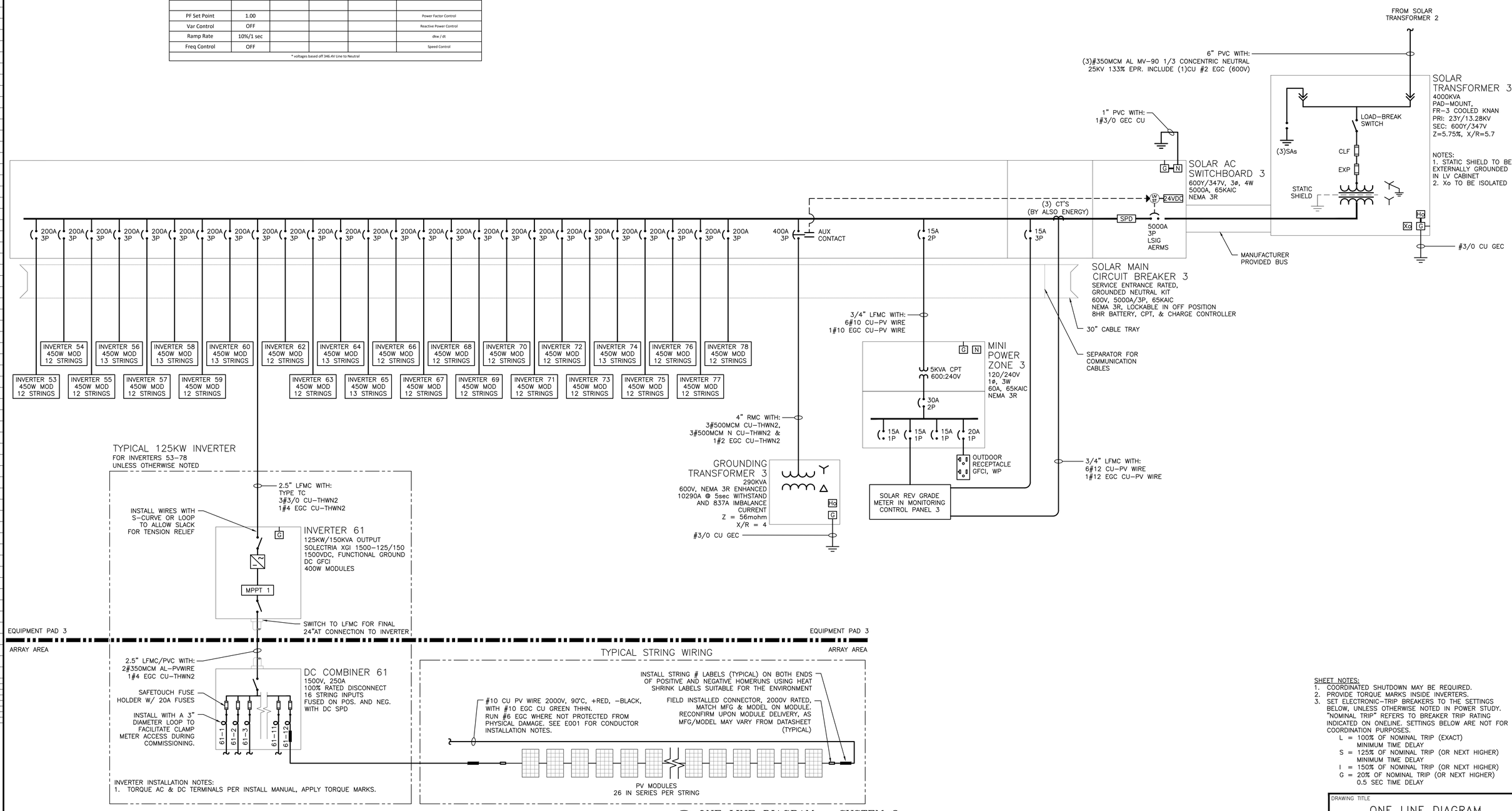
PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

INVERTER INTERNAL PROTECTIVE SETTINGS: UL1741-SA COMPLIANT					
ANSI ELEMENT #	Pickup	Units*	Level	Total Clear Time (sec)	Description
27	304.8	V	88%	2.00	Slow UV
27	173.2	V	50%	1.10	Fast UV
59	381.1	V	110%	2.00	Slow OV
59	415.7	V	120%	0.16	Fast OV
81U-1	56.50	Hz	94%	0.16	Fast UF
81U-2	58.50	Hz	98%	300.00	Slow UF
81O-1	62.00	Hz	103%	0.16	Fast OF
81O-2	61.20	Hz	102%	300.00	Slow OF
79	329.1	V	95%	300.00	Min Reclosing Voltage Value
79	363.7	V	105%	300.00	Max Reclosing Voltage Value
79	59.6	Hz	99%	300.00	Min Reclosing Frequency Value
79	60.5	Hz	101%	300.00	Max Reclosing Frequency Value
INVERTER INTERNAL OPERATION SETTINGS					
PF Set Point	1.00				Power Factor Control
Var Control	OFF				Reactive Power Control
Ramp Rate	10%/1 sec				dkw / dt
Freq Control	OFF				Speed Control
* voltages based off 346.4V Line to Neutral					

SYSTEM 3 SUMMARY	
DC SYSTEM SIZE	3,720.600 KW
AC SYSTEM SIZE	3,250.000 KW / 3,900.000 KVA
MODULE	HT-SAAE HT72-166M 450W
MODULE QTY	8,268
INVERTER	SOLECTRIA XGI-1500 125/150
INVERTER QTY	26



1 E303 ONE LINE DIAGRAM – SYSTEM 3
SCALE: NONE

SHEET NOTES:
1. COORDINATED SHUTDOWN MAY BE REQUIRED.
2. PROVIDE TORQUE MARKS INSIDE INVERTERS.
3. SET ELECTRONIC-TRIP BREAKERS TO THE SETTINGS BELOW, UNLESS OTHERWISE NOTED IN POWER STUDY. "NOMINAL TRIP" REFERS TO BREAKER TRIP RATING INDICATED ON ONELINE. SETTINGS BELOW ARE NOT FOR COORDINATION PURPOSES.
   - L = 100% OF NOMINAL TRIP (EXACT) MINIMUM TIME DELAY
   - S = 125% OF NOMINAL TRIP (OR NEXT HIGHER) MINIMUM TIME DELAY
   - I = 150% OF NOMINAL TRIP (OR NEXT HIGHER)
   - G = 20% OF NOMINAL TRIP (OR NEXT HIGHER) 0.5 SEC TIME DELAY

DRAWING TITLE: ONE LINE DIAGRAM SYSTEM 3

DRAWING #: E303

DATE	REVISION DESCRIPTION	PM	ENG	CHK	SK	AD	RI
03/17/2021	PERMIT REVIEW SET						

PUREPOWER ENGINEERING
111 RIVER STREET HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 00293452

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

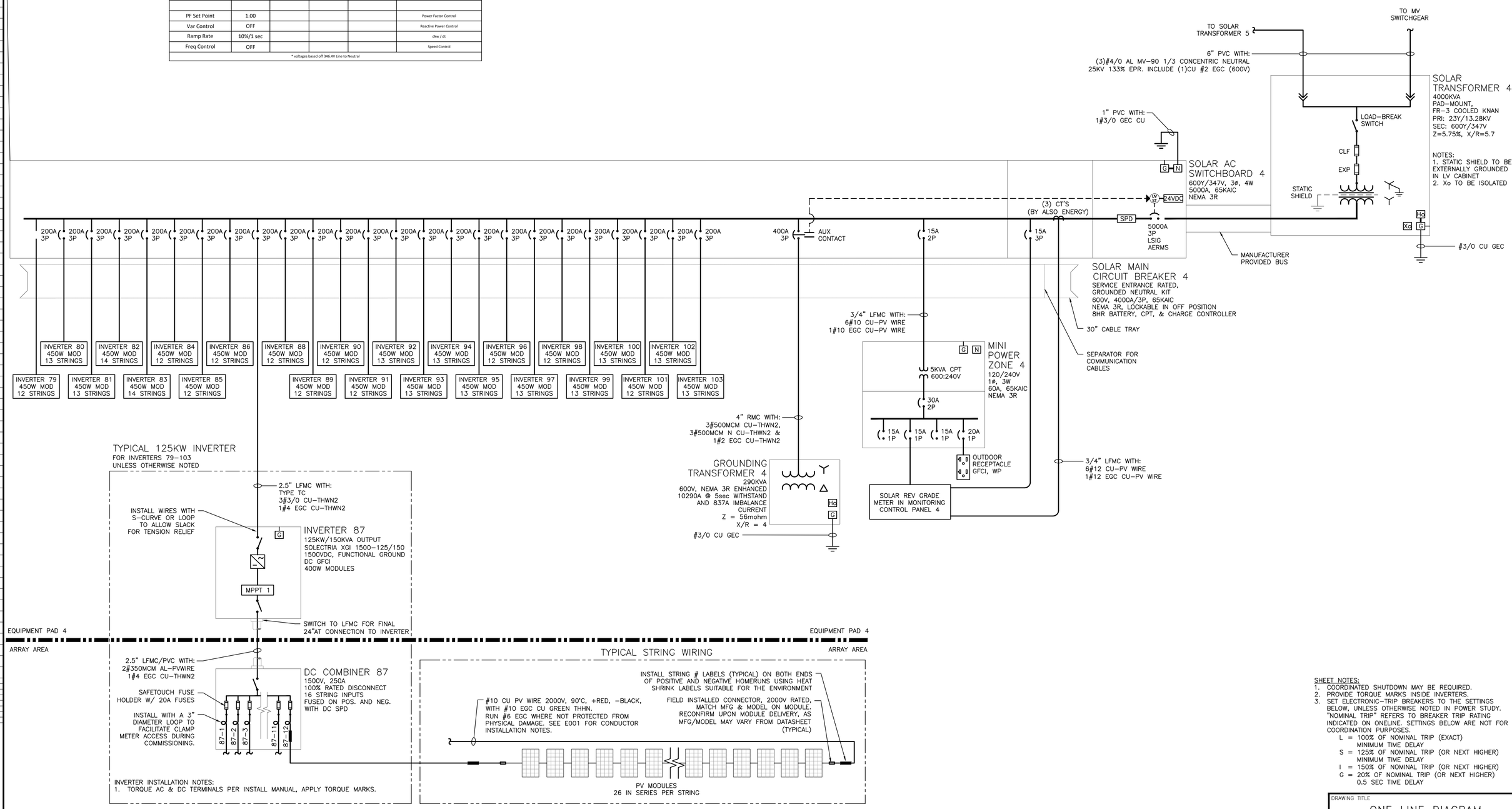
PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

INVERTER INTERNAL PROTECTIVE SETTINGS: UL1741-SA COMPLIANT					
ANSI ELEMENT #	Pickup	Units*	Level	Total Clear Time (sec)	Description
27	304.8	V	88%	2.00	Slow UV
27	173.2	V	50%	1.10	Fast UV
59	381.1	V	110%	2.00	Slow OV
59	415.7	V	120%	0.16	Fast OV
81U-1	56.50	Hz	94%	0.16	Fast UF
81U-2	58.50	Hz	98%	300.00	Slow UF
81O-1	62.00	Hz	103%	0.16	Fast OF
81O-2	61.20	Hz	102%	300.00	Slow OF
79	329.1	V	95%	300.00	Min Reclosing Voltage Value
79	363.7	V	105%	300.00	Max Reclosing Voltage Value
79	59.6	Hz	99%	300.00	Min Reclosing Frequency Value
79	60.5	Hz	101%	300.00	Max Reclosing Frequency Value
INVERTER INTERNAL OPERATION SETTINGS					
PF Set Point	1.00				Power Factor Control
Var Control	OFF				Reactive Power Control
Ramp Rate	10%/1 sec				dkw / dt
Freq Control	OFF				Speed Control
* voltages based off 346.4V Line to Neutral					

SYSTEM 4 SUMMARY	
DC SYSTEM SIZE	3,685.500 KW
AC SYSTEM SIZE	3,125.000 KW / 3,750.000 KVA
MODULE	HT-SAAE HT72-166M 450W
MODULE QTY	8,190
INVERTER	SOLECTRIA XGI-1500 125/150
INVERTER QTY	25



1 E304 ONE LINE DIAGRAM – SYSTEM 4
SCALE: NONE

SHEET NOTES:
1. COORDINATED SHUTDOWN MAY BE REQUIRED.
2. PROVIDE TORQUE MARKS INSIDE INVERTERS.
3. SET ELECTRONIC-TRIP BREAKERS TO THE SETTINGS BELOW, UNLESS OTHERWISE NOTED IN POWER STUDY. "NOMINAL TRIP" REFERS TO BREAKER TRIP RATING INDICATED ON ONELINE. SETTINGS BELOW ARE NOT FOR COORDINATION PURPOSES.
   - L = 100% OF NOMINAL TRIP (EXACT) MINIMUM TIME DELAY
   - S = 125% OF NOMINAL TRIP (OR NEXT HIGHER) MINIMUM TIME DELAY
   - I = 150% OF NOMINAL TRIP (OR NEXT HIGHER)
   - G = 20% OF NOMINAL TRIP (OR NEXT HIGHER) 0.5 SEC TIME DELAY

DRAWING TITLE: ONE LINE DIAGRAM SYSTEM 4

DRAWING #: E304

DATE	REVISION DESCRIPTION	PM	ENG CHK	SK	AD	RI
03/17/2021	PERMIT REVIEW SET					

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 00232452

DEVELOPER: GREENSKIES, 127 WASHINGTON AVENUE, NORTH HAVEN, CT 06473, WWW.GREENSKIES.COM — Greenskies, a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,883,340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

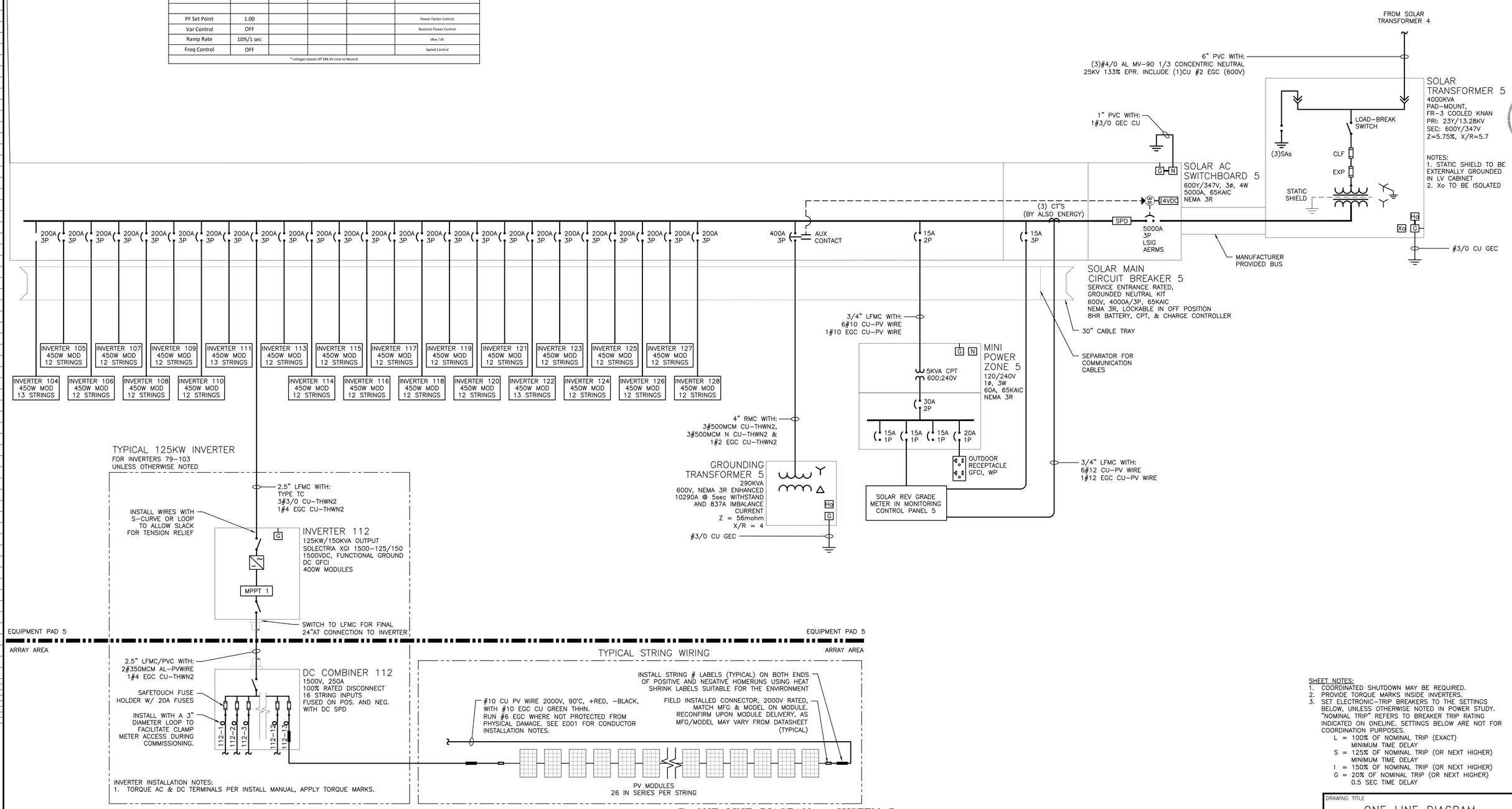
PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR, 117 OIL MILL ROAD, WATERFORD, CT 06385

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

INVERTER INTERNAL PROTECTIVE SETTINGS: UL1741-SA COMPLIANT					
ANSI ELEMENT #	Pickup	Units*	Level	Total Clear Time (sec)	Description
27	304.8	V	88%	2.00	Slow UV
27	173.2	V	50%	1.10	Fast UV
59	381.1	V	110%	2.00	Slow OV
59	415.7	V	120%	0.16	Fast OV
81U-1	56.50	Hz	94%	0.16	Fast UF
81U-2	58.50	Hz	98%	300.00	Slow UF
81O-1	62.00	Hz	103%	0.16	Fast OF
81O-2	61.20	Hz	102%	300.00	Slow OF
79	329.1	V	95%	300.00	Min Reclosing Voltage Value
79	363.7	V	105%	300.00	Max Reclosing Voltage Value
79	59.6	Hz	99%	300.00	Min Reclosing Frequency Value
79	60.5	Hz	101%	300.00	Max Reclosing Frequency Value
INVERTER INTERNAL OPERATION SETTINGS					
PF Set Point	1.00				Power Factor Control
Var Control	OFF				Reactive Power Control
Ramp Rate	10%/1 sec				dkw / dt
Freq Control	OFF				Speed Control
* voltages based off 346.4V Line to Neutral					

SYSTEM 5 SUMMARY	
DC SYSTEM SIZE	3,556.800 KW
AC SYSTEM SIZE	3,125.000 KW / 3,750.000 KVA
MODULE	HT-SAAE HT72-166M 450W
MODULE QTY	7,904
INVERTER	SOLECTRIA XGI-1500 125/150
INVERTER QTY	25



1 E305 ONE LINE DIAGRAM – SYSTEM 5
SCALE: NONE

SHEET NOTES:
1. COORDINATED SHUTDOWN MAY BE REQUIRED.
2. PROVIDE TORQUE MARKS INSIDE INVERTERS.
3. SET ELECTRONIC-TRIP BREAKERS TO THE SETTINGS BELOW, UNLESS OTHERWISE NOTED IN POWER STUDY. "NOMINAL TRIP" REFERS TO BREAKER TRIP RATING INDICATED ON ONELINE. SETTINGS BELOW ARE NOT FOR COORDINATION PURPOSES.
   - L = 100% OF NOMINAL TRIP (EXACT) MINIMUM TIME DELAY
   - S = 125% OF NOMINAL TRIP (OR NEXT HIGHER) MINIMUM TIME DELAY
   - I = 150% OF NOMINAL TRIP (OR NEXT HIGHER)
   - G = 20% OF NOMINAL TRIP (OR NEXT HIGHER) 0.5 SEC TIME DELAY

DRAWING TITLE: ONE LINE DIAGRAM SYSTEM 5

DRAWING #: E305

DATE	REVISION DESCRIPTION	PM	ENG CHK	SK	AD	RI
03/17/2021	PERMIT REVIEW SET					

PUREPOWER ENGINEERING
111 RIVER STREET HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 00293452
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,883,340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

AC FEEDER CALCULATIONS - SYSTEM 1

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTALVOLTAGE DROP AT FLA
SOLAR AC SWITCHBOARD 1	SOLAR TRANSFORMER 1	600	3744.0	4680.0	5000	BUSBAR	14	CU 500MCM	CU 500MCM	5000	5000	5000	0.96	1.00	10	0.02%	0.02%
INVERTER 1	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%
INVERTER 2	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 3	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 4	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 5	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 6	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 7	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 8	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 9	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 10	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 11	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.24%
INVERTER 12	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 13	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	75	0.25%	0.27%
INVERTER 14	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	75	0.25%	0.27%
INVERTER 15	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 16	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.24%
INVERTER 17	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 18	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 19	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 20	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 21	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 22	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 23	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 24	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 25	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 26	SOLAR AC SWITCHBOARD 1	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 0.17%

AC FEEDER CALCULATIONS - SYSTEM 2

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTALVOLTAGE DROP AT FLA
SOLAR AC SWITCHBOARD 2	SOLAR TRANSFORMER 2	600	3744.0	4680.0	5000	BUSBAR				5000	5000	5000	0.96	1.00	10	0.02%	0.02%
INVERTER 27	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%
INVERTER 28	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 29	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 30	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 31	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 32	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 33	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 34	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 35	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 36	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 37	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.24%
INVERTER 38	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 39	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	75	0.25%	0.27%
INVERTER 40	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	75	0.25%	0.27%
INVERTER 41	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 42	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.24%
INVERTER 43	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 44	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 45	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 46	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 47	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 48	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 49	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 50	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 51	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 52	SOLAR AC SWITCHBOARD 2	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 0.17%

NOTE: DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS, CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E310

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

AC FEEDER CALCULATIONS - SYSTEM 3

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTALVOLTAGE DROP AT FLA
SOLAR AC SWITCHBOARD 3	SOLAR TRANSFORMER 3	600	3744.0	4680.0	5000	BUSBAR				5000	5000	5000	0.96	1.00	10	0.02%	0.02%
INVERTER 53	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%
INVERTER 54	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 55	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 56	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 57	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 58	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 59	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 60	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 61	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 62	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 63	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.24%
INVERTER 64	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 65	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	75	0.25%	0.27%
INVERTER 66	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	75	0.25%	0.27%
INVERTER 67	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 68	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.24%
INVERTER 69	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 70	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 71	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 72	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 73	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 74	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 75	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 76	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 77	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 78	SOLAR AC SWITCHBOARD 3	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 0.17%

AC FEEDER CALCULATIONS - SYSTEM 4

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTALVOLTAGE DROP AT FLA
SOLAR AC SWITCHBOARD 4	SOLAR TRANSFORMER 4	600	3600.0	4500.0	5000	BUSBAR				5000	5000	5000	0.96	1.00	10	0.02%	0.02%
INVERTER 79	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%
INVERTER 80	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 81	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 82	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 83	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 84	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 85	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 86	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 87	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 88	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 89	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.23%
INVERTER 90	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 91	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	75	0.25%	0.27%
INVERTER 92	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 93	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.23%
INVERTER 94	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 95	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 96	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 97	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 98	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 99	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 100	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 101	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 102	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 103	SOLAR AC SWITCHBOARD 4	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 0.17%

NOTE: DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS, CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"

PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683,340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E311

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

PLOT DATE: 3/17/2021 5:45 PM

AC FEEDER CALCULATIONS - SYSTEM 5

EQUIPMENT SUPPLIED	FED FROM	VOLTAGE	FULL LOAD AMPS 'FLA'	FLA x 1.25	OCPD SIZE	GROUND SIZE	CONDUCTORS PER PHASE	PHASE CONDUCTOR SIZE	NEUTRAL CONDUCTOR SIZE	75° AMPACITY	90° AMPACITY	90° AMPACITY WITH C.O.U.	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	FEEDER LENGTH (FEET)	SEGMENT VOLTAGE DROP AT FLA	TOTALVOLTAGE DROP AT FLA
SOLAR AC SWITCHBOARD 5	SOLAR TRANSFORMER 5	600	3600.0	4500.0	5000	BUSBAR				5000	5000	5000	0.96	1.00	10	0.02%	0.02%
INVERTER 104	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%
INVERTER 105	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 106	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 107	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 108	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 109	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 110	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 111	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 112	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 113	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 114	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.23%
INVERTER 115	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 116	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	75	0.25%	0.27%
INVERTER 117	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	70	0.23%	0.25%
INVERTER 118	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	65	0.21%	0.23%
INVERTER 119	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	60	0.20%	0.22%
INVERTER 120	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	55	0.18%	0.20%
INVERTER 121	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	50	0.16%	0.19%
INVERTER 122	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	45	0.15%	0.17%
INVERTER 123	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	40	0.13%	0.15%
INVERTER 124	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	35	0.11%	0.14%
INVERTER 125	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	30	0.10%	0.12%
INVERTER 126	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	25	0.08%	0.10%
INVERTER 127	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	20	0.07%	0.09%
INVERTER 128	SOLAR AC SWITCHBOARD 5	600	144.0	180.0	200	CU #4	1	CU #3/0	CU #3/0	200	225	216	0.96	1.00	15	0.05%	0.07%

AVERAGE AC VOLTAGE DROP FROM POI TO INVERTERS: 0.17%

NOTE: DISTANCES ARE ESTIMATES GENERATED FOR ENGINEER'S CALCULATIONS, CONTRACTOR IS RESPONSIBLE FOR OWN MEASUREMENTS AND TAKEOFFS.

