



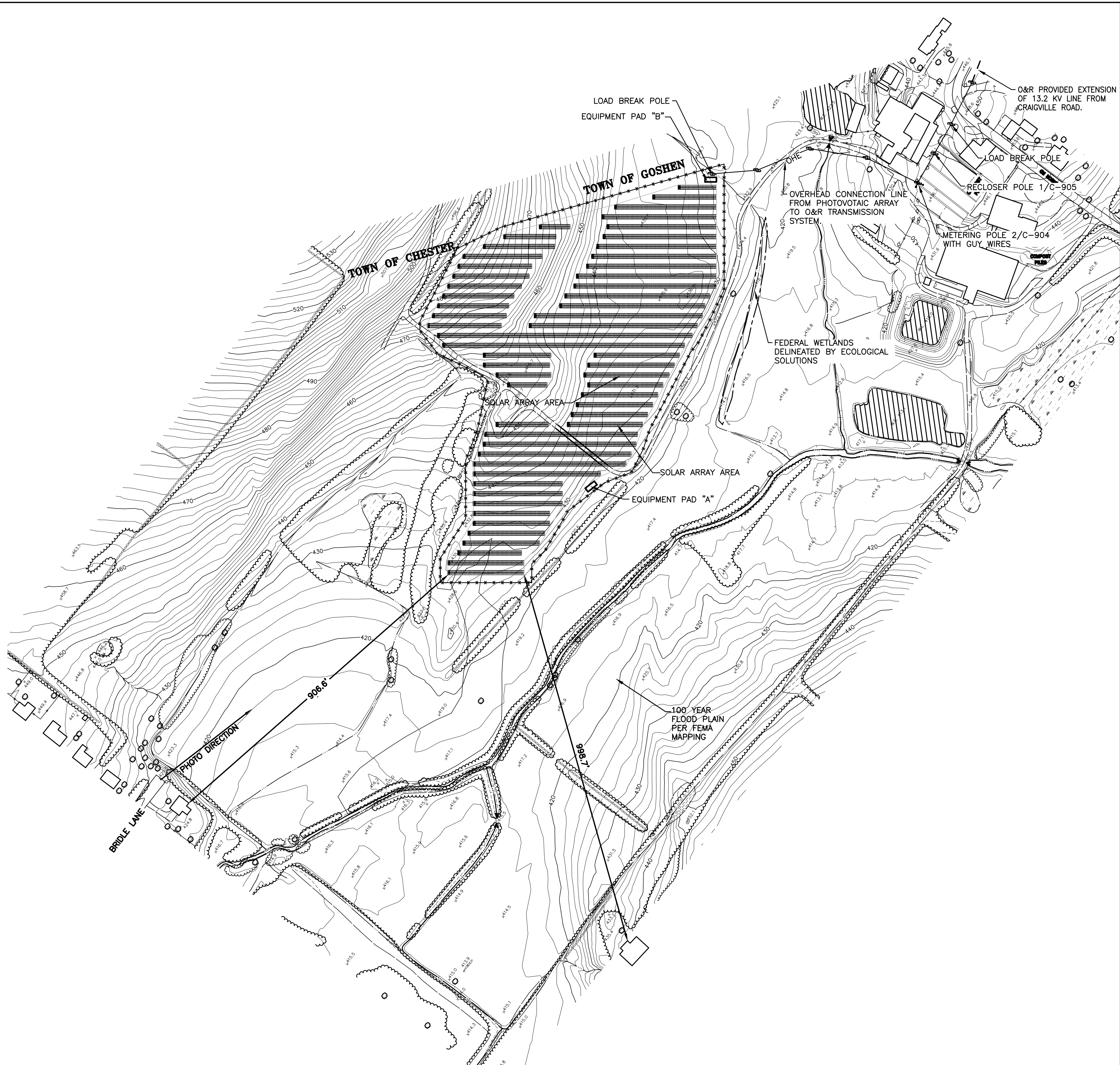




1 PREVIOUS SOLAR ARRAY LAYOUT (JAN 5, 2016 PUBLIC HEARING)  
1"=150'±

**DECOMMISSIONING BOND**

ON OR BEFORE THE TENTH (10TH) YEAR OF OPERATIONS, OWNER SHALL PROVIDE TO TOWN EVIDENCE OF DECOMMISSIONING AND REMOVAL BOND IN AN AMOUNT THAT WILL COVER REMOVAL COSTS, WHICH AMOUNT SHALL NOT BE LESS THAN THIRTY THOUSAND DOLLARS (\$30,000.00) PER MEGAWATT OF INSTALLED CAPACITY. THE BOND WILL PROVIDE FOR DECOMMISSIONING AND REMOVAL OF THE SOLAR ARRAY, IN THE EVENT THE SYSTEM IS NOT REMOVED BY THE SYSTEM OWNER AFTER FULFILLING ITS USEFUL LIFE AND OR ABANDONMENT IN EXCESS OF TWELVE (12) MONTHS. THE BOND WILL BE MAINTAINED FROM YEAR 10 THROUGHOUT THE PROJECT'S REMAINING YEARS OF OPERATION. UPON REQUEST, OWNER WILL PROVIDE EVIDENCE OF SAID BOND.



2 PROPOSED SOLAR ARRAY LAYOUT (SCHEDULED MARCH 2, 2016 PUBLIC HEARING)  
1"=150'±



3 PHOTO VIEW FROM END OF BRIDLE LANE  
N.T.S.



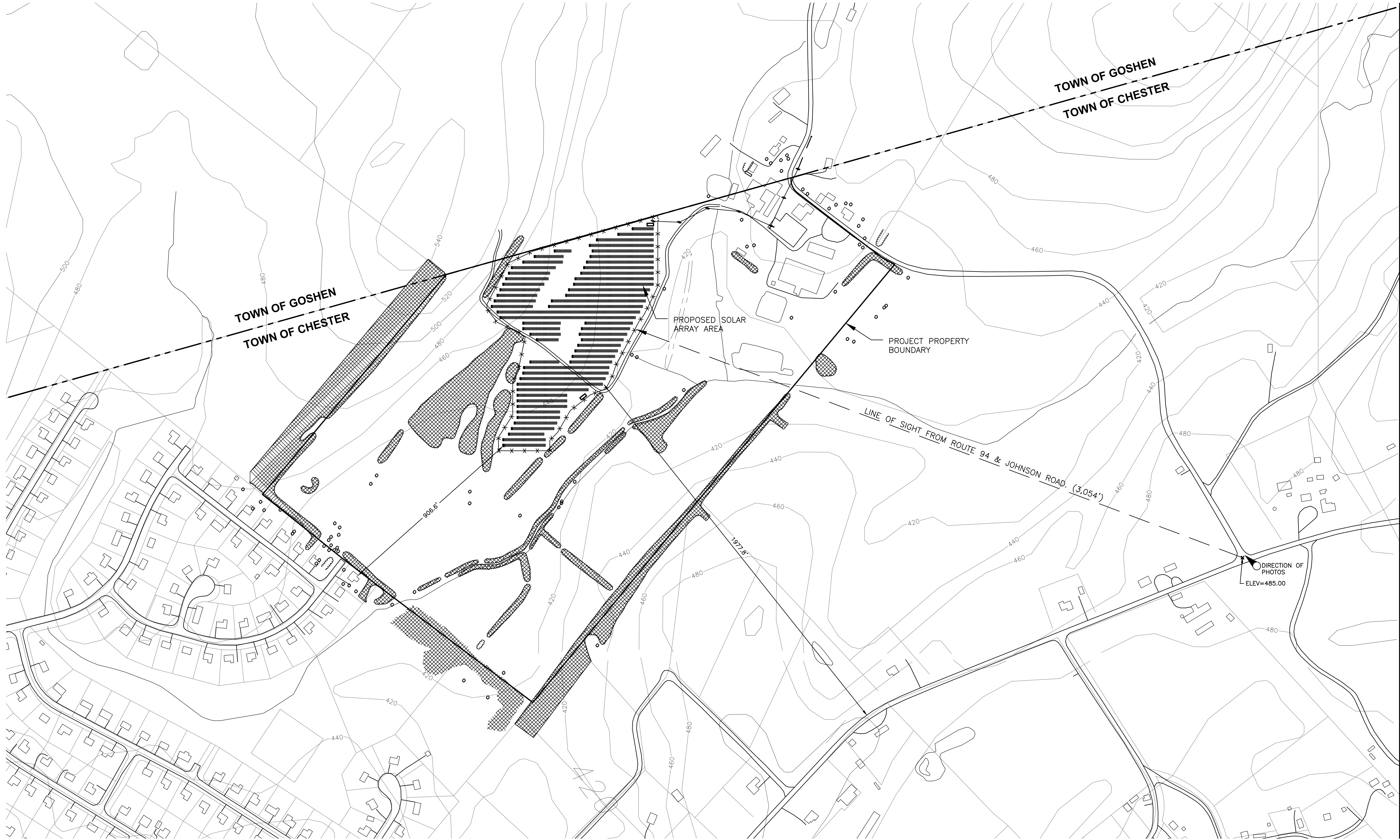
4 ENLARGED PORTION OF VIEW FROM BRIDLE LANE  
N.T.S.

**NOTE:**  
UPON DECOMMISSIONING OF THE SOLAR ARRAY, THE ARRAY OPERATOR SHALL REMOVE THE ARRAY, RACKING, INVERTERS, POLES, UNDERGROUND AND OVERHEAD WIRING AND ALL ASSOCIATED IMPROVEMENTS AND SHALL RETURN THE LAND TO ITS PRE-CONSTRUCTION STATE.

TOWN OF CHESTER PLANNING BOARD APPROVAL

|   |                    |   |                          |                            |             |
|---|--------------------|---|--------------------------|----------------------------|-------------|
|   |                    |   |                          |                            |             |
|   |                    |   |                          |                            |             |
| 1   | 3/23/16            | PER COMMENTS/ FOR APPROVAL  |                          |                            |             |
| REV #   | DATE               | REMARKS:  | ISSUE #                  | DATE                       | ISSUED FOR: |
|   |                    |   |                          |                            |             |
| UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2 OF THE N.Y. STATE EDUCATION LAW. |                    |   |                          |                            |             |
| <b>FELLENZER III</b><br>ENGINEERING LLP<br>www.fellp.com  |                    |   |                          |                            |             |
| 22 Mulberry St., Suite 2A,<br>Middletown, NY 10940<br>t 845-343-1481 fx 845-343-4986  |                    | 181 Church St., Suite 100,<br>Poughkeepsie, NY 12601<br>t 845-454-9704 fx 855-320-8735              |                          |                            |             |
| MARK D. FELLENER, P.E.  |                    | PROJECT TITLE:<br><b>JOHNSON FARM<br/>PHOTOVOLTAIC ARRAY</b><br>121 JOHNSON ROAD, CHESTER, NY 10918 |                          |                            |             |
| DRAWING TITLE:<br><b>SOLAR ARRAY OPTIONS</b>  |                    |   |                          |                            |             |
| DESIGNED BY:<br>RDF   | DRAWN BY:<br>SAR   | APPROVED BY P.E.:<br>ACL  | APPROVED BY P.E.:<br>MDF | DRAWING #:<br><b>C-101</b> |             |
| DATE:<br>09/15/15   | SCALE:<br>AS SHOWN | FE PROJECT #:<br>15-255   |                          | PAGE 2 OF 10               |             |





1 EXTENDED TOPOGRAPHY MAP  
1"=200' ±



ZOOM 2



ZOOM 1



PHOTO

|  |                 |                            |                       |                  |             |
|--|-----------------|----------------------------|-----------------------|------------------|-------------|
| 1  | 3/23/16         | PER COMMENTS/ FOR APPROVAL |                       |                  |             |
| REV #  | DATE            | REMARKS:                   | ISSUE #               | DATE             | ISSUED FOR: |
| <div>1"=200' ±</div> <div>REFERENCE SCALE</div>  |                 |                            |                       |                  |             |
| UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2 OF THE N.Y. STATE EDUCATION LAW.  |                 |                            |                       |                  |             |
| <div><div><b>FELLENZER III</b><br/>ENGINEERING LLP</div><div>22 Mulberry St., Suite 2A,<br/>Middletown, NY 10940<br/>t 845-343-1481 fx 845-343-4986</div><div>181 Church St., Suite 100,<br/>Poughkeepsie, NY 12601<br/>t 845-454-9704 fx 855-320-8735</div></div> |                 |                            |                       |                  |             |
| MARK D. FELLENZER, P.E.  |                 |                            |                       |                  |             |
| PROJECT TITLE: JOHNSON FARM PHOTOVOLTAIC ARRAY   |                 |                            |                       |                  |             |
| DRAWING TITLE: EXTENDED TOPOGRAPHY MAP   |                 |                            |                       |                  |             |
| DESIGNED BY: RDF   | DRAWN BY: SAR   | APPROVED BY P.E.: ACL      | APPROVED BY P.E.: MDF | DRAWING #: C-102 |             |
| DATE: 09/15/15   | SCALE: AS SHOWN | FE PROJECT #: 15-255       | PAGE 3 OF 10          |                  |             |







SILVANTIS® R-SERIES:  
330 W TO 355 W  
72-Cell High Wattage Modules

SunEdison introduces the next generation of high performance solar modules based on innovative Continuous Cu (CC2) monocrystalline cells with PERC technology. Best-in-class efficiency coupled with durability and superior design elements provide products with maximum long term investment performance. At the same time the R-series maintains cost incurred throughout the product lifecycle, such as installation, operation and overall operation and maintenance. SunEdison is a leader in utility-scale solar systems with over two and a half million Silvantis modules deployed in some of the world's harshest climates and most remote locations. This experience, coupled with over 20 years of expertise in silicon technology and innovation enables SunEdison to design and produce highly advanced solar solutions.



SILVANTIS ADVANTAGE

- 18.2% module efficiency with positive power tolerance
- IPD-free, multi-MPPT transformerless inverter compatible
- Based on SunEdison's proprietary CC2 technology
- Higher return on investment with more watts-per-module
- Utility-grade manufacturing: ISO 14001, ISO 9001 and 100% EL inspection

QUALITY & SAFETY

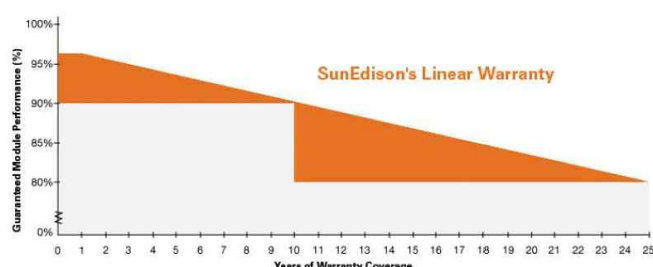
- Industry leading PID test conditions:
  - 96 hours, 85°C, 85% relative humidity, -1 kV
- IEC certification VDI 6150:
  - 61215 long-term operation in a variety of climates including snow loading up to 5400 Pa and hail testing
  - 61730 to ensure electrical safety
  - 61701 Level 1 salt mist corrosion resistant for marine regions
  - 62716 ammonia testing for agricultural environments
  - CSA tested to UL 1703 for 1,000 V systems in the US and Canada
- MCS certified by GABT for the UK
- Automotive grade TS 16949 & AQL Level II-0.4 manufacturing quality

ROBUST DESIGN

- Reliability tested beyond international standards
- Proven field performance in harsh environments

SUNEDISON WARRANTY

- 10-year limited warranty for materials and workmanship
- 25-year linear power warranty at STC
- Year 1:  $\leq 0.5\%$  of rated power
- After year 1:  $\leq 0.7\%$  rated power degradation per year



SILVANTIS R-SERIES: 330 W TO 355 W

PHYSICAL PARAMETERS

|  |                                      |
|--|--------------------------------------|
| Module Dimensions                      | 1,976 mm x 960 mm x 30 mm            |
| Module Weight                          | 22 kg                                |
| Cell Type                              | PERC on CC2 monocrystalline          |
| Number of Cells                        | 72                                   |
| Frame Material                         | Anodized aluminum alloy frame        |
| Tempered AIG Glass Thickness           | 3.2 mm                               |
| Connector Types (Indicated in model #) | 4mp40p141 (1-20)<br>Bz14H, S418 (20) |

TEMPERATURE COEFFICIENTS AND PARAMETERS<sup>1</sup>

|  |  |
|--|--|
| Nominal Operating Cell Temperature (NOCT)  | 45.0 ± 2.0   |
| Temperature Coefficient of Power           | -0.44 %/°C   |
| Temperature Coefficient of Voc             | -0.30 %/°C   |
| Temperature Coefficient of Isc             | +0.04 %/°C   |
| Operating Temperature                      | -40.0 °C to +85.0 °C   |
| Maximum System Voltage                     | 1000 V (UL, IEC)   |
| Limiting Reverse Current                   | 5.10 A   |
| Maximum Series Fuse Rating                 | 15 A   |
| Power Selection Test 2, Temperature        | +25.0 to +35.0   |
| Junction Box Rating                        | (IP67)   |
| Application Class                          | Class A  |
| Packaging Specifications                   | 23 modules per pallet<br>440 modules per 40' high-cube container |
| Wind and Snow Front Load                   | 150 to 5,400 Pa  |
| Wind Load Load                             | 2,400 Pa   |
| Reduction of STC efficiency from 1000 W/m² | < 0.5%   |

