



STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

October 13, 2020

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **PETITION NO. 1407** – Torrington Solar One LLC and VCP, LLC d/b/a Verogy declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 1.975-megawatt AC solar photovoltaic electric generating facility on an approximately 66.4 acre parcel located generally south of East Pearl Road and east of Torrington Street (Route 183) in Torrington, Connecticut and associated electrical interconnection.

Dear Attorney Baldwin:

The Connecticut Siting Council (Council) is in receipt of the final electrical design plans regarding compliance with Condition No. 4 of the Council's Declaratory Ruling dated August 14, 2020 for the above-referenced project. The Council acknowledges that Condition No. 4 of the Declaratory Ruling has been satisfied.

This acknowledgement of compliance of Condition No. 4 of the Declaratory Ruling applies only to the condition satisfied in the correspondence dated October 9, 2020. Any significant changes to the above-referenced project require advance Council notification and approval.

The Council is also in receipt of the October 9, 2020 notification regarding the transfer of assignment of the rights in the above-referenced project. The Council hereby acknowledges the transfer of assignment of the rights from Torrington Solar One, LLC and VCP, LLC d/b/a Verogy to DG Connecticut Solar II, LLC (DGCS) with the condition that DGCS complies with all the terms, limitations, and conditions contained in the decision letter issued on August 14, 2020, and on timely payment of apportioned assessment charges for the facility under Connecticut General Statutes § 16-50v(b)(1).

Thank you for your attention and cooperation.

Sincerely,

s/Melanie A. Bachman

Melanie A. Bachman
Executive Director

MB/MP

c: William Herchel, Chief Executive Officer, VCP, LLC d/b/a Verogy
Brian Fitzgerald, Director of Development, VCP, LLC d/b/a Verogy
Timothy Garcia, NextEra Energy DG Business Management

KENNETH C. BALDWIN

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Hartford, CT 06103-3597
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kbaldwin@rc.com
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Also admitted in Massachusetts
and New York

October 9, 2020

Via Electronic Mail

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Petition No. 1407 - Torrington Solar One, LLC and VCP, LLC d/b/a Verogy –
Petition for a Declaratory Ruling that a Certificate of Environmental Compatibility
and Public Need is not Required for the Construction, Operation and Maintenance
of a 1.975 MWAC Solar Photovoltaic Project Off East Pearl Road in Torrington,
Connecticut**

Compliance Filing No. 2

Dear Attorney Bachman:

As you know, on August 13, 2020, the Siting Council (“Council”) approved the above-referenced Petition for Declaratory Ruling (“Petition”) subject to certain conditions.

In accordance with Condition Nos. 4 of the Council’s approval, attached you will find the Final Electrical Design Plans for the Project. Also, in accordance with Condition No. 11 of the Council’s approval attached is a letter from Bryan Fitzgerald, Project Manager with Torrington Solar One LLC, notifying the Council that control of the approved facility has been transferred to DG Connecticut Solar II, LLC.

Finally, the final the Stormwater General Permit has not yet been received. A copy of the permit will be submitted to the Council as soon as it is available.

Melanie A. Bachman, Esq.
October 9, 2020
Page 2

Please let me know if you have any questions or need any additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment

Copy to:

Bryan Fitzgerald
William Herchel
Michael Libertine
Jennifer Young Gaudet
Brad Parsons

October 6, 2020

Melanie Bachman, Esq.
Executive Director and Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Petition No. 1407 - Torrington Solar One, LLC and VCP, LLC d/b/a Verogy – Petition for a Declaratory Ruling that a Certificate of Environmental Compatibility and Public Need is not Required for the Construction, Operation and Maintenance of a 1.975 MWAC Solar Photovoltaic Project Off East Pearl Road in Torrington, Connecticut

Dear Attorney Bachman:

Pursuant to the Condition no. 11 of the Council's approval of Petition No. 1407, this letter will serve as notice that the Torrington Solar One, LLC facility has been transferred to DG Connecticut Solar II, LLC, an affiliate of NextEra Energy Resources, LLC, on or about September 15, 2020. The individual responsible for management and operations of the Torrington Solar One facility going forward will be Timothy Garcia, NextEra Energy DG Business Management DL-DG-NEER-BUS-MGT@nexteraenergy.com.

If you have any questions or need any additional information about the transfer of the Torrington Solar One facility, please contact me. Thank you in advance for your cooperation.

Sincerely,



Bryan Fitzgerald

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

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, -180° AZIMUTH

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

REGISTERED PROFESSIONAL ENGINEER, STATE OF CONNECTICUT, LICENSE NO. 000034

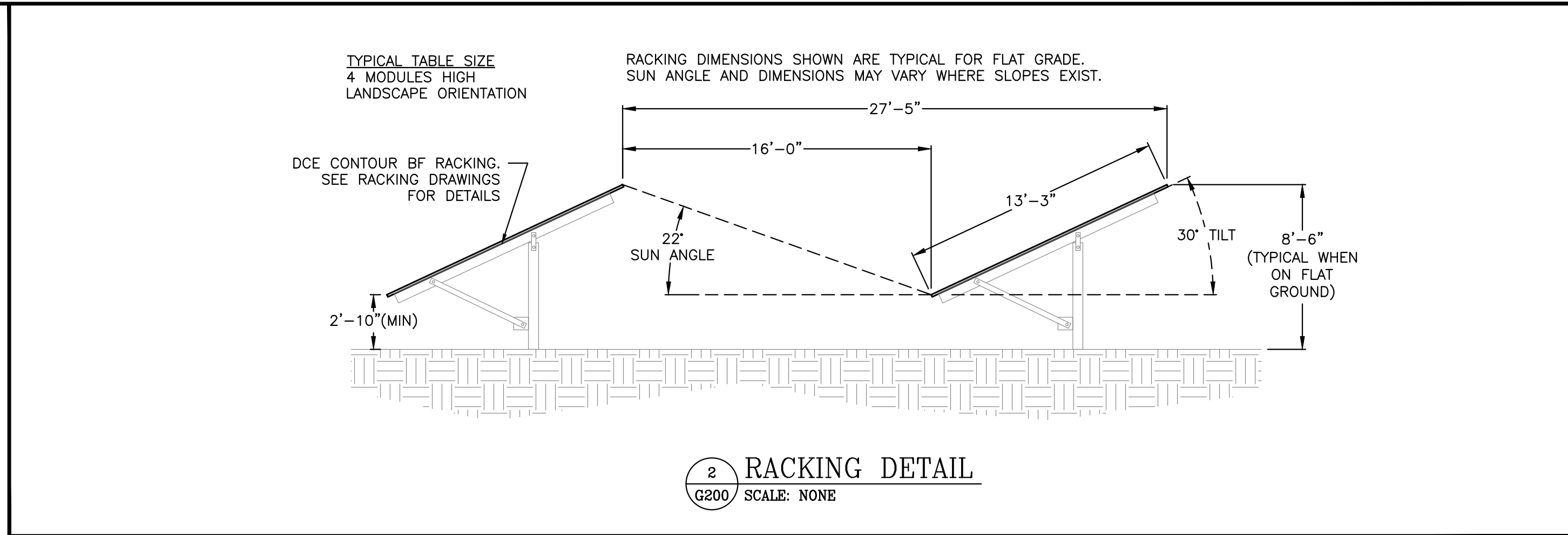
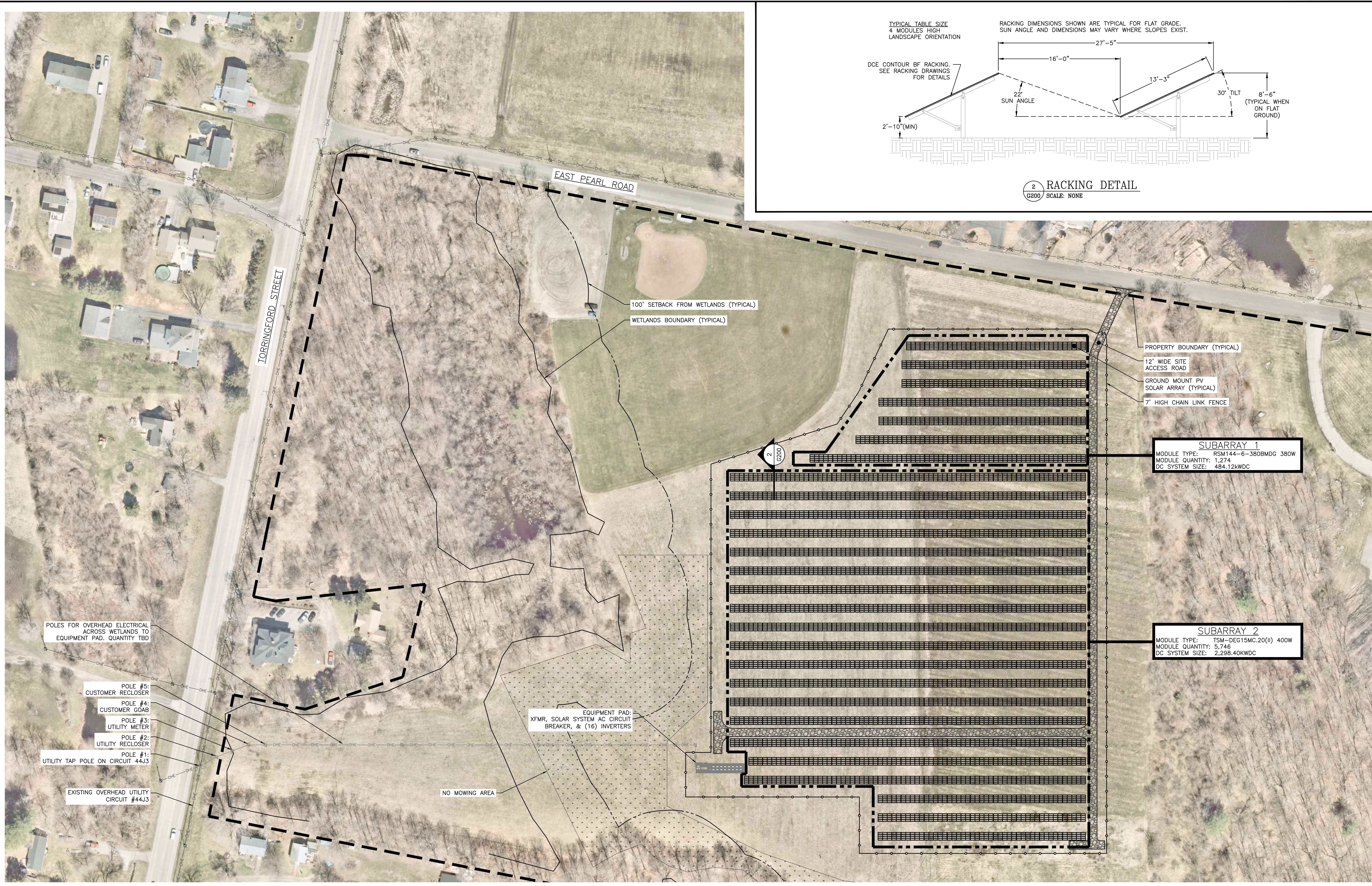
REVISIONS:

| DATE | REVISION DESCRIPTION | PM | ENG | CHK |
|------------|------------------------|----|-----|-----|
| 10/08/2020 | ISSUE FOR PERMIT | RK | CP | RI |
| 09/09/2020 | 90% DESIGN DEVELOPMENT | RK | ES | RI |
| 07/28/2020 | 30% DESIGN - REV. 1 | RK | CP | RI |
| 05/24/2020 | 30% CONCEPTUAL DESIGN | RK | CP | RI |

PUREPOWER ENGINEERING, 5 MARINE VIEW PLAZA, HOBOKEN, NJ, WWW.PUREPOWER.COM, RICHARD A. VONDERHEID, CT LICENSE NO. 00029882

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

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



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

| | |
|--------------------|-----------|
| DRAWING TITLE | DRAWING # |
| OVERALL ARRAY PLAN | G200 |

| | | | |
|--|---|--|--|
| 5 MARINE VIEW PLAZA, HARTFORD, CT 06103 WWW.PUREPOWER.COM RICHARD A. WILSON CT LICENSE NO. 03029282 | DATE: 10/08/2020 ISSUE FOR PERMIT: 09/08/2020 90% DESIGN DEVELOPMENT: 07/28/2020 50% DESIGN - REV. 1: 05/21/2020 30% CONCEPTUAL DESIGN: | PM ENG CHK RK CP RI RK CP RI RK AA RI RK CP RI RK CP RI | |
| | VEROGY 150 HARTFORD STREET 4TH FLOOR HARTFORD, CT 06103 WWW.VEROGY.COM | DEVELOPER VEROGY | 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 |
| | PROJECT SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE 1440 TORRINGFORD STREET TORRINGTON, CONNECTICUT 06790 | PAGE SIZE 36" x 24" PROJECT # 00034 | VEROGY VEROGY |
| | PROJECT TITLE OVERALL ARRAY PLAN | | DRAWING # G200 |

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
- 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
- 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.