MV FEEDER CALCULATIONS

EQUIPMENT SUPPLIED	FED FROM	CIRCUIT ROUTING	VOLTAGE [V]	APPARENT POWER [KVA]	FEEDER LENGTH [FT]	FULL LOAD AMPS 'FLA' [A]	OCPD TYPE	OCPD TRIP RATING [A]	OCPD TRIP % OF FLA	CONDUCTOR MATERIAL	CONDUCTOR SIZE	NEC TABLE REFERENCE	TEMPERATURE ADJUSTMENT	ADJUSTED CONDUCTOR AMPACITY [A]	CHECK CONDUCTOR AMPACITY > FLA?	CHECK OCPD RATING > FLA x 1.25?	CHECK OCPD COMPLIANT WITH 240.101(A)?	SEGMENT VOLTAGE DROP AT FLA	TOTAL VOLTAGE DROP AT FLA	PVC CONDUIT SIZE	ADDITIONAL GROUND CABLE	FULL CONDUCTOR SPEC
MV SWITCHGEAR	POI	UNDERGROUND IN CONDUIT	23,000	20,000	50	502.0	BREAKER	753	150%	AL	(2) SETS OF 500MCM	310.60(C)(78)	1.00	2 X 290 = 580	PASS	PASS	PASS	0.00%	0.00%	#N/A	CU #1/0	2 SETS OF (3) 500MCM AL MV90 1/3 CONCENTRIC NEUTRAL 25KV 100% EPR. INCLUDE (1)CU #1/0 EGC (600V)
SOLAR TRANSFORMER 1, 2 & 3	MV SWITCHGEAR	UNDERGROUND IN CONDUIT	23,000	12,000	2,475	301.2	FUSE	500	166%	AL	350MCM	310.60(C)(78)	1.00	305	PASS	PASS	PASS	0.35%	0.36%	6"	CU #2	(3) 350MCM AL MV90 1/3 CONCENTRIC NEUTRAL 25KV 133% EPR. INCLUDE (1)CU #2 EGC (600V)
SOLAR TRANSFORMER 4 & 5	MV SWITCHGEAR	UNDERGROUND IN CONDUIT	23,000	8,000	4,000	200.8	FUSE	500	249%	AL	#4/0	310.60(C)(78)	1.00	230	PASS	PASS	PASS	0.60%	0.61%	6"	CU #2	(3) #4/0 AL MV90 1/3 CONCENTRIC NEUTRAL 25KV 133% EPR. INCLUDE (1)CU #2 EGC (600V)

MODULE SPECIFICATIONS	
MAKE/MODEL	CANADIAN 400W
POWER [W]	400
ISC [A]	11.71
IMP [A]	10.34
VOC [V]	47.20
VMP [V]	38.70
β VOC [%/degC]	-0.290%
SITE CLIMATE CRITERIA	
ASHRAE HIGH [°C]	32
ASHRAE LOW [°C]	-19
STRING SPECIFICATIONS AT STC	
MODULES/STRING	26
POWER [W]	10400
STRING ISC [A]	11.71
STRING IMP [A]	10.34
STRING VMP [V]	1006.20
STRING MAX VOLTAGE CALCULATION	
VOC TEMP ADJUSTMENT @ -19 °C	1.1276
VOC @ -19 °C [V]	53.22
MAX STRING VOC [V]	1383.8

MODULE SPECIFICATIONS	
MAKE/MODEL	CANADIAN 405W
POWER [W]	405
ISC [A]	11.71
IMP [A]	10.42
VOC [V]	47.40
VMP [V]	38.90
β VOC [%/degC]	-0.290%
SITE CLIMATE CRITERIA	
ASHRAE HIGH [°C]	32
ASHRAE LOW [°C]	-19
STRING SPECIFICATIONS AT STC	
MODULES/STRING	26
POWER [W]	10530
STRING ISC [A]	11.71
STRING IMP [A]	10.42
STRING VMP [V]	1011.40
STRING MAX VOLTAGE CALCULATION	
VOC TEMP ADJUSTMENT @ -19 °C	1.1276
VOC @ -19 °C [V]	53.45
MAX STRING VOC [V]	1389.7

MODULE SPECIFICATIONS	
MAKE/MODEL	HT-SAAE 450W
POWER [W]	450
ISC [A]	13.00
IMP [A]	10.96
VOC [V]	50.00
VMP [V]	41.10
β VOC [%/degC]	-0.290%
SITE CLIMATE CRITERIA	
ASHRAE HIGH [°C]	32
ASHRAE LOW [°C]	-19
STRING SPECIFICATIONS AT STC	
MODULES/STRING	26
POWER [W]	11700
STRING ISC [A]	13.00
STRING IMP [A]	10.96
STRING VMP [V]	1068.60
STRING MAX VOLTAGE CALCULATION	
VOC TEMP ADJUSTMENT @ -19 °C	1.1276
VOC @ -19 °C [V]	56.38
MAX STRING VOC [V]	1465.9

DC STRING WIRING CALCULATION - CANADIAN 400W & 405W	
STRING ISC [AMPS]	11.71
MAXIMUM CIRCUIT CURRENT [AMPS]	14.64
1.25x MAX CIRCUIT CURRENT [AMPS]	18.30
MAX # OF WIRES PER CONDUIT	40
CONDUIT FILL DERATE	0.4
MAX AMBIENT TEMPERATURE	32
TEMPERATURE DERATE	0.96
WIRE GAUGE	CU #10
75DEG AMPACITY WITHOUT COU ADJUSTEMENT [AMPS]	35
IS 75 DEG AMPACITY WITHOUT COU ADJUSTEMENT >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(1)
90DEG AMPACITY WITH COU ADJUSTMENT [AMPS]	15.36
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= 1.0x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(2)
PV SOURCE CIRCUIT FUSE RATING [AMPS]	20
AVAILABLE FAULT CURRENT FROM ALL PARALLEL SOURCES [AMPS]	14.63625
IS FUSE RATING >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.9(B)

DC STRING WIRING CALCULATION - HT-SAAE 450W	
STRING ISC [AMPS]	13.00
MAXIMUM CIRCUIT CURRENT [AMPS]	16.25
1.25x MAX CIRCUIT CURRENT [AMPS]	20.31
MAX # OF WIRES PER CONDUIT	30
CONDUIT FILL DERATE	0.45
MAX AMBIENT TEMPERATURE	32
TEMPERATURE DERATE	0.96
WIRE GAUGE	CU #10
75DEG AMPACITY WITHOUT COU ADJUSTEMENT [AMPS]	35
IS 75 DEG AMPACITY WITHOUT COU ADJUSTEMENT >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(1)
90DEG AMPACITY WITH COU ADJUSTMENT [AMPS]	17.28
IS 90DEG AMPACITY WITH COU ADJUSTMENT >= 1.0x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.8(B)(2)
PV SOURCE CIRCUIT FUSE RATING [AMPS]	20
AVAILABLE FAULT CURRENT FROM ALL PARALLEL SOURCES [AMPS]	16.24875
IS FUSE RATING >= 1.25x MAX CIRCUIT CURRENT?	YES. COMPLIES WITH 690.9(B)

RULER IN INCHES:

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

ENGINEER

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E312

PLOT DATE: 3/17/2021 4:08 PM

THE STRING MAX CURRENT IS CALCULATED BY SYSTEM ADVISOR MODEL SIMULATION PROGRAM PROVIDED BY THE NATIONAL RENEWABLE ENERGY LABORATORY, REFERENCE SAND 2004–3535, PHOTOVOLTAIC ARRAY PERFORMANCE MODEL, AS ALLOWABLE BY NEC 690.8(A)(1)(2), THE CALCULATED CURRENT IS 93.1% (CANADIAN 400W), 93.8% (CANADIAN 405W), & 91% (HT–SAAE 450W) OF THE VALUE USING 690.8(A)(1)(1).

DC FEEDER CALCULATIONS

CIRCUIT DESCRIPTION				FEEDER SIZING						CONDUCTOR CHECK PER 690.8(B)(1)			CONDUCTOR CHECK PER 690.8(B)(2)					TERMINAL CHECK			OCPD CHECK				VOLTAGE DROP CALCS			
COMBINER BOX	QTY OF STRINGS	OPERATING VOLTAGE Vmp (V)	STRING MAX CURRENT (SAM Simulated)	FEEDER MAX CURRENT (SAM Simulated)	FEEDER MAX CURRENT x 125%	CONDUCTORS PER POLE	CONDUCTOR SIZE	GROUND SIZE	OCPD SIZE	90° AMPACITY	FEEDER MAX CURRENT x 125%	PASS?	C.O.U DERATE AMBIENT TEMP	C.O.U. DERATE CONDUIT FILL	90° AMPACITY WITH C.O.U.	FEEDER MAX CURRENT (SAM Simulated)	PASS?	75° AMPACITY	FEEDER MAX CURRENT x 125%	PASS?	90° AMPACITY WITH C.O.U.	75° AMPACITY	MAX ALLOWABLE OCPD	PASS?	STRING OPERATING CURRENT (STRING Imp)	FEEDER OPERATING CURRENT	FEEDER LENGTH (FT, ONE WAY)	FEEDER VOLTAGE DROP
(400W) CB-1	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	1120	1.9%
(400W) CB-2	16	1006	11.71	187	234	1	AL 350MCM	CU #4	250	280	234	PASS	0.96	1	269	187	PASS	250	234	PASS	268.8	250	250	PASS	10.34	165.44	1065	2.1%
(400W) CB-3	16	1006	11.71	187	234	1	AL 350MCM	CU #4	250	280	234	PASS	0.96	1	269	187	PASS	250	234	PASS	268.8	250	250	PASS	10.34	165.44	1020	2.0%
(400W) CB-4	16	1006	11.71	187	234	1	AL 350MCM	CU #4	250	280	234	PASS	0.96	1	269	187	PASS	250	234	PASS	268.8	250	250	PASS	10.34	165.44	955	1.9%
(400W) CB-5	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	350	0.6%
(400W) CB-6	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	305	0.5%
(400W) CB-7	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	295	0.5%
(400W) CB-8	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	280	0.5%
(400W) CB-9	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	280	0.5%
(400W) CB-10	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	340	0.6%
(400W) CB-11	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	330	0.6%
(400W) CB-12	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	260	0.5%
(400W) CB-13	15	1006	11.71	176	220	1	AL 350MCM	CU #4	250	280	220	PASS	0.96	1	269	176	PASS	250	220	PASS	268.8	250	250	PASS	10.34	155.1	310	0.6%
(400W) CB-14	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	270	0.5%
(400W) CB-15	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	510	0.9%
(400W) CB-16	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	465	0.8%
(400W) CB-17	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	425	0.7%
(400W) CB-18	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	390	0.7%
(400W) CB-19	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	375	0.7%
(400W) CB-20	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	360	0.6%
(400W) CB-21	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	350	0.6%
(400W) CB-22	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	340	0.6%
(400W) CB-23	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	315	0.5%
(400W) CB-24	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	245	0.4%
(400W) CB-25	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	320	0.6%
(400W) CB-26	15	1006	11.71	176	220	1	AL 350MCM	CU #4	250	280	220	PASS	0.96	1	269	176	PASS	250	220	PASS	268.8	250	250	PASS	10.34	155.1	135	0.3%
(400W) CB-27	16	1006	11.71	187	234	1	AL 350MCM	CU #4	250	280	234	PASS	0.96	1	269	187	PASS	250	234	PASS	268.8	250	250	PASS	10.34	165.44	615	1.2%
(405W) CB-28	14	1011	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	595	1.0%
(450W) CB-29	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.34	134.42	495	0.8%
(400W) CB-30	15	1006	11.71	176	220	1	AL 350MCM	CU #4	250	280	220	PASS	0.96	1	269	176	PASS	250	220	PASS	268.8	250	250	PASS	10.34	155.1	325	0.6%
(400W) CB-31	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	310	0.5%
(400W) CB-32	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	265	0.5%
(400W) CB-33	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	240	0.4%
(400W) CB-34	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	200	0.3%
(400W) CB-35	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	175	0.3%
(400W) CB-36	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	155	0.3%
(405W) CB-37	14	1011	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	135	0.2%
(405W) CB-38	15	1011	11.71	176	220	1	AL 350MCM	CU #4	250	280	220	PASS	0.96	1	269	176	PASS	250	220	PASS	268.8	250	250	PASS	10.34	155.1	120	0.2%
(405W) CB-39	14	1011	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.34	144.76	120	0.2%
(450W) CB-40	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.34	124.08	50	0.1%
(450W) CB-41	12	1069	13.02	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.34	124.08	500	0.7%
(450W) CB-42	12	1069	13.02	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.42	125.04	535	0.8%
(400W) CB-43	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.42	145.88	400	0.7%
(400W) CB-44	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.42	145.88	370	0.6%
(400W) CB-45	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.42	145.88	340	0.6%
(400W) CB-46	15	1006	11.71	176	220	1	AL 350MCM	CU #4	250	280	220	PASS	0.96	1	269	176	PASS	250	220	PASS	268.8	250	250	PASS	10.42	156.3	310	0.6%
(400W) CB-47	15	1006	11.71	176	220	1	AL 350MCM	CU #4	250	280	220	PASS	0.96	1	269	176	PASS	250	220	PASS	268.8	250	250	PASS	10.42	156.3	255	0.5%
(400W) CB-48	15	1006	11.71	176	220	1	AL 350MCM	CU #4	250	280	220	PASS	0.96	1	269	176	PASS	250	220	PASS	268.8	250	250	PASS	10.42	156.3	225	0.4%
(400W) CB-49	14	1006	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.96	153.44	195	0.4%
(405W) CB-50	14	1011	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.96	153.44	140	0.3%
(405W) CB-51	13	1011	11.71	152	190	1	AL 350MCM	CU #4	250	280	190	PASS	0.96	1	269	152	PASS	250	190	PASS	268.8	250	250	PASS	10.96	142.48	80	0.1%
(405W) CB-52	14	1011	11.71	164	205	1	AL 350MCM	CU #4	250	280	205	PASS	0.96	1	269	164	PASS	250	205	PASS	268.8	250	250	PASS	10.96	153.44	65	0.1%
(450W) CB-53	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	420	0.6%
(450W) CB-54	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	390	0.6%
(450W) CB-55	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	390	0.6%
(450W) CB-56	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	380	0.6%
(450W) CB-57	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	370	0.6%
(450W) CB-58	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	355	0.6%
(450W) CB-59	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	250	0.4%
(450W) CB-60	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	330	0.5%
(450W) CB-61	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	305	0.5%
(450W) CB-62	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	295	0.4%
(450W) CB-63	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	280	0.4%
(450W) CB-64	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	335	0.5%

RULER IN INCHES:

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER
Greenskies
a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E313

(450W) CB-65	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	315	0.5%
(450W) CB-66	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	295	0.4%
(450W) CB-67	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	270	0.4%
(450W) CB-68	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	270	0.4%
(450W) CB-69	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	485	0.7%
(450W) CB-70	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	355	0.5%
(450W) CB-71	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	375	0.6%
(450W) CB-72	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	395	0.6%
(450W) CB-73	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	440	0.7%
(450W) CB-74	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	550	0.9%
(450W) CB-75	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	490	0.7%
(450W) CB-76	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	485	0.7%
(450W) CB-77	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	565	0.8%
(450W) CB-78	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	630	0.9%
(450W) CB-79	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	300	0.4%
(450W) CB-80	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	275	0.4%
(450W) CB-81	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	95	0.2%
(450W) CB-82	14	1069	13.00	182	227	1	AL 350MCM	CU #4	250	280	227	PASS	0.96	1	269	182	PASS	250	227	PASS	268.8	250	250	PASS	10.96	153.44	250	0.4%
(450W) CB-83	14	1069	13.00	182	227	1	AL 350MCM	CU #4	250	280	227	PASS	0.96	1	269	182	PASS	250	227	PASS	268.8	250	250	PASS	10.96	153.44	290	0.5%
(450W) CB-84	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	415	0.6%
(450W) CB-85	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	390	0.6%
(450W) CB-86	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	370	0.6%
(450W) CB-87	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	355	0.5%
(450W) CB-88	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	140	0.2%
(450W) CB-89	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	285	0.4%
(450W) CB-90	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	315	0.5%
(450W) CB-91	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	350	0.5%
(450W) CB-92	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	670	1.1%
(450W) CB-93	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	640	1.0%
(450W) CB-94	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	610	1.0%
(450W) CB-95	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	580	0.9%
(450W) CB-96	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	550	0.8%
(450W) CB-97	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	515	0.9%
(450W) CB-98	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	485	0.8%
(450W) CB-99	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	450	0.8%
(450W) CB-100	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	490	0.7%
(450W) CB-101	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	525	0.7%
(450W) CB-102	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	555	0.8%
(450W) CB-103	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	590	0.9%
(450W) CB-104	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	525	1.0%
(450W) CB-105	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	310	0.5%
(450W) CB-106	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	305	0.5%
(450W) CB-107	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	305	0.5%
(450W) CB-108	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	325	0.5%
(450W) CB-109	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	325	0.5%
(450W) CB-110	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	305	0.5%
(450W) CB-111	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	425	0.7%
(450W) CB-112	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	445	0.7%
(450W) CB-113	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	965	1.4%
(450W) CB-114	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	845	1.3%
(450W) CB-115	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	760	1.1%
(450W) CB-116	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	685	1.0%
(450W) CB-117	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	700	1.0%
(450W) CB-118	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	630	0.9%
(450W) CB-119	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	565	0.8%
(450W) CB-120	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	465	0.7%
(450W) CB-121	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	445	0.7%
(450W) CB-122	13	1069	13.00	169	211	1	AL 350MCM	CU #4	250	280	211	PASS	0.96	1	269	169	PASS	250	211	PASS	268.8	250	250	PASS	10.96	142.48	390	0.6%
(450W) CB-123	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	360	0.5%
(450W) CB-124	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	140	0.2%
(450W) CB-125	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	315	0.5%
(450W) CB-126	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	240	0.4%
(450W) CB-127	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	315	0.5%
(450W) CB-128	12	1069	13.00	156	195	1	AL 350MCM	CU #4	250	280	195	PASS	0.96	1	269	156	PASS	250	195	PASS	268.8	250	250	PASS	10.96	131.52	350	0.5%

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

STATE OF CONNECTICUT · RICHARD A. IVINS · PEN.0029262 · LICENSED PROFESSIONAL ENGINEER

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER
Greenskies
a Clean Focus company

PAGE SIZE 36" x 24"

PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E314

PLOT DATE: 3/17/2021 4:08 PM

STRING VOLTAGE DROP CALCULATIONS			MAX TOTAL VOLTAGE DROP	3.43%
			AVERAGE TOTAL VOLTAGE DROP	1.88%
STRING #	STRING LENGTH (FT)	STRING GAUGE	STRING VOLTAGE DROP %	TOTAL VOLTAGE DROP %
1-1	325	CU #10	0.86%	2.81%
1-2	295	CU #10	0.78%	2.73%
1-3	295	CU #10	0.78%	2.73%
1-4	180	CU #10	0.48%	2.43%
1-5	335	CU #10	0.88%	2.83%
1-6	365	CU #10	0.97%	2.92%
1-7	285	CU #10	0.75%	2.70%
1-8	260	CU #10	0.69%	2.64%
1-9	270	CU #10	0.72%	2.67%
1-10	290	CU #10	0.77%	2.72%
1-11	315	CU #10	0.83%	2.78%
1-12	345	CU #10	0.92%	2.87%
1-13	380	CU #10	1.01%	2.96%
1-14	420	CU #10	1.11%	3.06%
2-1	435	CU #10	1.15%	3.10%
2-2	325	CU #10	0.86%	2.81%
2-3	295	CU #10	0.78%	2.73%
2-4	295	CU #10	0.78%	2.73%
2-5	310	CU #10	0.82%	2.77%
2-6	335	CU #10	0.88%	2.83%
2-7	365	CU #10	0.97%	2.92%
2-8	400	CU #10	1.06%	3.01%
2-9	435	CU #10	1.15%	3.10%
2-10	475	CU #10	1.26%	3.21%
2-11	440	CU #10	1.17%	3.11%
2-12	285	CU #10	0.75%	2.70%
2-13	260	CU #10	0.69%	2.64%
2-14	270	CU #10	0.72%	2.67%
2-15	290	CU #10	0.77%	2.72%
2-16	315	CU #10	0.83%	2.78%
3-1	395	CU #10	1.04%	3.07%
3-2	430	CU #10	1.13%	3.16%
3-3	465	CU #10	1.23%	3.26%
3-4	140	CU #10	0.37%	2.40%
3-5	295	CU #10	0.78%	2.81%
3-6	295	CU #10	0.78%	2.81%
3-7	310	CU #10	0.82%	2.85%
3-8	335	CU #10	0.88%	2.91%
3-9	365	CU #10	0.97%	3.00%
3-10	400	CU #10	1.06%	3.09%
3-11	425	CU #10	1.12%	3.15%
3-12	280	CU #10	0.74%	2.77%
3-13	255	CU #10	0.68%	2.71%
3-14	265	CU #10	0.70%	2.73%
3-15	285	CU #10	0.75%	2.78%
3-16	315	CU #10	0.83%	2.86%
4-1	425	CU #10	1.12%	3.02%
4-2	140	CU #10	0.37%	2.27%
4-3	170	CU #10	0.45%	2.35%
4-4	335	CU #10	0.88%	2.78%
4-5	345	CU #10	0.92%	2.82%
4-6	365	CU #10	0.97%	2.87%
4-7	385	CU #10	1.02%	2.92%
4-8	135	CU #10	0.35%	2.25%
4-9	290	CU #10	0.77%	2.67%
4-10	290	CU #10	0.77%	2.67%
4-11	310	CU #10	0.82%	2.72%
4-12	125	CU #10	0.33%	2.23%
4-13	265	CU #10	0.70%	2.60%
4-14	270	CU #10	0.72%	2.62%
4-15	325	CU #10	0.86%	2.76%
4-16	320	CU #10	0.84%	2.74%
5-1	405	CU #10	1.07%	1.68%
5-2	460	CU #10	1.22%	1.83%
5-3	430	CU #10	1.13%	1.74%
5-4	395	CU #10	1.04%	1.65%
5-5	410	CU #10	1.08%	1.69%
5-6	455	CU #10	1.21%	1.82%
5-7	370	CU #10	0.98%	1.59%
5-8	355	CU #10	0.94%	1.55%
5-9	350	CU #10	0.93%	1.54%
5-10	380	CU #10	1.01%	1.62%
5-11	430	CU #10	1.13%	1.74%
5-12	420	CU #10	1.11%	1.72%
5-13	415	CU #10	1.10%	1.71%
5-14	435	CU #10	1.15%	1.76%

