

2,782.52 KW SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE

1440 TORRINGFORD STREET, TORRINGTON, CONNECTICUT 06790



LOCATION MAP
SCALE: 1" = 2000'-0"



BIRDS-EYE VIEW FROM SOUTH
SCALE: 1" = 200'-0"



SYSTEM PLAN
SCALE: 1" = 200'-0"

TOTAL SYSTEM SUMMARY:

TOTAL DC SYSTEM SIZE:	2,782.52 kWDC
AC SYSTEM SIZE:	1,975.00 kWAC
MODULE MANUFACTURER:	TRINA SOLAR
MODULE MODEL:	TSM-DEG15MC.20(II) 400W
MODULES PER STRING:	26
MODULE QUANTITY:	5,746
DUMMY MODULE QUANTITY:	2
STRING QUANTITY:	221
MODULE MANUFACTURER:	RISEN SOLAR TECHNOLOGY
MODULE MODEL:	RSM144-6-380BMDG 380W
MODULES PER STRING:	26
MODULE QUANTITY:	1,274
DUMMY MODULE QUANTITY:	2
STRING QUANTITY:	49
MODULE TILT:	30°
MODULE AZIMUTH:	180°
INVERTER MANUFACTURER:	SOLECTRIA RENEWABLES
INVERTER MODEL:	XGI 1500-125/125
INVERTER QUANTITY:	15
INVERTER MANUFACTURER:	CHINT POWER SYSTEMS
INVERTER MODEL:	CPS SCH100KTL-DO/US-600
INVERTER QUANTITY:	1

SCOPE OF WORK SUMMARY

GROUND MOUNT PV ARRAY:
INSTALL SOLAR MODULES AND RACKING SYSTEM ON GROUND LEVEL. INSTALL INVERTERS AND ELECTRICAL DISTRIBUTION EQUIPMENT TO INTERCONNECT AT LOCAL UTILITY DISTRIBUTION LINES

DEVELOPER:



150 TRUMBULL ST, 4TH FLOOR
HARTFORD, CT 06103

ENGINEERED BY:



5 MARINE VIEW PLAZA, SUITE 301
HOBOKEN, NEW JERSEY, 07030

DRAWING INDEX

GENERAL	30% CONCEPTUAL DESIGN	30% CONCEPTUAL DESIGN	90% DESIGN DEVELOPMENT	ISSUE FOR PERMIT
G001 TITLE SHEET	●	●	●	●
G200 ARRAY PLAN	●	●	●	●
ELECTRICAL				
E001 ELECTRICAL NOTES & SYMBOL LIST			●	○
E100 OVERALL AC ELECTRICAL PLAN			●	○
E110 EQUIPMENT AREA DETAIL			●	○
E120 EQUIPMENT MOUNTING DETAIL IN ARRAY			●	○
E130 POLE LINE DETAILS			●	○
E200 DC ELECTRICAL PLAN - NORTH			●	○
E201 DC ELECTRICAL PLAN - CENTER			●	○
E202 DC ELECTRICAL PLAN - SOUTH			●	○
E204 PV MODULES & WIRING DETAILS			●	●
E300 ONE LINE DIAGRAM	●	●	●	●
E310 SCHEDULES & CALCULATIONS			●	●
E311 SCHEDULES & CALCULATIONS			●	○
E401 GROUNDING DETAILS			●	○
E402 ELECTRICAL DETAILS			●	○
E500 LABELS & SIGNAGE			●	●
E600 EQUIPMENT DATA SHEETS			●	○
E601 EQUIPMENT DATA SHEETS			●	○

LEGEND:

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

DRAWING TITLE
TITLE SHEET

DRAWING #
G001

DEVELOPER



150 TRUMBULL ST, 4TH FLOOR
HARTFORD, CT 06103
WWW.VEROGY.COM



PUREPOWER ENGINEERING
5 MARINE VIEW PLAZA, SUITE 301
HOBOKEN, NJ 07030
WWW.PUREPOWER.COM
CT LICENSE NO. 03629282

REVISION DESCRIPTION	DATE	DATE	DATE
ISSUE FOR PERMIT	10/08/2020	09/09/2020	07/28/2020
90% DESIGN DEVELOPMENT	09/09/2020	07/28/2020	07/28/2020
30% DESIGN - REV. 1	07/28/2020	07/28/2020	07/28/2020
30% CONCEPTUAL DESIGN	05/24/2020	05/24/2020	05/24/2020

DC SYSTEM POWER: 2,782.52 kW
AC SYSTEM POWER: 1,975.00 kW
MODULE TYPE: TRINA 400 / RISEN 380
MODULE QUANTITY: 5,746 / 1,274
STRING QUANTITY: 221 / 49
ORIENTATION: 30° TILT, -180° AZIMUTH

SOLAR GROUND MOUNT SYSTEM AT
TORRINGTON SOLAR ONE
1440 TORRINGFORD STREET
TORRINGTON, CONNECTICUT 06790

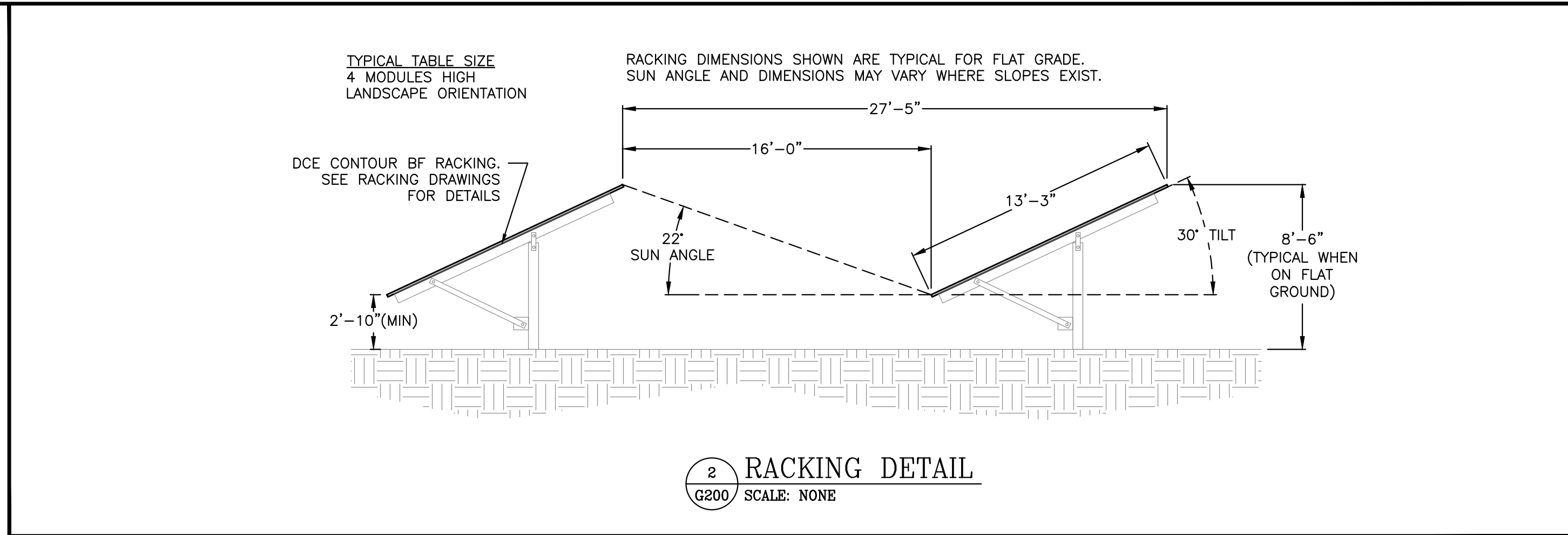
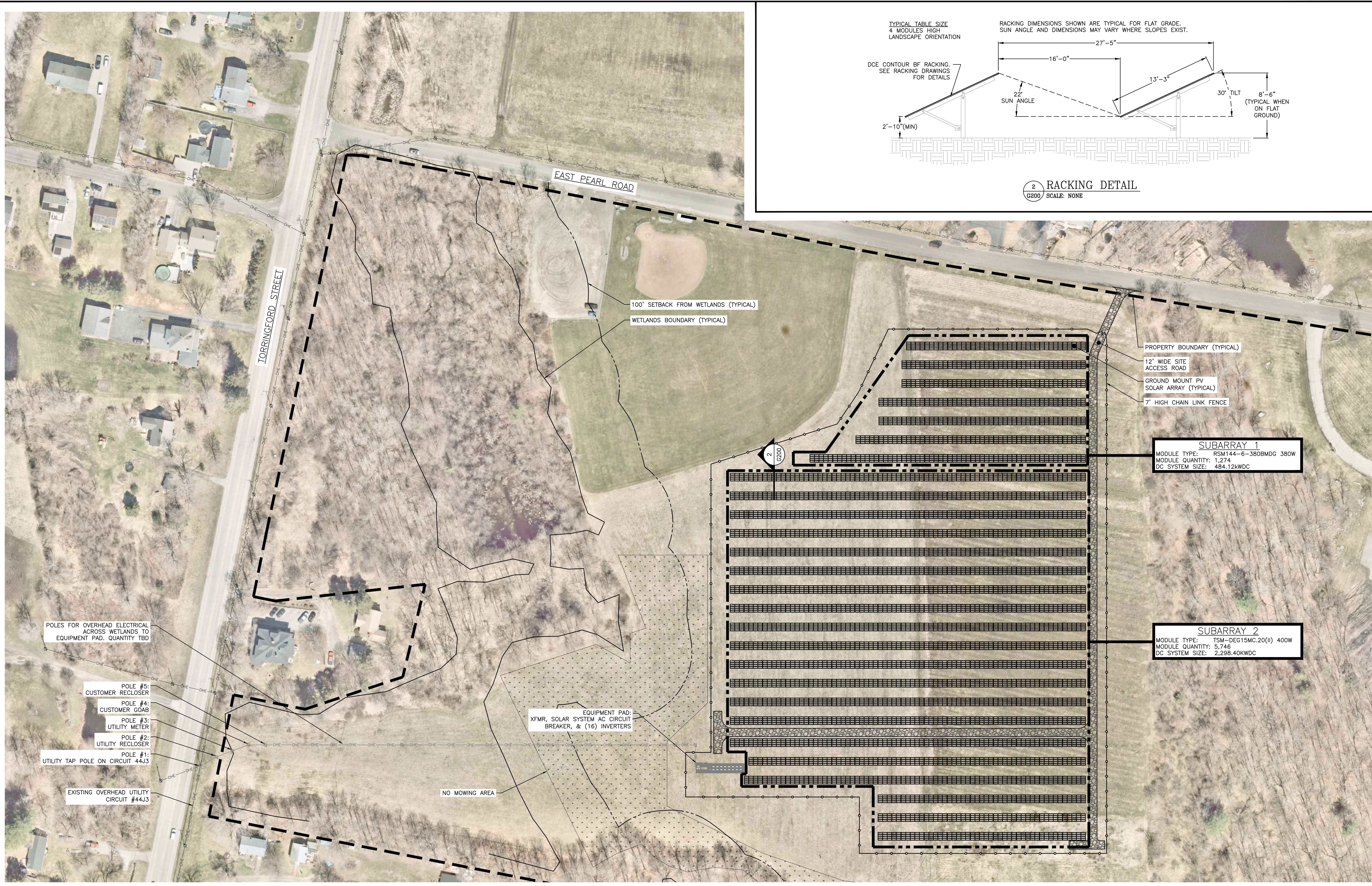
PAGE SIZE
36" x 24"
PROJECT #
00034

PLANT DATE: 10/29/2020 10:35 AM

RULER IN INCHES:

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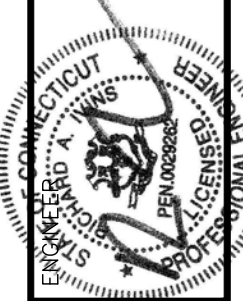
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1 OVERALL ARRAY PLAN
G200 SCALE: 1" = 60'-0"

DRAWING TITLE
OVERALL ARRAY PLAN

PROJECT	SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE 1440 TORRINGFORD STREET TORRINGTON, CONNECTICUT 06790	DRAWING #	G200
DC SYSTEM POWER:	2,782.52 kW	PAGE SIZE	36" x 24"
AC SYSTEM POWER:	1,975.00 kW	PROJECT #	00034
MODULE TYPE:	TRINA 400 / RISEN 380	DEVELOPER	VEROGY
MODULE QUANTITY:	5,746 / 1,274	ADDRESS	150 HARTFORD STREET HARTFORD, CT 06103
STRING QUANTITY:	221 / 49	WWW.VEROGY.COM	WWW.VEROGY.COM
ORIENTATION:	30° TILT, -1.60° AZIMUTH	VEROGY	VEROGY
REVISION DESCRIPTION	DATE	DATE	DATE
ISSUE FOR PERMIT	10/08/2020	ISSUE FOR PERMIT	10/08/2020
90% DESIGN DEVELOPMENT	03/08/2020	90% DESIGN DEVELOPMENT	03/08/2020
30% DESIGN - REV. 1	07/28/2020	30% DESIGN - REV. 1	07/28/2020
30% CONCEPTUAL DESIGN	05/24/2020	30% CONCEPTUAL DESIGN	05/24/2020
PM ENG CHK		PM ENG CHK	
RK CP RI		RK CP RI	
RK AA RI		RK AA RI	
RK CP RI		RK CP RI	
RK CP RI		RK CP RI	



VEROGY
150 HARTFORD STREET
4TH FLOOR
HARTFORD, CT 06103
WWW.VEROGY.COM



DEVELOPER
VEROGY

PROJECT #
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ELECTRICAL NOTES

1. GENERAL

- 1.A. ALL WORK AND MATERIALS SHALL BE IN FULL ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL EQUIPMENT SHALL BE LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) TO APPLICABLE UL STANDARDS. THE CONTRACTOR SHALL PROCURE ALL NECESSARY CERTIFICATIONS FOR ALL WORK INSTALLED, PAY ALL FEES AND CHARGES CONNECTED THEREWITH AND DELIVER ALL CERTIFICATES AND INSPECTION APPROVALS TO THE OWNER THROUGH THE ENGINEER, BEFORE WORK WILL BE FINALLY ACCEPTED.
- 1.B. ALL INVERTERS SHALL BE IEEE 1547 COMPLIANT AND SHALL BE INSPECTED BY LOCAL UTILITY BEFORE COMMISSIONING, TESTING AND OPERATION OF THE SYSTEM.
- 1.C. UNLESS OTHERWISE NOTED, NEW EQUIPMENT SHALL HAVE AN INTERRUPT RATING (KAIC) OR SHORT CIRCUIT CURRENT RATING (SCCR) GREATER THAN OR EQUAL TO THE EXISTING EQUIPMENT.

2. MANNER OF INSTALLATION

- 2.A. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. ALL DETAILS OF THE INSTALLATION SHALL BE MECHANICALLY AND ELECTRICALLY CORRECT.
- 2.B. TORQUE AND MARK ALL RACKING AND MECHANICAL LUGS.

3. CONDUCTORS AND CONDUCTOR INSTALLATION

- 3.A. COMPRESSION LUGS SHALL BE USED ON ALL ALUMINUM CABLE TERMINATIONS. MECHANICAL LUGS MAY ONLY BE USED FOR COPPER CABLE TERMINATIONS OR ALUMINUM CABLE WITH COMPRESSION PIN ADAPTORS.
- 3.B. IF ALUMINUM MC CABLE IS USED, THHN/THWN-2 INSULATION IS ACCEPTABLE. FOR ALUMINUM CONDUCTORS, XHHW-2 SHALL BE USED.
- 3.C. ANTI-OXIDANT COMPOUND SHALL BE USED WITH ALL ALUMINUM LUGS. CLEAN OXIDATION FROM WIRE STRANDS WITH STEEL WIRE BRUSH PRIOR TO APPLICATION OF COMPOUND.
- 3.D. PV SYSTEM CONDUCTORS SHALL BE MARKED AND IDENTIFIED PER NEC 690.31(B).
- 3.E. INSTALL WIRE AND CABLE IN ACCORDANCE WITH THE NEC AND AS HEREINAFTER SPECIFIED. USE THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION'S "STANDARD OF INSTALLATION", THE MANUFACTURER'S WRITTEN INSTRUCTIONS, UNLESS SUPERSEDED BY THESE SPECIFICATIONS. IN ALL CASES THE INSTALLATION SHALL BE IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES.
- 3.F. THE USE OF WIRE SPLICES AT ANY POINT IN THE INSTALLATION IS STRICTLY PROHIBITED
- 3.G. THE USE OF WIRE LUBE IS REQUIRED FOR ALL WIRE PULLS THROUGH CONDUIT RUNS OF 20' OR LONGER, OR WITH BENDS IN 180' OR MORE. WIRE LUBE IS REQUIRED EVEN WHEN USING SELF LUBRICATING CABLES SUCH AS SOUTHWIRE 'SIMPULL'.
- 3.H. STRING WIRING & HOMERUNS SHALL BE SECURED TO UNDERSIDE OF THE RACKING & MODULES USING ZIP TIES OUTDOOR RATED FOR UV. HELLERMAN TYTON PA66UV OR EQUAL. TRANSITION TO EMT OUTSIDE OF ARRAY.
- 3.I. ALL PV SOURCE CIRCUITS WHICH WOULD BE EXPOSED TO PHYSICAL DAMAGE SHALL BE PROTECTED IN CONDUIT OR CABLE TRAY.
- 3.J. ALL PV SOURCE CIRCUITS WITH DIRECT EXPOSURE TO SUNLIGHT SHALL BE PROTECTED THROUGH THE USE OF CONDUIT, PROTECTIVE WRAP, SPLIT LOOM, OR EQUIVALENT, WHICH ARE DURABLE FOR THE ENVIRONMENT AND RATED FOR THE APPLICATION.
- 3.K. ALL PLUG AND SOCKET CONNECTORS MATED TOGETHER SHALL BE OF THE SAME TYPE AND OF THE SAME MANUFACTURER. "COMPATIBLE" CONNECTORS SHALL NOT BE ACCEPTED (IEC 62446-1).
- 3.L. ALL FIELD-MADE PLUG & SOCKET CONNECTORS SHALL BE INSTALLED USING MANUFACTURER APPROVED TOOLS AND METHODS, AND CABLE GLANDS SHALL BE TIGHTENED TO MANUFACTURER'S SPECIFIED TORQUE VALUE.

4. PHASE RELATIONSHIP

- 4.A. CONNECT FEEDERS TO MAINTAIN PHASE RELATIONSHIP THROUGH SYSTEM. PHASE LEGS OF FEEDERS SHALL MATCH BUS OR CABLE ARRANGEMENTS IN EQUIPMENT TO WHICH THE FEEDERS ARE CONNECTED. COLOR CODING SHALL BE AS FOLLOWS:

208/120 VAC
A PHASE: BLACK, B PHASE: RED, C PHASE: BLUE

277/480 VAC
A PHASE: BROWN, B PHASE: ORANGE, C PHASE: YELLOW

1500 VDC, 1000 VDC, OR 600 VDC
UNGROUND POSITIVE CONDUCTOR: RED
UNGROUND NEGATIVE CONDUCTOR: BLACK

AC AND DC SYSTEMS:
GROUNDED CONDUCTOR: WHITE
GROUND: GREEN

- 4.B. GROUNDED CONDUCTORS (NEUTRAL) AND EQUIPMENT GROUNDING CONDUCTORS SMALLER THAN #4 MUST HAVE COLOR CODED INSULATION. WHERE COLOR CODED CABLE IS NOT USED, TAPE CONDUCTOR WITH OVERLAPPED COLORED TAPE FOR A MINIMUM OF 6" IN ACCESSIBLE LOCATIONS. COLOR CODING MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.

5. CONDUITS AND RACEWAYS

- 5.A. PROVIDE RACEWAYS MINIMUM SIZE 3/4".
- 5.B. CONDUITS SHALL BE EMT WHERE NOT SUBJECT TO PHYSICAL DAMAGE. CONDUITS SHALL BE IMC OR RMC WHERE SUBJECT TO PHYSICAL DAMAGE. PVC CONDUITS ONLY PERMITTED IN BELOW GRADE DUCT BANKS.
- 5.C. DRAWINGS SHOW RACEWAY LOCATIONS DIAGRAMMATICALLY. CONTRACTOR SHALL ADJUST ROUTING TO SUIT FIELD LOCATIONS. ANY CHANGES TO PROPOSED ROUTING SHALL BE SUBMITTED TO ENGINEER FOR REVIEW AND APPROVAL.
- 5.D. FURNISH AND INSTALL ALL FITTINGS AND SPECIAL DEVICES NECESSARY FOR THE PROPER INSTALLATION, CONNECTION AND OPERATION OF THE SYSTEM. CONDUIT ELBOWS SHALL BE OF THE SAME MAKE, QUALITY AND FINISH AS THE CONDUIT USED.
- 5.E. A PROTECTIVE COATING OF ASPHALT COMPOUND, PLASTIC SHEATH, OR

- OTHER EQUIVALENT PROTECTION SHALL BE APPLIED TO ANY GALVANIZED STEEL CONDUITS DIRECTLY BURIED IN EARTH.
 - 5.F. EMT CONDUIT SHALL USE COMPRESSION RAIN-TIGHT CONNECTORS, FACTORY STAMPED RAIN-TIGHT WITH COMPONENTS PROPERLY INSTALLED.
 - 5.G. PROVIDE EXPANSION FITTINGS WITH BONDING JUMPERS FOR EVERY 100' OF STRAIGHT METAL CONDUIT RUN.
 - 5.H. CONDUIT EXPANSION AND DEFLECTION FITTINGS WITH BONDING JUMPERS SHALL BE USED WHENEVER CROSSING BUILDING EXPANSION AND SEISMIC SEPARATION JOINTS.
 - 5.I. LEAVE WIRE SUFFICIENTLY LONG TO PERMIT MAKING FINAL CONNECTIONS. ALL EMPTY CONDUITS OVER 10' IN LENGTH SHALL BE PROVIDED WITH SYNTHETIC FIBER ROPE PULL WIRE.
 - 5.J. PATCH AND REPAIR ALL SURFACES DAMAGED BY TRENCHING TO MATCH THE PREVIOUSLY EXISTING CONDITIONS.
 - 5.K. 15" WIDE OR LESS BUCKET TO BE USED FOR TRENCHING.
 - 5.L. ALL PENETRATIONS SHALL BE SEALED TO MAINTAIN THE EXISTING FIRE RATING.
 - 5.M. ALL ROOFTOP CONDUITS SHALL BE MARKED PER LOCAL FIRE CODES.
 - 5.N. ALL CONDUITS ENTERING ENCLOSURES SHALL BE FITTED WITH PROTECTIVE BUSHINGS, INCLUDING CONDUIT WITH CONDUCTOR SIZES SMALLER THAN #4 AWG. METALLIC CONDUIT/BUSHINGS SHALL BE BONDED PER NEC.
 - 5.O. ALL CONDUIT ENTERING ENCLOSURES SHALL BE SEALED WITH AN APPROVED SEALANT.
- ## 6. ELECTRICAL ENCLOSURES
- 6.A. ALL OUTDOOR ENCLOSURES (PANELBOARDS, DISCONNECT SWITCHES, JUNCTION BOXES, COMBINER BOXES, ETC.) SHALL BE NEMA 3R, 4, OR 4X. INDOOR ENCLOSURES SHALL BE NEMA 1.
 - 6.B. PANELBOARD DOORS SHALL BE QUARTER TURN LATCHES OR EXTERNAL HANDLE WITH INTERNAL LATCHES, NO SETS OF EXTERNAL SCREW DOWN CLAMPS.
 - 6.C. CONDUIT TERMINATING IN OUTDOOR ENCLOSURES SHALL USE MYERS-TYPE HUBS WITH GROUND SCREW. UTILIZE RAIN-TIGHT FITTINGS FOR ALL CABLE ENTRIES.
 - 6.D. NO PENETRATIONS OR CABLE ENTRIES IN THE TOP OF OUTDOOR ENCLOSURES. ENTER OUTDOOR ENCLOSURES FROM THE BOTTOM (PREFERRED) OR SIDE.
 - 6.E. ALL ELECTRICAL EQUIPMENT SHALL BE LISTED OR LABELED BY A RECOGNIZED TESTING AGENCY.
 - 6.F. ARC FLASH HAZARD WARNING LABELS SHALL BE PROVIDED AND MOUNTED ON EVERY COMBINER BOX, TERMINAL BOX, INVERTER, AC AND DC SWITCH, TRANSFORMER, AND SWITCHGEAR.
 - 6.G. HAND HOLES, PULL BOXES, OR CONDUIT BODIES SHALL BE INSTALLED (WHETHER OR NOT SHOWN ON DRAWINGS) WHEN THE RACEWAY HAS MORE THAN 360° OF BENDS, OR AS NECESSARY TO NOT EXCEED MANUFACTURER'S MAXIMUM CABLE PULLING TENSION.