DRAWING TITLE
ELECTRICAL NOTES
& SYMBOL LIST

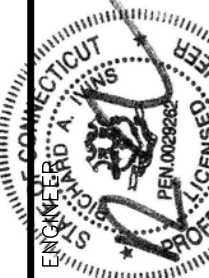
DRAWING #
E001

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, -1.60° AZIMUTH

PAGE SIZE
36" x 24"
PROJECT #
00034

DEVELOPER
VEROLOGY
150 HARTFORD STREET
HARTFORD, CT 06103
WWW.VEROLOGY.COM



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

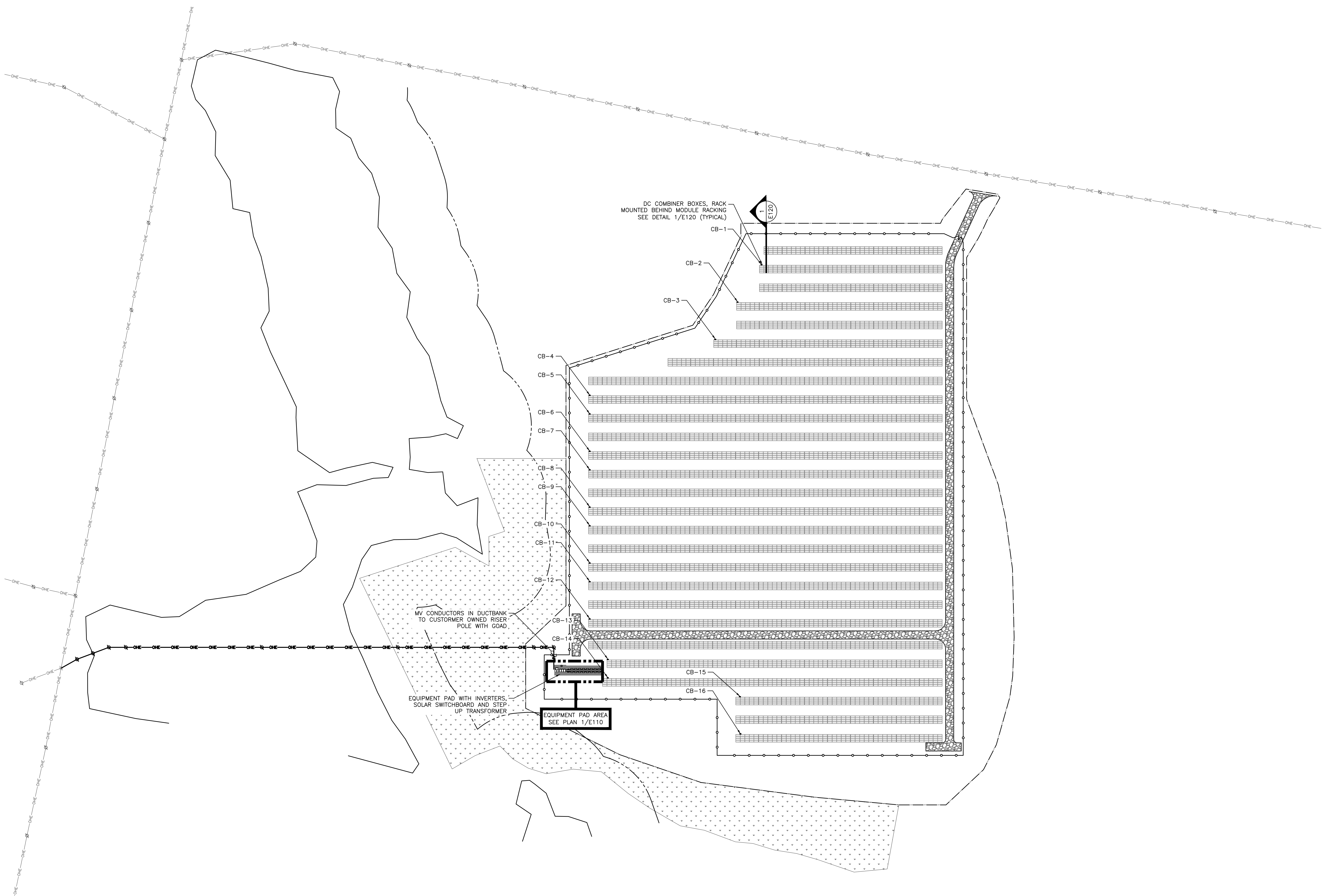
| REVISION DESCRIPTION | DATE | FW | LENG | CHK |
|----------------------|------|----|------|-----|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

RULER IN INCHES: 0 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

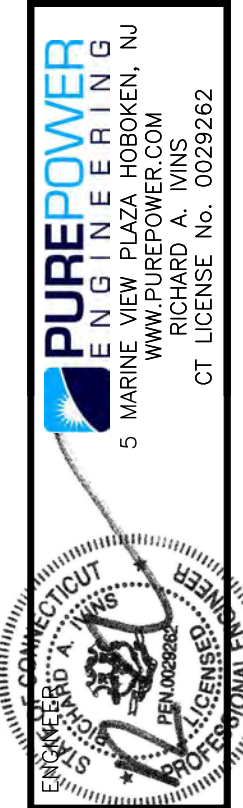
RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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



| | | | |
|---------|--|---|------------------------|
| PROJECT | SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE 1440 TORRINGTON STREET TORRINGTON, CONNECTICUT 06790 | | DRAWING # E100 |
| | 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 | DEVELOPER VEROGY 150 MAIN STREET HARTFORD, CT 06103 WWW.VEROGY.COM | |
| DATE | 09/03/2020 | REVISION DESCRIPTION | 90% DESIGN DEVELOPMENT |
| DATE | 09/03/2020 | REVISION DESCRIPTION | 90% DESIGN DEVELOPMENT |

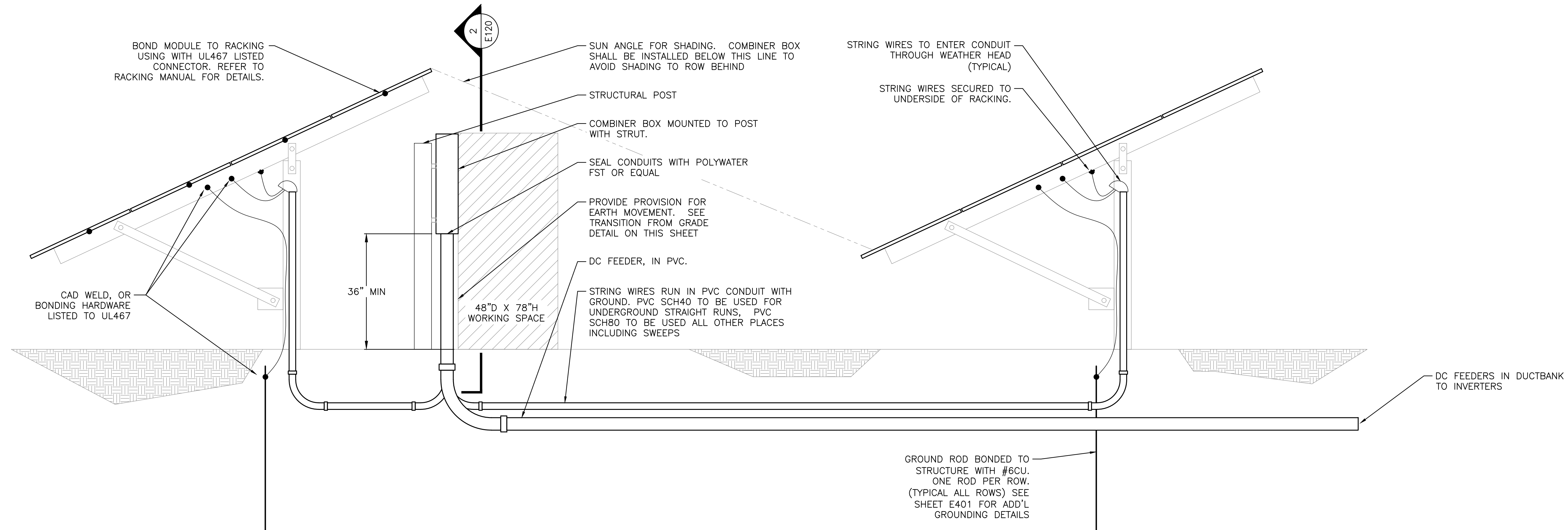
PUREPOWER
PUREPOWER ENERGY SOLUTIONS
5 MARINE VIEW PLAZA, HOBOKEN, NJ
WWW.PUREPOWER.COM
RICHARD A. WINKLER
CT LICENSE NO. 03029282



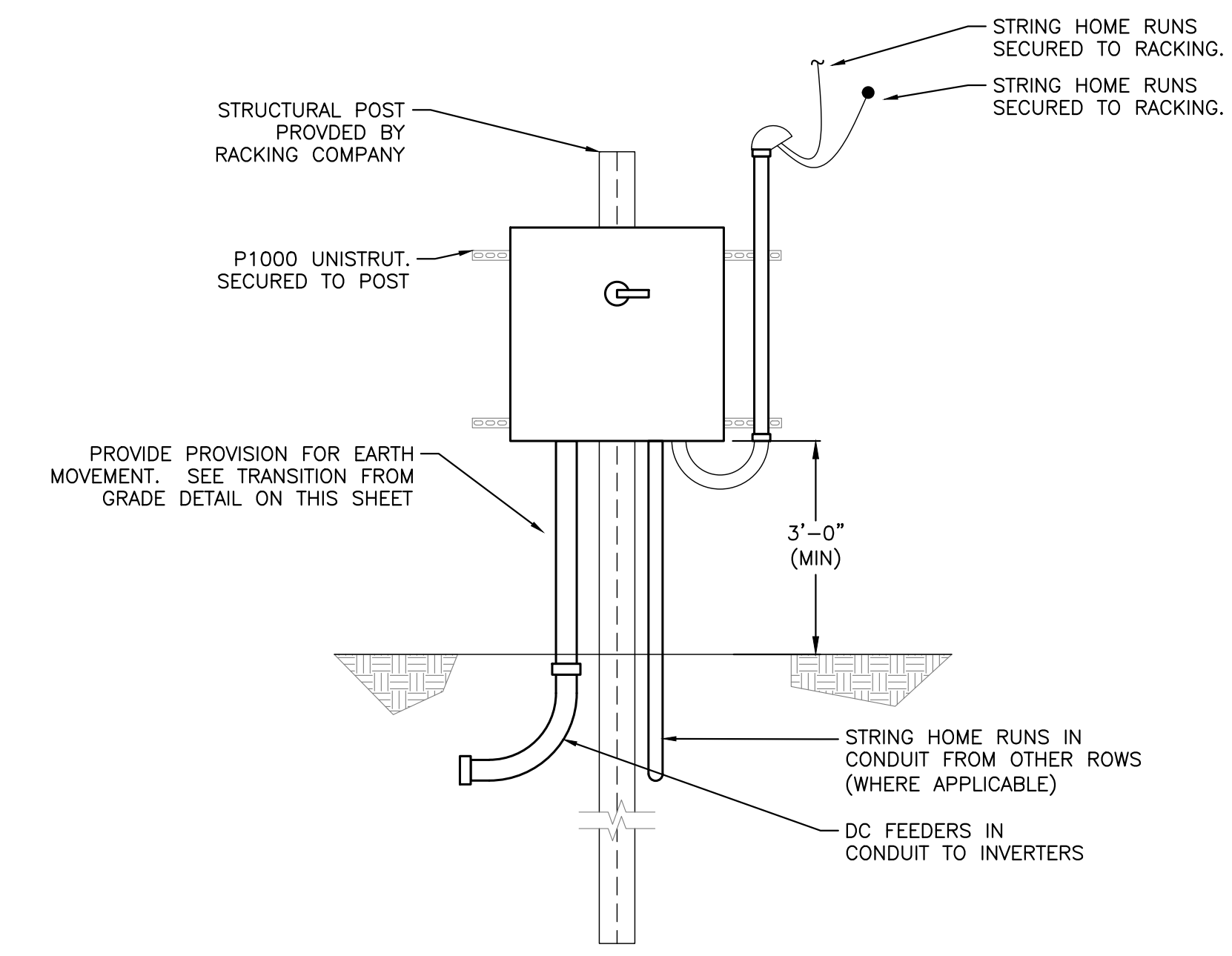
| | |
|---------------|--------------------|
| DRAWING TITLE | AC ELECTRICAL PLAN |
|---------------|--------------------|

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"