6-1	410	CU #10	1.08%	1.61%
6-2	430	CU #10	1.13%	1.66%
6-3	410	CU #10	1.08%	1.61%
6-4	395	CU #10	1.04%	1.57%
6-5	390	CU #10	1.03%	1.56%
6-6	405	CU #10	1.07%	1.60%
6-7	450	CU #10	1.19%	1.72%
6-8	445	CU #10	1.18%	1.71%
6-9	415	CU #10	1.10%	1.63%
6-10	390	CU #10	1.03%	1.56%
6-11	370	CU #10	0.98%	1.51%
6-12	360	CU #10	0.96%	1.49%
6-13	360	CU #10	0.96%	1.49%
6-14	430	CU #10	1.13%	1.66%
7-1	475	CU #10	1.26%	1.77%
7-2	445	CU #10	1.18%	1.69%
7-3	415	CU #10	1.10%	1.62%
7-4	390	CU #10	1.03%	1.54%
7-5	370	CU #10	0.98%	1.49%
7-6	355	CU #10	0.94%	1.45%
7-7	355	CU #10	0.94%	1.45%
7-8	405	CU #10	1.07%	1.59%
7-9	540	CU #10	1.43%	1.94%
7-10	510	CU #10	1.35%	1.87%
7-11	480	CU #10	1.27%	1.78%
7-12	455	CU #10	1.21%	1.72%
7-13	435	CU #10	1.15%	1.67%
7-14	420	CU #10	1.11%	1.63%
8-1	390	CU #10	1.03%	1.52%
8-2	410	CU #10	1.08%	1.57%
8-3	450	CU #10	1.19%	1.67%
8-4	540	CU #10	1.43%	1.91%
8-5	505	CU #10	1.33%	1.82%
8-6	475	CU #10	1.26%	1.75%
8-7	440	CU #10	1.17%	1.65%
8-8	415	CU #10	1.10%	1.59%
8-9	390	CU #10	1.03%	1.52%
8-10	370	CU #10	0.98%	1.47%
8-11	355	CU #10	0.94%	1.42%
8-12	360	CU #10	0.96%	1.44%
8-13	425	CU #10	1.12%	1.61%
8-14	610	CU #10	1.61%	2.10%
9-1	545	CU #10	1.45%	1.93%
9-2	510	CU #10	1.35%	1.84%
9-3	475	CU #10	1.26%	1.75%
9-4	445	CU #10	1.18%	1.66%
9-5	415	CU #10	1.10%	1.59%
9-6	390	CU #10	1.03%	1.52%
9-7	370	CU #10	0.98%	1.47%
9-8	355	CU #10	0.94%	1.42%
9-9	355	CU #10	0.94%	1.42%
9-10	410	CU #10	1.08%	1.57%
9-11	645	CU #10	1.71%	2.19%
9-12	605	CU #10	1.60%	2.09%
9-13	570	CU #10	1.51%	2.00%
9-14	535	CU #10	1.41%	1.90%
10-1	440	CU #10	1.17%	1.76%
10-2	415	CU #10	1.10%	1.69%
10-3	390	CU #10	1.03%	1.62%
10-4	365	CU #10	0.97%	1.56%
10-5	355	CU #10	0.94%	1.53%
10-6	350	CU #10	0.93%	1.52%
10-7	385	CU #10	1.02%	1.61%
10-8	610	CU #10	1.61%	2.20%
10-9	575	CU #10	1.52%	2.11%
10-10	540	CU #10	1.43%	2.02%
10-11	510	CU #10	1.35%	1.94%
10-12	480	CU #10	1.27%	1.86%
10-13	450	CU #10	1.19%	1.78%
10-14	430	CU #10	1.13%	1.73%

11-1	370	CU #10	0.98%	1.55%
11-2	355	CU #10	0.94%	1.51%
11-3	355	CU #10	0.94%	1.51%
11-4	400	CU #10	1.06%	1.64%
11-5	615	CU #10	1.62%	2.20%
11-6	575	CU #10	1.52%	2.09%
11-7	540	CU #10	1.43%	2.00%
11-8	510	CU #10	1.35%	1.93%
11-9	480	CU #10	1.27%	1.84%
11-10	455	CU #10	1.21%	1.78%
11-11	435	CU #10	1.15%	1.73%
11-12	420	CU #10	1.11%	1.69%
11-13	420	CU #10	1.11%	1.69%
11-14	435	CU #10	1.15%	1.73%
12-1	450	CU #10	1.19%	1.64%
12-2	585	CU #10	1.55%	2.00%
12-3	545	CU #10	1.45%	1.90%
12-4	510	CU #10	1.35%	1.81%
12-5	475	CU #10	1.26%	1.71%
12-6	445	CU #10	1.18%	1.63%
12-7	415	CU #10	1.10%	1.56%
12-8	390	CU #10	1.03%	1.48%
12-9	370	CU #10	0.98%	1.43%
12-10	360	CU #10	0.96%	1.41%
12-11	360	CU #10	0.96%	1.41%
12-12	410	CU #10	1.08%	1.53%
12-13	585	CU #10	1.55%	2.00%
12-14	550	CU #10	1.46%	1.91%
13-1	505	CU #10	1.33%	1.91%
13-2	470	CU #10	1.25%	1.83%
13-3	440	CU #10	1.17%	1.74%
13-4	410	CU #10	1.08%	1.66%
13-5	385	CU #10	1.02%	1.60%
13-6	365	CU #10	0.97%	1.55%
13-7	350	CU #10	0.93%	1.50%
13-8	345	CU #10	0.92%	1.49%
13-9	385	CU #10	1.02%	1.60%
13-10	505	CU #10	1.33%	1.91%
13-11	475	CU #10	1.26%	1.84%
13-12	435	CU #10	1.15%	1.73%
13-13	385	CU #10	1.02%	1.60%
13-14	345	CU #10	0.92%	1.49%
13-15	300	CU #10	0.79%	1.37%
14-1	235	CU #10	0.62%	1.09%
14-2	195	CU #10	0.52%	0.99%
14-3	160	CU #10	0.43%	0.90%
14-4	130	CU #10	0.34%	0.81%
14-5	125	CU #10	0.33%	0.80%
14-6	60	CU #10	0.16%	0.63%
14-7	350	CU #10	0.93%	1.40%
14-8	365	CU #10	0.97%	1.44%
14-9	420	CU #10	1.11%	1.58%
14-10	400	CU #10	1.06%	1.53%
14-11	400	CU #10	1.06%	1.53%
14-12	415	CU #10	1.10%	1.57%
14-13	435	CU #10	1.15%	1.62%
14-14	460	CU #10	1.22%	1.69%
15-1	475	CU #10	1.26%	2.15%
15-2	215	CU #10	0.57%	1.46%
15-3	455	CU #10	1.21%	2.09%
15-4	445	CU #10	1.18%	2.06%
15-5	440	CU #10	1.17%	2.05%
15-6	455	CU #10	1.21%	2.09%
15-7	405	CU #10	1.07%	1.96%
15-8	390	CU #10	1.03%	1.92%
15-9	395	CU #10	1.04%	1.93%
15-10	410	CU #10	1.08%	1.97%
15-11	415	CU #10	1.10%	1.99%
15-12	360	CU #10	0.96%	1.84%
15-13	360	CU #10	0.96%	1.84%
15-14	370	CU #10	0.98%	1.87%

16-1	455	CU #10	1.21%	2.02%
16-2	280	CU #10	0.74%	1.55%
16-3	450	CU #10	1.19%	2.00%
16-4	410	CU #10	1.08%	1.89%
16-5	390	CU #10	1.03%	1.84%
16-6	395	CU #10	1.04%	1.85%
16-7	410	CU #10	1.08%	1.89%
16-8	435	CU #10	1.15%	1.96%
16-9	415	CU #10	1.10%	1.91%
16-10	360	CU #10	0.96%	1.77%
16-11	360	CU #10	0.96%	1.77%
16-12	370	CU #10	0.98%	1.79%
16-13	390	CU #10	1.03%	1.84%
16-14	415	CU #10	1.10%	1.91%
17-1	500	CU #10	1.32%	2.06%
17-2	455	CU #10	1.21%	1.95%
17-3	405	CU #10	1.07%	1.81%
17-4	395	CU #10	1.04%	1.78%
17-5	400	CU #10	1.06%	1.80%
17-6	415	CU #10	1.10%	1.84%
17-7	440	CU #10	1.17%	1.91%
17-8	465	CU #10	1.23%	1.97%
17-9	500	CU #10	1.32%	2.06%
17-10	385	CU #10	1.02%	1.76%
17-11	350	CU #10	0.93%	1.67%
17-12	355	CU #10	0.94%	1.68%
17-13	370	CU #10	0.98%	1.72%
17-14	390	CU #10	1.03%	1.77%
18-1	475	CU #10	1.26%	1.94%
18-2	495	CU #10	1.31%	1.99%
18-3	525	CU #10	1.39%	2.07%
18-4	455	CU #10	1.21%	1.89%
18-5	405	CU #10	1.07%	1.75%
18-6	390	CU #10	1.03%	1.71%
18-7	400	CU #10	1.06%	1.74%
18-8	415	CU #10	1.10%	1.78%
18-9	435	CU #10	1.15%	1.83%
18-10	465	CU #10	1.23%	1.91%
18-11	495	CU #10	1.31%	1.99%
18-12	525	CU #10	1.39%	2.07%
18-13	405	CU #10	1.07%	1.75%
18-14	355	CU #10	0.94%	1.62%
19-1	390	CU #10	1.03%	1.68%
19-2	395	CU #10	1.04%	1.69%
19-3	410	CU #10	1.08%	1.73%
19-4	435	CU #10	1.15%	1.81%
19-5	460	CU #10	1.22%	1.87%
19-6	490	CU #10	1.30%	1.95%
19-7	525	CU #10	1.39%	2.05%
19-8	560	CU #10	1.48%	2.13%
19-9	410	CU #10	1.08%	1.73%
19-10	360	CU #10	0.96%	1.61%
19-11	360	CU #10	0.96%	1.61%
19-12	375	CU #10	0.99%	1.64%
19-13	395	CU #10	1.04%	1.69%
19-14	420	CU #10	1.11%	1.77%
20-1	465	CU #10	1.23%	1.85%
20-2	495	CU #10	1.31%	1.94%
20-3	525	CU #10	1.39%	2.02%
20-4	560	CU #10	1.48%	2.10%
20-5	400	CU #10	1.06%	1.69%
20-6	355	CU #10	0.94%	1.56%
20-7	355	CU #10	0.94%	1.56%
20-8	370	CU #10	0.98%	1.60%
20-9	390	CU #10	1.03%	1.66%
20-10	415	CU #10	1.10%	1.73%
20-11	445	CU #10	1.18%	1.80%
20-12	475	CU #10	1.26%	1.89%
20-13	510	CU #10	1.35%	1.98%
20-14	545	CU #10	1.45%	2.07%

21-1	455	CU #10	1.21%	1.82%
21-2	400	CU #10	1.06%	1.67%
21-3	385	CU #10	1.02%	1.63%
21-4	395	CU #10	1.04%	1.65%
21-5	410	CU #10	1.08%	1.69%
21-6	430	CU #10	1.13%	1.74%
21-7	460	CU #10	1.22%	1.83%
21-8	490	CU #10	1.30%	1.91%
21-9	525	CU #10	1.39%	2.00%
21-10	560	CU #10	1.48%	2.09%
21-11	475	CU #10	1.26%	1.87%
21-12	425	CU #10	1.12%	1.73%
21-13	365	CU #10	0.97%	1.58%
21-14	365	CU #10	0.97%	1.58%
22-1	395	CU #10	1.04%	1.63%
22-2	410	CU #10	1.08%	1.67%
22-3	435	CU #10	1.15%	1.75%
22-4	460	CU #10	1.22%	1.81%
22-5	490	CU #10	1.30%	1.89%
22-6	525	CU #10	1.39%	1.99%
22-7	560	CU #10	1.48%	2.07%
22-8	415	CU #10	1.10%	1.69%
22-9	365	CU #10	0.97%	1.56%
22-10	360	CU #10	0.96%	1.55%
22-11	375	CU #10	0.99%	1.58%
22-12	395	CU #10	1.04%	1.63%
22-13	420	CU #10	1.11%	1.71%
22-14	450	CU #10	1.19%	1.78%
23-1	495	CU #10	1.31%	1.86%
23-2	525	CU #10	1.39%	1.94%
23-3	560	CU #10	1.48%	2.03%
23-4	395	CU #10	1.04%	1.59%
23-5	350	CU #10	0.93%	1.47%
23-6	350	CU #10	0.93%	1.47%
23-7	365	CU #10	0.97%	1.52%
23-8	385	CU #10	1.02%	1.57%
23-9	410	CU #10	1.08%	1.63%
23-10	440	CU #10	1.17%	1.71%
23-11	470	CU #10	1.25%	1.80%
23-12	505	CU #10	1.33%	1.88%
23-13	540	CU #10	1.43%	1.97%
23-14	580	CU #10	1.54%	2.09%
24-1	375	CU #10	0.99%	1.41%
24-2	350	CU #10	0.93%	1.35%
24-3	355	CU #10	0.94%	1.36%
24-4	370	CU #10	0.98%	1.40%
24-5	390	CU #10	1.03%	1.46%
24-6	415	CU #10	1.10%	1.53%
24-7	445	CU #10	1.18%	1.60%
24-8	475	CU #10	1.26%	1.69%
24-9	510	CU #10	1.35%	1.78%
24-10	545	CU #10	1.45%	1.87%
24-11	585	CU #10	1.55%	1.98%
24-12	620	CU #10	1.64%	2.07%
24-13	615	CU #10	1.62%	2.05%
24-14	650	CU #10	1.72%	2.14%
25-1	390	CU #10	1.03%	1.59%
25-2	355	CU #10	0.94%	1.49%
25-3	355	CU #10	0.94%	1.49%
25-4	370	CU #10	0.98%	1.53%
25-5	390	CU #10	1.03%	1.59%
25-6	415	CU #10	1.10%	1.66%
25-7	445	CU #10	1.18%	1.73%
25-8	480	CU #10	1.27%	1.83%
25-9	510	CU #10	1.35%	1.91%
25-10	455	CU #10	1.21%	1.76%
25-11	545	CU #10	1.45%	2.00%
25-12	580	CU #10	1.54%	2.10%
25-13	615	CU #10	1.62%	2.18%
25-14	655	CU #10	1.74%	2.29%

RULER IN INCHES:

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

ENGINEER
PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies
a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E315

26-1	135	CU #10	0.35%	0.61%
26-2	135	CU #10	0.35%	0.61%
26-3	355	CU #10	0.94%	1.19%
26-4	370	CU #10	0.98%	1.23%
26-5	390	CU #10	1.03%	1.28%
26-6	415	CU #10	1.10%	1.35%
26-7	445	CU #10	1.18%	1.43%
26-8	475	CU #10	1.26%	1.51%
26-9	480	CU #10	1.27%	1.52%
26-10	510	CU #10	1.35%	1.60%
26-11	540	CU #10	1.43%	1.68%
26-12	575	CU #10	1.52%	1.77%
26-13	615	CU #10	1.62%	1.87%
26-14	650	CU #10	1.72%	1.97%
26-15	590	CU #10	1.56%	1.81%
27-1	285	CU #10	0.75%	1.97%
27-2	260	CU #10	0.69%	1.91%
27-3	235	CU #10	0.62%	1.85%
27-4	215	CU #10	0.57%	1.80%
27-5	190	CU #10	0.50%	1.72%
27-6	145	CU #10	0.38%	1.61%
27-7	165	CU #10	0.44%	1.66%
27-8	120	CU #10	0.32%	1.55%
27-9	140	CU #10	0.37%	1.60%
27-10	95	CU #10	0.25%	1.47%
27-11	115	CU #10	0.30%	1.53%
27-12	65	CU #10	0.18%	1.40%
27-13	90	CU #10	0.24%	1.46%
27-14	40	CU #10	0.10%	1.33%
27-15	80	CU #10	0.21%	1.43%
27-16	30	CU #10	0.08%	1.31%
28-1	75	CU #10	0.20%	1.23%
28-2	30	CU #10	0.08%	1.11%
28-3	100	CU #10	0.26%	1.29%
28-4	55	CU #10	0.15%	1.18%
28-5	125	CU #10	0.33%	1.36%
28-6	80	CU #10	0.21%	1.24%
28-7	155	CU #10	0.41%	1.44%
28-8	105	CU #10	0.28%	1.31%
28-9	180	CU #10	0.48%	1.51%
28-10	130	CU #10	0.34%	1.37%
28-11	80	CU #10	0.21%	1.24%
28-12	125	CU #10	0.33%	1.36%
28-13	170	CU #10	0.45%	1.48%
28-14	215	CU #10	0.57%	1.60%
29-1	105	CU #10	0.28%	1.31%
29-2	60	CU #10	0.16%	0.91%
29-3	130	CU #10	0.34%	1.10%
29-4	85	CU #10	0.23%	0.98%
29-5	155	CU #10	0.41%	1.16%
29-6	110	CU #10	0.29%	1.04%
29-7	205	CU #10	0.54%	1.29%
29-8	180	CU #10	0.48%	1.23%
29-9	135	CU #10	0.35%	1.11%
29-10	25	CU #10	0.06%	0.82%
29-11	70	CU #10	0.19%	0.94%
29-12	115	CU #10	0.30%	1.06%
29-13	160	CU #10	0.43%	1.18%
30-1	555	CU #10	1.47%	2.22%
30-2	585	CU #10	1.55%	2.30%
30-3	440	CU #10	1.17%	1.77%
30-4	395	CU #10	1.04%	1.65%
30-5	350	CU #10	0.93%	1.53%
30-6	305	CU #10	0.81%	1.42%
30-7	260	CU #10	0.69%	1.29%
30-8	210	CU #10	0.55%	1.16%
30-9	165	CU #10	0.44%	1.04%
30-10	120	CU #10	0.32%	0.93%
30-11	75	CU #10	0.20%	0.80%
30-12	30	CU #10	0.08%	0.69%
30-13	465	CU #10	1.23%	1.83%
30-14	420	CU #10	1.11%	1.72%
30-15	375	CU #10	0.99%	1.59%
31-1	305	CU #10	0.81%	1.42%

31-2	260	CU #10	0.69%	1.23%
31-3	210	CU #10	0.55%	1.09%
31-4	165	CU #10	0.44%	0.98%
31-5	120	CU #10	0.32%	0.86%
31-6	75	CU #10	0.20%	0.74%
31-7	30	CU #10	0.08%	0.62%
31-8	465	CU #10	1.23%	1.77%
31-9	420	CU #10	1.11%	1.65%
31-10	375	CU #10	0.99%	1.53%
31-11	330	CU #10	0.87%	1.41%
31-12	285	CU #10	0.75%	1.29%
31-13	240	CU #10	0.63%	1.17%
31-14	190	CU #10	0.50%	1.04%
32-1	135	CU #10	0.35%	0.89%
32-2	90	CU #10	0.24%	0.70%
32-3	45	CU #10	0.11%	0.58%
32-4	440	CU #10	1.17%	1.63%
32-5	395	CU #10	1.04%	1.50%
32-6	350	CU #10	0.93%	1.39%
32-7	300	CU #10	0.79%	1.25%
32-8	255	CU #10	0.68%	1.14%
32-9	210	CU #10	0.55%	1.01%
32-10	165	CU #10	0.44%	0.90%
32-11	120	CU #10	0.32%	0.78%
32-12	75	CU #10	0.20%	0.66%
32-13	30	CU #10	0.08%	0.54%
32-14	465	CU #10	1.23%	1.69%
33-1	395	CU #10	1.04%	1.50%
33-2	350	CU #10	0.93%	1.34%
33-3	305	CU #10	0.81%	1.23%
33-4	260	CU #10	0.69%	1.10%
33-5	210	CU #10	0.55%	0.97%
33-6	165	CU #10	0.44%	0.85%
33-7	120	CU #10	0.32%	0.74%
33-8	75	CU #10	0.20%	0.62%
33-9	30	CU #10	0.08%	0.50%
33-10	465	CU #10	1.23%	1.65%
33-11	420	CU #10	1.11%	1.53%
33-12	375	CU #10	0.99%	1.41%
33-13	330	CU #10	0.87%	1.29%
33-14	285	CU #10	0.75%	1.17%
34-1	225	CU #10	0.59%	1.01%
34-2	180	CU #10	0.48%	0.83%
34-3	135	CU #10	0.35%	0.70%
34-4	90	CU #10	0.24%	0.59%
34-5	45	CU #10	0.11%	0.46%
34-6	440	CU #10	1.17%	1.51%
34-7	395	CU #10	1.04%	1.39%
34-8	350	CU #10	0.93%	1.27%
34-9	305	CU #10	0.81%	1.16%
34-10	255	CU #10	0.68%	1.02%
34-11	210	CU #10	0.55%	0.90%
34-12	165	CU #10	0.44%	0.79%
34-13	120	CU #10	0.32%	0.67%
34-14	75	CU #10	0.20%	0.55%
35-1	45	CU #10	0.11%	0.46%
35-2	440	CU #10	1.17%	1.47%
35-3	390	CU #10	1.03%	1.33%
35-4	345	CU #10	0.92%	1.22%
35-5	300	CU #10	0.79%	1.10%
35-6	255	CU #10	0.68%	0.98%
35-7	210	CU #10	0.55%	0.86%
35-8	165	CU #10	0.44%	0.74%
35-9	120	CU #10	0.32%	0.63%
35-10	70	CU #10	0.19%	0.49%
35-11	25	CU #10	0.06%	0.37%
35-12	465	CU #10	1.23%	1.53%
35-13	415	CU #10	1.10%	1.41%
35-14	370	CU #10	0.98%	1.28%
36-1	305	CU #10	0.81%	1.12%

36-2	260	CU #10	0.69%	0.96%
36-3	215	CU #10	0.57%	0.84%
36-4	165	CU #10	0.44%	0.71%
36-5	120	CU #10	0.32%	0.59%
36-6	75	CU #10	0.20%	0.47%
36-7	30	CU #10	0.08%	0.35%
36-8	60	CU #10	0.16%	0.43%
36-9	105	CU #10	0.28%	0.55%
36-10	150	CU #10	0.40%	0.67%
36-11	200	CU #10	0.53%	0.80%
36-12	245	CU #10	0.65%	0.91%
36-13	290	CU #10	0.77%	1.04%
36-14	335	CU #10	0.88%	1.15%
37-1	255	CU #10	0.68%	0.95%
37-2	210	CU #10	0.55%	0.79%
37-3	165	CU #10	0.44%	0.67%
37-4	120	CU #10	0.32%	0.56%
37-5	70	CU #10	0.19%	0.42%
37-6	25	CU #10	0.06%	0.30%
37-7	465	CU #10	1.23%	1.46%
37-8	420	CU #10	1.11%	1.35%
37-9	370	CU #10	0.98%	1.21%
37-10	325	CU #10	0.86%	1.10%
37-11	280	CU #10	0.74%	0.97%
37-12	235	CU #10	0.62%	0.86%
37-13	190	CU #10	0.50%	0.73%
37-14	145	CU #10	0.38%	0.62%
38-1	75	CU #10	0.20%	0.43%
38-2	30	CU #10	0.08%	0.31%
38-3	465	CU #10	1.23%	1.45%
38-4	420	CU #10	1.11%	1.34%
38-5	375	CU #10	0.99%	1.21%
38-6	330	CU #10	0.87%	1.10%
38-7	285	CU #10	0.75%	0.97%
38-8	235	CU #10	0.62%	0.85%
38-9	190	CU #10	0.50%	0.72%
38-10	145	CU #10	0.38%	0.61%
38-11	100	CU #10	0.26%	0.48%
38-12	490	CU #10	1.30%	1.52%
38-13	445	CU #10	1.18%	1.40%
38-14	400	CU #10	1.06%	1.28%
38-15	355	CU #10	0.94%	1.16%
39-1	210	CU #10	0.55%	0.77%
39-2	165	CU #10	0.44%	0.64%
39-3	120	CU #10	0.32%	0.53%
39-4	75	CU #10	0.20%	0.41%
39-5	30	CU #10	0.08%	0.29%
39-6	420	CU #10	1.11%	1.32%
39-7	375	CU #10	0.99%	1.20%
39-8	330	CU #10	0.87%	1.08%
39-9	285	CU #10	0.75%	0.96%
39-10	235	CU #10	0.62%	0.83%
39-11	190	CU #10	0.50%	0.71%
39-12	145	CU #10	0.38%	0.59%
39-13	100	CU #10	0.26%	0.47%
39-14	55	CU #10	0.15%	0.35%
40-1	255	CU #10	0.68%	0.88%
40-2	205	CU #10	0.54%	0.75%
40-3	160	CU #10	0.43%	0.50%
40-4	115	CU #10	0.30%	0.37%
40-5	70	CU #10	0.19%	0.26%
40-6	25	CU #10	0.06%	0.13%
40-7	90	CU #10	0.24%	0.31%
40-8	135	CU #10	0.35%	0.42%
40-9	180	CU #10	0.48%	0.55%
40-10	225	CU #10	0.59%	0.66%
40-11	485	CU #10	1.28%	1.35%
40-12	440	CU #10	1.17%	1.24%
41-1	115	CU #10	0.30%	0.37%
41-2	160	CU #10	0.43%	0.50%
41-3	210	CU #10	0.55%	0.62%
41-4	255	CU #10	0.68%	0.75%