7. GROUNDING

- 7.A. THE CONTRACTOR SHALL FURNISH AND INSTALL GROUNDING NECESSARY IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

8. TESTS

- 8.A. FINAL TESTS AND INSPECTION SHALL BE HELD IN THE PRESENCE OF OWNER'S REPRESENTATIVES AND TO THEIR SATISFACTION.
- 8.B. MEGGER ALL: STRING WIRING, COMBINER BOX OUTPUT FEEDERS, AND AC FEEDERS. SUBMIT RESULTS TO OWNER FOR REVIEW.
- 8.C. IV CURVE TRACES OF STRINGS SHALL BE GENERATED USING THE SOLMETRIC PV ANALYZER (OR EQUIVALENT DEVICE) AND SUBMITTED TO OWNER FOR APPROVAL.
- 8.D. OPEN-CIRCUIT VOLTAGE (Voc) MEASUREMENTS OF ALL STRING CONDUCTORS.

GENERAL NOTES

- 9. THE GENERAL NOTES APPLY TO ALL DRAWINGS UNDER THE CONTRACT. REFER TO INDIVIDUAL DRAWINGS FOR ADDITIONAL NOTES.
- 10. DRAWINGS ARE DIAGRAMS AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT OF WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM, SPACE CONDITIONS, AND REQUIRED CLEARANCES.
- 11. PV SYSTEM CONTRACTOR SHALL COORDINATE ALL THE WORK WITH THE ENGINEER, THE CONSTRUCTION MANAGER AND ALL OTHER CONTRACTORS TO INSURE THAT THE PV SYSTEM IS INSTALLED AS SPECIFIED IN THESE DRAWINGS.
- 12. PERSONAL PROTECTIVE EQUIPMENT (PPE) SHALL BE PROVIDED AS REQUIRED IN ACCORDANCE WITH NEC 70E AND OSHA REQUIREMENTS.
- 13. UNFORSEEN OBSTRUCTIONS ON THE SITE MAY NECESSITATE A CHANGE IN THE LAYOUT. ANY CHANGES TO THE RACKING LAYOUT SHOULD BE REPORTED TO THE ENGINEER. CHANGES IN UP TO 5% OF THE MODULES SHOULD BE ANTICIPATED. CHANGES TO THE ARRAY LAYOUT SHOULD BE MADE AS TO NOT IMPACT THE NUMBER OF MODULES ON A COMBINER BOX OR INVERTER.
- 14. LANDSCAPING: RESTORE TO ORIGINAL CONDITIONS.
- 15. ALL STRUCTURAL AND MISCELLANEOUS EXTERIOR STEEL, INCLUDING STRUT CHANNEL (SUCH AS UNISTUT OR KINDORF) SHALL BE CORROSION RESISTANT, HOT DIP GALVANIZED OR GALVANNEALED WITH A COATED FINISH MINIMUM.

LEGEND - GENERAL

- LIGHT LINE INDICATES EXISTING OR BEYOND 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
- PULLBOX
- JUNCTION BOX
- PANEL BOARD
- LOCAL DISCONNECT SWITCH
- SIMPLEX RECEPTACLE, RATED: 125-VOLTS AC, 20A
- DUPLEX RECEPTACLE, RATED: 125-VOLTS AC, 20A
- WEATHERPROOF DUPLEX RECEPTACLE, RATED: 125-VOLTS AC, 20A
- 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
- PUSHBUTTON SWITCHES; NUMBER AND TYPE OF CONTACT BLOCKS MAY VARY
- PUSHBUTTON SWITCHES MUSHROOM HEAD; NUMBER AND TYPE OF CONTACT BLOCKS MAY VARY
- KEYED INTERLOCK (KIRK KEY OR EQ.)
- 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
- COU CONDITIONS OF USE
- 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
- MLPE MODULE LEVEL POWER ELECTRONICS
- MPPT MAXIMUM POWER POINT TRACKING
- NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
- NTS NOT TO SCALE
- P POLE
- PF POWER FACTOR
- PLC PROGRAMMABLE LOGIC CONTROLLER
- POA PLANE OF ARRAY
- 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

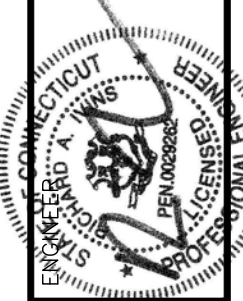
ADOPTED NEC VERSION: 2017

UTILITY: EVERSOURCE

UTILITY DISCONNECT SWITCH REQUIREMENTS:

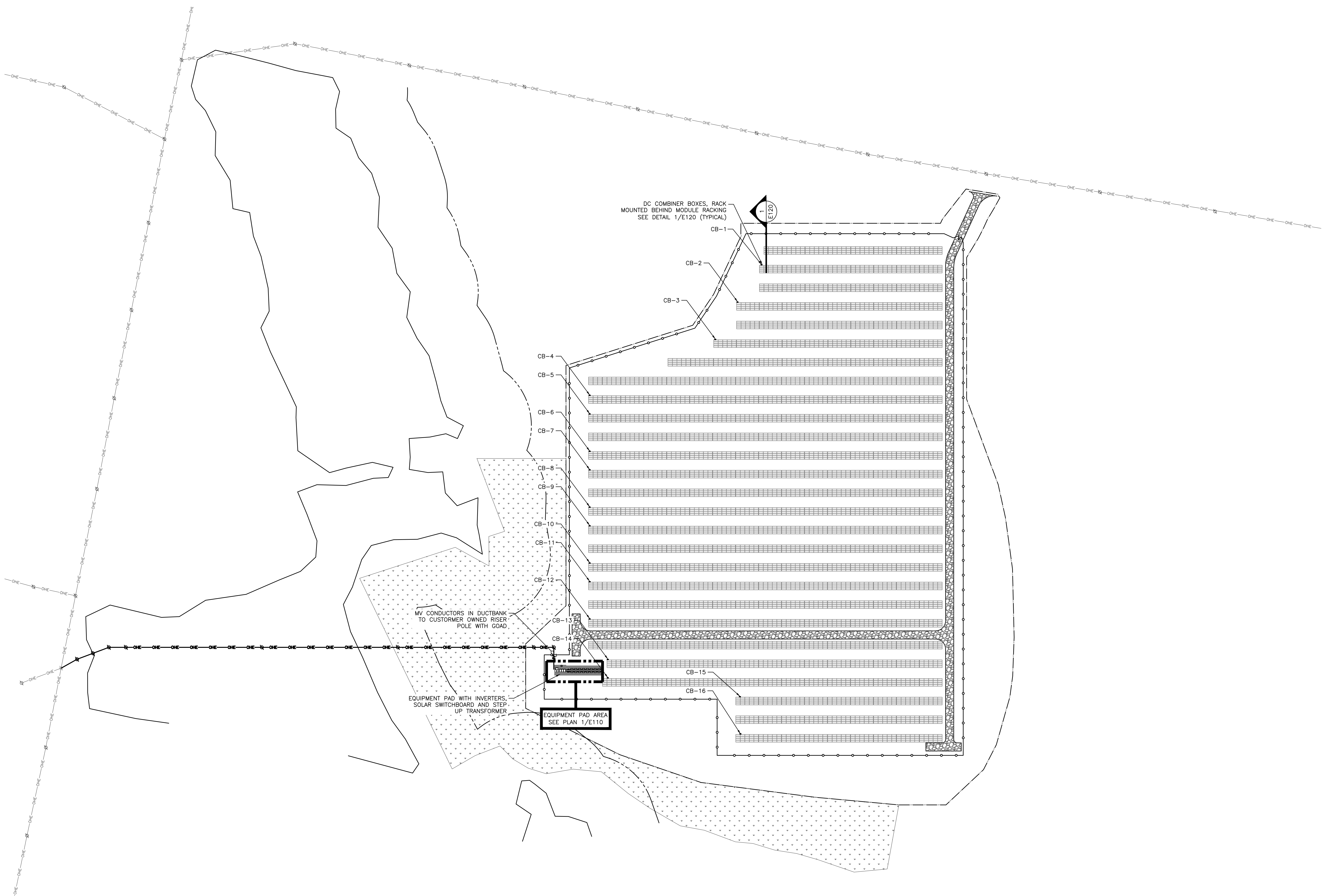
AN EXTERNAL DISCONNECT AT THE PCC OR AT ANOTHER MUTUALLY AGREEABLE POINT THAT IS ACCESSIBLE TO COMPANY PERSONNEL AT ALL HOURS OF ALL DAYS AND THAT CAN BE OPENED FOR ISOLATION IF REQUIRED. THE SWITCH SHALL BE GANG OPERATED, HAVE A VISIBLE AIR GAP BETWEEN SWITCH CONTACTS, BE RATED TO INTERRUPT THE MAXIMUM 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.

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 PUREPOWER ENGINEERING INC. 5 MARINE VIEW PLAZA HOBOKEN, NJ WWW.PUREPOWER.COM
 DATE: 09/09/2020
 REVISION DESCRIPTION: 90% DESIGN DEVELOPMENT
 PK: ES: R:



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PLOT DATE: 10/29/2020 10:35 AM



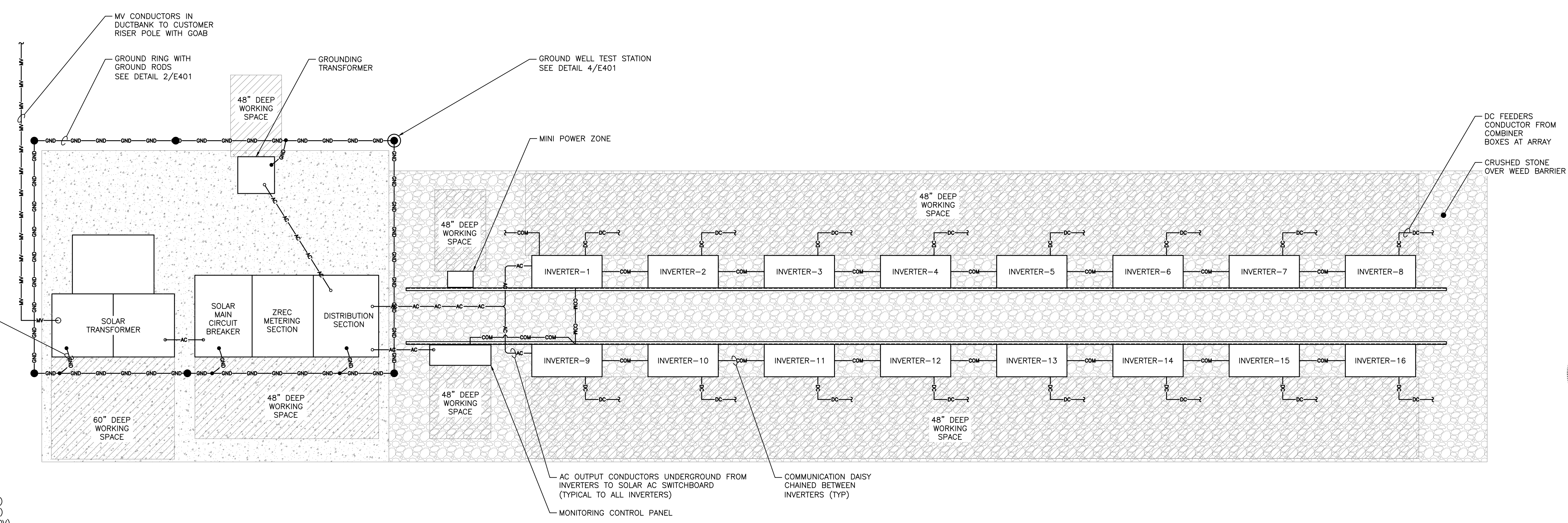
1 OVERALL ELECTRICAL PLAN
E100 SCALE: 1" = 60'-0"

DRAWING TITLE	DRAWING #
AC ELECTRICAL PLAN	E100

VEROGY DEVELOPER 150 TOWN FLOORS STREET HARTFORD, CT 06103 WWW.VEROGY.COM	PAGE SIZE 36" x 24" PROJECT # 00034	PROJECT SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE 1440 TORRINGTON STREET TORRINGTON, CONNECTICUT 06790	DC SYSTEM POWER: 2,782.52 kW AC SYSTEM POWER: 1,975.00 kW MODULE TYPE: TRINA 400 / RISEN 380 MODULE QUANTITY: 5,746 / 1,274 STRING QUANTITY: 221 / 49 ORIENTATION: 30° TILT, 180° AZIMUTH		DATE 09/03/2020	REVISION DESCRIPTION 90% DESIGN DEVELOPMENT	PW LENG CHK RY LA TR
					PURVEPOWER ENGINEER 5 MARINE VIEW PLAZA, HOBOKEN, NJ WWW.PURVEPOWER.COM RICHARD A. VEROGY CT LICENSE NO. 03629282		

RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

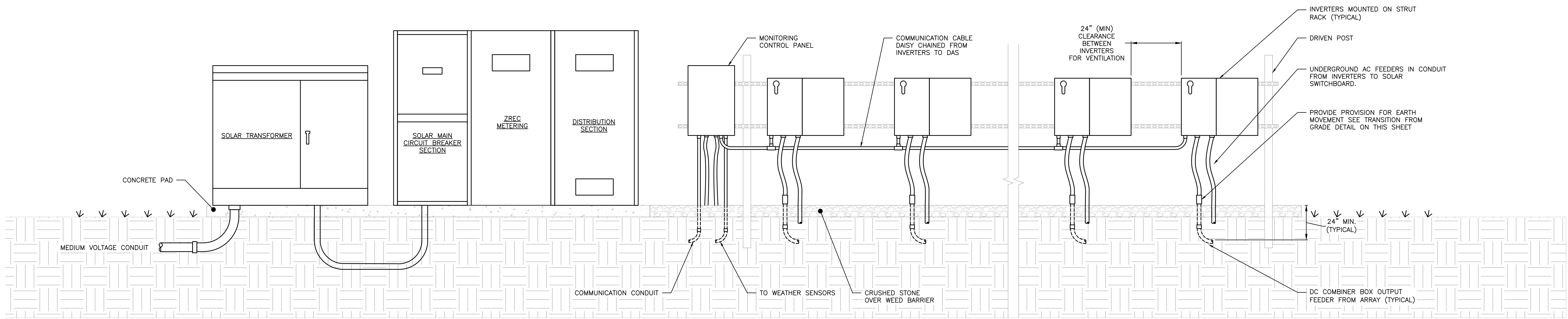
NOTES:
 1. ALL PAD MOUNTED EQUIPMENT SHALL BE BOLTED AND SECURED TO EQUIPMENT PAD WITH SUITABLE CONCRETE ANCHORS AT FOUR CORNERS.
 2. STUB-UP LOCATIONS ARE DIAGRAMATIC. REFER TO EQUIPMENT SUBMITALS FOR EXACT LOCATIONS.
 3. PAD SIZE IS APPROXIMATE. CONTRACTOR TO COORDINATE WITH EQUIPMENT SHOP DRAWINGS.



LINE TYPE LEGEND

— AC — AC	AC POWER CONDUIT UNDERGROUND (600V)
— MW — MW	AC POWER CONDUIT UNDERGROUND (25KV)
— DC — DC	DC FEEDER CONDUIT UNDERGROUND (1500V)
— GND — GND	BARE GROUND CABLE UNDERGROUND
— COM — COM	COMS CONDUIT UNDERGROUND

1 EQUIPMENT AREA PLAN
 E110 SCALE: 3/8" = 1'-0"



2 TYPICAL ELECTRICAL EQUIPMENT AREA ELEVATION
 E110 SCALE: 1/2" = 1'-0"

DATE	REVISION DESCRIPTION	FW LENGTH	CHK
09/07/2020			
DATE	REVISION DESCRIPTION	FW LENGTH	CHK
09/07/2020			

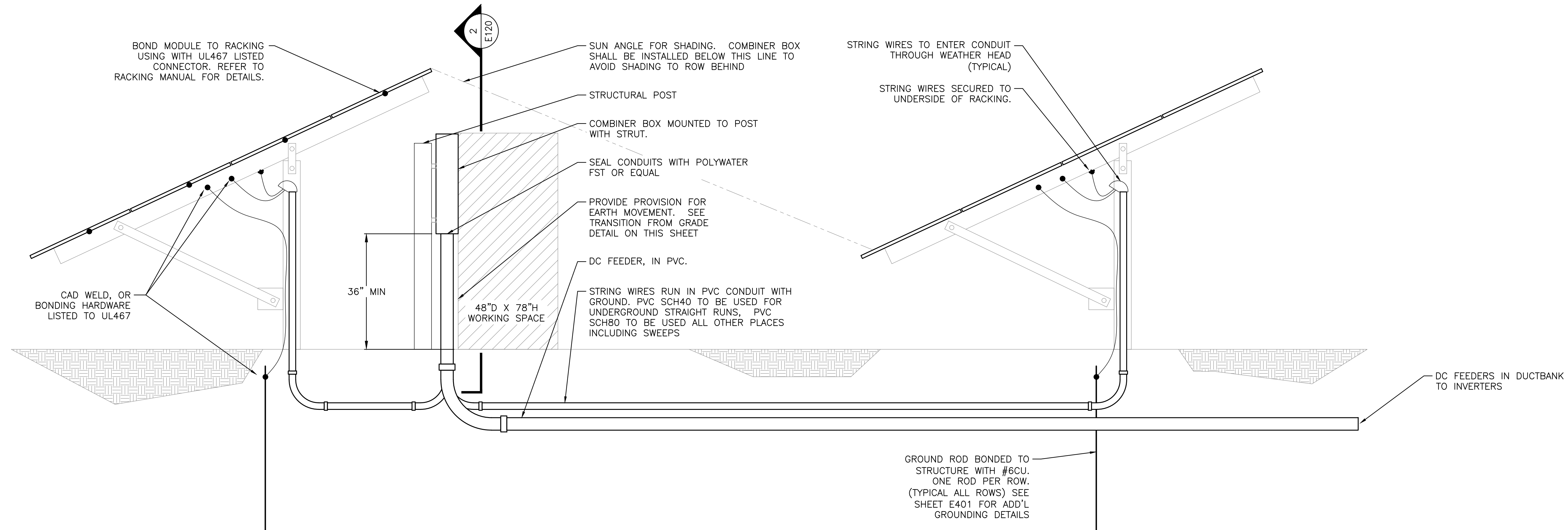
PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE, 1440 TORRINGFORD STREET, TORRINGTON, CONNECTICUT 06790
 DEVELOPER: VEROGY
 PAGE SIZE: 36" x 24"
 PROJECT #: 00034
 DC SYSTEM POWER: 2,782.52 kW
 AC SYSTEM POWER: 1,975.00 kW
 MODULE TYPE: TRINA 400 / RISEN 380
 MODULE QUANTITY: 5,746 / 1,274
 STRING QUANTITY: 221 / 49
 ORIENTATION: 30° TILT, -1.60° AZIMUTH