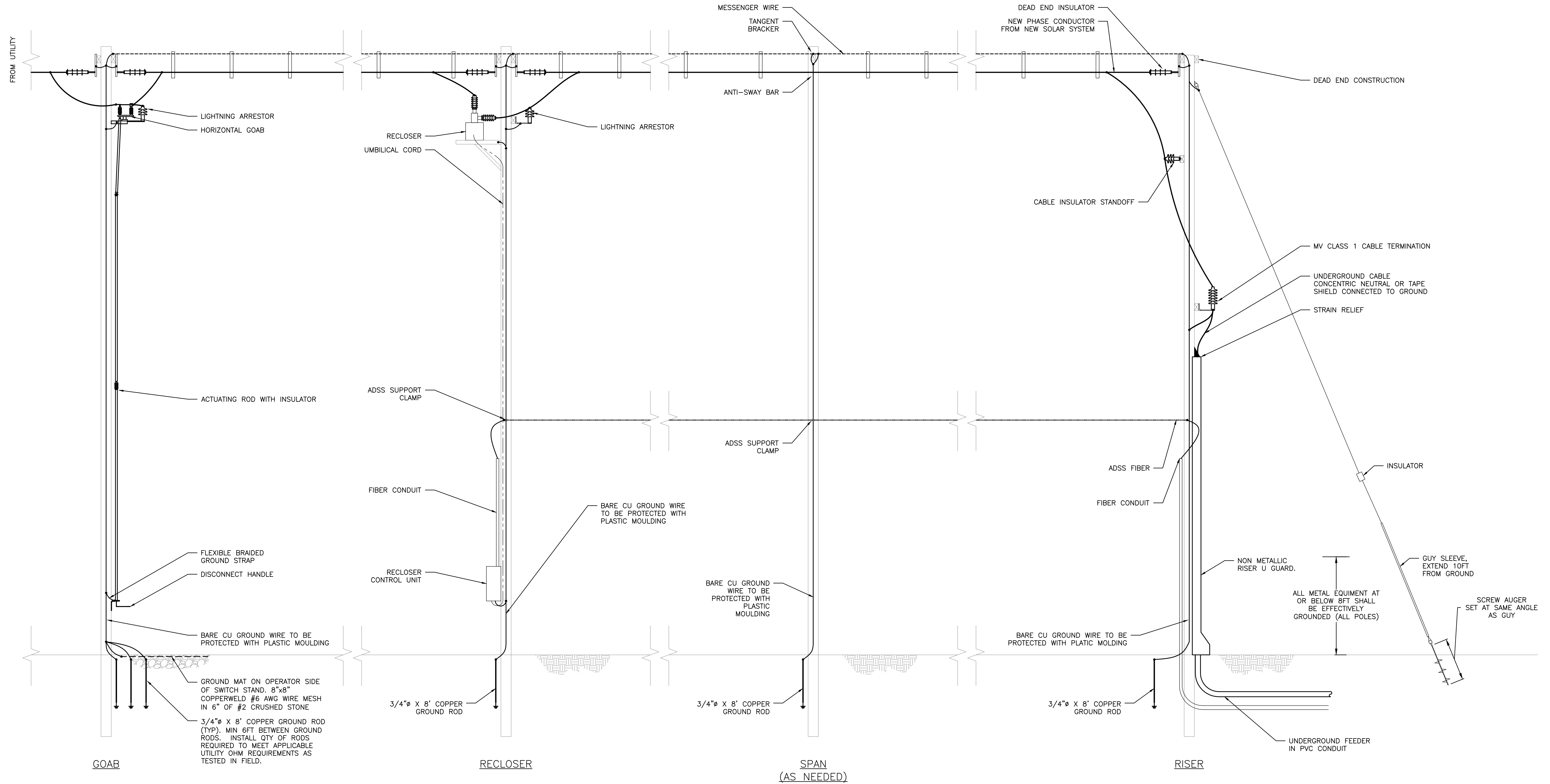


2 TYPICAL COMBINER BOX ELEVATION - FRONT VIEW
E120 SCALE: 1/2" = 1'-0"

| | |
|--|-----------|
| DRAWING TITLE | DRAWING # |
| EQUIPMENT MOUNTING DETAILS IN ARRAY | E120 |

| | | |
|---|--|---|
| PURE POWER 5 MARINE VIEW PLAZA, HARTFORD, CT 06103 WWW.PUREPOWER.COM RICHARD A. VONSON CT LICENSE NO. 03029282 | REVISION DESCRIPTION DATE | PM ENG CHK |
| | PROJECT SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE 1440 TORRINGTON STREET TORRINGTON, CONNECTICUT 06790 | DEVELOPER VEROGY 150 HARTFORD 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 MODULE QUANTITY: 5,746 / 1,274 STRING QUANTITY: 221 / 49 ORIENTATION: 30 TILT, -180 AZIMUTH | VEROGY 150 HARTFORD STREET HARTFORD, CT 06103 WWW.VEROGY.COM | DATE 09/08/2020 90% DESIGN DEVELOPMENT RKT AL R |

PLAT DATE: 10/29/2020 10:35 AM
 RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18



1 POLE LINE DETAILS
 E130 SCALE: NONE

| | |
|-------------------|-----------|
| DRAWING TITLE | DRAWING # |
| POLE LINE DETAILS | E130 |

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

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

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

VEROGY
 5 MARINE VIEW PLAZA, HARTFORD, CT
 WWW.PUREPOWER.COM
 LICENSE # 00029282
 CT LICENSE NO. 00029282

PUREPOWER
 5 MARINE VIEW PLAZA, HARTFORD, CT
 WWW.PUREPOWER.COM
 LICENSE # 00029282
 CT LICENSE NO. 00029282

| DATE | REVISION DESCRIPTION | PM | ENG | CHK |
|------|----------------------|----|-----|-----|
| | | | | |

RULER IN INCHES: 0 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) |
| 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: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020
 PM / ENG / CHK: [Blank]
 DATE: 10/29/2020
 REVISION DESCRIPTION: 10/29/2020
 PM / ENG / CHK: [Blank]

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

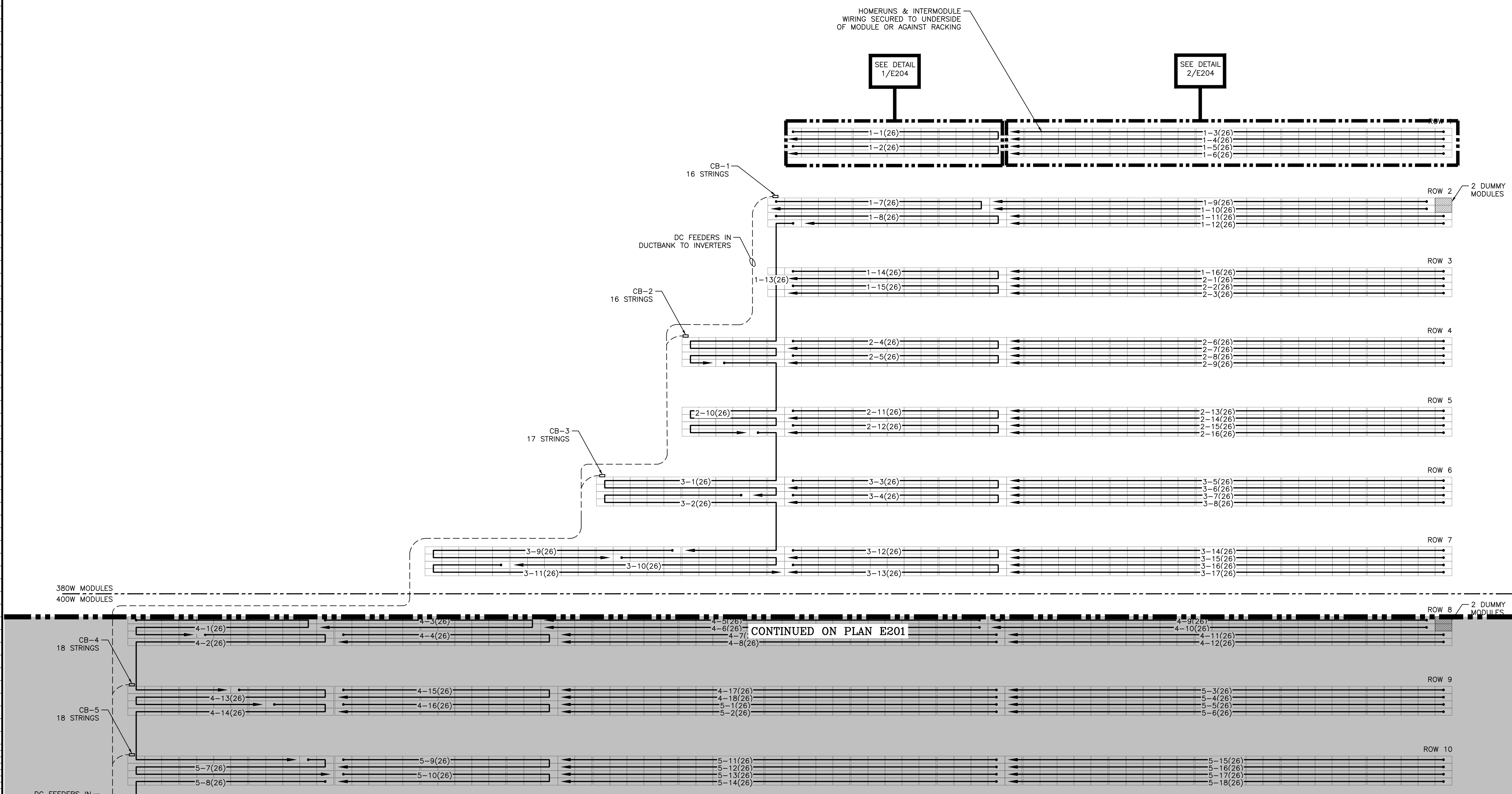
VEROGY
 DEVELOPER
 150 HARTFORD STREET
 4TH FLOOR
 HARTFORD, CT 06103
 WWW.VEROGY.COM

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, -180° AZIMUTH

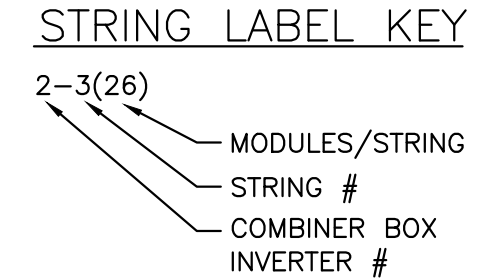
PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE
 1440 TORRINGTON STREET
 TORRINGTON, CONNECTICUT 06790

DRAWING # E200



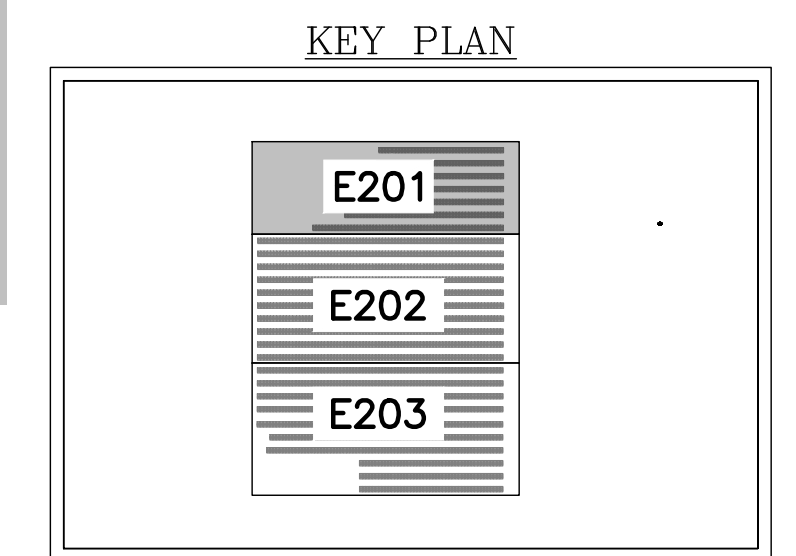
IMPORTANT
CONTRACTOR MUST REDLINE DRAWINGS TO REFLECT EXACT AS-BUILT STRINGING AND RETURN TO PURE POWER.

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



STRING SUMMARY

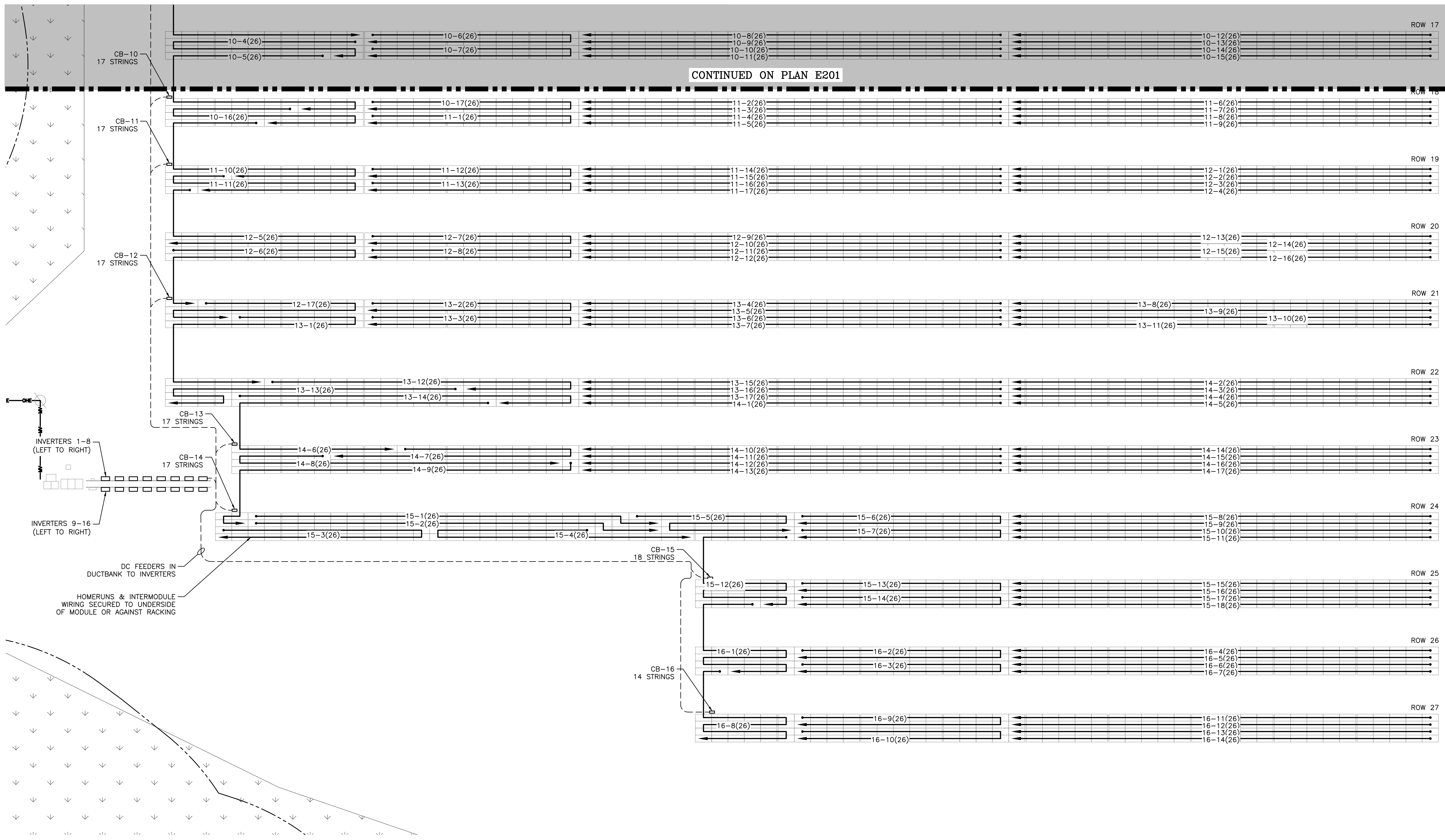
| Inverter | String Quantity | Module Quantity | Module Type |
|----------|-----------------|-----------------|-------------|
| 1 | 16 | 26 | 380W |
| 2 | 16 | 26 | 380W |
| 3 | 17 | 26 | 380W |



DRAWING TITLE: DC ELECTRICAL PLAN NORTH

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) |
| 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