STC ELECTRICAL CHARACTERISTICS<sup>2</sup>

| Model # <sup>3</sup>            | R330BtC | R330BtC | R340BtC | R340BtC | R350BtC | R350BtC |
|---------------------------------|---------|---------|---------|---------|---------|---------|
| Rated Maximum Power (W)         | 330     | 339     | 349     | 349     | 350     | 350     |
| Open Circuit Voltage (Voc (V))  | 45.2    | 45.4    | 46.5    | 46.6    | 46.7    | 46.8    |
| Short Circuit Current (Isc (A)) | 9.38    | 9.39    | 9.40    | 9.48    | 9.50    | 9.54    |

| Model # <sup>3</sup>            | R330BtC | R330BtC | R340BtC | R340BtC | R350BtC | R350BtC |
|---------------------------------|---------|---------|---------|---------|---------|---------|
| Rated Maximum Power (W)         | 236.0   | 238.0   | 242.0   | 245.6   | 248.0   | 252.6   |
| Open Circuit Voltage (Voc (V))  | 42.7    | 42.8    | 42.9    | 43.0    | 43.1    | 43.2    |
| Short Circuit Current (Isc (A)) | 7.80    | 7.85    | 7.90    | 7.95    | 7.96    | 7.98    |

| Model # <sup>3</sup>            | R330BtC | R330BtC | R340BtC | R340BtC | R350BtC | R350BtC |
|---------------------------------|---------|---------|---------|---------|---------|---------|
| Rated Maximum Power (W)         | 33.4    | 33.6    | 33.8    | 34.0    | 34.2    | 34.4    |
| Open Circuit Voltage (Voc (V))  | 7.04    | 7.08    | 7.16    | 7.22    | 7.26    | 7.34    |
| Short Circuit Current (Isc (A)) | 0.77    | 0.85    | 0.95    | 0.96    | 0.96    | 0.97    |

NOCT ELECTRICAL CHARACTERISTICS<sup>4</sup>

| Model # <sup>3</sup>            | R330BtC | R330BtC | R340BtC | R340BtC | R350BtC | R350BtC |
|---------------------------------|---------|---------|---------|---------|---------|---------|
| Rated Maximum Power (W)         | 236.0   | 238.0   | 242.0   | 245.6   | 248.0   | 252.6   |
| Open Circuit Voltage (Voc (V))  | 42.7    | 42.8    | 42.9    | 43.0    | 43.1    | 43.2    |
| Short Circuit Current (Isc (A)) | 7.80    | 7.85    | 7.90    | 7.95    | 7.96    | 7.98    |

Temperature coefficients may vary by  $\pm 0.2\%$

<sup>1</sup> All electrical data at standard test conditions (STC): 1000 W/m², 25°C module temperature, AM 1.5, electrical characteristics may vary by  $\pm 3\%$  and power by  $\pm 0.5\%$

<sup>2</sup> For module manufacturing location: N = Netherland, P = Mexico, C = China, T = Taiwan

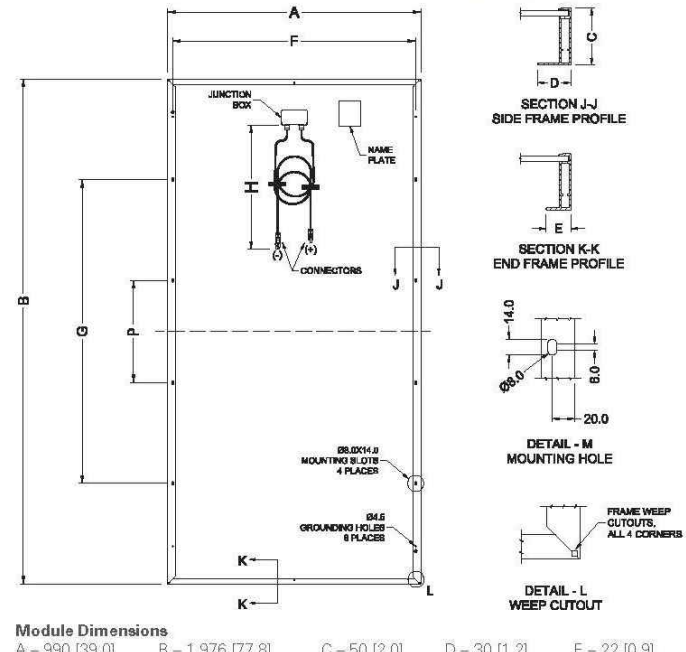
<sup>3</sup> Electrical characteristics measured under normal operating conditions of cable: 800mm², 25°C ambient temperature, AM 1.5, wind speed 1 m/s

<sup>4</sup> All other trademarks mentioned in this document are the property of their respective owners

For more information about SunEdison's Silvantis modules, please visit [www.sunedison.com](http://www.sunedison.com)

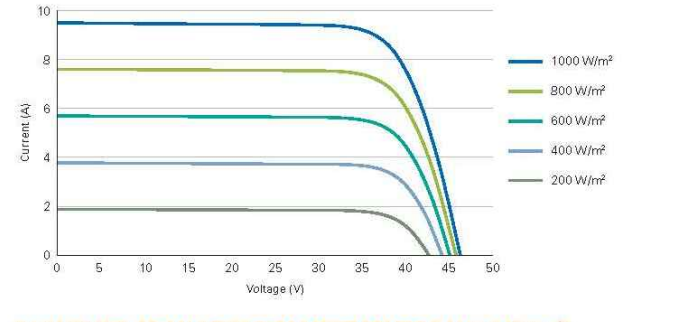
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R-SERIES SOLAR MODULE DIMENSIONS mm [inch]

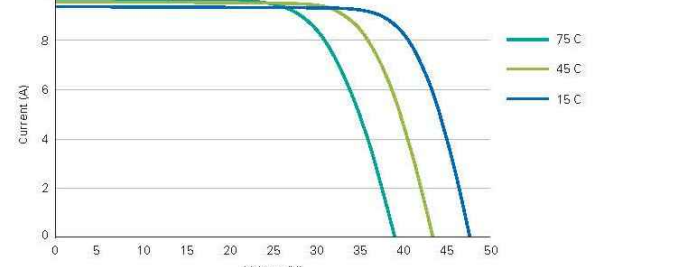


Module Dimensions  
Mounting Hole Spacing  
Cable Length  
Junction Box Dimensions  
100 to 1000 V, 25°C (68°F to 77°F) at 1.0

IV CURVES AT MULTIPLE IRRADIANCES (25°C)



IV CURVES AT MULTIPLE TEMPERATURES (1000 W/m²)



GOVERNING CODE:

INTERNATIONAL BUILDING CODE (XXX 200X)

DESIGN LOADS:

- DEAD LOADS:
  - STRUCTURE: X.0 PSF
  - GLAZING: X.0 PSF
  - $\Sigma = X.0$  PSF
- ROOF LIVE LOAD = XX PSF
- SNOW LOAD:
  - Pg = XX PSF (GROUND SNOW)
  - Pf = XX PSF (FLAT ROOF SNOW)
  - Ce = XX
  - Cl = XX
  - Is = XX
- WIND LOAD: (MAIN WIND FORCE RESISTING SYSTEM)
  - V = XX MPH
  - EXPOSURE: C
  - OCCUPANCY CATEGORY: X
  - Iw = XX
- SEISMIC: Ss = 0.XXX Sds = 0.XXX  
S1 = 0.XXX Sd1 = 0.XXX

- OCCUPANCY CATEGORY: X
- IRREGULARITY CLASS: XX
- SITE CLASS: X
- DESIGN CATEGORY: X
- SEISMIC FORCE RESISTING SYSTEM = BRACED FRAME
- DESIGN BASE SHEAR: V = XX W  
Cs = XX  
R = XX
- EQUIVALENT LATERAL FORCE ANALYSIS

CONSTRUCTION AND SAFETY:

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE APPLICABLE CONSTRUCTION CODE AND THE PROJECT SPECIFICATIONS.
- ENGINEER SHALL NOT BE RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OF CONSTRUCTION SELECTED BY CONTRACTOR.
- CONTRACTOR SHALL FIELD MEASURE AND VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. ANY UNEXPECTED CONDITIONS OR DISCREPANCIES WITH THE DESIGN DOCUMENTS SHALL BE REPORTED TO THE ENGINEER PRIOR TO INSTALLATION OR ERECTION OF MATERIALS.
- THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. WHEN ON SITE, THE ENGINEER IS RESPONSIBLE FOR HIS OWN SAFETY BUT HAS NO RESPONSIBILITY FOR THE SAFETY OF OTHER PERSONNEL OR SAFETY CONDITION AT THE SITE.

GENERAL NOTES:

- THIS SUBMITTAL/CONSTRUCTION SET WAS PRODUCED FROM DRAWINGS RECEIVED FROM CUSTOMER ON X/X/XX. RBI SOLAR IS NOT RESPONSIBLE FOR DISCREPANCIES FROM ACTUAL FIELD DIMENSIONS.

SPECIAL FIELD INSPECTION:

- ALL SPECIAL INSPECTORS SHALL BE RETAINED BY OWNER/CUSTOMER. THE EXTENT OF THE INSPECTION SHALL COMPLY WITH THE CONTRACT DOCUMENTS, THE BUILDING CODE REQUIREMENTS AND LOCAL JURISDICTION. IT IS THE OWNER/CUSTOMER'S RESPONSIBILITY TO GIVE PROPER NOTIFICATION TO THE SPECIAL INSPECTOR AND PROCEED WITH THE WORK ONLY AFTER THE SPECIAL INSPECTOR'S APPROVAL.
- FAILURE TO NOTIFY THE SPECIAL INSPECTOR MAY RESULT IN OWNER/CUSTOMER HAVING TO REMOVE WORK FOR THE PURPOSE OF INSPECTION AT THE OWNER/CUSTOMER'S EXPENSE.
- PREMATURE NOTIFICATION FOR INSPECTION WILL RESULT IN AN ADDITIONAL INSPECTION WITH ALL EXPENSES AND FEES PAID BY THE OWNER/CUSTOMER.
- SPECIAL INSPECTORS SHALL KEEP RECORDS OF ALL INSPECTIONS. RECORDS SHALL BE FURNISHED TO THE OWNER, ENGINEER OF RECORD AND LOCAL JURISDICTION AS REQUIRED. ANY AND ALL DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR. CORRECTIONS SHALL BE MADE AND A FINAL REPORT OF INSPECTIONS SHALL BE PROVIDED NOTING COMPLETION OF INSPECTIONS AND CORRECTIONS OF DISCREPANCIES. FAILURE TO CORRECT DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER OF RECORD AND THE LOCAL JURISDICTION AND MAY RESULT IN REMOVAL OF COMPLETED WORK AND ADDITIONAL WORK TO CORRECT DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
- MINIMUM REQUIRED INSPECTIONS:
- STRUCTURAL STEEL/ALUMINUM
  - FABRICATION
    - MATERIAL IDENTIFICATION
    - HIGH STRENGTH BOLTS – MATERIAL IDENTIFICATION OF BOLTS, NUTS AND WASHERS
    - WELD FILLER MATERIALS – IDENTIFICATION AND CONFIRMATION OF COMPLIANCE WITH DESIGN DOCUMENTS
  - ERECTION
    - MATERIAL IDENTIFICATION
    - INSTALLATION OF HIGH STRENGTH BOLTS
    - WELDED CONNECTIONS
    - MEMBER SIZES AND PLACEMENT
    - GENERAL CONFORMANCE WITH DESIGN DOCUMENTS
- CONCRETE CONSTRUCTION
  - MATERIAL IDENTIFICATION
  - MIX DESIGN VERIFICATION
  - SIZE AND PLACEMENT OF REINFORCING STEEL
  - PLACEMENT OF CONCRETE USING PROPER TECHNIQUES
  - CONCRETE SAMPLES FOR SLUMP, AIR CONTENT, TEMPERATURE, STRENGTH TESTS, ETC. IN ACCORDANCE WITH ACI 318
  - PROPER MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES
- FOUNDATIONS
  - SIZE AND LOCATION OF FOUNDATION EXCAVATIONS
  - PLACEMENT OF REINFORCING STEEL AS REQUIRED

TYPICAL NOTES

STRUCTURAL STEEL:

- ALL STRUCTURAL STEEL SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST VERSION OF AISC "MANUAL OF STEEL CONSTRUCTION." LIGHT GAGE COLD-FORMED SECTIONS SHALL CONFORM TO LATEST VERSION OF AISI SPECIFICATIONS FOR COLD-FORMED STEEL STRUCTURAL MEMBERS.
- MATERIALS:
  - ROLLED SHAPES: ASTM A992 OR A572 GRADE 50, F<sub>y</sub> ~ Y<sub>t</sub> = 50 KSI MINIMUM
  - PLATES: ASTM A36
  - TUBULAR SHAPES: ASTM A500 GRADE B, F<sub>y</sub> = 50 KSI MINIMUM
  - FIELD BOLTS: (TYP. U.N.O) SAE J429 GRADE 5
  - SCREWS: SHEET METAL SCREWS, #8 & #10 TEKs – STAINLESS STEEL #12 TEKs – GALVANIZED
- FIELD CONNECTIONS SHALL BE BOLTED EXCEPT WHERE WELDED CONNECTIONS ARE INDICATED ON THE STRUCTURAL DRAWINGS. ALL BOLTED CONNECTIONS SHALL BE INSTALLED TO THE "SNUG TIGHT" CONDITION DEFINED AS THE FULL EFFORT OF A MAN USING A NORMAL SPUD WRENCH OR A FEW IMPACTS OF AN IMPACT WRENCH. THE "SNUG TIGHT" CONDITION WILL ENSURE THE PLIES OF CONNECTED MATERIAL ARE IN FIRM CONTACT.
- ALL WELDING OF STEEL SHALL BE DONE IN ACCORDANCE WITH THE LATEST VERSION OF THE AMERICAN WELD SOCIETY'S SPECIFICATIONS – AWS D1.1. ELECTRODES SHALL BE E70 SERIES UNLESS NOTED OTHERWISE.
- GALVANIZING SHALL BE G90 MINIMUM OR EQUIVALENT.

ALUMINUM:

- ALL STRUCTURAL ALUMINUM SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST VERSION OF THE SPECIFICATIONS AND GUIDELINES FOR ALUMINUM STRUCTURES.
- MATERIALS:
  - ALUMINUM SHAPES: ALLOY 6063-T6, 6061-T6 & 6005-T6
  - ALUMINUM SHEET: ALLOY 5005-H34 & 5052-H3
  - FIELD BOLTS: STAINLESS STEEL (TYP. U.N.O.)
  - SCREWS: #12 TEKs – GALVANIZED

MISCELLANEOUS FASTENER NOTES:

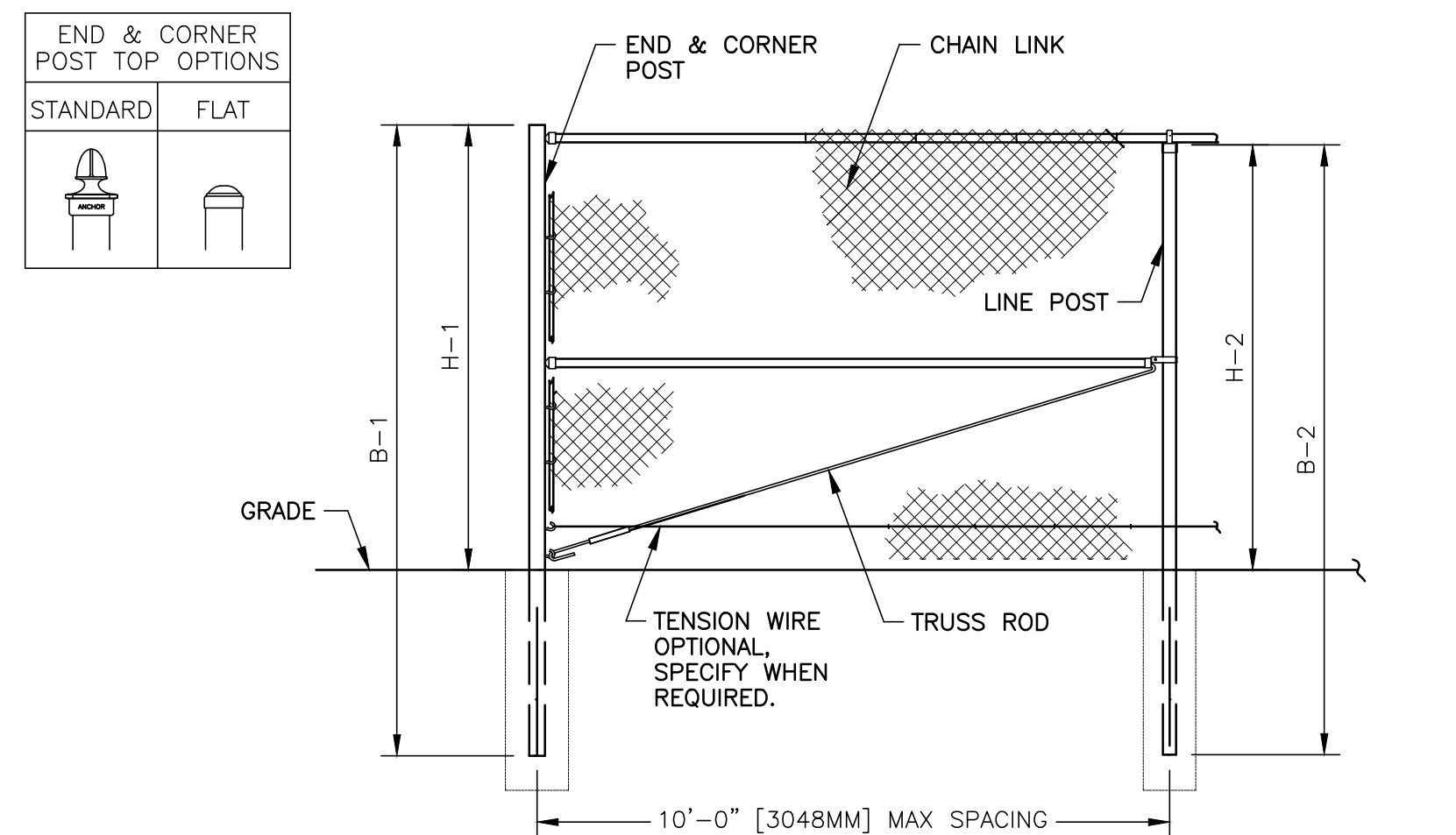
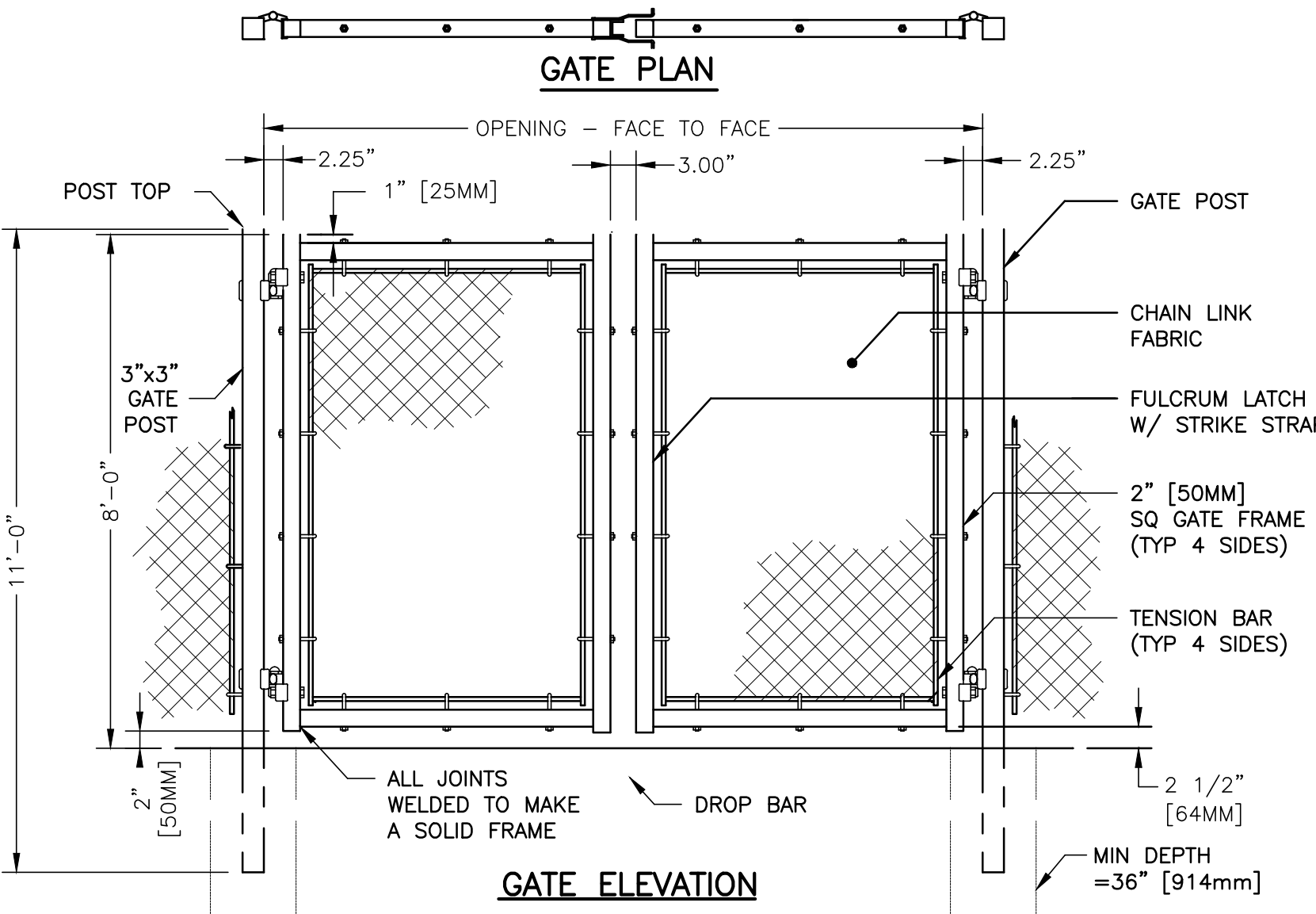
- ALL BOLTS SHALL BE THE TYPE AND SIZE INDICATED ON DRAWINGS. ALL HOLES SHALL BE BOLT DIAMETER + "1/16" MAX.
- ALL HARDWARE USED FOR MOUNTING MODULES SHALL BE STAINLESS STEEL.

WORK BY OTHERS:

- SITE WORK AND DEVELOPMENT.
- ALL ELECTRICAL WORK INCLUDING WIRING, CONDUIT, PANELS AND LIGHTS TO BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- GROUNDING REQUIREMENTS.
- ALL SHADING ANALYSIS AND/OR PRODUCTION ANALYSIS SHALL BE PERFORMED AND VERIFIED BY OTHERS. RBI IS NOT RESPONSIBLE FOR PV SYSTEM DESIGN AS IT PERTAINS TO ELECTRICAL OR PV SYSTEM PRODUCTION.

FOUNDATION/CONCRETE NOTES:

- THE FOUNDATION DESIGN IS BASED ON ASSUMED VALUES OR BASED ON GEOTECHNICAL REPORT PREPARED BY X DATED: X-X-20XX (REPORT # X).
- CUSTOMER IS RESPONSIBLE FOR VERIFYING SOIL CONDITIONS ARE CONSISTENT WITH FINDINGS INCLUDED IN GEOTECH REPORT. VARIATIONS IN SOIL CONDITIONS SHALL BE REPORTED TO GEOTECH ENGINEER AND ENGINEER OF RECORD RESPONSIBLE FOR FOUNDATION DESIGN PRIOR TO INSTALLATION OF ANY FOUNDATION MATERIALS.
- CUSTOMER IS RESPONSIBLE FOR VERIFYING CORROSION COMPATIBILITY WITH FOUNDATIONS AND/OR DRIVEN POSTS.
- INSTALLER/CONTRACTOR SHALL COORDINATE PLACEMENT OF FOUNDATIONS AND/OR ANCHOR BOLTS PER DESIGN DRAWINGS.



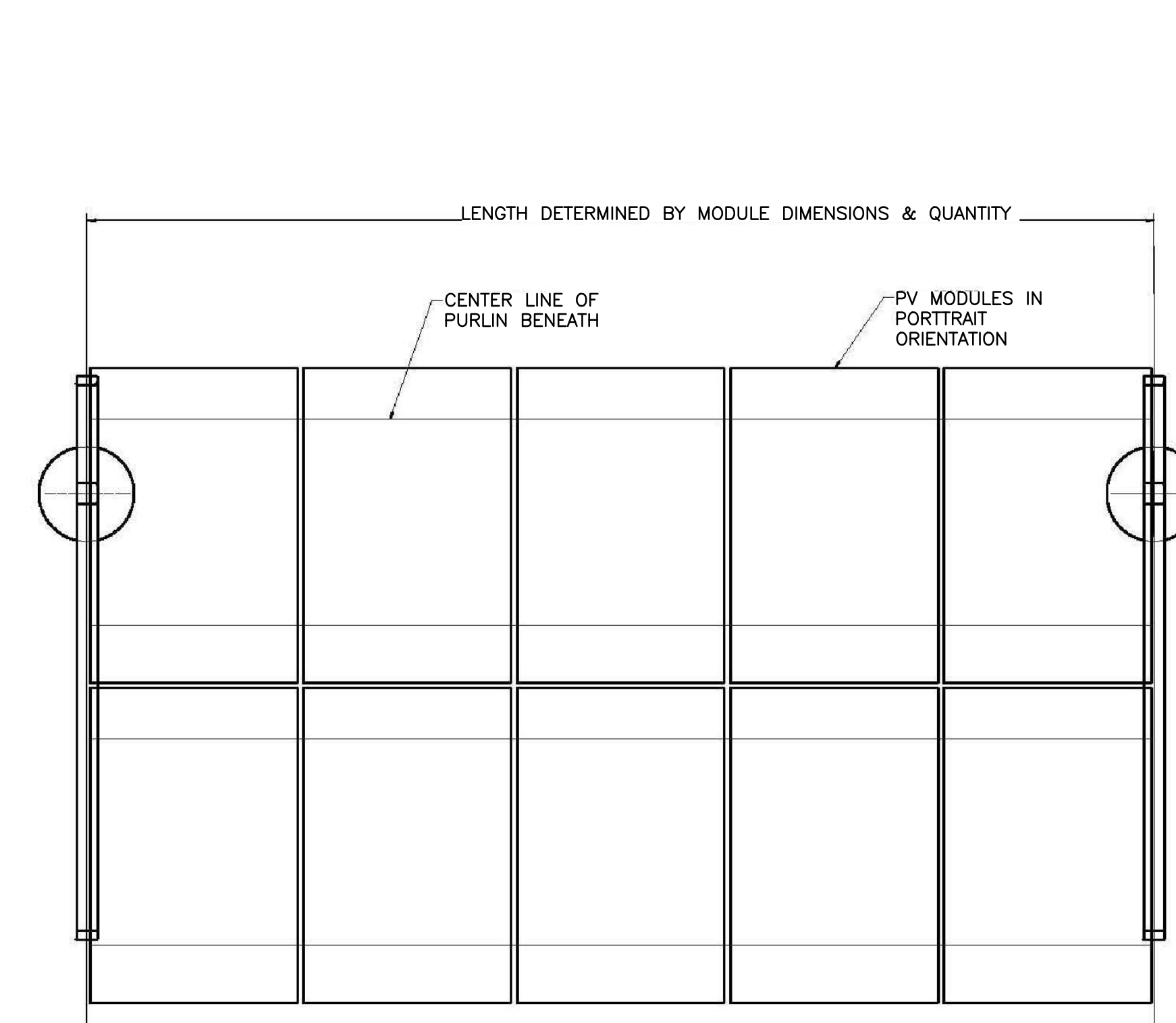
| FENCE HEIGHT   | END & CORNER POSTS |                           | LINE POSTS        |                           |
|----------------|--------------------|---------------------------|-------------------|---------------------------|
| NOMINAL HEIGHT | B-1<br>BAR LENGTH  | H-1<br>HEIGHT ABOVE GRADE | B-2<br>BAR LENGTH | H-2<br>HEIGHT ABOVE GRADE |
| 8'-0" [2438MM] | 11'-0" [3353MM]    | 8'-0 5/8" [2454MM]        | 10'-8" [3251MM]   | 7'-8 7/8" [2359MM]        |

- NOTES:
- METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
  - FOOTING WIDTH TO BE (4)X POST WIDTH.
  - GATES MAY BE MANUALLY OR ELECTRICALLY OPERATED. HARDWARE WILL VARY FOR ELECTRICALLY OPERATED GATES.
  - ALL POSTS AND CHAINLINK FABRIC SHALL BE BLACK VINYL COATED.

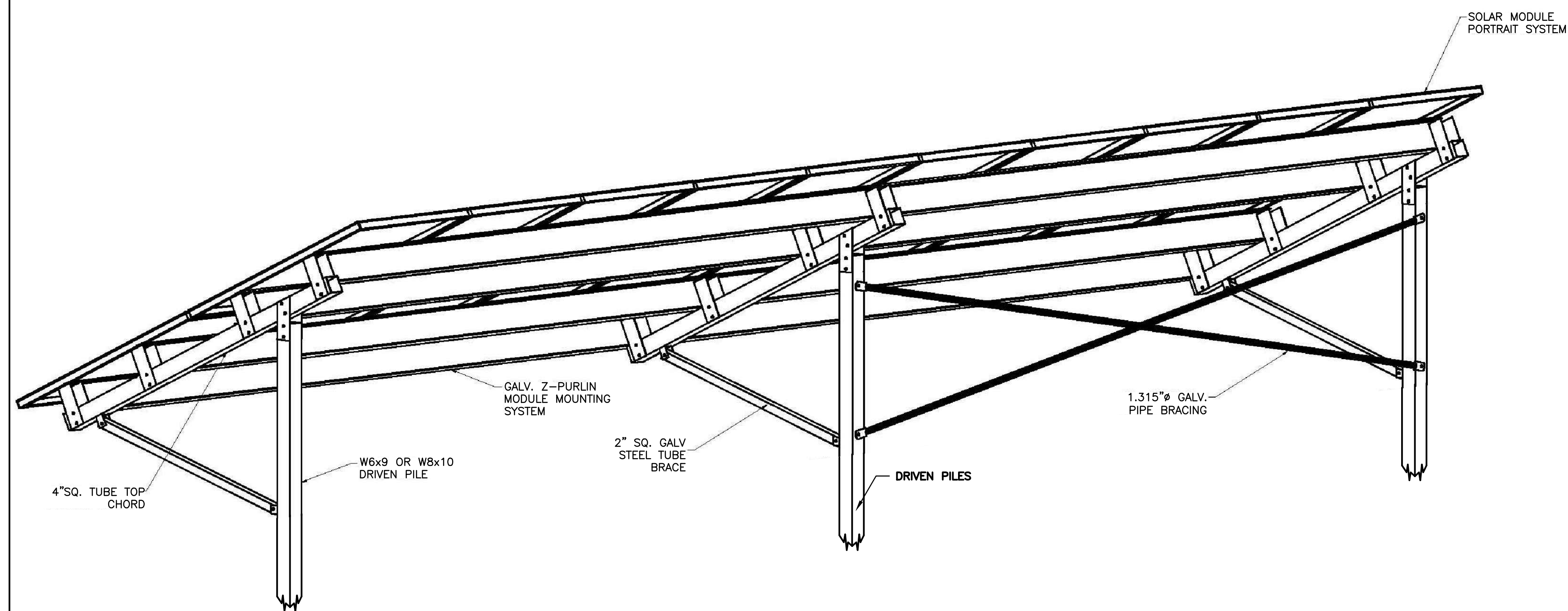
2 TYPICAL CHAIN LINK FENCE AND GATE  
N.T.S.

| 1   | 3/23/16         | PER COMMENTS/ FOR APPROVAL |                     |      |             |
|---|-----------------|----------------------------|---------------------|------|-------------|
| REV #   | DATE            | REMARKS:                   | ISSUE #             | DATE | ISSUED FOR: |
| <div>8" 4" 2" 0 1" 2"</div> REFERENCE SCALE   |                 |                            |                     |      |             |
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| <b>FELLENZER III</b><br>ENGINEERING LLP<br>www.fellp.com  |                 |                            |                     |      |             |
| 22 Mulberry St., Suite 2A,<br>Middletown, NY 10940<br>t 845-343-1481 fx 845-343-4986  |                 |                            |                     |      |             |
| 181 Church St., Suite 100,<br>Poughkeepsie, NY 12601<br>t 845-454-9704 fx 855-320-8735  |                 |                            |                     |      |             |
| MARK D. FELLENZER, P.E.   |                 |                            |                     |      |             |
| PROJECT TITLE: JOHNSON FARM PHOTOVOLTAIC ARRAY<br>121 JOHNSON ROAD, CHESTER, NY 10918   |                 |                            |                     |      |             |
| DRAWING TITLE: DETAILS  |                 |                            |                     |      |             |
| DESIGNED BY: RDF  | DRAWN BY: SAR   | APPROVED BY PM: ACL        | APPROVED BY PG: MDF |      |             |
| DATE: 09/15/15  | SCALE: AS SHOWN | FE PROJECT #: 15-255       | DRAWING #: C-901    |      |             |
| NY PROFESSIONAL ENGINEER NO. 06498-1  |                 |                            |                     |      |             |