PURE POWER ENERGY SOLUTIONS
 5 MARINE VIEW PLAZA, HARTFORD, CT 06103
 WWW.PUREPOWER.COM
 LICENSE NO. 03029282

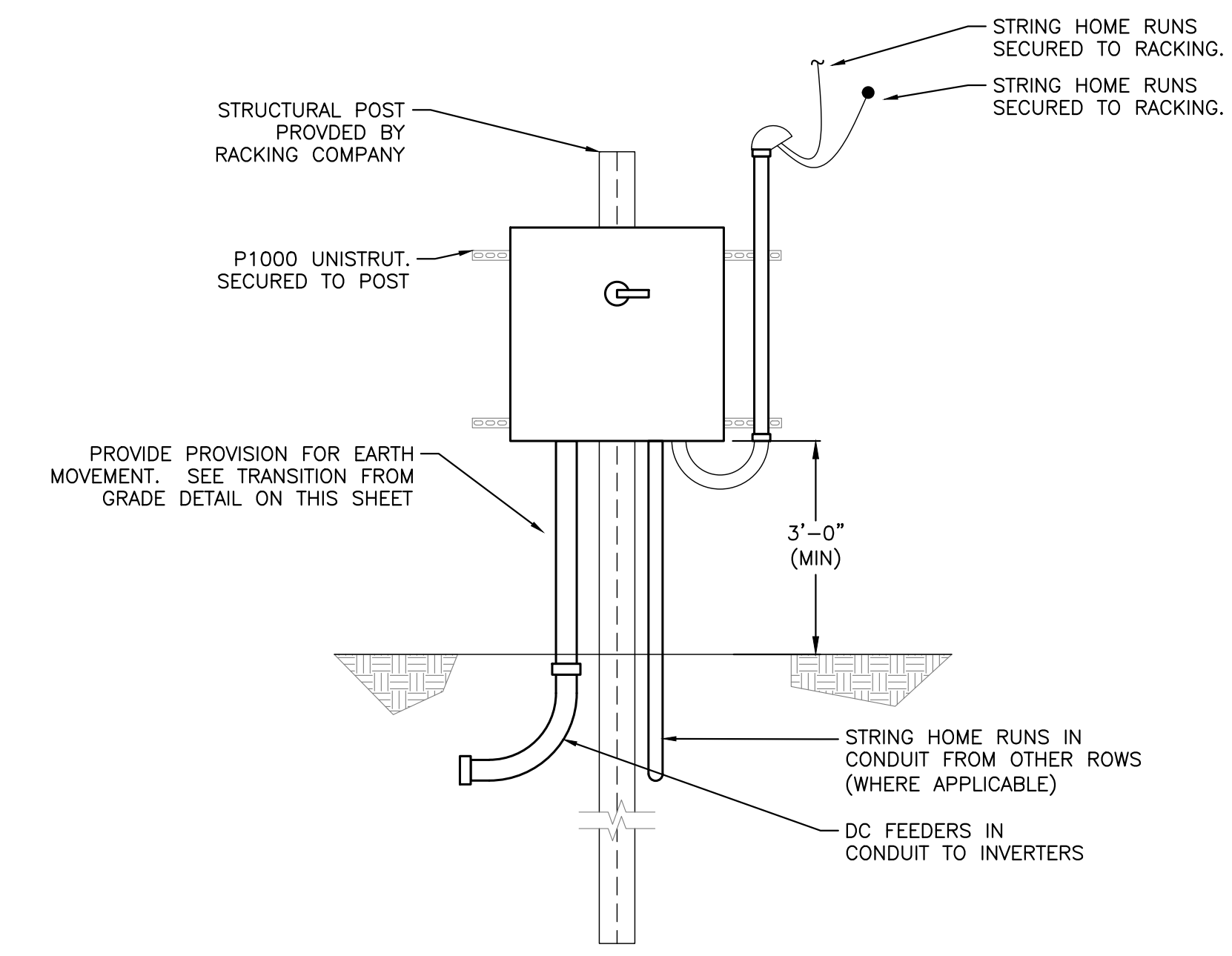
VEROGY
 150 HARTFORD STREET
 HARTFORD, CT 06103
 WWW.VEROGY.COM

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 10/29/2020 10:35 AM



1 TYPICAL EQUIPMENT RACKING ELEVATION - SIDE VIEW
E120 SCALE: 1/2" = 1'-0"



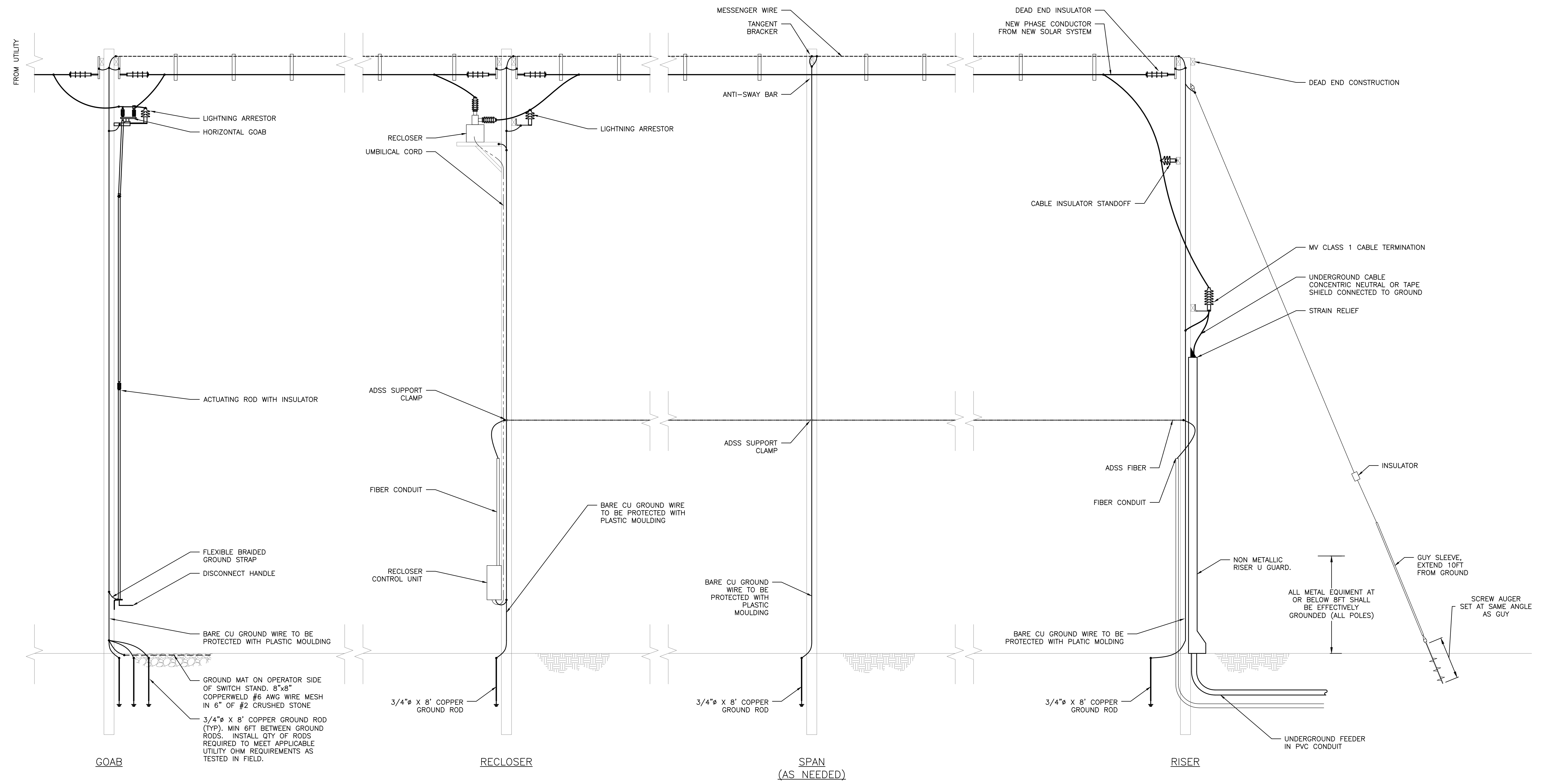
2 TYPICAL COMBINER BOX ELEVATION - FRONT VIEW
E120 SCALE: 1/2" = 1'-0"

DRAWING TITLE	DRAWING #
EQUIPMENT MOUNTING DETAILS IN ARRAY	E120

 PURE POWER 5 MARINE VIEW PLAZA, HARTFORD, CT 06103 WWW.PUREPOWER.COM CT LICENSE NO. 03029282	REVISION DESCRIPTION	PM / ENG / CHK
	DATE	
 VEROGY 150 HARTFORD STREET HARTFORD, CT 06103 WWW.VEROGY.COM	DEVELOPER	PROJECT #
	PAGE SIZE	PROJECT #
DC SYSTEM POWER: 2,782.52 kW AC SYSTEM POWER: 1,975.00 kW MODULE TYPE: TRINA 400 / RISEN 380 STRING QUANTITY: 221 / 49 ORIENTATION: 30° TILT, -1.60° AZIMUTH	PROJECT SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE 1440 TORRINGTON STREET TORRINGTON, CONNECTICUT 06790	PROJECT # 00034

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 10/29/2020 10:35 AM



1 POLE LINE DETAILS
E130 SCALE: NONE

DRAWING TITLE	DRAWING #
POLE LINE DETAILS	E130

 PURE POWER 5 MARINE VIEW PLAZA, HARTFORD, CT 06103 WWW.PUREPOWER.COM LICENSE # 00033482 CT LICENSE NO. 00033482	REVISION DESCRIPTION	DATE	PM TENG CHK
 VEROGY 150 HARTFORD STREET HARTFORD, CT 06103 WWW.VEROGY.COM	PROJECT	SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE 1440 TORRINGTON STREET TORRINGTON, CONNECTICUT 06790	
	DC SYSTEM POWER:	2,782.52 kW	
AC SYSTEM POWER:	1,975.00 kW		
MODULE TYPE:	TRINA 400 / RISEN 380		
MODULE QUANTITY:	5,746 / 1,274		
STRING QUANTITY:	221 / 49		
ORIENTATION:	30° TILT, -180° AZIMUTH		
PAGE SIZE	36" x 24"	PROJECT #	000334
DEVELOPER	VEROGY		

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENGTH OVER 24" (40% FILL)
3/4"	6	4
1"	9	6
1.25"	16	11
1.5"	23	15
2"	37	25
2.5"	40	40
3"	40	40
3.5"	40	40
4"	40	40

TABLE ASSUMING: EMT CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 0.96 TEMP. DERATE
PV SOURCE CIRCUIT WITH 12.12A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND 20A FUSES

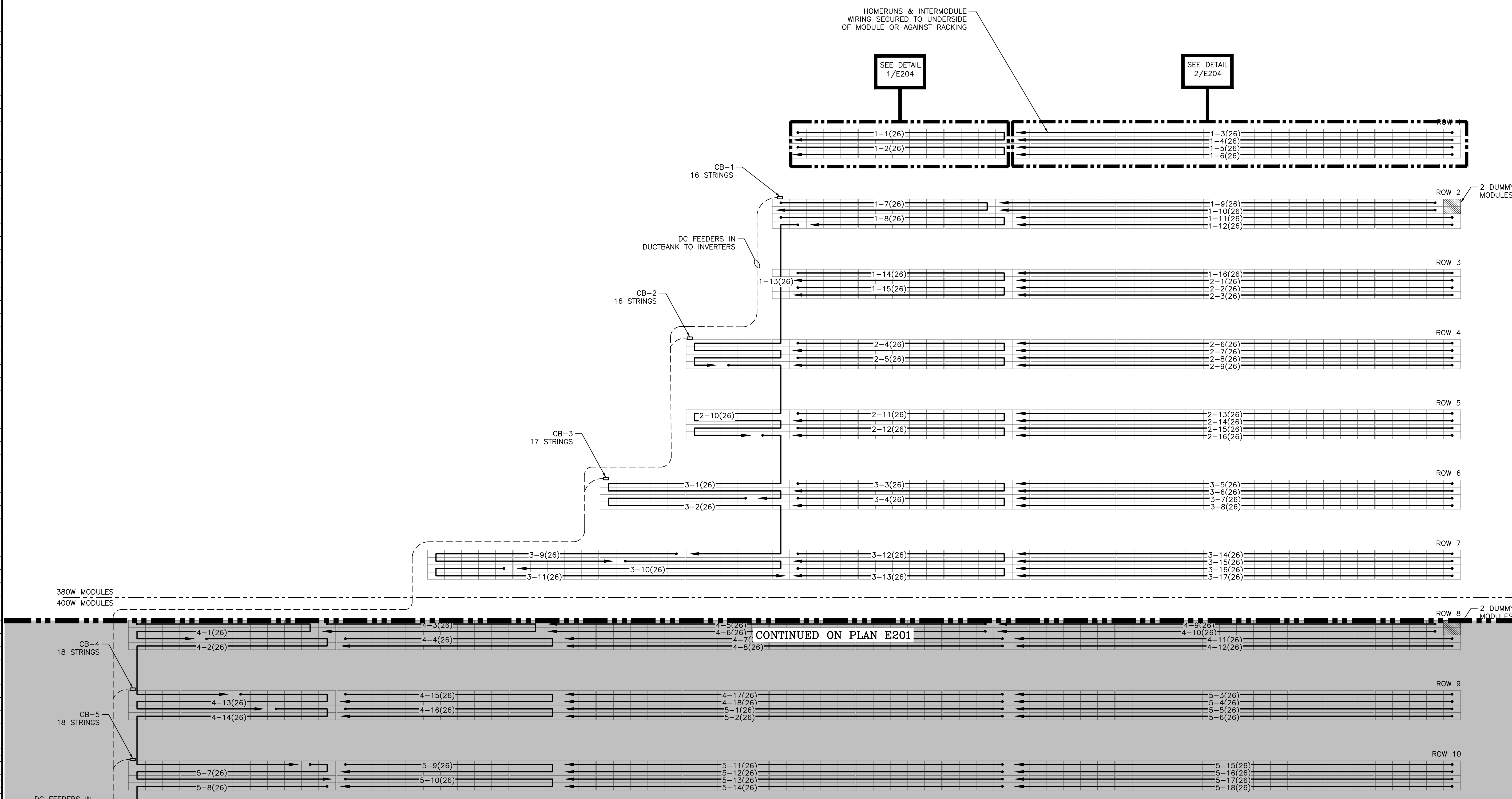
DATE: 09/04/2020
 REVISION DESCRIPTION: 80% DESIGN DEVELOPMENT
 PM / ENG / CHK: [Blank]
 DATE: 09/04/2020
 REVISION DESCRIPTION: 80% DESIGN DEVELOPMENT
 PM / ENG / CHK: [Blank]

PURE POWER
 ENGINEERING & CONSTRUCTION
 5 MARINE VIEW PLAZA - HOBOKEN, NJ
 WWW.PUREPOWER.COM
 LICENSE NO. 30329282
 CT LICENSE NO. 30329282

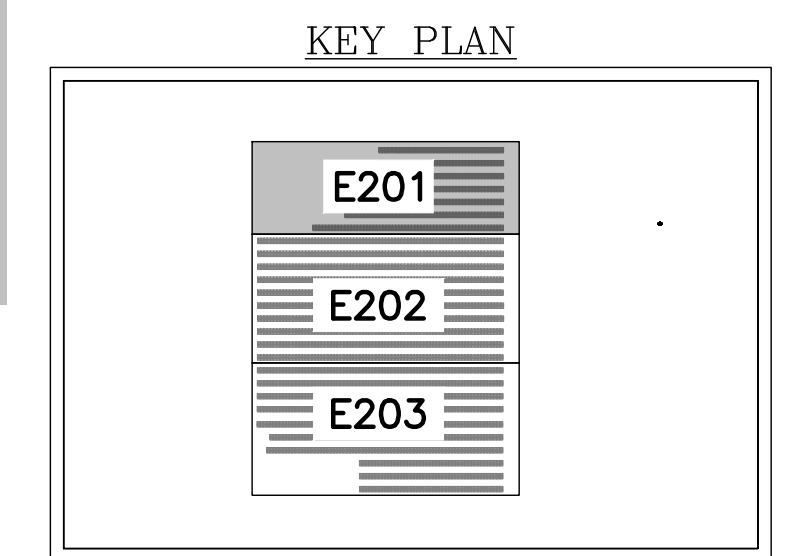
VEROGY
 DEVELOPER
 150 HARTFORD STREET
 4TH FLOOR
 HARTFORD, CT 06103
 WWW.VEROGY.COM

PAGE SIZE: 36" x 24"
 PROJECT #: 00034
 DC SYSTEM POWER: 2,782.52 kW
 AC SYSTEM POWER: 1,975.00 kW
 MODULE TYPE: TRINA 400 / RISEN 380
 MODULE QUANTITY: 5,746 / 1,274
 STRING QUANTITY: 221 / 49
 ORIENTATION: 30° TILT, -18° AZIMUTH

PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE
 1440 TORRINGTON STREET
 TORRINGTON, CONNECTICUT 06790
 DRAWING #: E200

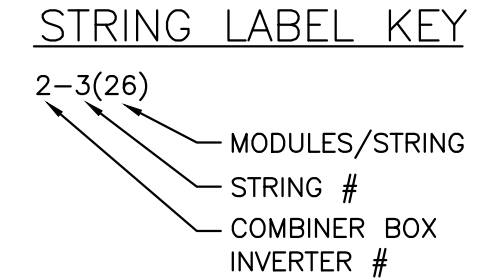


STRING SUMMARY			
Inverter	String Quantity	Module Quantity	Module Type
1	16	26	380W
2	16	26	380W
3	17	26	380W



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

1 DC ELECTRICAL PLAN - NORTH
E200 SCALE: 1" = 20'-0"

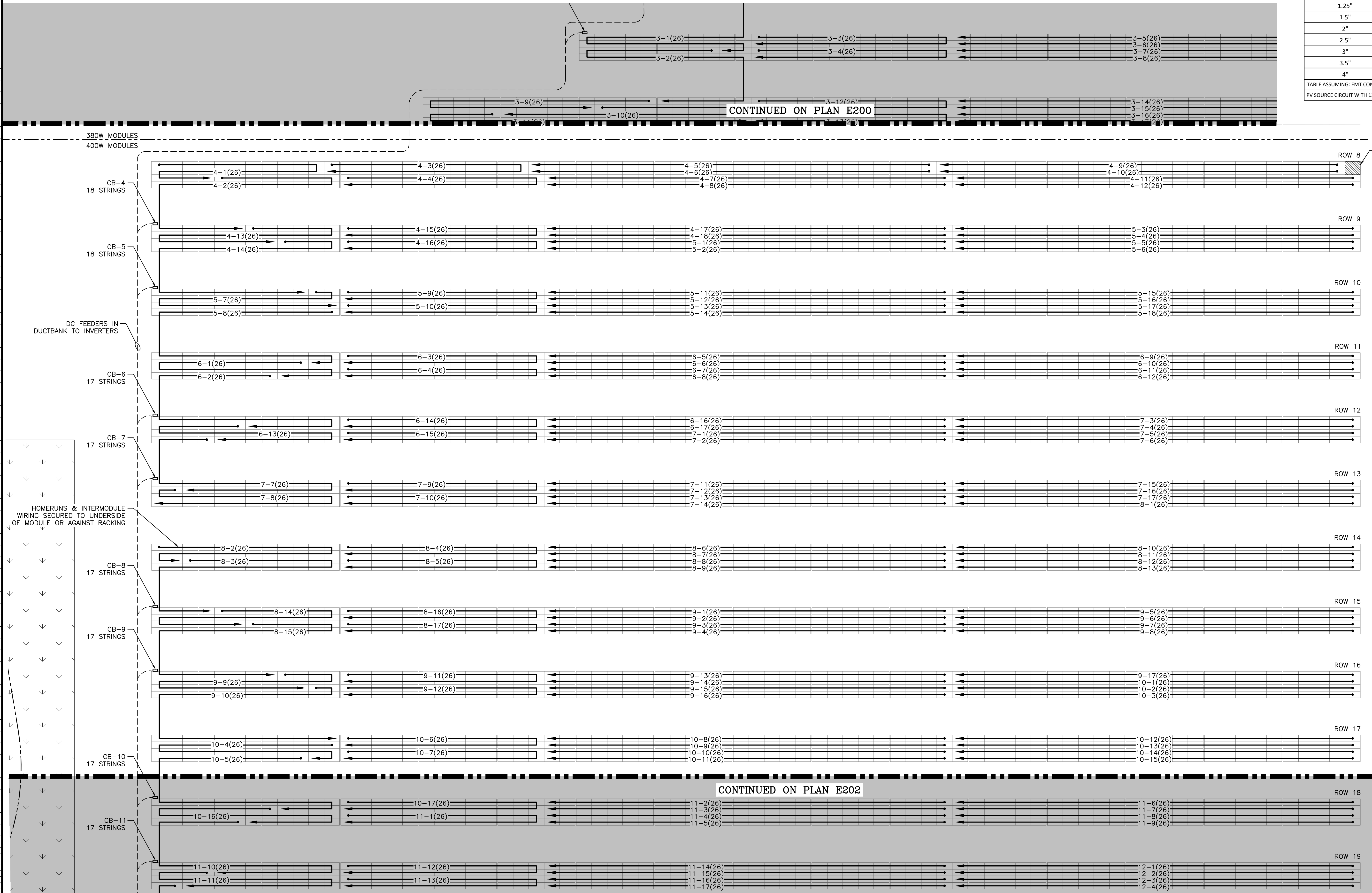


DRAWING TITLE
DC ELECTRICAL PLAN NORTH

DRAWING #
E200

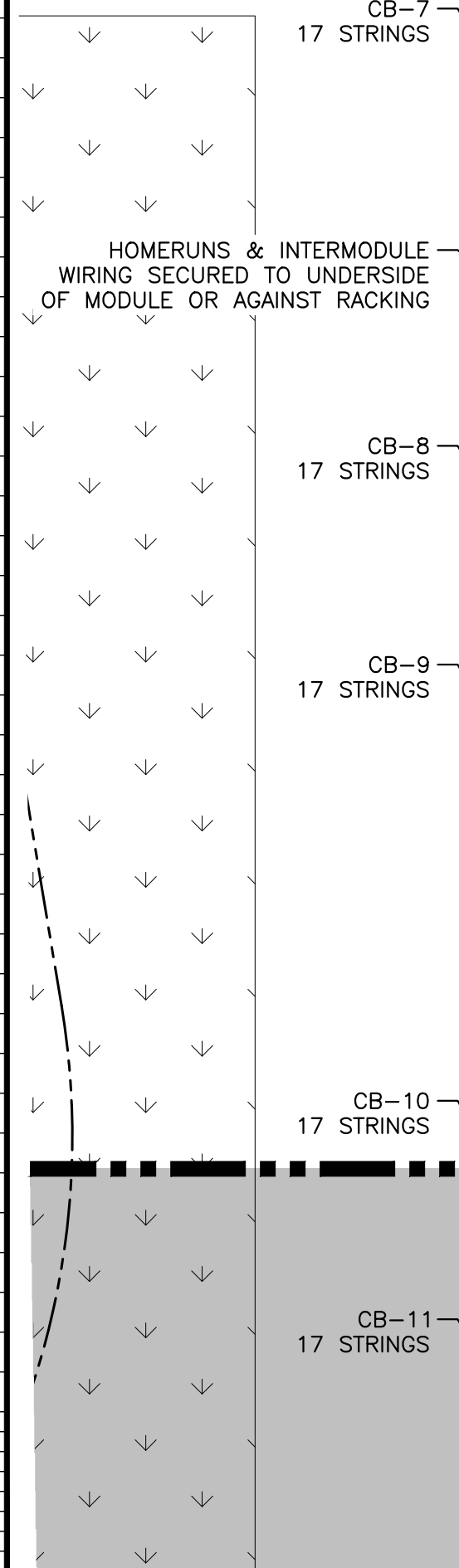
RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 10/29/2020 10:35 AM

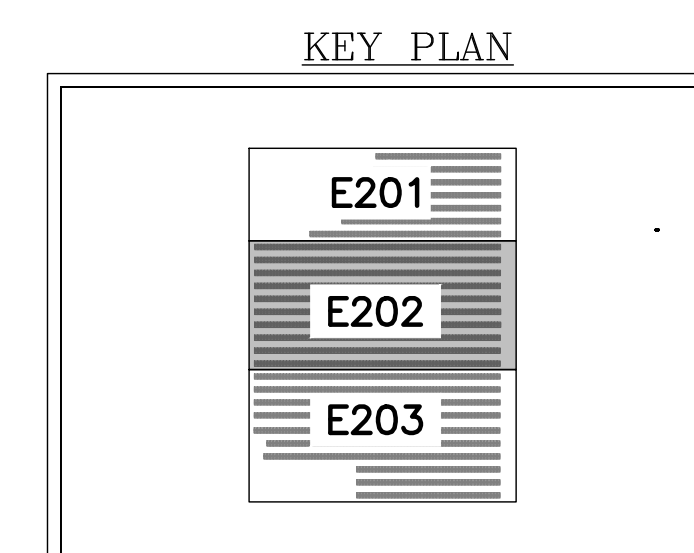


CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENGTH OVER 24" (40% FILL)
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1"	9	6
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1.5"	23	15
2"	37	25
2.5"	40	40
3"	40	40
3.5"	40	40
4"	40	40

TABLE ASSUMING: EMT CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 0.96 TEMP. DERATE
PV SOURCE CIRCUIT WITH 12.12A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND 20A FUSES

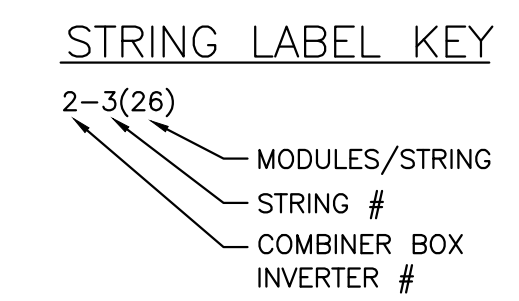


STRING SUMMARY			
Inverter	String Quantity	Module Quantity	Module Type
4	18	26	400W
5	18	26	400W
6	17	26	400W
7	17	26	400W
8	17	26	400W
9	17	26	400W
10	17	26	400W