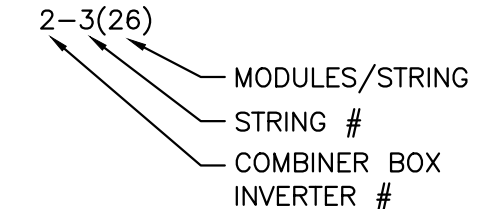
CONTINUED ON PLAN E201

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

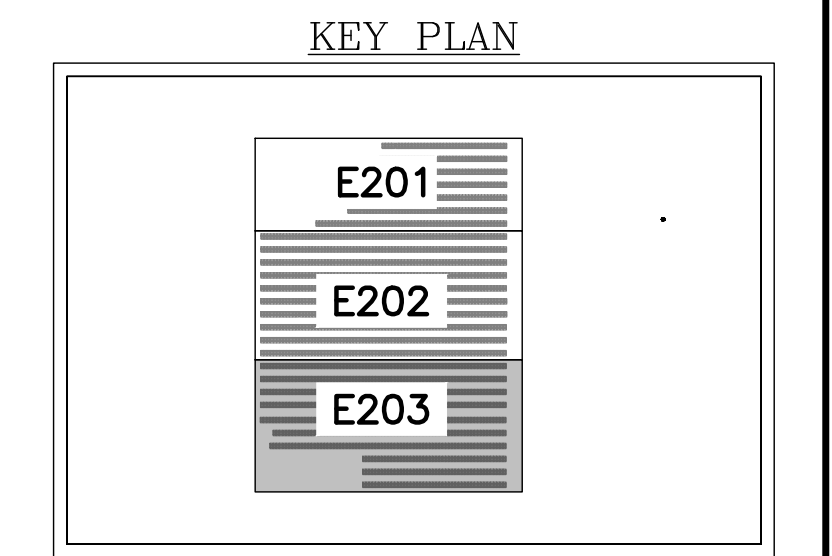
1 DC ELECTRICAL PLAN - SOUTH
E202 SCALE: 1" = 20'-0"



STRING LABEL KEY



| STRING SUMMARY | | | |
|----------------|-----------------|-----------------|-------------|
| 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 |



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: RKL ES RL

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, -1.60° AZIMUTH

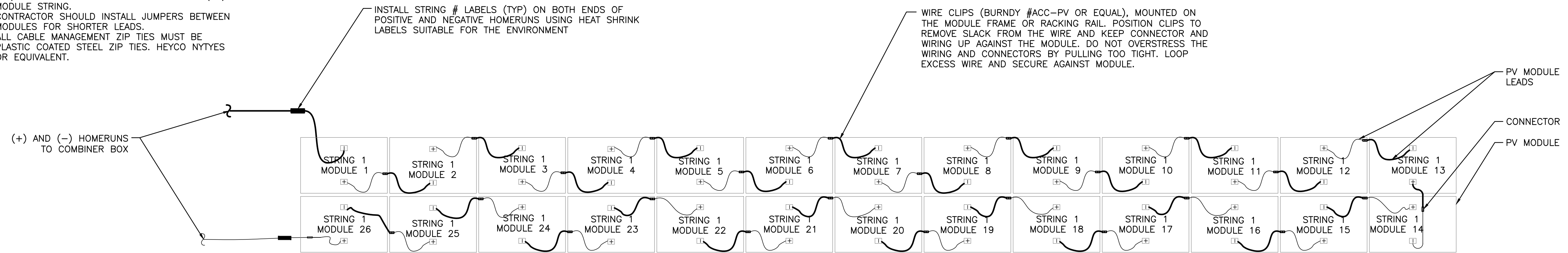
PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE
 1440 TORRINGTON STREET
 TORRINGTON, CONNECTICUT 06790

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:

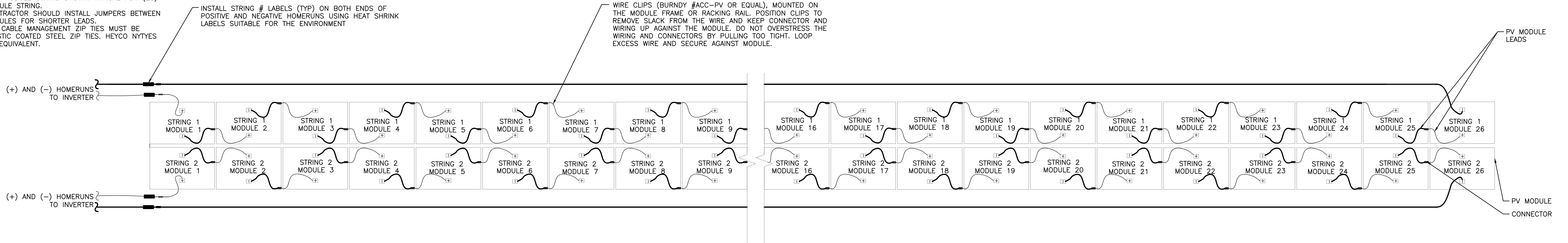
1. CONDUCTORS TRANSITIONING BETWEEN TABLES SHALL BE PROPERLY SECURED AND PROTECTED WITH UV RESISTANT SPLIT LOOM OR SPIRAL WRAP.
2. STRING HOME RUN CONDUCTORS SHALL USE HORIZONTAL PURLINS FOR CABLE MANAGEMENT AND SUPPORT. SECURE CONDUCTORS WITH UV RESISTANT CABLE TIES.
3. (26) MODULE STRING SHOWN. TYPICAL 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:

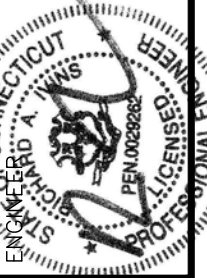
1. CONDUCTORS TRANSITIONING BETWEEN TABLES SHALL BE PROPERLY SECURED AND PROTECTED WITH UV RESISTANT SPLIT LOOM OR SPIRAL WRAP.
2. STRING HOME RUN CONDUCTORS SHALL USE HORIZONTAL PURLINS FOR CABLE MANAGEMENT AND SUPPORT. SECURE CONDUCTORS WITH UV RESISTANT CABLE TIES.
3. (26) MODULE STRING SHOWN. TYPICAL 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

| | |
|-----------------------------|-----------|
| DRAWING TITLE | DRAWING # |
| PV MODULES & WIRING DETAILS | E204 |

| | |
|--|--|
| 5 MARINE VIEW PLAZA, HOBOKEN, NJ WWW.PUREPOWER.COM RICHARD A. VON CT LICENSE NO. 03029282 | DATE: 10/08/2020 REVISION DESCRIPTION: ISSUE FOR PERMIT DATE: 09/04/2020 REVISION DESCRIPTION: 80% DESIGN DEVELOPMENT |
| | 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, -1.60° AZIMUTH | PAGE SIZE: 36" x 24" PROJECT #: 00034 |



PLT 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% |

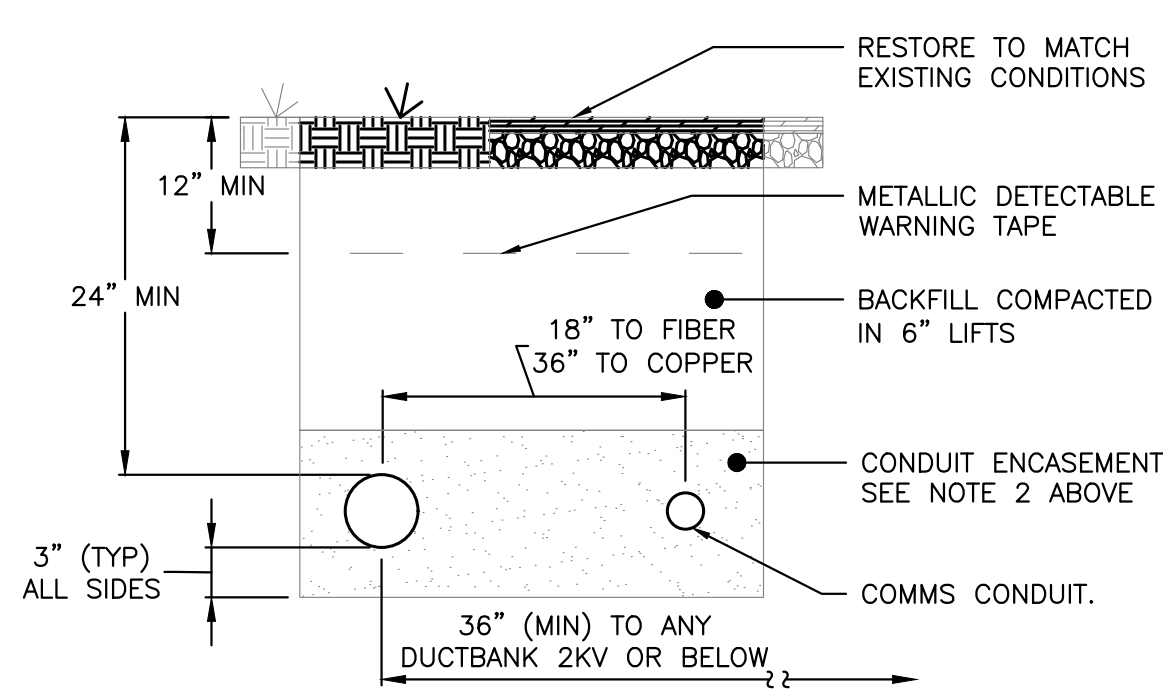
| INVERTERS 8 THRU 10 | | | | |
|---------------------|-------------------------------|-------------------------------------|------------------------|---------------------|
| STRING NUMBER | STRING TO INVERTER WIRE GAUGE | STRING TO INVERTER IMPEDANCE (Ω/ft) | STRING DISTANCE (FEET) | STRING VOLTAGE 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</ | |

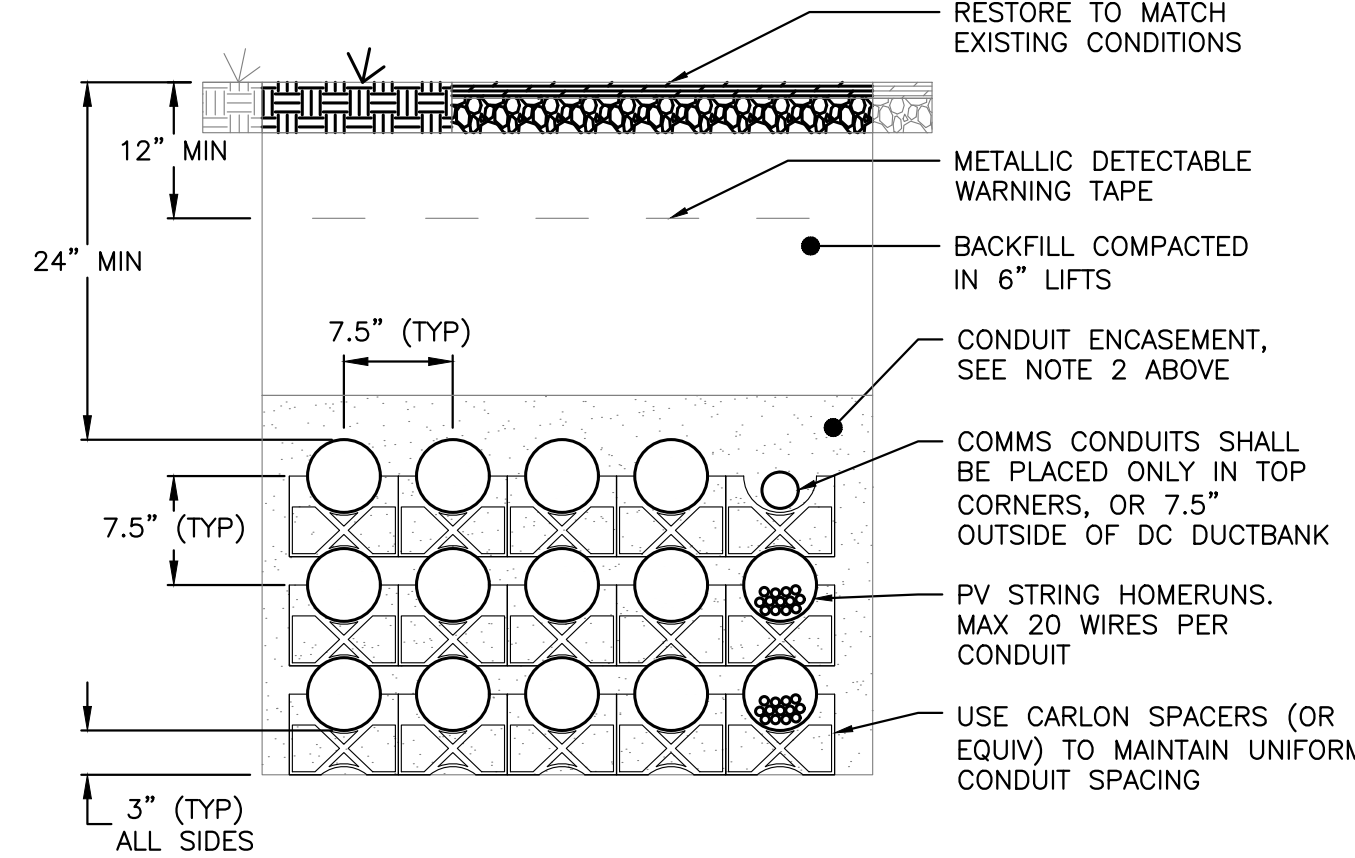
RULER IN INCHES: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

- 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.