**3 SOLAR RACKING - PLAN VIEW**  
N.T.S.

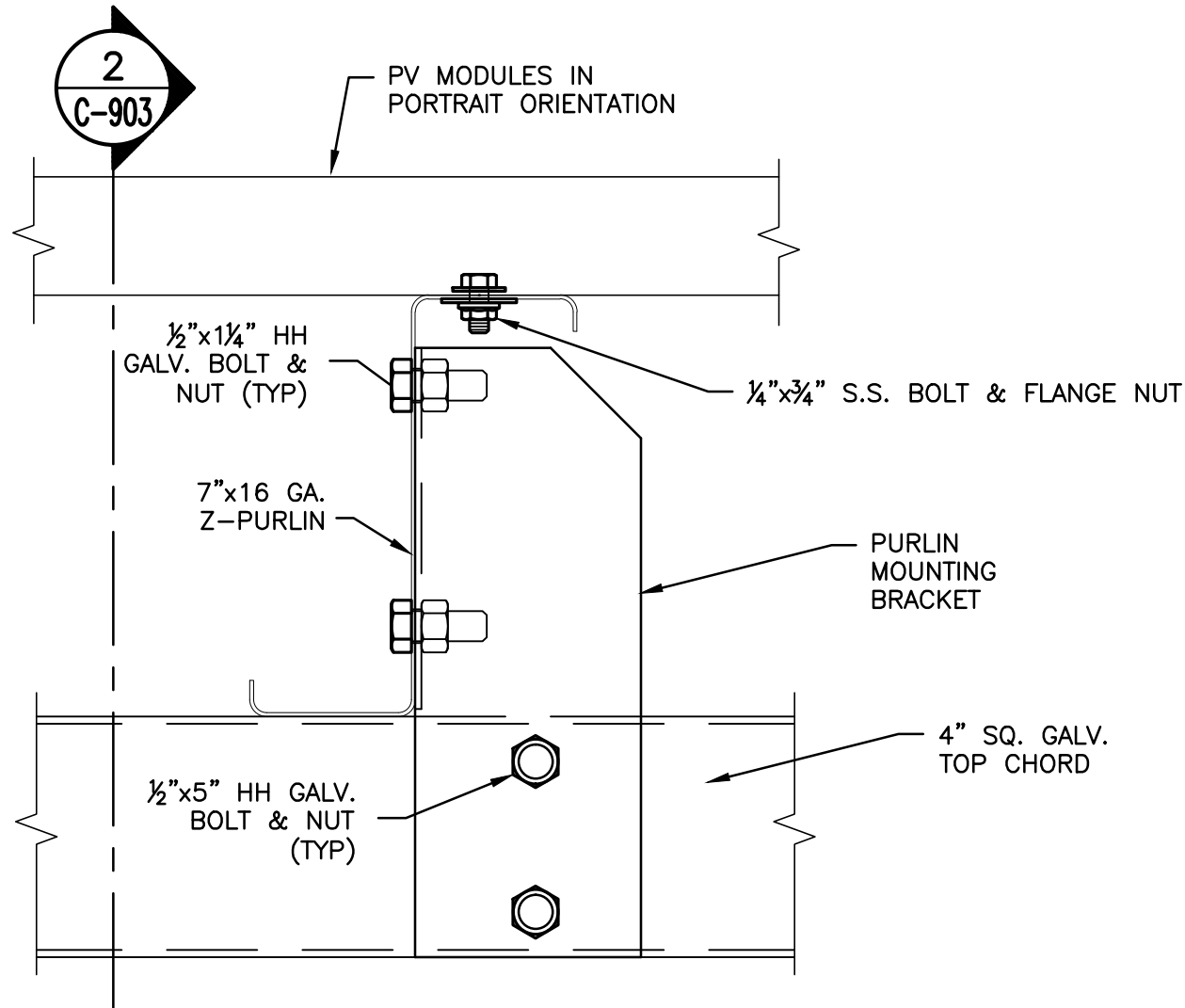


**2 SOLAR RACKING - REAR ELEVATION**  
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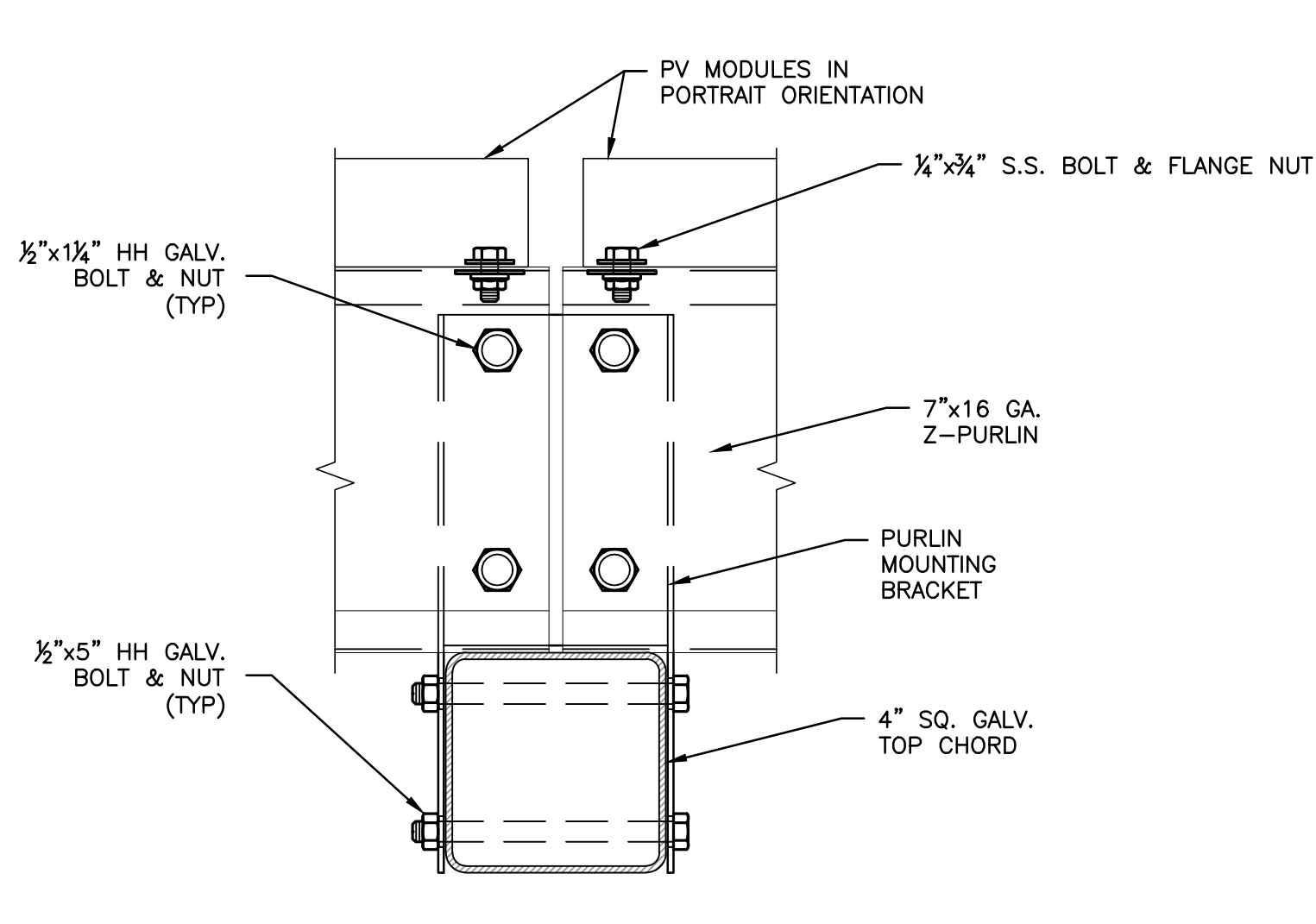
**4 SOLAR RACKING - SIDE ELEVATION**  
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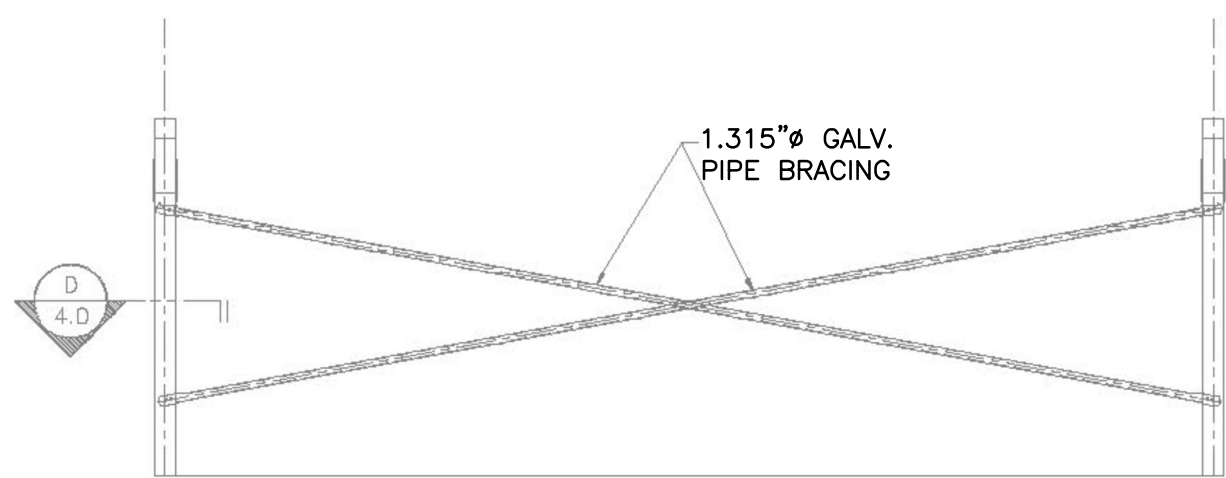
TOWN OF CHESTER PLANNING BOARD APPROVAL



