

ELECTRICAL SITE PLAN

General Notes

- Perimeter fencing to be 8' chain link fence.

SIGNATURE & SEAL

REVISIONS

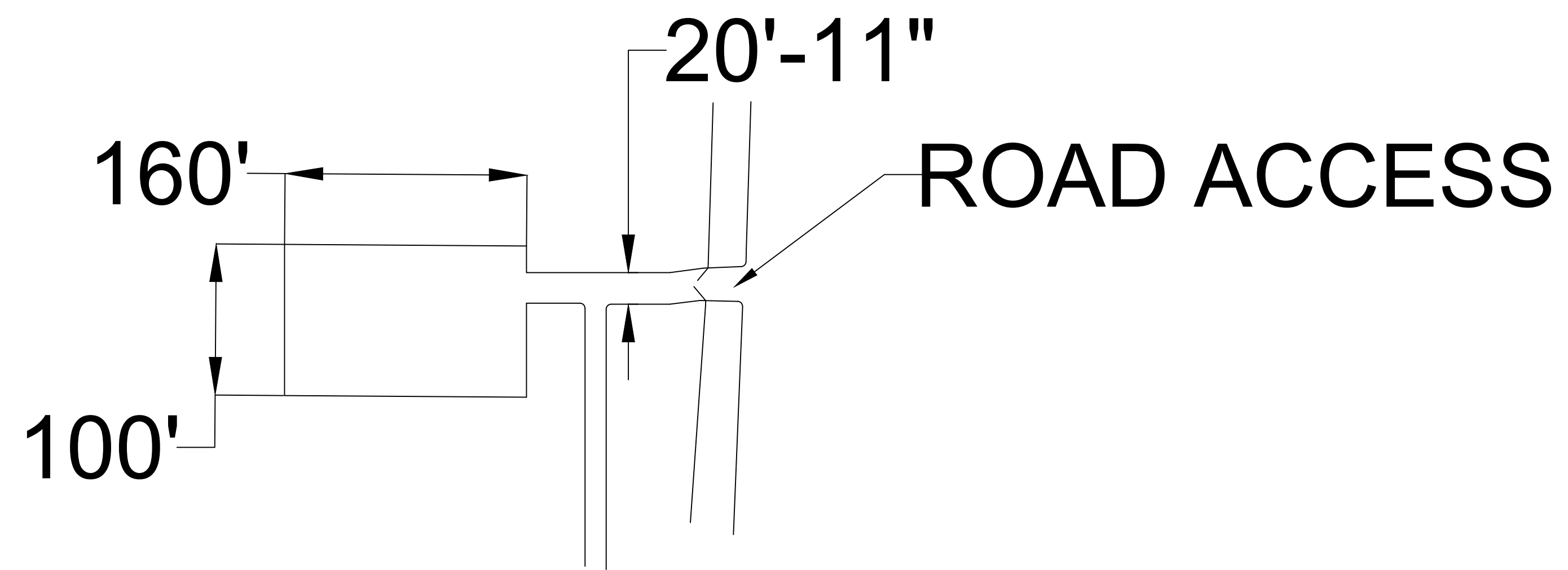
NO.	DESCRIPTION	DATE
C	75% SET SUBMITTAL	3/29/24
D	90% SET SUBMITTAL	4/12/24
E	100% SET SUBMITTAL	4/22/24

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CHICHENG TANG, SITI MOHD RADZI,
EDUARDO JIMENEZ-TZOMPAXTLE
4100 MARSTON HALL
533 MORRILL ROAD
AMES, IA 50011

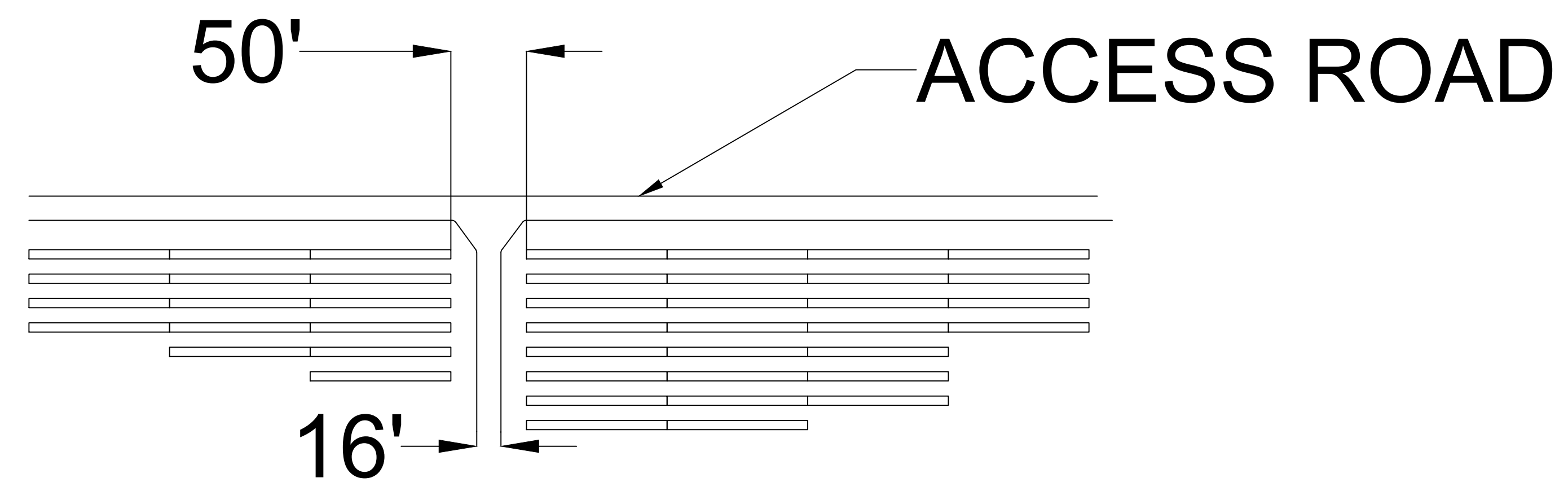
BLACK & VEATCH

LOVINGTON, NM 88260
(LEA COUNTY)

Project	60MW SOLAR POWER PLANT	Sheet	S100
Date	11/07/23	SITE PLAN	
Scale	1" = 50'		



① SUBSTATION OVERVIEW



② ACCESS ROAD DETAIL

General Notes

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REVISIONS

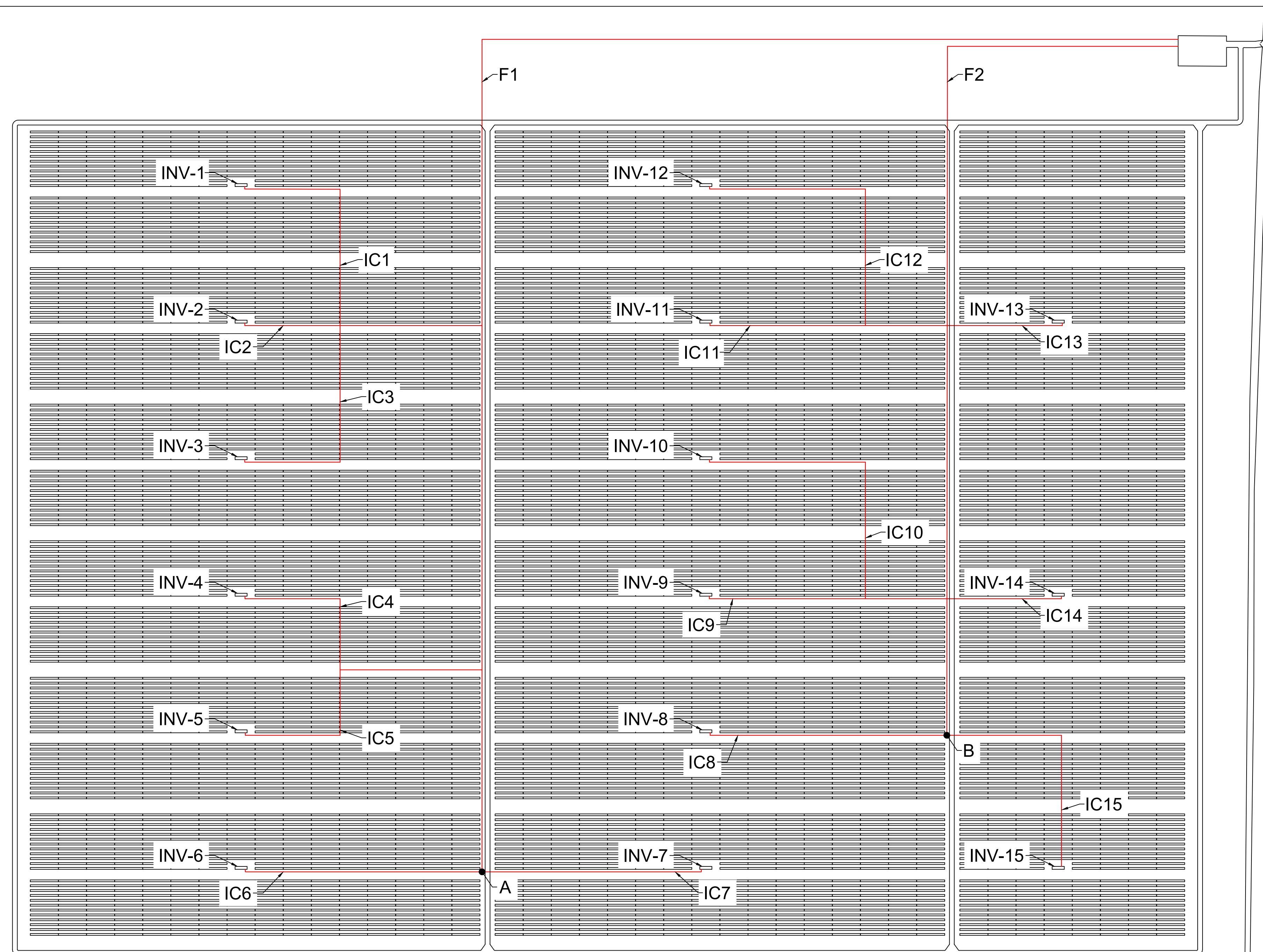
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 (LEA COUNTY)

Project	Sheet
60MW SOLAR POWER PLANT	S101
Date	SITE KEYPLAN
11/07/23	
Scale	
N/A	



Legend	
Line Color:	Line Description:
Red	Below ground, from skid to substation

FEEDER SITE PLAN

CABLE NAME	CABLE LENGTH	START	END	SIZE	CONDUIT
F1	4778' - 4"	A	SUB	600 MCM	3"
F2	3043' - 3"	B	SUB	600 MCM	3"
IC1	1242' - 6"	INV-1	F1	600 MCM	3"
IC2	791' - 8"	INV-2	F1	600 MCM	3"
IC3	1243' - 6"	INV-3	F1	600 MCM	3"
IC4	1027'	INV-4	F1	600 MCM	3"
IC5	1008'	INV-5	F1	600 MCM	3"
IC6	791' - 8"	INV-6	A	600 MCM	3"
IC7	734'	INV-7	A	600 MCM	3"
IC8	794' - 5"	INV-8	B	600 MCM	3"
IC9	794' - 5"	INV-9	F2	600 MCM	3"
IC10	1246' - 5"	INV-10	F2	600 MCM	3"
IC11	794' - 5"	INV-11	F2	600 MCM	3"
IC12	1246' - 5"	INV-12	F2	600 MCM	3"
IC13	388' - 10"	INV-13	F2	600 MCM	3"
IC14	388' - 10"	INV-14	F2	600 MCM	3"
IC15	814' - 9"	INV-15	B	600 MCM	3"