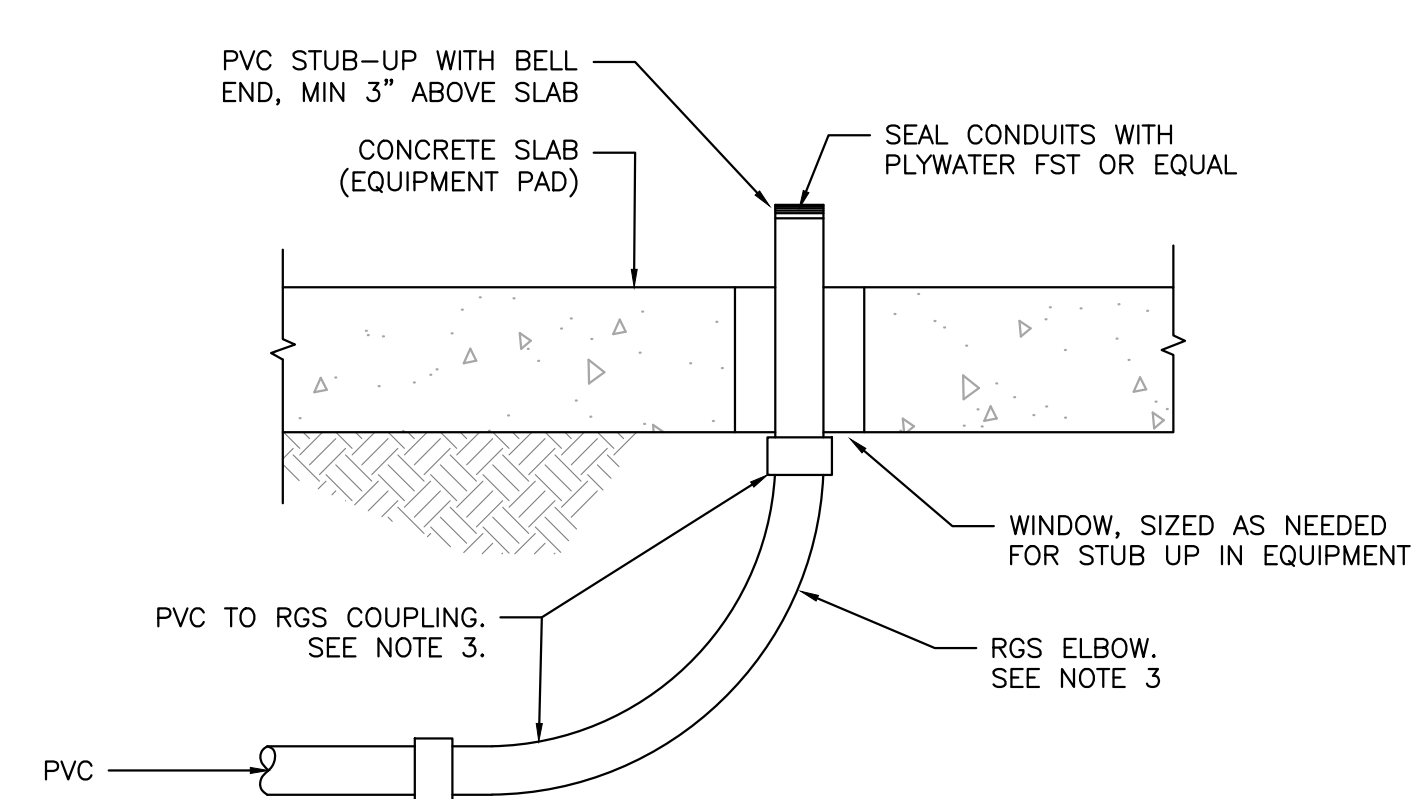
1 TYPICAL MV DUCTBANK DETAIL
E402 SCALE: NONE

- 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.



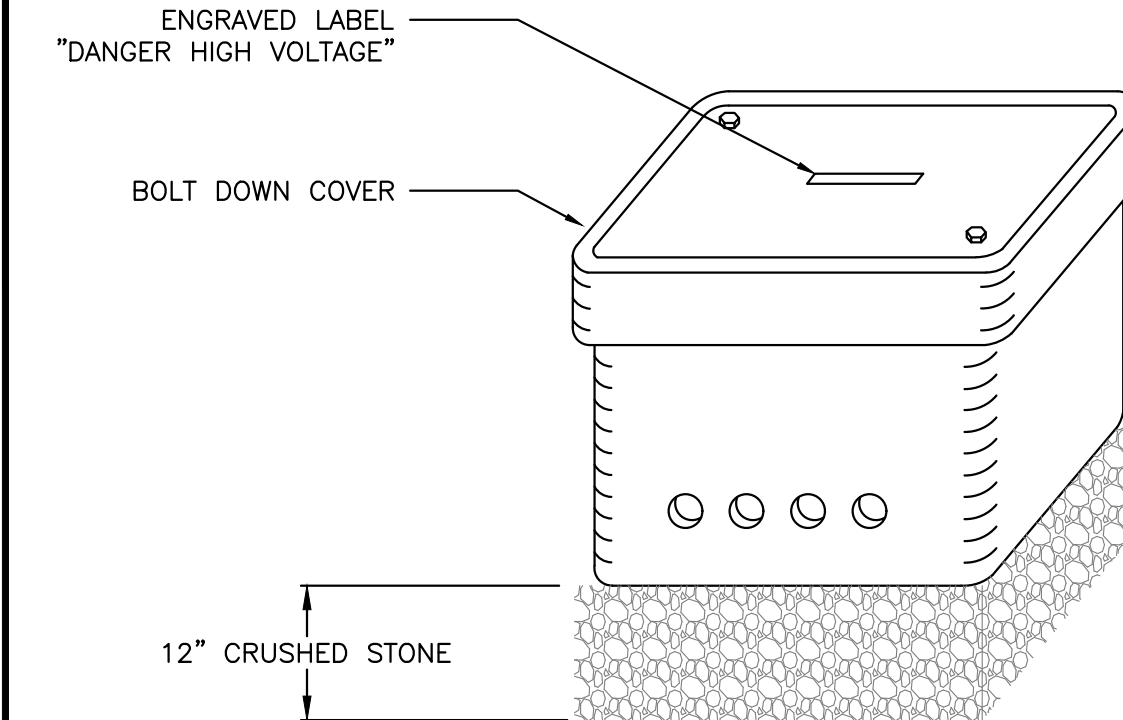
2 TYPICAL 1500VDC DUCTBANK DETAIL
E402 SCALE: NONE

- 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.

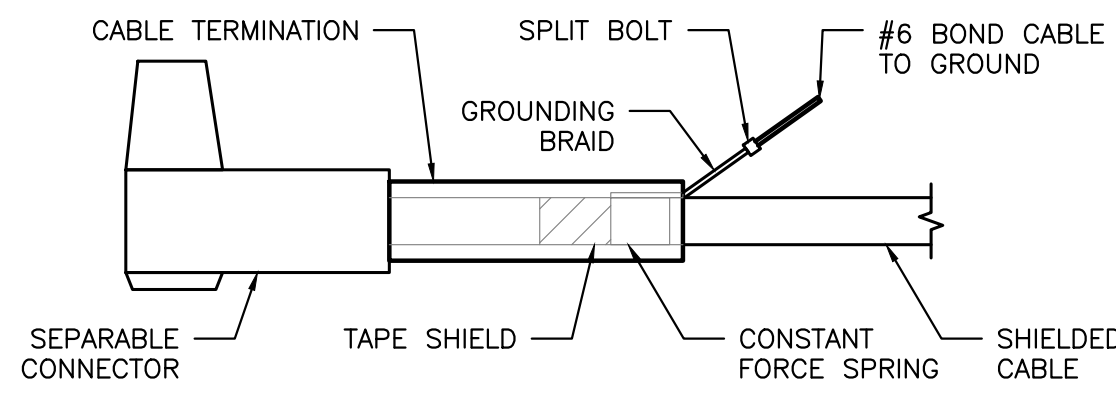


3 EQUIPMENT PAD STUB-UP DETAIL
E402 SCALE: NONE

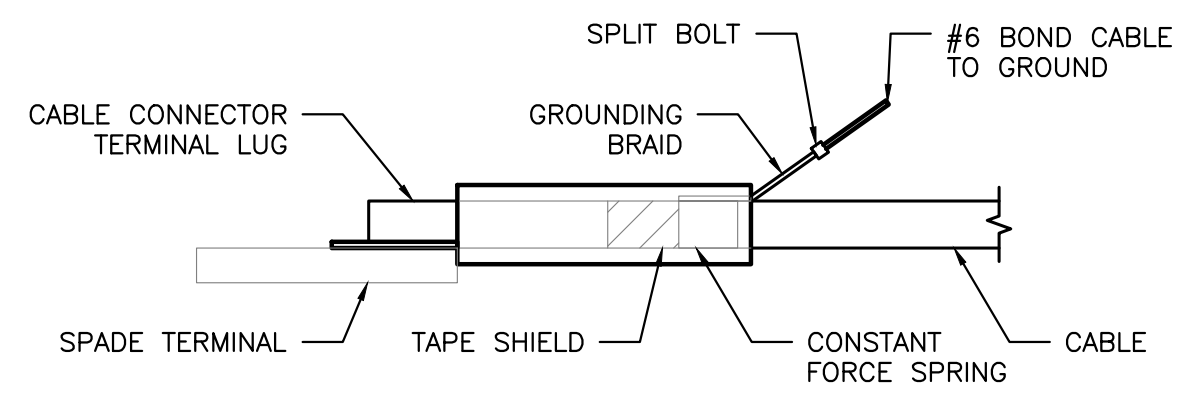
- NOTES:**
- BOX SHALL BE RATED T8 FOR USE IN GRASSY AREAS NOT SUBJECT TO VEHICULAR TRAFFIC, OR RATED T22 FOR USE IN SIDEWALKS OR PARKING LOTS SUBJECT TO OCCASIONAL NON-DELIBERATE HEAVY VEHICULAR TRAFFIC. BOXES TO BE USED IN ROADWAYS OR AREAS FREQUENTLY SUBJECT TO HEAVY VEHICULAR TRAFFIC SHALL BE SUBMITTED 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

