

INTERCONNECTION APPLICATION SET



PHOTOVOLTAIC SYSTEM DESCRIPTION:	
INSTALLATION TYPE:	GROUND
RACK SYSTEM:	25° TILT
INTERCONNECTION UTILITY:	CENTRAL HUDSON
AC SYSTEM SIZE:	4.95 MW
DC SYSTEM SIZE:	6.05 MW
SITE ORIENTATION:	
ARRAY AZIMUTH:	180°
PROPOSED EQUIPMENT:	
MODULE:	(12 476) 485 WATT MODULE MANUFACTURER: HANWHA MODEL: Q.PEAK DUO XL-G10.3/BFG 485 (485W)
INVERTERS:	(22) 225 KW 3-PHASE STRING INVERTERS MANUFACTURER: YASKAWA SOLECTRIA MODEL: SGI 225-480 (SOLECTRIA)

PRIMARY 15 KV CONDUCTOR :	
OVERHEAD:	2/o COPPER
UNDERGROUND :	3 # 4/0 TYPE MV-105 15KV EPR INSULATED SHIELDED, 1#2/0 G IN 4" RGS
DISTANCE:	
DISTANCE BETWEEN CUSTOMER OWNED STEP UP TRANSFORMER AND NEAREST INTERCONNECTION POINT IS APPROXIMATELY 1 MILE.	
UTILITY INTERCONNECTION POINT LOCATION DETAILS:	
FEEDER NOMINAL VOLTAGE: 13.2 KV	

APPLICABLE PROJECT CODES :
2017 NATIONAL ELECTRICAL CODE (NFPA-70)
2020 BUILDING CODE OF NEW YORK STATE
2020 MECHANICAL CODE OF NEW YORK STATE
2020 FIRE CODE OF NEW YORK STATE
ASHRAE / IESNA STANDARD90.1-2007
UL 1741 - PHOTOVOLTAIC INVERTERS
UL 1703 - PHOTOVOLTAIC MODULES
IN ADDITION TO CODES LISTED ABOVE, THE ENTIRE INSTALLATION SHALL MEET THE REQUIREMENT OF THE LOCAL LAW / CODES AND AUTHORITY HAVING JURISDICTION.

PROJECT DRAWING LIST :	
SHEET	TITLE
PV-0.1	COVER SHEET
PV-1.0	PV LAYOUT & SOLAR INTERCONNECTION PLAN
PV-2.0	THREE LINE DIAGRAM
PV-3.0	ELECTRICAL SPECIFICATION SHEET
PV-4.0	PV CELL MOUNTING & SECTION DETAILS

ELECTRICAL SYMBOL LIST	
	TRANSFORMER, RATING AS INDICATED
	CIRCUIT BREAKER, RATING AS INDICATED
	INVERTER, RATING AS INDICATED
	DISCONNECT SWITCH, RATING AS INDICATED
	ENERGY METER
	CURRENT TRANSFORMER
	MAJOR ELECTRICAL COMPONENT OR DEVICE. RATING AS INDICATED
	KEYED NOTE REFERENCE
	UNDERGROUND WIRING SYSTEM
	OVERHEAD WIRING SYSTEM
	FUSE, SIZE AS INDICATED

ELECTRICAL ABBREVIATION:							
A	AMPERES	°F	DEGREE FAHRENHEIT	PNL	PANEL	PVC	POLYVINYL CHLORIDE
AF	AMPERE FRAME/AMP FUSE	DISC	DISCONNECT	W	WATT	RGS	RIGID GALVANIZED STEEL
AS	AMP SWITCH	DP	DISTRIBUTION PANEL	W	WIRE	SPDT	SINGLE POLE DOUBLE THROW
AIC	AMPS INTERRUPTING CAPACITY	KCMIL	ONE THOUSAND CIRCULAR MILS	E	EXISTING	SPST	SINGLE POLE SINGLE THROW
AT	AMP TRIP	KV	KILOVOLT	EC	EMPTY CONDUIT/ ELECTRICAL CONTRACTOR	SPEC	SPECIFICATION
ATS	AUTOMATIC TRANSFER SWITCH	KVA	KILOVOLT-AMPERES	EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
AUTO	AUTOMATIC	KW	KILOWATTS	EQUIP	EQUIPMENT	TYP	TYPICAL
AWG	AMERICAN WIRE GAUGE	MCB	MAIN CIRCUIT BREAKER	FDR	FEEDER	U.O.N.	UNLESS OTHERWISE NOTED
C	CONDUIT	N	NEUTRAL	G	GROUND	V	VOLT/VOLTAGE
CB	CIRCUIT BREAKER	NIC	NOT IN CONTRACT	GFI	GROUND FAULT INTERRUPTER	VA	VOLT AMPERE
CKT	CIRCUIT	NTS	NOT TO SCALE	HZ	HERTZ	WP	WEATHERPROOF
CT	CURRENT TRANSFORMER	P	POLES	IC	INTERRUPTING CAPACITY	XFMR	TRANSFORMER
°C	DEGREE CELSIUS	∅	PHASE	PP	POWER PANEL		

ELECTRICAL NOTES	
1.	CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR FAILURE TO DO SO.
2.	CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
3.	ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAIN-TIGHT INSTALLATION.

PHOTOVOLTAIC SYSTEM DESCRIPTION:

INSTALLATION TYPE: GROUND
RACK SYSTEM: 25° TILT

AC SYSTEM SIZE: 4.95 MW
DC SYSTEM SIZE: 6.05 MW
SITE ORIENTATION:
ARRAY AZIMUTH: 180°

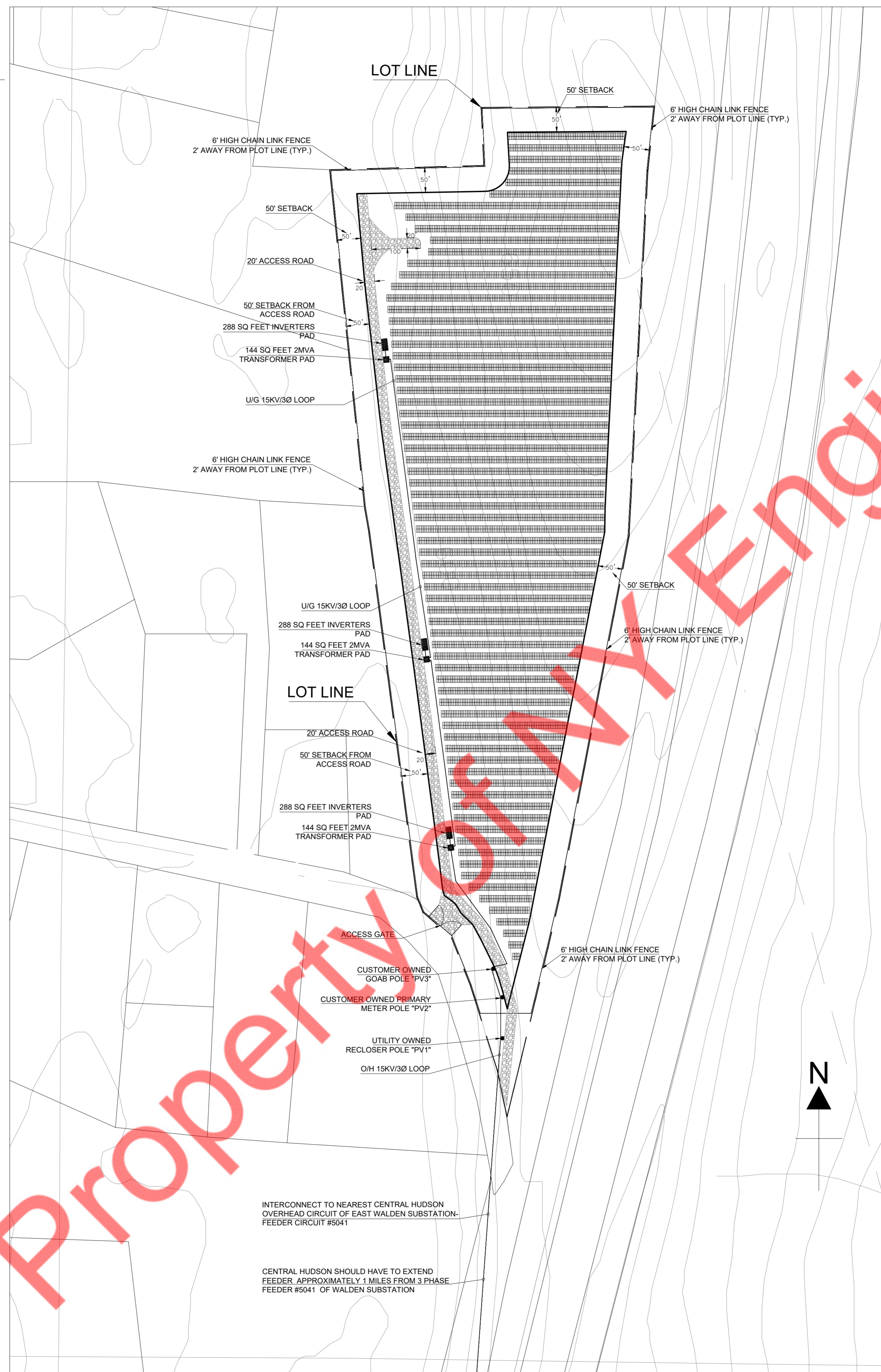
PROPOSED EQUIPMENT:
MODULE: (12,476) 485 WATT MODULE
 MANUFACTURER: HANWHA
 MODEL: Q-PEAK DUO XL-G10.3/BFG 485 (485W)

INVERTERS: (22) 225 KW 3-PHASE STRING INVERTERS
 MANUFACTURER: YASKAWA SOLECTRIA
 MODEL: SGI 225-480 (SOLECTRIA)

PRIMARY 15 KV CONDUCTOR:
OVERHEAD: 2/0 COPPER
UNDERGROUND: 3 # 4/0 TYPE MV-105 15KV EPR INSULATED SHIELDED, 1#2/0 G IN 4" RGS

DISTANCE:
 DISTANCE BETWEEN CUSTOMER OWNED STEP UP TRANSFORMER AND NEAREST INTERCONNECTION POINT IS APPROXIMATELY 1 MILE.