41-5	300	CU #10	0.79%	1.49%
41-6	345	CU #10	0.92%	1.62%
41-7	390	CU #10	1.03%	1.73%
41-8	435	CU #10	1.15%	1.86%
41-9	480	CU #10	1.27%	1.97%
41-10	525	CU #10	1.39%	2.10%
41-11	570	CU #10	1.51%	2.21%
41-12	615	CU #10	1.62%	2.33%
42-1	680	CU #10	1.80%	2.50%
42-2	25	CU #10	0.06%	0.76%
42-3	70	CU #10	0.19%	0.89%
42-4	120	CU #10	0.32%	1.02%
42-5	165	CU #10	0.44%	1.14%
42-6	210	CU #10	0.55%	1.25%
42-7	255	CU #10	0.68%	1.38%
42-8	300	CU #10	0.79%	1.55%
42-9	345	CU #10	0.92%	1.67%
42-10	390	CU #10	1.03%	1.79%
42-11	435	CU #10	1.15%	1.91%
42-12	480	CU #10	1.27%	2.03%
43-1	180	CU #10	0.48%	1.24%
43-2	225	CU #10	0.59%	1.35%
43-3	270	CU #10	0.72%	1.48%
43-4	315	CU #10	0.83%	1.59%
43-5	360	CU #10	0.96%	1.71%
43-6	405	CU #10	1.07%	1.83%
43-7	450	CU #10	1.19%	1.94%
43-8	500	CU #10	1.32%	2.08%
43-9	545	CU #10	1.45%	2.20%
43-10	30	CU #10	0.08%	0.78%
43-11	75	CU #10	0.20%	0.90%
43-12	120	CU #10	0.32%	1.02%
43-13	165	CU #10	0.44%	1.14%
43-14	210	CU #10	0.55%	1.25%
44-1	275	CU #10	0.73%	1.43%
44-2	320	CU #10	0.84%	1.54%
44-3	365	CU #10	0.97%	1.67%
44-4	410	CU #10	1.08%	1.78%
44-5	455	CU #10	1.21%	1.91%
44-6	500	CU #10	1.32%	2.02%
44-7	545	CU #10	1.45%	2.15%
44-8	595	CU #10	1.57%	2.27%
44-9	30	CU #10	0.08%	0.78%
44-10	75	CU #10	0.20%	0.85%
44-11	120	CU #10	0.32%	0.97%
44-12	165	CU #10	0.44%	1.09%
44-13	210	CU #10	0.55%	1.20%
44-14	260	CU #10	0.69%	1.34%
45-1	320	CU #10	0.84%	1.49%
45-2	365	CU #10	0.97%	1.62%
45-3	410	CU #10	1.08%	1.73%
45-4	455	CU #10	1.21%	1.86%
45-5	500	CU #10	1.32%	1.97%
45-6	545	CU #10	1.45%	2.10%
45-7	590	CU #10	1.56%	2.21%
45-8	25	CU #10	0.06%	0.71%
45-9	75	CU #10	0.20%	0.85%
45-10	120	CU #10	0.32%	0.97%
45-11	165	CU #10	0.44%	1.03%
45-12	210	CU #10	0.55%	1.15%
45-13	255	CU #10	0.68%	1.27%
45-14	300	CU #10	0.79%	1.39%
46-1	360	CU #10	0.96%	1.55%
46-2	405	CU #10	1.07%	1.67%
46-3	450	CU #10	1.19%	1.78%
46-4	475	CU #10	1.26%	1.86%
46-5	30	CU #10	0.08%	0.68%
46-6	75	CU #10	0.20%	0.79%
46-7	120	CU #10	0.32%	0.92%
46-8	165	CU #10	0.44%	1.03%
46-9	210	CU #10	0.55%	1.15%
46-10	255	CU #10	0.68%	1.27%

46-11	305	CU #10	0.81%	1.39%
46-12	350	CU #10	0.93%	1.51%
46-13	395	CU #10	1.04%	1.62%
46-14	440	CU #10	1.17%	1.75%
46-15	55	CU #10	0.15%	0.73%
47-1	85	CU #10	0.23%	0.81%
47-2	135	CU #10	0.35%	0.94%
47-3	180	CU #10	0.48%	1.06%
47-4	225	CU #10	0.59%	1.18%
47-5	270	CU #10	0.72%	1.30%
47-6	315	CU #10	0.83%	1.41%
47-7	360	CU #10	0.96%	1.54%
47-8	410	CU #10	1.08%	1.66%
47-9	455	CU #10	1.21%	1.79%
47-10	475	CU #10	1.26%	1.74%
47-11	25	CU #10	0.06%	0.54%
47-12	70	CU #10	0.19%	0.67%
47-13	115	CU #10	0.30%	0.78%
47-14	160	CU #10	0.43%	0.91%
47-15	210	CU #10	0.55%	1.03%
48-1	270	CU #10	0.72%	1.20%
48-2	315	CU #10	0.83%	1.31%
48-3	360	CU #10	0.96%	1.44%
48-4	405	CU #10	1.07%	1.55%
48-5	455	CU #10	1.21%	1.69%
48-6	30	CU #10	0.08%	0.56%
48-7	75	CU #10	0.20%	0.68%
48-8	120	CU #10	0.32%	0.75%
48-9	165	CU #10	0.44%	0.86%
48-10	215	CU #10	0.57%	1.00%
48-11	260	CU #10	0.69%	1.11%
48-12	305	CU #10	0.81%	1.23%
48-13	350	CU #10	0.93%	1.35%
48-14	395	CU #10	1.04%	1.46%
48-15	440	CU #10	1.17%	1.59%
49-1	475	CU #10	1.26%	1.68%
49-2	30	CU #10	0.08%	0.51%
49-3	75	CU #10	0.20%	0.62%
49-4	120	CU #10	0.32%	0.75%
49-5	170	CU #10	0.45%	0.87%
49-6	215	CU #10	0.57%	1.00%
49-7	260	CU #10	0.69%	1.05%
49-8	305	CU #10	0.81%	1.17%
49-9	350	CU #10	0.93%	1.29%
49-10	395	CU #10	1.04%	1.40%
49-11	440	CU #10	1.17%	1.52%
49-12	375	CU #10	0.99%	1.35%
49-13	420	CU #10	1.11%	1.47%
49-14	465	CU #10	1.23%	1.59%
50-1	30	CU #10	0.08%	0.44%
50-2	75	CU #10	0.20%	0.56%
50-3	120	CU #10	0.32%	0.68%
50-4	165	CU #10	0.44%	0.80%
50-5	210	CU #10	0.55%	0.91%
50-6	255	CU #10	0.68%	0.93%
50-7	300	CU #10	0.79%	1.05%
50-8	350	CU #10	0.93%	1.18%
50-9	395	CU #10	1.04%	1.30%
50-10	440	CU #10	1.17%	1.42%
50-11	490	CU #10	1.30%	1.56%
50-12	55	CU #10	0.15%	0.40%
50-13	100	CU #10	0.26%	0.52%
50-14	145	CU #10	0.38%	0.64%
51-1	180	CU #10	0.48%	0.74%
51-2	225	CU #10	0.59%	0.85%
51-3	270	CU #10	0.72%	0.97%

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 WOOD AVENUE SOUTH, ISELIN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"

PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W // 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE: SCHEDULES & CALCULATIONS

DRAWING #: E316

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

PLOT DATE: 3/17/2021 4:08 PM

51-4	320	CU #10	0.84%	0.98%
51-5	365	CU #10	0.97%	1.10%
51-6	410	CU #10	1.08%	1.22%
51-7	455	CU #10	1.21%	1.34%
51-8	25	CU #10	0.06%	0.20%
51-9	70	CU #10	0.19%	0.32%
51-10	120	CU #10	0.32%	0.46%
51-11	165	CU #10	0.44%	0.57%
51-12	210	CU #10	0.55%	0.69%
51-13	255	CU #10	0.68%	0.81%
52-1	315	CU #10	0.83%	0.97%
52-2	360	CU #10	0.96%	1.09%
52-3	410	CU #10	1.08%	1.20%
52-4	455	CU #10	1.21%	1.33%
52-5	25	CU #10	0.06%	0.18%
52-6	70	CU #10	0.19%	0.31%
52-7	120	CU #10	0.32%	0.44%
52-8	165	CU #10	0.44%	0.56%
52-9	210	CU #10	0.55%	0.67%
52-10	50	CU #10	0.14%	0.25%
52-11	95	CU #10	0.25%	0.37%
52-12	145	CU #10	0.38%	0.50%
52-13	190	CU #10	0.50%	0.62%
52-14	235	CU #10	0.62%	0.74%
53-1	395	CU #10	1.04%	1.67%
53-2	410	CU #10	1.08%	1.71%
53-3	455	CU #10	1.21%	1.83%
53-4	355	CU #10	0.94%	1.56%
53-5	350	CU #10	0.93%	1.55%
53-6	380	CU #10	1.01%	1.63%
53-7	415	CU #10	1.10%	1.73%
53-8	430	CU #10	1.13%	1.76%
53-9	155	CU #10	0.41%	1.03%
53-10	425	CU #10	1.12%	1.75%
53-11	170	CU #10	0.45%	1.07%
53-12	395	CU #10	1.04%	1.67%
54-1	420	CU #10	1.11%	1.69%
54-2	440	CU #10	1.17%	1.75%
54-3	440	CU #10	1.17%	1.75%
54-4	460	CU #10	1.22%	1.80%
54-5	465	CU #10	1.23%	1.81%
54-6	410	CU #10	1.08%	1.66%
54-7	485	CU #10	1.28%	1.86%
54-8	470	CU #10	1.25%	1.83%
54-9	395	CU #10	1.04%	1.62%
54-10	355	CU #10	0.94%	1.52%
54-11	355	CU #10	0.94%	1.52%
54-12	405	CU #10	1.07%	1.65%
55-1	370	CU #10	0.98%	1.56%
55-2	390	CU #10	1.03%	1.61%
55-3	415	CU #10	1.10%	1.68%
55-4	440	CU #10	1.17%	1.75%
55-5	475	CU #10	1.26%	1.84%
55-6	505	CU #10	1.33%	1.91%
55-7	540	CU #10	1.43%	2.01%
55-8	580	CU #10	1.54%	2.12%
55-9	445	CU #10	1.18%	1.76%
55-10	435	CU #10	1.15%	1.74%
55-11	190	CU #10	0.50%	1.08%
55-12	420	CU #10	1.11%	1.69%

56-1	660	CU #10	1.75%	2.36%
56-2	620	CU #10	1.64%	2.26%
56-3	740	CU #10	1.96%	2.57%
56-4	710	CU #10	1.88%	2.50%
56-5	725	CU #10	1.91%	2.53%
56-6	635	CU #10	1.69%	2.30%
56-7	670	CU #10	1.77%	2.38%
56-8	710	CU #10	1.88%	2.50%
56-9	675	CU #10	1.79%	2.40%
56-10	615	CU #10	1.62%	2.24%
56-11	655	CU #10	1.74%	2.35%
56-12	625	CU #10	1.65%	2.27%
56-13	670	CU #10	1.77%	2.38%
57-1	415	CU #10	1.10%	1.65%
57-2	435	CU #10	1.15%	1.71%
57-3	460	CU #10	1.22%	1.77%
57-4	490	CU #10	1.30%	1.85%
57-5	525	CU #10	1.39%	1.95%
57-6	560	CU #10	1.48%	2.03%
57-7	595	CU #10	1.57%	2.12%
57-8	385	CU #10	1.02%	1.57%
57-9	130	CU #10	0.34%	0.89%
57-10	350	CU #10	0.93%	1.48%
57-11	365	CU #10	0.97%	1.52%
57-12	385	CU #10	1.02%	1.57%
58-1	440	CU #10	1.17%	1.74%
58-2	465	CU #10	1.23%	1.80%
58-3	495	CU #10	1.31%	1.88%
58-4	530	CU #10	1.40%	1.98%
58-5	565	CU #10	1.50%	2.07%
58-6	475	CU #10	1.26%	1.83%
58-7	375	CU #10	0.99%	1.56%
58-8	350	CU #10	0.93%	1.50%
58-9	355	CU #10	0.94%	1.51%
58-10	370	CU #10	0.98%	1.55%
58-11	390	CU #10	1.03%	1.60%
58-12	415	CU #10	1.10%	1.68%
58-13	445	CU #10	1.18%	1.75%
59-1	375	CU #10	0.99%	1.36%
59-2	525	CU #10	1.39%	1.77%
59-3	560	CU #10	1.48%	1.85%
59-4	130	CU #10	0.34%	0.72%
59-5	355	CU #10	0.94%	1.31%
59-6	360	CU #10	0.96%	1.33%
59-7	370	CU #10	0.98%	1.35%
59-8	390	CU #10	1.03%	1.40%
59-9	415	CU #10	1.10%	1.48%
59-10	445	CU #10	1.18%	1.55%
59-11	475	CU #10	1.26%	1.63%
59-12	510	CU #10	1.35%	1.72%
60-1	560	CU #10	1.48%	2.01%
60-2	475	CU #10	1.26%	1.79%
60-3	395	CU #10	1.04%	1.57%
60-4	355	CU #10	0.94%	1.47%
60-5	360	CU #10	0.96%	1.49%
60-6	370	CU #10	0.98%	1.51%
60-7	390	CU #10	1.03%	1.56%
60-8	415	CU #10	1.10%	1.64%
60-9	445	CU #10	1.18%	1.71%
60-10	475	CU #10	1.26%	1.79%
60-11	510	CU #10	1.35%	1.88%
60-12	545	CU #10	1.45%	1.98%
60-13	450	CU #10	1.19%	1.72%

61-1	410	CU #10	1.08%	1.54%
61-2	395	CU #10	1.04%	1.49%
61-3	400	CU #10	1.06%	1.52%
61-4	415	CU #10	1.10%	1.56%
61-5	435	CU #10	1.15%	1.61%
61-6	465	CU #10	1.23%	1.68%
61-7	495	CU #10	1.31%	1.77%
61-8	525	CU #10	1.39%	1.85%
61-9	390	CU #10	1.03%	1.48%
61-10	350	CU #10	0.93%	1.38%
61-11	355	CU #10	0.94%	1.39%
61-12	370	CU #10	0.98%	1.43%
62-1	410	CU #10	1.08%	1.52%
62-2	435	CU #10	1.15%	1.59%
62-3	460	CU #10	1.22%	1.66%
62-4	490	CU #10	1.30%	1.74%
62-5	525	CU #10	1.39%	1.83%
62-6	405	CU #10	1.07%	1.51%
62-7	135	CU #10	0.35%	0.79%
62-8	360	CU #10	0.96%	1.40%
62-9	370	CU #10	0.98%	1.42%
62-10	390	CU #10	1.03%	1.47%
62-11	415	CU #10	1.10%	1.54%
62-12	445	CU #10	1.18%	1.61%
63-1	530	CU #10	1.40%	1.82%
63-2	455	CU #10	1.21%	1.62%
63-3	410	CU #10	1.08%	1.50%
63-4	395	CU #10	1.04%	1.46%
63-5	400	CU #10	1.06%	1.48%
63-6	415	CU #10	1.10%	1.52%
63-7	440	CU #10	1.17%	1.58%
63-8	465	CU #10	1.23%	1.64%
63-9	495	CU #10	1.31%	1.73%
63-10	375	CU #10	0.99%	1.41%
63-11	350	CU #10	0.93%	1.34%
63-12	355	CU #10	0.94%	1.35%
64-1	445	CU #10	1.18%	1.72%
64-2	445	CU #10	1.18%	1.72%
64-3	460	CU #10	1.22%	1.76%
64-4	475	CU #10	1.26%	1.80%
64-5	500	CU #10	1.32%	1.86%
64-6	455	CU #10	1.21%	1.75%
64-7	410	CU #10	1.08%	1.62%
64-8	395	CU #10	1.04%	1.58%
64-9	400	CU #10	1.06%	1.60%
64-10	415	CU #10	1.10%	1.64%
64-11	440	CU #10	1.17%	1.71%
64-12	290	CU #10	0.77%	1.31%
64-13	25	CU #10	0.06%	0.60%
65-1	410	CU #10	1.08%	1.59%
65-2	395	CU #10	1.04%	1.55%
65-3	400	CU #10	1.06%	1.57%
65-4	415	CU #10	1.10%	1.61%
65-5	435	CU #10	1.15%	1.66%
65-6	395	CU #10	1.04%	1.55%
65-7	350	CU #10	0.93%	1.43%
65-8	355	CU #10	0.94%	1.44%
65-9	195	CU #10	0.52%	1.03%
65-10	390	CU #10	1.03%	1.54%
65-11	410	CU #10	1.08%	1.59%
65-12	300	CU #10	0.79%	1.30%
65-13	445	CU #10	1.18%	1.68%

66-1	395	CU #10	1.04%	1.48%
66-2	400	CU #10	1.06%	1.50%
66-3	415	CU #10	1.10%	1.54%
66-4	435	CU #10	1.15%	1.59%
66-5	460	CU #10	1.22%	1.66%
66-6	390	CU #10	1.03%	1.47%
66-7	350	CU #10	0.93%	1.37%
66-8	355	CU #10	0.94%	1.38%
66-9	370	CU #10	0.98%	1.42%
66-10	390	CU #10	1.03%	1.47%
66-11	415	CU #10	1.10%	1.54%
66-12	440	CU #10	1.17%	1.60%
67-1	390	CU #10	1.03%	1.43%
67-2	350	CU #10	0.93%	1.33%
67-3	355	CU #10	0.94%	1.34%
67-4	365	CU #10	0.97%	1.37%
67-5	385	CU #10	1.02%	1.42%
67-6	410	CU #10	1.08%	1.48%
67-7	440	CU #10	1.17%	1.57%
67-8	415	CU #10	1.10%	1.50%
67-9	420	CU #10	1.11%	1.52%
67-10	430	CU #10	1.13%	1.54%
67-11	450	CU #10	1.19%	1.59%
67-12	475	CU #10	1.26%	1.66%
68-1	390	CU #10	1.03%	1.43%
68-2	350	CU #10	0.93%	1.33%
68-3	665	CU #10	1.76%	2.16%
68-4	765	CU #10	2.03%	2.43%
68-5	735	CU #10	1.95%	2.35%
68-6	715	CU #10	1.89%	2.30%
68-7	465	CU #10	1.23%	1.63%
68-8	705	CU #10	1.86%	2.26%
68-9	710	CU #10	1.88%	2.29%
68-10	725	CU #10	1.91%	2.32%
68-11	745	CU #10	1.97%	2.37%
68-12	765	CU #10	2.03%	2.43%
69-1	915	CU #10	2.42%	3.15%
69-2	810	CU #10	2.14%	2.87%
69-3	795	CU #10	2.10%	2.82%
69-4	365	CU #10	0.97%	1.69%
69-5	800	CU #10	2.11%	2.83%
69-6	810	CU #10	2.14%	2.87%
69-7	820	CU #10	2.17%	2.90%
69-8	835	CU #10	2.21%	2.93%
69-9	855	CU #10	2.26%	2.98%
69-10	875	CU #10	2.32%	3.04%
69-11	660	CU #10	1.75%	2.47%
69-12	735	CU #10	1.95%	2.67%
70-1	635	CU #10	1.69%	2.21%
70-2	630	CU #10	1.66%	2.19%
70-3	635	CU #10	1.69%	2.21%
70-4	645	CU #10	1.71%	2.23%
70-5	660	CU #10	1.75%	2.28%
70-6	680	CU #10	1.80%	2.33%
70-7	700	CU #10	1.85%	2.38%
70-8	730	CU #10	1.94%	2.46%
70-9	625	CU #10	1.65%	2.18%
70-10	570	CU #10	1.51%	2.04%
70-11	565	CU #10	1.50%	2.03%
70-12	575	CU #10	1.52%	2.05%

71-1	625	CU #10	1.65%	2.21%
71-2	635	CU #10	1.69%	2.24%
71-3	650	CU #10	1.72%	2.27%
71-4	670	CU #10	1.77%	2.33%
71-5	660	CU #10	1.75%	2.31%
71-6	585	CU #10	1.55%	2.11%
71-7	575	CU #10	1.52%	2.08%
71-8	580	CU #10	1.54%	2.10%
71-9	590	CU #10	1.56%	2.12%
71-10	605	CU #10	1.60%	2.16%
71-11	625	CU #10	1.65%	2.21%
71-12	645	CU #10	1.71%	2.26%
72-1	635	CU #10	1.69%	2.27%
72-2	575	CU #10	1.52%	2.11%
72-3	570	CU #10	1.51%	2.10%
72-4	575	CU #10	1.52%	2.11%
72-5	585	CU #10	1.55%	2.14%
72-6	600	CU #10	1.59%	2.18%
72-7	620	CU #10	1.64%	2.23%
72-8	645	CU #10	1.71%	2.29%
72-9	750	CU #10	1.99%	2.58%
72-10	430	CU #10	1.13%	1.72%
72-11	670	CU #10	1.77%	2.36%
72-12	655	CU #10	1.74%	2.33%
73-1	630	CU #10	1.66%	2.32%
73-2	640	CU #10	1.70%	2.35%
73-3	655	CU #10	1.74%	2.39%
73-4	675	CU #10	1.79%	2.44%
73-5	635	CU #10	1.69%	2.34%
73-6	570	CU #10	1.51%	2.16%
73-7	565	CU #10	1.50%	2.15%
73-8	575	CU #10	1.52%	2.17%
73-9	585	CU #10	1.55%	2.21%
73-10	600	CU #10	1.59%	2.25%
73-11	620	CU #10	1.64%	2.30%
73-12	640	CU #10	1.70%	2.35%
74-1	695	CU #10	1.84%	2.73%
74-2	560	CU #10	1.48%	2.36%
74-3	520	CU #10	1.37%	2.26%
74-4	655	CU #10	1.74%	2.62%
74-5	585	CU #10	1.55%	2.44%
74-6	575	CU #10	1.52%	2.41%
74-7	580	CU #10	1.54%	2.43%
74-8	590	CU #10	1.56%	2.45%
74-9	605	CU #10	1.60%	2.49%
74-10	625	CU #10	1.65%	2.54%
74-11	645	CU #10	1.71%	2.59%
74-12	670	CU #10	1.77%	2.66%
74-13	695	CU #10	1.84%	2.73%
75-1	675	CU #10	1.79%	2.52%
75-2	590	CU #10	1.56%	2.29%
75-3	580	CU #10	1.54%	2.27%
75-4	580	CU #10	1.54%	2.27%
75-5	590	CU #10	1.56%	2.29%
75-6	605	CU #10	1.60%	2.33%
75-7	625	CU #10	1.65%	2.38%
75-8	645	CU #10	1.71%	2.44%
75-9	670	CU #10	1.77%	2.50%
75-10	695	CU #10	1.84%	2.57%
75-11	740	CU #10	1.96%	2.69%
75-12	725	CU #10	1.91%	2.64%

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

ENGINEER

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E317

RULER IN INCHES:

PLOT DATE: 3/17/2021 4:08 PM

76-1	640	CU #10	1.70%	2.42%
76-2	630	CU #10	1.66%	2.39%
76-3	630	CU #10	1.66%	2.39%
76-4	640	CU #10	1.70%	2.42%
76-5	655	CU #10	1.74%	2.46%
76-6	495	CU #10	1.31%	2.03%
76-7	370	CU #10	0.98%	1.70%
76-8	570	CU #10	1.51%	2.23%
76-9	565	CU #10	1.50%	2.22%
76-10	575	CU #10	1.52%	2.24%
76-11	585	CU #10	1.55%	2.27%
76-12	600	CU #10	1.59%	2.31%
77-1	650	CU #10	1.72%	2.56%
77-2	665	CU #10	1.76%	2.60%
77-3	685	CU #10	1.81%	2.65%
77-4	595	CU #10	1.57%	2.41%
77-5	585	CU #10	1.55%	2.39%
77-6	375	CU #10	0.99%	1.83%
77-7	595	CU #10	1.57%	2.41%
77-8	610	CU #10	1.61%	2.45%
77-9	625	CU #10	1.65%	2.50%
77-10	740	CU #10	1.96%	2.80%
77-11	725	CU #10	1.91%	2.76%
77-12	680	CU #10	1.80%	2.64%
78-1	660	CU #10	1.75%	2.69%
78-2	655	CU #10	1.74%	2.68%
78-3	660	CU #10	1.75%	2.69%
78-4	675	CU #10	1.79%	2.73%
78-5	680	CU #10	1.80%	2.74%
78-6	590	CU #10	1.56%	2.50%
78-7	580	CU #10	1.54%	2.48%
78-8	580	CU #10	1.54%	2.48%
78-9	590	CU #10	1.56%	2.50%
78-10	605	CU #10	1.60%	2.54%
78-11	625	CU #10	1.65%	2.59%
78-12	645	CU #10	1.71%	2.64%
79-1	760	CU #10	2.01%	2.45%
79-2	410	CU #10	1.08%	1.53%
79-3	395	CU #10	1.04%	1.49%
79-4	400	CU #10	1.06%	1.51%
79-5	415	CU #10	1.10%	1.55%
79-6	440	CU #10	1.17%	1.61%
79-7	655	CU #10	1.74%	2.18%
79-8	635	CU #10	1.69%	2.13%
79-9	345	CU #10	0.92%	1.36%
79-10	570	CU #10	1.51%	1.96%
79-11	575	CU #10	1.52%	1.97%
79-12	585	CU #10	1.55%	2.00%
80-1	685	CU #10	1.81%	2.25%
80-2	495	CU #10	1.31%	1.75%
80-3	760	CU #10	2.01%	2.45%
80-4	670	CU #10	1.77%	2.21%
80-5	395	CU #10	1.04%	1.48%
80-6	620	CU #10	1.64%	2.09%
80-7	625	CU #10	1.65%	2.10%
80-8	635	CU #10	1.69%	2.13%
80-9	650	CU #10	1.72%	2.16%
80-10	675	CU #10	1.79%	2.23%
80-11	590	CU #10	1.56%	2.00%
80-12	580	CU #10	1.54%	1.98%
80-13	580	CU #10	1.54%	1.98%