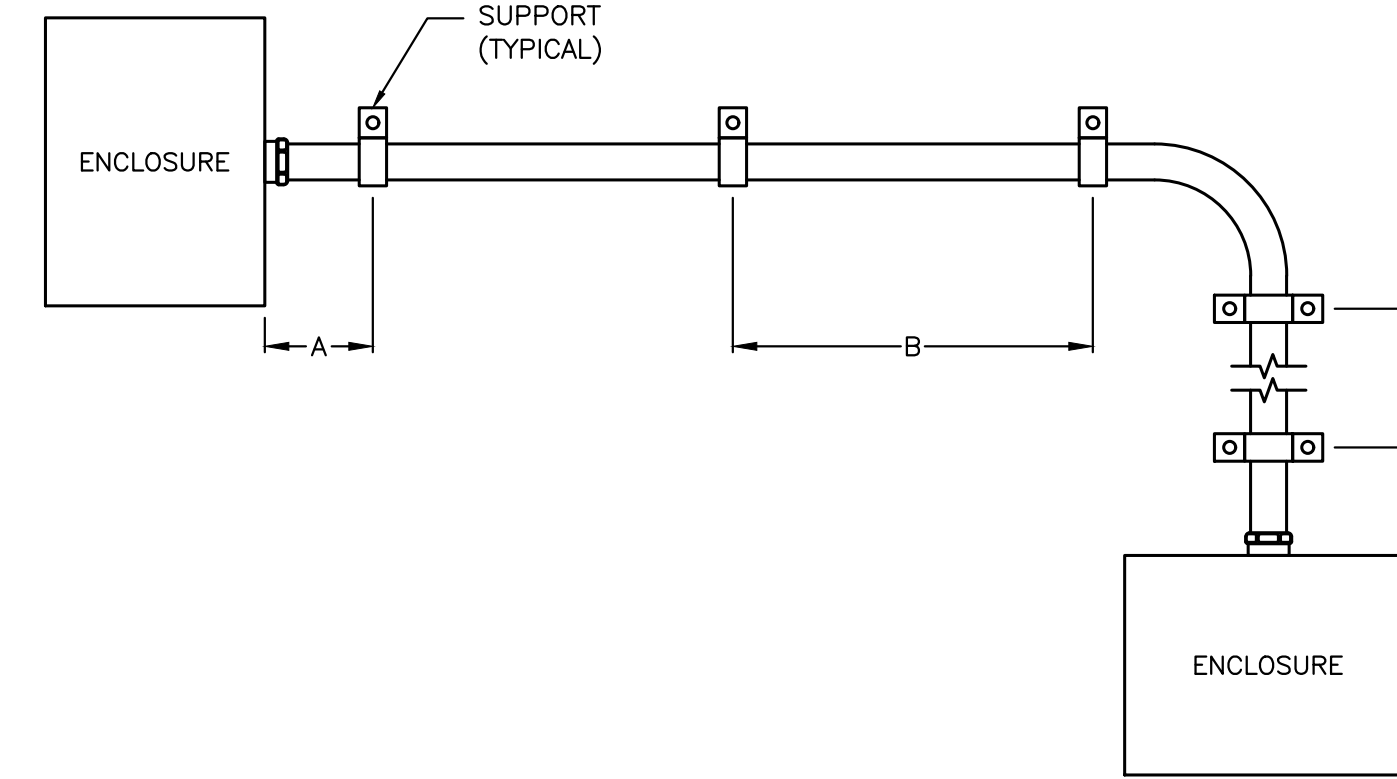


DEAD FRONT MV TERMINATION



LIVE FRONT MV TERMINATION

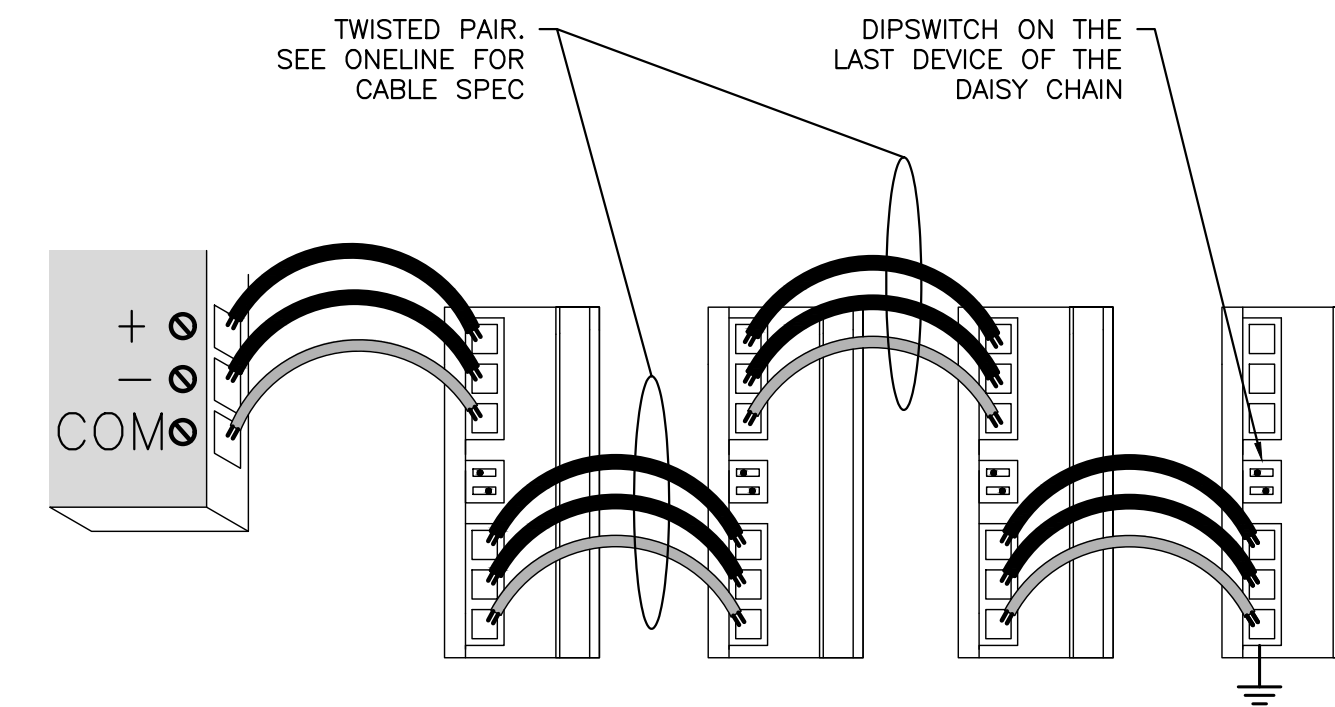
5 SHIELDED CABLE DETAIL
E402 SCALE: NONE



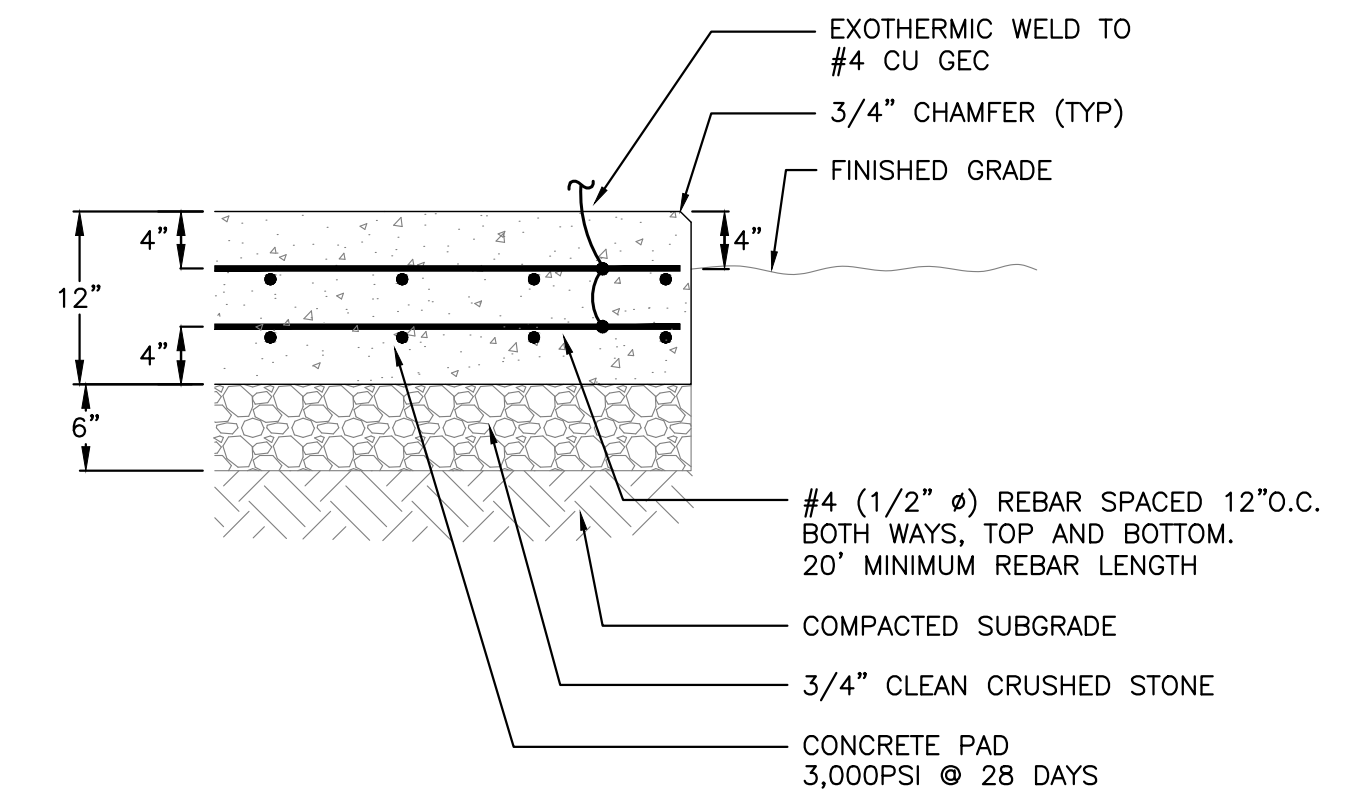
6 CONDUIT SUPPORT SPACING
E402 SCALE: NONE

| 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 |

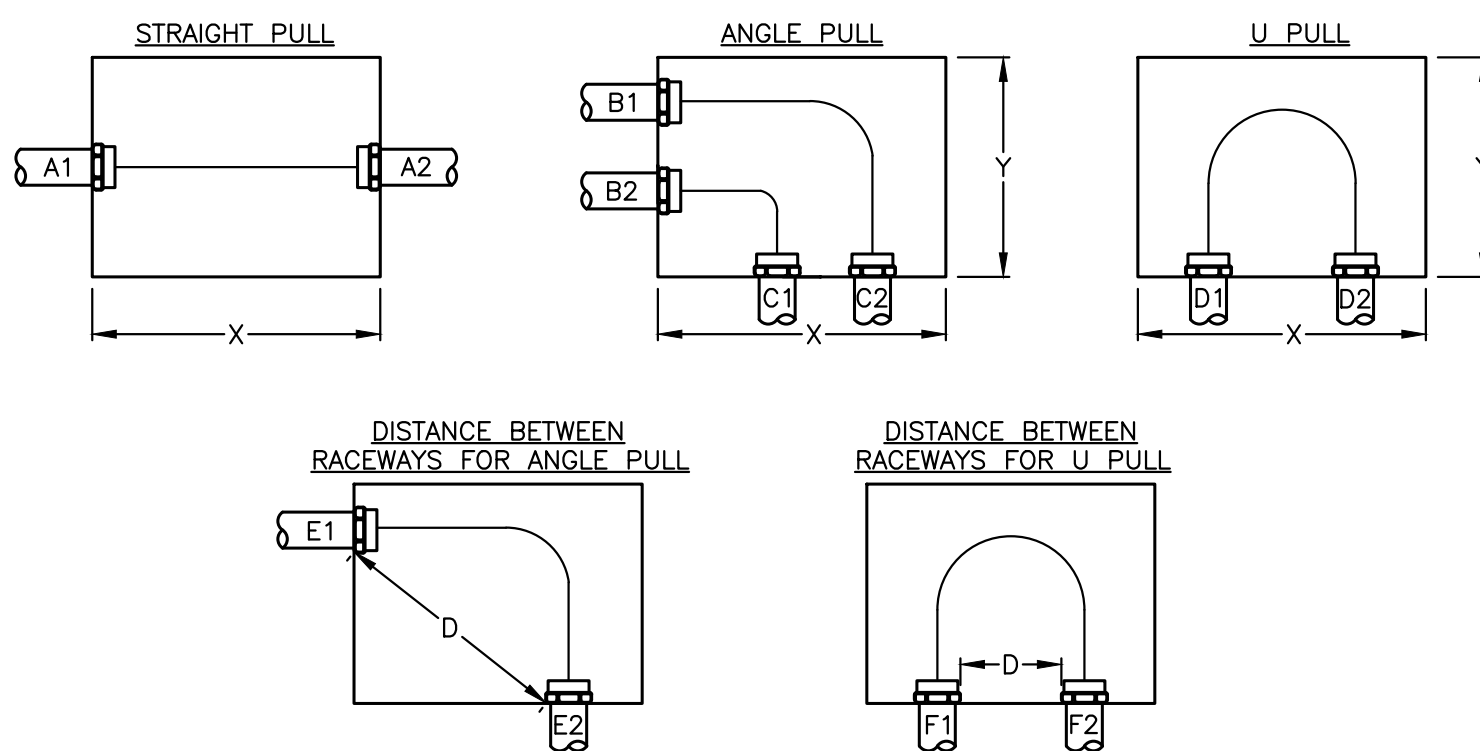
- MONITORING NOTES:**
- REFER TO MONITORING SYSTEM INSTALLATION MANUAL FOR DETAILS ON TERMINAL BLOCKS, CABLE TERMINATIONS, AND SYSTEM CONFIGURATION.
 - WIRELESS TRANSCEIVERS MUST HAVE LINE-OF-SIGHT BETWEEN EACH OTHER.
 - PYRANOMETER MUST BE INSTALLED IN UNSHADED LOCATION.



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

DRAWING TITLE
ELECTRICAL DETAILS

DRAWING #
E402

PROJECT: SOLAR GROUND MOUNT SYSTEM AT TORRINGTON SOLAR ONE
 1440 TORRINGTON STREET
 TORRINGTON, CONNECTICUT 06790
 PROJECT # 1274
 DRAWING # E402
 DATE: 09/04/2020
 REVISION DESCRIPTION: 90% DESIGN DEVELOPMENT
 DRAWN BY: R. LES
 CHECKED BY: R. LES
 DESIGNED BY: R. LES
 PURSPOWER
 5 MARINE VIEW PLAZA, HARTFORD, CT 06103
 WWW.PURSPOWER.COM
 LICENSE NO. 03029282
 VEROGY
 150 HARTFORD STREET
 HARTFORD, CT 06103
 WWW.VEROGY.COM
 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, -16° AZIMUTH