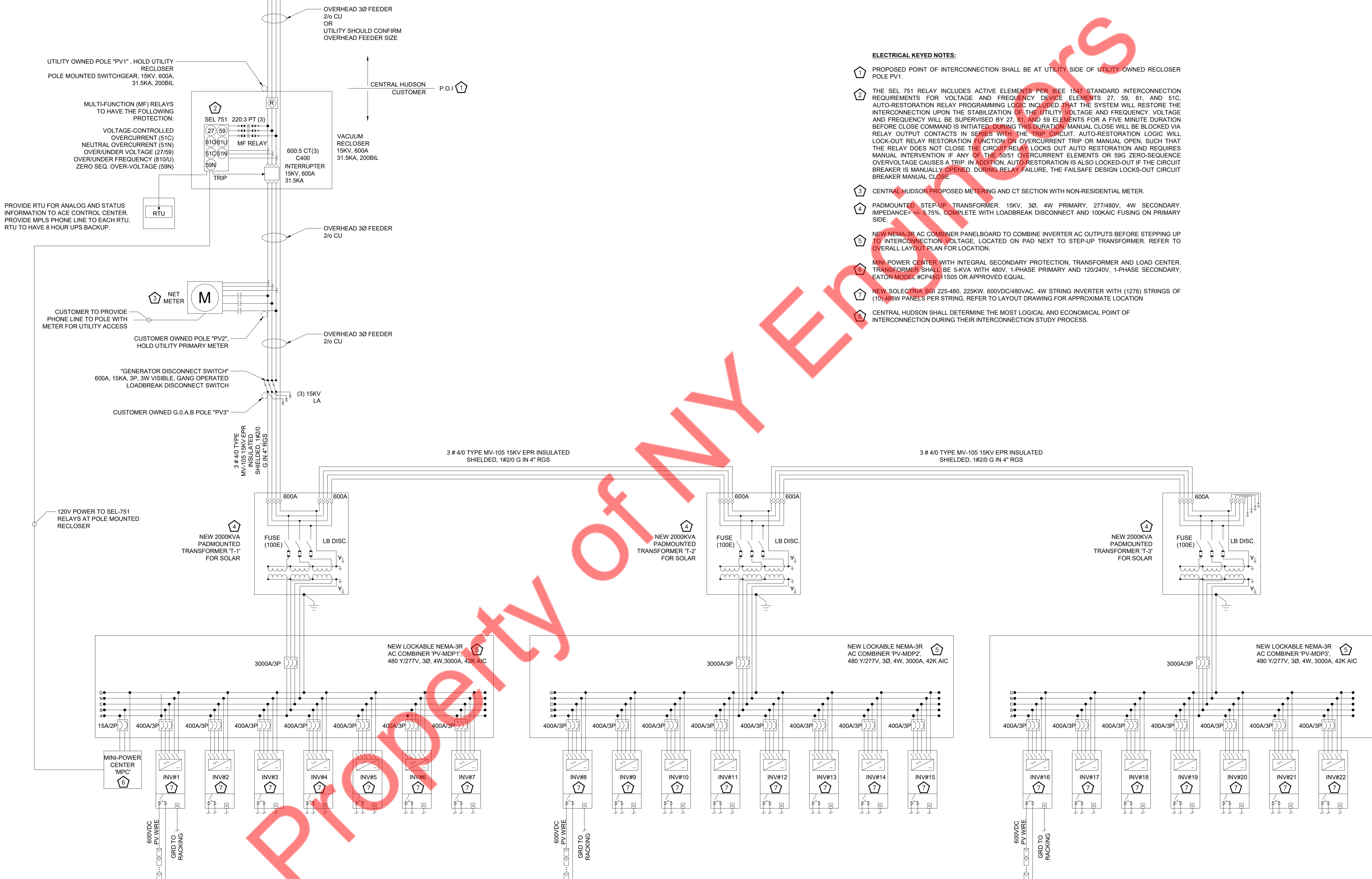
UTILITY INTERCONNECTION POINT LOCATION DETAILS:
 FEEDER NOMINAL VOLTAGE: 13.2 KV



2 SITE KYE PLAN
SCALE: NTS

1 ELECTRICAL SITE PLAN
SCALE: 1/128" = 1'-0"

INTERCONNECT TO NEAREST CENTRAL HUDSON
OVERHEAD CIRCUIT OF EAST WALDEN SUBSTATION-
FEEDER CIRCUIT #5041



ELECTRICAL KEYED NOTES:

- 1 PROPOSED POINT OF INTERCONNECTION SHALL BE AT UTILITY SIDE OF UTILITY OWNED RECLOSER POLE PV1.
- 2 THE SEL 751 RELAY INCLUDES ACTIVE ELEMENTS PER IEEE 1547 STANDARD INTERCONNECTION REQUIREMENTS FOR VOLTAGE AND FREQUENCY DEVICE ELEMENTS 27, 59, 81, AND 51C, AUTO-RESTORATION RELAY PROGRAMMING LOGIC INCLUDED THAT THE SYSTEM WILL RESTORE THE INTERCONNECTION UPON THE STABILIZATION OF THE UTILITY VOLTAGE AND FREQUENCY. VOLTAGE AND FREQUENCY WILL BE SUPERVISED BY 27, 81, AND 59 ELEMENTS FOR A FIVE MINUTE DURATION BEFORE CLOSE COMMAND IS INITIATED. DURING THIS DURATION, MANUAL CLOSE WILL BE BLOCKED VIA RELAY OUTPUT CONTACTS IN SERIES WITH THE TRIP CIRCUIT. AUTO-RESTORATION LOGIC WILL LOCK-OUT RELAY RESTORATION FUNCTION ON OVERCURRENT TRIP OR MANUAL OPEN, SUCH THAT THE RELAY DOES NOT CLOSE THE CIRCUIT. RELAY LOCKS OUT AUTO RESTORATION AND REQUIRES MANUAL INTERVENTION IF ANY OF THE 50/51 OVERCURRENT ELEMENTS OR 59G ZERO-SEQUENCE OVERVOLTAGE CAUSES A TRIP. IN ADDITION, AUTO-RESTORATION IS ALSO LOCKED-OUT IF THE CIRCUIT BREAKER IS MANUALLY OPENED. DURING RELAY FAILURE, THE FAILSAFE DESIGN LOCKS-OUT CIRCUIT BREAKER MANUAL CLOSE.
- 3 CENTRAL HUDSON PROPOSED METERING AND CT SECTION WITH NON-RESIDENTIAL METER.
- 4 PADMOUNTED STEP-UP TRANSFORMER, 15KV, 3Ø, 4W PRIMARY, 277/480V, 4W SECONDARY, IMPEDANCE= +/- 5.75%, COMPLETE WITH LOADBREAK DISCONNECT AND 100KAIC FUSING ON PRIMARY SIDE.
- 5 NEW NEMA-3R AC COMBINER PANELBOARD TO COMBINE INVERTER AC OUTPUTS BEFORE STEPPING UP TO INTERCONNECTION VOLTAGE, LOCATED ON PAD NEXT TO STEP-UP TRANSFORMER. REFER TO OVERALL LAYOUT PLAN FOR LOCATION.
- 6 MINI POWER CENTER WITH INTEGRAL SECONDARY PROTECTION, TRANSFORMER AND LOAD CENTER. TRANSFORMER SHALL BE 5-KVA WITH 480V, 1-PHASE PRIMARY AND 120/240V, 1-PHASE SECONDARY, EATON MODEL #CP48G11S05 OR APPROVED EQUAL.
- 7 NEW SOLEQTRIA SGI 225-480, 225KW, 600VDC/480VAC, 4W STRING INVERTER WITH (1276) STRINGS OF (10) 485W PANELS PER STRING. REFER TO LAYOUT DRAWING FOR APPROXIMATE LOCATION
- 8 CENTRAL HUDSON SHALL DETERMINE THE MOST LOGICAL AND ECONOMICAL POINT OF INTERCONNECTION DURING THEIR INTERCONNECTION STUDY PROCESS.

1 THREE LINE DIAGRAM
SCALE: NTS

SPECIFICATIONS	SGI 225	SGI 250	SGI 266	SGI 300	SGI 500	SGI 500PE
DC Input						
Absolute Maximum Input Voltage	600 VDC					
Max Power Input Voltage Range (MPP)*	300-500 VDC					
Maximum Operating Input Current	768 A	853 A	908 A	1026 A	1721 A	1712 A
Maximum PV Power	331.5 kW		345.8 kW	390 kW	650 kW	
Strike Voltage	390 V					
AC Output						
Nominal Output Voltage	480 VAC, 3 ϕ /PE					
AC Voltage Range	-12%/+10%					
Continuous Output Power	225 kW	250 kW	266 kW	300 kW	500 kW	
Continuous Output Current	480 VAC	301 A	320 A	360 A	602 A	
Continuous Output Current	600 VAC		240 A			
Maximum Backfeed Current	0 A					
Nominal Output Frequency	60 Hz					
Output Frequency Range	57-60.5 Hz					
Power Factor	Adjustable 0.9 leading / 0.9 lagging, factory set at 1					
Fault Current Contribution (1 Cycle RMS)	325.2 A	361.2 A	384 A	432 A	722 A	
Total Harmonic Distortion (THD) @ Rated Load	3%					
Performance						
Peak Efficiency	98.0%				97.9%	98.3%
CEC Efficiency (480 VAC)	97.5%				97.0%	97.5%
Tare Loss	28 W					32 W
Ambient Temperature Range (full power)	-40°F to +122°F (-40°C to +50°C)					
Storage Temperature Range	-40°F to +158°F (-40°C to +70°C)					
Relative Humidity (non-condensing)	5-95%					
Audible Noise	60 dBA @ 5 m					
Safety Listings & Certifications	UL1741/IEEE 1547, CSA C22.2#107.1, FCC part 15 B					
Maintenance Output Factor	0.1					
Testing Agency	ETL					
Mechanical						
Transformer	Standard, fully-integrated					
AC Breaker/DC Disconnect	Fully-integrated					
Dimensions (H x W x D)	79 in. x 109 in. x 41 in. (2007 mm x 2769 mm x 1042 mm)					
Shading Set Back	137 in. (3480 mm) at 30° solar elevation					
Weight	5170 lbs (2346 kg)		5650 lbs (2563 kg)	6980 lbs (3167 kg)	7107 lbs (3224 kg)	
Enclosure Rating	Type 3R					
Enclosure Finish	Polyester powder coated steel, optional 316 stainless steel					
Subcombiner Options						
Fuses or Breakers	6 positions, 225-400 A			8 positions, 225-400 A		
Fuses Only	12 positions, 110-200 A			16 positions, 110-200 A		
Fuses Only	24 positions, 70-100 A			32 positions, 70-100 A		
Communication						
Data Logger Hardware	Standard, integrated					
SolenView™ Monitoring Service	Optional					
Optional Revenue Grade Monitoring (Integrated)						
Optional SolZone™ Sub-Array Monitoring (DC Current)	400 A					
Optional Cellular Communication	SolenView AIR					
Communication Interface	RS-485 SunSpec Modbus RTU					
Warranty						
Standard	5 year					
Optional	10, 15, 20 year; extended service agreement; uptime guarantee					