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

1 DC ELECTRICAL PLAN - CENTER
E201 SCALE: 1" = 20'-0"



DRAWING TITLE
DC ELECTRICAL PLAN CENTER

DATE: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020
 DATE: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020
 DATE: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020
 DATE: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020

PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE, 1440 TORRINGTON STREET, TORRINGTON, CONNECTICUT 06790
 DEVELOPER: VEROGY
 150 MAIN STREET, 4TH FLOOR, HARTFORD, CT 06103
 WWW.VEROGY.COM
 PAGE SIZE: 36" x 24"
 PROJECT #: 00034
 DC SYSTEM POWER: 2,782.52 kW
 AC SYSTEM POWER: 1,975.00 kW
 MODULE TYPE: TRINA 400 / RISEN 380
 STRING QUANTITY: 221 / 49
 ORIENTATION: 30° TILT, -18° AZIMUTH

PURE POWER ENERGY SOLUTIONS
 5 MARINE VIEW PLAZA, HOBOKEN, NJ
 WWW.PUREPOWER.COM
 RICHARD A. VONN
 CT LICENSE NO. 03029282

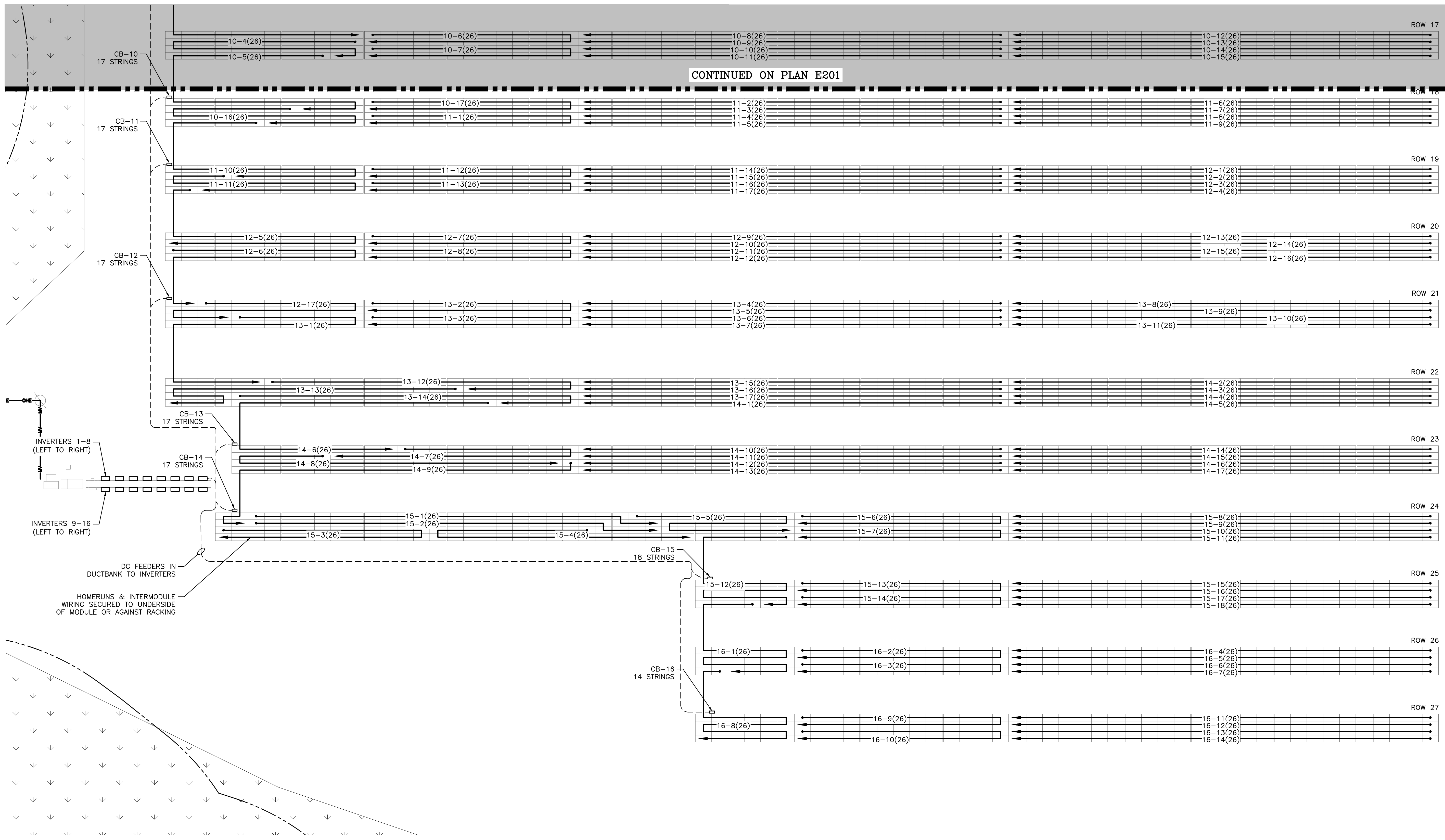
DATE: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020
 DATE: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020
 DATE: 10/29/2020
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 DATE: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

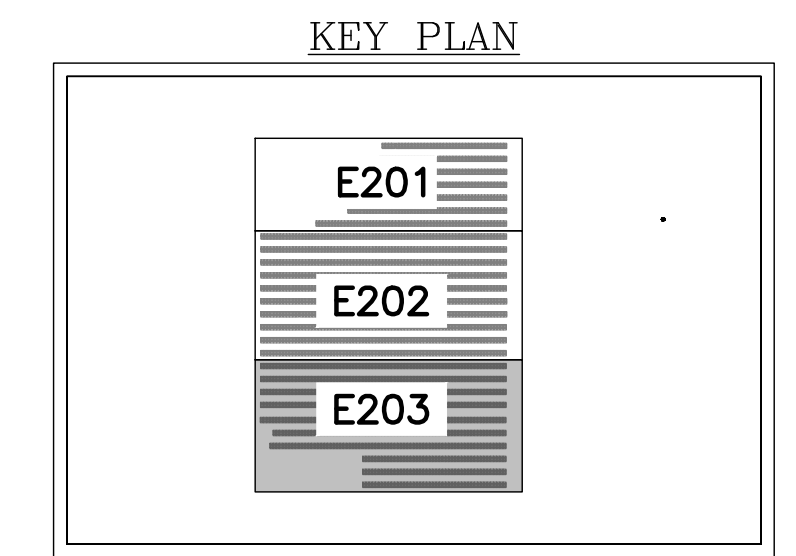
PLOT DATE: 10/29/2020 10:36 AM

CONDUIT FILL TABLE		
MAXIMUM NUMBER OF CU #10 WIRES (PV WIRE + GROUND)		
CONDUIT TRADE SIZE	CONDUIT LENGTH 24" OR LESS (60% FILL)	CONDUIT LENGTH OVER 24" (40% FILL)
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2.5"	40	40
3"	40	40
3.5"	40	40
4"	40	40

TABLE ASSUMING: EMT CONDUIT AND CU #10 PV WIRE WITH 0.26in O.D., 0.96 TEMP. DERATE
PV SOURCE CIRCUIT WITH 12.12A SHORT CIRCUIT CURRENT, 1 IN PARALLEL, AND 20A FUSES

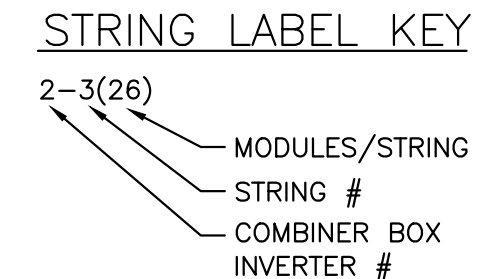


Inverter	String Quantity	Module Quantity	Module Type
11	17	26	400W
12	17	26	400W
13	17	26	400W
14	17	26	400W
15	18	26	400W
16	14	26	400W



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

1 DC ELECTRICAL PLAN - SOUTH
E202 SCALE: 1" = 20'-0"



DRAWING TITLE
DC ELECTRICAL PLAN SOUTH

DATE: 10/29/2020
 REVISION DESCRIPTION: PM TENG CHK
 DATE: 10/29/2020
 REVISION DESCRIPTION: 80% DESIGN DEVELOPMENT
 DATE: 10/29/2020
 REVISION DESCRIPTION: 90% DESIGN DEVELOPMENT
 DATE: 10/29/2020
 REVISION DESCRIPTION: RFL ES RI

PURE POWER
 5 MARINE VIEW PLAZA, HOBOKEN, NJ
 WWW.PUREPOWER.COM
 RICHARD A. WINKEL
 CT LICENSE NO. 03029282

VEROGY
 150 HARTFORD STREET
 HARTFORD, CT 06103
 WWW.VEROGY.COM

DEVELOPER: VEROGY
 PROJECT # 00034
 PAGE SIZE: 36" x 24"
 PROJECT # 00034

DC SYSTEM POWER: 2,782.52 kW
 AC SYSTEM POWER: 1,975.00 kW
 MODULE TYPE: TRINA 400 / RISEN 380
 STRING QUANTITY: 5,746 / 49
 ORIENTATION: 30° TILT, -180° AZIMUTH

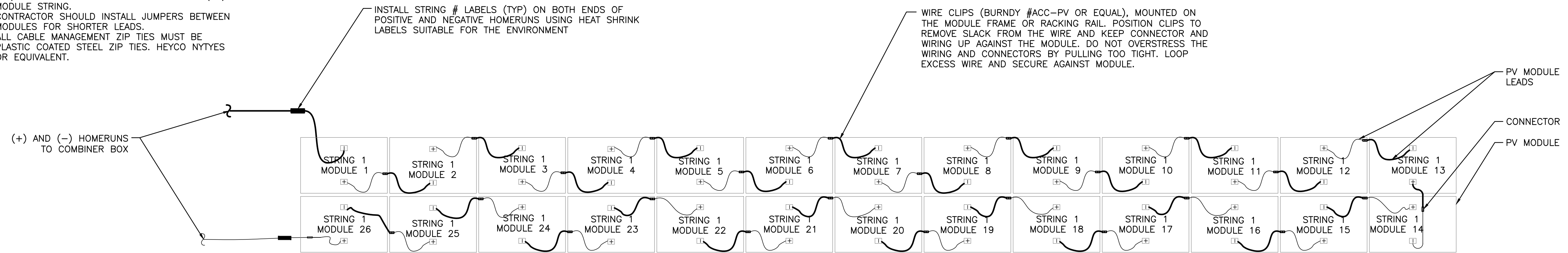
PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE, 1440 TORRINGTON STREET, TORRINGTON, CONNECTICUT 06790

DRAWING # E202

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

NOTES:

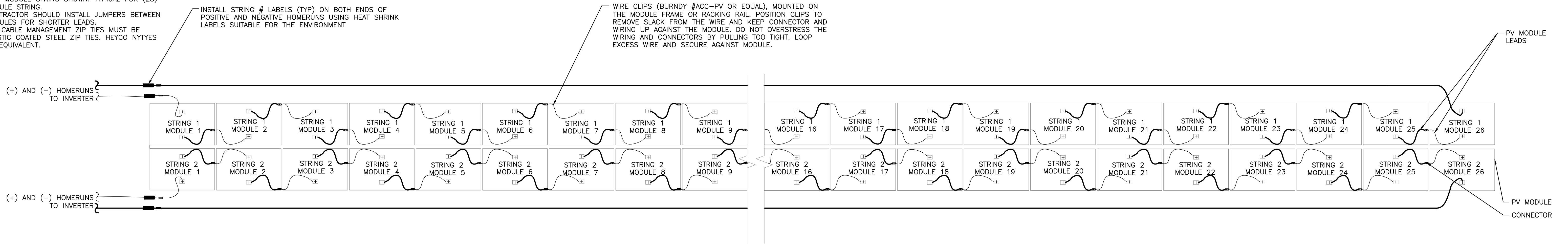
1. CONDUCTORS TRANSITIONING BETWEEN TABLES SHALL BE PROPERLY SECURED AND PROTECTED WITH UV RESISTANT SPLIT LOOM OR SPIRAL WRAP.
2. STRING HOME RUN CONDUCTORS SHALL USE HORIZONTAL PURLINS FOR CABLE MANAGEMENT AND SUPPORT. SECURE CONDUCTORS WITH UV RESISTANT CABLE TIES.
3. (26) MODULE STRING SHOWN. TYPICAL FOR (28) MODULE STRING.
4. CONTRACTOR SHOULD INSTALL JUMPERS BETWEEN MODULES FOR SHORTER LEADS.
5. ALL CABLE MANAGEMENT ZIP TIES MUST BE PLASTIC COATED STEEL ZIP TIES. HEYCO NYTYES OR EQUIVALENT.



1 HALF ROW INTERMODULE WIRING DETAIL
E204 SCALE: NONE

NOTES:

1. CONDUCTORS TRANSITIONING BETWEEN TABLES SHALL BE PROPERLY SECURED AND PROTECTED WITH UV RESISTANT SPLIT LOOM OR SPIRAL WRAP.
2. STRING HOME RUN CONDUCTORS SHALL USE HORIZONTAL PURLINS FOR CABLE MANAGEMENT AND SUPPORT. SECURE CONDUCTORS WITH UV RESISTANT CABLE TIES.
3. (26) MODULE STRING SHOWN. TYPICAL FOR (28) MODULE STRING.
4. CONTRACTOR SHOULD INSTALL JUMPERS BETWEEN MODULES FOR SHORTER LEADS.
5. ALL CABLE MANAGEMENT ZIP TIES MUST BE PLASTIC COATED STEEL ZIP TIES. HEYCO NYTYES OR EQUIVALENT.



2 FULL ROW INTERMODULE WIRING DETAIL
E204 SCALE: NONE

<p>PUREPOWER 5 MARINE VIEW PLAZA, HOBOKEN, NJ WWW.PUREPOWER.COM RICHARD A. VON CT LICENSE NO. 03029282</p>	<p>DATE: 10/08/2020 REVISION DESCRIPTION: ISSUE FOR PERMIT DATE: 09/07/2020 REVISION DESCRIPTION: 80% DESIGN DEVELOPMENT</p>
<p>VEROGY 150 HARTFORD STREET HARTFORD, CT 06103 WWW.VEROGY.COM</p>	
<p>DEVELOPER: VEROGY PROJECT # 00034 PAGE SIZE: 36" x 24"</p>	
<p>DC SYSTEM POWER: 2,782.52 kW AC SYSTEM POWER: 1,975.00 kW MODULE TYPE: TRINA 400 / RISEN 380 MODULE QUANTITY: 5,746 / 1,274 STRING QUANTITY: 221 / 49 ORIENTATION: 30° TILT, -1.60° AZIMUTH</p>	
<p>PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE 1440 TORRINGTON STREET TORRINGTON, CONNECTICUT 06790</p>	
DRAWING TITLE	DRAWING #
PV MODULES & WIRING DETAILS	E204

RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

PLOT DATE: 10/29/2020 10:36 AM

INVERTER INTERNAL PROTECTIVE SETTINGS: UL1741-SA COMPLIANT					
ANSI ELEMENT #	Pickup	Units*	Level	Total Clear Time (sec)	Description
27-1	304.8	V	88%	2.00	Slow UV
27-2	173.2	V	50%	1.10	Fast UV
59-1	381.1	V	110%	2.00	Slow OV
59-2	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	59.5	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				dIw / dt
Freq Control	OFF				Speed Control
* voltages based off 346.4V Line to Neutral					

1
E301
INVERTER SETTINGS

EXTERNAL RELAY SETTINGS								
ANSI ELEMENT #	Pickup	Real	Units	Level	Delay (sec)	Total Clear Time (sec)*	Curve	Description
27-1	2.33	11650	V	88%	1.95	2.00		Slow UV
27-2	1.32	6600	V	50%	1.05	1.10		Fast UV
59-1	2.92	14600	V	110%	1.95	2.00		Slow OV
59-2	3.18	15900	V	120%	0.11	0.16		Fast OV
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
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
50.2A 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								

2
E301
MV RELAY SETTINGS

PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE
1440 TORRINGTON STREET
TORRINGTON, CONNECTICUT 06790

DC SYSTEM POWER: 2,782.52 kW
AC SYSTEM POWER: 1,975.00 kW
MODULE TYPE: TRINA 400 / RISEN 380
MODULE QUANTITY: 5,746 / 1,274
STRING QUANTITY: 221 / 49
ORIENTATION: 30° TILT, -18° AZIMUTH

DEVELOPER: VEROGY
150 HARTFORD STREET
HARTFORD, CT 06103
WWW.VEROGY.COM

PAGE SIZE: 36" x 24"
PROJECT #: 00034

5 MARINE VIEW PLAZA, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. VONN
CT LICENSE NO. 0393282

DATE: 09/04/2020

REVISION DESCRIPTION: 30% DESIGN = REV. 2

DATE: 09/12/2020

REVISION DESCRIPTION: 30% DESIGN = REV. 2

PLAT DATE: 10/29/2020 10:36 AM
RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

COMBINER BOXES 1 THRU 3				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
1-1	#10	0.00124	70	0.14%
1-2	#10	0.00124	65	0.13%
1-3	#10	0.00124	200	0.40%
1-4	#10	0.00124	200	0.40%
1-5	#10	0.00124	195	0.39%
1-6	#10	0.00124	190	0.38%
1-7	#10	0.00124	50	0.10%
1-8	#10	0.00124	55	0.11%
1-9	#10	0.00124	180	0.36%
1-10	#10	0.00124	180	0.36%
1-11	#10	0.00124	185	0.37%
1-12	#10	0.00124	190	0.38%
1-13	#10	0.00124	35	0.07%
1-14	#10	0.00124	75	0.15%
1-15	#10	0.00124	80	0.16%
1-16	#10	0.00124	205	0.41%
2-1	#10	0.00124	235	0.47%
2-2	#10	0.00124	230	0.46%
2-3	#10	0.00124	230	0.46%
2-4	#10	0.00124	85	0.17%
2-5	#10	0.00124	90	0.18%
2-6	#10	0.00124	215	0.43%
2-7	#10	0.00124	215	0.43%
2-8	#10	0.00124	220	0.44%
2-9	#10	0.00124	225	0.45%
2-10	#10	0.00124	45	0.09%
2-11	#10	0.00124	110	0.22%
2-12	#10	0.00124	115	0.23%
2-13	#10	0.00124	240	0.48%
2-14	#10	0.00124	245	0.49%
2-15	#10	0.00124	245	0.49%
2-16	#10	0.00124	250	0.50%
3-1	#10	0.00124	40	0.08%
3-2	#10	0.00124	50	0.10%
3-3	#10	0.00124	115	0.23%
3-4	#10	0.00124	120	0.24%
3-5	#10	0.00124	245	0.49%
3-6	#10	0.00124	250	0.50%
3-7	#10	0.00124	255	0.51%
3-8	#10	0.00124	255	0.51%
3-9	#10	0.00124	55	0.11%
3-10	#10	0.00124	55	0.11%
3-11	#10	0.00124	65	0.13%
3-12	#10	0.00124	145	0.29%
3-13	#10	0.00124	150	0.30%
3-14	#10	0.00124	275	0.55%
3-15	#10	0.00124	275	0.55%
3-16	#10	0.00124	280	0.56%
3-17	#10	0.00124	285	0.57%
AVERAGE STRING VOLTAGE DROP				0.33%

INVERTERS 4 THRU 7				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
4-1	#10	0.00124	55	0.11%
4-2	#10	0.00124	50	0.10%
4-3	#10	0.00124	145	0.30%
4-4	#10	0.00124	140	0.29%
4-5	#10	0.00124	260	0.54%
4-6	#10	0.00124	260	0.54%
4-7	#10	0.00124	260	0.54%
4-8	#10	0.00124	260	0.54%
4-9	#10	0.00124	445	0.92%
4-10	#10	0.00124	440	0.91%
4-11	#10	0.00124	450	0.93%
4-12	#10	0.00124	445	0.92%
4-13	#10	0.00124	45	0.09%
4-14	#10	0.00124	50	0.10%
4-15	#10	0.00124	125	0.26%
4-16	#10	0.00124	130	0.27%
4-17	#10	0.00124	240	0.50%
4-18	#10	0.00124	245	0.51%
5-1	#10	0.00124	260	0.54%
5-2	#10	0.00124	255	0.53%
5-3	#10	0.00124	455	0.94%
5-4	#10	0.00124	450	0.93%
5-5	#10	0.00124	450	0.93%
5-6	#10	0.00124	445	0.92%
5-7	#10	0.00124	40	0.08%
5-8	#10	0.00124	45	0.09%
5-9	#10	0.00124	125	0.26%
5-10	#10	0.00124	130	0.27%
5-11	#10	0.00124	240	0.50%
5-12	#10	0.00124	245	0.51%
5-13	#10	0.00124	250	0.52%
5-14	#10	0.00124	250	0.52%
5-15	#10	0.00124	435	0.90%
5-16	#10	0.00124	440	0.91%
5-17	#10	0.00124	440	0.91%
5-18	#10	0.00124	445	0.92%
6-1	#10	0.00124	50	0.10%
6-2	#10	0.00124	45	0.09%
6-3	#10	0.00124	145	0.30%
6-4	#10	0.00124	140	0.29%
6-5	#10	0.00124	265	0.55%
6-6	#10	0.00124	260	0.54%
6-7	#10	0.00124	260	0.54%
6-8	#10	0.00124	255	0.53%
6-9	#10	0.00124	455	0.94%
6-10	#10	0.00124	455	0.94%
6-11	#10	0.00124	450	0.93%
6-12	#10	0.00124	450	0.93%
6-13	#10	0.00124	60	0.12%
6-14	#10	0.00124	125	0.26%
6-15	#10	0.00124	130	0.27%
6-16	#10	0.00124	240	0.50%
6-17	#10	0.00124	245	0.51%
7-1	#10	0.00124	260	0.54%
7-2	#10	0.00124	255	0.53%
7-3	#10	0.00124	455	0.94%
7-4	#10	0.00124	455	0.94%
7-5	#10	0.00124	450	0.93%
7-6	#10	0.00124	450	0.93%
7-7	#10	0.00124	55	0.11%
7-8	#10	0.00124	60	0.12%
7-9	#10	0.00124	125	0.26%
7-10	#10	0.00124	130	0.27%
7-11	#10	0.00124	240	0.50%
7-12	#10	0.00124	245	0.51%
7-13	#10	0.00124	250	0.52%
7-14	#10	0.00124	250	0.52%
7-15	#10	0.00124	435	0.90%
7-16	#10	0.00124	440	0.91%
7-17	#10	0.00124	440	0.91%