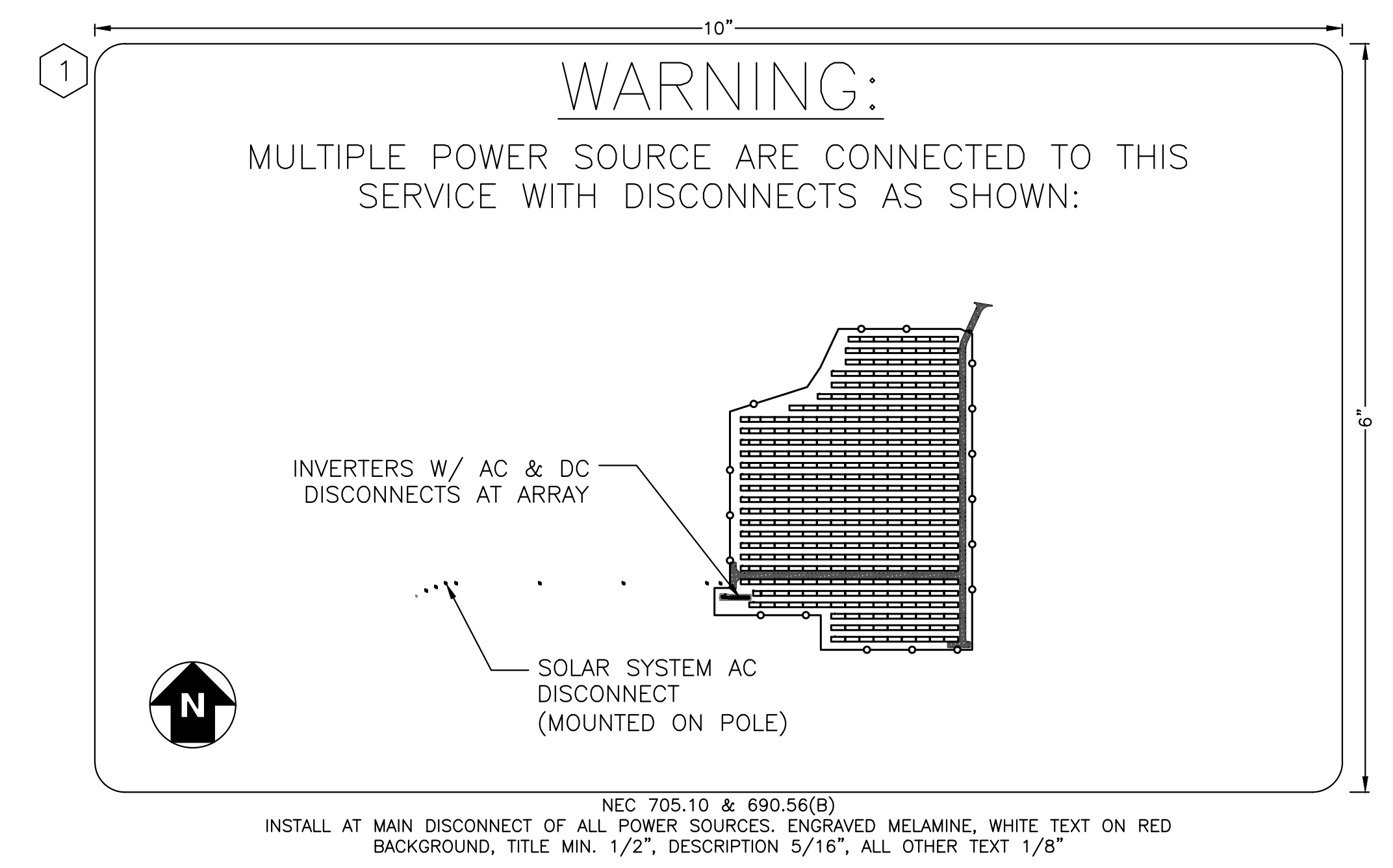
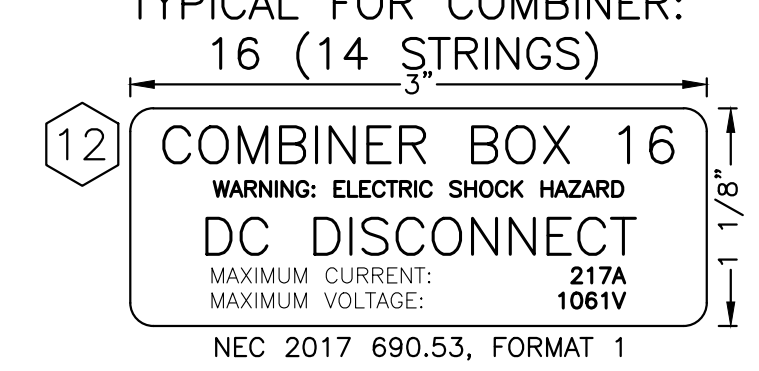
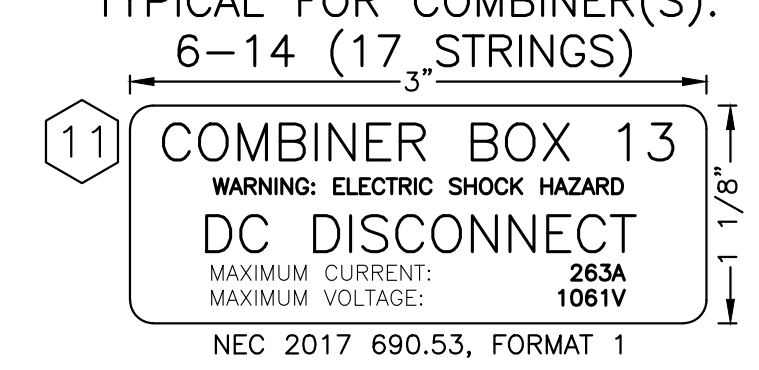
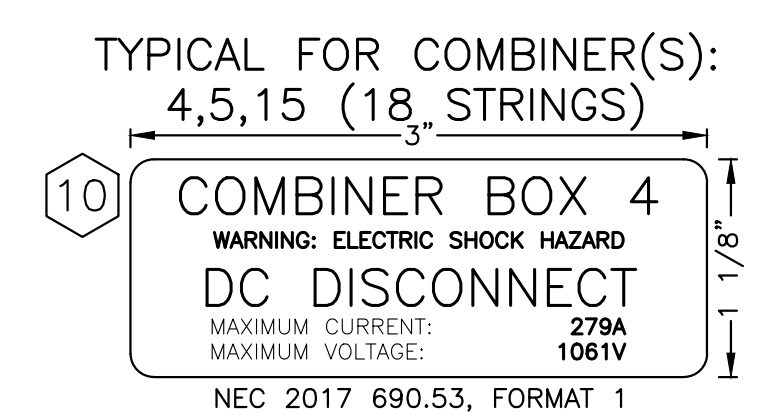
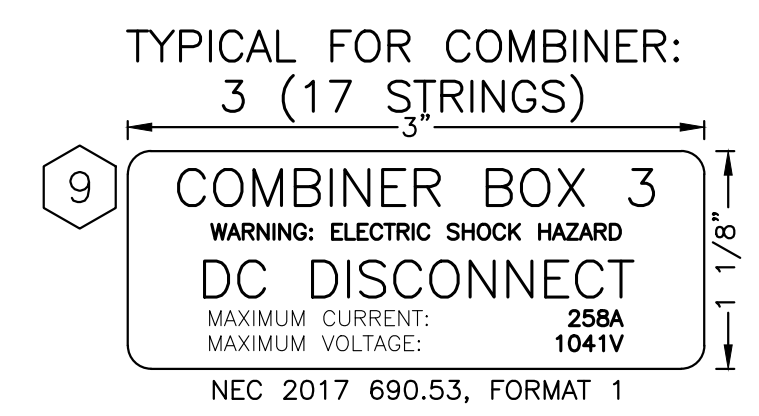
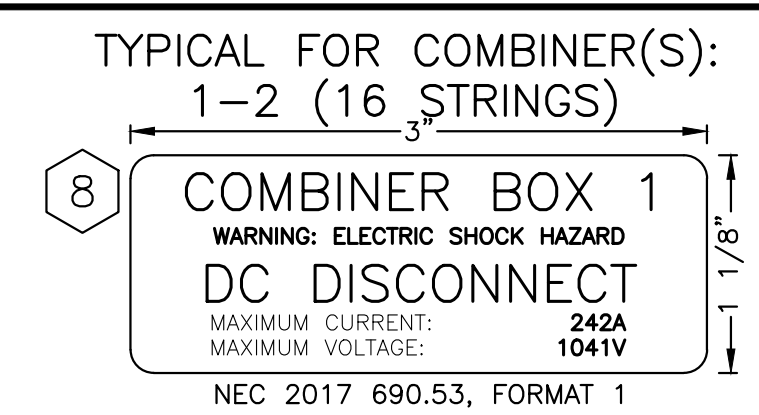
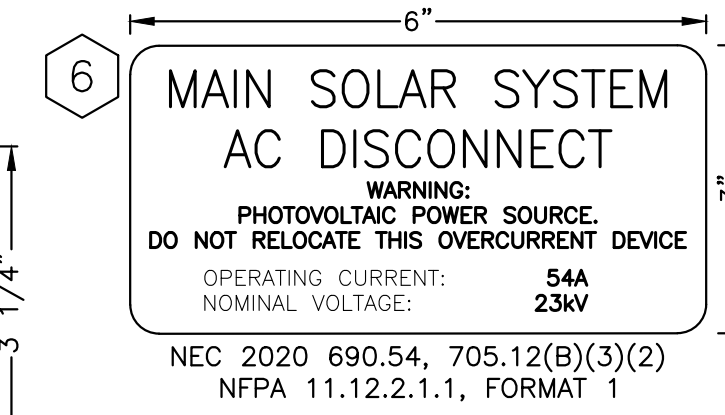
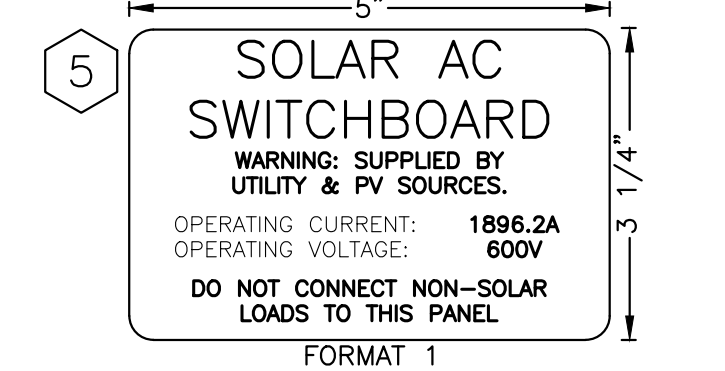
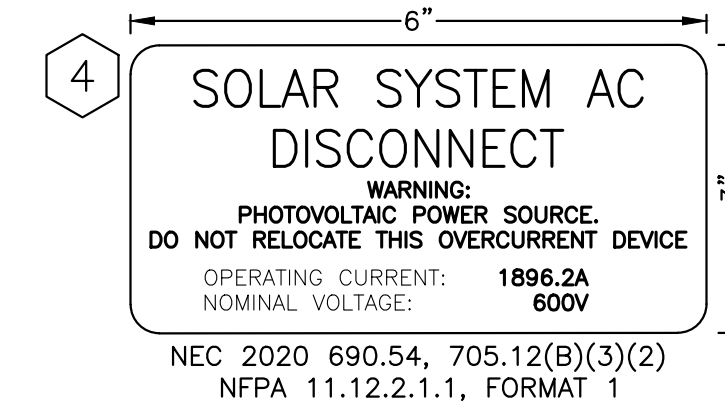
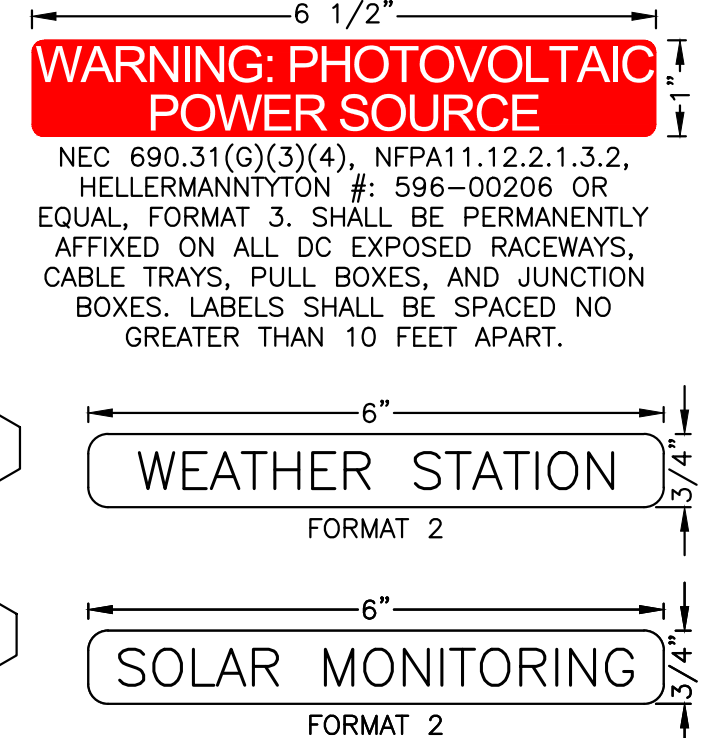
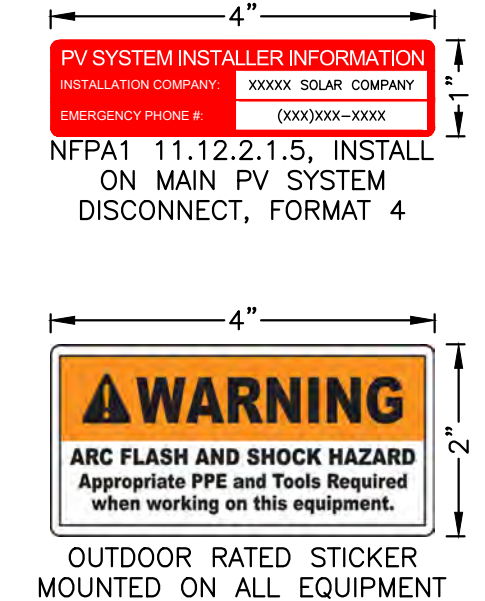
RULER IN INCHES: 0 1/2 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

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.