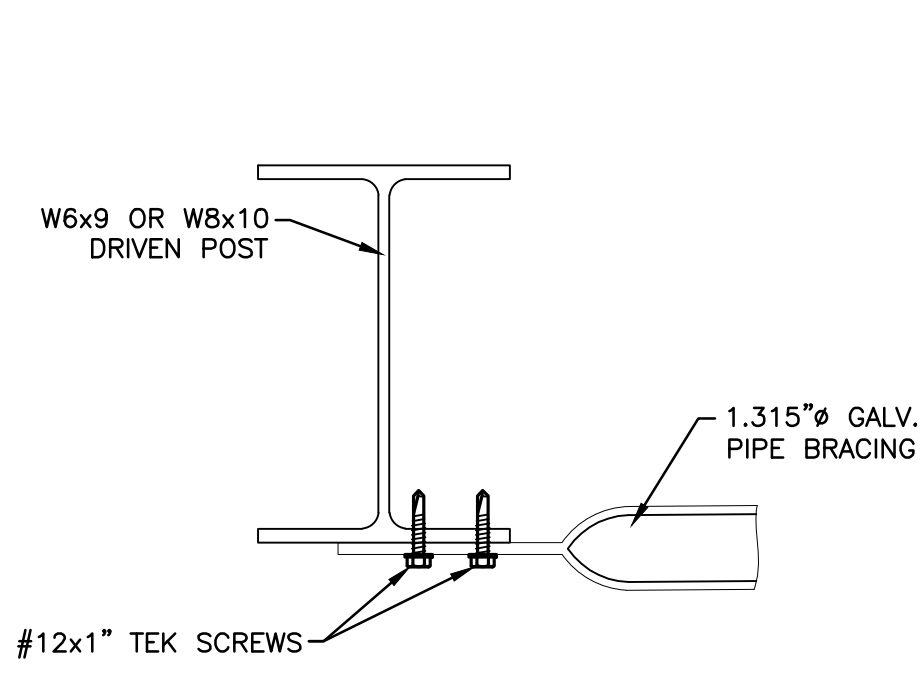
1 PURLIN CONNECTION  
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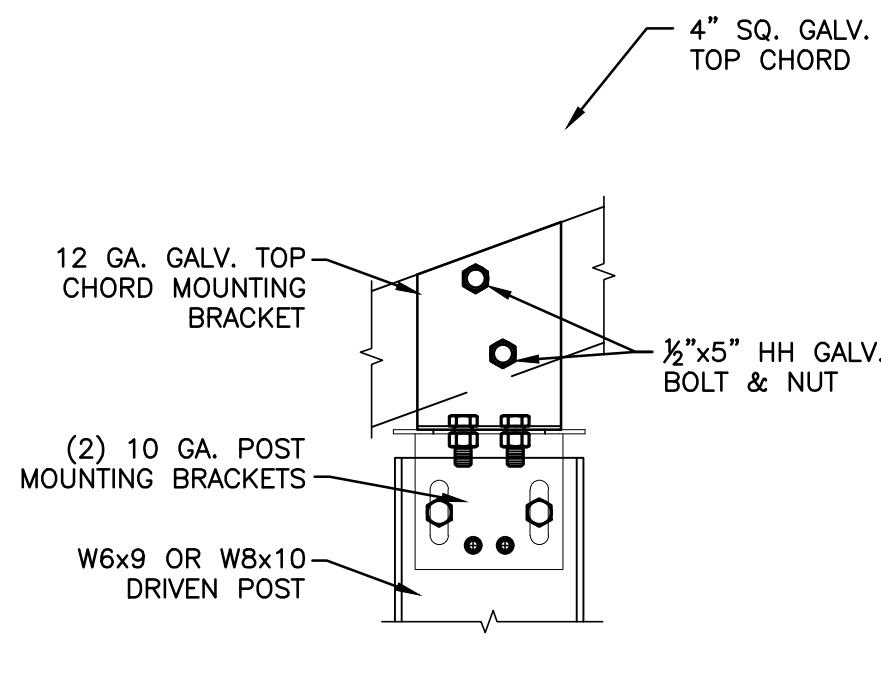
2 PURLIN CONNECTION - SECTION  
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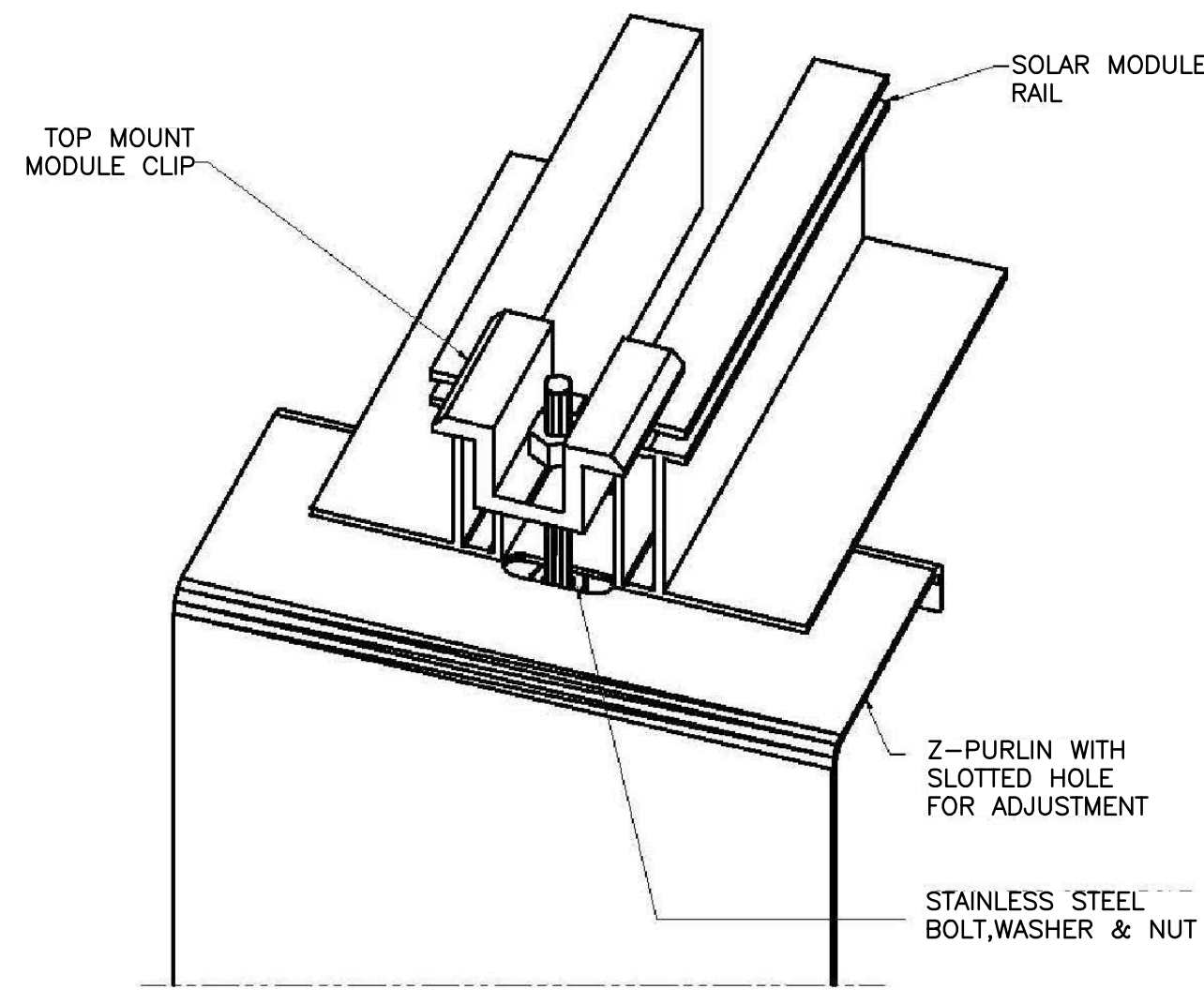
3 BRACING DETAIL  
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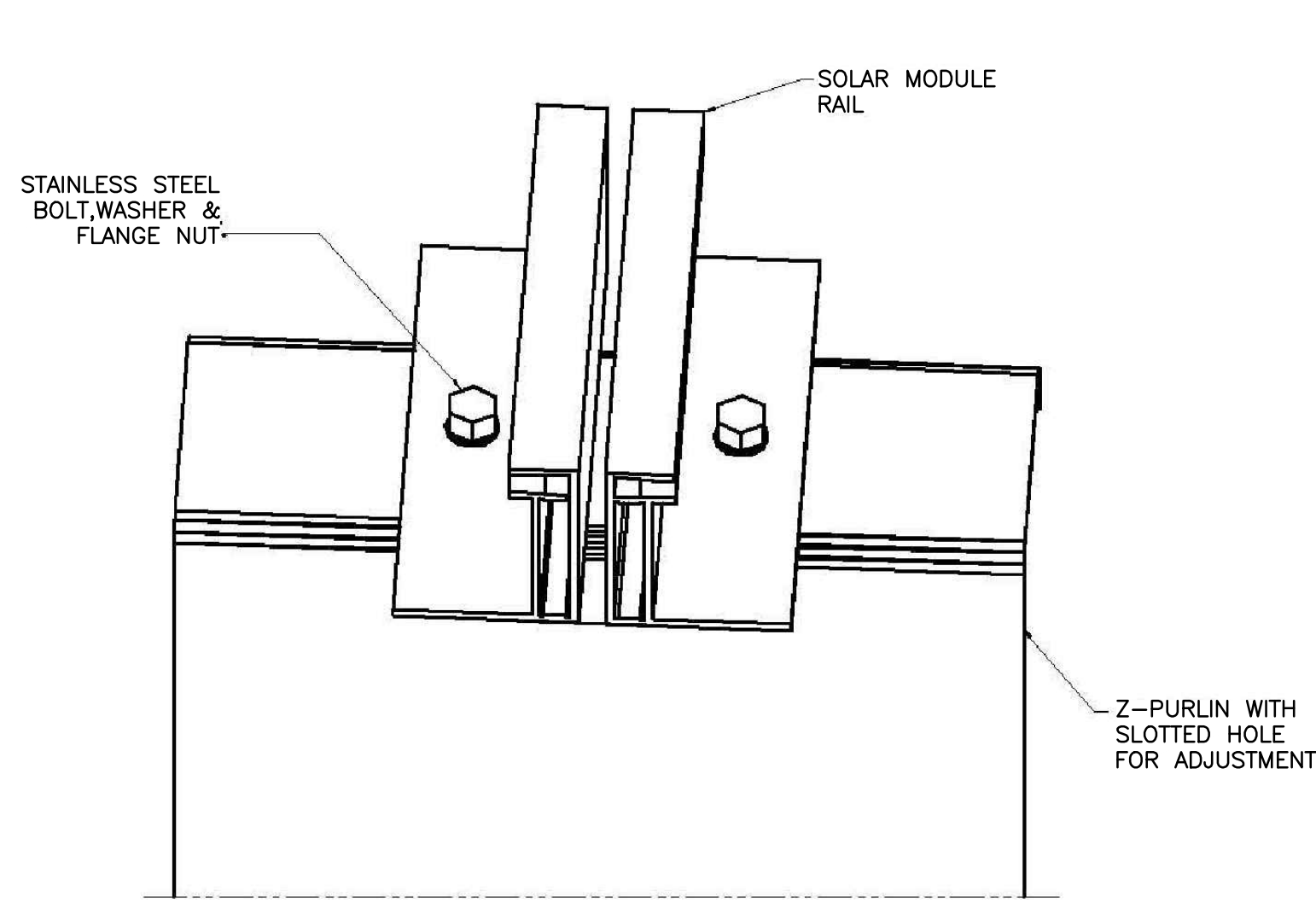
4 BRACING DETAIL - SECTION  
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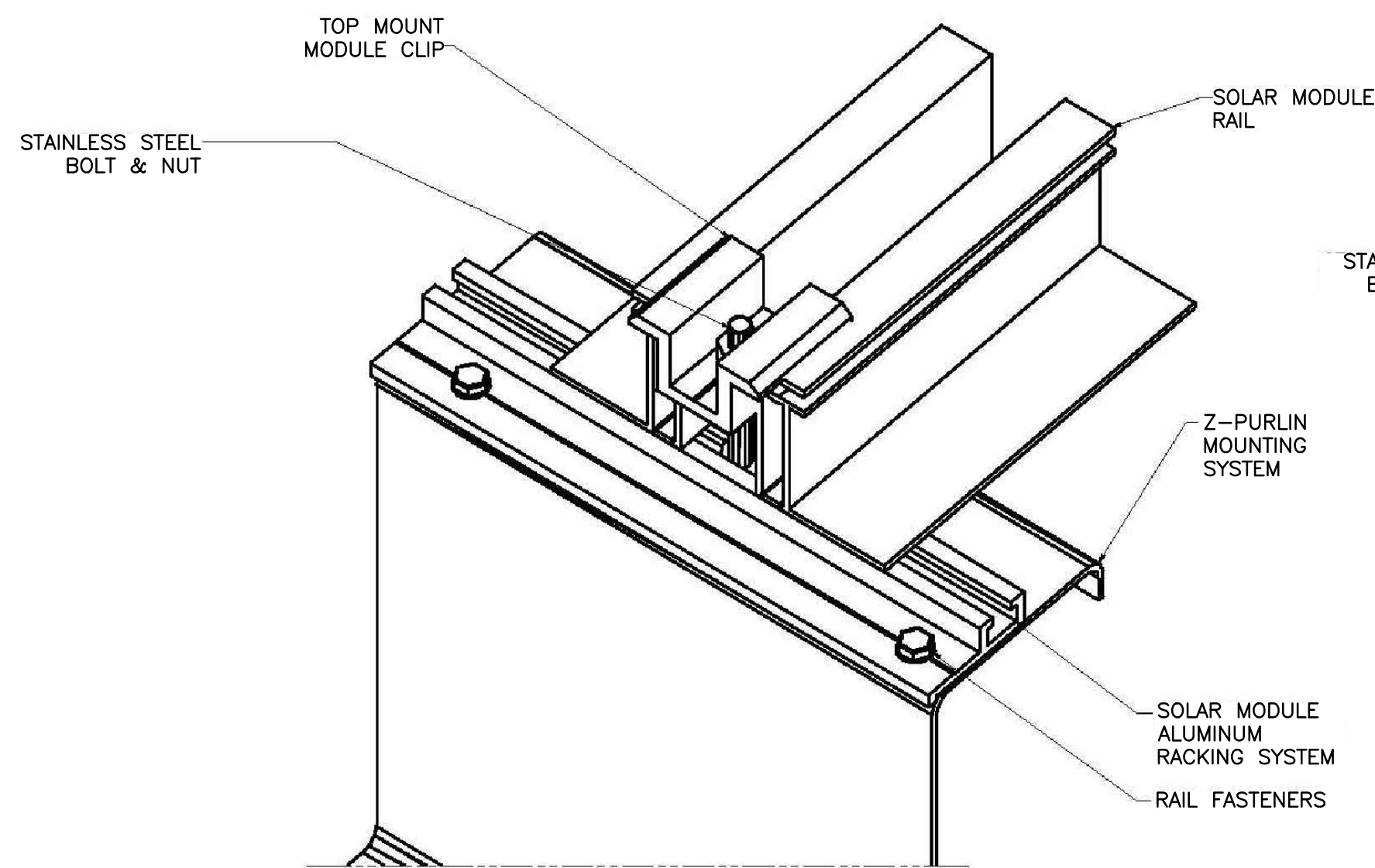
5 TOP CHORD / POST CONNECTION  
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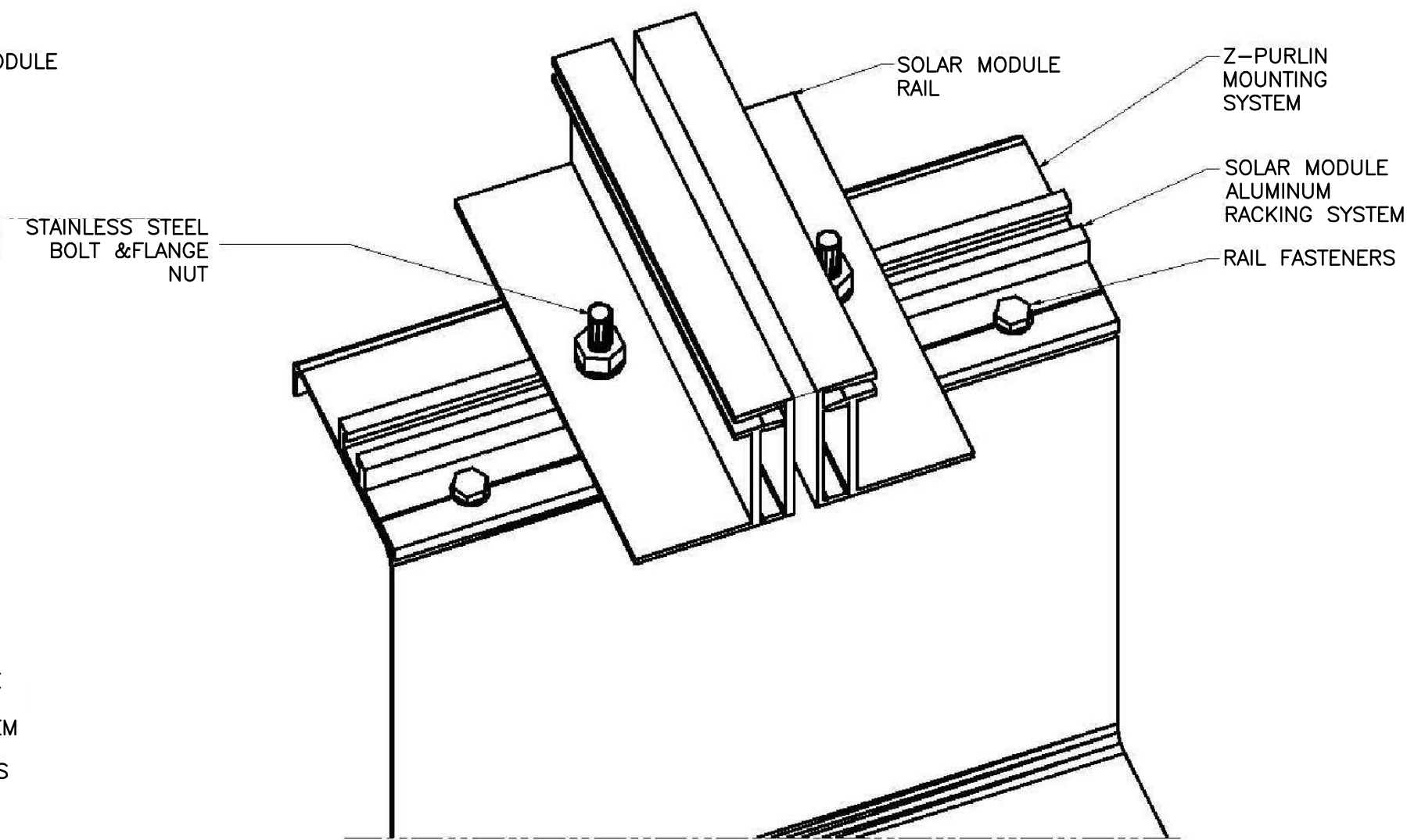
6 TOP MODULE MOUNTING SYSTEM  
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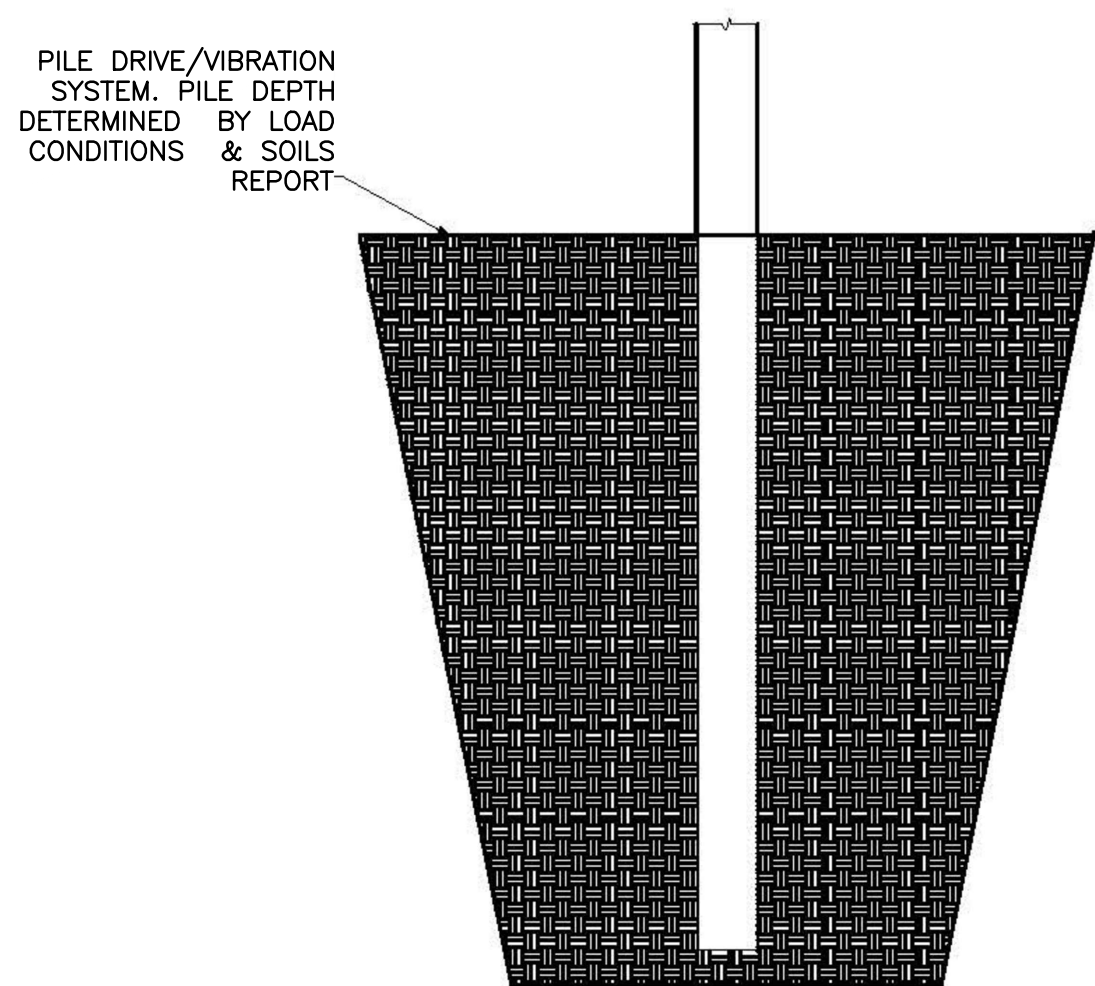
7 BOTTOM MODULE MOUNTING SYSTEM  
N.T.S.



8 TOP MODULE MOUNTING WITH RACKING SYSTEM  
N.T.S.



9 BOTTOM MODULE MOUNTING WITH RACKING SYSTEM  
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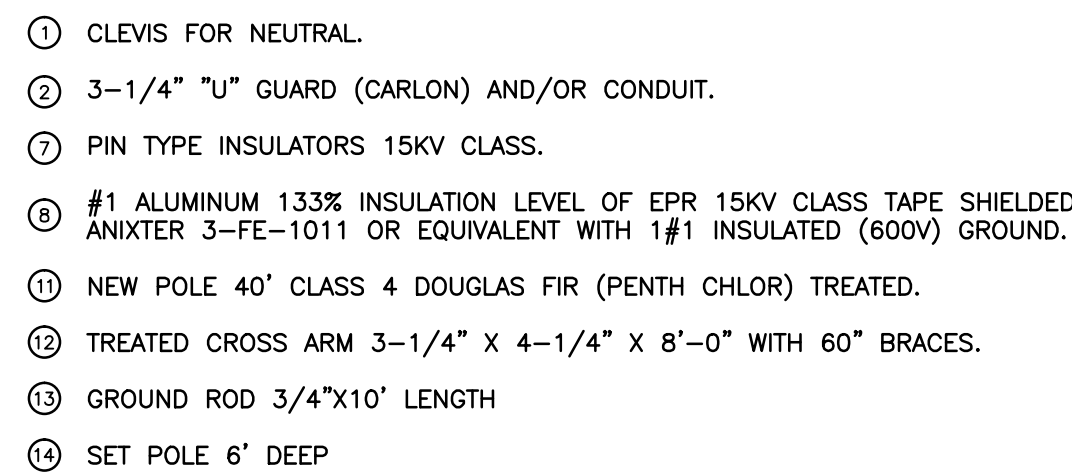


10 PILE DRIVEN / VIBRATION SYSTEM PIER  
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TOWN OF CHESTER PLANNING BOARD APPROVAL

|   |                    |   |                          |                            |             |
|---|--------------------|---|--------------------------|----------------------------|-------------|
|   |                    |   |                          |                            |             |
|   |                    |   |                          |                            |             |
| 1   | 3/23/16            | PER COMMENTS/ FOR APPROVAL  |                          |                            |             |
| REV #   | DATE               | REMARKS:  | ISSUE #                  | DATE                       | ISSUED FOR: |
| <div><div>1/8" 1/4" 1/2" 0 1" 2"</div><div>REFERENCE SCALE</div></div>  |                    |   |                          |                            |             |
| UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2 OF THE N.Y. STATE EDUCATION LAW.   |                    |   |                          |                            |             |
| <div><div><div><b>FELLENZER</b></div><div>ENGINEERING LLP</div><div>www.fellp.com</div></div><div>22 Mulberry St., Suite 2A,<br/>Middletown, NY 10940<br/>t 845-343-1481 fx 845-343-4986</div><div>181 Church St., Suite 100,<br/>Poughkeepsie, NY 12601<br/>t 845-454-9704 fx 855-320-8735</div></div> |                    |   |                          |                            |             |
| MARK D. FELLENZER, P.E.   |                    | PROJECT TITLE:<br><b>JOHNSON FARM<br/>PHOTOVOLTAIC ARRAY</b><br>121 JOHNSON ROAD, CHESTER, NY 10918 |                          |                            |             |
| DRAWING TITLE:<br><b>RACK DETAILS</b>   |                    |   |                          |                            |             |
| DESIGNED BY:<br>RDF   | DRAWN BY:<br>SAR   | APPROVED BY P.E.:<br>ACL  | APPROVED BY P.E.:<br>MDF | DRAWING #:<br><b>C-903</b> |             |
| DATE:<br>09/15/15   | SCALE:<br>AS SHOWN | FE PROJECT #:<br>15-255   | PAGE 7 OF 10             |                            |             |





N.T.S



**METER POLE DETAIL**  
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- NOTES:

1. GUY AS REQUIRED. PROVIDE 8" EHS PRIMARY GALVANIZED DOWN GUY, WITH 54" FIBERGLASS STRAIN INSULATOR GRIPS AND 8" SCREW ANCHOR WITH GALVANIZED THIMBLE EYE BOLTS 2" SQ. FLAT OR CURVED CAST WASHER, SQUARE NUT AND GRIPS OR GUY CLAMP AND GUY MARKERS (ORANGE, JOSSLIN, OR MACLEAN). PROVIDE 1/4" EHS GALVANIZED SECONDARY DOWN GUY WITH GRIPS OR CLAMPS (FOR NEUTRAL) AND SCREW ANCHORS AND GUY MARKERS (ORANGE, JOSSLIN, OR MACLEAN).
2. DOUBLE DEAD END 8'-0" OR 10'-0" CROSS ARM CONSTRUCTION TO BE LIMITED TO 2000 LBS. PER PHASE.
3. CUSTOMER CUTOFF FUSES TO BE SIZED PER UTILITY CO., CUTOUTS MUST HAVE LOADBREAK CAPABILITIES.
4. CUSTOMER OWNED METERING EQUIPMENT, OVERHEAD SOURCE SIDE CONDUCTORS, AND HARDWARE INCLUDING POLE, SWITCHES, CUTOUTS, AND TRANSFORMER BRACKET.
5. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS ON ADJACENT SOURCE SIDE OWNER OWNED POLE.
6. PROVIDE JUNCTION BOX NO HIGHER THAN 15'-0", JUNCTION BOX PER UTILITY CO. SHALL BE GROUNDED.
7. STANDARD GROUNDING METHODS. SEE GROUNDING DETAILS ON SHEET E4.02.
8. NOT USED
9. SEE GROUNDING DETAIL FOR PRIMARY AND GROUNDING SCHEMATIC.
10. CONTRACTOR SHALL VERIFY IF STANDARD IS CURRENT AND COORDINATE ALL WORK WITH UTILITY. OBTAIN LATEST DETAILS FROM LOCAL UTILITY AND PERFORM ALL WORK PER UTILITY CURRENT STANDARDS.
11. GROUND RODS SHALL BE PROVIDED ON A LINE PARALLEL TO THE PHASE CONDUCTORS.
12. GROUND RESISTANCE OF 10 OHMS OR LESS SHALL BE OBTAINED. USE 3 POINT TEST FOR MEASURING GROUND RESISTANCE.
13. FLEXIBLE BRAID TO BE SUPPLIED BY SWITCH MANUFACTURER, FROM SHAFT TO HANDLE BASE GROUND CONNECTION.
14. USE COMPRESSION CONNECTORS IN PREFERENCE TO BOLTED CONNECTORS. DO NOT COIL A WIRE UNDER A BOLT, TERMINATE IT IN A LUG BEFORE BOLTING IT DOWN.
15. IF EQUIPMENT GROUND IS REQUIRED, IT SHALL BE BONDED TO GROUND GRID BELOW GRADE.
16. IF METER POLE FOLLOWS CUSTOMER RECONFIGURE; A SOLID BLADE CUT OUT IS REQUIRED.  
S&C #15932(200A) 15KV, 89053R10-P 25/34SKV
17. CONNECT CABLE GROUNDED NEUTRAL TO UTILITY AERIAL GROUNDED NEUTRAL.
18. ALL POLES, CROSS ARMS, AERIAL CABLES, ETC. SHALL CONFORM TO ORANGE & ROCKLAND UTILITIES SPECIFICATIONS.