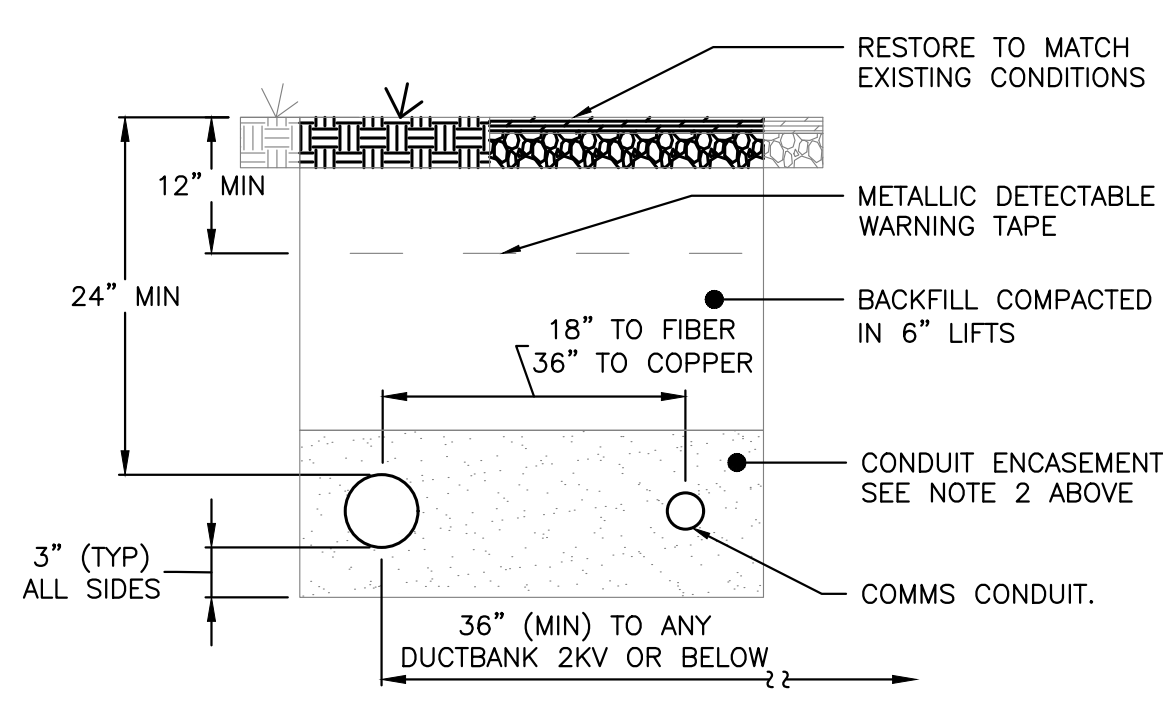
INVERTERS 8 THRU 10				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
8-1	#10	0.00124	475	0.98%
8-2	#10	0.00124	60	0.12%
8-3	#10	0.00124	55	0.11%
8-4	#10	0.00124	150	0.31%
8-5	#10	0.00124	145	0.30%
8-6	#10	0.00124	265	0.55%
8-7	#10	0.00124	260	0.54%
8-8	#10	0.00124	260	0.54%
8-9	#10	0.00124	255	0.53%
8-10	#10	0.00124	455	0.94%
8-11	#10	0.00124	455	0.94%
8-12	#10	0.00124	450	0.93%
8-13	#10	0.00124	450	0.93%
8-14	#10	0.00124	65	0.13%
8-15	#10	0.00124	70	0.14%
8-16	#10	0.00124	125	0.26%
8-17	#10	0.00124	135	0.28%
9-1	#10	0.00124	265	0.55%
9-2	#10	0.00124	260	0.54%
9-3	#10	0.00124	260	0.54%
9-4	#10	0.00124	255	0.53%
9-5	#10	0.00124	455	0.94%
9-6	#10	0.00124	455	0.94%
9-7	#10	0.00124	450	0.93%
9-8	#10	0.00124	450	0.93%
9-9	#10	0.00124	40	0.08%
9-10	#10	0.00124	45	0.09%
9-11	#10	0.00124	125	0.26%
9-12	#10	0.00124	135	0.28%
9-13	#10	0.00124	240	0.50%
9-14	#10	0.00124	245	0.51%
9-15	#10	0.00124	250	0.52%
9-16	#10	0.00124	250	0.52%
9-17	#10	0.00124	435	0.90%
10-1	#10	0.00124	480	0.99%
10-2	#10	0.00124	480	0.99%
10-3	#10	0.00124	475	0.98%
10-4	#10	0.00124	55	0.11%
10-5	#10	0.00124	50	0.10%
10-6	#10	0.00124	145	0.30%
10-7	#10	0.00124	140	0.29%
10-8	#10	0.00124	265	0.55%
10-9	#10	0.00124	260	0.54%
10-10	#10	0.00124	260	0.54%
10-11	#10	0.00124	255	0.53%
10-12	#10	0.00124	455	0.94%
10-13	#10	0.00124	455	0.94%
10-14	#10	0.00124	450	0.93%
10-15	#10	0.00124	450	0.93%
10-16	#10	0.00124	35	0.07%
10-17	#10	0.00124	125	0.26%

INVERTERS 11 THRU 13				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
11-1	#10	0.00124	140	0.29%
11-2	#10	0.00124	265	0.55%
11-3	#10	0.00124	260	0.54%
11-4	#10	0.00124	260	0.54%
11-5	#10	0.00124	255	0.53%
11-6	#10	0.00124	455	0.94%
11-7	#10	0.00124	455	0.94%
11-8	#10	0.00124	450	0.93%
11-9	#10	0.00124	450	0.93%
11-10	#10	0.00124	30	0.06%
11-11	#10	0.00124	35	0.07%
11-12	#10	0.00124	125	0.26%
11-13	#10	0.00124	130	0.27%
11-14	#10	0.00124	240	0.50%
11-15	#10	0.00124	245	0.51%
11-16	#10	0.00124	250	0.52%
11-17	#10	0.00124	250	0.52%
12-1	#10	0.00124	485	1.00%
12-2	#10	0.00124	480	0.99%
12-3	#10	0.00124	480	0.99%
12-4	#10	0.00124	475	0.98%
12-5	#10	0.00124	65	0.13%
12-6	#10	0.00124	60	0.12%
12-7	#10	0.00124	145	0.30%
12-8	#10	0.00124	140	0.29%
12-9	#10	0.00124	265	0.55%
12-10	#10	0.00124	260	0.54%
12-11	#10	0.00124	260	0.54%
12-12	#10	0.00124	255	0.53%
12-13	#10	0.00124	455	0.94%
12-14	#10	0.00124	480	0.99%
12-15	#10	0.00124	475	0.98%
12-16	#10	0.00124	450	0.93%
12-17	#10	0.00124	65	0.13%
13-1	#10	0.00124	80	0.17%
13-2	#10	0.00124	150	0.31%
13-3	#10	0.00124	145	0.30%
13-4	#10	0.00124	270	0.56%
13-5	#10	0.00124	265	0.55%
13-6	#10	0.00124	265	0.55%
13-7	#10	0.00124	260	0.54%
13-8	#10	0.00124	435	0.90%
13-9	#10	0.00124	460	0.95%
13-10	#10	0.00124	485	1.00%
13-11	#10	0.00124	430	0.89%
13-12	#10	0.00124	105	0.22%
13-13	#10	0.00124	55	0.11%
13-14	#10	0.00124	100	0.21%
13-15	#10	0.00124	240	0.50%
13-16	#10	0.00124	235	0.48%
13-17	#10	0.00124	230	0.47%

INVERTERS 14 THRU 16				
STRING NUMBER	STRING TO INVERTER WIRE GAUGE	STRING TO INVERTER IMPEDANCE (Ω/ft)	STRING DISTANCE (FEET)	STRING VOLTAGE DROP
14-1	#10	0.00124	255	0.53%
14-2	#10	0.00124	455	0.94%
14-3	#10	0.00124	455	0.94%
14-4	#10	0.00124	450	0.93%
14-5	#10	0.00124	450	0.93%
14-6	#10	0.00124	60	0.12%
14-7	#10	0.00124	105	0.22%
14-8	#10	0.00124	55	0.11%
14-9	#10	0.00124	100	0.21%
14-10	#10	0.00124	235	0.48%
14-11	#10	0.00124	235	0.48%
14-12	#10	0.00124	230	0.47%
14-13	#10	0.00124	230	0.47%
14-14	#10	0.00124	430	0.89%
14-15	#10	0.00124	425	0.88%
14-16	#10	0.00124	425	0.88%
14-17	#10	0.00124	420	0.87%
15-1	#10	0.00124	145</	

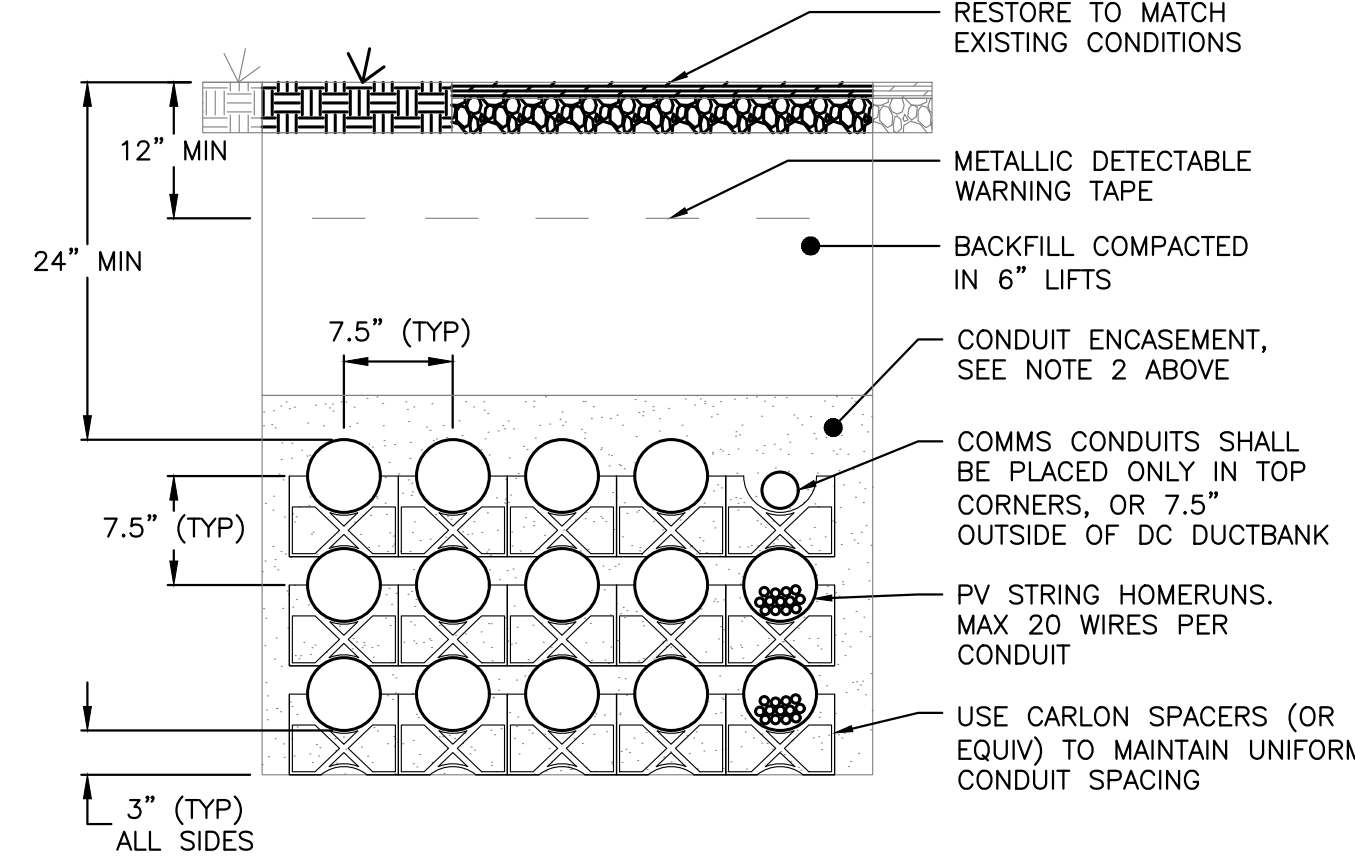
RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

- NOTES:**
- 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 $\geq 18"$ DEEP (NEC 250.86 EXCEPTION 3)
 - UNDER ROADS AND PARKING AREAS ENCASUREMENT SHALL BE 2500 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASUREMENT SHALL BE SAND.
 - CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON-CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
 - IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE DUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITH GRAVEL BASE TO ALLOW DRAINAGE.



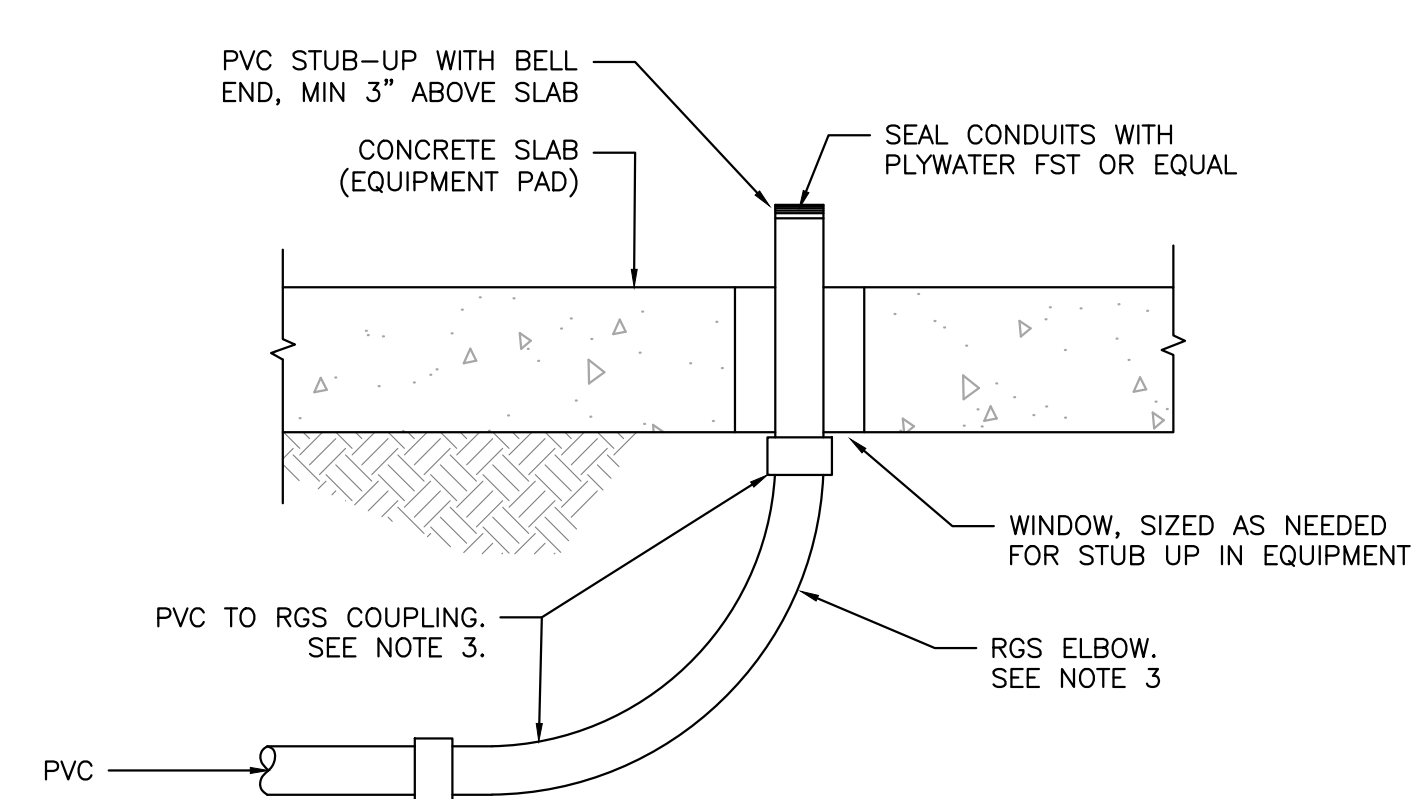
1 TYPICAL MV DUCTBANK DETAIL
E402 SCALE: NONE

- NOTES:**
- 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 $\geq 18"$ DEEP (NEC 250.86 EXCEPTION 3)
 - UNDER ROADS AND PARKING AREAS ENCASUREMENT SHALL BE 2500 PSI CONCRETE. UNDER GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC ENCASUREMENT SHALL BE SAND.
 - CALL BEFORE YOU DIG, DIAL 811 TO BE CONNECTED TO THE LOCAL ON-CALL CENTER. YOU MUST CALL AT LEAST 48 HOURS BEFORE EXCAVATING.
 - IF DUCTBANK SLOPES SUCH THAT ANY PART OF THE DUCTBANK IS ABOVE STUB UP ELEVATION, INCLUDE HAND HOLE WITH GRAVEL BASE TO ALLOW DRAINAGE.



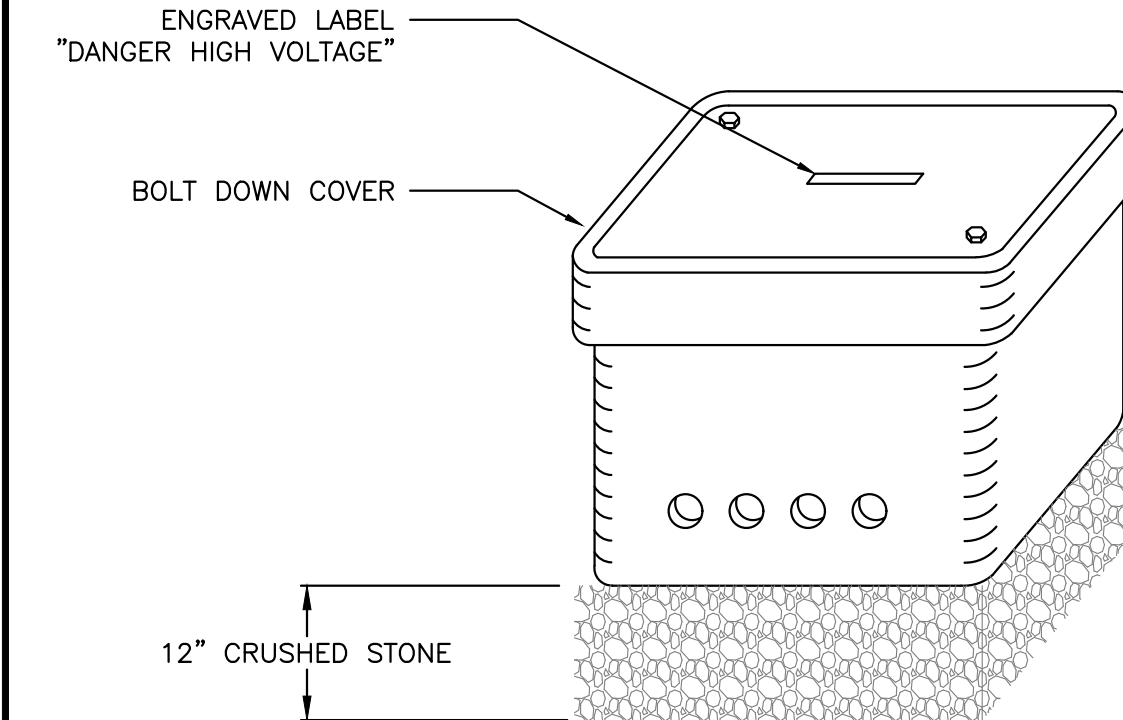
2 TYPICAL 1500VDC DUCTBANK DETAIL
E402 SCALE: NONE

- NOTES:**
- INITIALLY INSTALL COUPLING CAP TO PREVENT DAMAGE TO STUB-UP UNTIL GEAR IS SET.
 - INSTALL ROUNDED FITTING BEFORE PULLING CABLES TO AVOID DAMAGE TO CABLES.
 - 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.

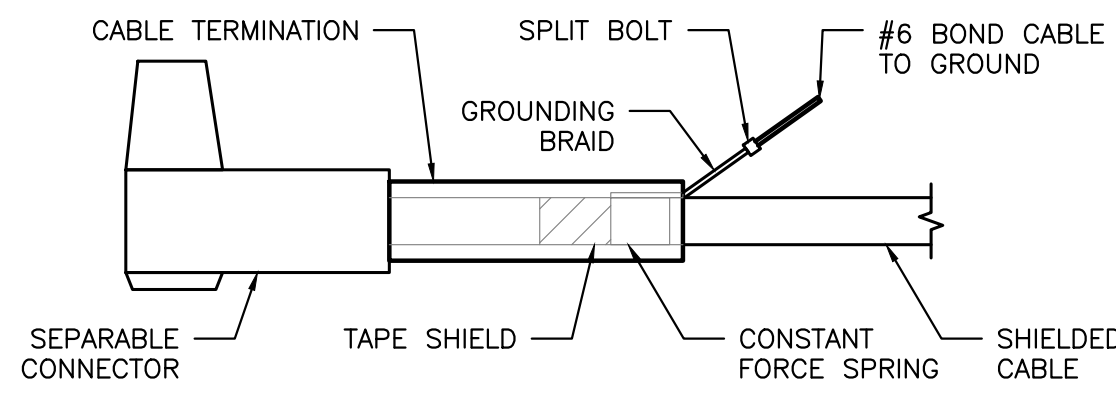


3 EQUIPMENT PAD STUB-UP DETAIL
E402 SCALE: NONE

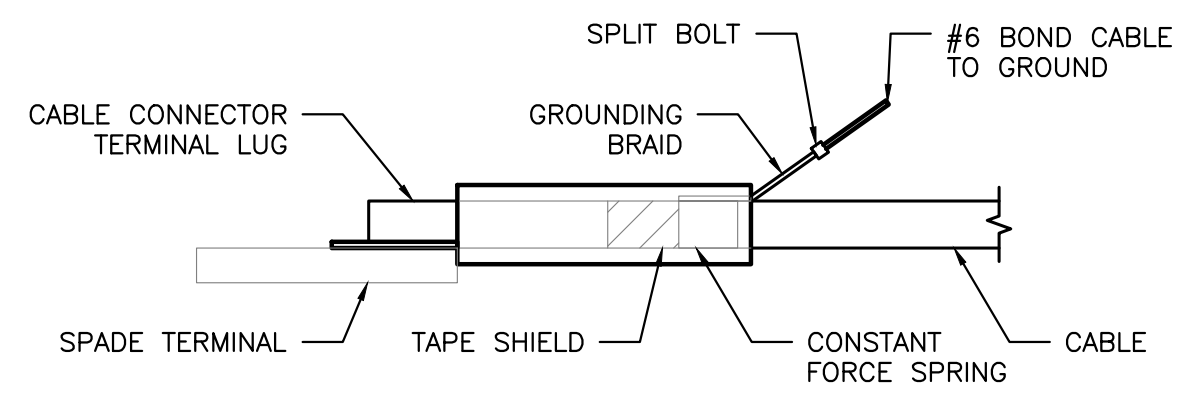
- NOTES:**
- BOX SHALL BE RATED T8 FOR USE IN GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC, OR RATED T22 FOR USE IN SIDEWALKS OR PARKING LOTS SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC. BOXES TO BE USED IN ROADWAYS OR AREAS FREQUENTLY SUBJECT TO HEAVY VEHICULAR TRAFFIC SHALL BE SUBMITTED TO EFOR FOR APPROVAL
 - CONDUITS SHALL ENTER ON SIDES. MINIMUM BURIAL DEPTHS OF CONDUITS IS 24" BELOW FINISHED GRADE.
 - CONDUIT KNOCKOUTS SHALL BE DRILLED OR PUNCHED ON SITE. QUANTITIES AND SIZES TO MATCH TRENCH PLAN AND COMBINER SCHEDULE.