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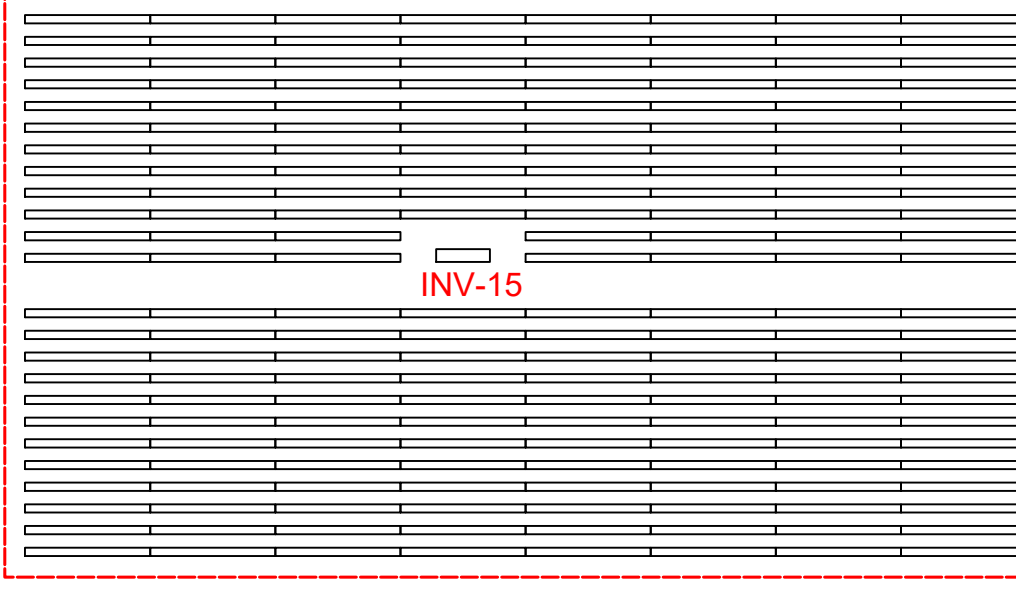
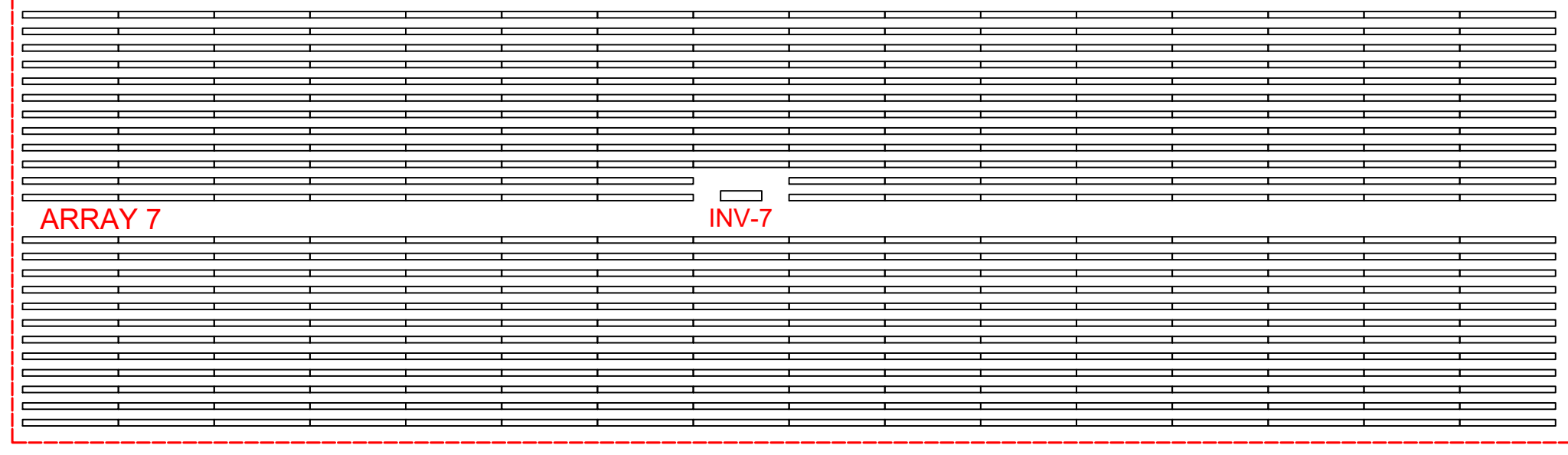
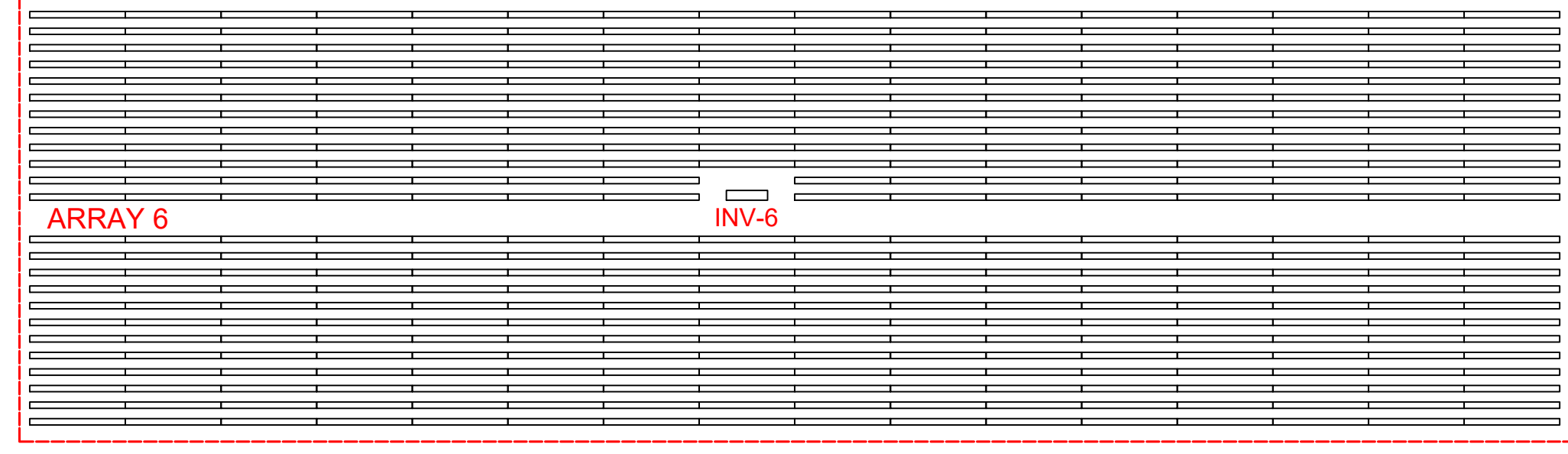
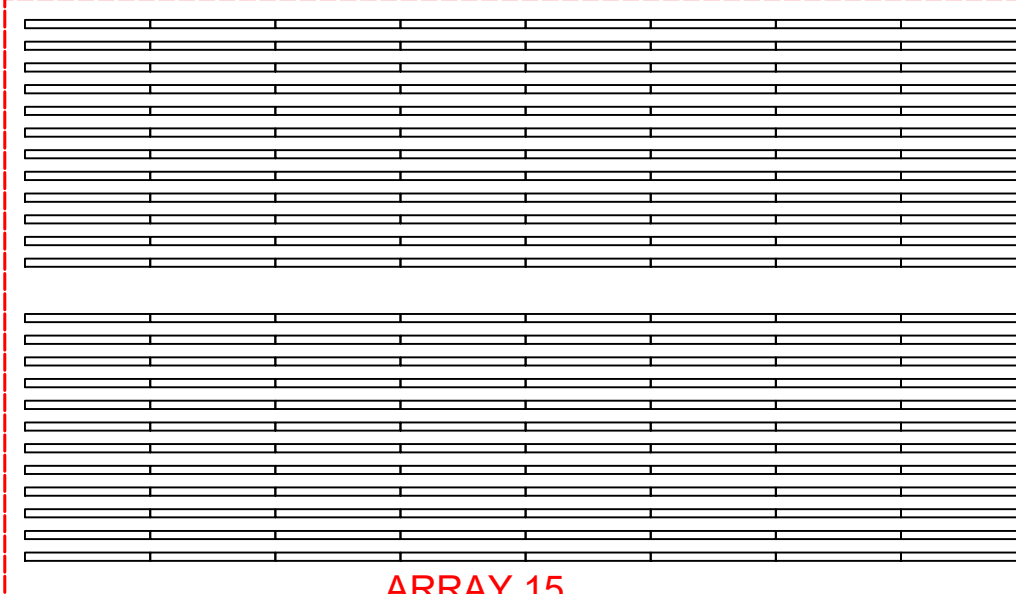
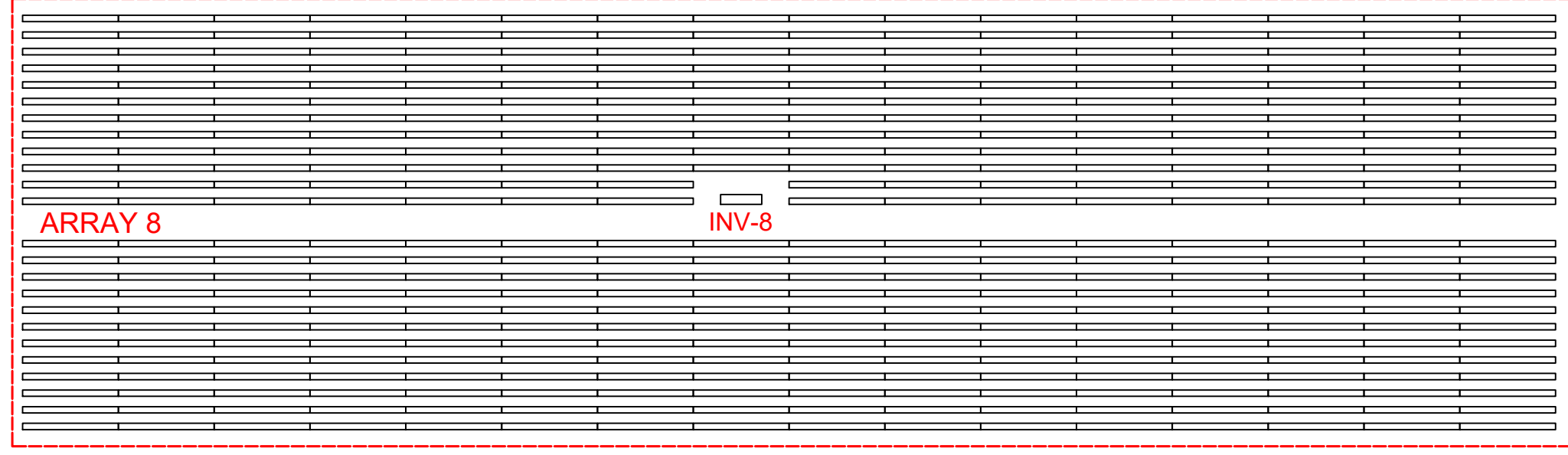
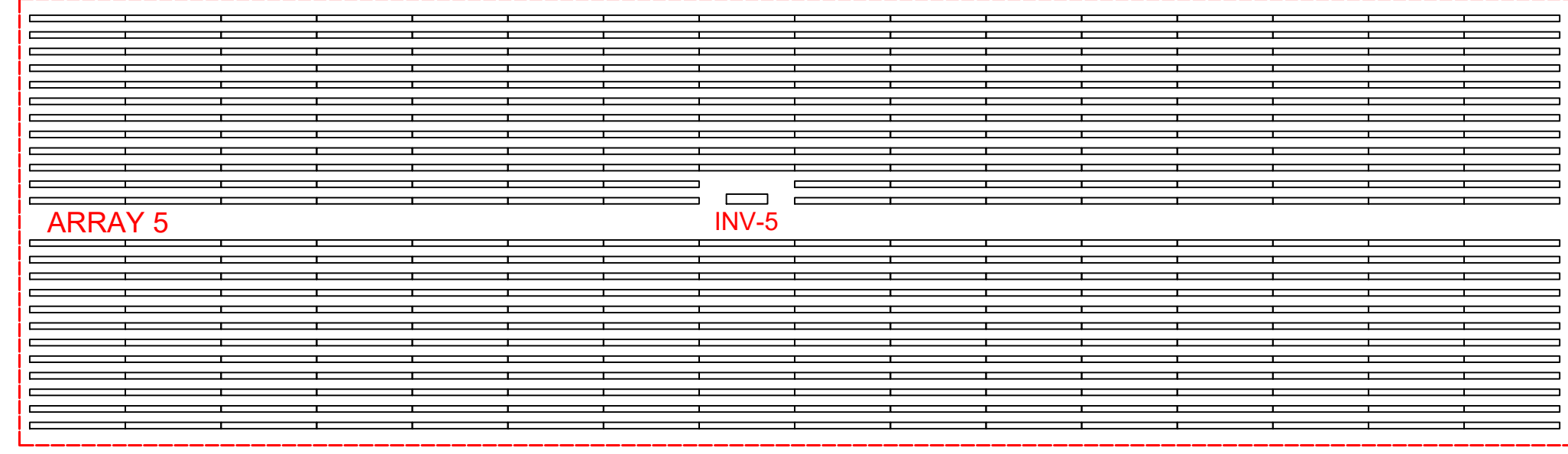
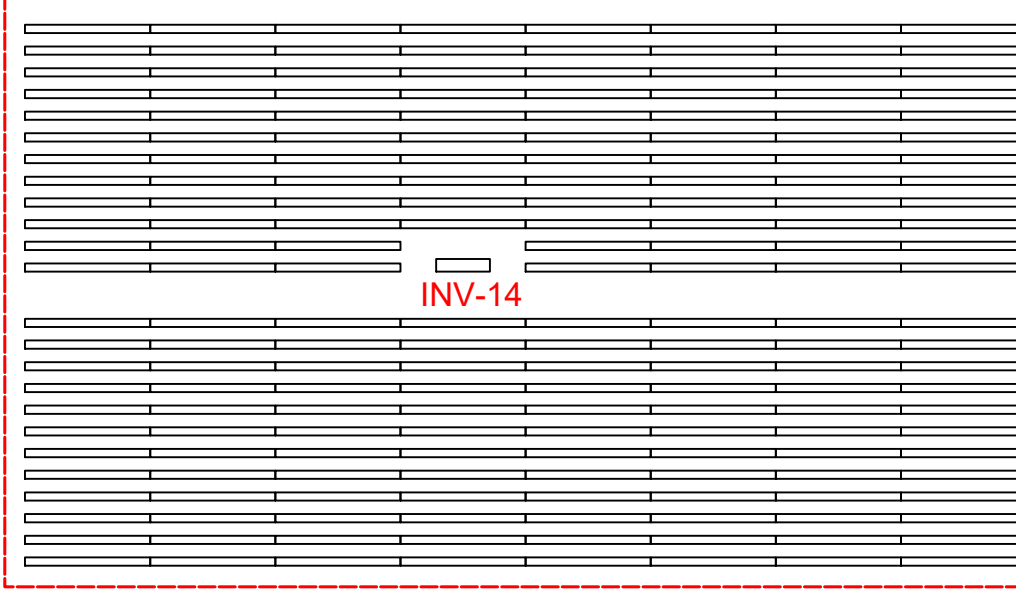
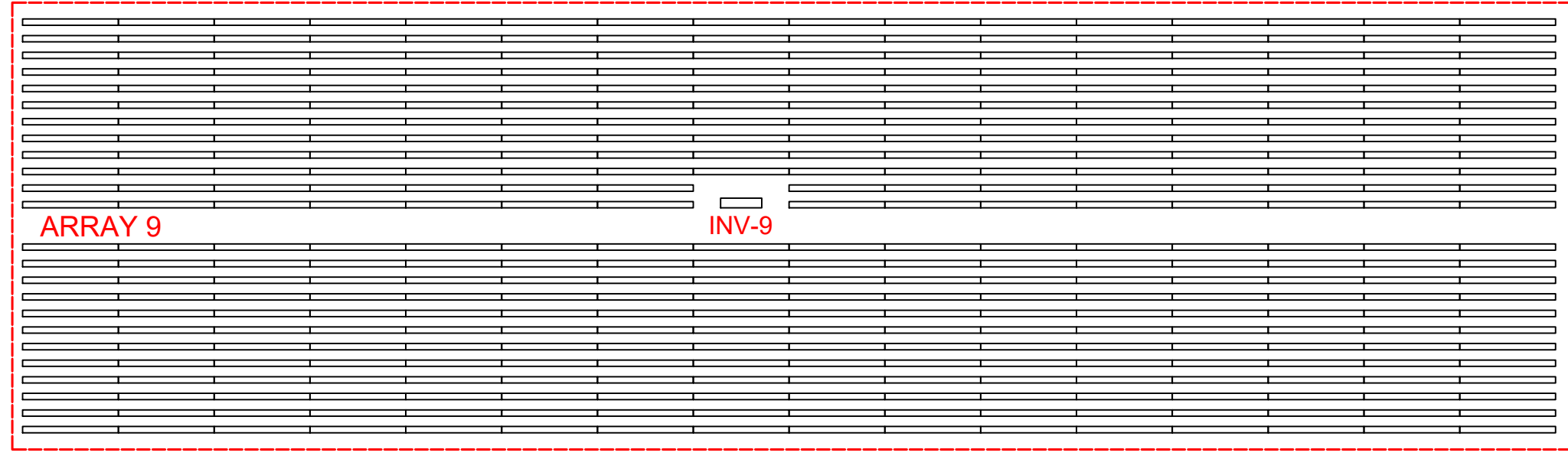
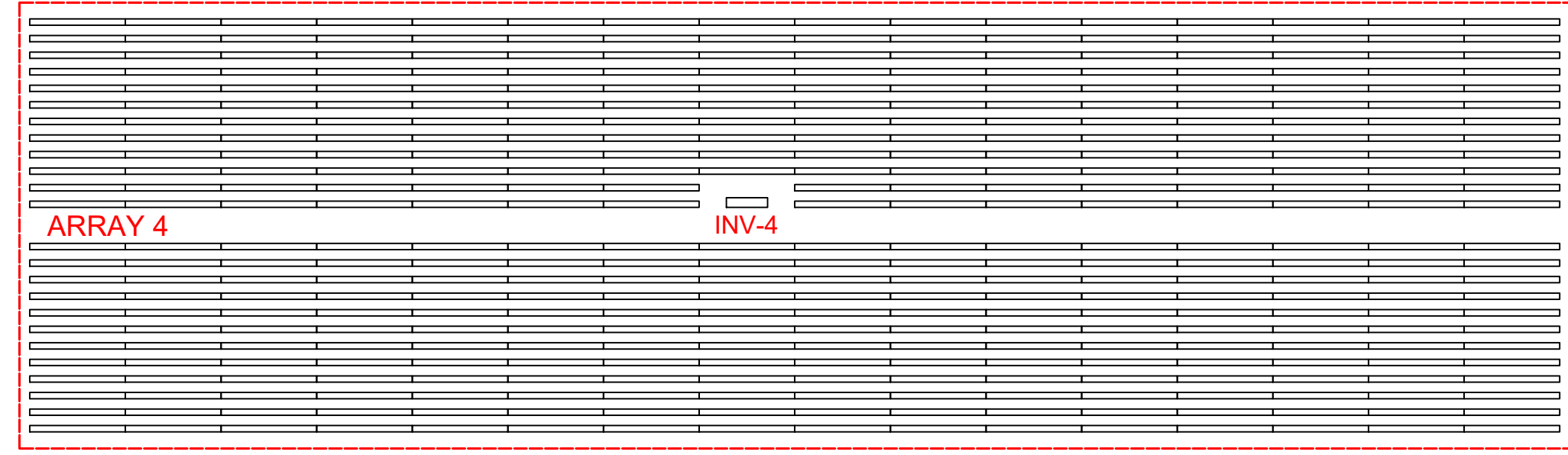