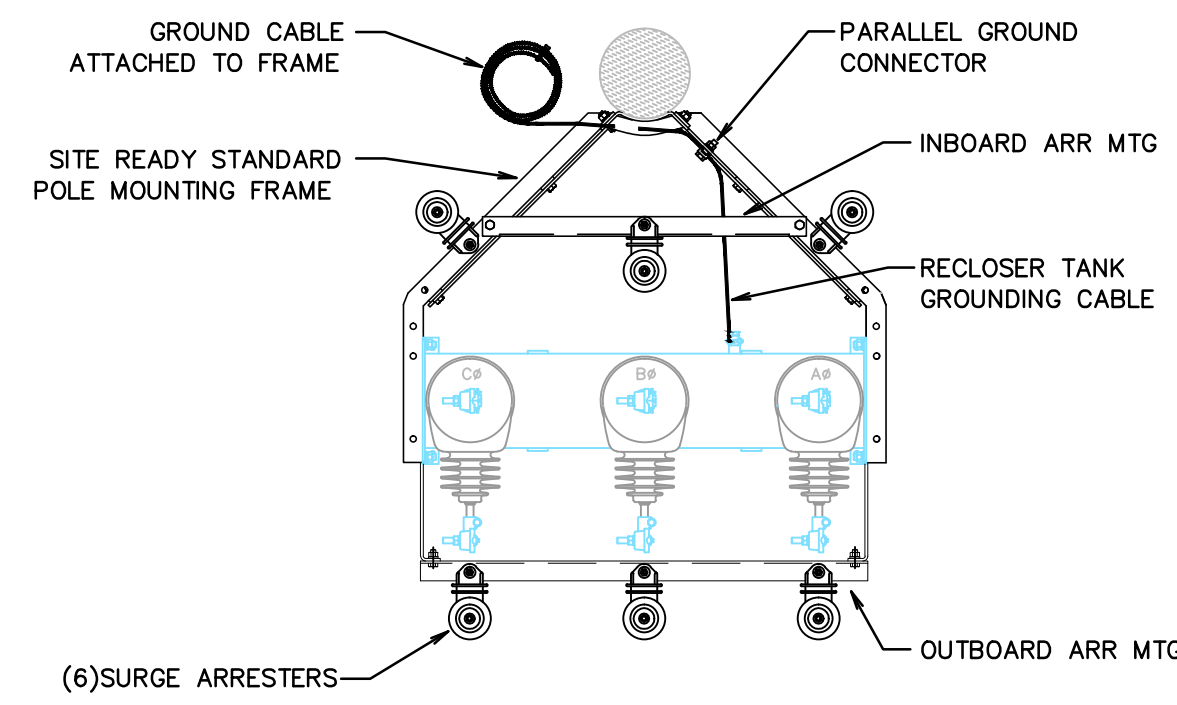
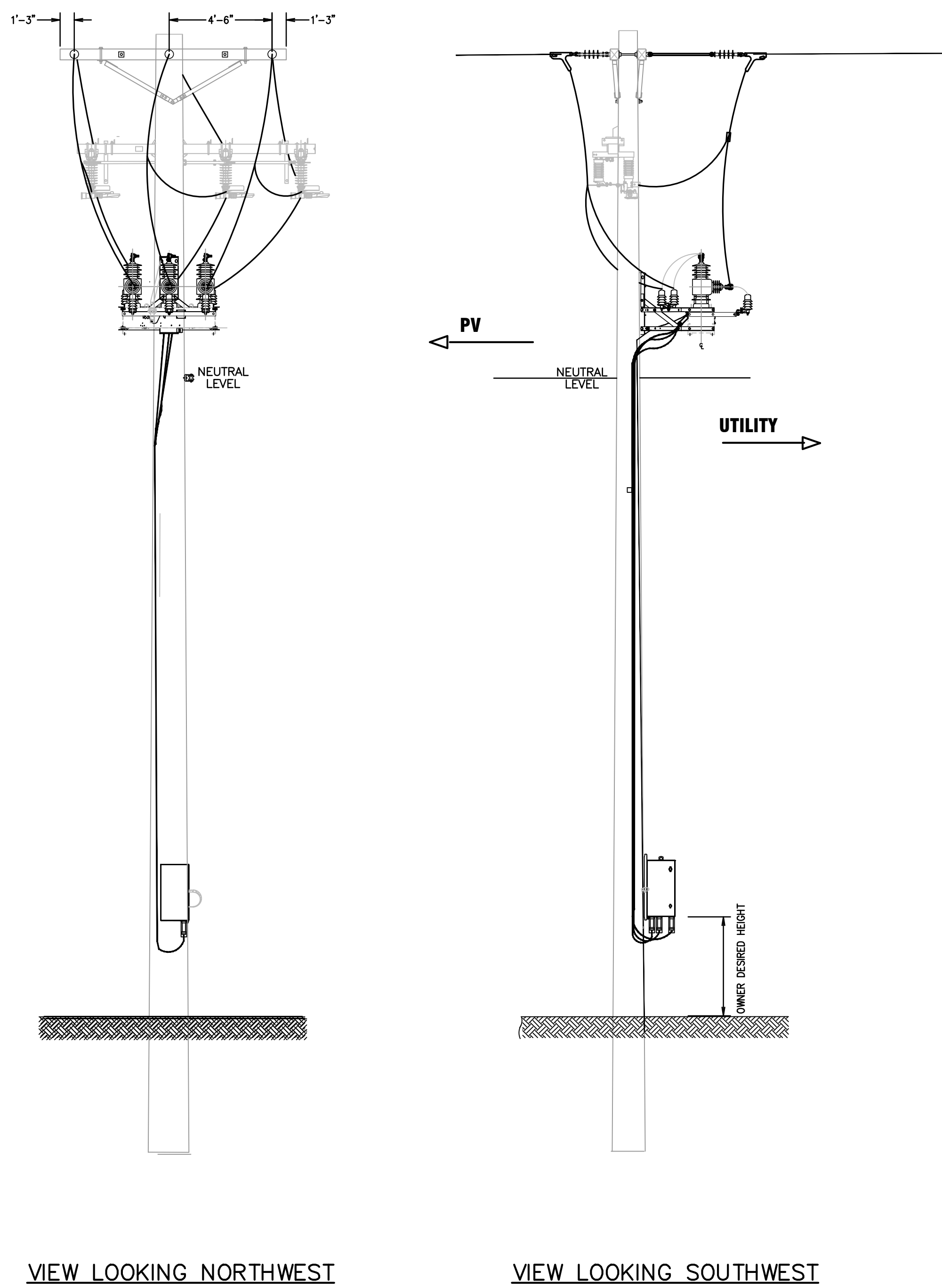
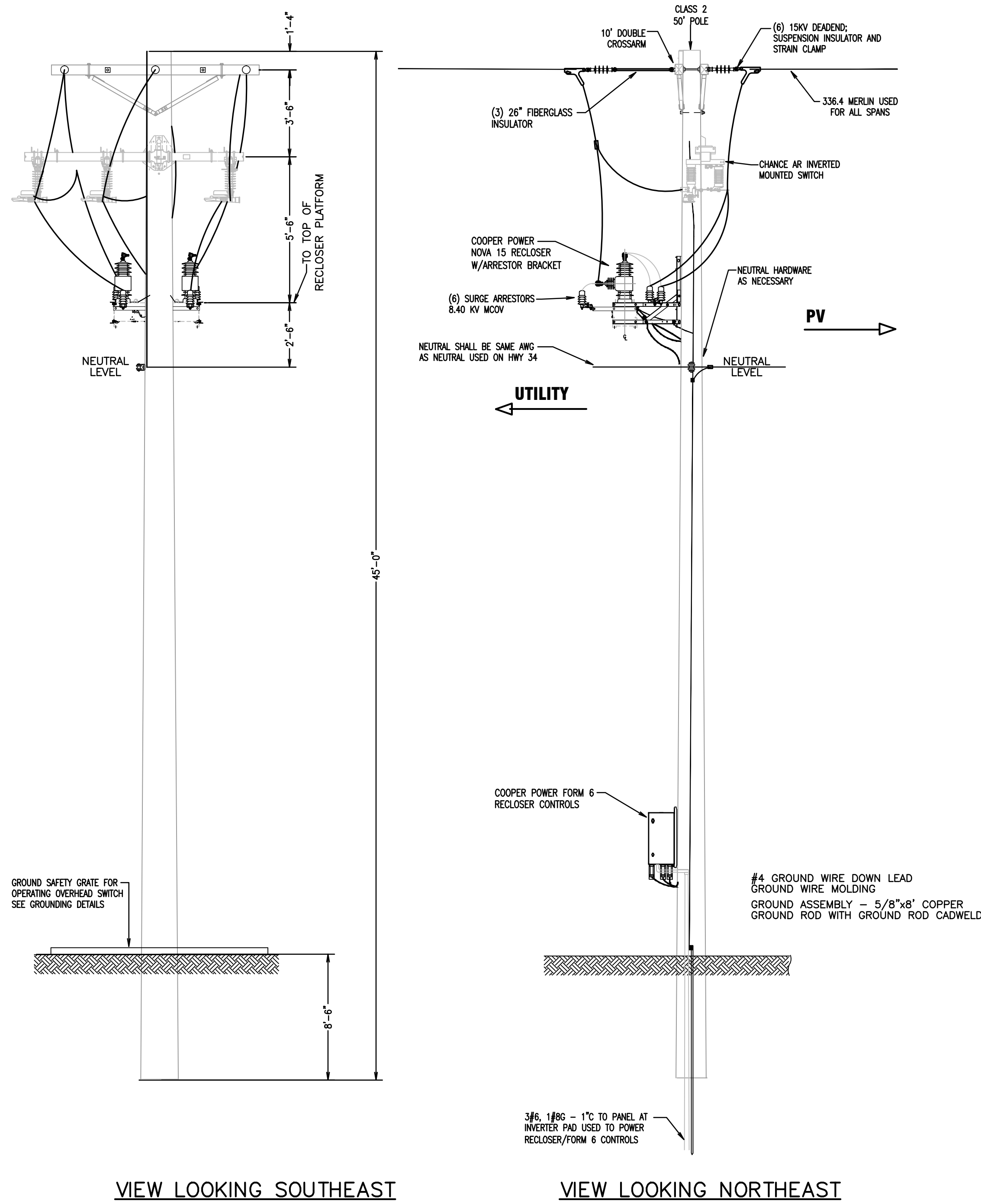
UTILITY POLE DETAIL:

DESCRIPTION

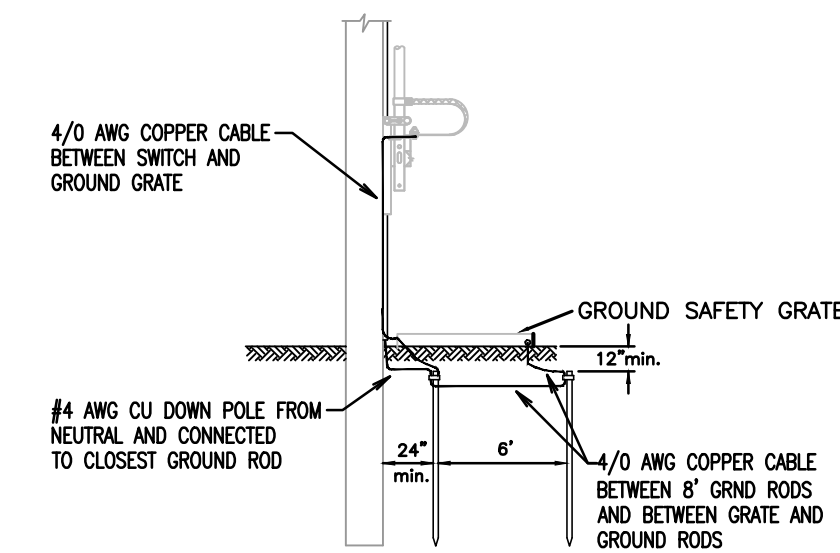
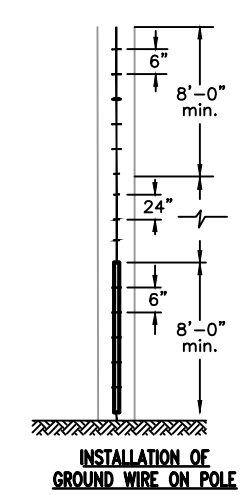
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|---------|--|
| A3      | PROVIDE 10KV MOV/NON GAPPED POLYMER SURGE ARRESTOR 15KV CLASS 08 PDV65 #217560.<br>35KV CLASS 08 PDV65 #213279, 29MCOV/ (OR EQUAL BY COOPER).  |
| B10     | BOLTS AS REQUIRED WITH SQUARE CURVED WASHERS AND SQUARE NUTS GALVANIZED.   |
| B18     | PROVIDE BRACKET FOR METERING ALUMINAFORM PMM-6 3 POSITION FOR INSTRUMENT TRANSFORMERS.   |
| B28,B57 | TERMINATION MOUNTING BRACKET WITH TIES OR STRAPS AND GUIDES AS REQUIRED. CHANCE CTB-EMB SERIES, JOSLYN J9203 SERIES OR EQUAL BY ALUMA FORM, KELLUMS, OR ELASTIMOLD 16TB-5 (PTC).   |
| C1      | CAD WELDED   |
| C14     | PROVIDE TREATED CROSS ARM 3-1/4" x 4-1/4" x 8'-0" (OR 10'-0" PER UTILITY CO. REQUIREMENTS) WITH 60" SPAN BRACES AND 30" DROP, WITH GALVANIZED CAST IRON GAIN (JOSLYN, HUGHES OR EQUAL). GALVANIZED HARDWARE AND BRACKETS: SQUARE HEAD BOLTS OR EYELETS, 2" SQUARE CAST FLAT OR CURVED WASHER AND SQUARE NUT. |
| C21,C46 | COMPRESSION CONNECTORS AS REQUIRED.  |
| C23     | PROVIDE S & C CUT OUT SMD-20, #9122R3-D WITH LOAD BREAK HORNS WITH 100 "E" FUSE.<br>34.5KV, 150KV BL CHANCE #C720613, S&C #B9053R10-D-P (OR EQUAL BY COOPER). NOTES-3,16   |
| C80     | PROVIDE INSULATED #2 SOLID CU DOWN GROUND STRAPPED EVERY 5' WITH GROUND RODS PER DETAIL. NOTE-11   |
| C82     | PROVIDE 1/0 ACSR-RAVEN OR (MEDIUM-HARD DRAWN TEMPER) COPPER AND COMPRESSION CONNECTIONS WITH INHIBITOR (OR MATCH ELECTRIC UTILITY CONDUCTOR IF LARGER).  |
| C84     | PROVIDE 1/0 COPPER 133% INSULATION LEVEL OF 133% EPR 15KV CLASS TAPE SHIELDED PER SPEC, 16121 MV 105 MIN. 1#2 INSULATED (600V) GROUNDING NEUTRAL. (OKONITE SOUTHWIRE).   |
| CL      | PIN INSULATORS TANGENT TYPE 15KV & 95KV BL PP366-S PP2045-S 34.5KV 125KV BL (VICTOR OR EQUAL).   |
| G4      | PROVIDE 3-1/2" - I.D. GALVANIZED STEEL "U" GUARD WITH COVER BOOT OR 4" RGS CONDUIT ON STAND OFFS. (CHANCE OR EQUAL) OR PVC(80) 3.2" I.D. (MIN.) "U" GUARD (CARLON OR EQUAL)  |
| IS      | PROVIDE DEAD END (POLYMER) STRAIN TYPE INSULATOR & O-B; PDI+15(KV) #4011050215 OR PDI-35(KV) #4013050215 (OR EQUAL) GALVANIZED DYNELIMB TIE, EYELET SHACKLE OR DEAD END CLEVIS, UNLESS PROVIDED BY UTILITY CO.   |
| P1      | PROVIDE 45'-0" CLASS 4 PENTACHLOROPHENOL/CWA TREATED POLE, SET 6'-6" DEEP; PROVIDE 50'-0" CLASS 4 POLE SET 7" DEEP FOR 34.5KV AS REQUIRED. VERIFY POLE HEIGHT AND ARM SPACING WITH LOCAL UTILITY CO.   |
| R3      | COPPER GROUND RODS 3/4" DIAMETER, 10'-0" LENGTH.   |
| R6      | PROVIDE INSULATED CLEVIS FOR NEUTRAL: (CHANCE OR JOSLYN)   |
| S6      | STAPLE 1/2" RGS CONDUIT TO POLE, FOR GROUND WIRE PROTECTION.   |
| T6      | PROVIDE OUTDOOR TERMINATOR 15KV JOSLYN JPT15W/K1 BRACKET 3M 5630 SERIES W/BRACKET OR EQUAL BY CHANCE, WITH CABLE GUIDE AND TAPE SHIELDED ADAPTER AS REQUIRED. 34.5KV JOSLYN #E5203/K1 BRACKET (OR EQUAL BY 3M OR CHANCE)   |
| T51     | CT BY ELECTRICAL CONTRACTOR.   |
| T52     | PT BY ELECTRICAL CONTRACTOR.   |