*At nominal AC voltage

Copyright © Yaskawa-Solecτρια Solar. All information subject to change without notice. November 2015 (DOCC-070242-1)

MECHANICAL SPECIFICATION

Format	87.2 in x 41.1 in x 1.38 in (including frame) (2216 mm x 1045 mm x 35 mm)
Weight	64.2 lbs (29.1 kg)
Front Cover	0.08 in (2.0 mm) thermally pre-stressed glass with anti-reflection technology
Back Cover	0.08 in (2.0 mm) semi-tempered glass
Frame	Anodized aluminum
Cell	6 x 26 monocrystalline G.ANTUM solar half cells
Junction Box	2.09-3.98 in x 1.26-2.36 in x 0.59-0.71 in (53-101 mm x 32-60 mm x 15-18 mm), IP67, with bypass diodes
Cable	4mm² Solar cable; (+) ≥27.6 in (700 mm), (-) ≥13.8 in (350 mm)
Connector	Silubul MC4-Evo2, Hanwha G CELLS HGCA, IP68

ELECTRICAL CHARACTERISTICS

POWER CLASS	470	475	480	485	
MINIMUM PERFORMANCE AT STANDARD TEST CONDITIONS, STC† AND BSTC* (POWER TOLERANCE ±6W / -0 W)					
	BSTC*		BSTC*		
Power at MPP ²	P _{MPP} [W]	470	514.1	475	519.6
Short Circuit Current ¹	I _{SC} [A]	11.04	12.08	11.08	12.12
Open Circuit Voltage ³	V _{OC} [V]	52.91	53.10	53.15	53.34
Current at MPP	I _{MPP} [A]	10.51	11.50	10.55	11.54
Voltage at MPP	V _{MPP} [V]	44.73	44.72	45.03	45.02
Efficiency ⁴	η [%]	≥20.3	≥22.2	≥20.5	≥22.4

PERFORMANCE AT LOW IRRADIANCE

At least 98% of nominal power during first year. Thereafter max. 0.45% degradation per year. At least 93.95% of nominal power up to 10 years. At least 84.95% of nominal power up to 30 years.

All data within measurement tolerances. Full warranties in accordance with the warranty terms of the Q CELLS sales organization of your respective country.

TEMPERATURE COEFFICIENTS

Temperature Coefficient of I _{SC}	α [%/K]	+0.04	Temperature Coefficient of V _{OC}	β [%/K]	-0.27
Temperature Coefficient of P _{MPP}	γ [%/K]	-0.34	Nominal Module Operating Temperature	NMOT [°F]	108±5.4 (42±3°C)

PROPERTIES FOR SYSTEM DESIGN

Maximum System Voltage V _{MSS} [V]	1500	PV module classification	Class II
Maximum Series Fuse Rating [A DC]	20	Fire Rating based on ANSI/UL 61730	TYPE 29†
Max. Design Load, Push/Pull ¹ [lbs/ft]	75 (3600Pa) / 33 (1600Pa)	Permitted Module Temperature on Continuous Duty	-40°F up to +185°F (-40°C up to +85°C)
Max. Test Load, Push/Pull ² [lbs/ft]	113 (5400Pa) / 50 (2400Pa)		

QUALIFICATIONS AND CERTIFICATES

UL E1730, CE-compliant, IEC 61215-2016, IEC 61730-2016, U.S. Patent No. 9,893,215 (solar cells), Certification in process.

Hanwha Q CELLS America Inc.
400 Spectrum Center Drive, Suite 1400, Irvine, CA 92618, USA | TEL +1 949 748 59 96 | EMAIL inquiry@us-q-cells.com | WEB www.q-cells.com

Three-Phase Pad-Mounted Transformers

Ratings

- 45-10,000 kVA
- High voltages (primary): 4160 Grd. Y/2400 through 43,800 Grd./25,300 Grd. Y/19,920
- HV Taps: 2-2-1/2% above and below normal, or 4-2-1/2% below normal
- Standard BIL levels: kV Class 12 through 46
- Standard BIL levels: BIL (kV) 1500 through 250
- HV Taps: 25.0 Grd. Y Only 150 through 250

Design Impedances

Impedances are supplied to meet IEEE C57.12.34 standards. Customer specified impedances are available. (Subject to IEEE/ANSI ±7.5% impedance tolerance.)

Impedance	%Z
45	2.70-5.75
75	3.1-5.75
112-1/2	3.1-5.75
150	3.1-5.75
225	3.1-5.75
300	3.1-5.75
500	4.35-5.75
750	5.75
1000	5.75
1500	5.75
2000	5.75
2500	5.75
3000	5.75
3750	5.75
5000-10,000	6.0-6.5

Note: Subject to NEMA/IEEE ±7.5% impedance tolerance.
Note: Non-standard design impedance may be obtained by contacting Eaton.

Layout Dimensions

Figure 17.0-12. Pad-Mounted Transformer—Dimensions in Inches (mm)

Table 17.0-13. Dimensions with DOE Efficiency at 65 Degree AWR

kVA	A	B	C	D	E	F	I	Gallons	Approximate Weight	DOE 2016 Efficiency
45	50	68	39	42	26	68	20	2150	98.92%	
75	50	68	39	42	26	68	20	2350	99.03%	
112.5	50	68	39	42	26	68	20	2600	99.11%	
150	50	68	49	42	26	68	20	2900	99.16%	
225	50	72	53	42	30	72	20	3400	99.23%	
300	50	72	55	42	30	72	20	3950	99.27%	
500	50	72	61	42	30	72	20	5300	99.35%	
750	64	72	63	42	30	72	20	7150	99.40%	
1000	64	72	64	42	30	72	20	8950	99.43%	
1500	73	82	71	42	30	72	24	13,500	99.48%	
2000	73	101	75	42	30	72	24	18,800	99.51%	
2500	73	101	99	42	30	72	24	26,000	99.53%	

Note: The reference dimensions in this table cover the following: liveload and deadload configurations, loop feed and radial feed, mineral oil and FR3 filled units.