81-1	685	CU #10	1.81%	1.96%
81-2	690	CU #10	1.83%	1.98%
81-3	310	CU #10	0.82%	0.98%
81-4	675	CU #10	1.79%	1.94%
81-5	640	CU #10	1.70%	1.85%
81-6	625	CU #10	1.65%	1.81%
81-7	630	CU #10	1.66%	1.82%
81-8	635	CU #10	1.69%	1.84%
81-9	265	CU #10	0.70%	0.85%
81-10	350	CU #10	0.93%	1.08%
81-11	570	CU #10	1.51%	1.66%
81-12	575	CU #10	1.52%	1.67%
81-13	585	CU #10	1.55%	1.70%
82-1	305	CU #10	0.81%	1.25%
82-2	295	CU #10	0.78%	1.21%
82-3	755	CU #10	2.00%	2.43%
82-4	715	CU #10	1.89%	2.33%
82-5	695	CU #10	1.84%	2.28%
82-6	310	CU #10	0.82%	1.26%
82-7	285	CU #10	0.75%	1.18%
82-8	395	CU #10	1.04%	1.47%
82-9	265	CU #10	0.70%	1.13%
82-10	245	CU #10	0.65%	1.08%
82-11	260	CU #10	0.69%	1.12%
82-12	310	CU #10	0.82%	1.26%
82-13	305	CU #10	0.81%	1.25%
82-14	305	CU #10	0.81%	1.25%
83-1	310	CU #10	0.82%	1.33%
83-2	305	CU #10	0.81%	1.32%
83-3	300	CU #10	0.79%	1.29%
83-4	305	CU #10	0.81%	1.32%
83-5	290	CU #10	0.77%	1.27%
83-6	330	CU #10	0.87%	1.38%
83-7	735	CU #10	1.95%	2.45%
83-8	295	CU #10	0.78%	1.28%
83-9	280	CU #10	0.74%	1.24%
83-10	340	CU #10	0.89%	1.40%
83-11	295	CU #10	0.78%	1.28%
83-12	280	CU #10	0.74%	1.24%
83-13	345	CU #10	0.92%	1.42%
83-14	300	CU #10	0.79%	1.29%
84-1	605	CU #10	1.60%	2.22%
84-2	590	CU #10	1.56%	2.18%
84-3	580	CU #10	1.54%	2.16%
84-4	575	CU #10	1.52%	2.14%
84-5	585	CU #10	1.55%	2.17%
84-6	655	CU #10	1.74%	2.36%
84-7	660	CU #10	1.75%	2.37%
84-8	655	CU #10	1.74%	2.36%
84-9	655	CU #10	1.74%	2.36%
84-10	675	CU #10	1.79%	2.41%
84-11	720	CU #10	1.90%	2.52%
84-12	745	CU #10	1.97%	2.58%
85-1	605	CU #10	1.60%	2.18%
85-2	590	CU #10	1.56%	2.14%
85-3	580	CU #10	1.54%	2.12%
85-4	575	CU #10	1.52%	2.10%
85-5	585	CU #10	1.55%	2.13%
85-6	665	CU #10	1.76%	2.34%
85-7	660	CU #10	1.75%	2.33%
85-8	655	CU #10	1.74%	2.32%
85-9	655	CU #10	1.74%	2.32%
85-10	675	CU #10	1.79%	2.37%
85-11	720	CU #10	1.90%	2.48%
85-12	440	CU #10	1.17%	1.75%

86-1	410	CU #10	1.08%	1.63%
86-2	585	CU #10	1.55%	2.10%
86-3	575	CU #10	1.52%	2.07%
86-4	570	CU #10	1.51%	2.06%
86-5	345	CU #10	0.92%	1.47%
86-6	660	CU #10	1.75%	2.30%
86-7	660	CU #10	1.75%	2.30%
86-8	650	CU #10	1.72%	2.27%
86-9	655	CU #10	1.74%	2.29%
86-10	675	CU #10	1.79%	2.34%
86-11	720	CU #10	1.90%	2.45%
86-12	735	CU #10	1.95%	2.50%
87-1	415	CU #10	1.10%	1.63%
87-2	585	CU #10	1.55%	2.08%
87-3	575	CU #10	1.52%	2.05%
87-4	570	CU #10	1.51%	2.04%
87-5	575	CU #10	1.52%	2.05%
87-6	645	CU #10	1.71%	2.23%
87-7	660	CU #10	1.75%	2.28%
87-8	650	CU #10	1.72%	2.25%
87-9	655	CU #10	1.74%	2.27%
87-10	670	CU #10	1.77%	2.30%
87-11	715	CU #10	1.89%	2.42%
87-12	745	CU #10	1.97%	2.49%
88-1	600	CU #10	1.59%	1.80%
88-2	585	CU #10	1.55%	1.76%
88-3	575	CU #10	1.52%	1.73%
88-4	570	CU #10	1.51%	1.72%
88-5	580	CU #10	1.54%	1.75%
88-6	385	CU #10	1.02%	1.23%
88-7	660	CU #10	1.75%	1.96%
88-8	430	CU #10	1.13%	1.34%
88-9	655	CU #10	1.74%	1.95%
88-10	670	CU #10	1.77%	1.98%
88-11	715	CU #10	1.89%	2.10%
88-12	745	CU #10	1.97%	2.17%
89-1	605	CU #10	1.60%	2.03%
89-2	595	CU #10	1.57%	2.00%
89-3	585	CU #10	1.55%	1.97%
89-4	585	CU #10	1.55%	1.97%
89-5	600	CU #10	1.59%	2.02%
89-6	700	CU #10	1.85%	2.28%
89-7	665	CU #10	1.76%	2.18%
89-8	660	CU #10	1.75%	2.17%
89-9	420	CU #10	1.11%	1.54%
89-10	680	CU #10	1.80%	2.22%
89-11	730	CU #10	1.94%	2.36%
89-12	730	CU #10	1.94%	2.36%
90-1	600	CU #10	1.59%	2.06%
90-2	585	CU #10	1.55%	2.02%
90-3	575	CU #10	1.52%	1.99%
90-4	570	CU #10	1.51%	1.98%
90-5	575	CU #10	1.52%	1.99%
90-6	655	CU #10	1.74%	2.21%
90-7	655	CU #10	1.74%	2.21%
90-8	650	CU #10	1.72%	2.19%
90-9	655	CU #10	1.74%	2.21%
90-10	675	CU #10	1.79%	2.26%
90-11	720	CU #10	1.90%	2.37%
90-12	730	CU #10	1.94%	2.40%

91-1	600	CU #10	1.59%	2.11%
91-2	585	CU #10	1.55%	2.07%
91-3	575	CU #10	1.52%	2.04%
91-4	565	CU #10	1.50%	2.02%
91-5	575	CU #10	1.52%	2.04%
91-6	635	CU #10	1.69%	2.21%
91-7	655	CU #10	1.74%	2.26%
91-8	650	CU #10	1.72%	2.24%
91-9	655	CU #10	1.74%	2.26%
91-10	670	CU #10	1.77%	2.29%
91-11	715	CU #10	1.89%	2.41%
91-12	740	CU #10	1.96%	2.48%
92-1	785	CU #10	2.08%	3.16%
92-2	755	CU #10	2.00%	3.08%
92-3	725	CU #10	1.91%	3.00%
92-4	695	CU #10	1.84%	2.92%
92-5	670	CU #10	1.77%	2.85%
92-6	645	CU #10	1.71%	2.79%
92-7	620	CU #10	1.64%	2.72%
92-8	605	CU #10	1.60%	2.68%
92-9	590	CU #10	1.56%	2.64%
92-10	580	CU #10	1.54%	2.62%
92-11	575	CU #10	1.52%	2.60%
92-12	580	CU #10	1.54%	2.62%
92-13	655	CU #10	1.74%	2.82%
93-1	785	CU #10	2.08%	3.11%
93-2	755	CU #10	2.00%	3.03%
93-3	725	CU #10	1.91%	2.95%
93-4	695	CU #10	1.84%	2.87%
93-5	670	CU #10	1.77%	2.80%
93-6	645	CU #10	1.71%	2.74%
93-7	620	CU #10	1.64%	2.68%
93-8	600	CU #10	1.59%	2.62%
93-9	585	CU #10	1.55%	2.58%
93-10	575	CU #10	1.52%	2.55%
93-11	570	CU #10	1.51%	2.54%
93-12	575	CU #10	1.52%	2.55%
93-13	640	CU #10	1.70%	2.73%
94-1	785	CU #10	2.08%	3.06%
94-2	755	CU #10	2.00%	2.98%
94-3	725	CU #10	1.91%	2.90%
94-4	695	CU #10	1.84%	2.83%
94-5	665	CU #10	1.76%	2.74%
94-6	640	CU #10	1.70%	2.68%
94-7	620	CU #10	1.64%	2.63%
94-8	600	CU #10	1.59%	2.58%
94-9	585	CU #10	1.55%	2.53%
94-10	575	CU #10	1.52%	2.50%
94-11	570	CU #10	1.51%	2.49%
94-12	575	CU #10	1.52%	2.50%
94-13	635	CU #10	1.69%	2.67%
95-1	785	CU #10	2.08%	3.02%
95-2	750	CU #10	1.99%	2.92%
95-3	720	CU #10	1.90%	2.84%
95-4	695	CU #10	1.84%	2.78%
95-5	665	CU #10	1.76%	2.69%
95-6	640	CU #10	1.70%	2.63%
95-7	620	CU #10	1.64%	2.58%
95-8	600	CU #10	1.59%	2.53%
95-9	585	CU #10	1.55%	2.49%
95-10	570	CU #10	1.51%	2.44%
95-11	565	CU #10	1.50%	2.43%
95-12	565	CU #10	1.50%	2.43%
95-13	615	CU #10	1.62%	2.56%

96-1	725	CU #10	1.91%	2.73%
96-2	695	CU #10	1.84%	2.66%
96-3	670	CU #10	1.77%	2.59%
96-4	645	CU #10	1.71%	2.53%
96-5	620	CU #10	1.64%	2.46%
96-6	600	CU #10	1.59%	2.41%
96-7	585	CU #10	1.55%	2.37%
96-8	575	CU #10	1.52%	2.34%
96-9	570	CU #10	1.51%	2.33%
96-10	580	CU #10	1.54%	2.36%
96-11	650	CU #10	1.72%	2.54%
96-12	735	CU #10	1.95%	2.76%
97-1	665	CU #10	1.76%	2.65%
97-2	640	CU #10	1.70%	2.58%
97-3	620	CU #10	1.64%	2.53%
97-4	600	CU #10	1.59%	2.48%
97-5	580	CU #10	1.54%	2.43%
97-6	570	CU #10	1.51%	2.40%
97-7	565	CU #10	1.50%	2.39%
97-8	565	CU #10	1.50%	2.39%
97-9	610	CU #10	1.61%	2.50%
97-10	465	CU #10	1.23%	2.11%
97-11	705	CU #10	1.86%	2.75%
97-12	685	CU #10	1.81%	2.70%
97-13	670	CU #10	1.77%	2.66%
98-1	605	CU #10	1.60%	2.37%
98-2	590	CU #10	1.56%	2.33%
98-3	580	CU #10	1.54%	2.31%
98-4	580	CU #10	1.54%	2.31%
98-5	590	CU #10	1.56%	2.33%
98-6	675	CU #10	1.79%	2.56%
98-7	540	CU #10	1.43%	2.19%
98-8	690	CU #10	1.83%	2.60%
98-9	675	CU #10	1.79%	2.56%
98-10	660	CU #10	1.75%	2.51%
98-11	655	CU #10	1.74%	2.50%
98-12	660	CU #10	1.75%	2.51%
99-1	355	CU #10	0.94%	1.72%
99-2	580	CU #10	1.54%	2.32%
99-3	650	CU #10	1.72%	2.50%
99-4	465	CU #10	1.23%	2.01%
99-5	710	CU #10	1.88%	2.67%
99-6	690	CU #10	1.83%	2.61%
99-7	670	CU #10	1.77%	2.55%
99-8	450	CU #10	1.19%	1.97%
99-9	650	CU #10	1.72%	2.50%
99-10	655	CU #10	1.74%	2.52%
99-11	670	CU #10	1.77%	2.55%
99-12	715	CU #10	1.89%	2.68%
99-13	745	CU #10	1.97%	2.75%
100-1	670	CU #10	1.77%	2.49%
100-2	645	CU #10	1.71%	2.43%
100-3	620	CU #10	1.64%	2.37%
100-4	605	CU #10	1.60%	2.33%
100-5	585	CU #10	1.55%	2.28%
100-6	575	CU #10	1.52%	2.24%
100-7	570	CU #10	1.51%	2.23%
100-8	580	CU #10	1.54%	2.27%
100-9	640	CU #10	1.70%	2.42%
100-10	575	CU #10	1.52%	2.24%
100-11	540	CU #10	1.43%	2.15%
100-12	690	CU #10	1.83%	2.56%
100-13	670	CU #10	1.77%	2.49%

RULER IN INCHES:

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	AD	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

ENGINEER

DEVELOPER
Greenskies a Clean Focus company
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E318

PLOT DATE: 3/17/2021 4:08 PM

101-1	605	CU #10	1.60%	2.33%
101-2	590	CU #10	1.56%	2.29%
101-3	580	CU #10	1.54%	2.27%
101-4	575	CU #10	1.52%	2.25%
101-5	350	CU #10	0.93%	1.66%
101-6	660	CU #10	1.75%	2.48%
101-7	735	CU #10	1.95%	2.68%
101-8	710	CU #10	1.88%	2.61%
101-9	690	CU #10	1.83%	2.56%
101-10	670	CU #10	1.77%	2.50%
101-11	450	CU #10	1.19%	1.92%
101-12	655	CU #10	1.74%	2.47%
102-1	570	CU #10	1.51%	2.36%
102-2	565	CU #10	1.50%	2.35%
102-3	345	CU #10	0.92%	1.76%
102-4	620	CU #10	1.64%	2.49%
102-5	760	CU #10	2.01%	2.85%
102-6	730	CU #10	1.94%	2.78%
102-7	705	CU #10	1.86%	2.71%
102-8	685	CU #10	1.81%	2.66%
102-9	670	CU #10	1.77%	2.62%
102-10	655	CU #10	1.74%	2.58%
102-11	650	CU #10	1.72%	2.56%
102-12	650	CU #10	1.72%	2.56%
102-13	670	CU #10	1.77%	2.62%
103-1	570	CU #10	1.51%	2.40%
103-2	625	CU #10	1.65%	2.55%
103-3	760	CU #10	2.01%	2.90%
103-4	730	CU #10	1.94%	2.83%
103-5	705	CU #10	1.86%	2.76%
103-6	685	CU #10	1.81%	2.71%
103-7	670	CU #10	1.77%	2.66%
103-8	655	CU #10	1.74%	2.63%
103-9	650	CU #10	1.72%	2.61%
103-10	650	CU #10	1.72%	2.61%
103-11	670	CU #10	1.77%	2.66%
103-12	715	CU #10	1.89%	2.79%
103-13	750	CU #10	1.99%	2.88%
104-1	305	CU #10	0.81%	1.76%
104-2	770	CU #10	2.04%	2.99%
104-3	760	CU #10	2.01%	2.96%
104-4	370	CU #10	0.98%	1.93%
104-5	750	CU #10	1.99%	2.94%
104-6	715	CU #10	1.89%	2.85%
104-7	335	CU #10	0.88%	1.84%
104-8	760	CU #10	2.01%	2.96%
104-9	670	CU #10	1.77%	2.72%
104-10	630	CU #10	1.66%	2.62%
104-11	300	CU #10	0.79%	1.74%
104-12	675	CU #10	1.79%	2.74%
104-13	590	CU #10	1.56%	2.51%
105-1	750	CU #10	1.99%	2.45%
105-2	780	CU #10	2.06%	2.52%
105-3	610	CU #10	1.61%	2.07%
105-4	565	CU #10	1.50%	1.96%
105-5	565	CU #10	1.50%	1.96%
105-6	570	CU #10	1.51%	1.97%
105-7	585	CU #10	1.55%	2.01%
105-8	600	CU #10	1.59%	2.05%
105-9	620	CU #10	1.64%	2.11%
105-10	640	CU #10	1.70%	2.16%
105-11	665	CU #10	1.76%	2.22%
105-12	695	CU #10	1.84%	2.30%

106-1	730	CU #10	1.94%	2.39%
106-2	760	CU #10	2.01%	2.46%
106-3	305	CU #10	0.81%	1.27%
106-4	600	CU #10	1.59%	2.05%
106-5	575	CU #10	1.52%	1.97%
106-6	575	CU #10	1.52%	1.97%
106-7	580	CU #10	1.54%	1.99%
106-8	595	CU #10	1.57%	2.03%
106-9	610	CU #10	1.61%	2.07%
106-10	630	CU #10	1.66%	2.12%
106-11	655	CU #10	1.74%	2.19%
106-12	680	CU #10	1.80%	2.25%
107-1	730	CU #10	1.94%	2.39%
107-2	760	CU #10	2.01%	2.46%
107-3	580	CU #10	1.54%	1.99%
107-4	565	CU #10	1.50%	1.95%
107-5	570	CU #10	1.51%	1.96%
107-6	575	CU #10	1.52%	1.97%
107-7	590	CU #10	1.56%	2.01%
107-8	610	CU #10	1.61%	2.07%
107-9	630	CU #10	1.66%	2.12%
107-10	655	CU #10	1.74%	2.19%
107-11	520	CU #10	1.37%	1.83%
107-12	705	CU #10	1.86%	2.32%
108-1	760	CU #10	2.01%	2.49%
108-2	310	CU #10	0.82%	1.31%
108-3	610	CU #10	1.61%	2.10%
108-4	580	CU #10	1.54%	2.02%
108-5	580	CU #10	1.54%	2.02%
108-6	585	CU #10	1.55%	2.03%
108-7	600	CU #10	1.59%	2.08%
108-8	615	CU #10	1.62%	2.11%
108-9	460	CU #10	1.22%	1.70%
108-10	495	CU #10	1.31%	1.79%
108-11	685	CU #10	1.81%	2.29%
108-12	710	CU #10	1.88%	2.37%
109-1	760	CU #10	2.01%	2.49%
109-2	610	CU #10	1.61%	2.10%
109-3	580	CU #10	1.54%	2.02%
109-4	580	CU #10	1.54%	2.02%
109-5	380	CU #10	1.01%	1.49%
109-6	600	CU #10	1.59%	2.08%
109-7	615	CU #10	1.62%	2.11%
109-8	635	CU #10	1.69%	2.17%
109-9	490	CU #10	1.30%	1.78%
109-10	685	CU #10	1.81%	2.29%
109-11	710	CU #10	1.88%	2.37%
109-12	600	CU #10	1.59%	2.08%
110-1	740	CU #10	1.96%	2.41%
110-2	615	CU #10	1.62%	2.08%
110-3	595	CU #10	1.57%	2.03%
110-4	590	CU #10	1.56%	2.01%
110-5	600	CU #10	1.59%	2.05%
110-6	610	CU #10	1.61%	2.07%
110-7	630	CU #10	1.66%	2.12%
110-8	650	CU #10	1.72%	2.17%
110-9	670	CU #10	1.77%	2.22%
110-10	700	CU #10	1.85%	2.31%
110-11	725	CU #10	1.91%	2.37%
110-12	755	CU #10	2.00%	2.45%

111-1	785	CU #10	2.08%	2.77%
111-2	750	CU #10	1.99%	2.67%
111-3	575	CU #10	1.52%	2.20%
111-4	695	CU #10	1.84%	2.53%
111-5	665	CU #10	1.76%	2.44%
111-6	640	CU #10	1.70%	2.38%
111-7	620	CU #10	1.64%	2.33%
111-8	600	CU #10	1.59%	2.28%
111-9	585	CU #10	1.55%	2.24%
111-10	575	CU #10	1.52%	2.20%
111-11	570	CU #10	1.51%	2.19%
111-12	575	CU #10	1.52%	2.20%
111-13	635	CU #10	1.69%	2.37%
112-1	785	CU #10	2.08%	2.80%
112-2	755	CU #10	2.00%	2.72%
112-3	725	CU #10	1.91%	2.63%
112-4	695	CU #10	1.84%	2.56%
112-5	665	CU #10	1.76%	2.48%
112-6	645	CU #10	1.71%	2.42%
112-7	620	CU #10	1.64%	2.36%
112-8	600	CU #10	1.59%	2.31%
112-9	585	CU #10	1.55%	2.27%
112-10	575	CU #10	1.52%	2.24%
112-11	570	CU #10	1.51%	2.23%
112-12	575	CU #10	1.52%	2.24%
112-13	635	CU #10	1.69%	2.40%
113-1	630	CU #10	1.66%	3.10%
113-2	645	CU #10	1.71%	3.14%
113-3	685	CU #10	1.81%	3.25%
113-4	755	CU #10	2.00%	3.43%
113-5	570	CU #10	1.51%	2.95%
113-6	565	CU #10	1.50%	2.94%
113-7	570	CU #10	1.51%	2.95%
113-8	380	CU #10	1.01%	2.45%
113-9	650	CU #10	1.72%	3.15%
113-10	670	CU #10	1.77%	3.21%
113-11	715	CU #10	1.89%	3.33%
113-12	745	CU #10	1.97%	3.40%
114-1	640	CU #10	1.70%	2.95%
114-2	620	CU #10	1.64%	2.90%
114-3	600	CU #10	1.59%	2.85%
114-4	585	CU #10	1.55%	2.81%
114-5	365	CU #10	0.97%	2.23%
114-6	570	CU #10	1.51%	2.77%
114-7	575	CU #10	1.52%	2.78%
114-8	630	CU #10	1.66%	2.92%
114-9	670	CU #10	1.77%	3.03%
114-10	660	CU #10	1.75%	3.01%
114-11	650	CU #10	1.72%	2.97%
114-12	655	CU #10	1.74%	3.00%
115-1	625	CU #10	1.65%	2.79%
115-2	640	CU #10	1.70%	2.83%
115-3	675	CU #10	1.79%	2.92%
115-4	645	CU #10	1.71%	2.84%
115-5	620	CU #10	1.64%	2.78%
115-6	415	CU #10	1.10%	2.23%
115-7	585	CU #10	1.55%	2.68%
115-8	575	CU #10	1.52%	2.65%
115-9	570	CU #10	1.51%	2.64%
115-10	575	CU #10	1.52%	2.65%
115-11	645	CU #10	1.71%	2.84%
115-12	690	CU #10	1.83%	2.96%
116-1	625	CU #10	1.65%	2.67%
116-2	605	CU #10	1.60%	2.62%
116-3	590	CU #10	1.56%	2.58%
116-4	580	CU #10	1.54%	2.56%
116-5	580	CU #10	1.54%	2.56%
116-6	360	CU #10	0.96%	1.98%
116-7	410	CU #10	1.08%	2.10%
116-8	690	CU #10	1.83%	2.85%
116-9	675	CU #10	1.79%	2.81%
116-10	660	CU #10	1.75%	2.77%
116-11	655	CU #10	1.74%	2.76%
116-12	660	CU #10	1.75%	2.77%