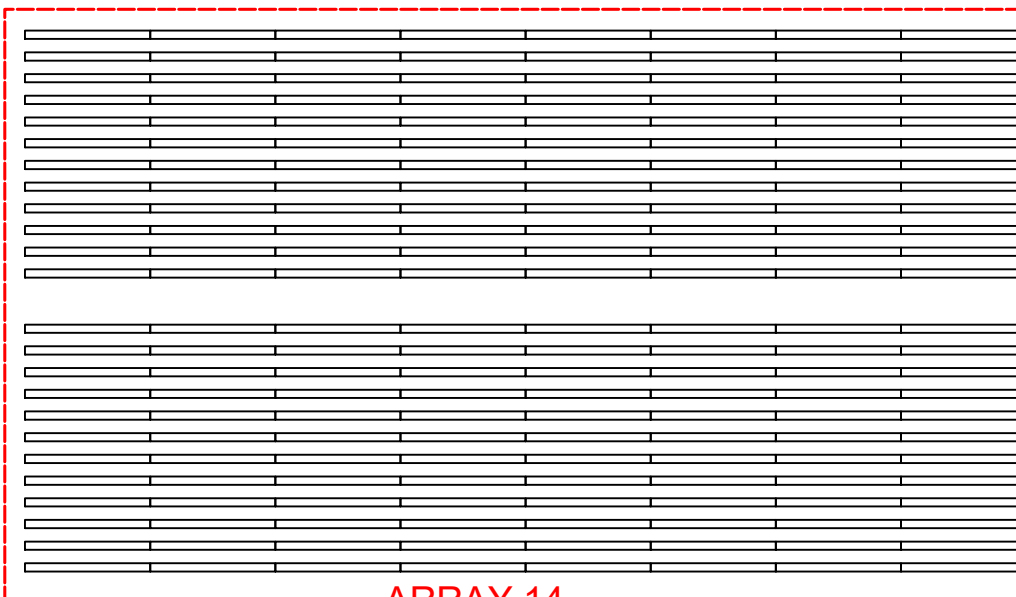
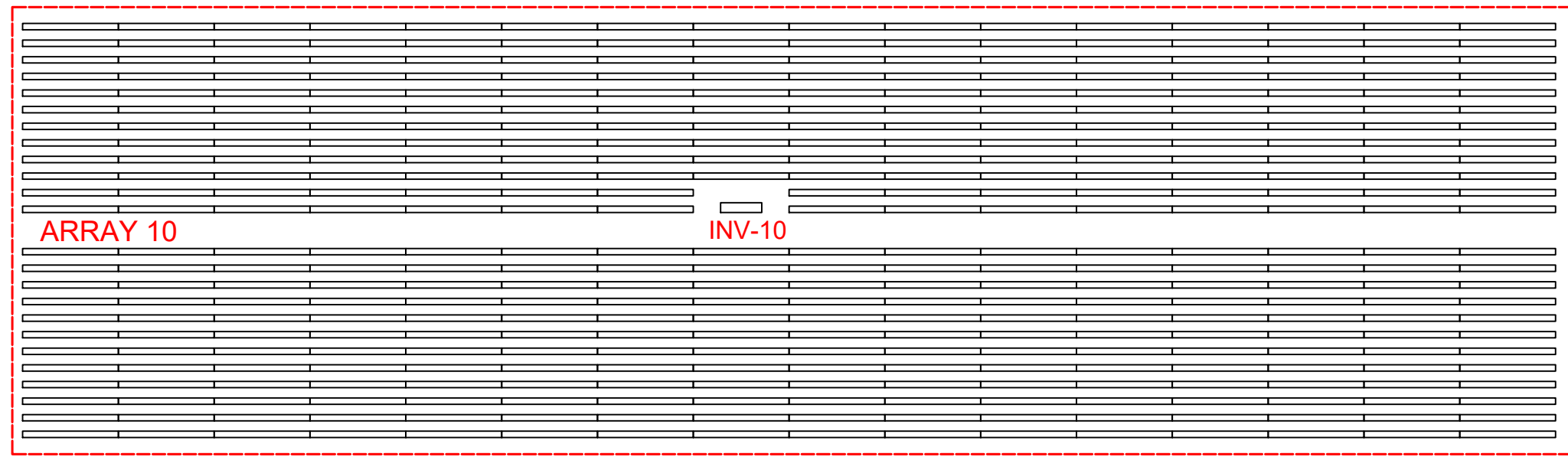
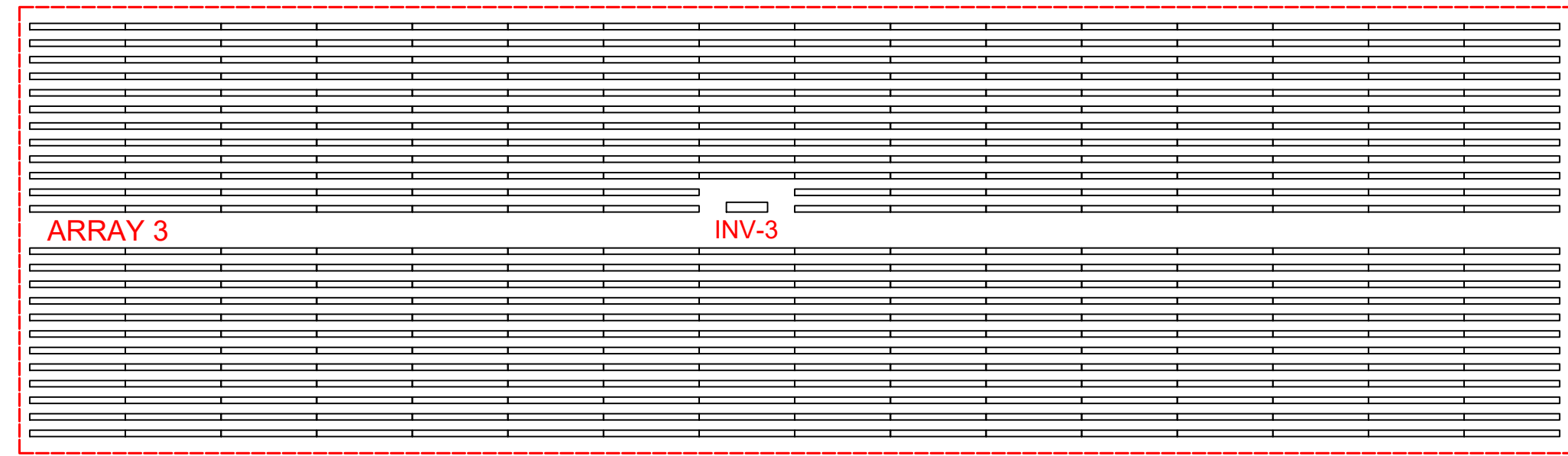
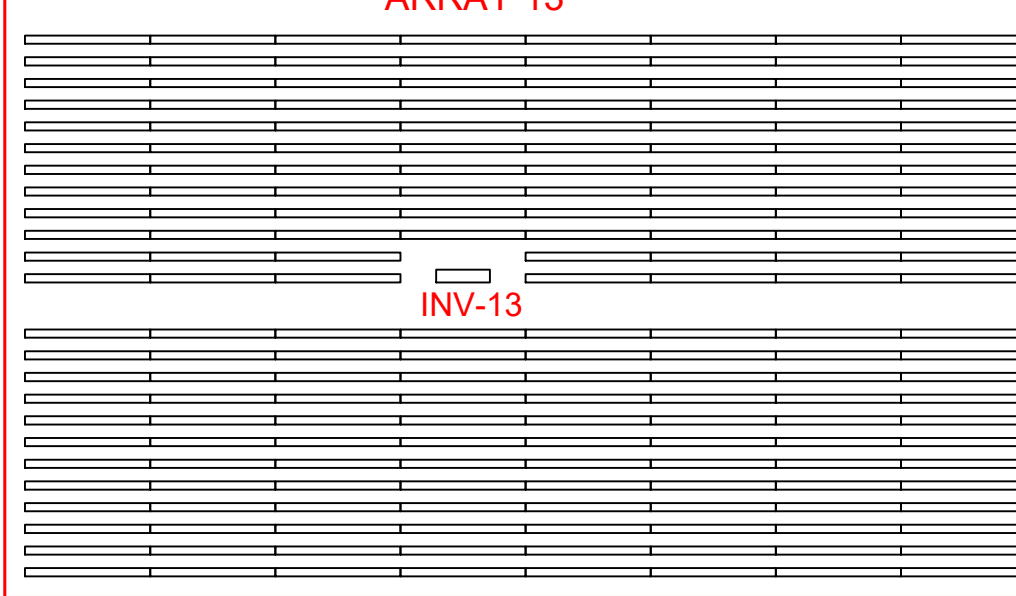
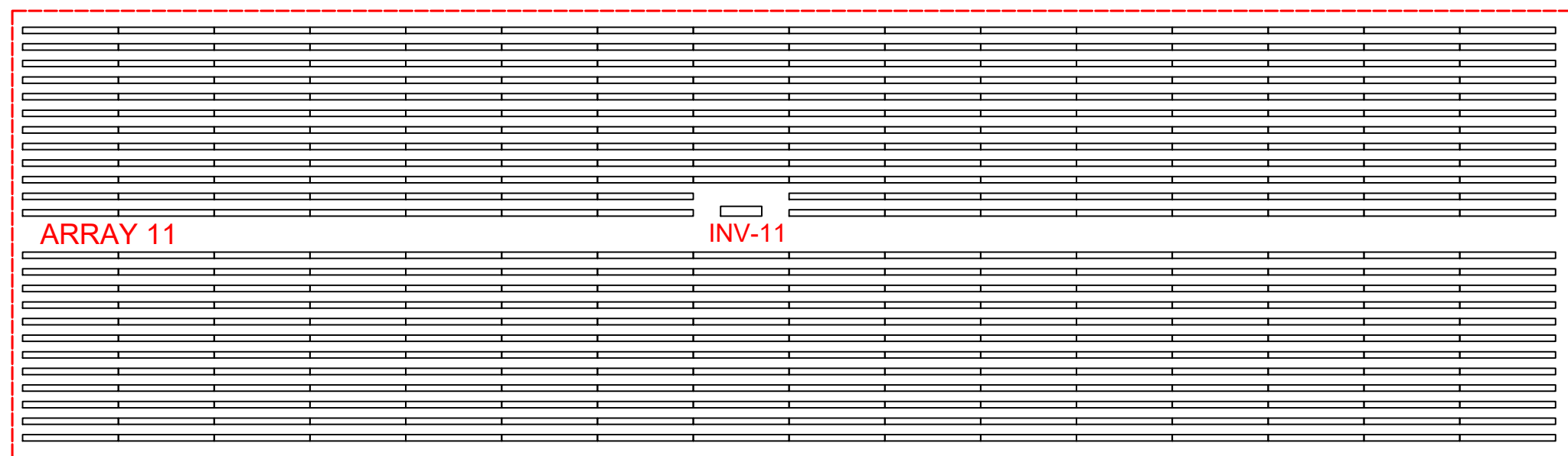
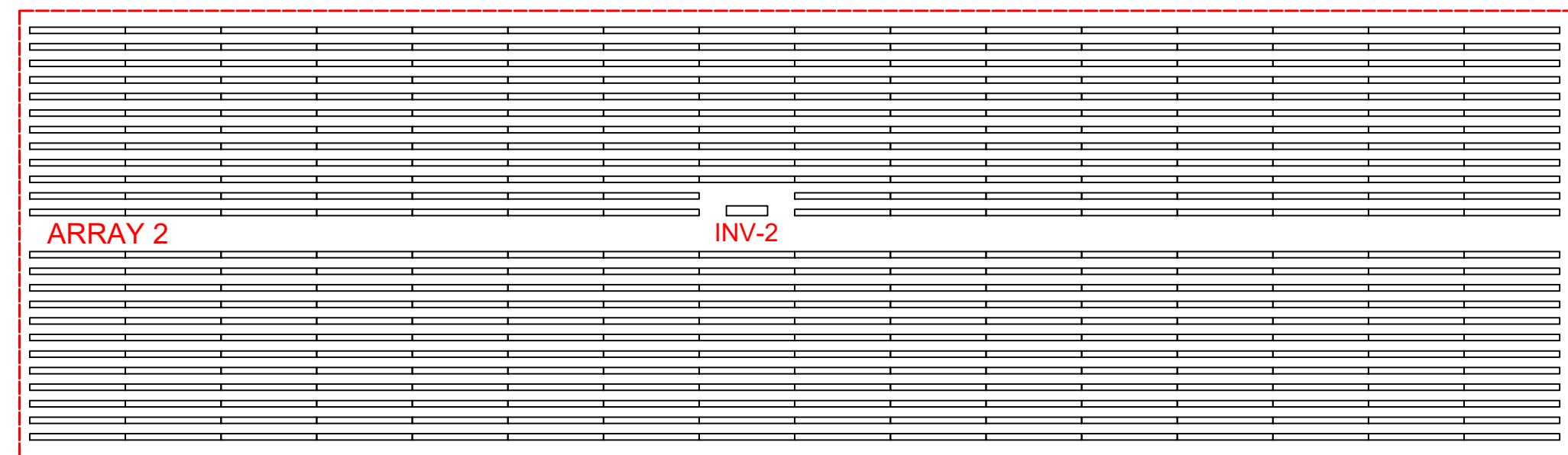
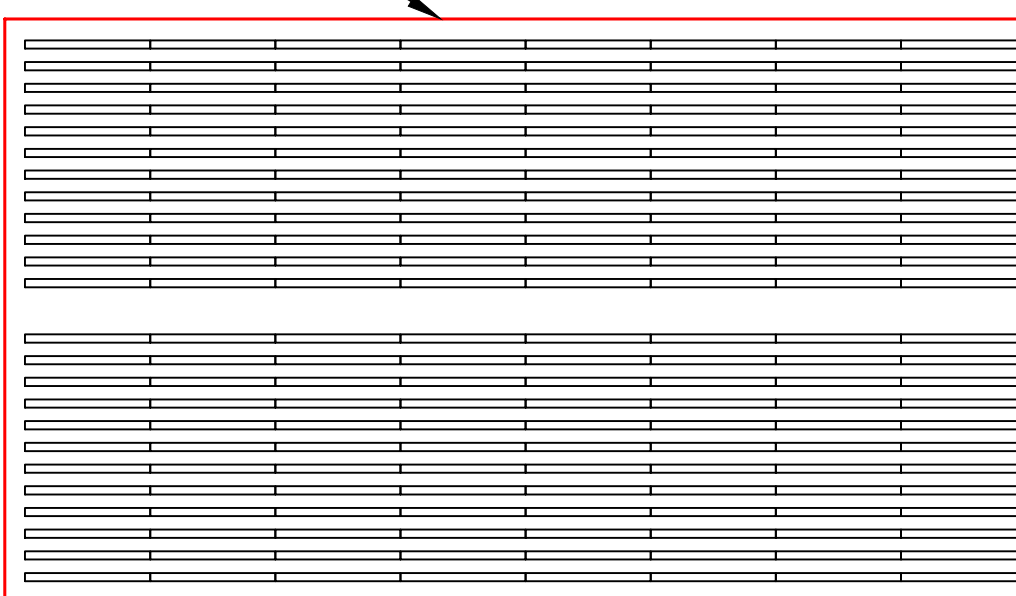
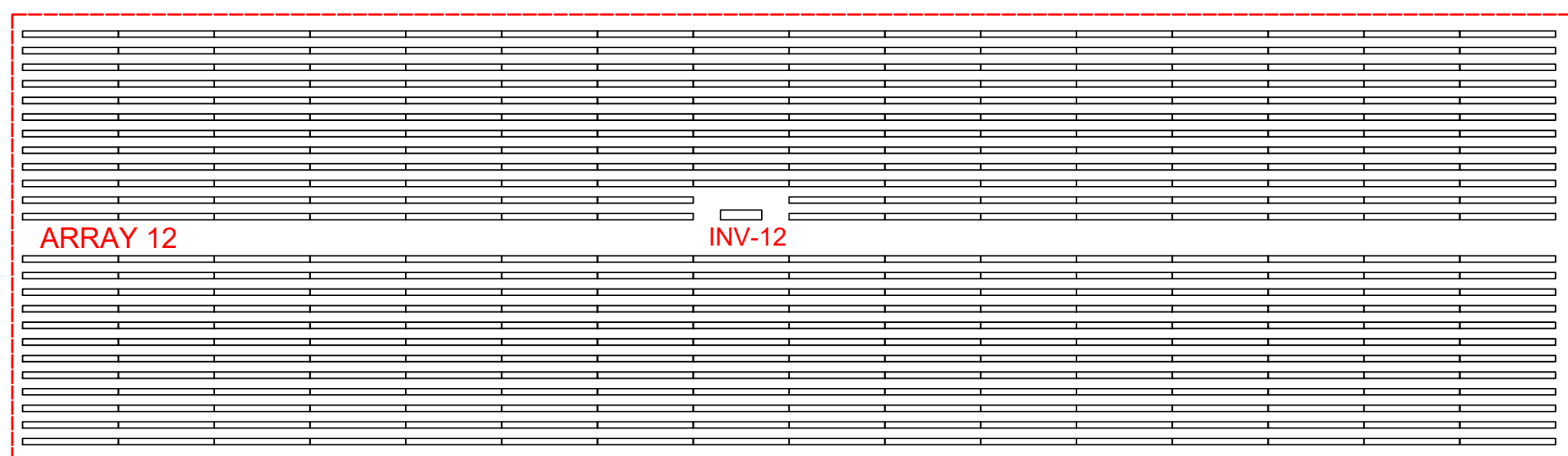
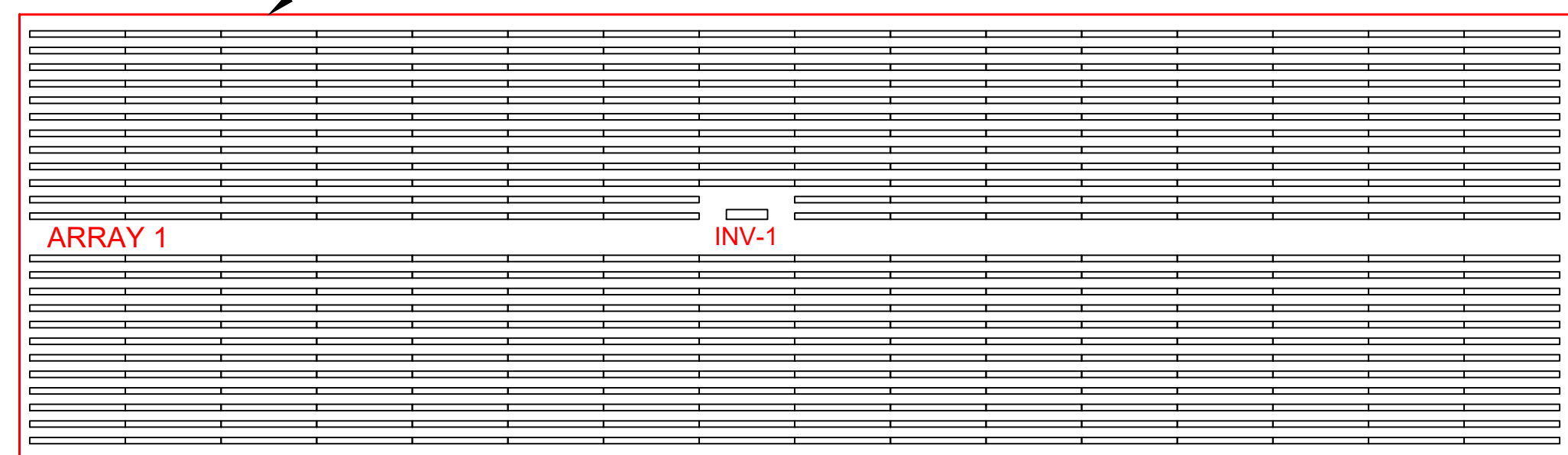
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LOVINGTON, NM 88260
(LEA COUNTY)