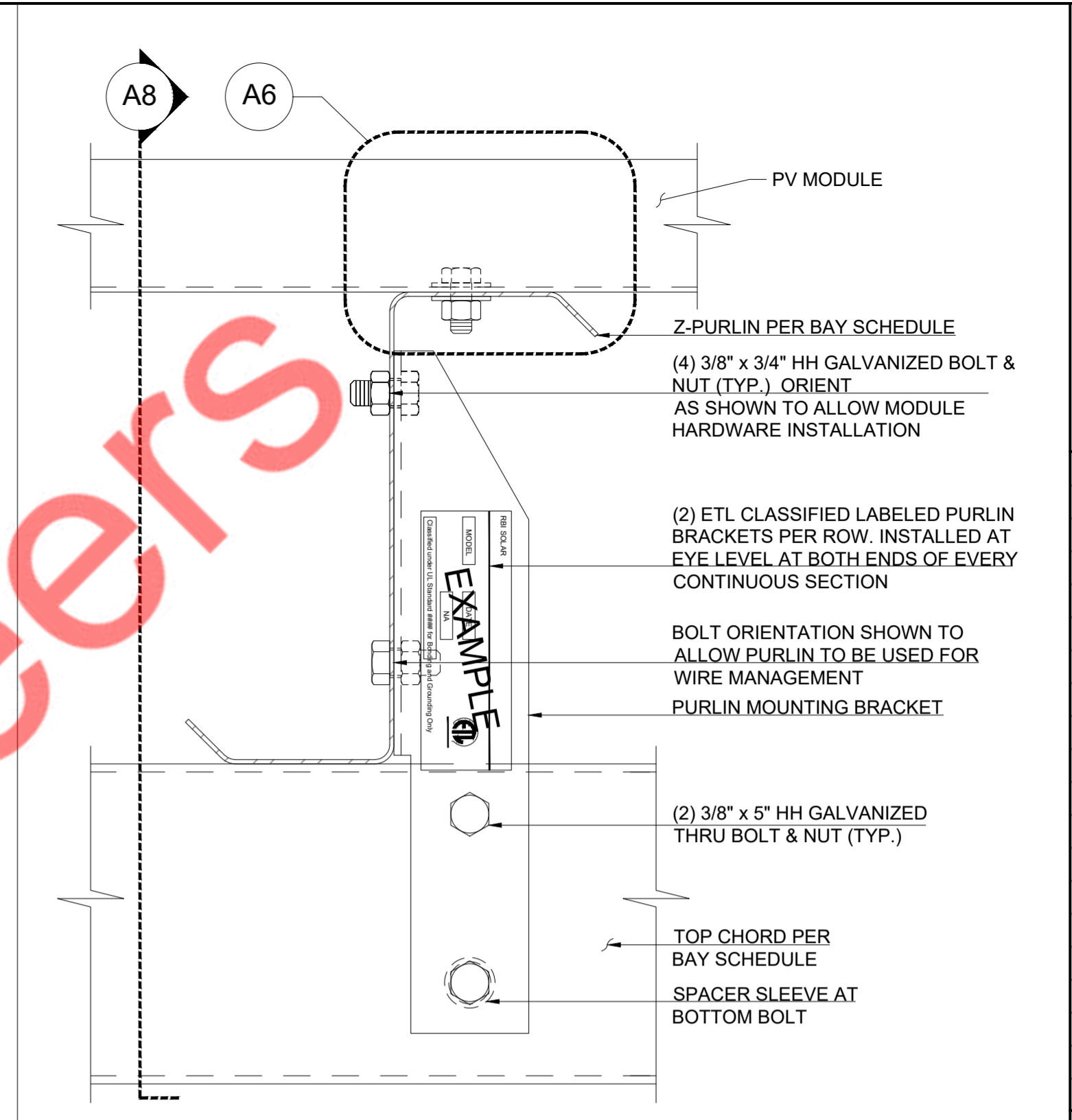
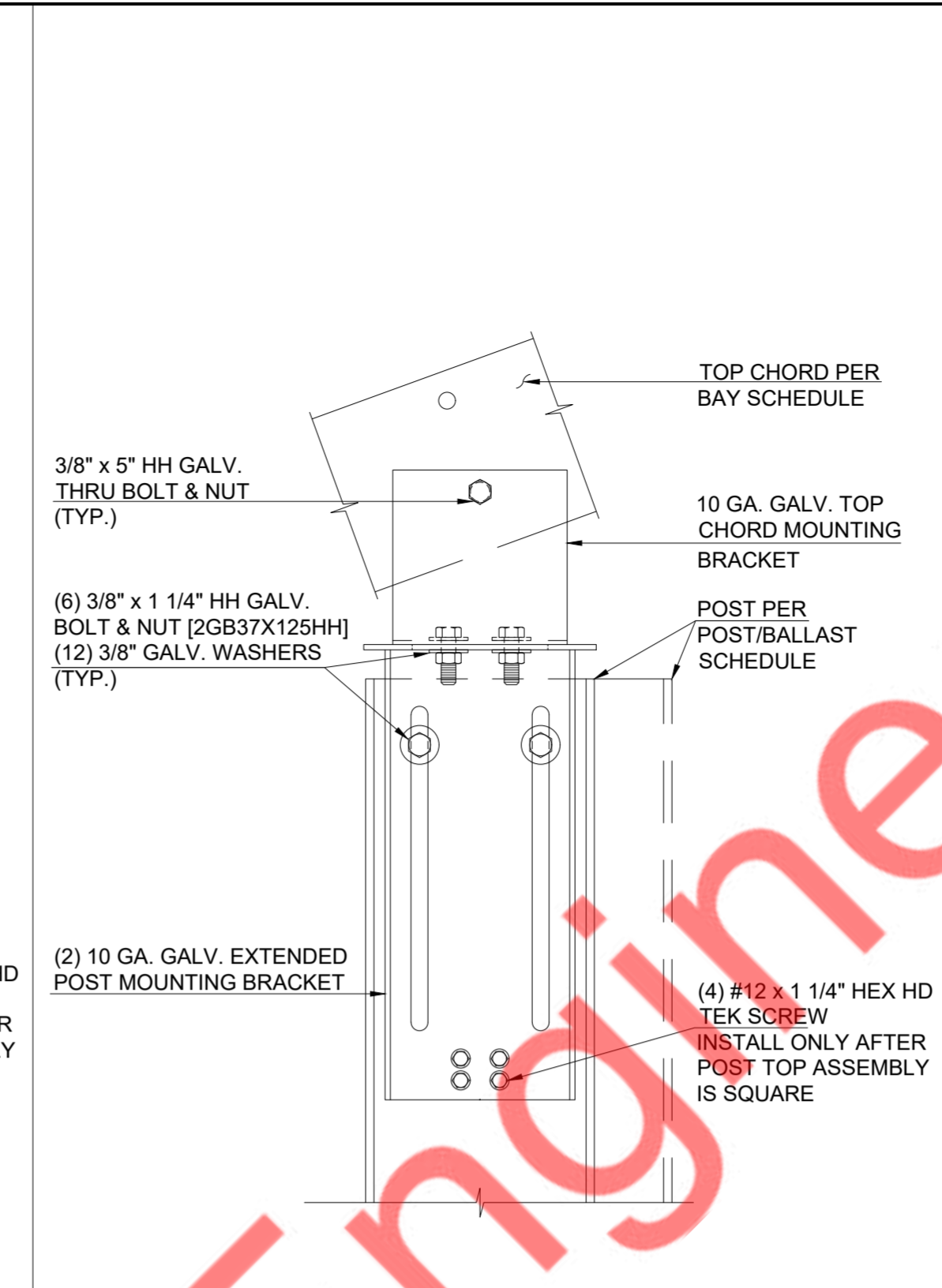
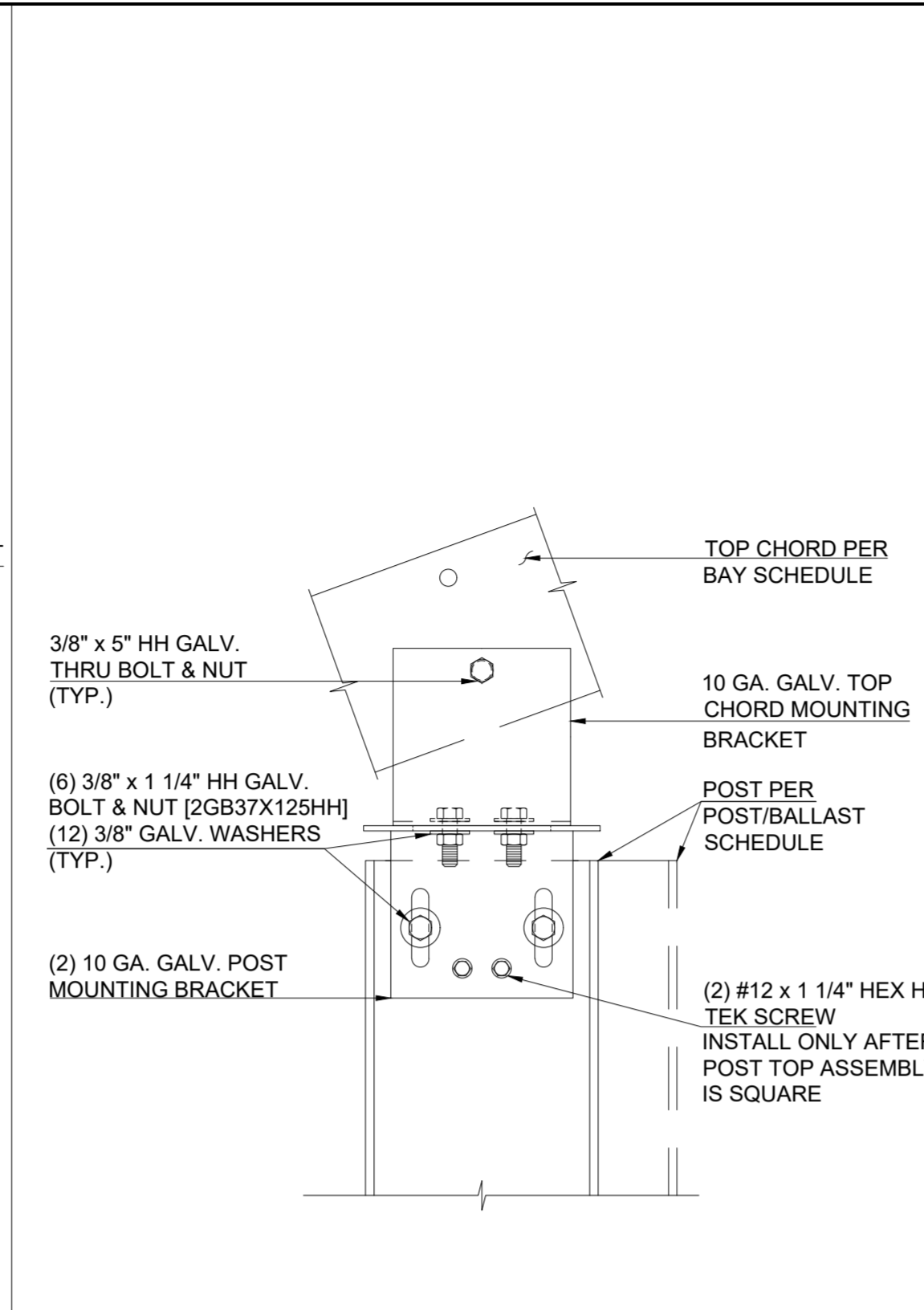
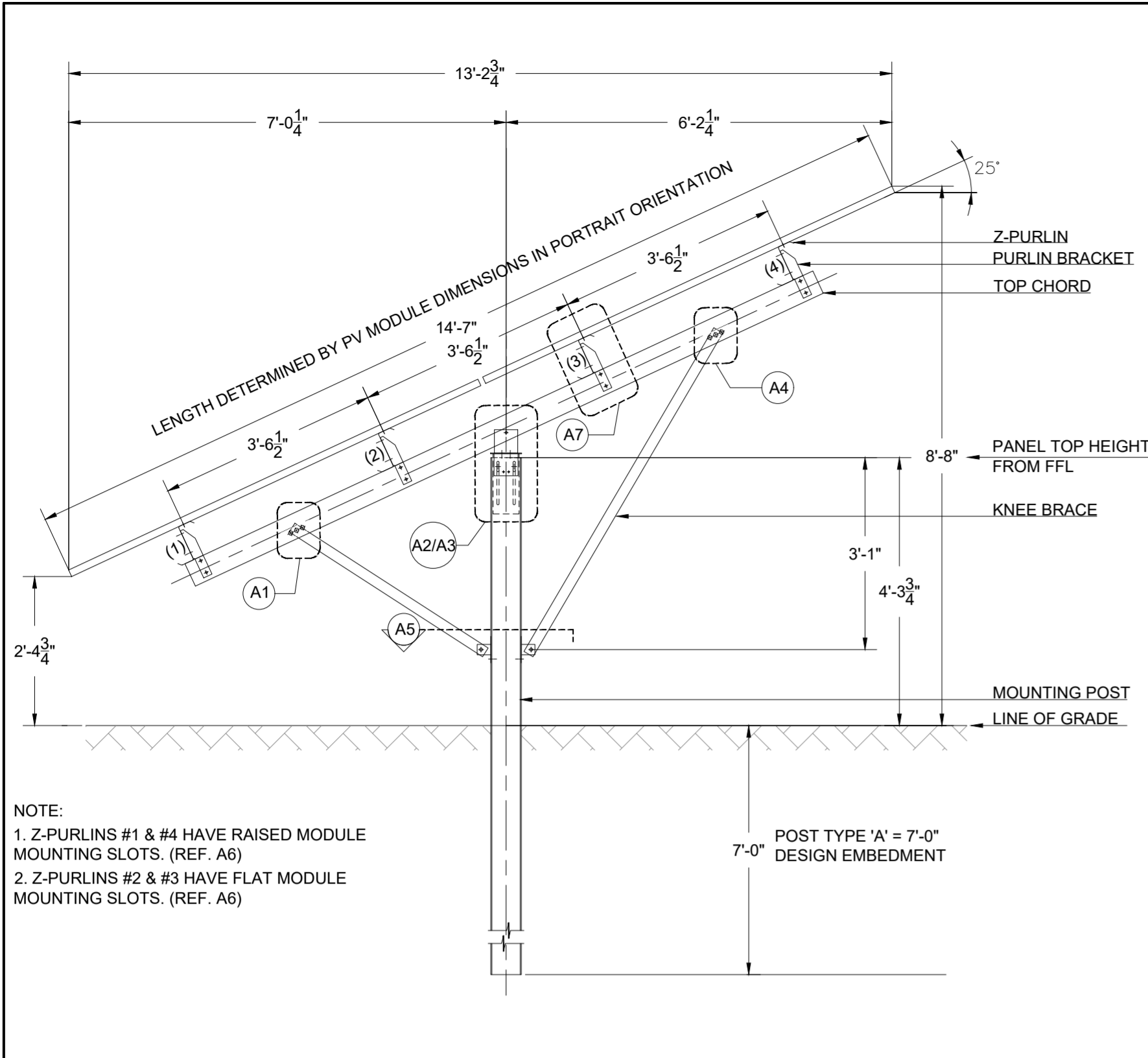
Dimensional Variations

- Add 9.00 inches (228.6 mm) to the height when using bayonet fusing on all kVA ratings.
- Less flammable natural ether fluid requires deeper tanks on some transformer ratings.
 - Add 2.00 inches (50.8 mm) to the depth of kVA ratings 75-1500. Add 8.00 inches (203.2 mm) to the depth of kVA ratings 2000 and 2500.