4 HANDHOLE DETAIL
E402 SCALE: NONE

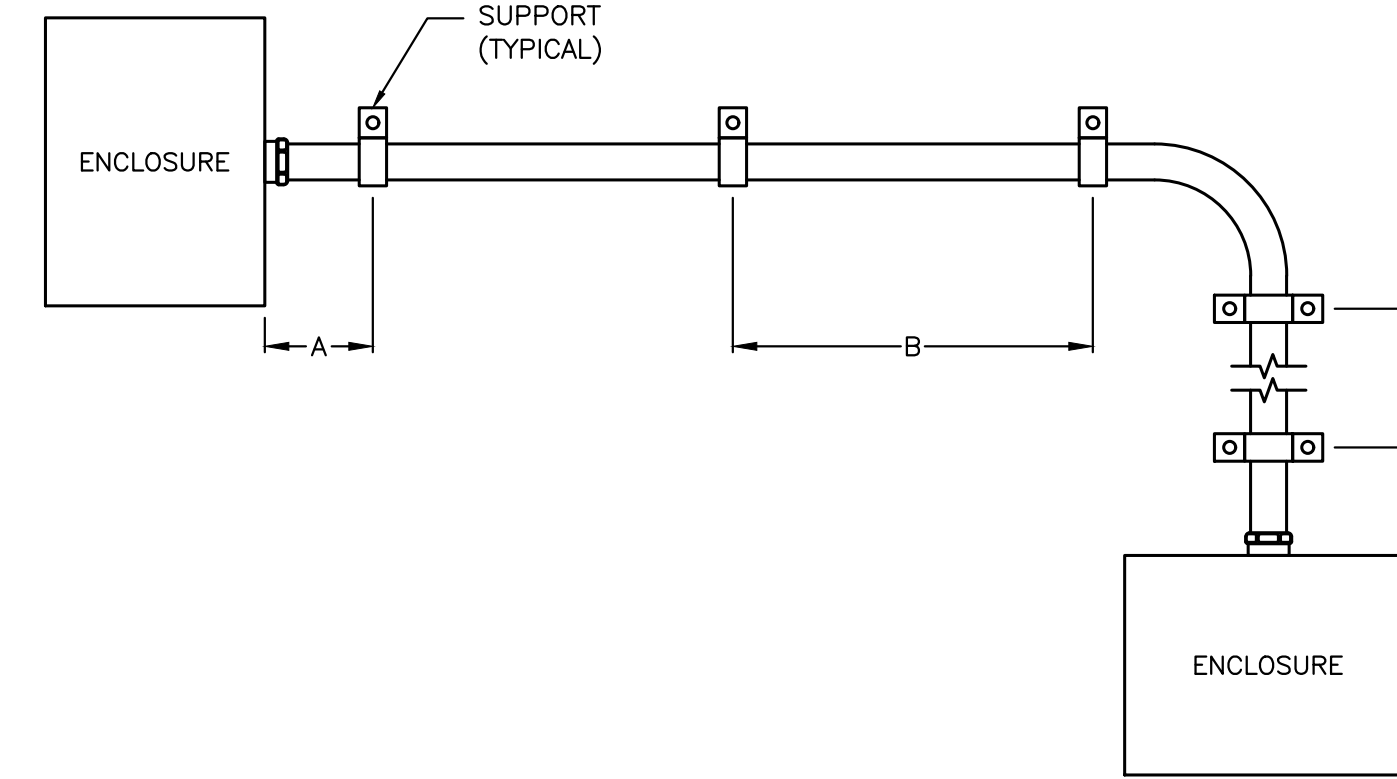


DEAD FRONT MV TERMINATION



LIVE FRONT MV TERMINATION

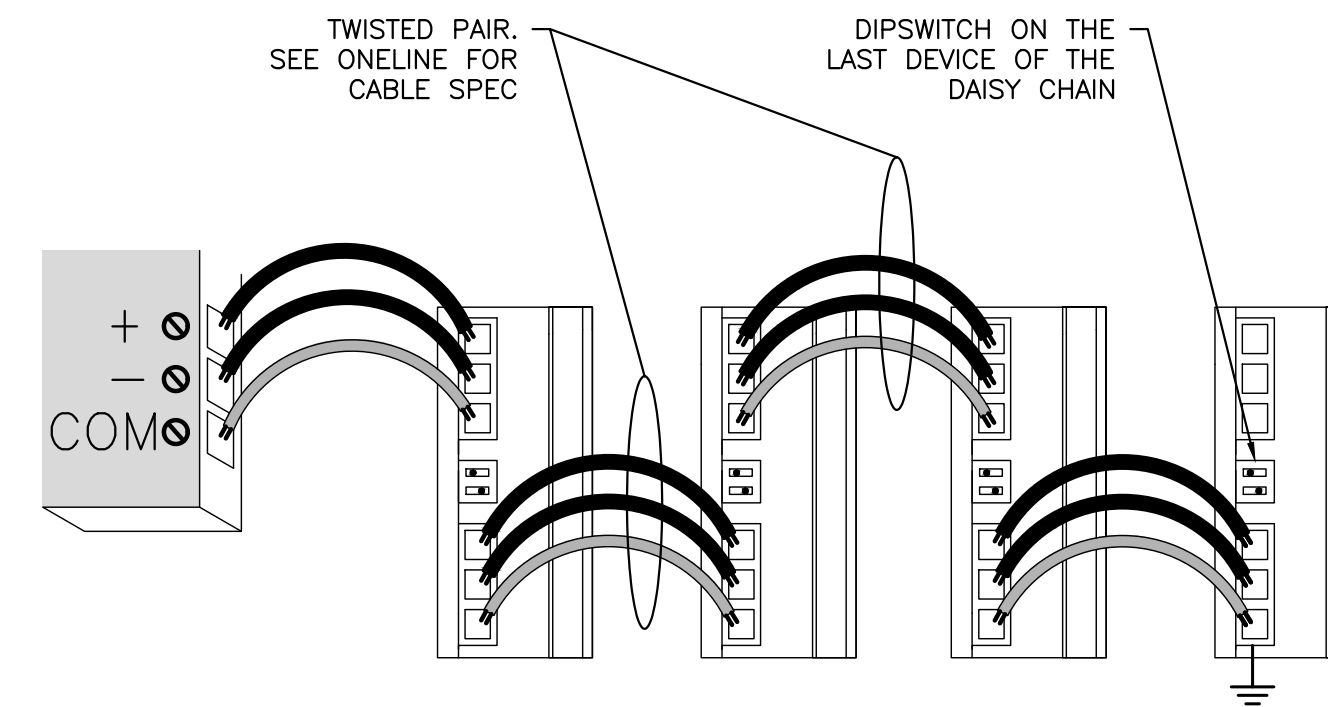
5 SHIELDED CABLE DETAIL
E402 SCALE: NONE



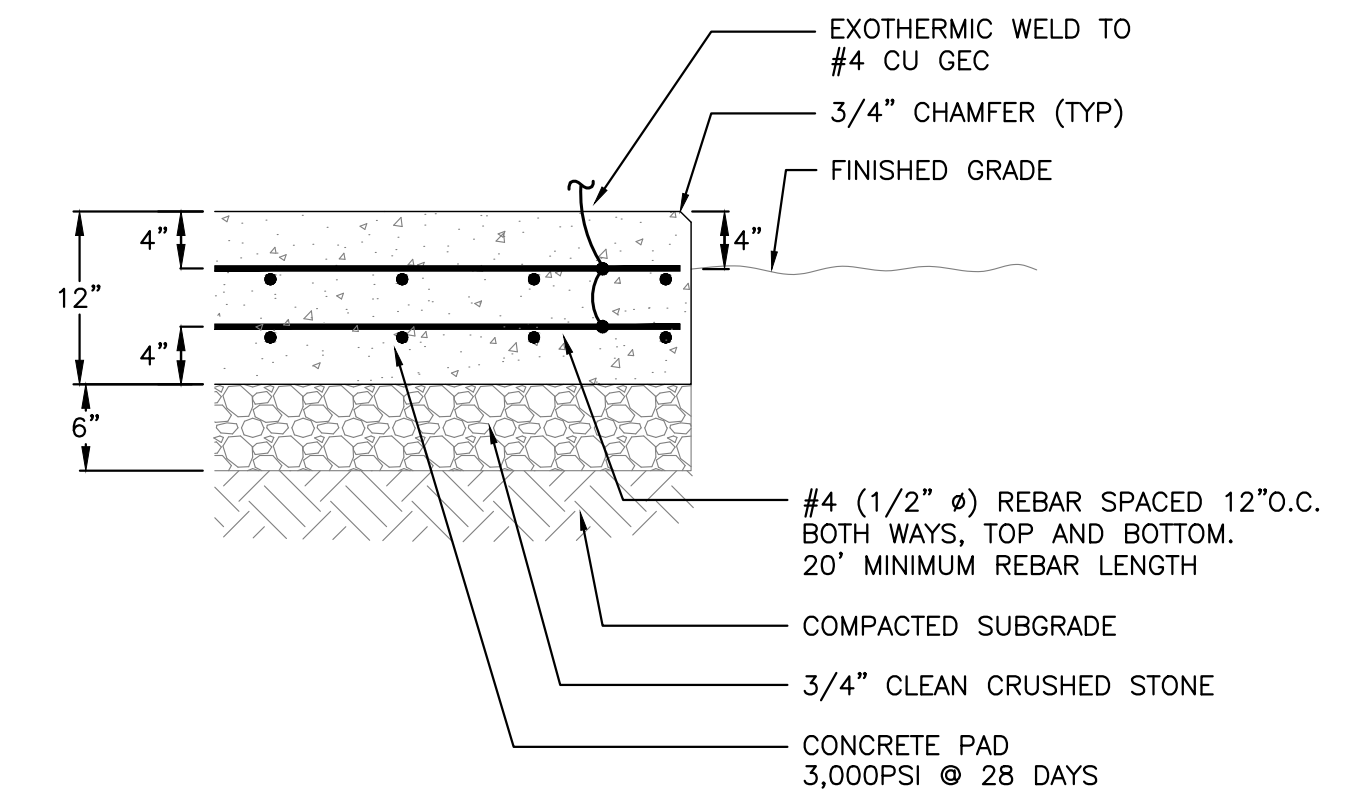
6 CONDUIT SUPPORT SPACING
E402 SCALE: NONE

MAXIMUM CONDUIT HARDWARE SPACING				
CONDUIT TYPE	ENCLOSURE TO SUPPORT (A)	SUPPORT TO SUPPORT (B)	VERTICAL RUNS (C)	NEC ARTICLE
ELECTRICAL METALLIC TUBING (EMT)	3'	10'	10'	358
INTERMEDIATE METAL CONDUIT (IMC)	3'	10'	20'	342
RIGID METAL CONDUIT (RMC)	3'	10'	20'	344
LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC)	1'	4.5'	4.5'	350
PVC (SCH40 & 80) [0.5" - 1"]	3'	3'	3'	352
PVC (SCH40 & 80) [1.25" - 2"]	3'	5'	5'	352
PVC (SCH40 & 80) [2.5" - 3"]	3'	6'	6'	352
PVC (SCH40 & 80) [3.5" - 5"]	3'	7'	7'	352
PVC (SCH40 & 80) [6"]	3'	8'	8'	352

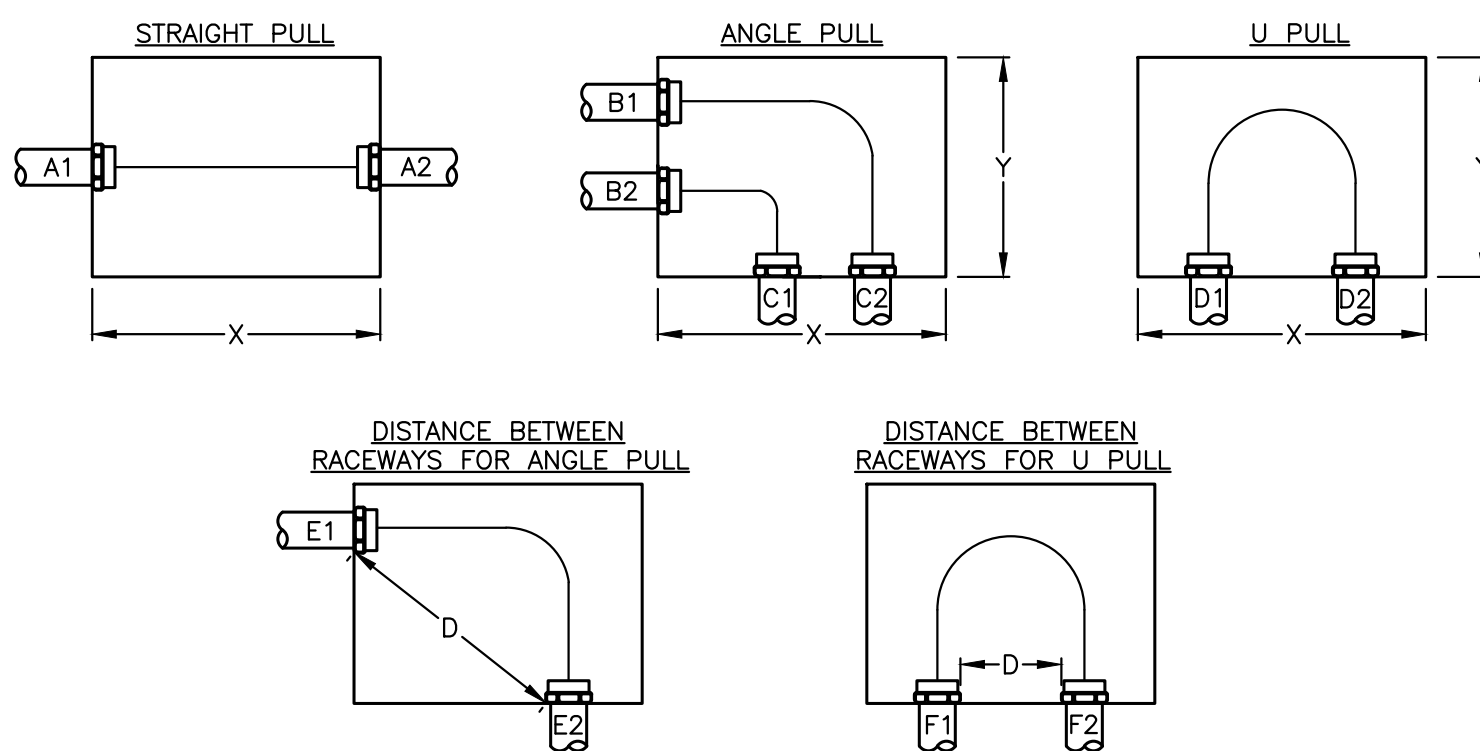
- MONITORING NOTES:**
- REFER TO MONITORING SYSTEM INSTALLATION MANUAL FOR DETAILS ON TERMINAL BLOCKS, CABLE TERMINATIONS, AND SYSTEM CONFIGURATION.
 - WIRELESS TRANSCEIVERS MUST HAVE LINE-OF-SIGHT BETWEEN EACH OTHER.
 - PYRANOMETER MUST BE INSTALLED IN UNSHADED LOCATION.



7 MODBUS DETAIL
E402 SCALE: NONE



8 CONCRETE PAD DETAIL
E402 SCALE: NONE



NEC 314.28(A)(1)-(3) PULL BOX SIZING

PULL BOX TYPE	LENGTH (X)	HEIGHT (Y)	DISTANCE (D)
STRAIGHT PULL	8 X LARGEST OF A1 & A2	AS NEEDED	N/A
ANGLE PULL	6 X (LARGEST OF B1 & B2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X (LARGEST OF C1 & C2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X LARGEST OF E1 & E2
U PULL	AS NEEDED	6 X (LARGEST OF D1 & D2) + SUM OF OTHER CONDUIT ENTERING THE SAME WALL	6 X LARGEST OF F1 & F2

NOTE:
REFER TO NEC 314.28 FOR ADDITIONAL REQUIREMENTS.

9 PULL BOX SIZING
E402 SCALE: NONE

PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE
 1440 TORRINGTON STREET
 TORRINGTON, CONNECTICUT 06790
 DC SYSTEM POWER: 2,782.52 KW
 AC SYSTEM POWER: 1,975.00 KW
 MODULE TYPE: TRINA 400 / RISEN 380
 MODULE QUANTITY: 5,746 / 1,274
 STRING QUANTITY: 221 / 49
 ORIENTATION: 30° TILT, -16° AZIMUTH
 DEVELOPER: VEROGY
 150 HARTFORD STREET
 HARTFORD, CT 06103
 WWW.VEROGY.COM
 VEROGY
 5 MARINE VIEW PLAZA, HOBOKEN, NJ
 WWW.PUREPOWER.COM
 RICHARD A. VON
 09/04/2020
 90% DESIGN DEVELOPMENT
 DATE: 09/04/2020
 REVISION DESCRIPTION: 90% DESIGN DEVELOPMENT
 PW: ENG: CHK: R: ES: RI:

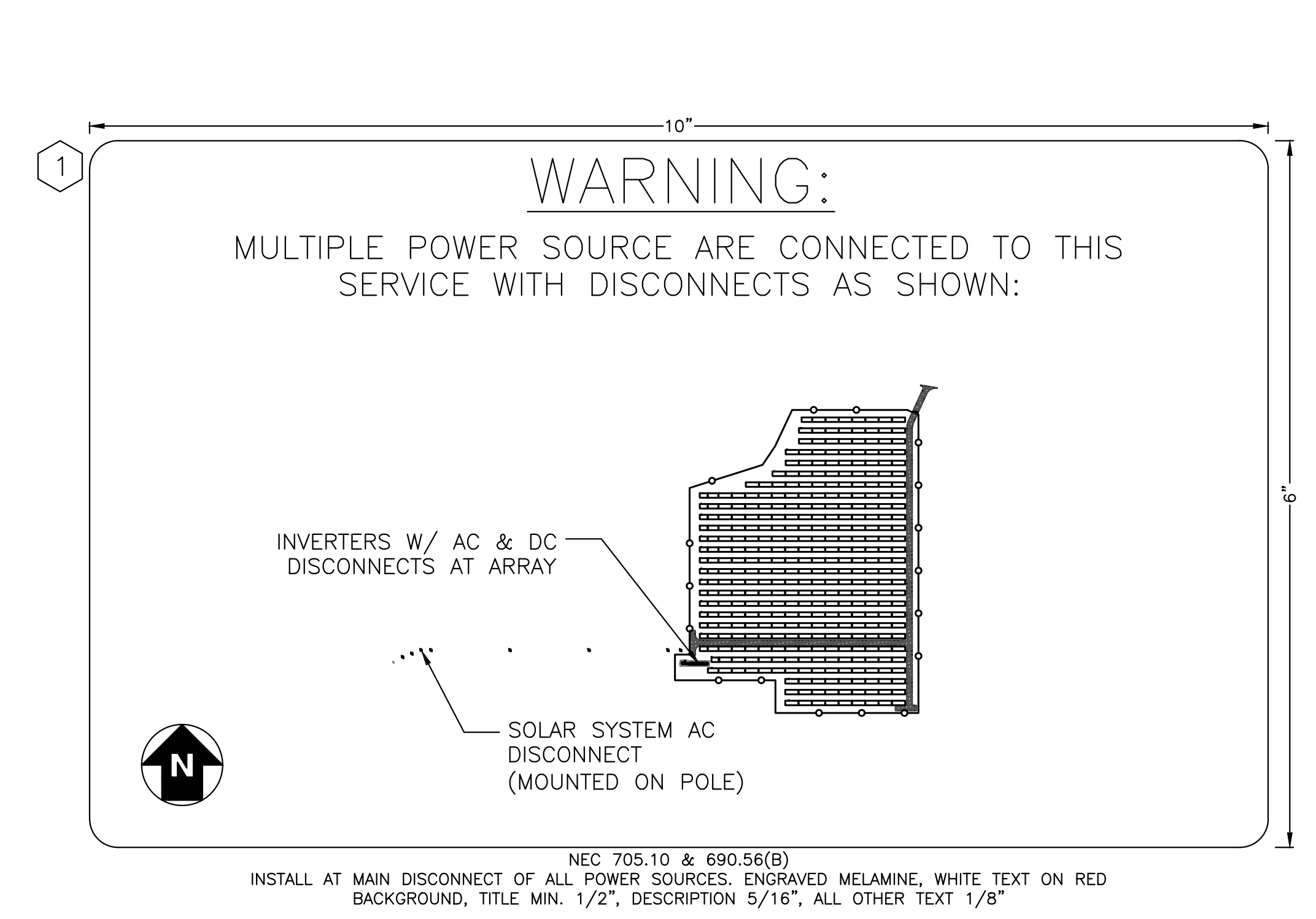
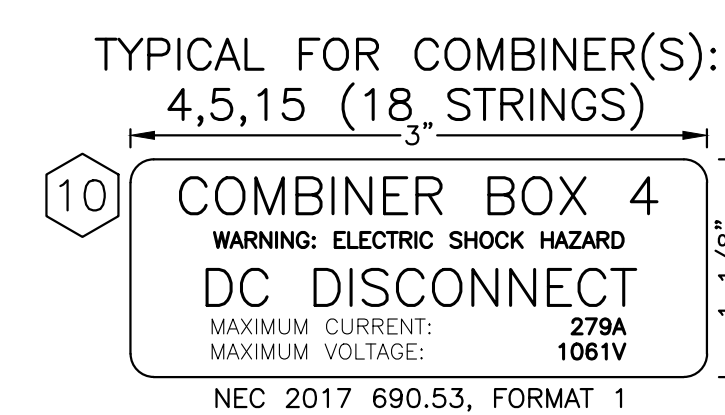
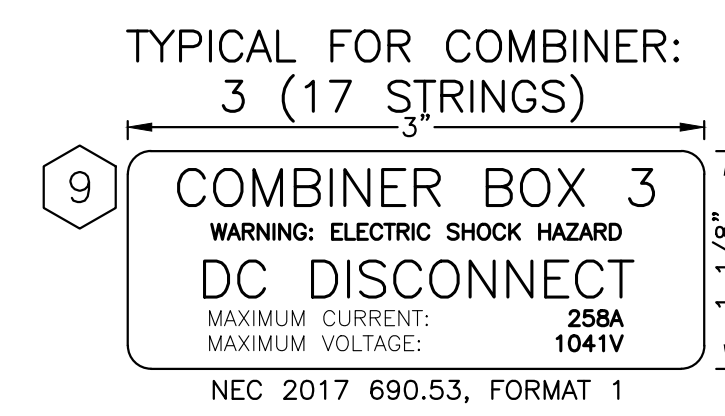
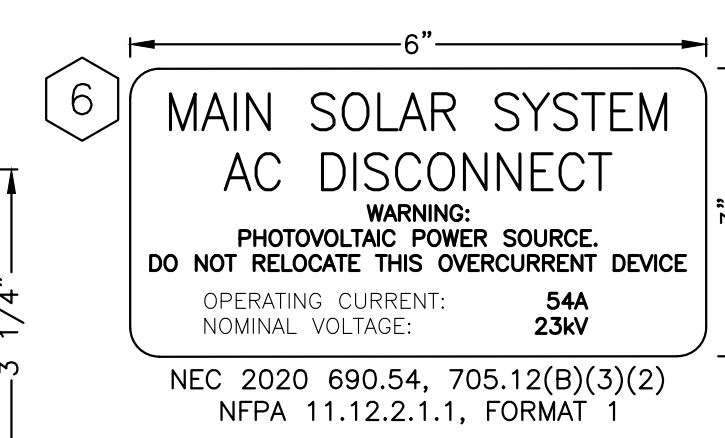
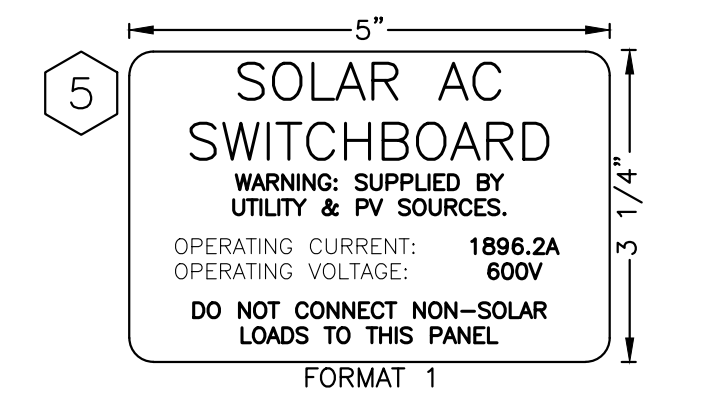
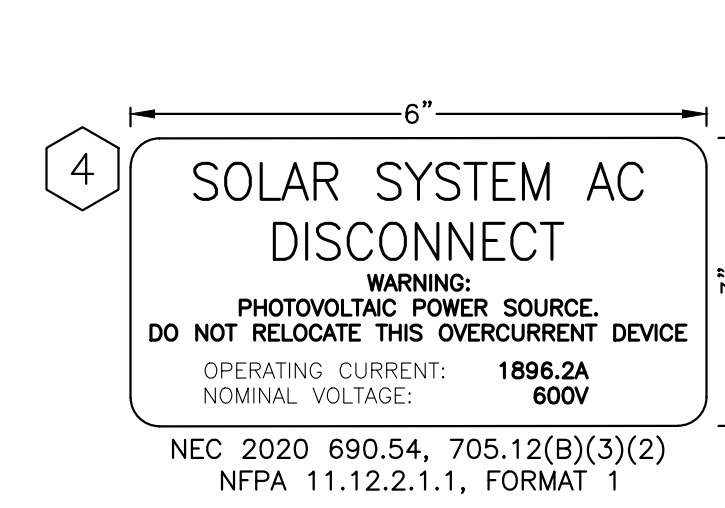
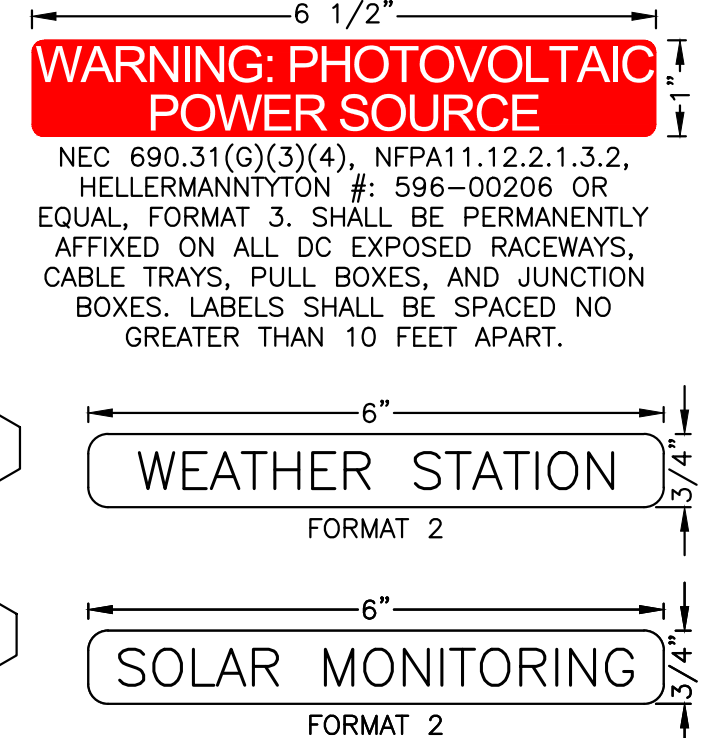
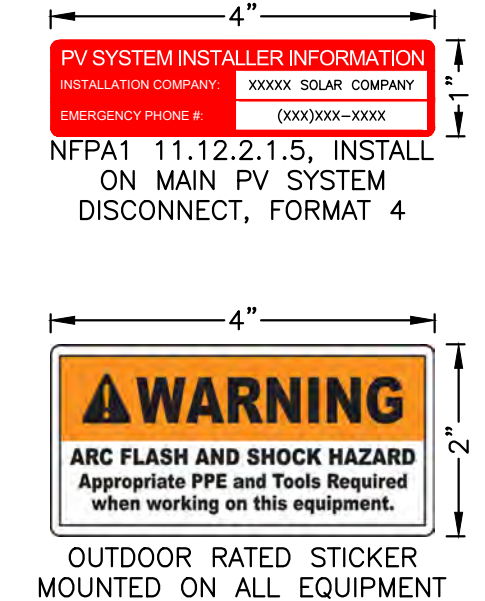
RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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.