Project	60MW SOLAR POWER PLANT	Sheet	S102
Date	11/07/23	SITE WIRING	
Scale	1"=50'		

SEE PV102 FOR MORE INFORMATION ON ARRAYS 1-12

SEE PV103 FOR MORE INFORMATION ON ARRAYS 13-15



General Notes

SIGNATURE & SEAL

REVISIONS

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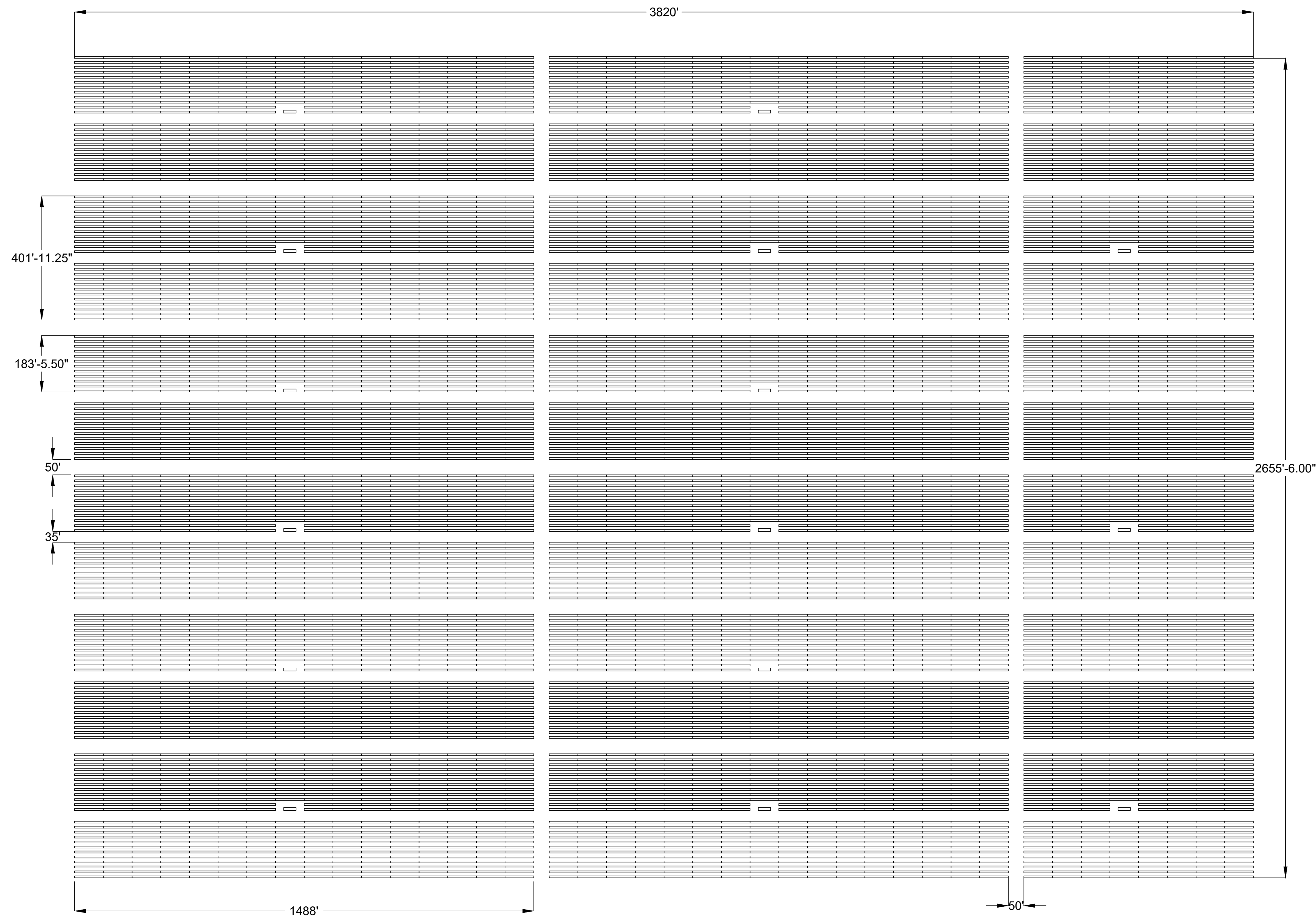
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Project	60MW SOLAR POWER PLANT	Sheet	PV100
Date	11/07/23	SOLAR KEYPLAN	
Scale	N/A		

SOLAR FARM KEY PLAN



OVERALL ARRAY LAYOUTS

General Notes

SIGNATURE & SEAL

REVISIONS

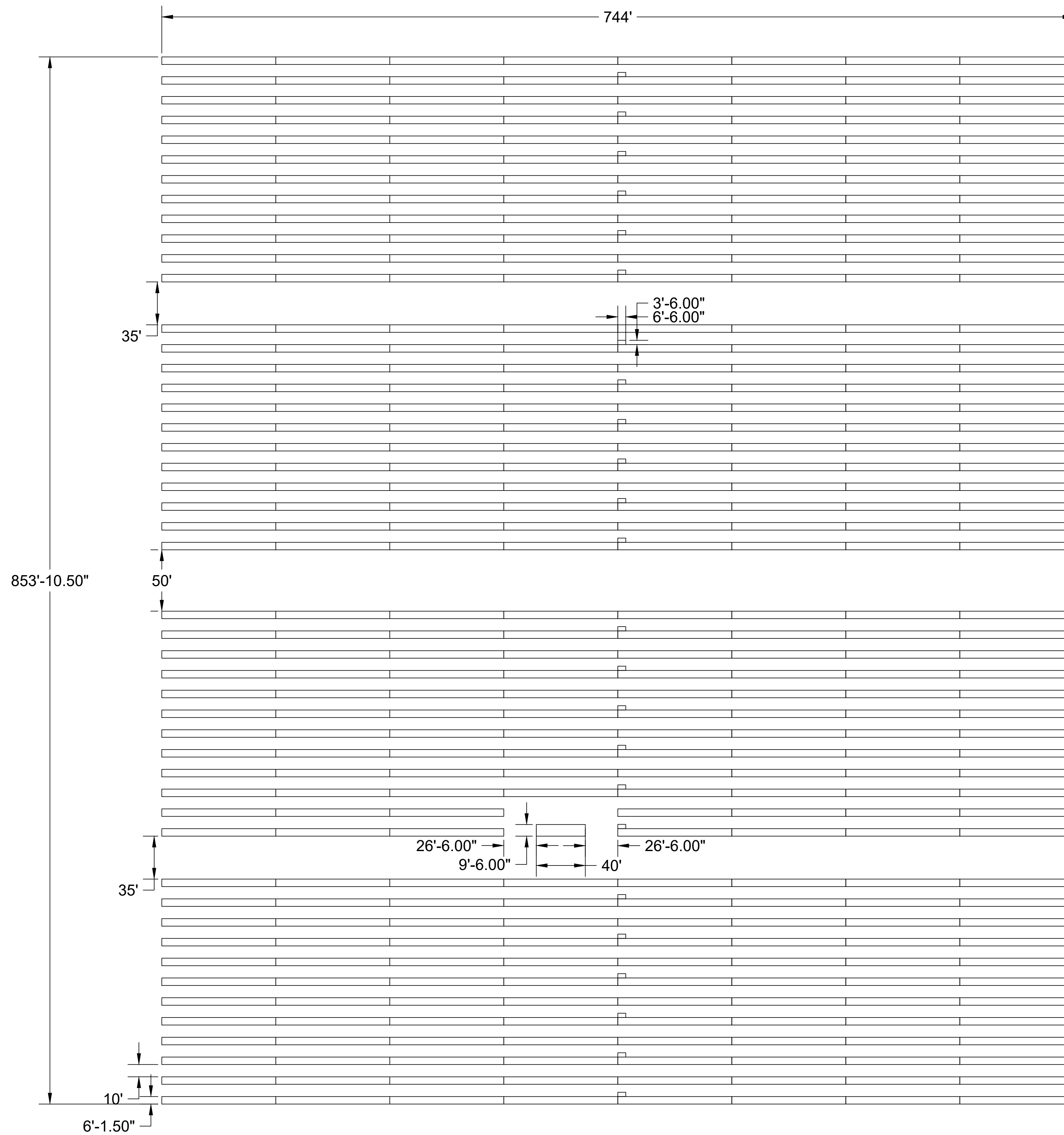
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 (LEA COUNTY)

Project	60MW SOLAR POWER PLANT	Sheet	PV101 OVERALL ARRAY LAYOUT
Date	11/07/23		
Scale	1" = 150'		