1 THREE PHASE STRING INVERTER SPECIFICATION
SCALE: NTS

2 485W PV MODULE SPECIFICATION
SCALE: NTS

3 PAD MOUNTED TRANSFORMER SPECIFICATION
SCALE: NTS

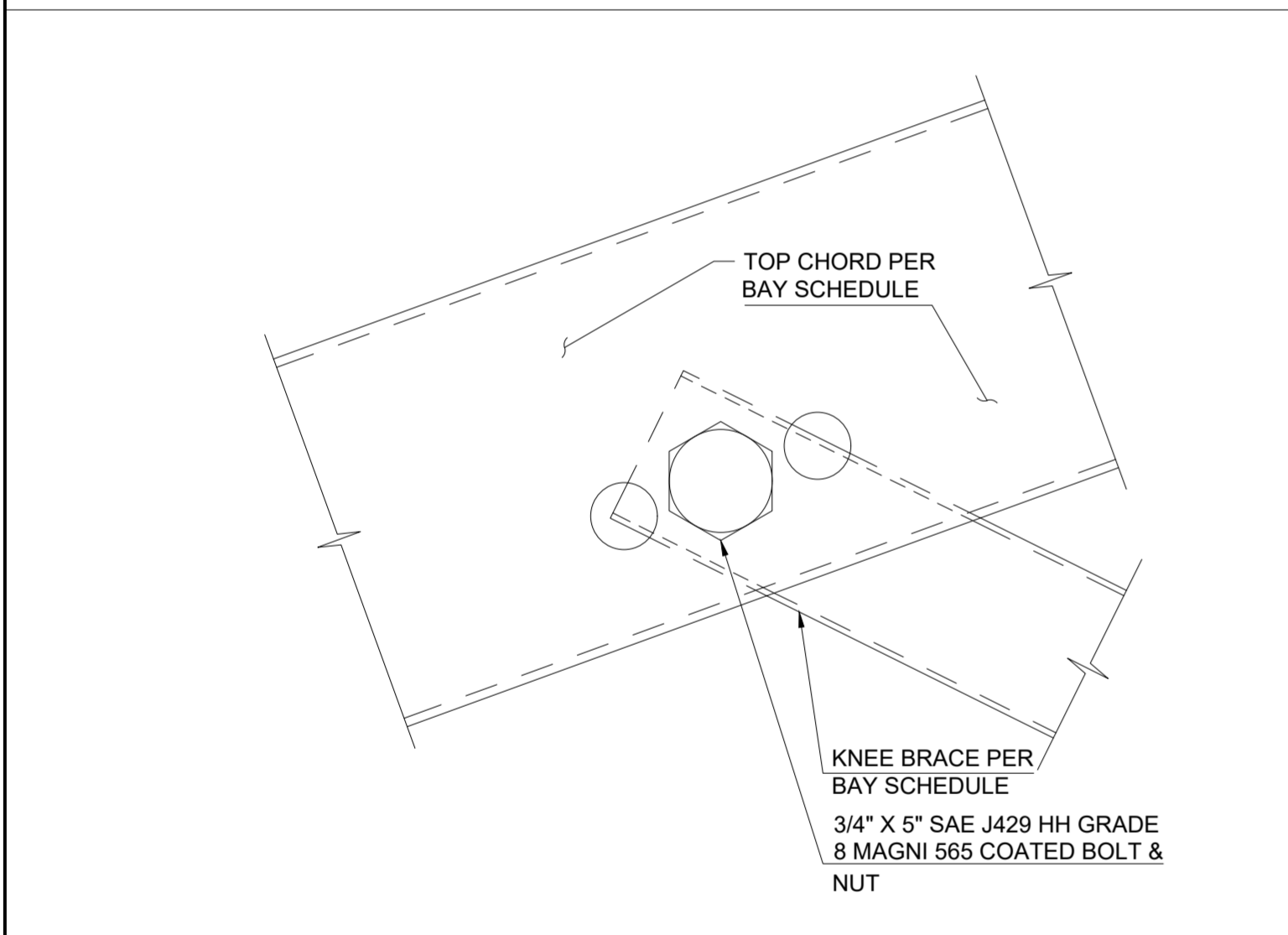


1 DESIGN RACK SECTION
SCALE: 1/2" = 1'-0"

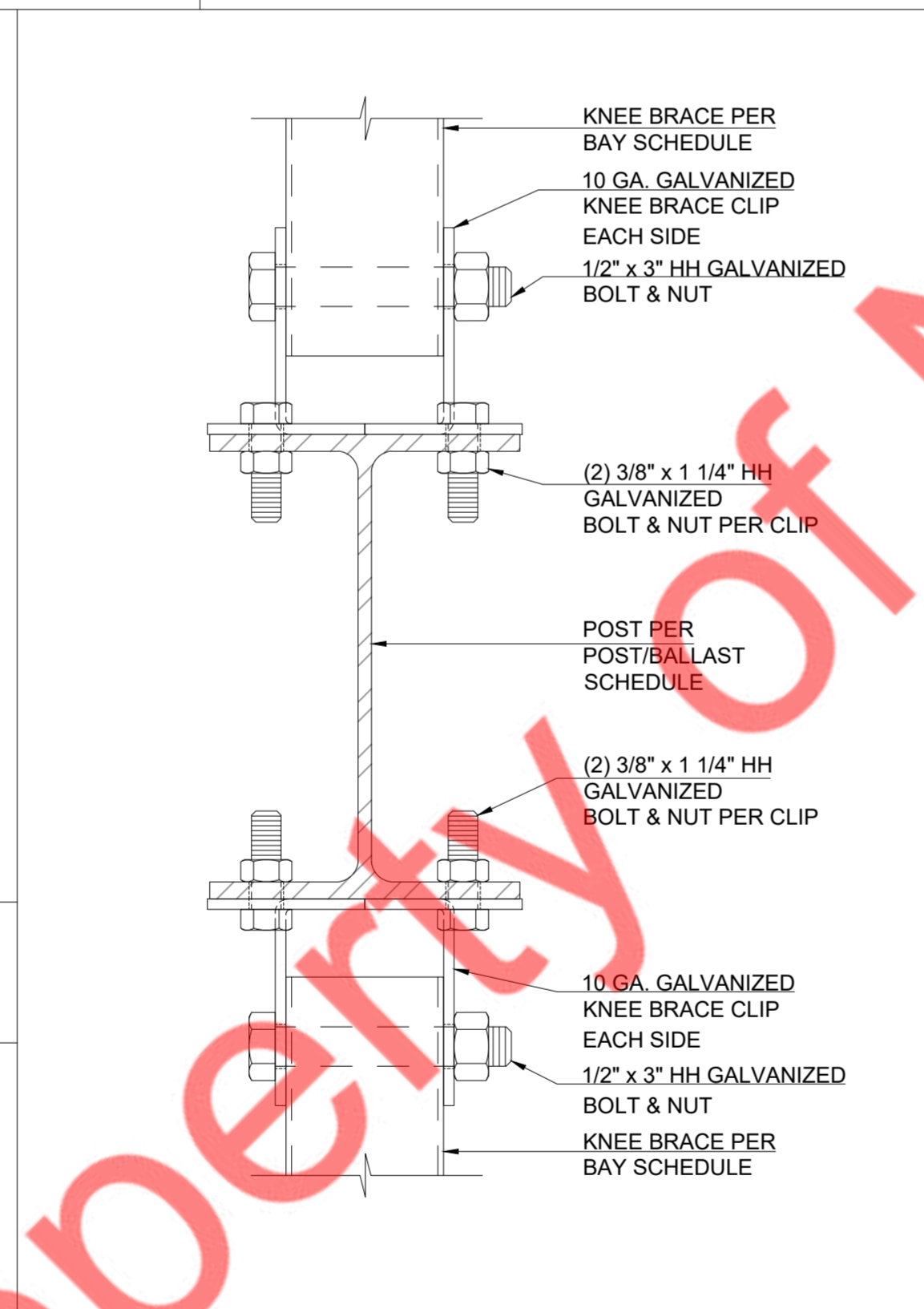
A2 TOP CHORD TO POST CONN. DETAIL
SCALE: NTS

A3 TOP CHORD CONN. DETAIL (EXTENDED)
SCALE: NTS

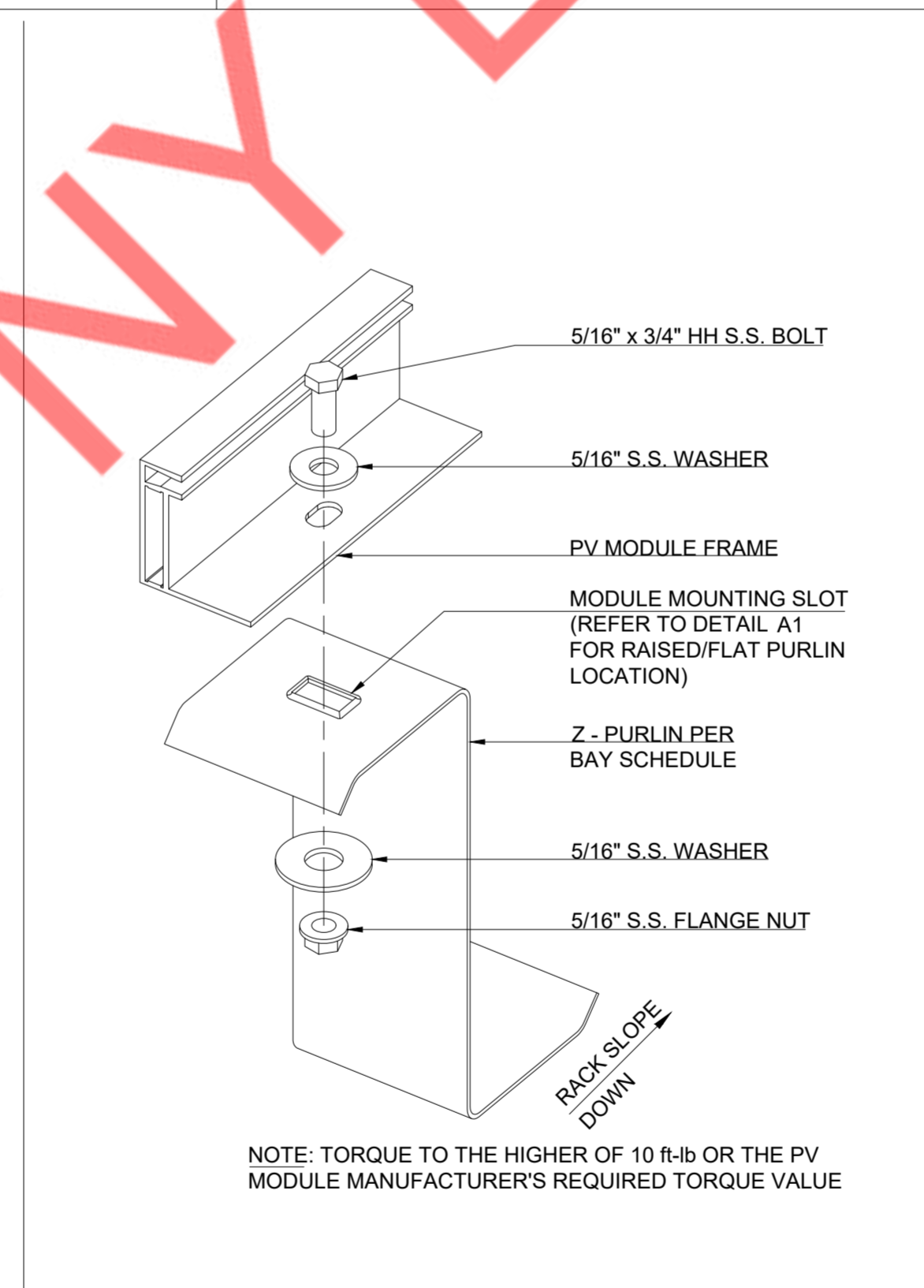
A7 TRANSVERSE PURLIN CONN. DETAIL
SCALE: NTS