117-1	645	CU #10	1.71%	2.75%
117-2	685	CU #10	1.81%	2.85%
117-3	760	CU #10	2.01%	3.05%
117-4	640	CU #10	1.70%	2.74%
117-5	620	CU #10	1.64%	2.69%
117-6	600	CU #10	1.59%	2.63%
117-7	580	CU #10	1.54%	2.58%
117-8	570	CU #10	1.51%	2.55%
117-9	345	CU #10	0.92%	1.96%
117-10	560	CU #10	1.48%	2.52%
117-11	600	CU #10	1.59%	2.63%
117-12	685	CU #10	1.81%	2.85%
118-1	645	CU #10	1.71%	2.64%
118-2	440	CU #10	1.17%	2.10%
118-3	605	CU #10	1.60%	2.54%
118-4	590	CU #10	1.56%	2.50%
118-5	370	CU #10	0.98%	1.92%
118-6	575	CU #10	1.52%	2.46%
118-7	580	CU #10	1.54%	2.48%
118-8	650	CU #10	1.72%	2.65%
118-9	710	CU #10	1.88%	2.82%
118-10	690	CU #10	1.83%	2.77%
118-11	670	CU #10	1.77%	2.71%
118-12	660	CU #10	1.75%	2.69%
119-1	600	CU #10	1.59%	2.43%
119-2	585	CU #10	1.55%	2.39%
119-3	575	CU #10	1.52%	2.36%
119-4	570	CU #10	1.51%	2.35%
119-5	580	CU #10	1.54%	2.38%
119-6	665	CU #10	1.76%	2.60%
119-7	675	CU #10	1.79%	2.63%
119-8	665	CU #10	1.76%	2.60%
119-9	655	CU #10	1.74%	2.58%
119-10	650	CU #10	1.72%	2.56%
119-11	665	CU #10	1.76%	2.60%
119-12	695	CU #10	1.84%	2.68%
120-1	650	CU #10	1.72%	2.41%
120-2	695	CU #10	1.84%	2.53%
120-3	660	CU #10	1.75%	2.44%
120-4	635	CU #10	1.69%	2.38%
120-5	615	CU #10	1.62%	2.32%
120-6	595	CU #10	1.57%	2.26%
120-7	580	CU #10	1.54%	2.23%
120-8	565	CU #10	1.50%	2.19%
120-9	560	CU #10	1.48%	2.17%
120-10	560	CU #10	1.48%	2.17%
120-11	600	CU #10	1.59%	2.28%
120-12	705	CU #10	1.86%	2.55%
121-1	645	CU #10	1.71%	2.37%
121-2	625	CU #10	1.65%	2.32%
121-3	605	CU #10	1.60%	2.26%
121-4	590	CU #10	1.56%	2.22%
121-5	580	CU #10	1.54%	2.20%
121-6	575	CU #10	1.52%	2.18%
121-7	350	CU #10	0.93%	1.59%
121-8	660	CU #10	1.75%	2.41%
121-9	540	CU #10	1.43%	2.09%
121-10	690	CU #10	1.83%	2.49%
121-11	670	CU #10	1.77%	2.43%
121-12	660	CU #10	1.75%	2.41%
122-1	600	CU #10	1.59%	2.22%
122-2	585	CU #10	1.55%	2.18%
122-3	575	CU #10	1.52%	2.15%
122-4	350	CU #10	0.93%	1.56%
122-5	345	CU #10	0.92%	1.54%
122-6	645	CU #10	1.71%	2.34%
122-7	535	CU #10	1.41%	2.04%
122-8	555	CU #10	1.47%	2.10%
122-9	525	CU #10	1.39%	2.02%
122-10	680	CU #10	1.80%	2.43%
122-11	665	CU #10	1.76%	2.39%
122-12	655	CU #10	1.74%	2.37%
122-13	650	CU #10	1.72%	2.35%

123-1	370	CU #10	0.98%	1.51%
123-2	355	CU #10	0.94%	1.47%
123-3	575	CU #10	1.52%	2.05%
123-4	640	CU #10	1.70%	2.23%
123-5	735	CU #10	1.95%	2.48%
123-6	710	CU #10	1.88%	2.42%
123-7	690	CU #10	1.83%	2.37%
123-8	670	CU #10	1.77%	2.30%
123-9	660	CU #10	1.75%	2.28%
123-10	650	CU #10	1.72%	2.25%
123-11	655	CU #10	1.74%	2.27%
123-12	670	CU #10	1.77%	2.30%
124-1	670	CU #10	1.77%	1.98%
124-2	760	CU #10	2.01%	2.22%
124-3	695	CU #10	1.84%	2.05%
124-4	670	CU #10	1.77%	1.98%
124-5	645	CU #10	1.71%	1.91%
124-6	625	CU #10	1.65%	1.86%
124-7	605	CU #10	1.60%	1.81%
124-8	590	CU #10	1.56%	1.77%
124-9	580	CU #10	1.54%	1.75%
124-10	575	CU #10	1.52%	1.73%
124-11	585	CU #10	1.55%	1.76%
124-12	390	CU #10	1.03%	1.24%
125-1	695	CU #10	1.84%	2.31%
125-2	670	CU #10	1.77%	2.24%
125-3	645	CU #10	1.71%	2.18%
125-4	625	CU #10	1.65%	2.12%
125-5	605	CU #10	1.60%	2.07%
125-6	590	CU #10	1.56%	2.03%
125-7	580	CU #10	1.54%	2.01%
125-8	580	CU #10	1.54%	2.01%
125-9	590	CU #10	1.56%	2.03%
125-10	680	CU #10	1.80%	2.27%
125-11	735	CU #10	1.95%	2.41%
125-12	710	CU #10	1.88%	2.35%
126-1	645	CU #10	1.71%	2.06%
126-2	620	CU #10	1.64%	2.00%
126-3	605	CU #10	1.60%	1.96%
126-4	585	CU #10	1.55%	1.91%
126-5	575	CU #10	1.52%	1.88%
126-6	570	CU #10	1.51%	1.87%
126-7	580	CU #10	1.54%	1.90%
126-8	650	CU #10	1.72%	2.07%
126-9	735	CU #10	1.95%	2.30%
126-10	710	CU #10	1.88%	2.24%
126-11	690	CU #10	1.83%	2.19%
126-12	670	CU #10	1.77%	2.13%
127-1	600	CU #10	1.59%	2.06%
127-2	585	CU #10	1.55%	2.02%
127-3	575	CU #10	1.52%	1.99%
127-4	570	CU #10	1.51%	1.98%
127-5	580	CU #10	1.54%	2.01%
127-6	650	CU #10	1.72%	2.19%
127-7	710	CU #10	1.88%	2.35%
127-8	690	CU #10	1.83%	2.30%
127-9	670	CU #10	1.77%	2.24%
127-10	660	CU #10	1.75%	2.22%
127-11	655	CU #10	1.74%	2.21%
127-12	655	CU #10	1.74%	2.21%
128-1	630	CU #10	1.66%	2.19%
128-2	670	CU #10	1.77%	2.29%
128-3	760	CU #10	2.01%	2.53%
128-4	670	CU #10	1.77%	2.29%
128-5	645	CU #10	1.71%	2.23%
128-6	625	CU #10	1.65%	2.18%
128-7	415	CU #10	1.10%	1.62%
128-8	590	CU #10	1.56%	2.08%
128-9	370	CU #10	0.98%	1.50%
128-10	580	CU #10	1.54%	2.06%
128-11	595	CU #10	1.57%	2.09%
128-12	685	CU #10	1.81%	2.33%

RULER IN INCHES:

PM	ENG	CHK	REVISION DESCRIPTION	DATE
SK	AD	RI	PERMIT REVIEW SET	03/17/2021

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262

ENGINEER

STATE OF CONNECTICUT RICHARD A. IVINS PEN.0029262 LICENSED PROFESSIONAL ENGINEER

DEVELOPER
Greenskies
a Clean Focus company

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

PAGE SIZE
36" x 24"

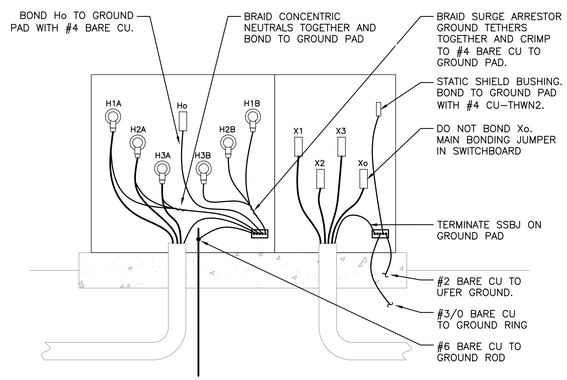
PROJECT #
01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

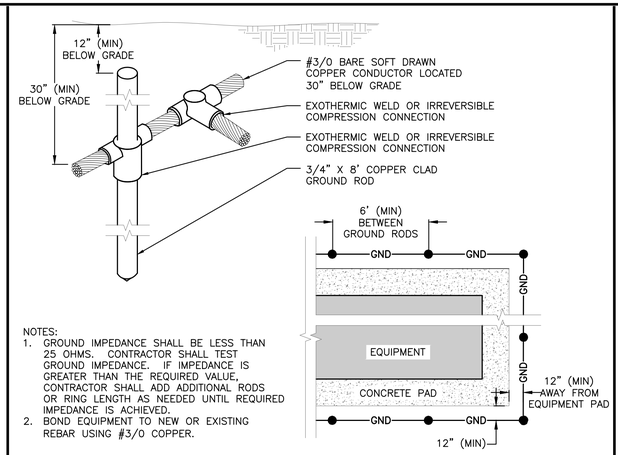
PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
SCHEDULES & CALCULATIONS

DRAWING #
E319

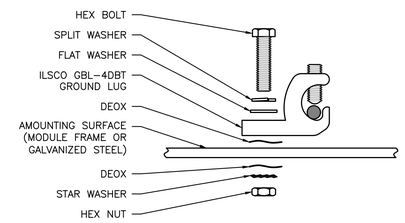


1 E401 TRANSFORMER GROUNDING: WYE-G/WYE-G
SCALE: NONE



NOTES:
1. GROUND IMPEDANCE SHALL BE LESS THAN 25 OHMS. CONTRACTOR SHALL TEST GROUND IMPEDANCE. IF IMPEDANCE IS GREATER THAN THE REQUIRED VALUE, CONTRACTOR SHALL ADD ADDITIONAL RODS OR RING LENGTH AS NEEDED UNTIL REQUIRED IMPEDANCE IS ACHIEVED.
2. BOND EQUIPMENT TO NEW OR EXISTING REBAR USING #3/0 COPPER.

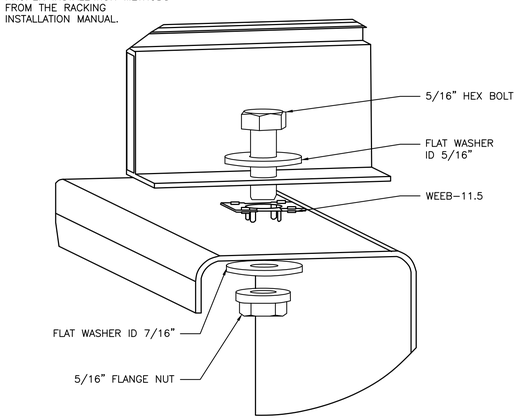
2 E401 GROUND RING DETAIL
SCALE: NONE



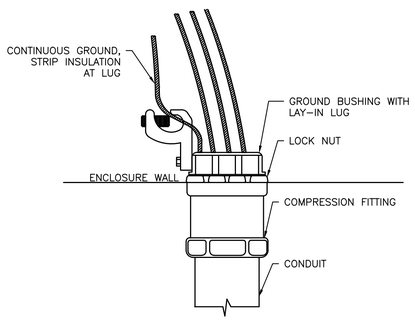
NOTES
1. ALL HARDWARE TO BE STAINLESS STEEL.
2. REFER TO ILSCO MANUAL FOR ADDITIONAL REQUIREMENTS AND TORQUE VALUES

3 E401 GROUND LUG DETAIL – ILSCO
SCALE: NONE

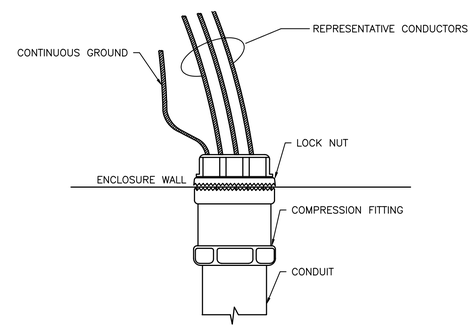
NOTES:
1. CONTRACTOR TO REVIEW PROPER INSTALLATION METHODS FROM THE RACKING INSTALLATION MANUAL.



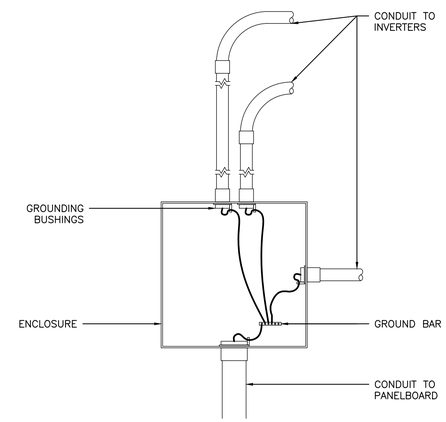
4 E402 MODULE GROUNDING ON RACK
SCALE: NONE



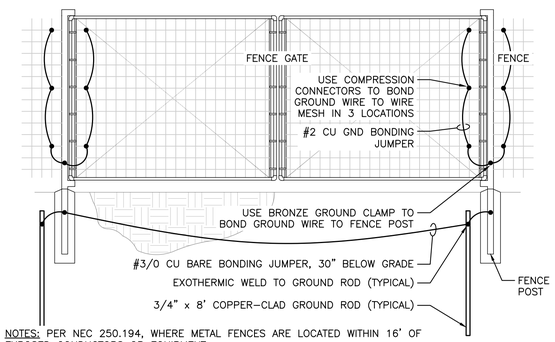
5 E401 CONDUIT CONNECTOR BONDING DETAIL
SCALE: NONE



6 E401 MYER'S HUB BONDING DETAIL
SCALE: NONE



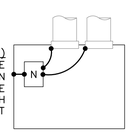
7 E401 PULL BOX/TROUGH GROUNDING DETAIL
SCALE: NONE



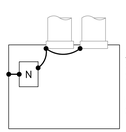
NOTES: PER NEC 250.194, WHERE METAL FENCES ARE LOCATED WITHIN 16' OF EXPOSED CONDUCTORS OR EQUIPMENT:
(1) BONDING JUMPERS SHALL BE INSTALLED AT EACH FENCE CORNER AND AT MAXIMUM 50 M (160 FT) INTERVALS ALONG THE FENCE.
(2) WHERE BARE OVERHEAD CONDUCTORS CROSS THE FENCE, BONDING JUMPERS SHALL BE INSTALLED ON EACH SIDE OF THE CROSSING.
(3) GATES SHALL BE BONDED TO THE GATE SUPPORT POST, AND EACH GATE SUPPORT POST SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM.
(4) ANY GATE OR OTHER OPENING IN THE FENCE SHALL BE BONDED ACROSS THE OPENING BY A BURIED BONDING JUMPER.
(5) THE GROUNDING GRID OR GROUNDING ELECTRODE SYSTEMS SHALL BE EXTENDED TO COVER THE SWING OF ALL GATES.
(6) THE BARBED WIRE STRANDS ABOVE THE FENCE SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM.

8 E401 FENCE GROUNDING DETAIL
SCALE: NONE

NEC 250.102(C)(1)
SSBJ IS SIZED PER TABLE 250.102(C)(1) BASED ON THE SIZE OF PHASE CONDUCTORS IN EACH INDIVIDUAL CONDUIT



INDIVIDUAL



COMBINED

NEC 250.102(C)(2)
SSBJ IS SIZED PER TABLE 250.102(C)(1) BASED ON THE COMBINED AREA OF PARALLEL PHASE CONDUCTORS

TABLE 250.102(C)(1)

SIZE OF LARGEST UNGROUNDED CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL CONDUCTORS (AWG/KCMIL)		SIZE OF GROUNDED CONDUCTOR OR BONDING JUMPER (AWG/KCMIL)	
COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM	COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM
2 OR SMALLER	1/0 OR SMALLER	8	6
1 OR 1/0	2/0 OR 3/0	6	4
2 OR 2/0	4/0 OR 250	4	2
OVER 3/0 THROUGH 350	OVER 250 THROUGH 500	2	1/0
OVER 350 THROUGH 600	OVER 500 THROUGH 900	1/0	3/0
OVER 600 THROUGH 1100	OVER 900 THROUGH 1750	2/0	4/0
OVER 1100	OVER 1750	REFER TO NOTES IN NEC TABLE 250.102(C)(1)	

9 E401 SUPPLY SIDE BONDING JUMPERS (SSBJ)
SCALE: NONE

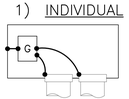
A) FOR CONCENTRIC KNOCKOUTS, USE BONDING JUMPERS AS FOLLOWS:

TABLE 250.122

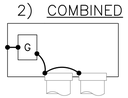
OVERCURRENT DEVICE CIRCUIT NOT EXCEEDING (AMPERES)	SIZE (AWG OR KCMIL)	
	COPPER	ALUMINUM
15	14	12
20	12	10
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1
500	2	1/0
600	1	2/0
800	1/0	3/0
1000	2/0	4/0
1200	3/0	250
1600	4/0	350
2000	250	400
2500	350	600
3000	400	600
4000	500	750

FOR PARALLEL FEEDERS – NEC 250.102(D)
EQUIPMENT BONDING JUMPER IS SIZED PER TABLE 250.122, REGARDLESS IF COMBINED OR INDIVIDUAL BONDING JUMPERS ARE USED

1) INDIVIDUAL



2) COMBINED



B) FOR NON-CONCENTRIC KNOCKOUTS, THE FOLLOWING METHODS SHALL BE PERMITTED (PER NEC 250.97)
1) THREADLESS COUPLINGS AND CONNECTORS FOR CABLES WITH METAL SHEATS
2) TWO LOCKNUTS, ON RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT, ONE INSIDE AND ONE OUTSIDE OF BOXES AND CABINETS
3) FITTINGS WITH SHOULDERS THAT SEAT FIRMLY AGAINST THE BOX OR CABINET, SUCH AS ELECTRICAL METALLIC TUBING CONNECTORS, FLEXIBLE METAL CONDUIT CONNECTORS, AND CABLE CONNECTORS, WITH ON LOCKNUT ON THE INSIDE OF BOXES AND CABINETS
4) LISTED FITTINGS (SUCH AS MEYERS HUB)

10 E401 LOAD SIDE EQUIPMENT BONDING JUMPER
SCALE: NONE

DATE	REVISION DESCRIPTION	PM	ENG	CHK	SK	JD	RI
03/17/2021	PERMIT REVIEW SET						

PUREPOWER ENGINEERING
111 WOOD STREET, LODI, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200kVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

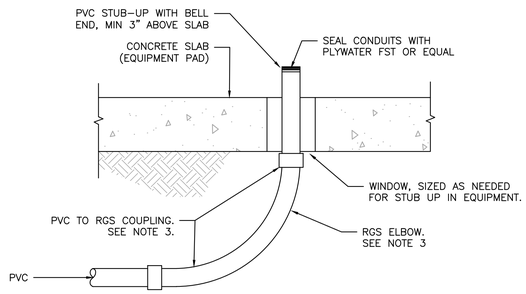
DRAWING TITLE
GROUNDING DETAILS

DRAWING #
E401

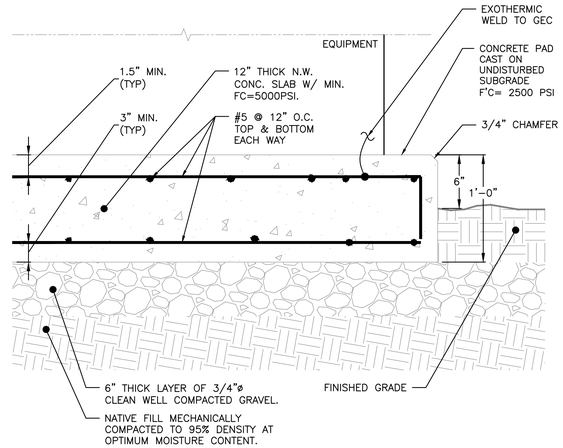
PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

NOTES:
1. INITIALLY INSTALL COUPLING CAP TO PREVENT DAMAGE TO STUB–UP UNTIL GEAR IS SET.
2. INSTALL ROUNDED FITTING BEFORE PULLING CABLES TO AVOID DAMAGE TO CABLES.
3. RMC ELBOW ONLY REQUIRED ON ONE SIDE OF EACH PULL NEAREST THE LOCATION OF THE PULLING MACHINE. ON OPPOSITE SIDE, PVC SCH80 ELBOWS ARE PERMITTED.

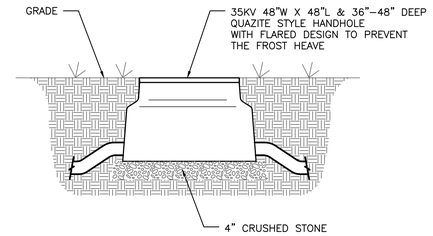


1 E402 EQUIPMENT PAD STUB–UP DETAIL
SCALE: NONE



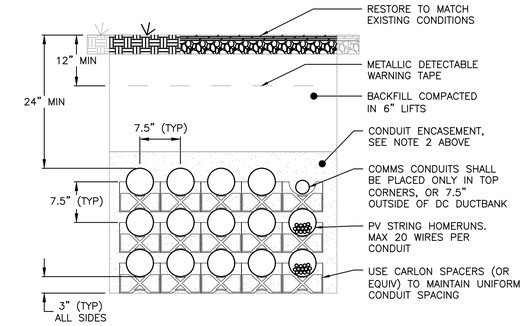
2 E402 CONCRETE PAD DETAIL
SCALE: NONE

NOTES:
1. HANDHOLES TO BE PLACED AS NECESSARY
2. SEPARATE HANDHOLES REQUIRED FOR DATA AND POWER ACCESS
3. LOCATIONS OF HANDHOLES TO BE DETERMINED IN FIELD BY CONTRACTOR
4. HANDHOLES SHALL BE UL LISTED, GASKETED, SUITABLE FOR TIER 15 LOADING.
5. IN AREAS OF VEHICLE TRAFFIC, HANDHOLES SHALL BE SUITABLED FOR H20 LOADING.
6. HANDHOLES SHALL BE PROVIDED WITH BASES AND SS HEX BOLTS.



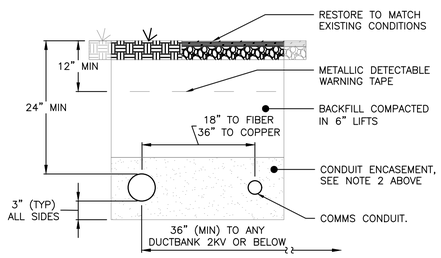
3 E402 HANDHOLE DETAIL
SCALE: NONE

NOTES:
1. ALL UNDERGROUND CONDUIT SHALL BE PVC AND TRANSITION TO RMC FOR ELBOW. RMC ELBOW DOES NOT NEED TO BE BONDED IF THE ENTIRE ELBOW IS >= 18" DEEP (NEC 250.86 EXCEPTION 3)
2. UNDER ROADS AND PARKING AREAS ENCASEMENT SHALL BE 3000 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASEMENT SHALL BE SAND.
3. CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON–CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
4. IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE DUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITHGRAVEL BASE TO ALLOW DRAINAGE.



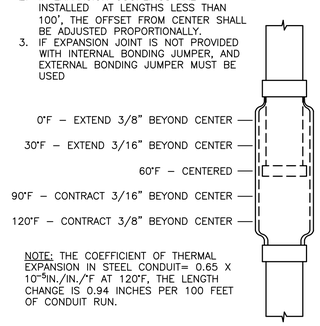
4 E402 TYPICAL 1500VDC DUCTBANK DETAIL
SCALE: NONE

NOTES:
1. ALL UNDERGROUND CONDUIT SHALL BE PVC AND TRANSITION TO RMC FOR ELBOW. RMC ELBOW DOES NOT NEED TO BE BONDED IF THE ENTIRE ELBOW IS >= 18" DEEP (NEC 250.86 EXCEPTION 3)
2. UNDER ROADS AND PARKING AREAS ENCASEMENT SHALL BE 3000 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASEMENT SHALL BE SAND.
3. CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON–CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
4. IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE SUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITHGRAVEL BASE TO ALLOW DRAINAGE.