ARRAYS 13-15 LAYOUT

General Notes

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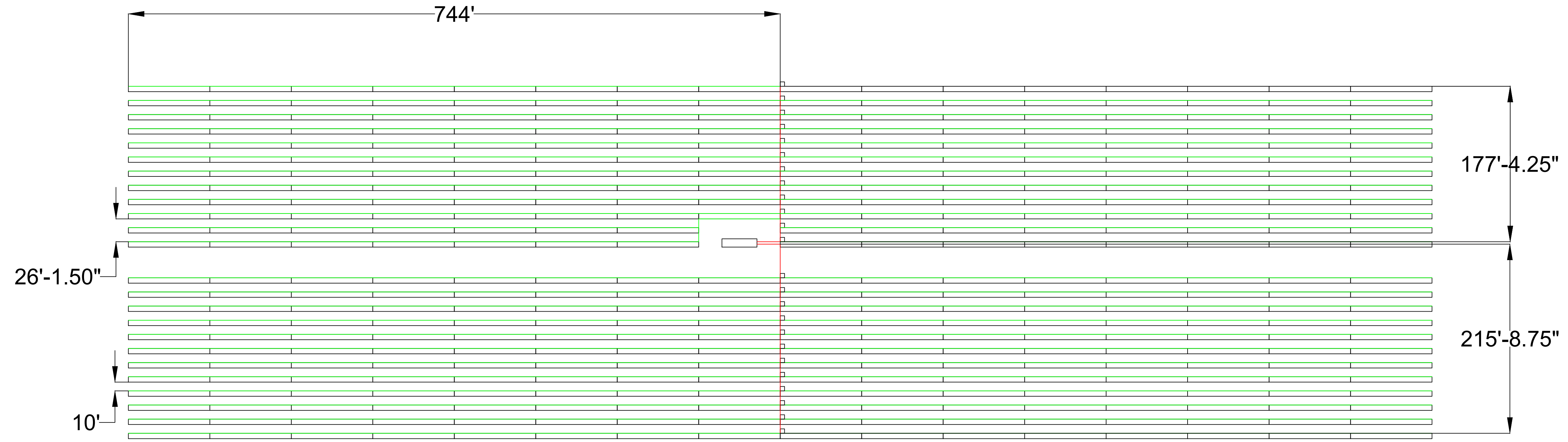
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Project	Sheet
60MW SOLAR POWER PLANT	PV103
Date	ARRAYS 13 - 15 LAYOUT
11/07/23	
Scale	
1" = 50'	

Legend	
Line Color:	Line Description:
Red	Below ground, from CB to skid
Green	Above ground, from racks to CB



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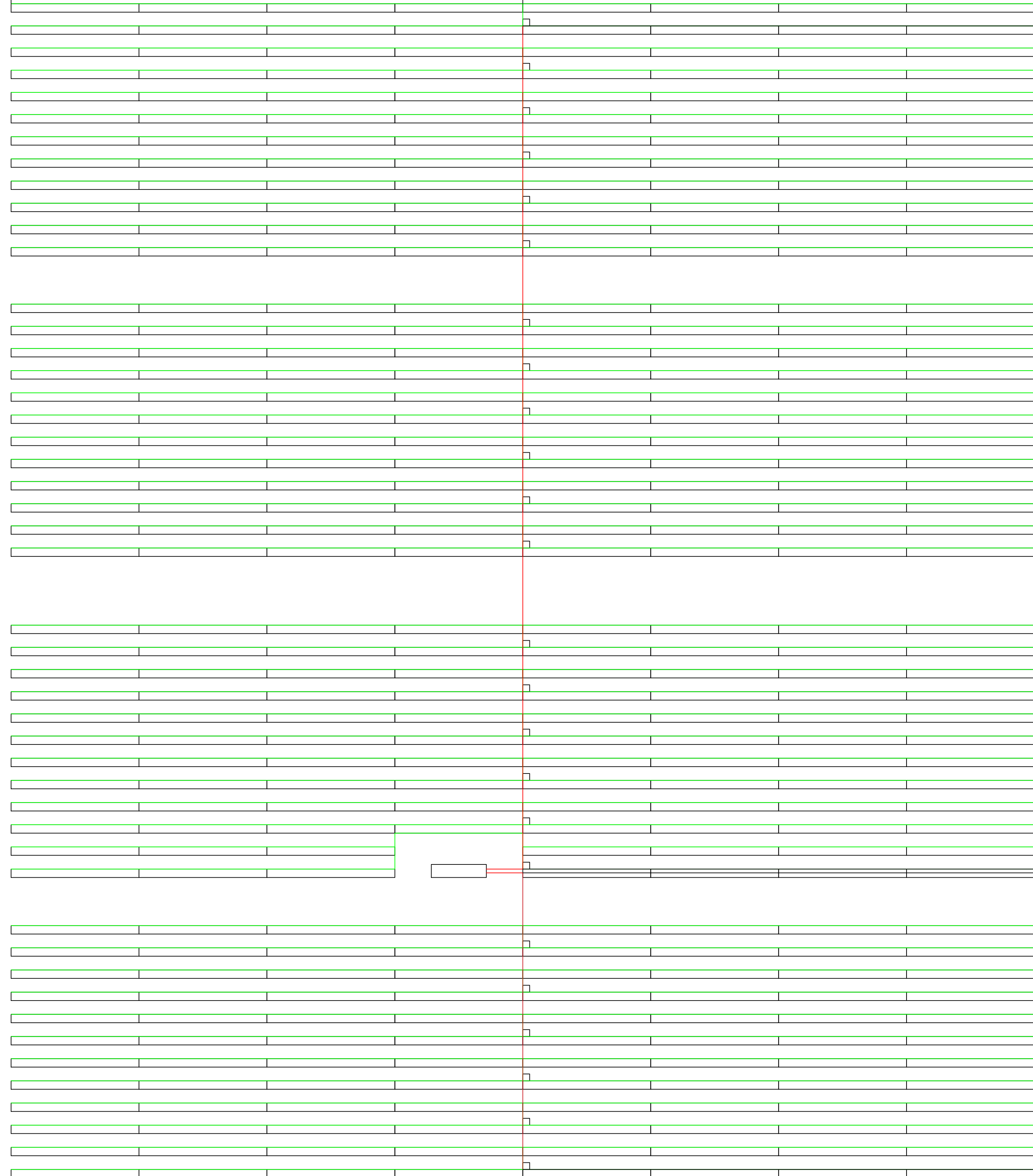
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LOVINGTON, NM 88260
(LEA COUNTY)

Project	60MW SOLAR POWER PLANT	Sheet	PV104 ARRAYS 1-12 WIRING
Date	11/07/23		
Scale	1" = 70'		

ARRAYS 1-12 WIRING

372'



Legend	
Line Color:	Line Description:
Red	Below ground, from CB to skid
Green	Above ground, from racks to CB

613'-2.00"

215'-8.75"

ARRAYS 13-15 WIRING

General Notes

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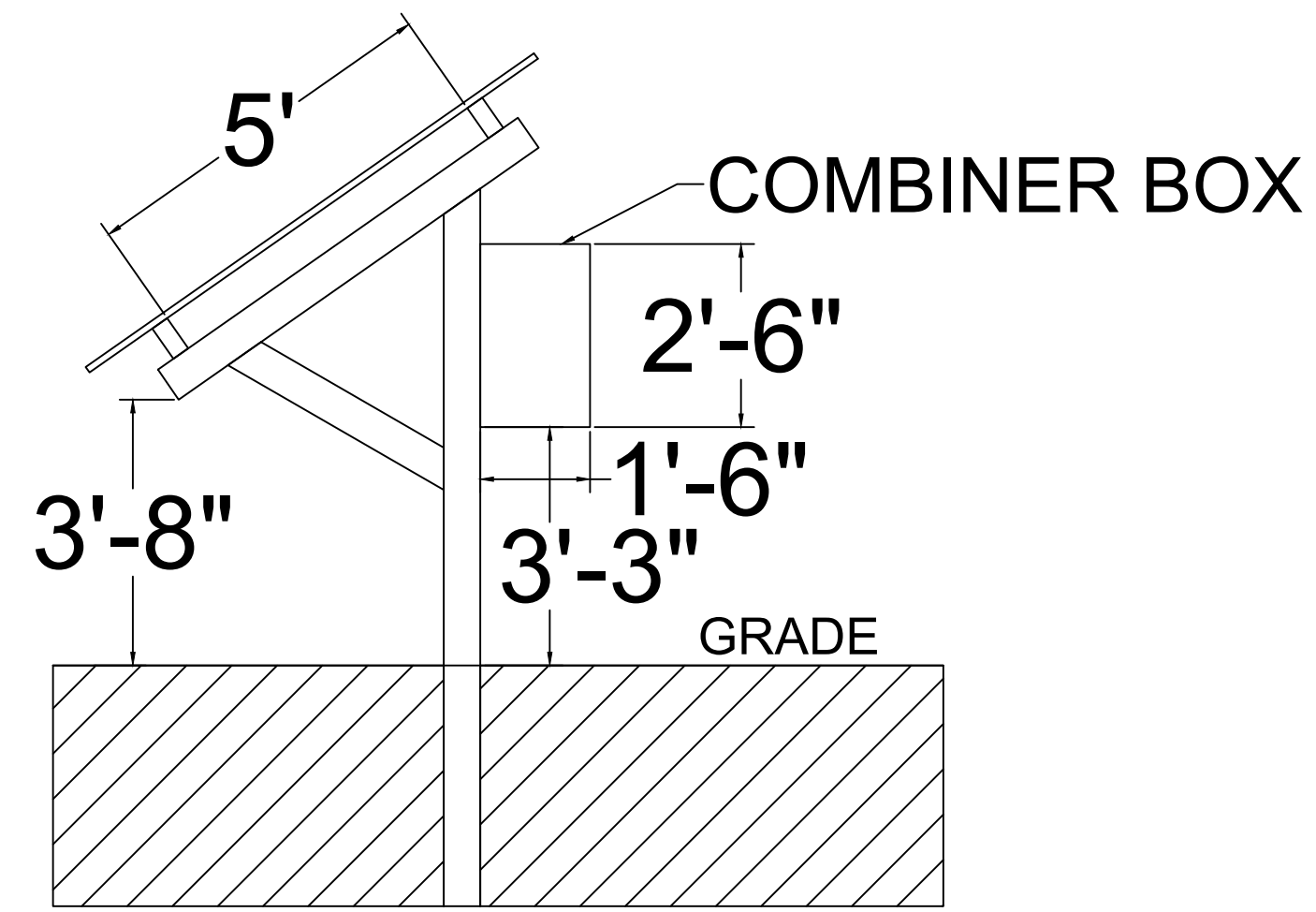
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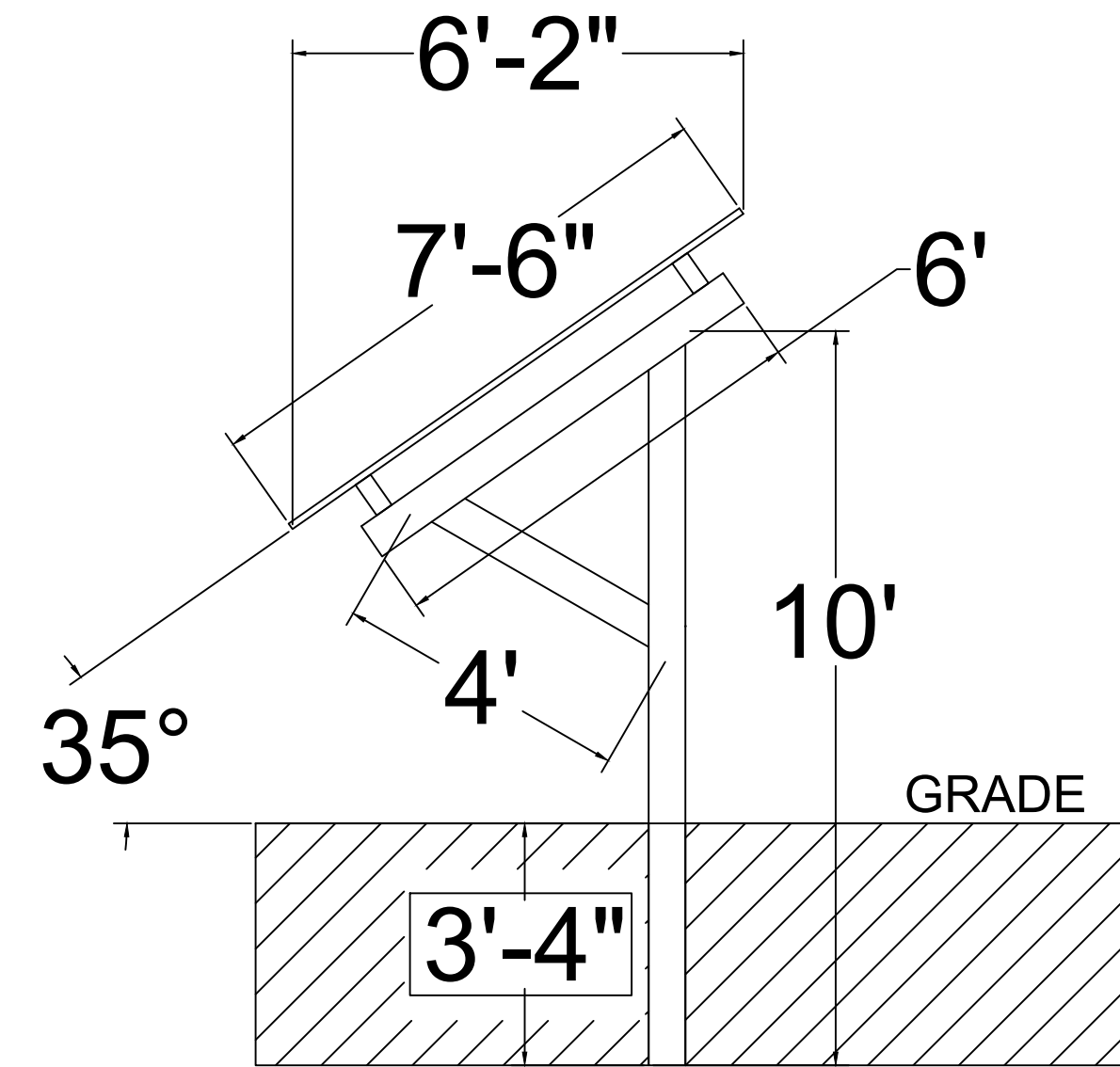
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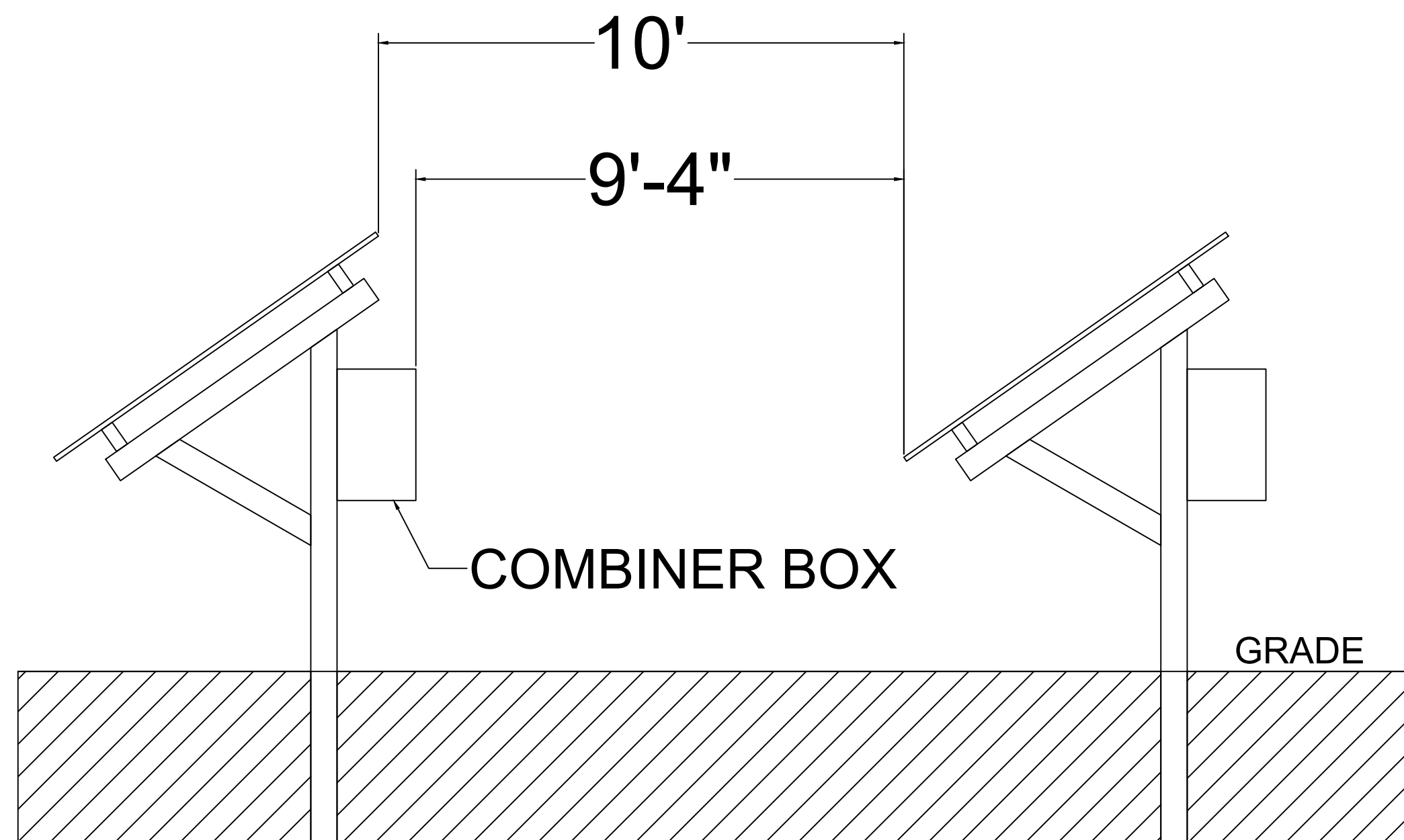
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Date	11/07/23		
Scale	1" = 50'		