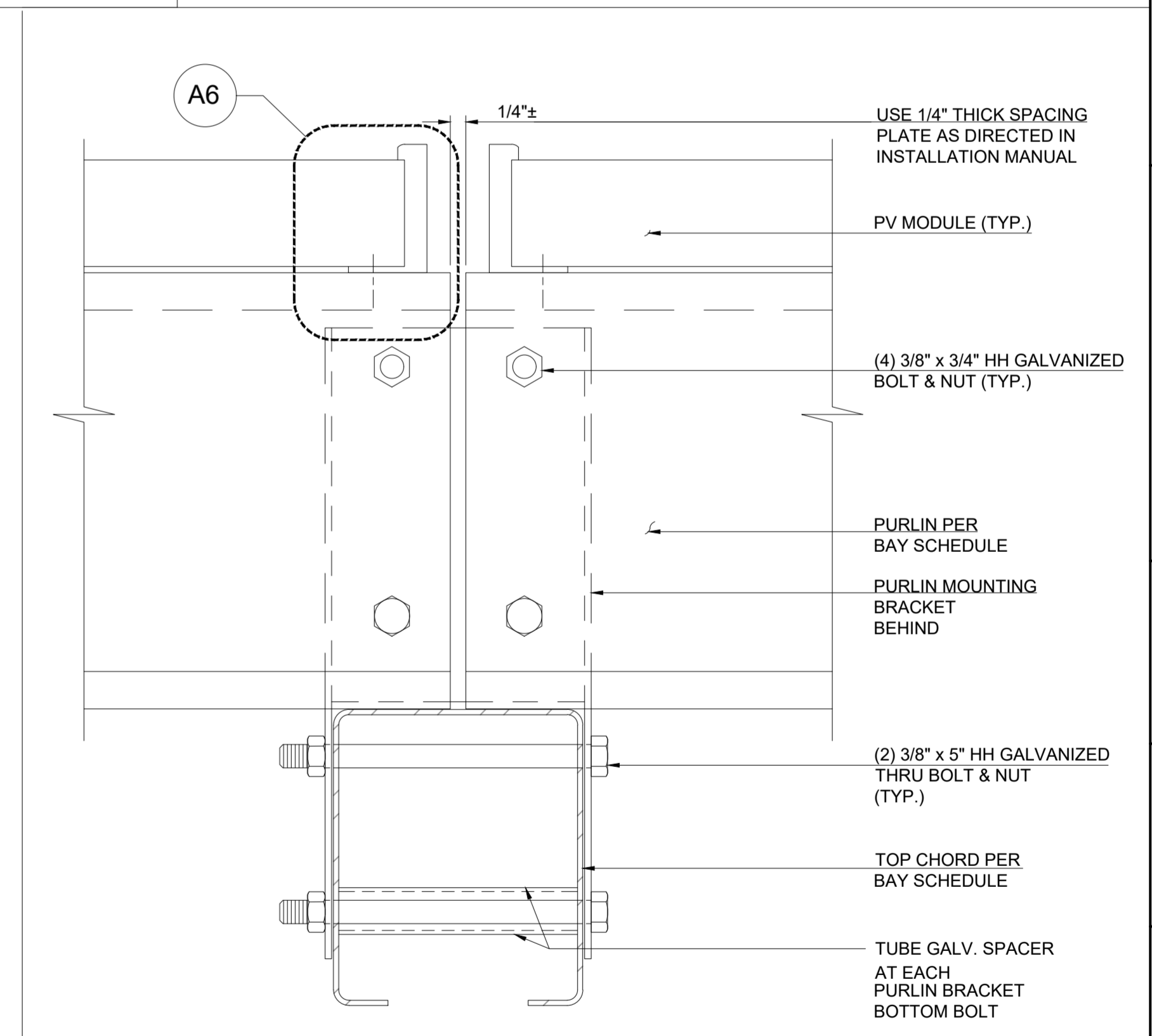
A1 LOWER KNEE BRACE TO TOP CHORD CONN. DETAIL
SCALE: NTS



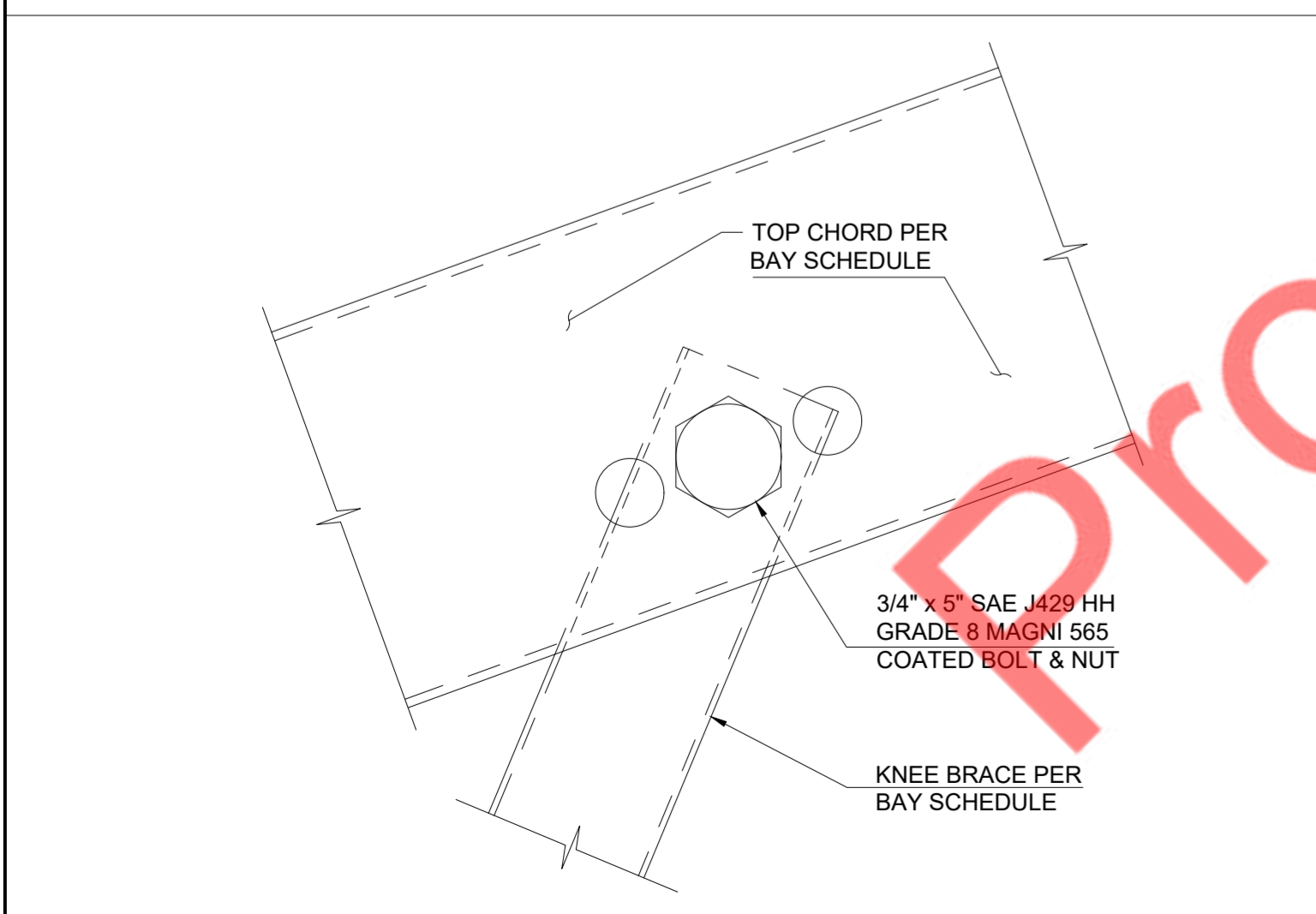
A5 KNEE BRACE TO POST CONN. DETAIL
SCALE: NTS



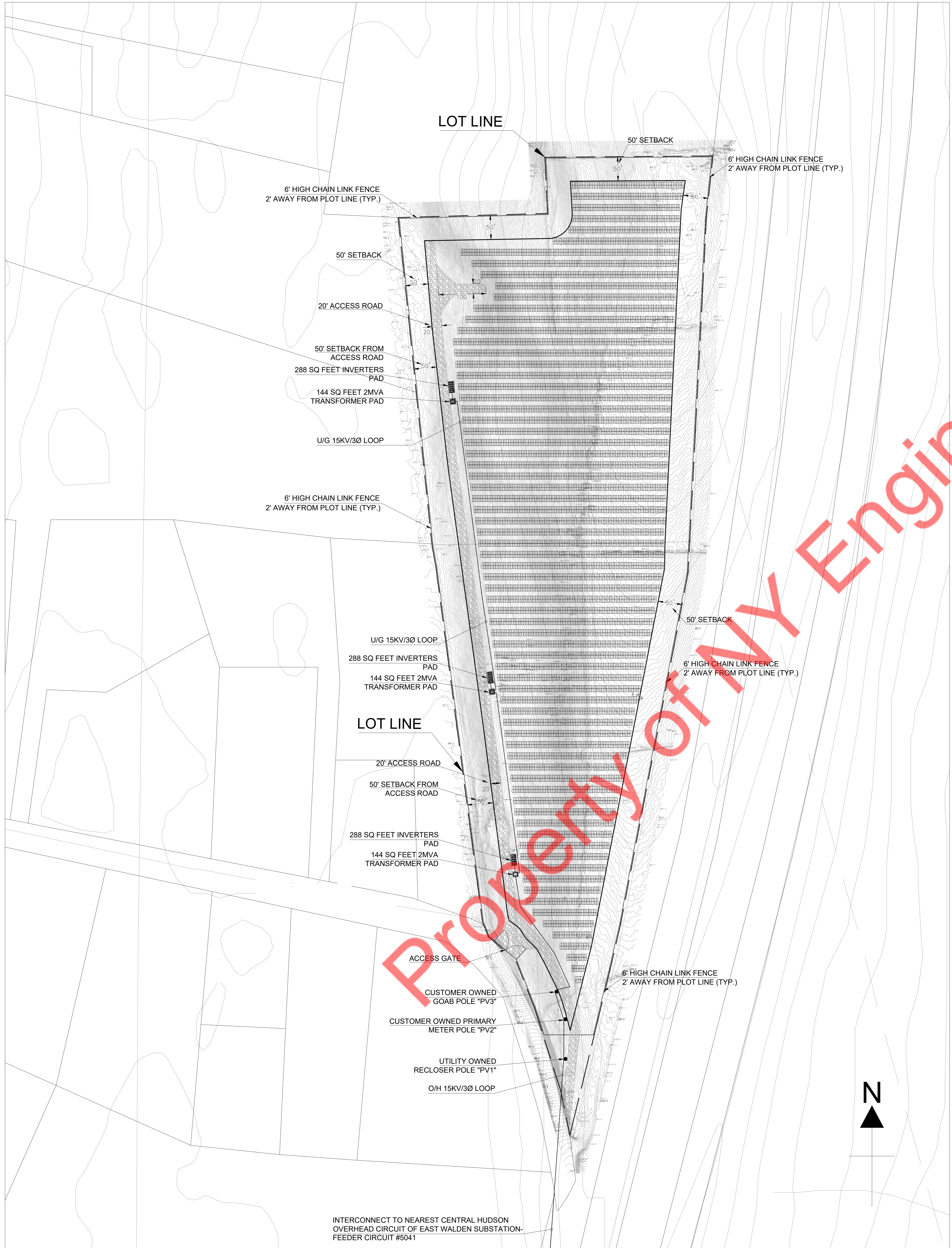
A6 PV MODULE TO PURLIN CONN. DETAIL
SCALE: NTS



A8 LONGITUDINAL PURLIN CONN. DETAIL
SCALE: NTS



A4 UPPER KNEE BRACE TO TOP CHORD CONN. DETAIL
SCALE: NTS



BULK REQUIREMENTS:

§110-80- APPROVAL STANDARDS FOR LARGE SCALE SOLAR SYSTEM AS SPECIAL USES.