5 E402 TYPICAL MV DUCTBANK DETAIL
SCALE: NONE

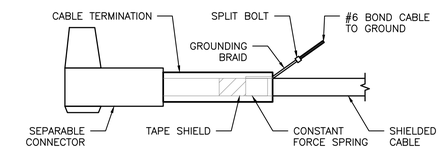
NOTES:
1. INSTALL EXPANSION COUPLING EVERY 100' OF STRAIGHT CONDUIT RUN.
2. IF EXPANSION COUPLINGS ARE INSTALLED AT LENGTHS LESS THAN 100', THE OFFSET FROM CENTER SHALL BE ADJUSTED PROPORTIONALLY.
3. IF EXPANSION JOINT IS NOT PROVIDED WITH INTERNAL BONDING JUMPER, AND EXTERNAL BONDING JUMPER MUST BE USED



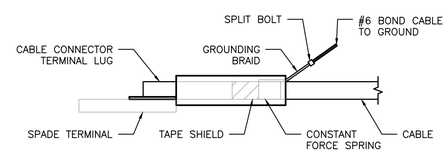
NOTE: THE COEFFICIENT OF THERMAL EXPANSION IN STEEL CONDUIT= 0.65 X 10^{-5}IN./IN./°F AT 120°F, THE LENGTH CHANGE IS 0.94 INCHES PER 100 FEET OF CONDUIT RUN.

EMT, IMC & RMC

6 E402 EXPANSION COUPLING DETAIL
SCALE: NONE

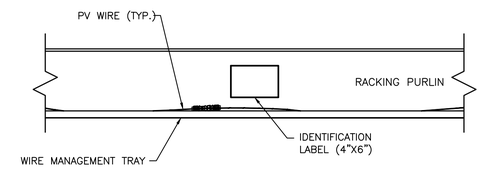


DEAD FRONT MV TERMINATION



LIVE FRONT MV TERMINATION

7 E402 SHIELDED CABLE DETAIL
SCALE: NONE



NOTES:

1. INSTALL MANUFACTURED LABEL IDENTIFYING THE INVERTER AND STRING NUMBER. LABEL MUST HAVE RED BACKGROUND FOR POSITIVE OR BLACK BACKGROUND FOR NEGATIVE. TEXT SHALL BE WHITE WITH A HEIGHT OF 3/4".
2. NO CROSS MATING OF CONNECTORS IS AUTHORIZED. BOTH MALE AND FEMALE CONNECTOR ENDS MUST BE OF THE SAME MANUFACTURER TO ENSURE UL COMPLIANCE. ACCEPTABLE MANUFACTURER INCLUDE AMPENOL, MC4 AND TYCO. THE MANUFACTURER SPECIFIC TOOL KIT MUST BE USED WHILE MAKING FIELD CONNECTIONS.
3. LABEL SHALL BE INSTALLED ON THE E/W PURLINS, ABOVE THE BUILT–IN WIRE MANAGEMENT TRAY.

8 E402 STRING PLACARD DETAIL
SCALE: NONE

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	JD	RI

PUREPOWER ENGINEERING
111 RIVER STREET HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

DEVELOPER: Greenskies a Clean Focus company

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT:
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE: ELECTRICAL DETAILS

DRAWING #: E402

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

GENERAL NOTES FOR LABELS:
1. LABEL SCALE 1:2 UNLESS NOTED
2. LETTERING ON SIGNS SHALL BE CAPITAL LETTERS
3. CLEARLY LABEL ALL CIRCUIT BREAKERS IN THE PANELBOARD(S). THE LABEL SHALL INDICATE THE NAME OF THE DEVICE IT SERVES.

LABEL FORMAT NOTES:
1. FORMAT 1: ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND. TEXT HEIGHT: TITLES 3/8", ALL OTHER TEXT 5/32".
2. FORMAT 2: ENGRAVED MELAMINE, BLACK TEXT ON WHITE BACKGROUND. TEXT HEIGHT: 3/8".
3. FORMAT 3: REFLECTIVE UV RATED LABEL. RED BACKGROUND WITH WHITE CAPITAL LETTERS AT LEAST 3/8" TALL. LABELS SHALL BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE INSTALLED.
4. FORMAT 4: ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND. TEXT HEIGHT: TITLES 5/32", ALL OTHER TEXT 3/32".

PER 2017 NEC 690.31(B)(1), PV SYSTEM CIRCUIT CONDUCTORS SHALL BE IDENTIFIED AT ALL ACCESSIBLE POINTS OF TERMINATION, CONNECTION, AND SPLICES.

1. STRING HOMERUNS AT ARRAY
2. DC INPUT TERMINALS OF COMBINER BOX
3. DC OUTPUT TERMINALS OF COMBINER BOX
4. DC INPUT TERMINALS OF INVERTER
5. AC OUTPUT TERMINALS OF INVERTER
6. AC INPUT & OUTPUT TERMINALS OF EACH SUCCESSIVE DEVICE (WHERE APPLICABLE)

1 — 10" x 16"

WARNING:

MULTIPLE POWER SOURCE ARE CONNECTED TO THIS SERVICE WITH DISCONNECTS AS SHOWN:

UTILITY DISCONNECT SWITCH LOCATED IN MAIN MEDIUM VOLTAGE SWITCHGEAR

SYSTEM 1 MAIN CIRCUIT BREAKER

SYSTEM 3 MAIN CIRCUIT BREAKER

SYSTEM 2 MAIN CIRCUIT BREAKER

SYSTEM 5 MAIN CIRCUIT BREAKER

SYSTEM 4 MAIN CIRCUIT BREAKER

NEC 705.10 & 690.56(B)
INSTALL AT MAIN DISCONNECT OF ALL POWER SOURCES. ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND, TITLE MIN. 1/2", DESCRIPTION 5/16", ALL OTHER TEXT 1/8"

2 E500 DIRECTORY LABEL
SCALE: 1:1

4" x 1"
PV SYSTEM INSTALLER INFORMATION
INSTALLATION COMPANY: XXXXX SOLAR COMPANY
EMERGENCY PHONE # : (XXX)XXX-XXXX

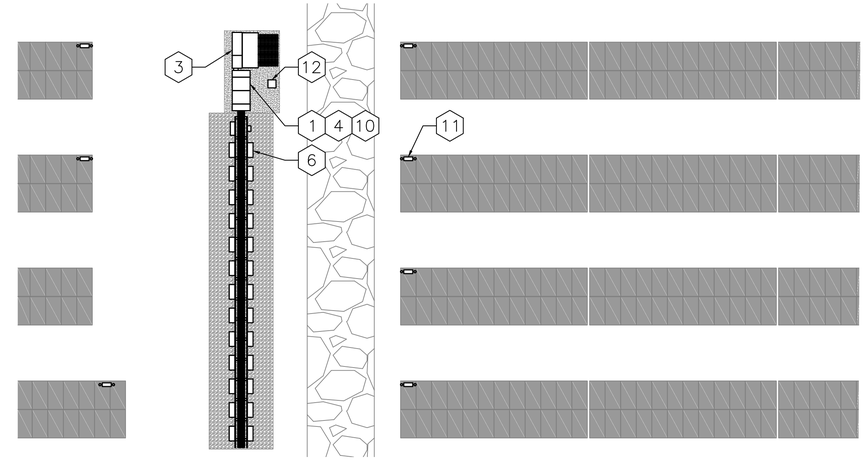
NFPA1 11.12.2.1.5, INSTALL ON MAIN PV SYSTEM DISCONNECT, FORMAT 4

4" x 2"
WARNING
ARC FLASH AND SHOCK HAZARD
Appropiate PPE and Tools Required when working on this equipment.

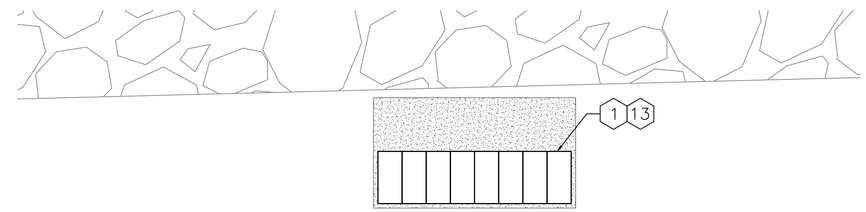
OUTDOOR RATED STICKER MOUNTED ON ALL EQUIPMENT

6 1/2" x 1"
WARNING: PHOTOVOLTAIC POWER SOURCE

CEC 690.31(G)(3)(4), NFPA11.12.2.1.3.2, HELLERMANNTYTON #: 596-00206 OR EQUAL, FORMAT 3. SHALL BE PERMANENTLY AFFIXED ON ALL DC EXPOSED RACEWAYS, CABLE TRAYS, PULL BOXES, AND JUNCTION BOXES. LABELS LABELS SHALL BE SPACED NO GREATER THAN 10 FEET APART.



3 E500 TYPICAL LABELS & SIGNAGE
SCALE: 1/16" = 1'-0"



4 E500 MEDIUM VOLTAGE LABELS & SIGNAGE
SCALE: 1/8" = 1'-0"

TYPICAL FOR TRASNFORMERS 1–5

3 — 6" x 3"
SOLAR TRANSFORMER

PRIMARY & SECONDARY DISCONNECTING MEANS LOCATION:

PRIMARY: LOAD BREAK SWITCH IN THE MEDIUM VOLTAGE SWITCHGEAR

SECONDARY: SOLAR MAIN CIRCUIT BREAKER

TYPICAL FOR SYSTEMS 1–3

4 — 6" x 3"
SOLAR AC MAIN CIRCUIT BREAKER 1
WARNING: PHOTOVOLTAIC POWER SOURCE. DO NOT RELOCATE THIS OVERCURRENT DEVICE
OPERATING CURRENT: 3744A
NOMINAL VOLTAGE: 600V

NEC 2017 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

TYPICAL FOR SYSTEMS 4–5

5 — 6" x 3"
SOLAR AC SWITCHBOARD 4
WARNING: PHOTOVOLTAIC POWER SOURCE. DO NOT RELOCATE THIS OVERCURRENT DEVICE
OPERATING CURRENT: 3600A
NOMINAL VOLTAGE: 600V

NEC 2017 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

14 STRINGS – SEE TYPICAL TABLE

6 — 8" x 3 1/4"
INVERTER 1 (400W MOD)

DC DISCONNECT
MAXIMUM CURRENT: 204.91A
MAXIMUM VOLTAGE: 1383.8V

AC DISCONNECT
MAXIMUM AC OPERATING CURRENT: 144A
NOMINAL AC OPERATING VOLTAGE: 600V

NEC 2017 690.53, 690.54, NFPA 11.12.2.1.1
FORMAT 1

TYPICAL FOR SYSTEMS 4–5

7 — 6" x 3"
SOLAR AC MAIN CIRCUIT BREAKER 4
WARNING: PHOTOVOLTAIC POWER SOURCE. DO NOT RELOCATE THIS OVERCURRENT DEVICE
OPERATING CURRENT: 3600A
NOMINAL VOLTAGE: 600V

NEC 2017 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

14 STRINGS – SEE TYPICAL TABLE

8 — 8" x 3 1/4"
INVERTER 14 (405W MOD)

DC DISCONNECT
MAXIMUM CURRENT: 204.91A
MAXIMUM VOLTAGE: 1389.7V

AC DISCONNECT
MAXIMUM AC OPERATING CURRENT: 144A
NOMINAL AC OPERATING VOLTAGE: 600V

NEC 2017 690.53, 690.54, NFPA 11.12.2.1.1
FORMAT 1

12 STRINGS – SEE TYPICAL TABLE

9 — 8" x 3 1/4"
INVERTER 50 (450W MOD)

DC DISCONNECT
MAXIMUM CURRENT: 194.99A
MAXIMUM VOLTAGE: 1465.9V

AC DISCONNECT
MAXIMUM AC OPERATING CURRENT: 144A
NOMINAL AC OPERATING VOLTAGE: 600V

NEC 2017 690.53, 690.54, NFPA 11.12.2.1.1
FORMAT 1

TYPICAL FOR SYSTEMS 1–3

10 — 6" x 3"
SOLAR AC SWITCHBOARD 1
WARNING: PHOTOVOLTAIC POWER SOURCE. DO NOT RELOCATE THIS OVERCURRENT DEVICE
OPERATING CURRENT: 3744A
NOMINAL VOLTAGE: 600V

NEC 2017 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

SEE TYPICAL LABEL TABLE

11 — 3" x 1 1/8"
COMBINER BOX 1
WARNING: ELECTRIC SHOCK HAZARD
DC DISCONNECT
MAXIMUM CURRENT: 204.91A
MAXIMUM VOLTAGE: 1011.4V

NEC 2017 690.53, FORMAT 1

TYPICAL FOR GROUNDING TRANSFORMER 1–5

12 — 6" x 3/4"
GROUNDING TRANSFORMER 1
FORMAT 2

13 — 6" x 3"
MEDIUM VOLTAGE SWITCHGEAR
WARNING: PHOTOVOLTAIC POWER SOURCE. DO NOT RELOCATE THIS OVERCURRENT DEVICE
OPERATING CURRENT: 1200A
NOMINAL VOLTAGE: 23kV

NEC 2017 690.54, 705.12(B)(2)(3)(b)
NFPA 11.12.2.1.1, FORMAT 1

MODULE TYPE	STRING LENGTH	MAX CURRENT	MAX VOLTAGE	TYPICAL FOR INVERTER(S)
400W	14	204.91A	1383.8V	1, 5–12, 14–25, 30–37, 40, 43–45, 49
400W	15	219.54A	1383.8V	13, 26, 28, 30, 39, 41, 47, 48
400W	16	234.18A	1383.8V	27
405W	13	190.27A	1389.7V	51
405W	14	204.91A	1389.7V	28, 37, 39, 50, 52
405W	15	219.54A	1389.7V	38
450W	12	194.99A	1465.9V	40–42, 50–55, 57, 59, 61–63, 66–73, 75–79, 84–91, 96, 98, 101, 105–110, 113–121, 123–128
450W	13	211.23A	1465.9V	29, 56, 58, 60, 64, 65, 74, 80–81, 92–95, 97, 99–100, 102–104, 111–112, 122
450W	14	227.48A	1465.9V	82–83

WARNING! DUAL POWER SOURCE
SECOND SOURCE IS PHOTOVOLTAIC SYSTEM

NOTES:
1. LABEL REQUIRED PER NEC 690.59.

9 E500 UTILITY BI-DIRECTIONAL METER SIGN
NOT TO SCALE

THE MAIN SERVICE DISCONNECT IS LOCATED IN THE EXTERIOR MAIN MEDIUM VOLTAGE SWITCHGEAR

1 E500 MAIN SERVICE DISCONNECT SIGN
NOT TO SCALE

ALL UTILITY INTERACTIVE INVERTERS ARE RACK MOUNTED LOCATED AT THE GROUND MOUNT ARRAY

3 E500 INVERTER DIRECTORY SIGN
NOT TO SCALE

WARNING!
ELECTRIC SHOCK HAZARD. TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

NOTES:
1. LABEL REQUIRED PER NEC 690.13(B).

4 E500 ELECTRIC SHOCK HAZARD SIGN
NOT TO SCALE

INTERACTIVE PHOTOVOLTAIC SYSTEM CONNECTED

THE PHOTOVOLTAIC SYSTEM DISCONNECT IS LOCATED IN THE SYSTEM MEDIUM VOLTAGE SWITCHGEAR

5 E500 PHOTOVOLTAIC DISCONNECT SIGN
NOT TO SCALE

PHONE NUMBER:
860-598-4890

EMAIL:
Om_office@greenskies.com

6 E500 GREENSKIES EMERGENCY CONTACT INFORMATION
NOT TO SCALE

WARNING!
ELECTRIC SHOCK HAZARD. TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

NOTES:
1. LABEL REQUIRED PER CEC 690.13(B).

2 E500 ELECTRIC SHOCK HAZARD SIGN
NOT TO SCALE

WARNING: SOLAR AC CIRCUIT
600Y/347V

NOTES:
1. LABELS SHALL BE REFLECTIVE, WITH LETTERS CAPITALIZED AND A MINIMUM HEIGHT OF 3/8" IN BLACK ON A YELLOW BACKGROUND.
2. CONTRACTOR TO INSTALL ONE LABEL PER INVERTER AC OUTPUT CONDUIT, WITHIN 10 FEET OF INVERTER.

10 E500 AC RACEWAY LABEL
NOT TO SCALE

SOLAR PHOTOVOLTAIC POWER SOURCE LOCATED ON PREMISES

NOTES:
1. LABEL SHALL BE REFLECTIVE, WITH LETTERS CAPITALIZED AND A MINIMUM HEIGHT OF 3/4" IN BLACK ON A YELLOW BACKGROUND.
2. LOCATE SIGN ADJACENT TO FIRE ALARM CONTROL PANEL OR OTHER LOCATION ACCEPTABLE TO BUILDING OWNER.

11 E500 BUILDING FRONT SIGN
NOT TO SCALE

CAUTION!
PHOTOVOLTAIC SYSTEM CIRCUIT IS BACKFED

NOTES:
1. LABEL REQUIRED PER NEC 690.59, 705.12(B)(3), AND 705.12(B)(4).
2. LABEL SHALL BE APPLIED TO EXISTING SWITCHBOARD AND AC COMBINER PANELBOARD(S).

7 E500 POWER SOURCE BACKFEED SIGN
NOT TO SCALE

CUSTOMER OWNED PRODUCTION METER

600Y/347V

NOTES:
1. LABEL SHALL BE APPLIED TO DECK MONITOR ENCLOSURE AND CUSTOMER OWNED REC METER.

8 E500 DECK MONITORING/REC METER SIGN
NOT TO SCALE

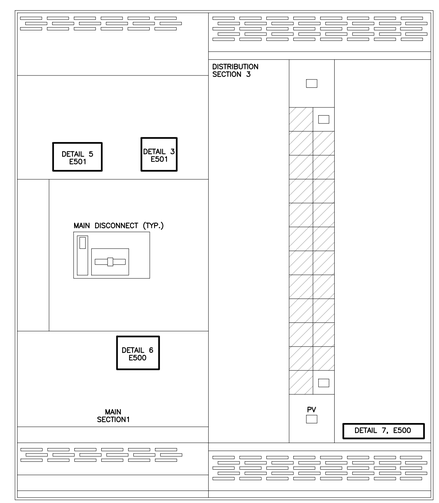


FIGURE 1. EXISTING BUILDING SWITCHGEAR (TYP.)

NOTE: SWITCHGEAR MAY BE CONFIGURED DIFFERENTLY (E.G., NO MAIN BREAKER, TWO SECTION SWITCHGEAR, BREAKER TYPES, ETC.). CONTRACTOR SHALL ADJUST SIGNAGE IN THE FIELD IF NEEDED PER NEC.

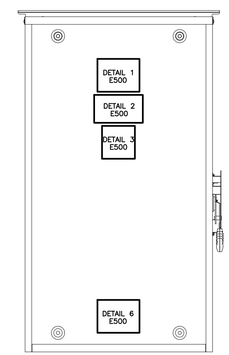


FIGURE 2. AC DISCONNECT (TYP.)

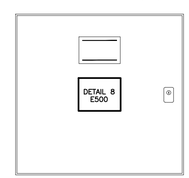


FIGURE 3. DECK MONITOR (TYP.)

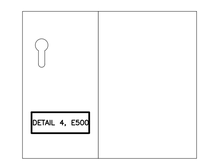


FIGURE 5. INVERTER (TYP.)

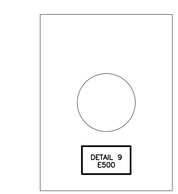


FIGURE 4. UTILITY BI-DIRECTIONAL METER (TYP.)

5 E500 CLIENT REQUIRED LABELS
SCALE: 1" = 20'-0"

DRAWING TITLE: LABELS & SIGNAGE

DRAWING #: E500

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	PA	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ 07030
WWW.PUREPOWER.COM
RICHARD A. WINS
CT LICENSE No. 0023452

GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM

DEVELOPER: Greenskies a Clean Focus company

PAGE SIZE: 36" x 24"
PROJECT #: 01590.07

DC SYSTEM SIZE: 18,883.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT: GROUND MOUNT SYSTEM AT WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

PLOT DATE: 3/17/2021 4:08 PM

RULER IN INCHES:

PLOT DATE: 3/17/2021 4:09 PM

RULER IN INCHES:

NEW

CanadianSolar

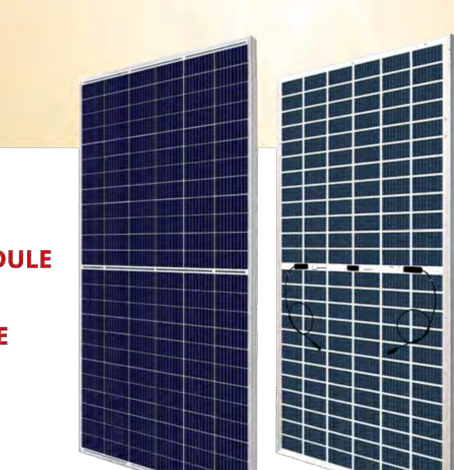
BiHiKu

SUPER HIGH POWER BIFACIAL POLY PERC MODULE

390 W ~ 410 W

UP TO 30% MORE POWER FROM THE BACK SIDE

CS3W-390|395|400|405|410PB-AG



MORE POWER

- EXTRA POWER — Up to 30% more power from the back side
- 24 % more front side power than conventional modules
- 41°C — Low NMOT: 41 ± 3 °C. Low temperature coefficient (Pmax): -0.37 % / °C
- Better shading tolerance

MORE RELIABLE

- Lower internal current, lower hot spot temperature
- Minimizes micro-cracks and snail trails
- Heavy snow load up to 5400 Pa, wind load up to 2400 Pa *
- Fire Class A and Type 3 / Type 13

*For detail information, please refer to Installation Manual.

30 years linear power output warranty*

10 years product warranty on materials and workmanship*

*According to the applicable Canadian Solar Limited Warranty Statement.

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001:2015 / Quality management system
ISO 14001:2015 / Standards for environmental management system
OHSAS 18001:2007 / International standards for occupational health & safety

PRODUCT CERTIFICATES*

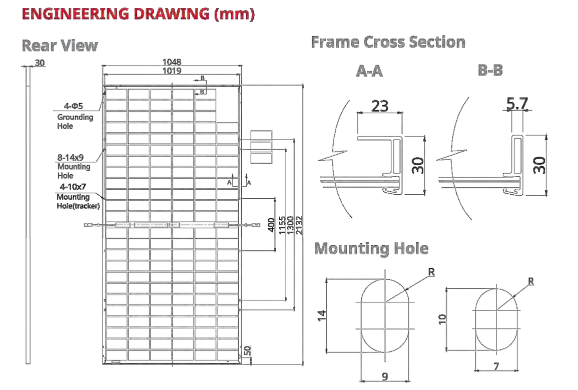
IEC 61215 / IEC 61730: VDE / CE / MCS / INMETRO
UL 1703 / IEC 61215 performance: CEC listed (US)
UL 1703: CSA / IEC 61701 ED2: VDE / IEC 62716: VDE
Take-e-way

* 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.

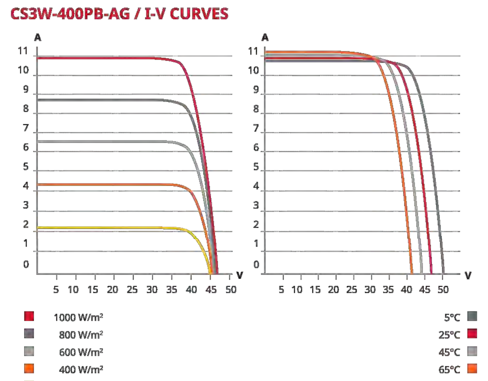
CANADIAN SOLAR (USA), INC. is committed to providing high quality solar products, solar system solutions and services to customers around the world. No. 1 module supplier for quality and performance/price ratio in IHS Module Customer Insight Survey. As a leading PV project developer and manufacturer of solar modules with over 34 GW deployed around the world since 2001.