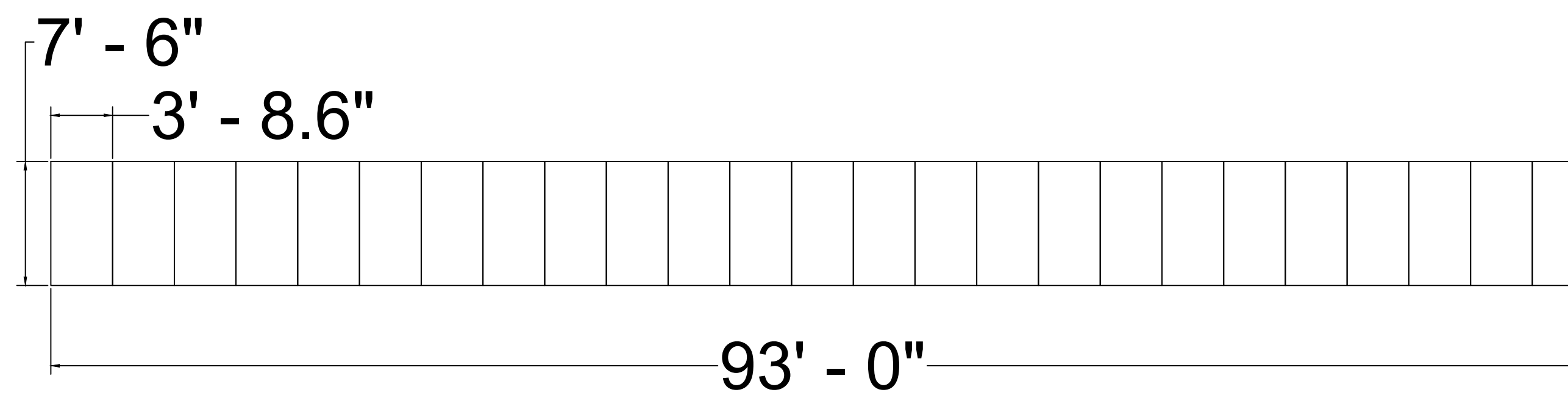
1 COMBINER BOX MOUNTING PROFILE
SCALE: 1" - 2.5'



2 PANEL MOUNTING PROFILE
SCALE: 1" - 2.5'



3 GENERAL ARRAY MOUNTING PROFILE
SCALE: 1" - 2.5'



4 TYP. RACK LAYOUT
SCALE: 1" - 7.75'

SOLAR DESIGN DETAILS

General Notes

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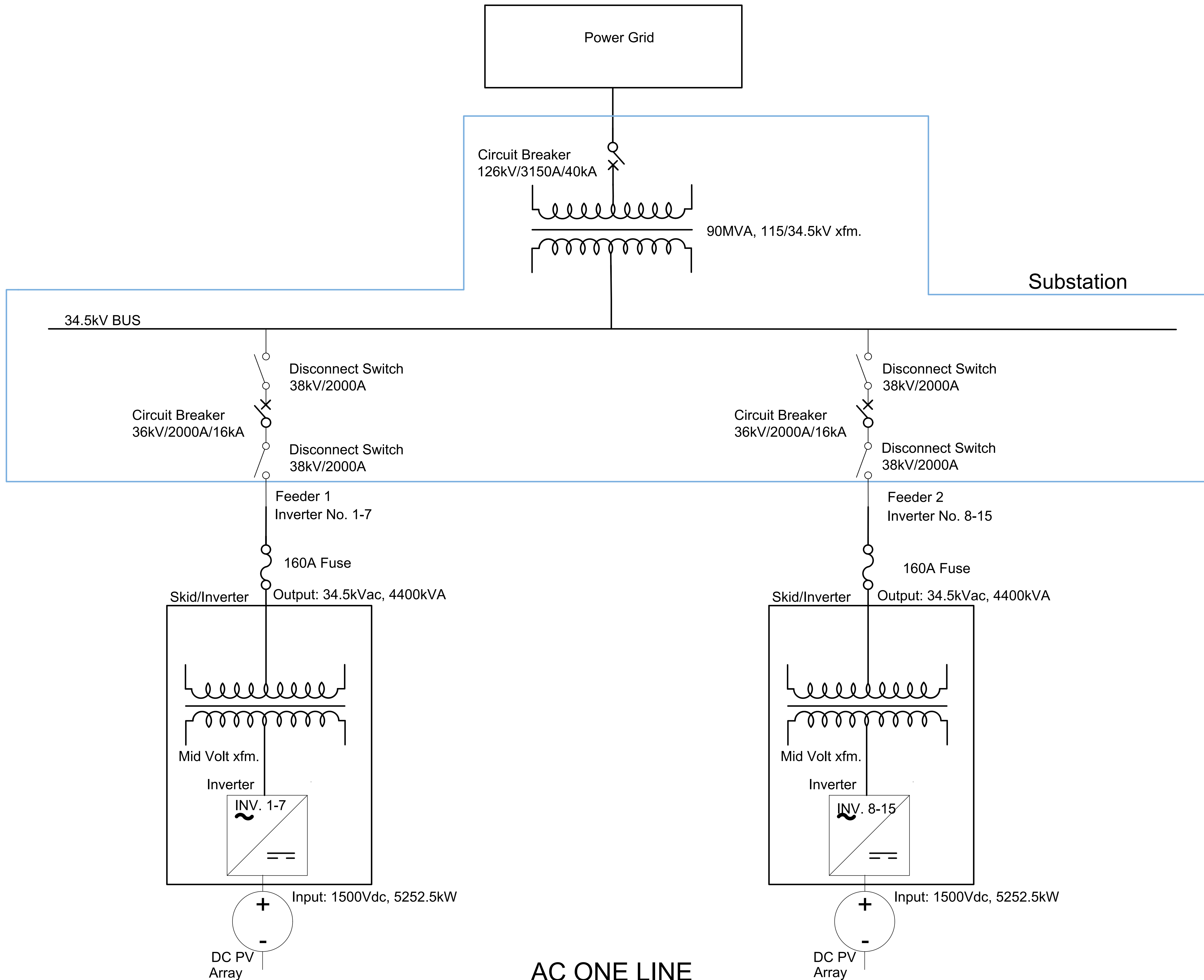
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(LEA COUNTY)

Project	60MW SOLAR POWER PLANT	Sheet	PV106 SOLAR DESIGN DETAILS
Date	11/07/23		
Scale	N/A		



AC ONE LINE

General Notes

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Project	60MW SOLAR POWER PLANT	Sheet	PV107
Date	11/07/23		AC ONE LINE
Scale	N/A		

	Pmax (W)	Vmp (V)	Imp (A)	Voc (V)	Isc (A)	Mod Eff (%)
PVX-Y-Z.W	550	41.90	13.13	50.20	13.89	21.29

Model No. ZXM7-SHDB144

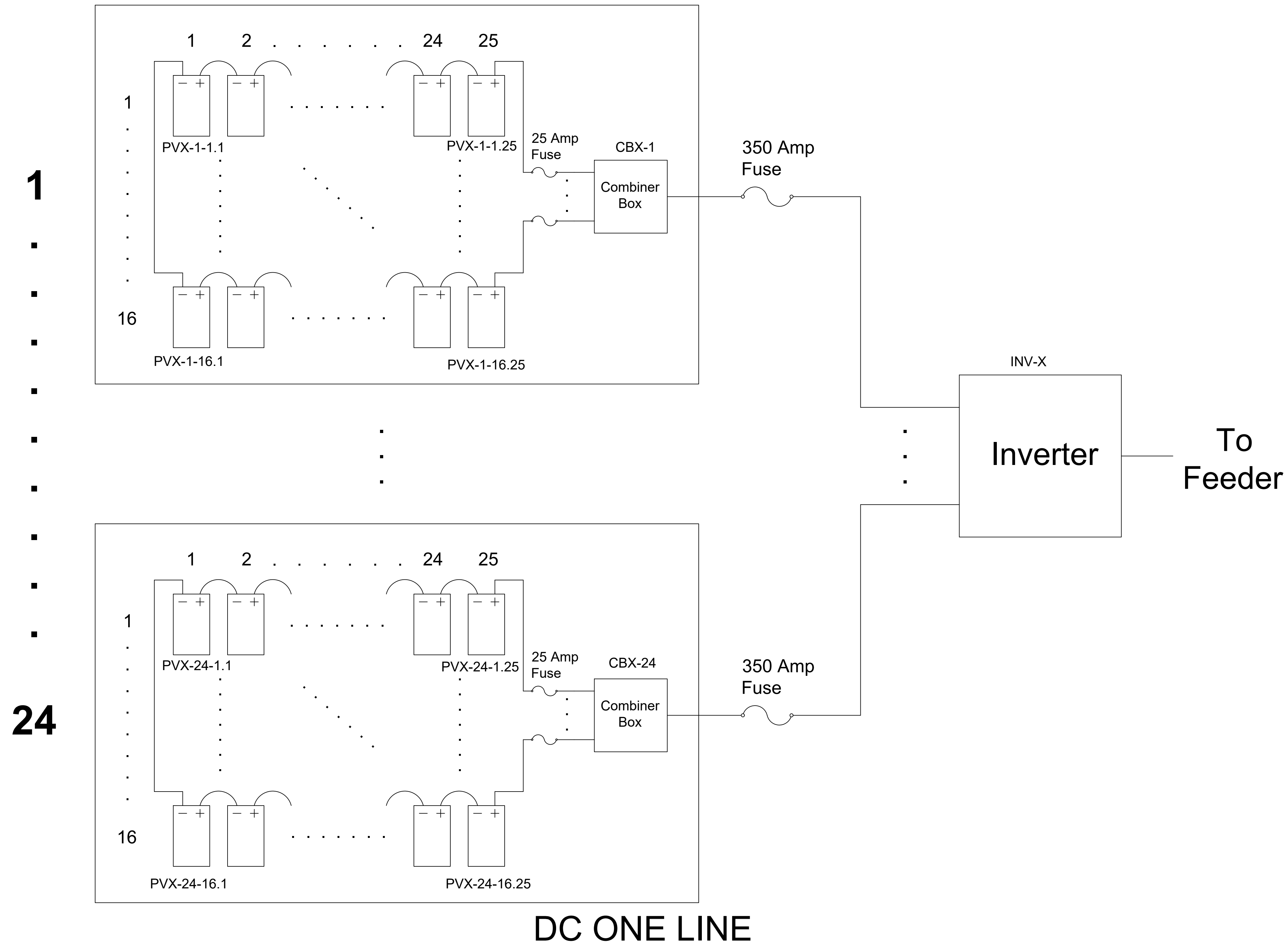
	Vmax (V)	Input #	I _{max} in (A)	I _{max} out (A)
CBX-Y	1500	16	30	350

Model No. BHTZ-16/1

	INPUT (DC)			OUTPUT (AC)			
	PVmax (kWp)	DC Volt Range (V)	DC Inputs	Snom (kVA)	Smax (kVA)	Output Freq (Hz)	Inv Eff (%)
INV-X	2 x 3200	935-1500	24	4000	4400	60	98.8

Model No. PVS980-MWS-4000kVA-K

X = INVERTER #
 Y = CB #
 Z = STRING #
 W = MODULE #



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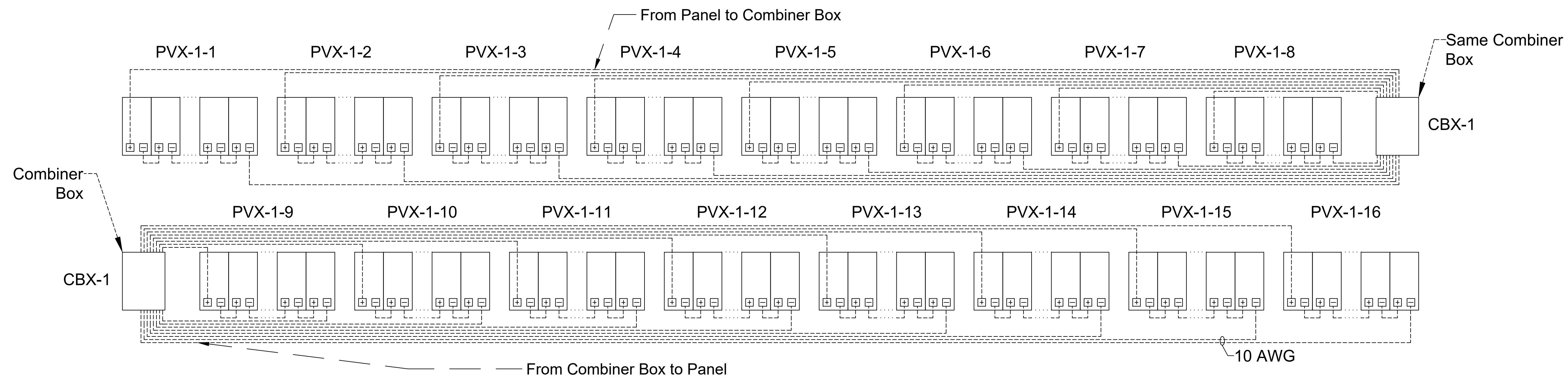
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Project	Sheet
60MW SOLAR POWER PLANT	PV108
Date	DC ONE LINE
11/07/23	
Scale	
N/A	