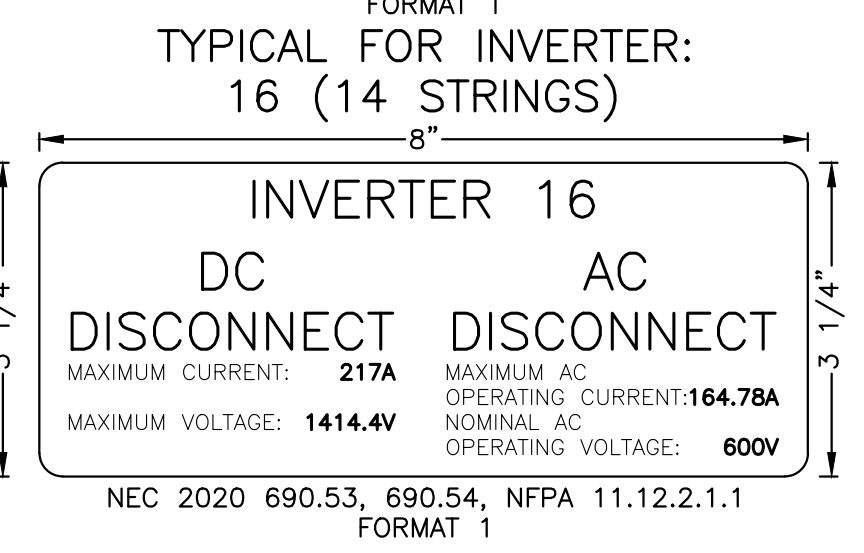
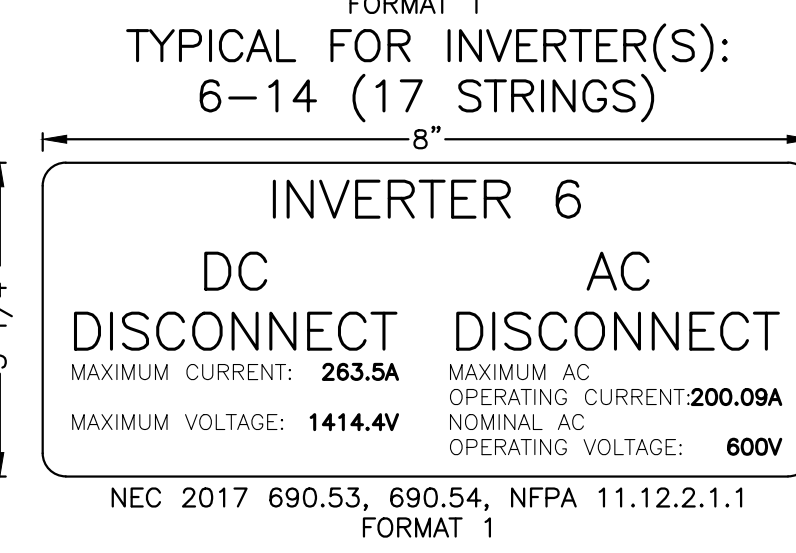
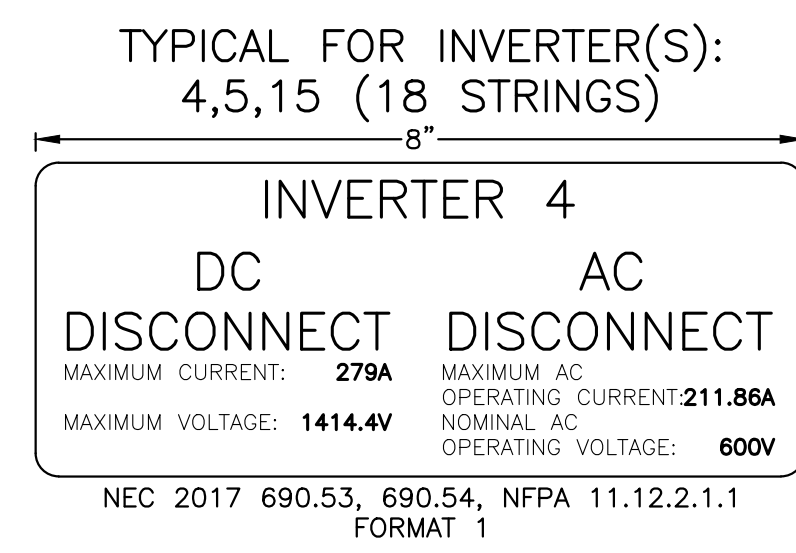
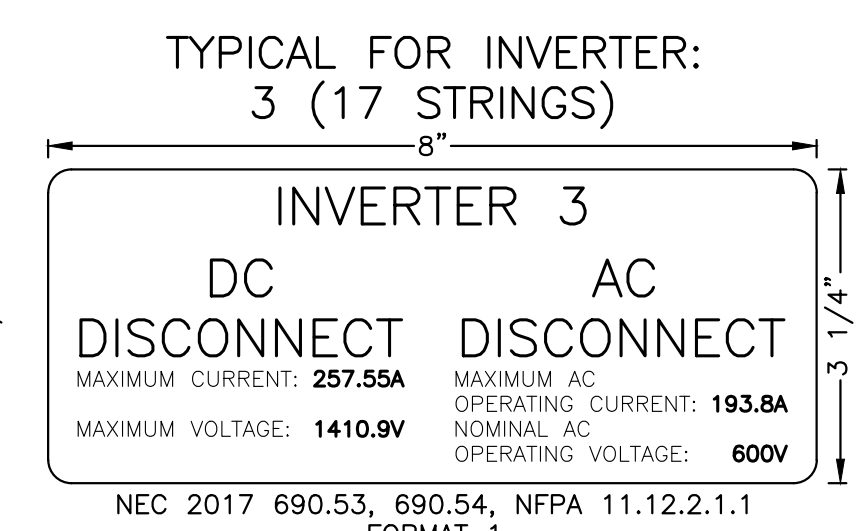
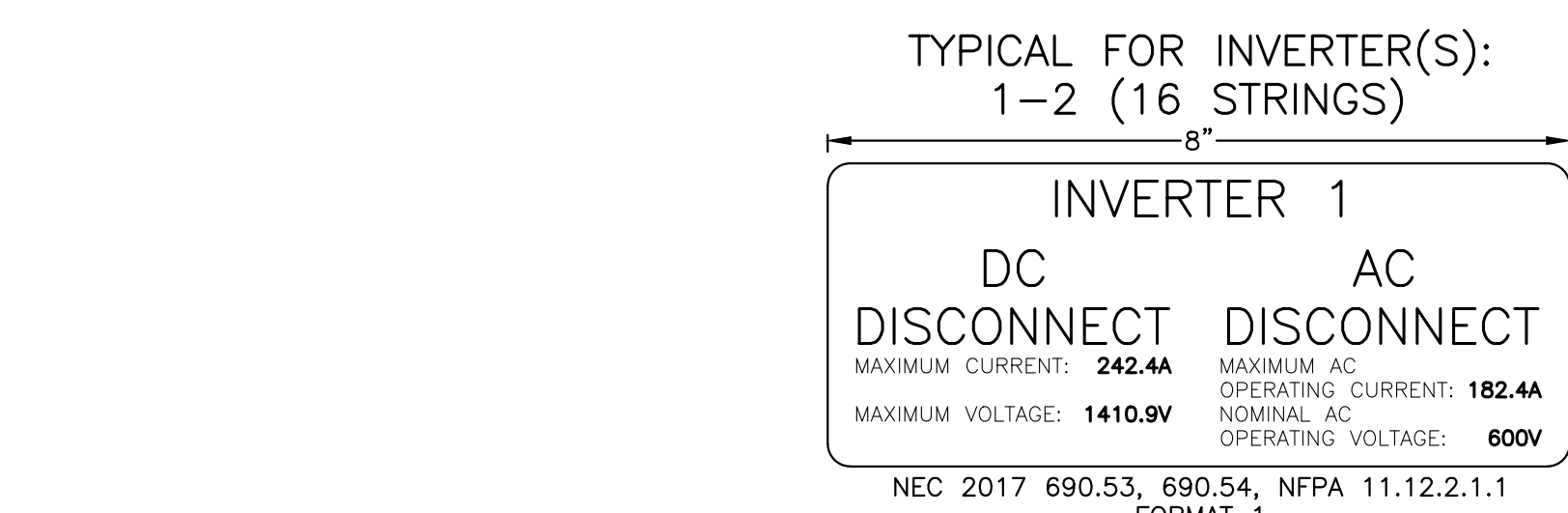
LABEL FORMAT NOTES:
 1. **FORMAT 1:** ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND. TEXT HEIGHT: TITLES 3/8", ALL OTHER TEXT 5/32".
 2. **FORMAT 2:** ENGRAVED MELAMINE, BLACK TEXT ON WHITE BACKGROUND. TEXT HEIGHT: 3/8".
 3. **FORMAT 3:** REFLECTIVE UV RATED LABEL, RED BACKGROUND WITH WHITE CAPITAL 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.

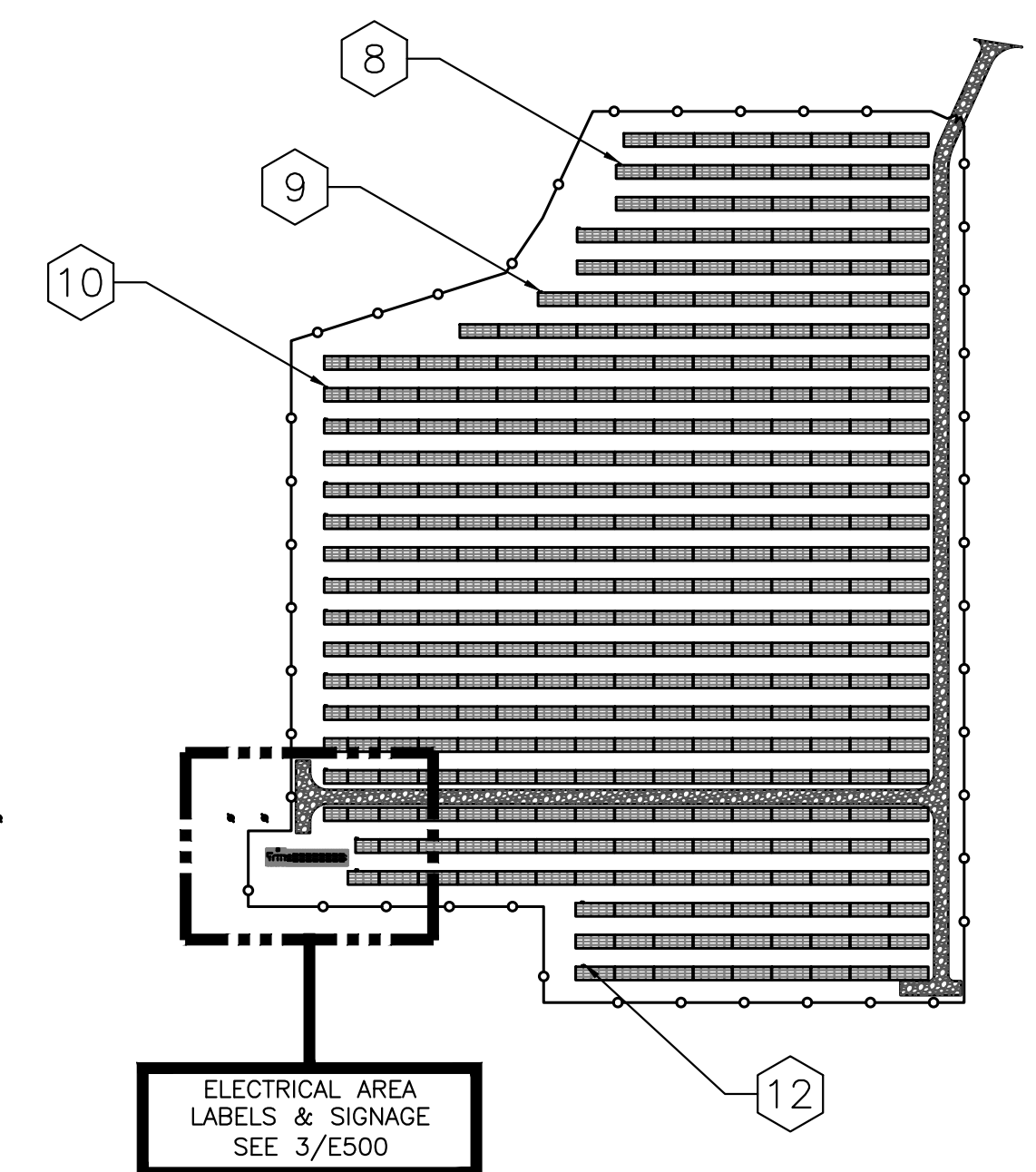
1. STRING HOMERUNS AT ARRAY
2. DC INPUT TERMINALS OF COMBINER BOX
3. DC OUTPUT TERMINALS OF COMBINER BOX
4. DC INPUT TERMINALS OF INVERTER
5. AC OUTPUT TERMINALS OF INVERTER
6. AC INPUT & OUTPUT TERMINALS OF EACH SUCCESSIVE DEVICE (WHERE APPLICABLE)



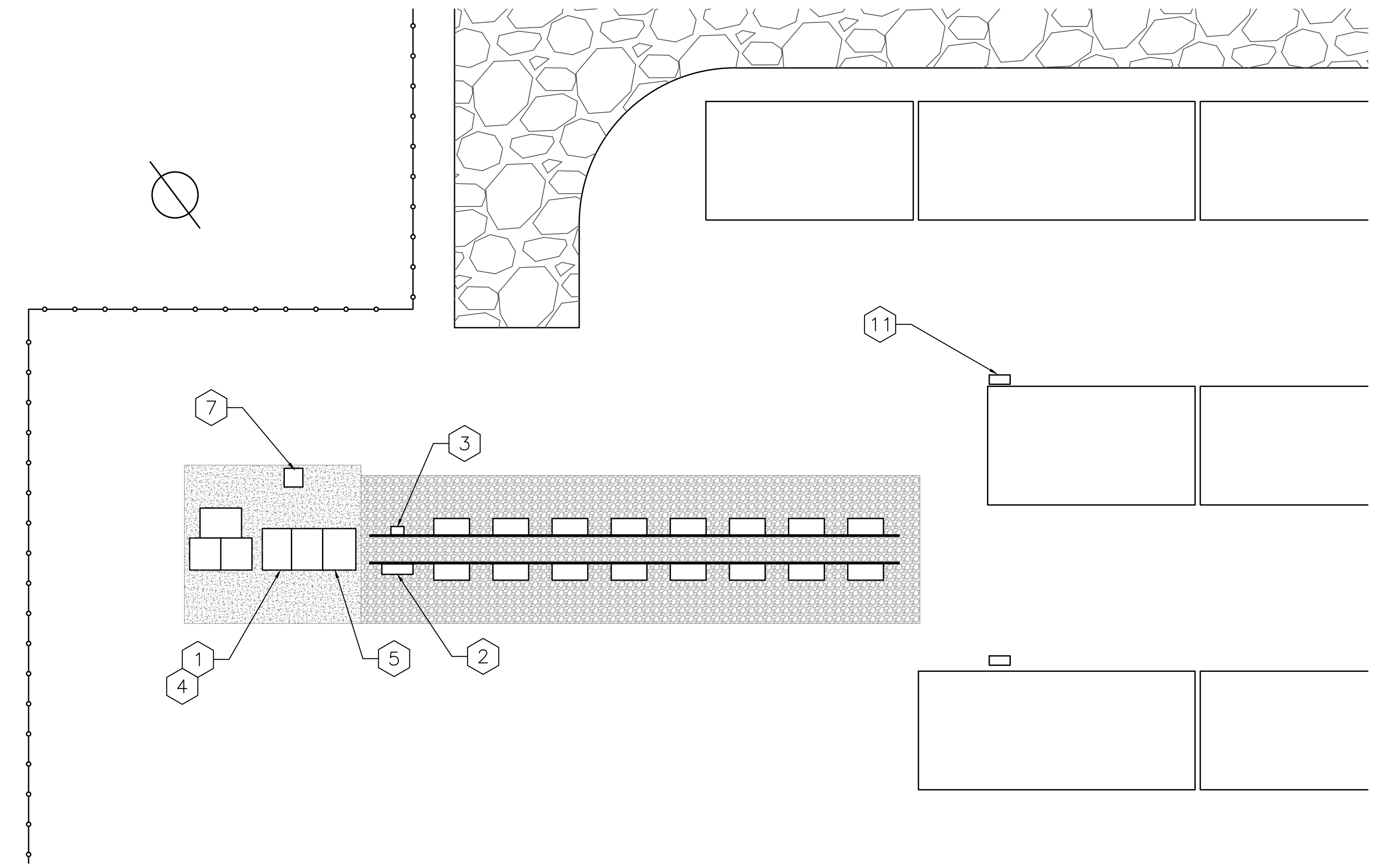
2 DIRECTORY LABEL
 E500 SCALE: 1:1



1 LABELS & SIGNAGE
 E500 SCALE: 1" = 150'-0"



3 ELECTRICAL AREA - LABELS & SIGNAGE
 E500 SCALE: 1/8" = 1'-0"



DRAWING TITLE
 LABELS & SIGNAGE

DATE	REVISION DESCRIPTION	PM	LENG	CHK
10/08/2020	ISSUE FOR PERMIT	RK	CP	RI
03/09/2020	90% DESIGN DEVELOPMENT	RK	ES	RI

PURE POWER
 5 MARINE VIEW PLAZA, HOBOKEN, NJ
 WWW.PUREPOWER.COM
 RICHARD A. VONN
 CT LICENSE NO. 00329282

VEROGY
 150 HATHAWAY STREET
 HARTFORD, CT 06103
 WWW.VEROGY.COM

DC SYSTEM POWER: 2,782.52 kW
 AC SYSTEM POWER: 1,975.00 kW
 MODULE TYPE: TRINA 400 / RISEN 380
 STRING QUANTITY: 5,746 / 1,274
 STRING QUANTITY: 221 / 49
 ORIENTATION: 30° TILT, -1.60° AZIMUTH

PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE
 1440 TORRINGTON STREET
 TORRINGTON, CONNECTICUT 06790

PAGE SIZE: 3.6" x 24"
 PROJECT #: 00034

DRAWING #
 E500

RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Mono Multi Solutions

THE DUOMAX^{twinn}

BIFACIAL DUAL GLASS 144 CELL MULTI BUSBAR MODULE

144-Cell MONOCRYSTALLINE MODULE

390-410W POWER OUTPUT RANGE

20.2% MAXIMUM EFFICIENCY

0~+5W POSITIVE POWER TOLERANCE

Founded in 1997, Trina Solar is the world's leading total solution provider for solar energy. With local presence around the globe, Trina Solar is able to provide exceptional service to each customer in each market and deliver our innovative, reliable products with the backing of Trina as a strong, bankable brand. Trina Solar now distributes its PV products to over 100 countries in all over the world. We are committed to building strategic, mutually beneficial collaborations with installers, developers, distributors and other partners in driving smart energy together.