CANADIAN SOLAR (USA), INC.
3000 Oak Road, Suite 400, Walnut Creek, CA 94597, USA | www.canadiansolar.com/na | sales.us@canadiansolar.com

ENGINEERING DRAWING (mm)



CS3W-400PB-AG / I-V CURVES



ELECTRICAL DATA | STC*

		Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency
CS3W-390PB-AG		390 W	38.3 V	10.19 A	46.8 V	10.74 A	17.45%
Bifacial Gain**	5%	410 W	38.3 V	10.71 A	46.8 V	11.28 A	18.35%
	10%	429 W	38.3 V	11.21 A	46.8 V	11.81 A	19.20%
	20%	468 W	38.3 V	12.23 A	46.8 V	12.89 A	20.95%
	30%	507 W	38.3 V	13.25 A	46.8 V	13.96 A	22.69%
CS3W-395PB-AG		395 W	38.5 V	10.26 A	47 V	10.82 A	17.68%
Bifacial Gain**	5%	415 W	38.5 V	10.78 A	47 V	11.36 A	18.57%
	10%	435 W	38.5 V	11.3 A	47 V	11.9 A	19.47%
	20%	474 W	38.5 V	12.31 A	47 V	12.98 A	21.21%
	[illegible]	51[illegible] W	[illegible]38.5 V	[illegible].34 A	[illegible] V	[illegible]	22.[illegible]%
CS3W-400PB-AG		400 W	38.7 V	10.34 A	47.2 V	10.9 A	17.90%
Bifacial Gain**	5%	420 W	38.7 V	10.86 A	47.2 V	11.45 A	18.80%
	10%	440 W	38.7 V	11.37 A	47.2 V	11.99 A	19.69%
	20%	480 W	38.7 V	12.41 A	47.2 V	13.08 A	21.48%
	30%	520 W	38.7 V	13.44 A	47.2 V	14.17 A	23.27%
CS3W-405PB-AG		405 W	38.9 V	10.42 A	47.4 V	10.98 A	18.13%
Bifacial Gain**	5%	425 W	38.9 V	10.94 A	47.4 V	11.53 A	19.02%
	10%	445 W	38.9 V	11.46 A	47.4 V	12.08 A	19.92%
	20%	486 W	38.9 V	12.5 A	47.4 V	13.18 A	21.75%
	30%	527 W	38.9 V	13.56 A	47.4 V	14.27 A	23.59%
[illegible]W-41[illegible]		41[illegible] W	39.1 [illegible]	[illegible].49 A	[illegible] V	[illegible]	18.[illegible]%
Bifacial Gain**	5%	431 W	39.1 V	11.03 A	47.6 V	11.61 A	19.29%
	10%	451 W	39.1 V	11.54 A	47.6 V	12.17 A	20.18%
	20%	492 W	39.1 V	12.59 A	47.6 V	13.27 A	22.02%
	30%	533 W	39.1 V	13.64 A	47.6 V	14.38 A	23.85%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.
** Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

ELECTRICAL DATA

Operating Temperature	-40°C ~ +85°C
Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Module Fire Performance	TYPE 3 / Type 13 (UL 1703) or CLASS A (IEC61730)
Max. Series Fuse Rating	25 A
Application Classification	Class A
Power Tolerance	0 ~ + 5 W
Power Bifaciality*	70 %

* Power Bifaciality = $Pmax_{rear}$ / $Pmax_{front}$, both $Pmax_{rear}$ and $Pmax_{front}$ are tested under STC, Bifaciality Tolerance: ± 5 %

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. Canadian Solar Inc. reserves the right to make necessary adjustment to the information described herein at any time without further notice.
Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

ELECTRICAL DATA | NMOT*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)
CS3W-390PB-AG	291 W	35.7 V	8.15 A	44.0 V	8.66 A
CS3W-395PB-AG	295 W	35.9 V	8.21 A	44.2 V	8.72 A
CS3W-400PB-AG	299 W	36.1 V	8.27 A	44.4 V	8.79 A
CS3W-405PB-AG	302 W	36.3 V	8.33 A	44.6 V	8.85 A
CS3W-410PB-AG	306 W	36.5 V	8.39 A	44.8 V	8.92 A

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

MECHANICAL DATA

Specification	Data
Cell Type	Poly-crystalline
Cell Arrangement	144 [2X (12 X6)]
Dimensions	2132 × 1048 × 30 mm (83.9 × 41.3 × 1.2 in)
Weight	28.2 kg (62.2 lbs)
Front / Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 diodes
Cable	4.0 mm² (IEC), 12 AWG (UL)
Cable Length (Including Connector)	Portrait: 400 mm (15.7 in) (+) / 280 mm (11.0 in) (-); landscape: 1400 mm (55.1 in); leap-frog connection: 1850 mm (72.8 in)*
Connector	T4 series
Per Pallet	35 pieces
Per Container (40' HQ)	770 pieces or 560 pieces (only for US and Canada)

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.37 % / °C
Temperature Coefficient (Voc)	-0.29 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

PARTNER SECTION

CANADIAN SOLAR (USA), INC. August 2019 | All rights reserved | PV Module Product Datasheet V5.583_J1_NA

Reliable State-owned Enterprise Deliver Solar Power since 1960s

HT-SAAE

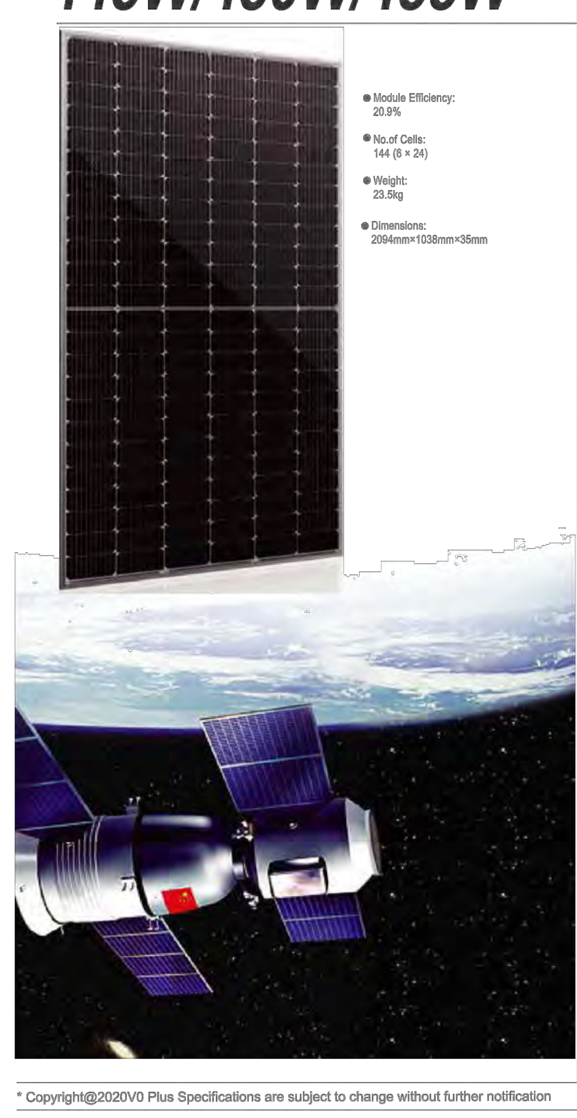
HT72-166M Transparent

High Efficiency Low LID Bifacial PERC with Half-cut Technology

NEW — Big Size: Cell 166*83

435W/440W 445W/450W/455W

MULTIWAY+



Shanghai Aerospace Automobile Electromechanical Co., Ltd.
website: www.htsolar.com.tr
Factory:
Turkey HT Solar Energy Joint Stock Company
Lianyungang ShenZhou New Energy Co., Ltd.

- **Half cut cell technology can reduce the internal power loss and improve component overall power. Excellent heat dissipation avoids hot spot production.**
- **Transparent Backsheet structure which enhance the Module power increases 5-25% generally (per different reflective condition) lower LCOE and higher IRR**
- 12Ys **Products Warranty**
- **Designed for high voltage systems of up to 1500 VDC, increasing the string length of solar systems and saving on BoS costs**
- 30Ys **Warranty on power output**
- 2% **All the modules are sorted and packaged by amperage, reducing mismatch losses and maximizing system output.**
- EL **Microcrack resistant Double glass structure enhance reliability, triple EL tested of high quality control.**
- 5W **Positive tolerance 0/+5w guaranteed**
- **Entire module certified to with stand extreme wind (2400 Pa) and snow loads (5400 Pa)**
- PID **PID Resistant**

Comprehensive and first-rat certification syste
IEC61215: 2016.IEC61730: 2016 Latest Standard and UL 61730 Latest Standard, IS09001, IS014001 and OHSAS18001, meeting the highest international standards Strict quality control

* Copyright@2020V0 Plus Specifications are subject to change without further notification

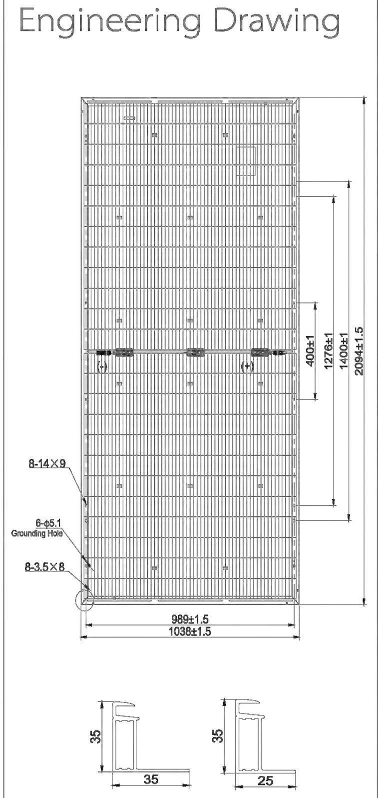
MULTIWAY+

Better Choice For Higher Efficiency!

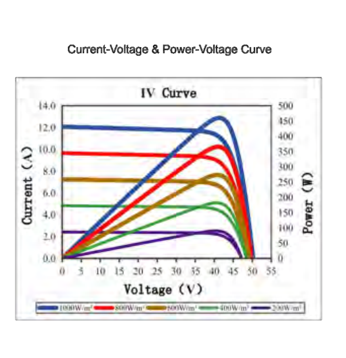
1000/1500V module HT72-166M

435W/440W/445W/450W/455W

Engineering Drawing



I-V Curves



The module recycling should be carried out by the professional institutions at the the end of module life cycle

Electrical Characteristics

Module	HT72-166M				
Maximum Power at STC(Pmax)	435W	440W	445W	450W	455W
Open-Circuit Voltage(Voc)	49.6V	49.8V	49.9V	50.0V	50.1V
Short-Circuit Current(Isc)	11.53A	11.60A	11.72A	11.83A	11.96A
Optimum Operating Voltage (Vmp)	40.7V	40.9V	41.0V	41.1V	41.2V
Optimum Operating Current(Imp)	10.70A	10.77A	10.86A	10.96A	11.06A
Module Efficiency	20.0%	20.2%	20.5%	20.7%	20.9%
Power Tolerance	0~+5W				
Maximum System Voltage	1000V / 1500V DC(IEC)				
Maximum Series Fuse Rating	20A				
Operating Temperature	-40 ℃ to +85 ℃				

*STC:Irradiance 1000W/m², module temperature 25, AM=1.5
Optional black frame or white frame module according to customer requirements

NOCT

Module	HT72-166M				
Maximum Power	322W	326W	330W	333W	337W
Open Circuit Voltage (Voc)	46.9V	47.1V	47.2V	47.2V	47.3V
Short Circuit Current (Isc)	9.31A	9.37A	9.46A	9.55A	9.66A
Maximum Power Voltage (Vmp)	38.5V	38.6V	38.7V	38.8V	38.9V
Maximum Circuit Current (Imp)	8.36A	8.45A	8.53A	8.58A	8.66A
NOCT	45℃±2℃				

*NOCT: Irradiance 800W/m², ambient temperature 20℃, wind speed 1 m/s

BIFACIAL REARSIDE POWER GAIN

Electrical characteristics with different rear side power gain (reference to 455W front)

Module	HT72-166M- 455				
Maximum Power	Pmax Gain	Voc/V	Isc/A	Vmp/V	Imp/A
478W	5%	50.10	12.42	41.2	11.61
501W	10%	50.10	13.01	41.2	12.17
523W	15%	50.10	13.60	41.2	12.72
546W	20%	50.10	14.20	41.2	13.27
569W	25%	50.10	14.79	41.2	13.83

*bifacial gain:the additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting(structure,height,tilt angle etc.)and abledo of the ground.

Mechanical Characteristics

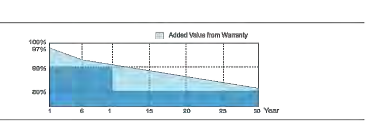
Solar Cells	Monocrystalline 166×83mm
No.of Cells	144 (6 × 24)
Dimensions	2094mm×1038mm×35mm
Weight	23.5kg
Front Glass	High transmission tempered glass
Frame	Anodized aluminium alloy
Junction Box	IP68
Cable	4mm²(UL/IEC) Length: 1200mm
Connectors	MC_4 / MC_4 Compatible
Packaging Configuration	30pcs / box, 704pcs / 40'HQ Container

Temperature Characteristics

Temperature Coefficient of Pmax	γ (Pm)	-0.39%/℃
Temperature Coefficient of Voc	β (Voc)	-0.29%/℃
Temperature Coefficient of Isc	α (Isc)	0.049%/℃

Warranty

12-year product warranty
30-year warranty on power output
Specific information is referred to the product quality guarantee



MULTIWAY+

YASKAWA

XGI 1500 COMBINERS

Increased Design Flexibility for SOLECTRIA XGI 1500

Features

- Made in the USA with global components
- Buy American Act (BAA) compliant
- Designed exclusively for use with XGI 1500 inverters
- Both poles fused and switched
- 16, 20, 24, 26, and 28 fuse positions
- 15 and 20 A fuse options for all models; 25 and 30 A fuse options for select models only
- Connection plates for compression terminals
- 90C terminal rating

Option

- Surge arrestor, both polarities

MADE IN THE USA

Yaskawa Solectria Solar offers two 1500V string combiners, Attachable & Remote, each designed to pair exclusively with SOLECTRIA XGI 1500 inverters. The 1500V Attachable Combiner is designed to mate directly to the XGI 1500 inverter for use in distributed PV systems where the combiner and inverter are located together throughout the array field. The 1500V Remote Combiner has similar features, but is designed for a centralized or clustered deployment of multiple XGI 1500 inverters where the combiners are distributed throughout the PV array field. Both combiner lines feature the highest quality and durability in the industry today.

Choose from models with 16 to 28 fused positions and either 15 or 20 A fuses. Specific models also available with 25 A fuses (20 positions) and 30 A fuses (16 positions). The combiners match the XGI 1500 in quality and appearance. Both models satisfy the National Electrical Code for systems with ungrounded PV source circuits. All Yaskawa Solectria Solar XGI inverters and combiners are Made in the USA with global components and are compliant with the Buy American Act.

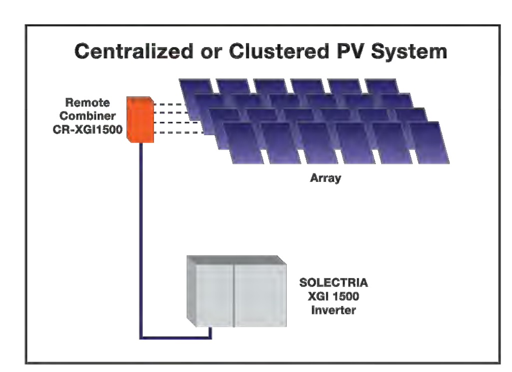
SOLECTRIA SOLAR

XGI 1500 COMBINERS

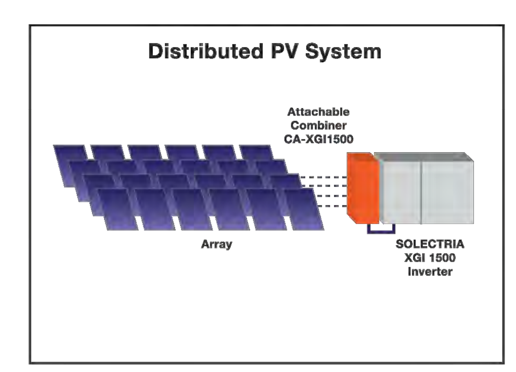
Specifications

	1500V Remote Combiner	1500V Attachable Combiner
1500V String Combiners exclusively for use with SOLECTRIA XGI 1500		
Input Wire Compatibility	14-4 AWG	14-4 AWG
Output Wire Compatibility	Compression Terminal: 1 conductor, 1/0 - 500 kcmil | 2 conductors, 1/0 - 500 kcmil	Compression Terminal: 1 conductor, 1/0 - 500 kcmil | 2 conductors, 1/0 - 500 kcmil
Maximum Voltage	1500 VDC	1500 VDC
Fuse Rating Options	15 A or 20 A (fuses included) 25 A 30 A	15 A or 20 A (fuses included) 25 A 30 A
Number of Fused Positions	16 / 20 / 24 / 26 / 28 20 16	16 / 20 / 24 / 26 / 28 20 16
Input PV Source Circuit Configurations	Ungrounded PV Source Circuits	Ungrounded PV Source Circuits
Fuse Configurations	Both positive and negative polarities fused	Both positive and negative polarities fused
DC Disconnect	2-pole integrated DC disconnect, positive and negative poles switched	DC Disconnect located on XGI 1500 inverter
DC Disconnect Current Rating	250 A	250 A (located on XGI 1500)
Temperature Range	-40°F to 122°F (-40°C to 50°C)	-40°F to 122°F (-40°C to 50°C)
Mounting Positions	Indoor, Outdoor, Wall, Array - Vertical, Horizontal or Angled	Mechanically attaches to structure
Safety Certification & Listing	UL 1741	UL 1741
Standard Warranty	5 Years	5 Years
Enclosure Material Options & Rating	Polyester Powder Coated Aluminum, NEMA Type 4X	Polyester Powder Coated Aluminum, NEMA Type 4X
Option		
Surge Protection	Both positive and negative polarities	Both positive and negative polarities

Centralized or Clustered PV System



Distributed PV System



SOLECTRIA SOLAR

Yaskawa Solectria Solar
360 Merrimack Street
Lawrence, MA 01843
solectria.com
1-978-683-9700
inverters@solectria.com

DOCR-071001-C | February 2019

© 2019 Yaskawa Solectria Solar

YASKAWA

YASKAWA

SOLECTRIA XGI™ 1500

Premium 3-Phase Transformerless Utility-Scale Inverters

Features

- Made in the USA with global components
- Buy American Act (BAA) compliant
- Four models: 125kW/125kVA, 125kW/150kVA, 150kW/166kVA, 166kW/166kVA
- 99.0% peak efficiency
- Flexible solution for distributed and centralized system architecture
- Advanced grid-support functionality Rule 21/UL1741SA
- Robust, dependable and built to last
- Lowest O&M and installation costs
- Access all inverters on site via WiFi from one location
- Remote diagnostics and firmware upgrades
- SunSpec Modbus Certified
- Tested compatible with the TESLA PowerPack Microgrid System

Options

- String combiners for distributed and centralized systems
- Web-based monitoring
- Extended warranty

MADE IN THE USA

Yaskawa Solectria Solar's XGI 1500 utility-scale string inverters are designed for high reliability and built of the highest quality components that were selected, tested and proven to last beyond their warranty. The XGI 1500 inverters provide advanced grid-support functionality and meet the latest IEEE 1547 and UL 1741 standards for safety. The XGI 1500 inverters are the most powerful 1500VDC string inverters in the PV market and have been engineered for both distributed and centralized system architecture. Designed and engineered in Lawrence, MA, the new SOLECTRIA XGI inverters are assembled and tested at Yaskawa America's facilities in Buffalo Grove, IL. The XGI 1500 inverters are Made in the USA with global components and are compliant with the Buy American Act.

SOLECTRIA SOLAR

SOLECTRIA XGI 1500

Specifications

	XGI 1500-125/125	XGI 1500-125/150	XGI 1500-150/166	XGI 1500-166/166
DC Input				
Absolute Maximum Input Voltage	1500 VDC	1500 VDC	1500 VDC	1500 VDC
Maximum Power Input Voltage Range (MPPT)	860-1250 VDC	860-1250 VDC	860-1250 VDC	860-1250 VDC
Operating Voltage Range (MPPT)	860-1450 VDC	860-1450 VDC	860-1450 VDC	860-1450 VDC
Number of MPP Trackers	1 MPPT	1 MPPT	1 MPPT	1 MPPT
Maximum Operating Input Current	148.3 A	148.3 A	178.0 A	197.7 A
Maximum Operating PV Power	128 kW	128 kW	153 kW	170 kW
Maximum DC/AC Ratio | Max Rated PV Power	2.6 | 332 kW	2.6 | 332 kW	2.2 | 332 kW	2.0 | 332 kW
Max Rated PV Short-Circuit Current (ΣIsc x 1.25)	500 A	500 A	500 A	500 A
AC Output				
Nominal Output Voltage	600 VAC, 3-Ph	600 VAC, 3-Ph	600 VAC, 3-Ph	600 VAC, 3-Ph
AC Voltage Range	-12% to +10%	-12% to +10%	-12% to +10%	-12% to +10%
Continuous Real Output Power	125 kW	125 kW	150 kW	166 kW
Continuous Apparent Output Power	125 kVA	150 kVA	166 kVA	166 kVA
Maximum Output Current	120 A	144 A	160 A	160 A
Nominal Output Frequency	60 Hz	60 Hz	60 Hz	60 Hz
Power Factor (Unity default)	+/- 0.80 Adjustable	+/- 0.80 Adjustable	+/- 0.80 Adjustable	+/- 0.80 Adjustable
Total Harmonic Distortion (THD) @ Rated Load	<3%	<3%	<3%	<3%
Grid Connection Type	3-Ph + N/GND	3-Ph + N/GND	3-Ph + N/GND	3-Ph + N/GND
Fault Current Contribution (1 cycle RMS)	144 A	173 A	192 A	192 A
Efficiency				
Peak Efficiency	98.9%	98.9%	99.0%	99.0%
CEC Average Efficiency	98.5%	98.5%	98.5%	98.5%
Tare Loss	<1 W	<1 W	<1 W	<1 W
Temperature				
Ambient Temperature Range	-40°F to 140°F (-40C to 60C)		-40°F to 140°F (-40C to 60C)	
De-Rating Temperature	122°F (50C)		113°F (45C)	
Storage Temperature Range	-40°F to 167°F (-40C to 75C)		-40°F to 167°F (-40C to 75C)	
Relative Humidity (non-condensing)	0 - 95%		0 - 95%	
Operating Altitude	9,840 ft (3 km)		9,840 ft (3 km)	
Communications				
Advanced Graphical User Interface	WiFi			
Communication Interface	Ethernet			
Third-Party Monitoring Protocol	SunSpec Modbus TCP/IP			
Web-Based Monitoring	Optional			
Firmware Updates	Remote and Local			
Testing & Certifications				
Safety Listings & Certifications	UL 1741, IEEE 1547, UL 1998			
Advanced Grid Support Functionality	Rule 21, UL 1741SA			
Testing Agency	ETL			
FCC Compliance	FCC Part 15 (Subpart B, Class A)			
Warranty				
Standard and Options	5 Years Standard; Option for 10 Years			
Enclosure				
Acoustic Noise Rating	73 dBA @ 1 m ; 67dBA @ 3 m			
DC Disconnect	Integrated 2-Pole 250 A DC Disconnect			
Mounting Angle	Vertical only			
Dimensions	Height: 29.5 in. (750 mm) | Width: 39.4 in. (1000 mm) | Depth: 15.1 in. (380 mm)			
Weight	270 lbs (122 kg)			
Enclosure Rating and Finish	Type 4X, Polyester Powder-Coated Aluminum			

Specifications subject to change.

SOLECTRIA SOLAR

Yaskawa Solectria Solar
360 Merrimack Street
Lawrence, MA 01843
solectria.com
1-978-683-9700
Email: inverters@solectria.com

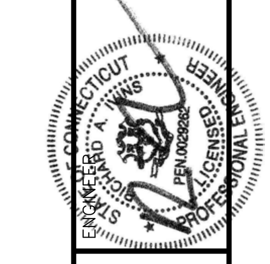
Document FL.XGI1500.01
02/03/2021

© 2021 Yaskawa – Solectria Solar

YASKAWA

DATE	REVISION DESCRIPTION	PM	ENG	CHK
03/17/2021	PERMIT REVIEW SET	SK	RA	RI

PUREPOWER ENGINEERING
111 RIVER STREET, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. IVINS
CT LICENSE No. 0029262



DEVELOPER
GREENSKIES
127 WASHINGTON AVENUE
NORTH HAVEN, CT 06473
WWW.GREENSKIES.COM
Greenskies a Clean Focus company

PAGE SIZE 36" x 24"
PROJECT # 01590.07

DC SYSTEM SIZE: 18,683.340 kW
AC SYSTEM SIZE: 16,000kW / 19,200KVA
MODULE TYPE: 400W / 405W / 450W
MODULE QUANTITY: 43,472
STRING QUANTITY: 1,672
ORIENTATION: 25° TILT, 0° AZIMUTH

PROJECT
GROUND MOUNT SYSTEM AT
WATERFORD SOLAR
117 OIL MILL ROAD
WATERFORD, CT 06385

DRAWING TITLE
EQUIPMENT DATA SHEETS

DRAWING #
E600