Not to Scale

STRING DIAGRAM

General Notes

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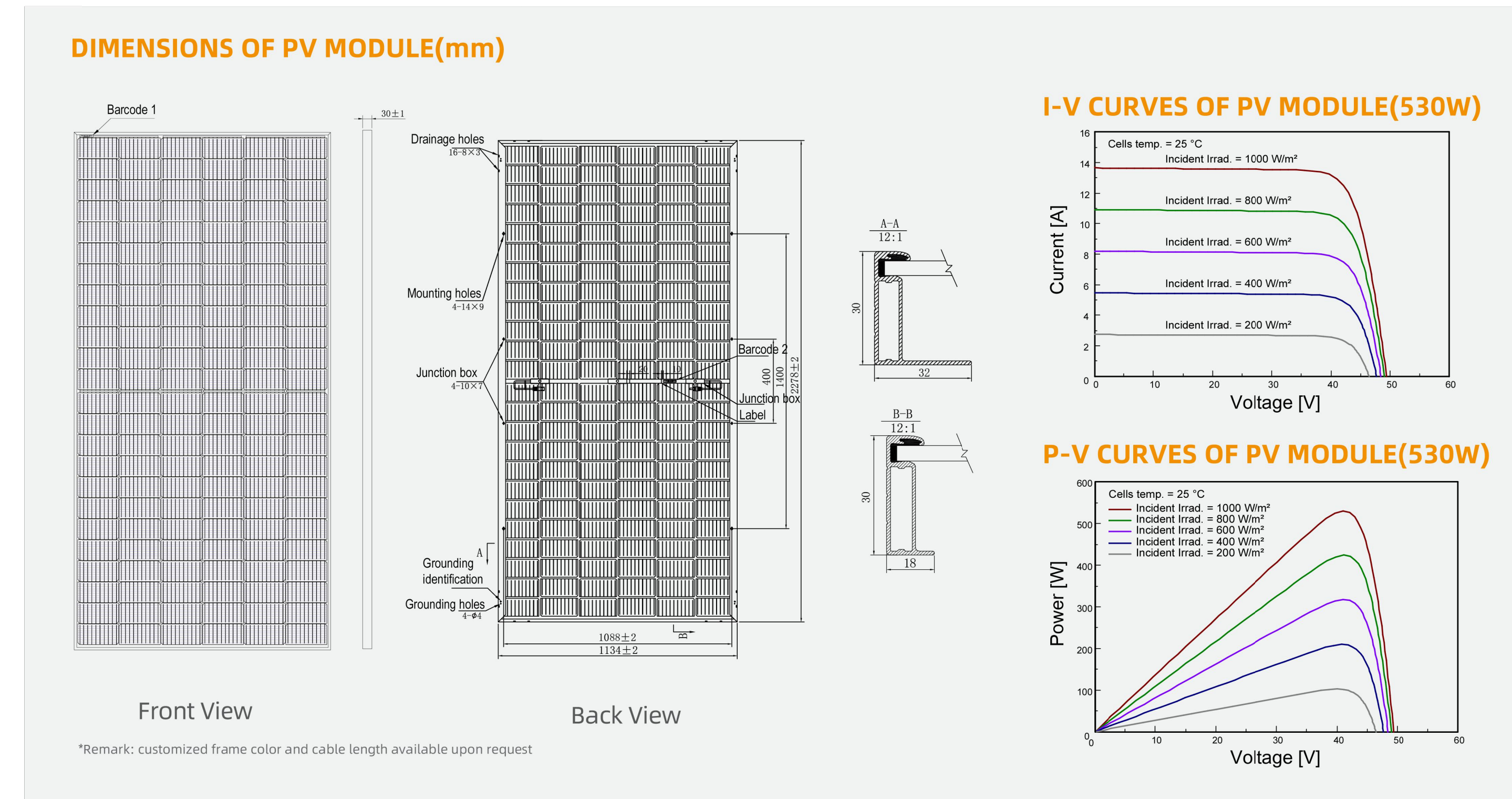
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Project	Sheet
60MW SOLAR POWER PLANT	PV109
Date	STRING ONE LINE
11/07/23	
Scale	
N/A	



ELECTRICAL CHARACTERISTICS | STC*

Nominal Power Watt Pmax(W)*	530	535	540	545	550	555
Maximum Power Voltage Vmp(V)	41.10	41.30	41.50	41.70	41.90	42.10
Maximum Power Current Imp(A)	12.91	12.96	13.02	13.07	13.13	13.19
Open Circuit Voltage Voc(V)	49.40	49.60	49.80	50.00	50.20	50.40
Short Circuit Current Isc(A)	13.65	13.71	13.77	13.83	13.89	13.95
Module Efficiency (%)	20.52	20.71	20.90	21.10	21.29	21.48

*The data above is for reference only and the actual data is in accordance with the practical testing
 *STC (Standard Test Condition): Irradiance 1000W/m², Module Temperature 25±2°C, AM 1.5
 *Measuring uncertainty: ±3%, all the electrical characteristics such as Power, Im, Vm and FF are within ±3% tolerance.

MECHANICAL DATA

Solar cells	Mono PERC
Cells orientation	144 (6×24)
Module dimension	2278×1134×30mm (With Frame)
Weight	25.5±1 kg
Glass	3.2mm, High Transmission, AR Coated Tempered Glass
Junction box	IP 68, 3 diodes
Cables	4 mm², 350 mm (With Connectors)
Connectors*	MC4-compatible

*Please refer to regional datasheet for specified connector

ELECTRICAL CHARACTERISTICS | NMOT*

Maximum Power Pmax(Wp)	396.40	399.90	403.60	406.80	410.80	414.60
Maximum Power Voltage Vmpp(V)	38.20	38.40	38.50	38.80	38.90	39.10
Maximum Power Current Impp(A)	10.38	10.42	10.47	10.49	10.56	10.61
Open Circuit Voltage Voc(V)	46.20	46.30	46.50	46.70	46.90	47.10
Short Circuit Current Isc(A)	11.02	11.07	11.12	11.17	11.22	11.27

*NMOT: Irradiance 800W/m², Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s

TEMPERATURE RATINGS

NMOT	44°C ±2°C	Maximum system voltage	1500 V DC
Temperature coefficient of Pmax	-0.35%/°C	Operating temperature	-40°C~+85°C
Temperature coefficient of Voc	-0.29%/°C	Maximum series fuse	30 A
Temperature coefficient of Isc	0.05%/°C	Front Side Maximum Static Loading	Up to 5400Pa
Refer. Bifacial Factor	70±5%	Rear Side Maximum Static Loading	Up to 2400Pa

*Remark: Do not connect Fuse in Combiner Box with two or more strings in parallel connection

ELECTRICAL CHARACTERISTICS WITH 25% REAR SIDE POWER GAIN*

Front power Pmax/W	530	535	540	545	550	550
Total power Pmax/W	663	669	675	681	688	694
Vmp/V(Total)	41.20	41.40	41.60	41.80	42.00	42.20
Imp/A(Total)	16.08	16.15	16.23	16.30	16.37	16.44
Voc/V(Total)	49.50	49.70	49.90	50.10	50.30	50.50
Isc/A(Total)	17.02	17.10	17.17	17.25	17.32	17.39

*Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

PACKAGING CONFIGURATION*

Piece/Box	36
Piece/Container(40'HQ)	720

*Customized packaging is available upon request.
 *Remark: Electrical data in this catalog do not refer to a single module and they are not part of the offer. They only serve for comparison among different module types.
 *Caution: Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

Add : 1#, Zhixi Industrial Zone, jintanjiangsu 213251, P.R. China Tel: +86 519 6822 0233 E-mail: info@znshinesolar.com

Note: Specifications included in this datasheet are subject to change without notice. ZNSHINE reserves the right of final interpretation © ZNSHINE SOLAR 2022 | Version: ZXM7-SHDB144 2203.E
 No special undertaking or warranty for the suitability of special purpose or being installed in extraordinary surroundings is granted unless as otherwise specifically committed by manufacturer in contract document

General Notes

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REVISIONS

NO.	DESCRIPTION	DATE
C	75% SET SUBMITTAL	3/29/24
D	90% SET SUBMITTAL	4/12/24
E	100% SET SUBMITTAL	4/22/24

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 CHICHENG TANG, SITI MOHD RADZI,
 EDUARDO JIMENEZ-TZOMPACTLE
 4100 MARSTON HALL
 533 MORRILL ROAD
 AMES, IA 50011

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LOVINGTON, NM 88260
 (LEA COUNTY)

Project	60MW SOLAR POWER PLANT	Sheet	PV110
Date	11/07/23	PANEL DATASHEET	
Scale	N/A		

BHSZ 1500V AFCI Combiner BOX

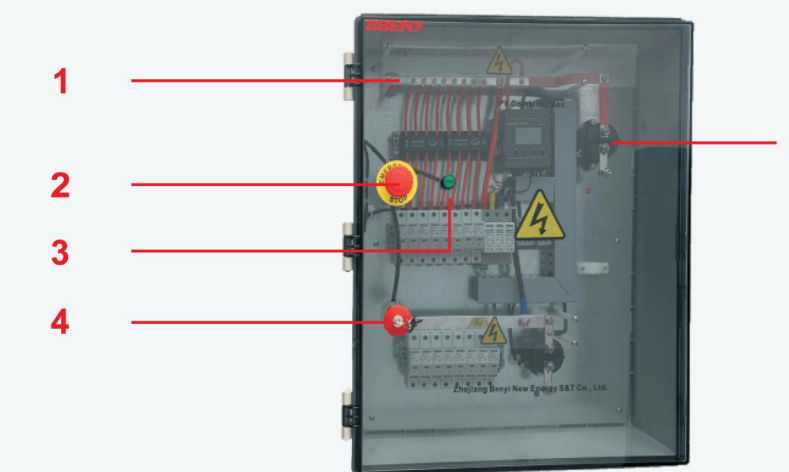


- 1 Brand
- 2 Emergency button
- 3 Indicating light
- 4 Start/Stop(Lockable)
- 5 Contactor

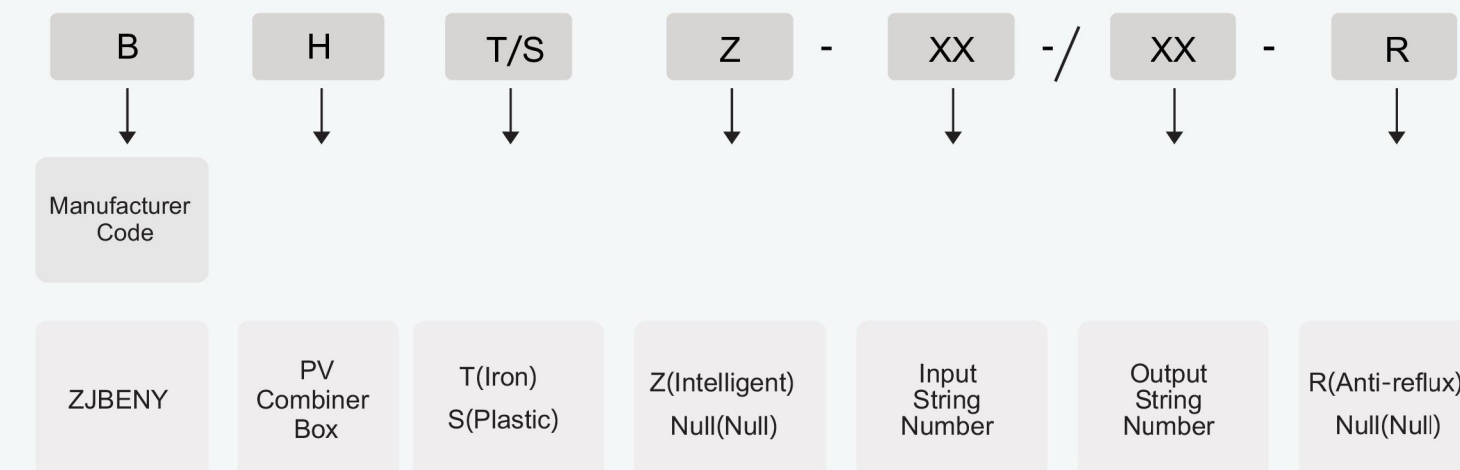
Application

ZBENY The Arc Fault Circuit Interruption Combiner Boxes monitor the current and voltage of each strings and the temperature in enclosure,the integrated automatic contactors triggered when there is arc fault detected. So the PV DC strings will be shut down rapidly.The solution provides solar PV system safety. The DC contactors can be remoted controlled for easier system maintain.

Apperance Introduction



Type Instruction



Model No.	BHSZ-8/1	BHSZ-12/1	BHSZ-16/1
Max Rated Voltage		1500VDC	
Number of Input	8	12	16
Max Input Current Per Each String		10A / 15A / 20A / 25A / 30A	
Connection Type of Input		PG09 MC4	
Input Cable Size		Ø4-8mm	
Max Output Current	100A / 125A / 250A	125A / 160A / 200A / 250A	200A / 250A / 315A / 350A
Connection Type of Output		PG 36, Ø22-32mm Customizable	
DC Surge Arrester		T2/T1+2, In=12.5KA, I _{max} =30KA, U _{cpv} =1500VDC	
Voltage of Monitoring Device		450VDC ~ 1500VDC	
Voltage of Contactor		24VDC (Built-in Power Supply) Plastic	
Enclosure		Powder Coated Stainless Steel	
Protection Degree		NEMA13 (IP65)	
Ambient Temperature		-20°C ~ +60°C	
Humidity		0-99%	
Altitude		≤2000m (derating > 2000m)	
Installation method		Vertical / Horizontal	
Standard		IEC62109 / IEC61439 (EN62109 / EN61439)	

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Project	Sheet
60MW SOLAR POWER PLANT	PV111 COMBINER BOX DATASHEET
Date 11/07/23	
Scale N/A	

PVS980-MWS

Solar inverters

Like other ABB central inverters, the PVS980 has been developed on the basis of decades of experience in the industry and proven technology platform. Unrivalled expertise from the world's market and technology leader in frequency converters is the hallmark of this solar inverter series. The PVS980 inverter is one of the most efficient and cost-effective ways of converting the direct current (DC) generated by solar modules into high quality and CO₂-free alternating current (AC) that can be fed into the power distribution network. Two ABB central inverters are used in the ABB megawatt station. The inverters provide high conversion efficiency with low auxiliary power consumption with very low maintenance need.