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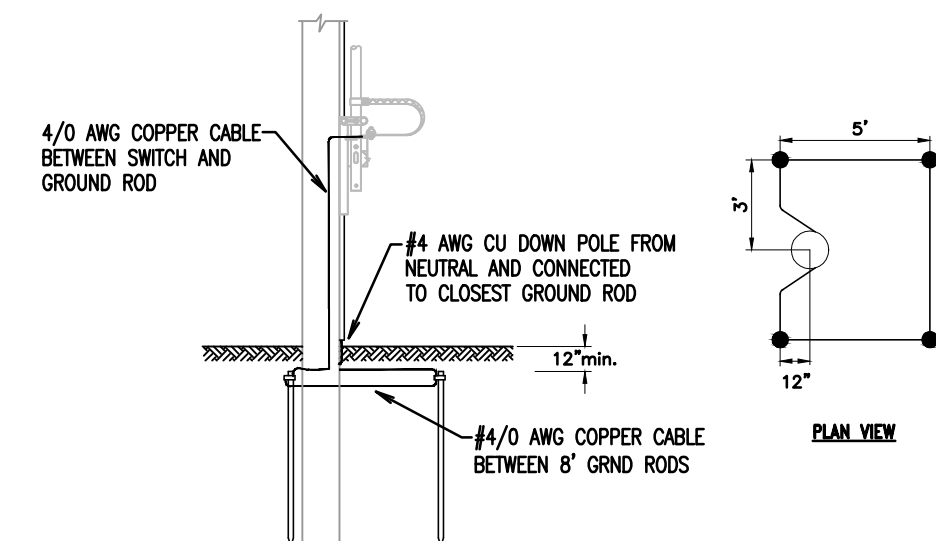




PLAN VIEW  
SCALE: NONE



OR  
USE FOUR ROD  
TYPE



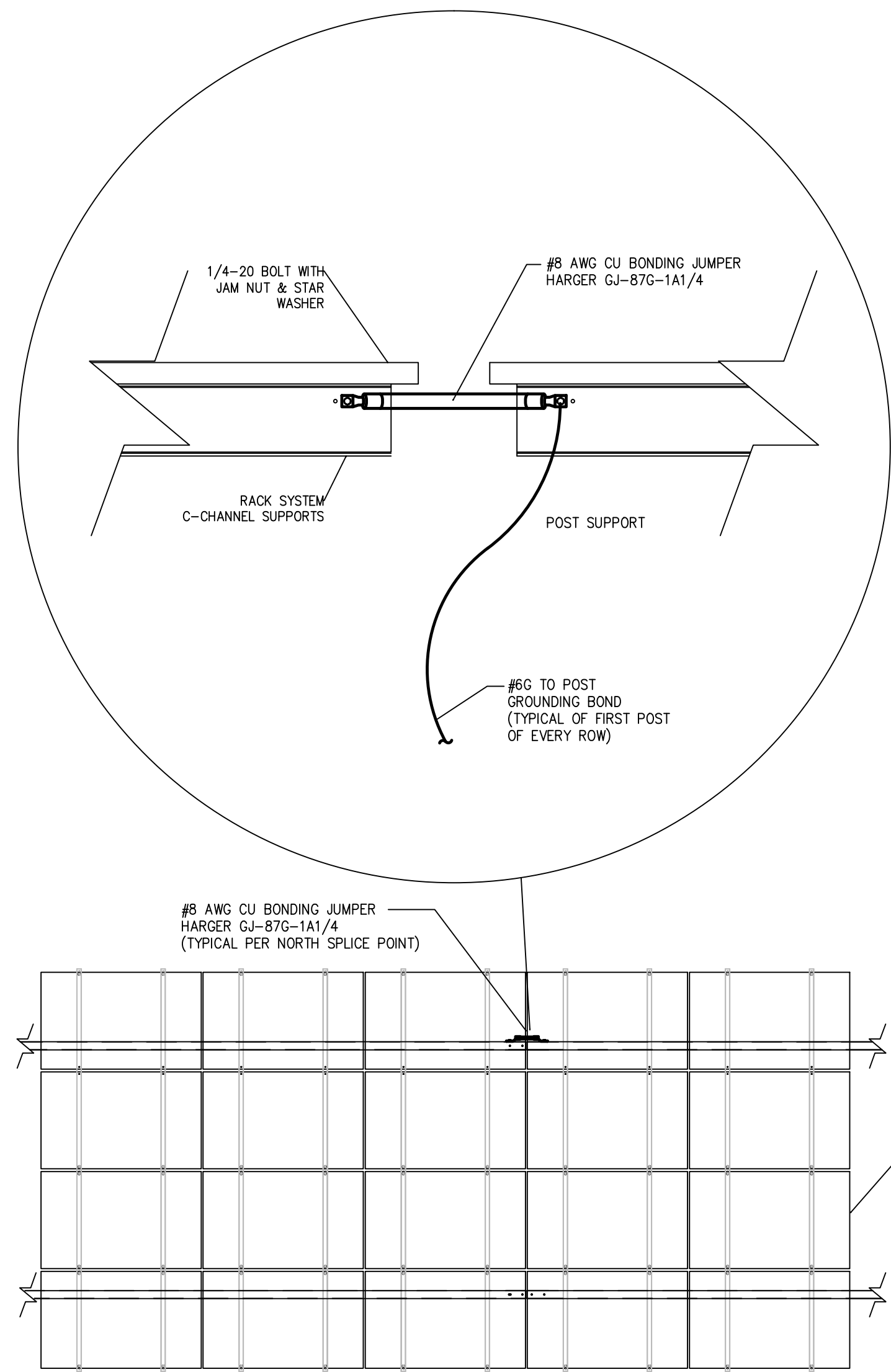
GROUNDING DETAILS  
SCALE: NONE

1 RECLOSER POLE DETAIL  
N.T.S.

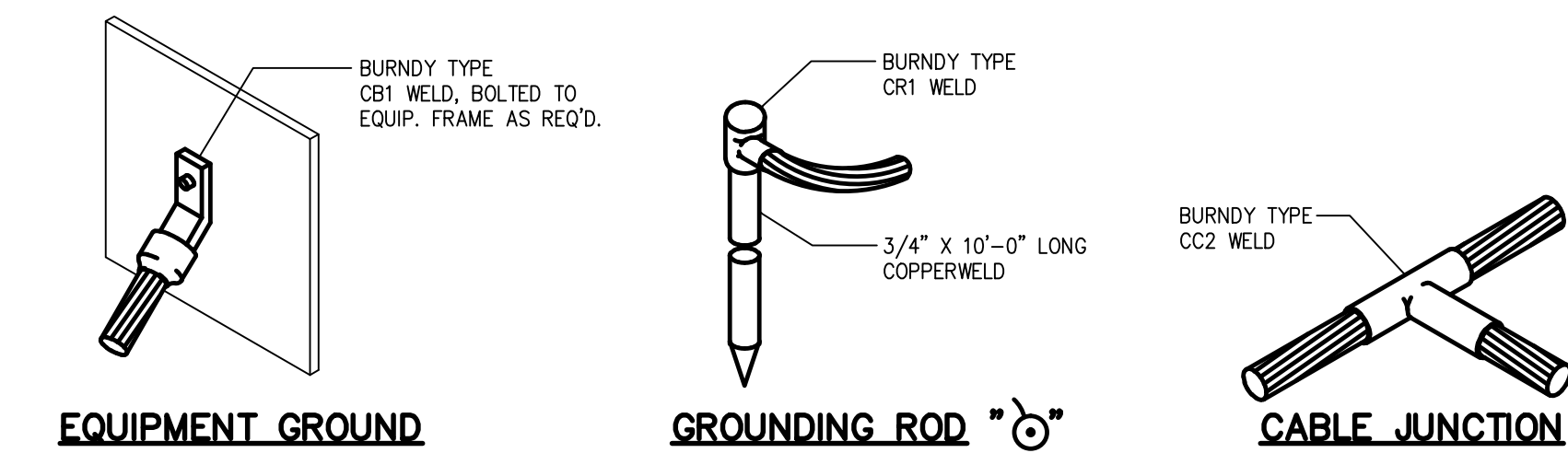
| 1  | 3/23/16 | PER COMMENTS/ FOR APPROVAL |         |      |             |
|--|---------|----------------------------|---------|------|-------------|
| REV #  | DATE    | REMARKS:                   | ISSUE # | DATE | ISSUED FOR: |
| <div><div><div>1/8"</div><div>1/4"</div><div>3/8"</div><div>1/2"</div><div>5/8"</div><div>3/4"</div><div>7/8"</div><div>1"</div><div>1 1/8"</div><div>1 1/4"</div><div>1 3/8"</div><div>1 1/2"</div><div>1 5/8"</div><div>1 3/4"</div><div>1 7/8"</div><div>2"</div></div><div>REFERENCE SCALE</div></div> |         |                            |         |      |             |
| UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A<br>LICENSED PROFESSIONAL ENGINEER'S SEAL IS A VIOLATION OF<br>SECTION 7209, SUB-DIVISION 2 OF THE N.Y. STATE EDUCATION LAW.  |         |                            |         |      |             |

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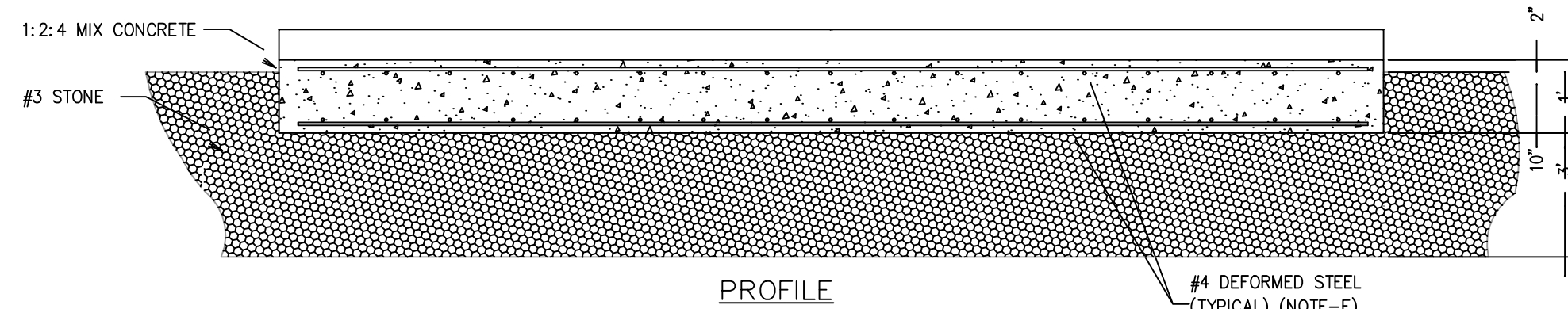
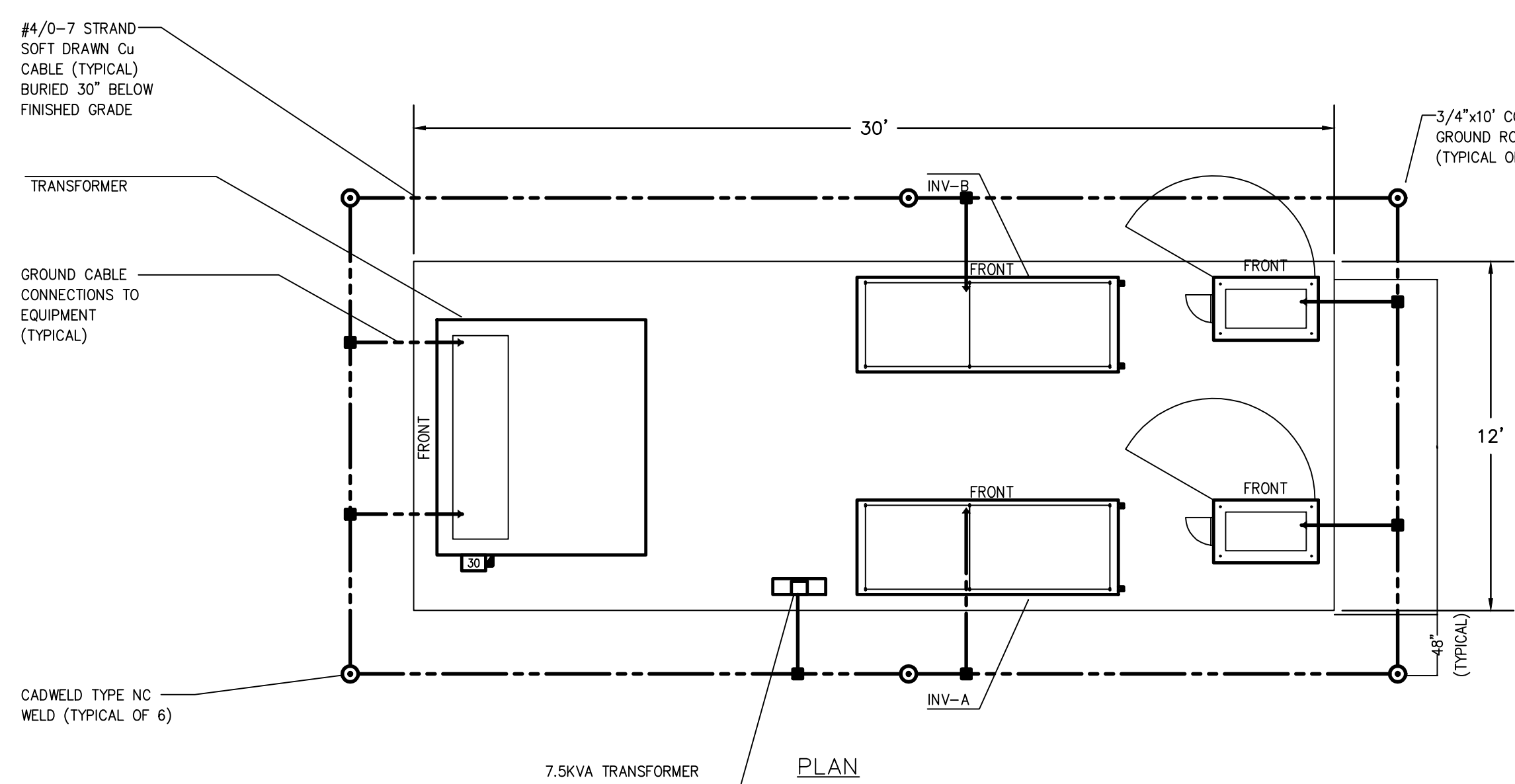
1 PHOTOVOLTAIC RACK BONDING DETAIL  
N.T.S.



GROUNDING NOTES:

- GROUNDING CABLE SHALL BE LAID SLACK A MINIMUM OF 18\"/>
- GROUND RESISTANCE SHALL BE 3 OHMS MAXIMUM. ADDITIONAL RODS OR ROD EXTENSIONS SHALL BE DRIVEN TO OBTAIN THIS VALUE BY TEST.
- ALL GROUND CABLE SHALL BE A #4/-7 STRAND SOFT, BARE COPPER CABLE MINIMUM.
- ALL CONNECTIONS TO BE MADE BY THE THERMOLO PROCESS OF BURNDY OR CADWELD PROCESS OF ERICO PRODUCTS INC.