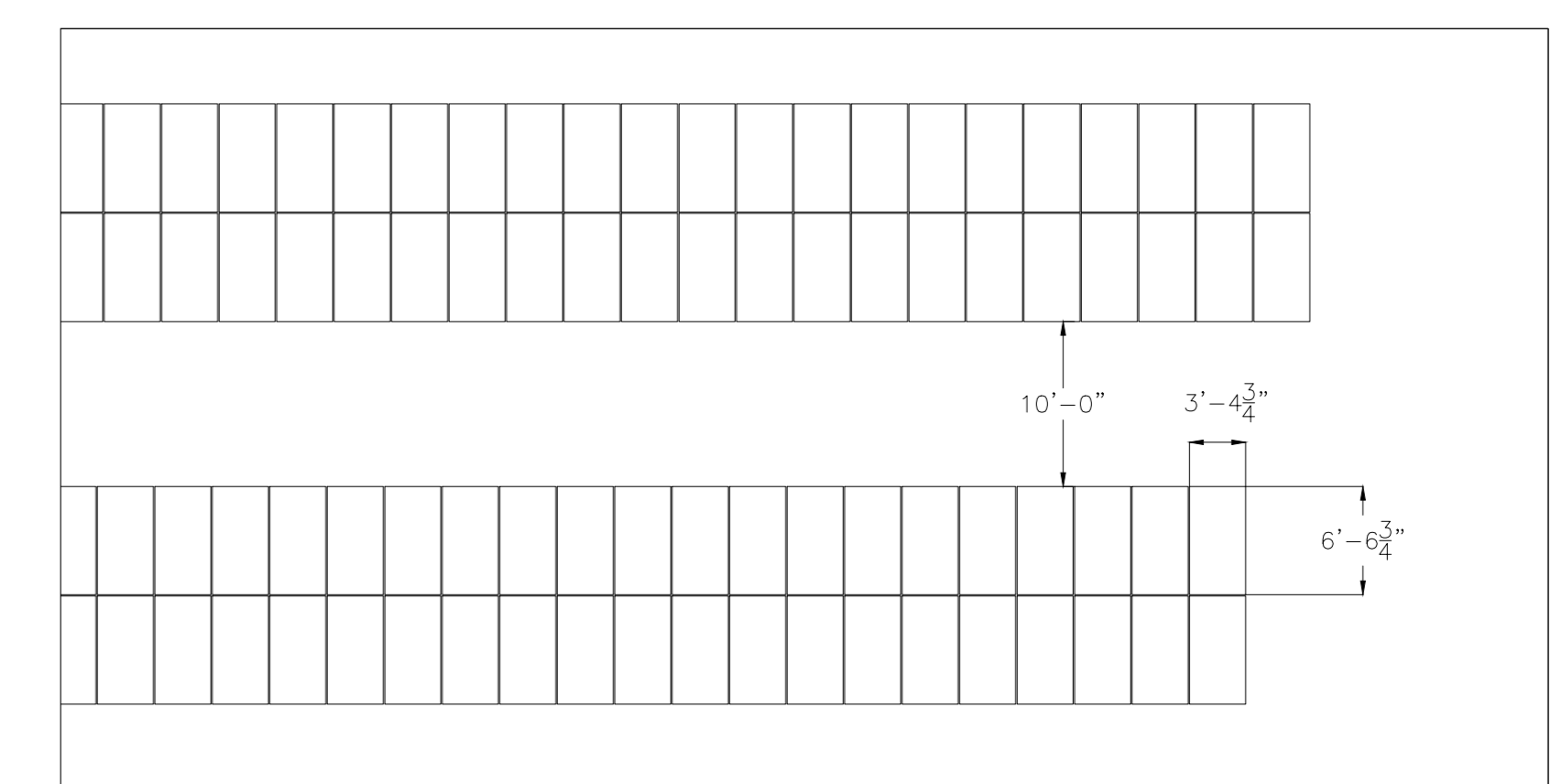
MINIMUM BUILDING REQUIREMENTS	REQUIRED	PROPOSED
SETBACK:	50 FEET	50 FEET
LOT SIZE:	1 AC	18.90 AC
MAXIMUM ALLOWABLE	REQUIRED	PROPOSED
HEIGHT:	12 FEET	8.8 FEET
LOT COVERAGE:	50%	33.75%

CALCULATION FOR LOT COVERAGE

ONE SOLAR PANEL AREA = 22.28 SQ. FEET
 TOTAL 12,476 SOLAR PANEL COVERAGE AREA=277965 SQ.FEET = 6.38 ACRES
 LOT TOTAL AREA= 18.90 ACRES
 TOTAL SOLAR PANEL COVERAGE AREA= 6.38 ACRES= 33.75% LOT COVER BY SOLAR PANELS.