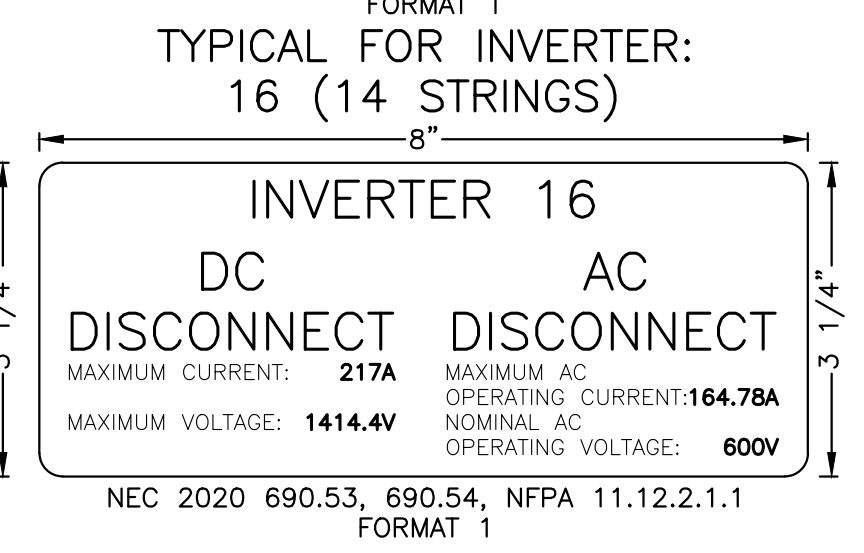
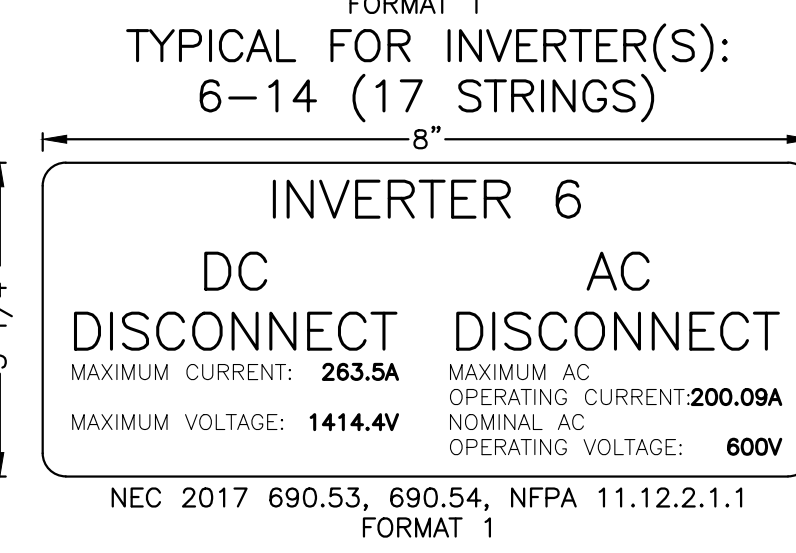
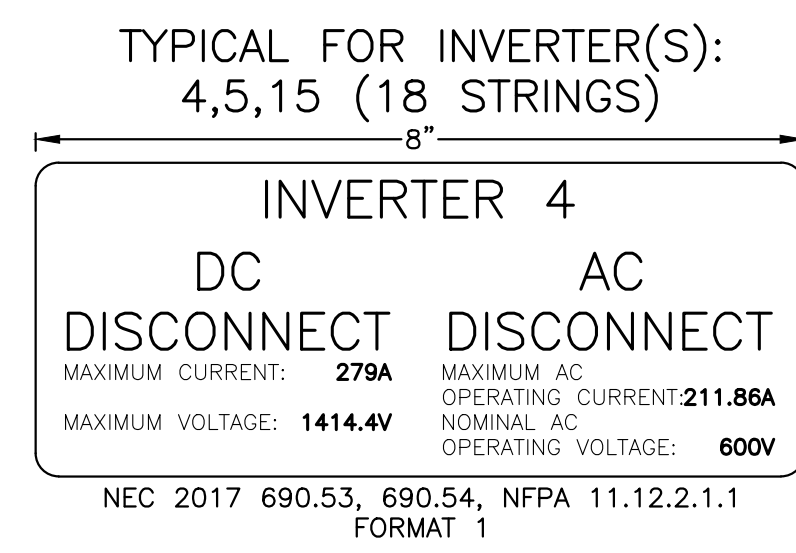
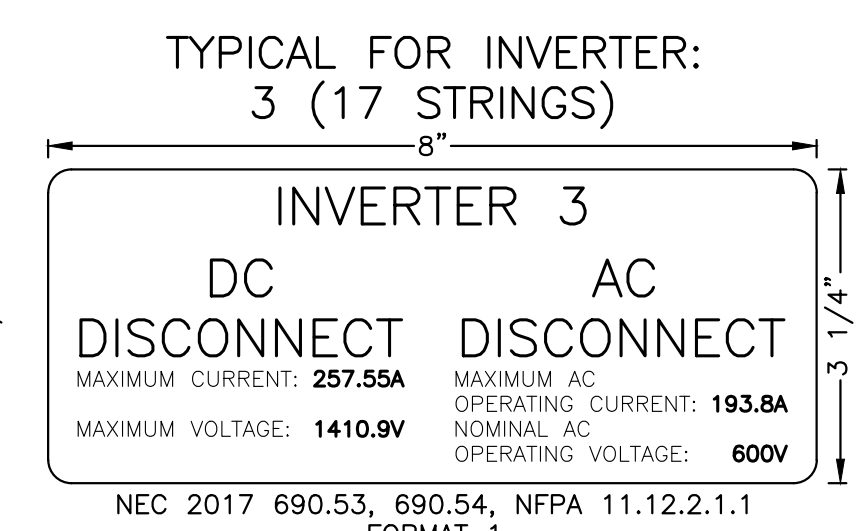
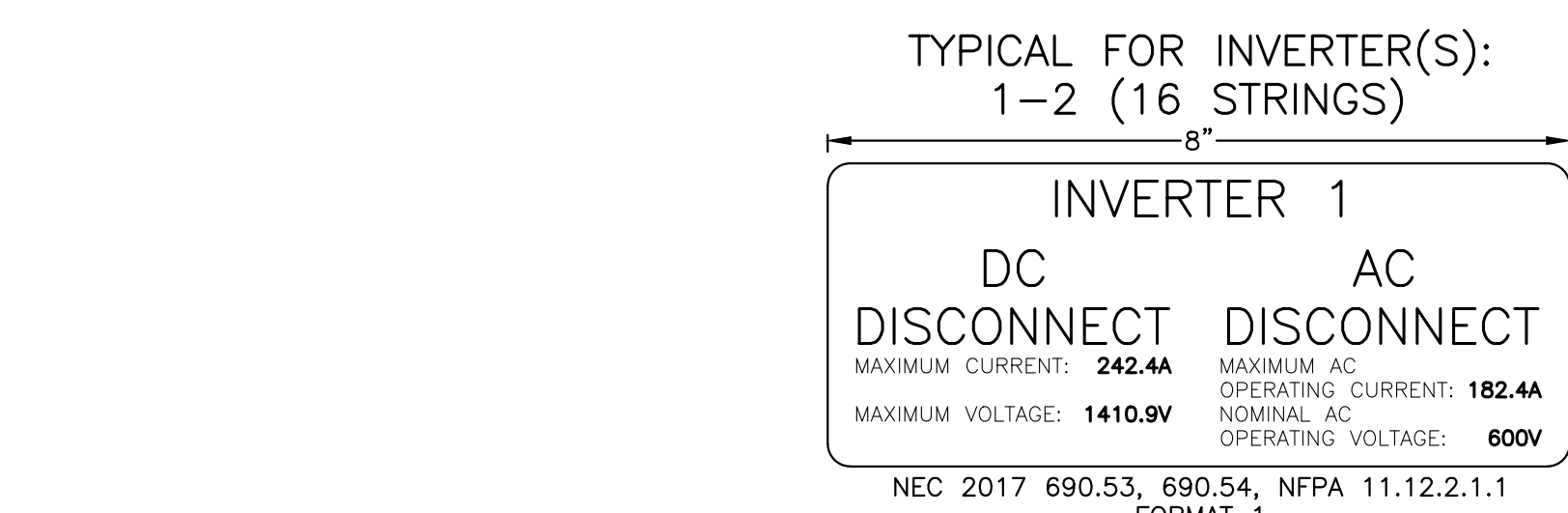
LABEL FORMAT NOTES:
 1. **FORMAT 1:** ENGRAVED MELAMINE, WHITE TEXT ON RED BACKGROUND. TEXT HEIGHT: TITLES 3/8", ALL OTHER TEXT 5/32".
 2. **FORMAT 2:** ENGRAVED MELAMINE, BLACK TEXT ON WHITE BACKGROUND. TEXT HEIGHT: 3/8".
 3. **FORMAT 3:** REFLECTIVE UV RATED LABEL, RED BACKGROUND WITH WHITE CAPITAL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

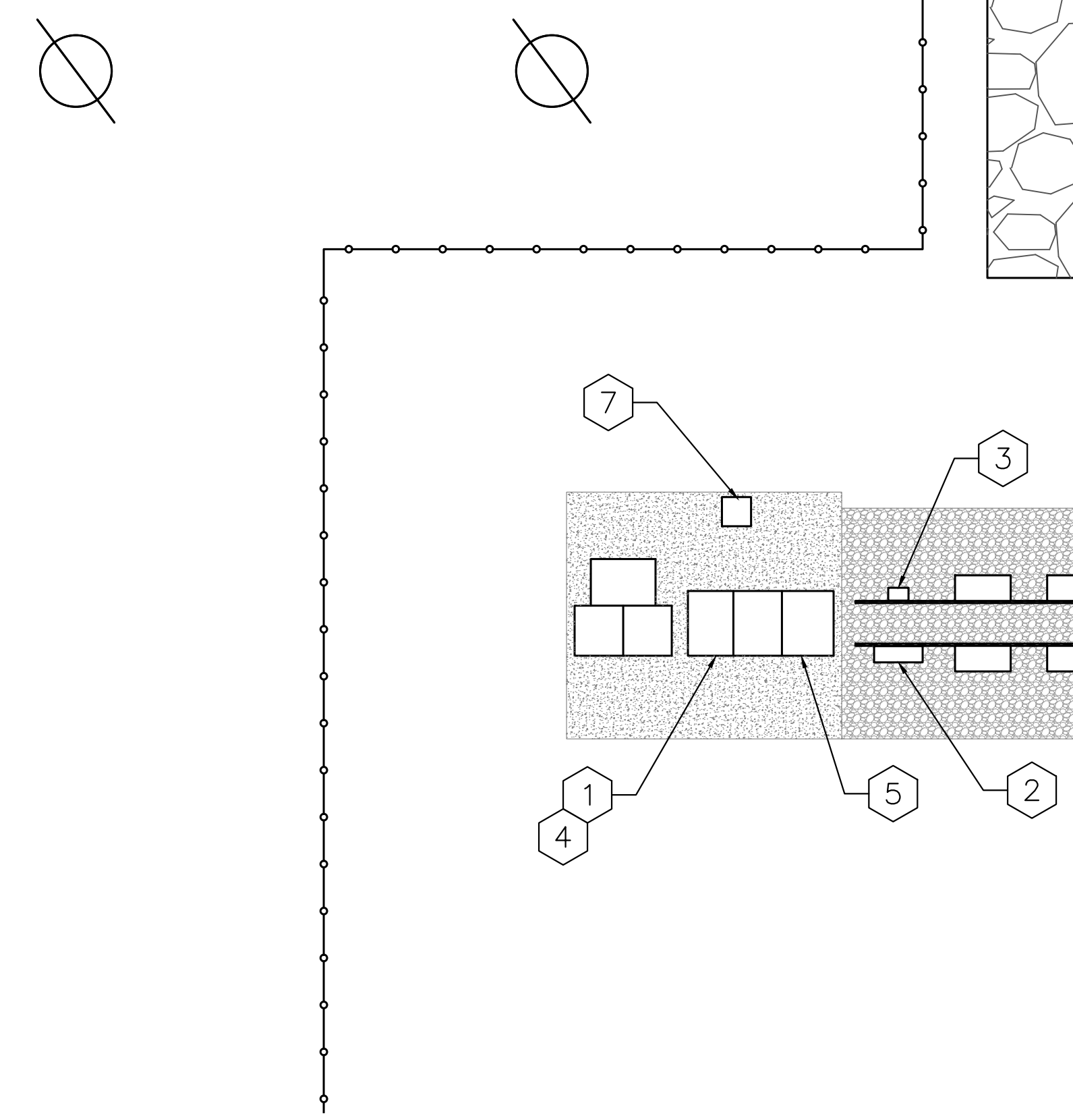
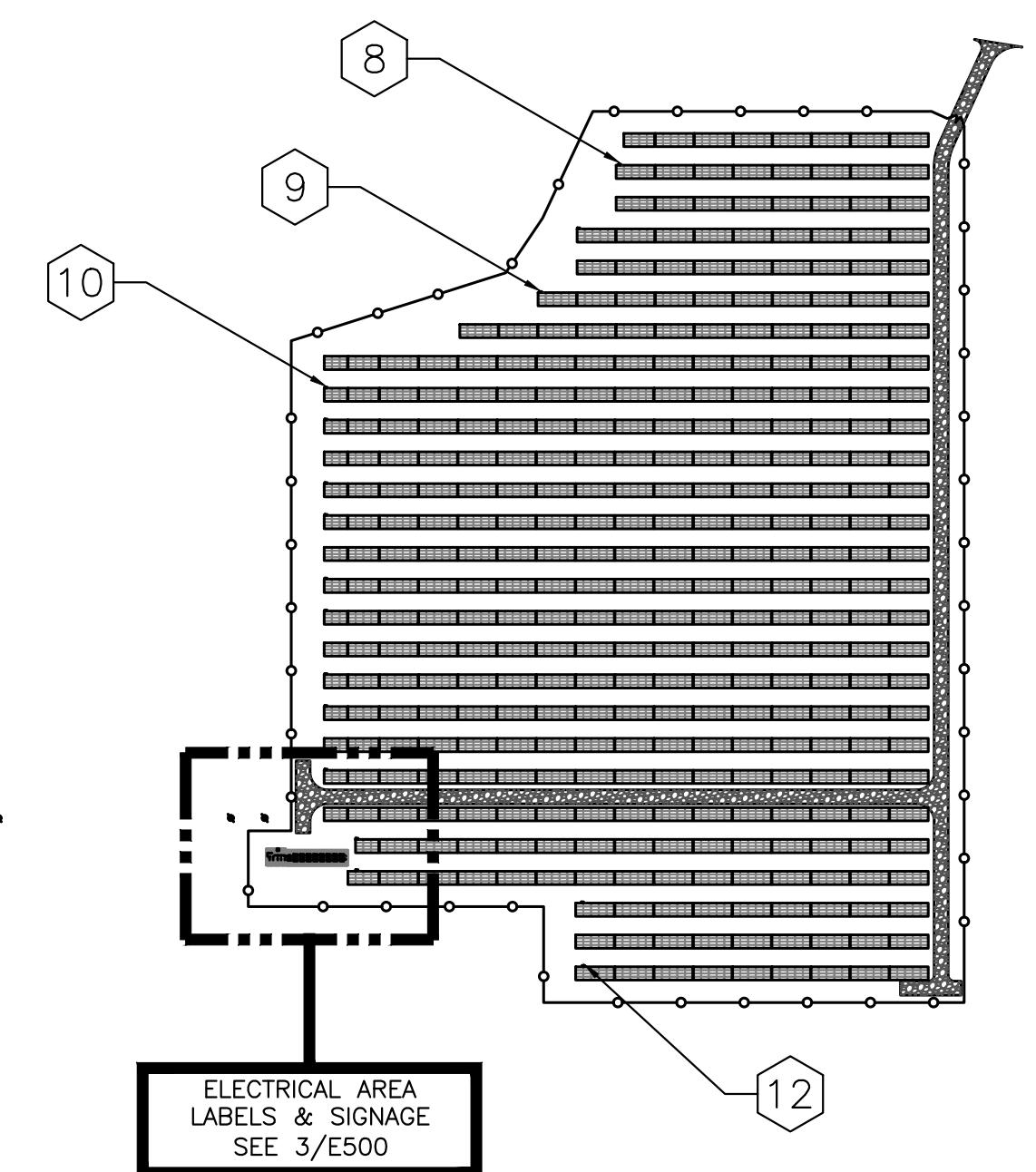


2 DIRECTORY LABEL
 E500 SCALE: 1:1



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

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



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

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
 STRING QUANTITY: 5,746 / 1,274
 STRING QUANTITY: 221 / 49
 ORIENTATION: 30° TILT, -1.60° AZIMUTH

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

DATE: 10/29/2020
 REVISION DESCRIPTION: PM TENG CHK
 DATE: 10/08/2020
 ISSUE FOR PERMIT: RJK, GP, RI
 DATE: 09/09/2020
 90% DESIGN DEVELOPMENT: RJK, ES, RI

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 1741 | UL 1741 |
| 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 |

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