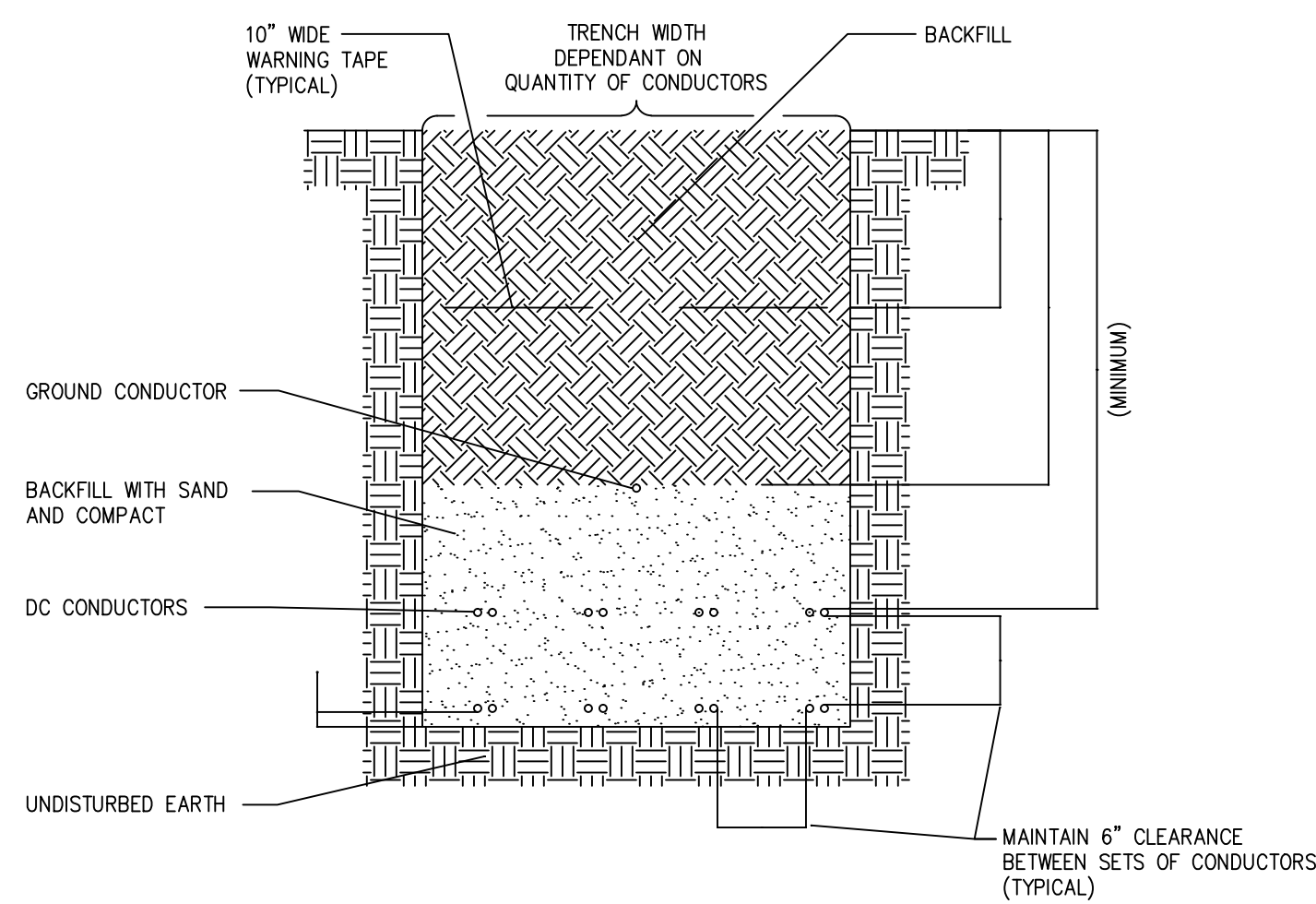
2 GROUNDING DETAILS  
N.T.S.



TRANSFORMER PAD DETAIL NOTES:

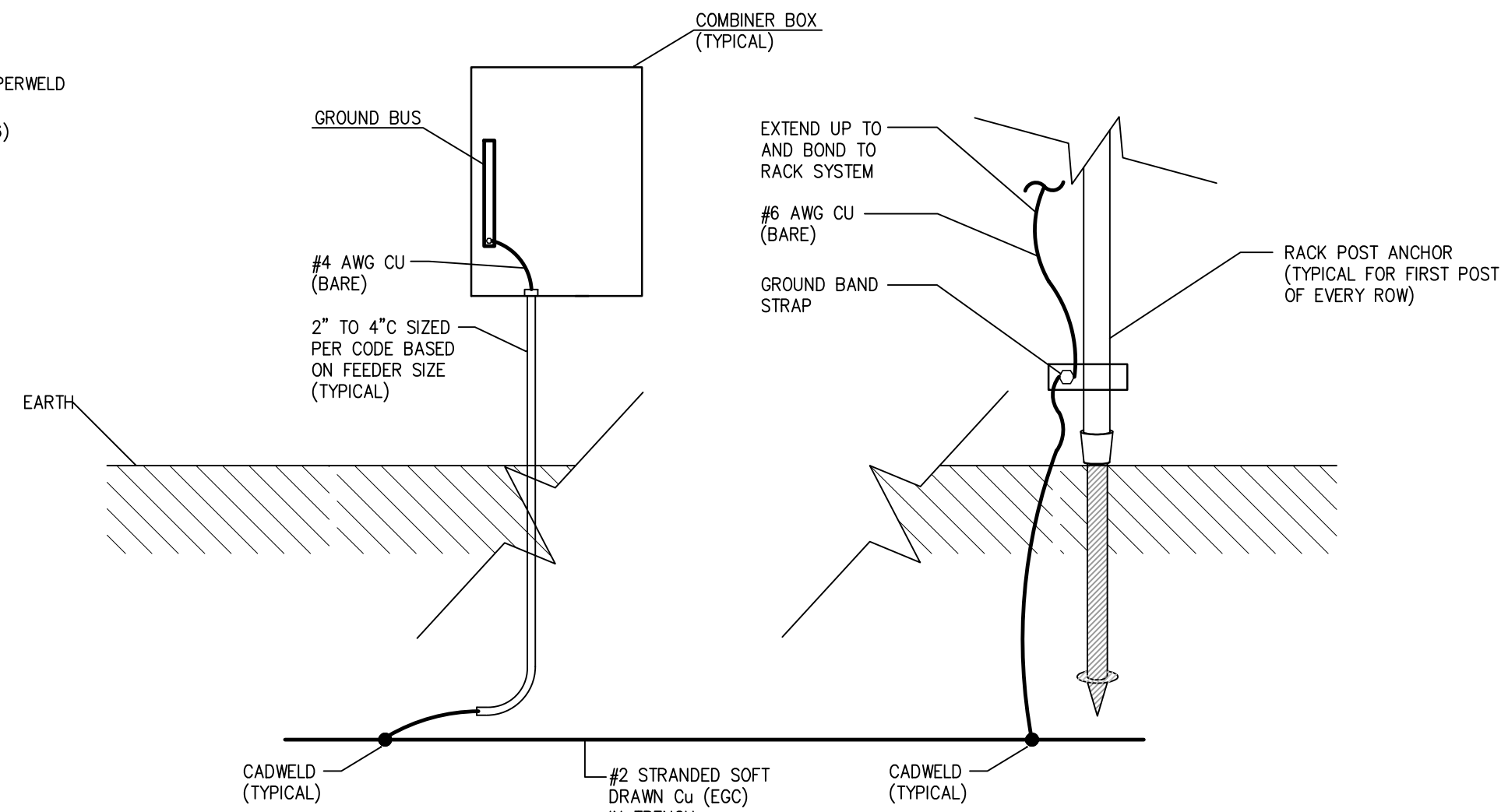
- CONDUITS SHALL BE INSTALLED WITH THE TOP OF THE CONDUITS EVEN WITH OR BELOW THE CONCRETE PAD SURFACE.
- CONDUIT OPENINGS FOR EQUIPMENT SHALL BE FRAMED AS INDICATED AND REMAIN OPEN AFTER CONCRETE POUR. PRIMARY CONDUITS SHALL BE INSTALLED ON THE LEFT SIDE OF THE C-CHANNEL OPENING. VERIFY OPENINGS WITH EQUIPMENT SPECIFICATIONS.
- CONCRETE SHALL BE PORTLAND CEMENT TYPE 3 OR 3A (1:2:4 MIX). CONCRETE SHALL BE 3000psi STRENGTH IN SEVEN DAYS. TRANSFORMER SHALL BE INSTALLED ON PAD AFTER THE PAD HAS CURED TO FULL STRENGTH.
- CONCRETE PAD SHALL BE INSTALLED LEVEL, REGRADE AND PREPARE BASE AS REQUIRED. STONE BASE SHALL BE COMPACTED PRIOR TO CONCRETE POUR.
- TWO LAYERS OF REINFORCING RODS 10\"/>
- PROVIDE 1/2\"/>

3 TRANSFORMER AND INVERTER CONCRETE PAD DETAIL  
N.T.S.

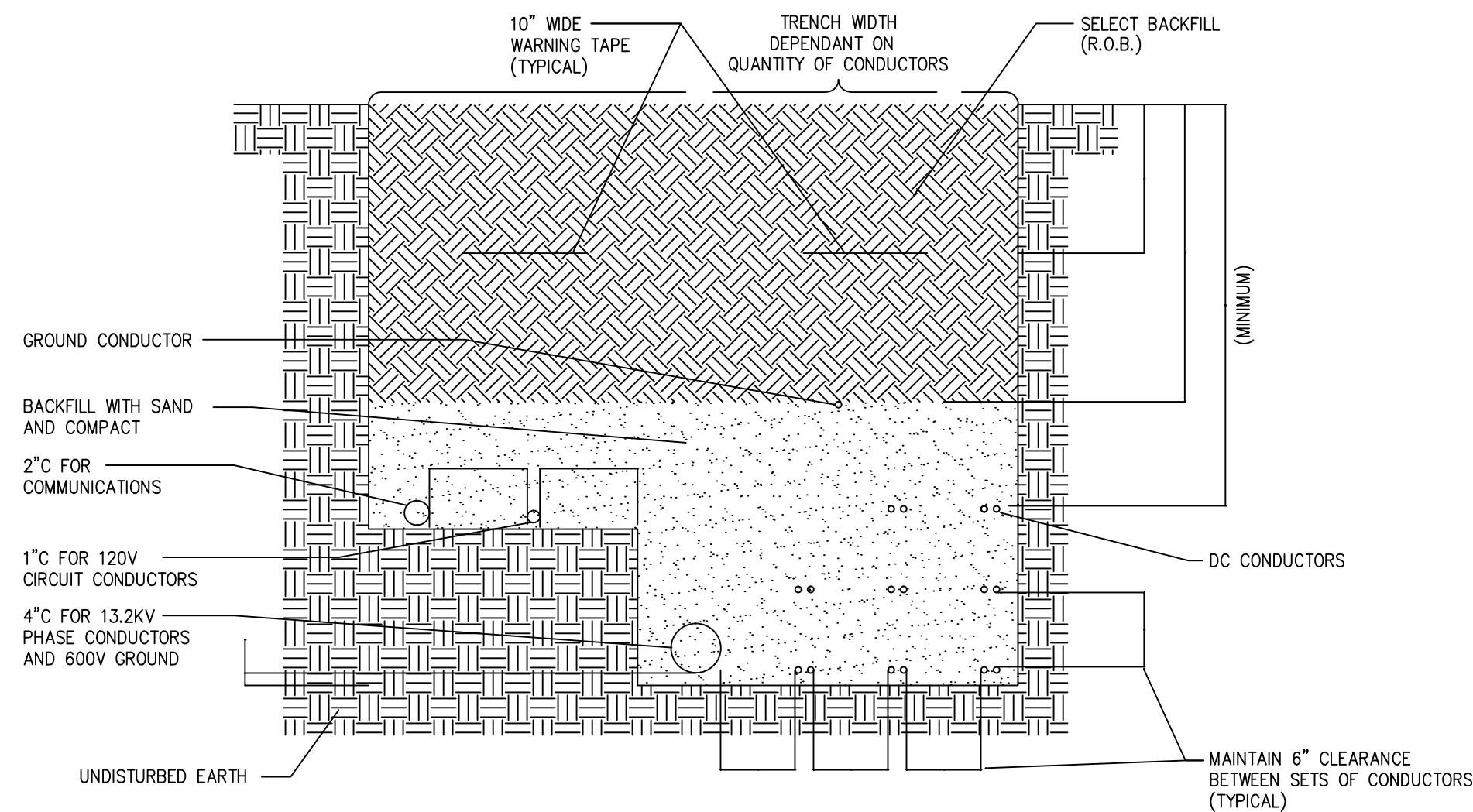


NOTE:  
CONDUITS FOR COMMUNICATION WIRING SHALL MAINTAIN A MINIMUM OF 12\"/>

5 TRENCH DETAIL 'B'  
N.T.S.

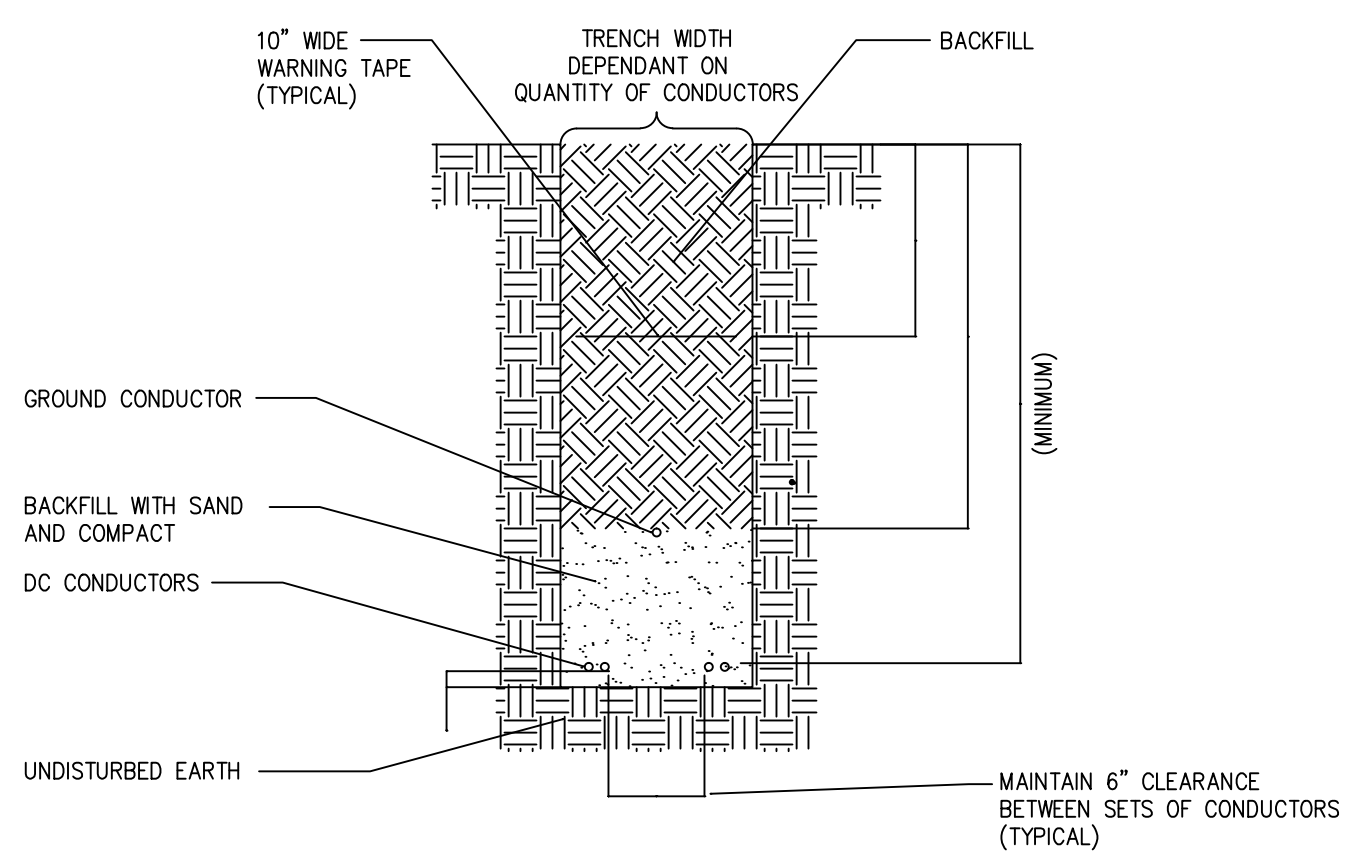


3 COMBINER BOX & RACK BONDING DETAIL  
N.T.S.



NOTE:  
CONDUITS FOR COMMUNICATION WIRING SHALL MAINTAIN A MINIMUM OF 12\"/>

4 TRENCH DETAIL 'A'  
N.T.S.



NOTE:  
CONDUITS FOR COMMUNICATION WIRING SHALL MAINTAIN A MINIMUM OF 12\"/>

5 TRENCH DETAIL 'C'  
N.T.S.

TOWN OF CHESTER PLANNING BOARD APPROVAL

|  |                    |                            |                          |                            |             |
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|  |                    |                            |                          |                            |             |
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| 1  | 3/23/16            | PER COMMENTS/ FOR APPROVAL |                          |                            |             |
| REV #  | DATE               | REMARKS:                   | ISSUE #                  | DATE                       | ISSUED FOR: |
| <div><div>1" = 2'</div><div>REFERENCE SCALE</div></div>  |                    |                            |                          |                            |             |
| UNAUTHORIZED ALTERATION OR ADDITION TO A PLAN BEARING A LICENSED PROFESSIONAL ENGINEER'S SEAL IS A VIOLATION OF SECTION 7209, SUB-DIVISION 2 OF THE N.Y. STATE EDUCATION LAW.  |                    |                            |                          |                            |             |
| <div><div><div><b>FELLENZER</b></div><div>ENGINEERING III</div><div>ENGINEERING LLP</div><div>www.fellp.com</div></div><div><div>22 Mulberry St., Suite 2A,<br/>Middletown, NY 10940<br/>t 845-343-1481 fx 845-343-4986</div><div>181 Church St., Suite 100,<br/>Poughkeepsie, NY 12601<br/>t 845-454-9704 fx 855-320-8735</div></div></div> |                    |                            |                          |                            |             |
| MARK D. FELLENZER, P.E. PROJECT TITLE: <b>JOHNSON FARM PHOTOVOLTAIC ARRAY</b><br>121 JOHNSON ROAD, CHESTER, NY 10918   |                    |                            |                          |                            |             |
| DRAWING TITLE: <b>GROUNDING &amp; TRENCH DETAILS</b>   |                    |                            |                          |                            |             |
| DESIGNED BY:<br>RDF  | DRAWN BY:<br>SAR   | APPROVED BY P.E.:<br>ACL   | APPROVED BY P.E.:<br>MDF | DRAWING #:<br><b>C-906</b> |             |
| DATE:<br>09/15/15  | SCALE:<br>AS SHOWN | FE PROJECT #:<br>15-255    | PAGE 10 of 10            |                            |             |