Comprehensive Products and System Certificates
 IEC61215/IEC61730/IEC61634/IEC61719
 ISO 9001: Quality Management System
 ISO 14001: Environmental Management System
 ISO14064: Greenhouse Gases Emissions Verification
 OHSAS18001: Occupational Health and Safety Management System



Trinasolar



PRODUCTS	POWER RANGE
TSM-DEGL5MC200P	390-410W

High power output

- Up to 410W front power and 20.2% module efficiency with half-cut and MBB (Multi Busbar) technology enabling higher BOS savings
- Lower resistance of half-cut cells ensures higher power

Certified to perform in highly challenging environments

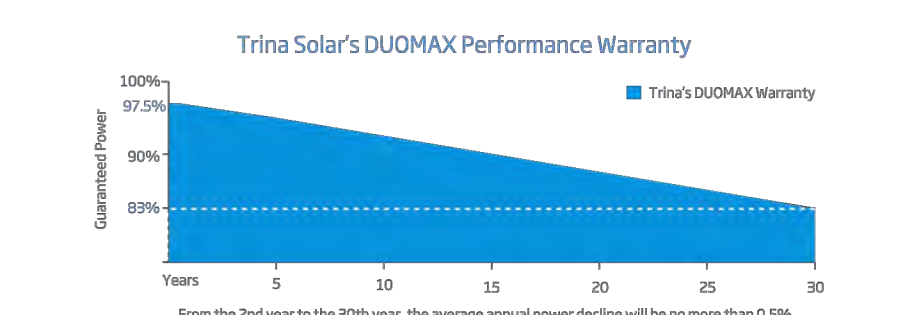
- High PID resistance through cell process and module material control
- Resistant to salt, acid, sand, and ammonia
- Proven to be reliable in high temperature and humidity areas
- Certified to the best fire class A
- Minimizes micro-crack and snail trails
- Certified to 5400 Pa positive load and 2400 Pa negative load

High energy generation, low LCOE

- Up to 25% additional power gain from back side, depending on the albedo
- Excellent 3rd party validated IAM and low light performance with cell process and module material optimization
- Low temp coefficient (-0.35%) and NMOI increases energy production
- Better anti-shading performance and lower operating temperature
- Higher power from same installation footprint as standard modules

Easy to install, wide application

- Frame design enables compatibility with standard installation methods
- Deployable for ground mounted utility, carports, and agricultural projects
- Safe and easy to transport, handle, and install like normal framed modules



HIGH PERFORMANCE BIFACIAL PERC MONOCRYSTALLINE MODULE

RSM144-6-370BMDG-390BMDG

144 CELL MONOCRYSTALLINE MODULE

370-390Wp POWER OUTPUT RANGE

1500VDC MAXIMUM SYSTEM VOLTAGE

19.4% MAXIMUM EFFICIENCY



About Risen Energy

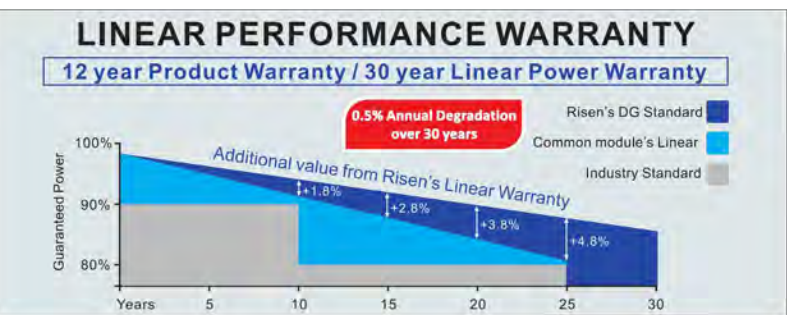
Risen Energy is a leading, global tier 1 manufacturer of high-performance solar photovoltaic products and provider of total business solutions for residential, commercial and utility-scale power generation. The company, founded in 1996, and publicly listed in 2010, compels value generation for its chosen global customers. Techno-commercial innovation, underpinned by consummate quality and support, enforces Risen Energy's total Solar PV business solutions which are among the most powerful and cost-effective in the industry. With local market presence and strong financial bankability status, we are committed, and able, to building strategic, mutually beneficial collaborations with our partners, as together we capitalise on the rising value of green energy.

KEY SALIENT FEATURES

- Global, Tier 1 bankable brand, with independently certified state-of-the-art automated manufacturing**
- Bifacial technology enables additional energy harvesting from rear side (up to 25%)**
- Industry leading lowest thermal co-efficient of power**
- Industry leading 12 years product warranty**
- Excellent low irradiance performance**
- Excellent PID resistance**
- Positive tight power tolerance**
- Dual stage 100% EL Inspection ensuring defect-free product**
- Module Imp binning radically reduces string mismatch losses**
- Warranted reliability and stringent quality assurances well beyond certified requirements**
- Certified to withstand severe environmental conditions**
 - Anti-reflective & anti-soiling surface minimise power loss from dirt and dust
 - Severe salt mist, ammonia & blown sand resistance, for seaside, farm and desert environments
 - Excellent mechanical load 2400Pa & snow load 5400Pa resistance



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 Taahan Industry Zone, Meilin,
 Ninghai 315609, Ningbo | PRC
 Tel: +86-574-59953239
 Fax: +86-574-59953599
 E-mail: marketing@risenenergy.com
 Website: www.risenenergy.com



DUOMAX^{twinn} BIFACIAL DUAL GLASS 144 HALF-CELL MBB MODULE

DIMENSIONS OF PV MODULE (mm)

ELECTRICAL DATA (STC)

Peak Power Watts-P _{max} (Wp)*	390	395	400	405	410
Power Output Tolerance-P _{ow} (W)	0~+5				
Maximum Power Voltage-V _{mp} (V)	40.2	40.5	40.8	41.1	41.4
Maximum Power Current-I _{mp} (A)	9.71	9.76	9.81	9.86	9.91
Open Circuit Voltage-V _{oc} (V)	48.5	48.7	48.9	49.1	49.3
Short Circuit Current-I _{sc} (A)	10.25	10.29	10.33	10.37	10.41
Module Efficiency η (%)	19.2	19.5	19.7	20.0	20.2

STC: Irradiance 1000W/m², Cell Temperature 25°C, Air Mass AM1.5, Measuring tolerance ± 0.5%

ELECTRICAL DATA (NMOT)

Maximum Power-P _{max} (Wp)	295	299	302	306	310
Maximum Power Voltage-V _{mp} (V)	37.7	38.0	38.3	38.6	38.9
Maximum Power Current-I _{mp} (A)	7.82	7.86	7.90	7.93	7.97
Open Circuit Voltage-V _{oc} (V)	45.7	45.9	46.1	46.3	46.5
Short Circuit Current-I _{sc} (A)	8.26	8.29	8.33	8.36	8.39

NMOT: Irradiance at 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Electrical characteristics with different rear side power gains (referenced specifically to 405 Wp front)**

Maximum Power-P _{max} (Wp)	425	446	466	486	506
Maximum Power Voltage-V _{mp} (V)	41.1	41.1	41.1	41.1	41.1
Maximum Power Current-I _{mp} (A)	10.35	10.85	11.34	11.83	12.33
Open Circuit Voltage-V _{oc} (V)	49.2	49.3	49.4	49.5	49.6
Short Circuit Current-I _{sc} (A)	10.89	11.41	11.93	12.44	12.96
P _{max} Gain	5%	10%	15%	20%	25%

Power Efficiency: 70.5%

MECHANICAL DATA

Solar Cells: Monocrystalline
 Cell Configuration: 144 cells (6 × 24)
 Module Dimensions: 2024 × 1002 × 30 mm (79.69 × 39.45 × 1.18 inches)
 Weight: 26.0 kg (57.3 lb)
 Front Glass: 2.0 mm (0.08 inches), High Transmission, AR Coated Heat Strengthened Glass
 Encapsulant material: PDE/EVA
 Back Glass: 2.0 mm (0.08 inches), Heat Strengthened Glass (White Grid Glass)
 Frame: 38mm (1.5 inches) Anodized Aluminum Alloy
 J-Box: IP68 rated
 Cables: Photovoltaic Technology Cable 4.0 mm² (1200G) (405W)
 Portals: 280/280 mm (11.02/11.02 inches)
 Landscape: 1900/1900 mm (74.80/74.80 inches)
 Connector: Trina T54

TEMPERATURE RATINGS

NMOT (Nominal Module Operating Temperature)	41°C (103°F)	Operational Temperature	-40~+85°C
Temperature Coefficient of P _{max}	-0.35%/°C	Maximum System Voltage	1500V DC (IEC)
Temperature Coefficient of V _{oc}	-0.25%/°C	Maximum DC (IEC)	1500V DC (UL)
Temperature Coefficient of I _{sc}	0.04%/°C	Max Series Fuse Rating	20A

PACKAGING CONFIGURATION

Number of modules per container	40P	20P
Number of modules per pallet	80	40
Number of pallets per container	22	10
Packaging box dimensions (LxWxH) in mm	2080x1100x1135	2080x1100x1135
Box gross weight (kg)	1100	1100

WARRANTY

12 year Product Workmanship Warranty
 30 year Power Warranty
 (Please refer to product warranty for details)

PACKAGING CONFIGURATION

Modules per box: 35 pieces
 Modules per 40' container: 665 pieces

Our Partners:

REMI144-BMDG-390-EN-1911-01-2021

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.
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 Version number: TSM_DEGL5MC20_EN_2020_RED www.trinasolar.com

risen solar technology

Dimensions of PV Module

ELECTRICAL DATA (STC)

Model Number:	RSM144-6-370BMDG	RSM144-6-375BMDG	RSM144-6-380BMDG	RSM144-6-385BMDG	RSM144-6-390BMDG
Rated Power in Watts-P _{max} (Wp)	370	375	380	385	390
Open Circuit Voltage-V _{oc} (V)	47.60	47.75	48.00	48.15	48.30
Short Circuit Current-I _{sc} (A)	9.90	10.00	10.10	10.20	10.30
Maximum Power Voltage-V _{mp} (V)	39.80	39.90	40.05	40.15	40.25
Maximum Power Current-I _{mp} (A)	9.30	9.40	9.50	9.60	9.70
Module Efficiency (%)	18.4	18.6	18.9	19.1	19.4

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to IEC 60904-5.
 Bifacial factor: 75%±5%

ELECTRICAL DATA (NMOT)

Model Number:	RSM144-6-370BMDG	RSM144-6-375BMDG	RSM144-6-380BMDG	RSM144-6-385BMDG	RSM144-6-390BMDG
Maximum Power-P _{max} (Wp)	276.7	280.3	284.4	288.1	291.8
Open Circuit Voltage-V _{oc} (V)	43.80	43.90	44.20	44.30	44.40
Short Circuit Current-I _{sc} (A)	8.12	8.20	8.28	8.36	8.45
Maximum Power Voltage-V _{mp} (V)	36.50	36.60	36.70	36.80	36.90
Maximum Power Current-I _{mp} (A)	7.59	7.67	7.75	7.83	7.92

NMOT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar cells: Monocrystalline 156.75x78.375 mm, SBB
 Cell configuration: 144 cells (6x12x6) 12
 Module dimensions: 2018x998x25mm
 Weight: 26kg
 Substrate: 2.0 mm, High Transmission, Low Iron, Tempered ARC Glass
 Frame: Anodized Aluminum Alloy type 6063T5, Silver Color
 J-Box: Potted, IP67, 1500VDC, 3 Schottky bypass diodes
 Cables: 4.0mm² (12AWG), Positive(+)/270mm, Negative(-)/100mm
 Connector: Risen Twinsel PV-SY02, IP67

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	45°C/103°F
Temperature Coefficient of Voc	-0.29%/°C
Temperature Coefficient of Isc	0.05%/°C
Temperature Coefficient of Pmax	-0.39%/°C
Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500VDC
Max Series Fuse Rating	20A
Limiting Reverse Current	20A

PACKAGING CONFIGURATION

Number of modules per container	40P	20P
Number of modules per pallet	80	40
Number of pallets per container	22	10
Packaging box dimensions (LxWxH) in mm	2080x1100x1135	2080x1100x1135
Box gross weight (kg)	1100	1100

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.
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THE POWER OF RISING VALUE

SOLECTRIA XG1™ 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



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

Yaskawa Solectria Solar's XG1 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 XG1 1500 inverters provide advanced grid-support functionality and meet the latest IEEE 1547 and UL 1741 standards for safety. The XG1 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 XG1 inverters are assembled and tested at Yaskawa America's facilities in Buffalo Grove, IL. The XG1 1500 inverters are Made in the USA with global components and are compliant with the Buy American Act.



SOLECTRIA SOLAR

SOLECTRIA XG1 1500

Specifications

	XG1 1500-125/125	XG1 1500-125/150	XG1 1500-150/166	XG1 1500-166/166
DC Input				
Absolute Maximum Input Voltage	1500 VDC	1500 VDC	1500 VDC	1500 VDC
Maximum Power Input Voltage Range (MPPT)	800-1250 VDC	800-1250 VDC	800-1250 VDC	800-1250 VDC
Operating Voltage Range (MPPT)	800-1450 VDC	800-1450 VDC	800-1450 VDC	800-1450 VDC
Number of MPPT Trackers	1 MPPT	1 MPPT	1 MPPT	1 MPPT
Maximum Operating Input Current	148.3 A	178.0 A	197.7 A	170.0 A
Maximum Operating PV Power	128 kW	128 kW	150 kW	170 kW
Maximum DC:AC Ratio (Max Rated PV Power)	2.0 / 250 kW	2.0 / 250 kW	1.96 / 250 kW	1.5 / 250 kW
Max Rated PV Short-Circuit Current (I _{sc} x 1.25)	320 A	320 A	320 A	320 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%
Circuit Breaker Trip Current	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 Settable)	+/- 0.90 Adjustable	+/- 0.90 Adjustable	+/- 0.90 Adjustable	+/- 0.90 Adjustable
Total Harmonic Distortion (THD) @ Rated Load	<-3%	<-3%	<-3%	<-3%
Grid Connection Type	3-Ph, N/NGND	3-Ph, N/NGND	3-Ph, N/NGND	3-Ph, N/NGND
Fault Current Contribution (1 cycle RMS)	14.4 A	17.3 A	19.2 A	19.2 A
Efficiency				
Peak Efficiency	98.9%	98.9%	99.0%	99.0%
CEC Average Efficiency	98.5%	98.5%	98.5%	98.5%
Thrs Loss	<-1 W	<-1 W	<-1 W	<-1 W
Temperature				
Ambient Temperature Range	-40°F to 140°F (-40°C to 60°C)		-40°F to 140°F (-40°C to 60°C)	
De-Rating Temperature	122°F (50°C)		119°F (48°C)	
Storage Temperature Range	-40°F to 167°F (-40°C to 75°C)		-40°F to 167°F (-40°C to 75°C)	
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	Web			
Construction Interface	Ethernet			
Third Party Monitoring Protocol	SunSpec Modbus TCP/IP			
Web-Based Monitoring	Optional			
Firmware Updates	Remote and Local			
Testing & Certifications				
UL 1741, IEEE 1547, UL 1928				
Advanced Grid-Support Functionality	Rule 21, UL 1741SA			
FCC Agency	FCC Part 15, Class A			
IEC Compliance	FCC Part 15, Class A			
Warranty				
Standard and Options	5 Years Standard; Option for 10 Years			
Enclosure				
Acoustic Noise Rating	56 dBA @ 3 m			
DC Disconnection	Integrated 2-Pole 250 A DC Disconnector			
Mounting Height	Variable only			
Dimensions	Height: 29.5 in. (750 mm); Width: 38.4 in. (1000 mm) [Depth: 15.1 in. (380 mm) - Depth subject to change]			
Weight	270 lbs (122 kg)			
Enclosure Rating and Finish	Type 4X, Polyester Powder-Coated Aluminum			

Yaskawa Solectria Solar
 300 Merrimack Street
 Lawrence, MA 01843
 solectria.com

1-978-863-9700
 Email: inverters@solectria.com

Document FL-XG1500.01
 2/6/2020
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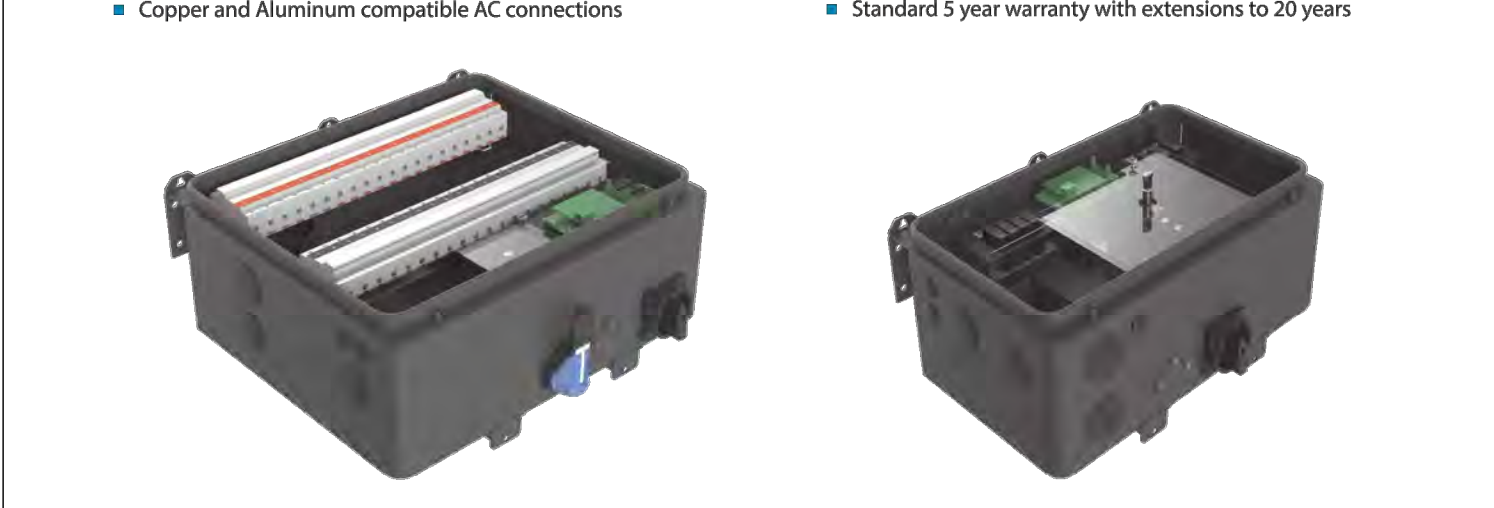
YASKAWA

CPS 100/125kW, 1500Vdc String Inverters for North America



The 100 & 125kW high power CPS three phase string inverters are designed for ground mount applications. The units are high performance, advanced and reliable inverters designed specifically for the North American environment and grid. High efficiency at 99.1% peak and 98.5% CEC, wide operating voltages, broad temperature ranges and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 100/125kW products ship with the Standard or Centralized Wire-box, each fully integrated and separable with AC and DC disconnect switches. The Standard Wire-box includes touch safe fusing for up to 2 strings. The CPS Flex Gateway enables communication, controls and remote product upgrades.

- Key Features**
- NFPA 70, NEC 2014 and 2017 compliant
 - Touch safe DC Fuse holders adds convenience and safety
 - CPS Flex Gateway enables remote FW upgrades
 - Integrated AC & DC disconnect switches
 - 1 MPPT with 20 fused inputs for maximum flexibility
 - Copper and Aluminum compatible AC connections
 - NEMA Type 4X outdoor rated, tough tested enclosure
 - Advanced Smart-Grid features (CA Rule 21 certified)
 - kVA Headroom yields 100kW @ 0.9PF and 125kW @ 0.95PF
 - Separable 1.87 and 1.5 DC/AC Inverter Load Ratios
 - Generous wire-box design for fast service
 - Standard 5 year warranty with extensions to 20 years



RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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 arrester, both polarities

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.

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	14-4 AWG	14-4 AWG
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
Number of Fused Positions	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 poles fused	Both positive and negative poles 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 T741	UL T741
Standard Warranty	5 Years	5 Years
Enclosure Material Options & Finishing	Polyster Powder Coated Aluminum, NEMA Type 4X	Polyster 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

CONTOUR BF

Boost your Bi-Facial PV Module production with DCE Solar's newest Contour racking solution.

- Open-back racking that allows optimal performance of Bi-Facial panels
- Accepts landscape or portrait module orientations
- Newly designed pivot bracket allows for superior purlin adjustability
- Integrated wire management & array bonding with panel clamps
- Driven, ballasted, or screw foundations accommodating all soil & site conditions

OPEN-BACK FRAMING Bi-Facial panels can perform unobstructed with our open-back racking solution while also benefiting from the established flexibilities the Contour components offer: fewer parts, minimal site grading, greater longevity. Utilizing clamping fasteners and structural members carefully placed along the panel's frame lend to an increased installation time.

PIVOT ADAPTER The uniquely designed pivot adapter elevates each one-point purlin connection to drastically improve every table's adaptability to challenging topography. The fully grounded rows can adjust to changes up to 20% grade.

FOUNDATION FLEXIBILITY Ideal for maximizing ROI in virtually any condition - Driven beam, ground screw, and ballasted foundation variants available to minimize installation challenges or environmental demands.

INTEGRATED WIRE MANAGEMENT The underside flange on panel beams act as home run wire support, decreasing the need for additional wire management components and labor. Pre-punched weep holes for moisture drainage

INTEGRATED BONDING Each continuous row is bonded using serrated hardware, therefore only one ground is needed per row as shown in the picture. No additional costly grounding components needed such as WEEBS and star washers, lowering material and installation costs. This reduces labor time, hardware, and cost for additional bonding components. (Certified to UL 2703)

DCE Solar delivers industry-leading racking products with unbeatable customer service. All Contour solutions have been designed to minimize grading, lower foundation costs, and facilitate greater energy performance.

CONTOUR BF

Structural Components

All truss members are constructed from G115 galvanized steel. Integrated wire management and support are included as part of original construction without add-ons

Technical Benefits

- Minimal hardware
- Landscape and Portrait options
- Fewer foundations per panel

TECHNICAL SPECIFICATIONS

Wind Load	Up to 130 MPH
Snow Load	Up to 90 PSF
Leading Module Height	18" - 36" MAX
Tilt Angle	10° - 25°
Module Suitability	All Major Brands
Panel Orientation	Portrait (2V x 12W) Landscape (4H x 5W)
Warranty	20 years

PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE
1440 TORRINGFORD STREET
TORRINGTON, CONNECTICUT 06790

DC SYSTEM POWER: 2,782.52 kW
AC SYSTEM POWER: 1,975.00 kW
MODULE TYPE: TRINA 400 / RISEN 380
MODULE QUANTITY: 5,746 / 1,274
STRING QUANTITY: 221 / 49
ORIENTATION: 30° TILT, -160° AZIMUTH

DEVELOPER: VEROGY
150 HARTFORD STREET
HARTFORD, CT 06103
WWW.VEROGY.COM

PAGE SIZE: 36" x 24"
PROJECT #: 00034

DATE: 09/08/2020
90% DESIGN DEVELOPMENT
REV: ES, RI