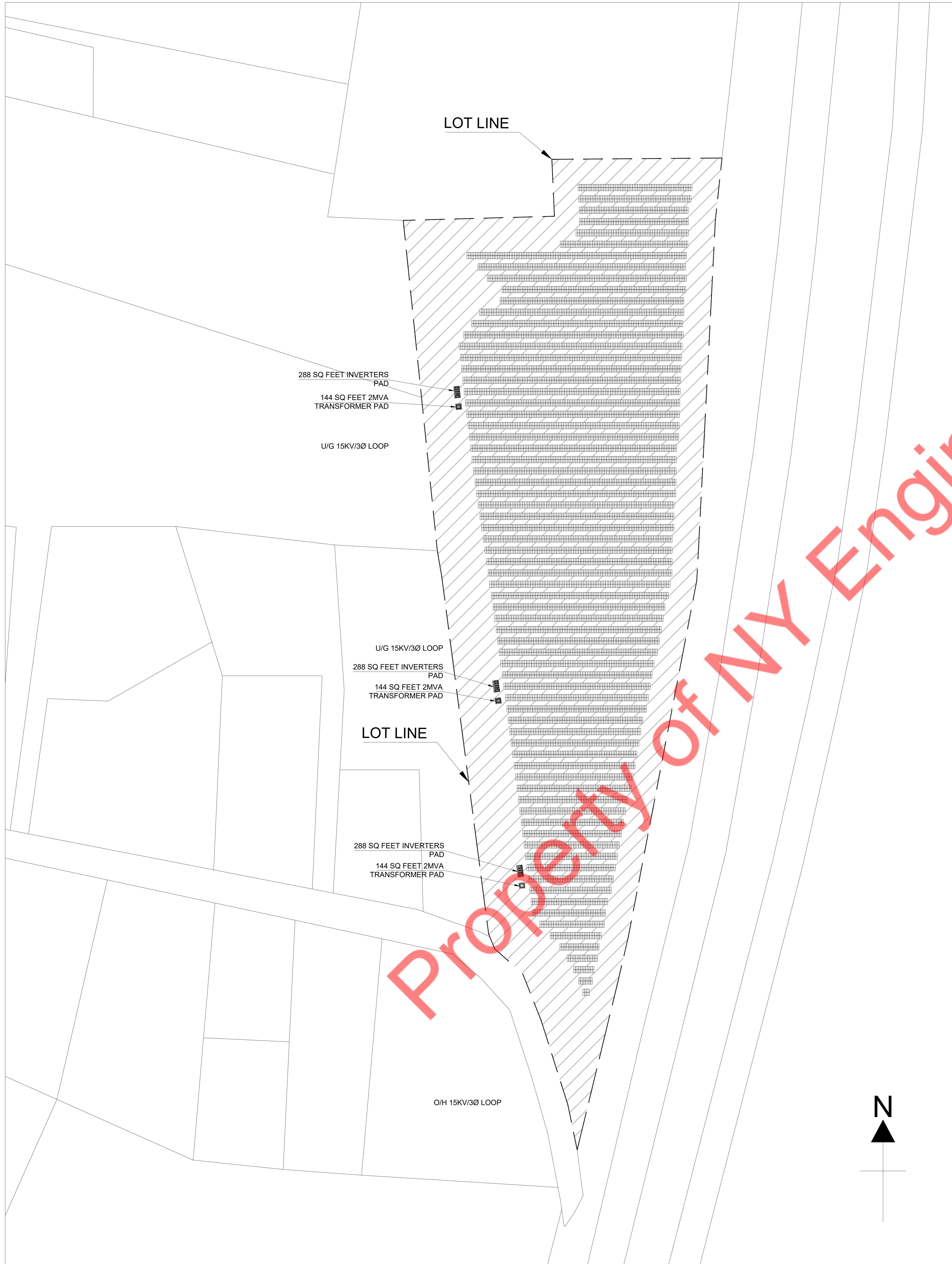
NOTE

- PER TOWN CODE SECTION §110-80-C6, APPLICANT (SOLEIL VENTURES LLC) WILL ARRANGE THE ANNUALLY PROPERTY INSPECTION, WHICH WILL BE CONDUCTED BY THE TOWN OF PLATTEKILL BUILDING INSPECTOR /OR CODE ENFORCEMENT OFFICER. REQUIRED FEES FOR THE INSPECTION WILL BE PAID PER MENTIONED IN THE CODE.
- PER TOWN CODE SECTION §110-80-C6, ANNUAL AND MONTHLY SOLAR PRODUCTION REPORTS WILL SUBMITTED TO THE TOWN OF PLATTEKILL BUILDING INSPECTOR /OR CODE ENFORCEMENT OFFICER.



1 SITE PLAN
SCALE: 1" = 80'-0"

3 ENLARGE VIEW OF PV CELL INSTALLTION
SCALE: 3/32" = 1'-0"



BULK REQUIREMENTS:

§110-80- APPROVAL STANDARDS FOR LARGE SCALE SOLAR SYSTEM AS SPECIAL USES.

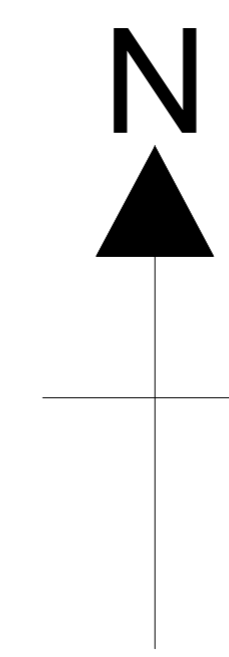
MINIMUM BUILDING REQUIREMENTS	REQUIRED	PROPOSED
SETBACK:	50 FEET	50 FEET
LOT SIZE:	1 AC	18.90 AC
MAXIMUM ALLOWABLE	REQUIRED	PROPOSED
HEIGHT:	12 FEET	8.8 FEET
LOT COVERAGE:	50%	33.75%

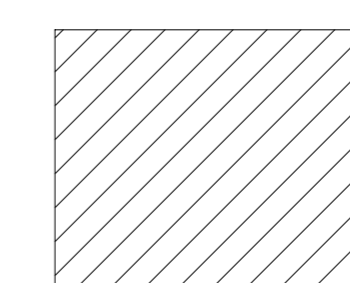
CALCULATION FOR LOT COVERAGE

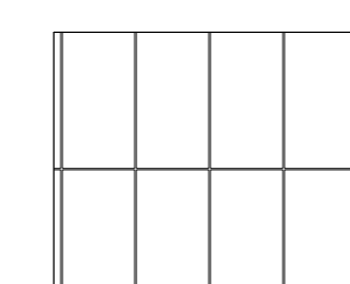
ONE SOLAR PANEL AREA = 22.28 SQ. FEET
 TOTAL 12,476 SOLAR PANEL COVERAGE AREA=277965 SQ.FEET = 6.38 ACRES
 LOT TOTAL AREA= 18.90 ACRES
 TOTAL SOLAR PANEL COVERAGE AREA= 6.38 ACRES= 33.75% LOT COVER BY SOLAR PANELS.

NOTE

1. PER TOWN CODE SECTION §110-80-C6, APPLICANT (SOLEIL VENTURES LLC) WILL ARRANGE THE ANNUALLY PROPERTY INSPECTION, WHICH WILL BE CONDUCTED BY THE TOWN OF PLATTEKILL BUILDING INSPECTOR /OR CODE ENFORCEMENT OFFICER. REQUIRED FEES FOR THE INSPECTION WILL BE PAID PER MENTIONED IN THE CODE.
2. PER TOWN CODE SECTION §110-80-C6, ANNUAL AND MONTHLY SOLAR PRODUCTION REPORTS WILL SUBMITTED TO THE TOWN OF PLATTEKILL BUILDING INSPECTOR /OR CODE ENFORCEMENT OFFICER.



 TOTAL OPEN LOT AREA = 12.60 ACRES

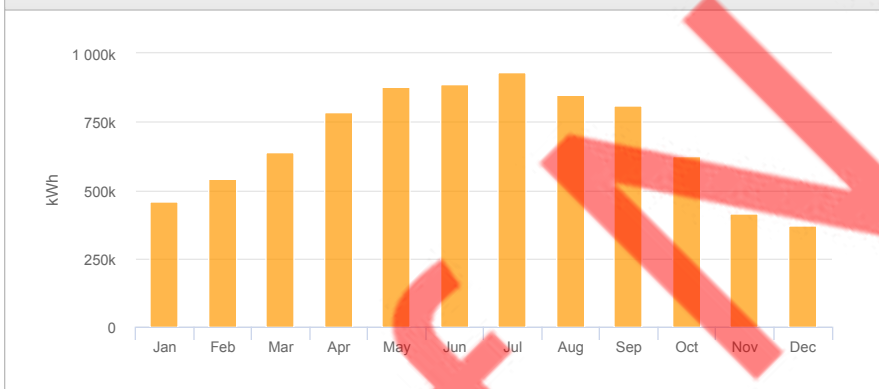
 TOTAL SOLAR SYSTEM COVERAGE AREA = 6.38 ACRES

Helioscope Generation Report

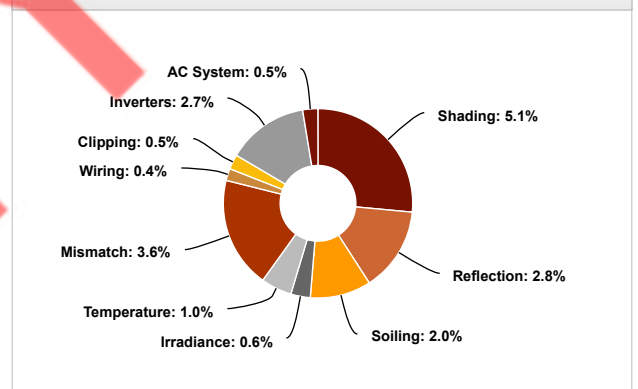
System Metrics

Design	
Module DC Nameplate	6.05 MW
Inverter AC Nameplate	4.95 MW Load Ratio: 1.22
Annual Production	8,191 GWh
Performance Ratio	82.3%
kWh/kWp	1,353.7
Weather Dataset	TMY, 10km Grid (41.65,-74.05), NREL (prospector)
Simulator Version	3cbb82d0a1-68176f8b3e-a806072408-da633b9eef

Monthly Production



Sources of System Loss



⚡ Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	1,439.9	
	Adjusted Global Horizontal Irradiance	1,416.2	-1.6%
	POA Irradiance	1,645.4	16.2%
	Shaded Irradiance	1,561.6	-5.1%
	Irradiance after Reflection	1,518.4	-2.8%
	Irradiance after Soiling	1,488.1	-2.0%
	Total Collector Irradiance	1,488.1	0.0%
Energy (kWh)	Nameplate	9,004,896.5	
	Output at Irradiance Levels	8,947,375.5	-0.6%
	Output at Cell Temperature Derate	8,856,407.7	-1.0%
	Output After Mismatch	8,533,352.7	-3.6%
	Optimal DC Output	8,499,695.9	-0.4%
	Constrained DC Output	8,458,771.6	-0.5%
	Inverter Output	8,232,416.2	-2.7%
	Energy to Grid	8,191,254.1	-0.5%
Temperature Metrics			
	Avg. Operating Ambient Temp		11.3 °C
	Avg. Operating Cell Temp		19.0 °C
Simulation Metrics			
	Operating Hours	4686	
	Solved Hours	4586	
	Pending Hours	100	

☁ Condition Set												
Description	Condition Set 1											
Weather Dataset	TMY, 10km Grid (41.65,-74.05), NREL (prospector)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module	Uploaded By		Characterization								
	Q.Peak DUO XL-G10.3/BFG 485 (Hanwha Q Cells)	HelioScope		Spec Sheet Characterization, PAN								
Component Characterizations	Device	Uploaded By		Characterization								

📦 Components		
Component Name	Count	
Inverters	SGI 225-480 (Solectria)	22 (4.95 MW)
Strings	10 AWG (Copper)	1,298 (288,890.3 ft)
Module	Hanwha Q Cells, Q.Peak DUO XL-G10.3/BFG 485 (485W)	12,476 (6.05 MW)

🔌 Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	7-10	Along Racking

🏠 Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Portrait (Vertical)	25°	180°	10.0 ft	2x1	6,238	12,476	6.05 MW