Transformer

The ABB megawatt station includes an ABB vacuum cast coil dry-type- or alternatively ABB oil immersed transformer. The transformer is designed to meet the reliability, durability, and efficiency required in PV applications. It is specifically designed and optimized for ABB solar inverters to provide the best performance throughout the lifetime of the plant.

As a major global transformer manufacturer, ABB offers a wide range of transformers. Alternate power transformers are available to meet customer requirements. All ABB's transformers are manufactured in accordance with the most demanding industry and international standards.

Switchgear

ABB offers a complete range of medium voltage switchgear for secondary distribution, including air-insulated and gas-insulated switchgear.

The ABB megawatt station is equipped, as standard, with the widely proven ABB SafeRing, SF₆-insulated switchgear.

A sealed steel tank with constant atmospheric conditions ensures a high level of reliability as well as personnel safety. The virtually maintenance-free system comes in a compact and flexible design that allows for a versatile switchgear configuration. As an option ABB's gas-insulated SafePlus and air insulated Unisec switchgear are also available.

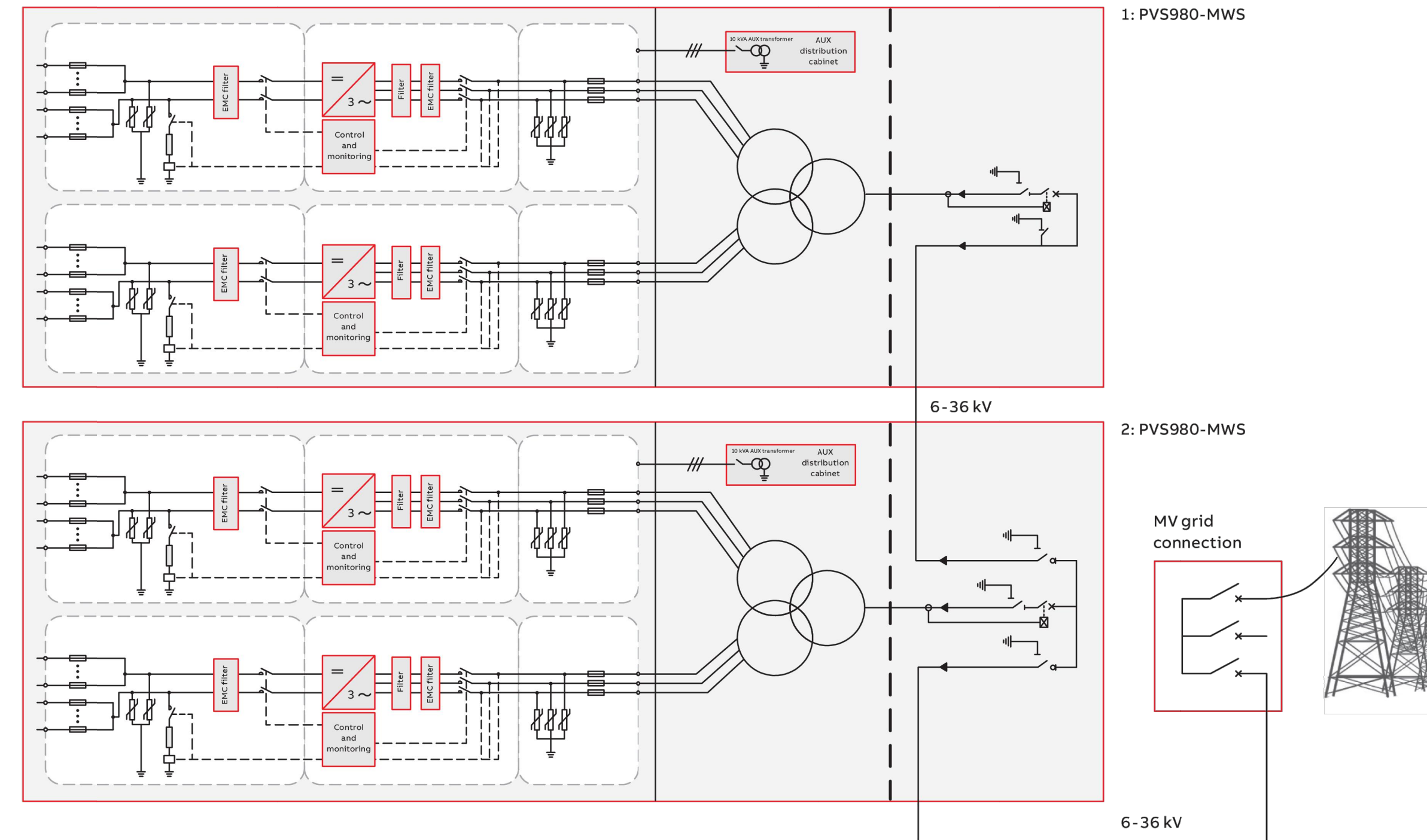
Technical data and types

Type designation ¹⁾	-3636kVA-I-xx-zzz	-3818kVA-J-xx-zzz	-4000kVA-K-xx-zzz	-4182kVA-L-xx-zzz
PVS980-MWS-				
Maximum rating	4000 kVA	4200 kVA	4400 kVA	4600 kVA
Input (DC)				
Maximum input power (P _{PV,max})	2x2909 kWp	2x3056 kWp	2x3200 kWp	2x3346
DC voltage range, mpp (U _{DC,mppt}) @ 35 °C (122°F)	850...1500 V	893...1500 V	935...1500 V	978...1500 V
(@ S _{nom}) @ 50 °C (122°F)	850...1100 V	893...1100 V	935...1100 V	978...1100 V
Maximum operational DC voltage (U _{DC,max})	1500 V			
Number of protected DC inputs (parallel)	2x8 (up to 24 as option)			
Number of mppt trackers	2			
Output (AC)				
Inverter type (2x ABB central inverter)	PVS980-58-1818kVA-I	PVS980-58-1909kVA-J	PVS980-58-2000kVA-K	PVS980-58-2091kVA-L
Nominal AC output power (S _{N(AC)}) @ 50 °C (122°F)	3636 kVA	3818 kVA	4000 kVA	4182 kVA
Maximum AC output power (S _{MAX(AC)}) @ 35 °C (122°F)	4000 kVA	4200 kVA	4400 kVA	4600 kVA
Medium voltage range (U _{N(AC)})	12 kV to 36 kV ²⁾			
Output frequency	50/60 Hz			
Harmonic distortion, current ³⁾	< 3%			
Power factor compensation (cosφ)	Yes			
Transformer type	ABB Vacuum cast coil dry type (AF), or ABB Oil immersed type (ONAN)			
Medium voltage switchgear type ⁴⁾	ABB SafeRing, SF ₆ -insulated, DeV, CV or CCV			
Enclosure	Painted steel outdoor enclosure, IP54, C4 corrosion protection			
Efficiency				
Maximum (inverter only)	98.8%			
Euro-eta (inverter only)	98.6%			

¹⁾ Where xx-mm voltage level, zzz-transformer type, oil or dry
²⁾ Nominal voltage 12 kV to 36 kV, from 6 kV on as option

³⁾ At nominal power
⁴⁾ Other ABB switchgear types available as an option

ABB megawatt station design and grid connection



Technical data and types

Type designation ¹⁾	-3636kVA-I-xx-zzz	-3818kVA-J-xx-zzz	-4000kVA-K-xx-zzz	-4182kVA-L-xx-zzz
PVS980-MWS-				
Maximum rating	4000 kVA	4200 kVA	4400 kVA	4600 kVA
Power consumption				
Own consumption in operation	≤ 5500 W / ≤ 7700 W ²⁾			
Standby operation consumption	≤ 800 W			
Auxiliary voltage for customer use	3 ~ 400 V/50 Hz, up to 40 kVA			
Dimensions and weight				
Width/Height/Depth, mm	12190 mm/2900 mm/2440 mm (40' HC container dimensions)			
Weight approx.	< 30 t			
Environmental limits				
Degree of protection	Inverter IP56/IP66, UL Type 3R. IP44/54 RMU and dry type transformer housing			
Ambient temperature range (nominal ratings) ⁶⁾	-20 °C to +50 °C			
Maximum altitude (above sea level) ⁷⁾	1000 m			
Relative humidity, non condensing	5% to 95%			
User interface and communications				
Local user interface	Inverter's control panel and PC interface through ABB Drive Studio			
Fieldbus connectivity	Modbus RTU, -TCP, Ethernet IP, Profinet			
Product compliance				
Conformity	IEC 60364, IEC 61936-1, IEC 60502-1			
Grid support	Reactive power compensation ⁸⁾ , Power reduction, LVRT, HVRT, FqRT			

²⁾ ≤ 5500 W with oil type transformer, ≤ 7700 W with dry type transformer
⁶⁾ Extended range upon request

⁷⁾ Higher altitude upon request
⁸⁾ Also during the night

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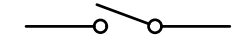
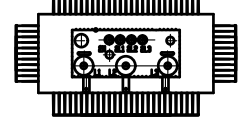
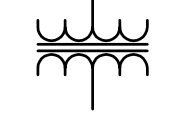
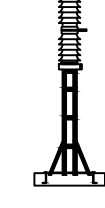
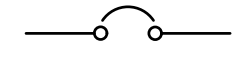

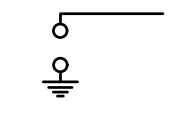
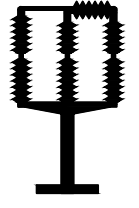
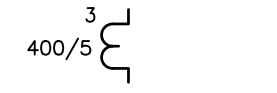
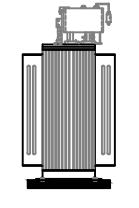
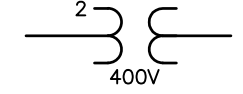
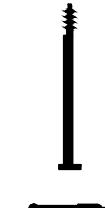
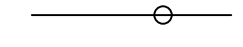
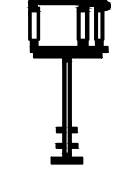
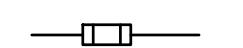
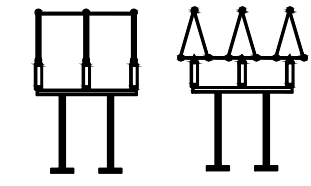
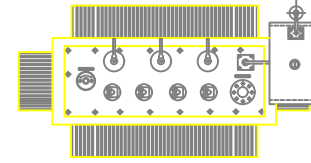
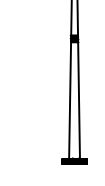
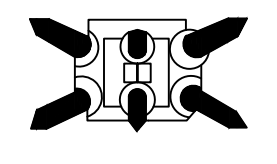
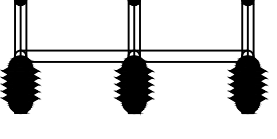
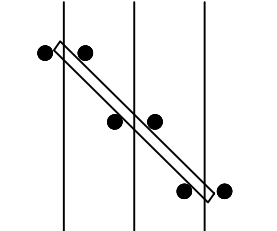
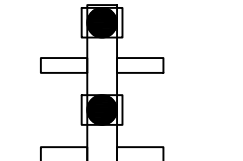
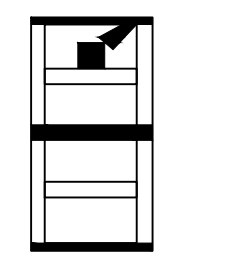
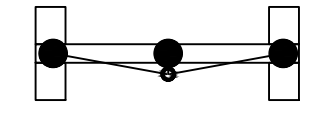
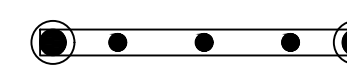
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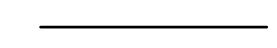
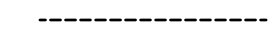
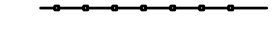



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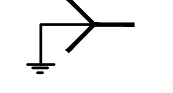
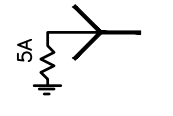
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60MW SOLAR POWER PLANT	PV112 SKID INVERTER DATASHEET
Date	11/07/23
Scale	N/A

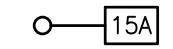
ELECTRICAL LEGEND SINGLE LINE & SCHEMATIC SYMBOLS

ELECTRICAL SYMBOL LEGEND

	UNFUSED DISCONNECT SWITCH		SUBSTATION POWER TRANSFORMER
	DISTRIBUTION TRANSFORMER		34.5KV CIRCUIT BREAKER SIDE
	CIRCUIT BREAKER		115KV CIRCUIT BREAKER SIDE
	LIGHTNING ARRESTER		HIGH VOLTAGE SWITCH SIDE
	CURRENT TRANSFORMER C/W RATIO AND QUANTITY		POWER DISTRIBUTION TRANSFORMER SIDE
	POTENTIAL TRANSFORMER C/W VOLTAGE RATIO AND QUANTITY		UNDERGROUND INPUT LINE SIDE
	BUS BAR WITH CONNECTION		LOW VOLTAGE SWITCH SIDE
	FUSE		BUS LINE SIDE
	POWER DISTRIBUTION TRANSFORMER		TAKEOFF H-FRAME SIDE
	115KV CIRCUIT BREAKER		
	115KV HIGH VOLTAGE SWITCH		
	BUS LINE		
	34.5KV CIRCUIT BREAKER		
	34.5KV LOW VOLTAGE SWITCH		
	UNDERGROUND INPUT LINE		
	TAKEOFF H-FRAME		

LINE SYMBOLS	
	CONDUCTOR
	UNDERGROUND CONDUCTOR
	FEEDER
	34.5KV BUS
	EQUIPMENT OUTLINE
	115KV BUS

SWITCH GEAR DEVICE NUMBER AND FUNCTIONS	
3 PHASE TRANSFORMER CONNECTION SYMBOLS	
	DELTA
	WYE OR STAR WITH SOLID GROUNDED NEUTRAL
	WYE OR STAR WITH RESISTANCE GROUNDED NEUTRAL AND MAXIMUM CURRENT INDICATED

FEEDER IDENTIFICATION SYMBOL	
	

General Notes

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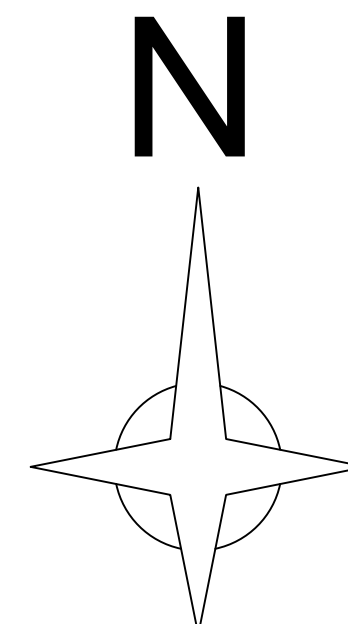
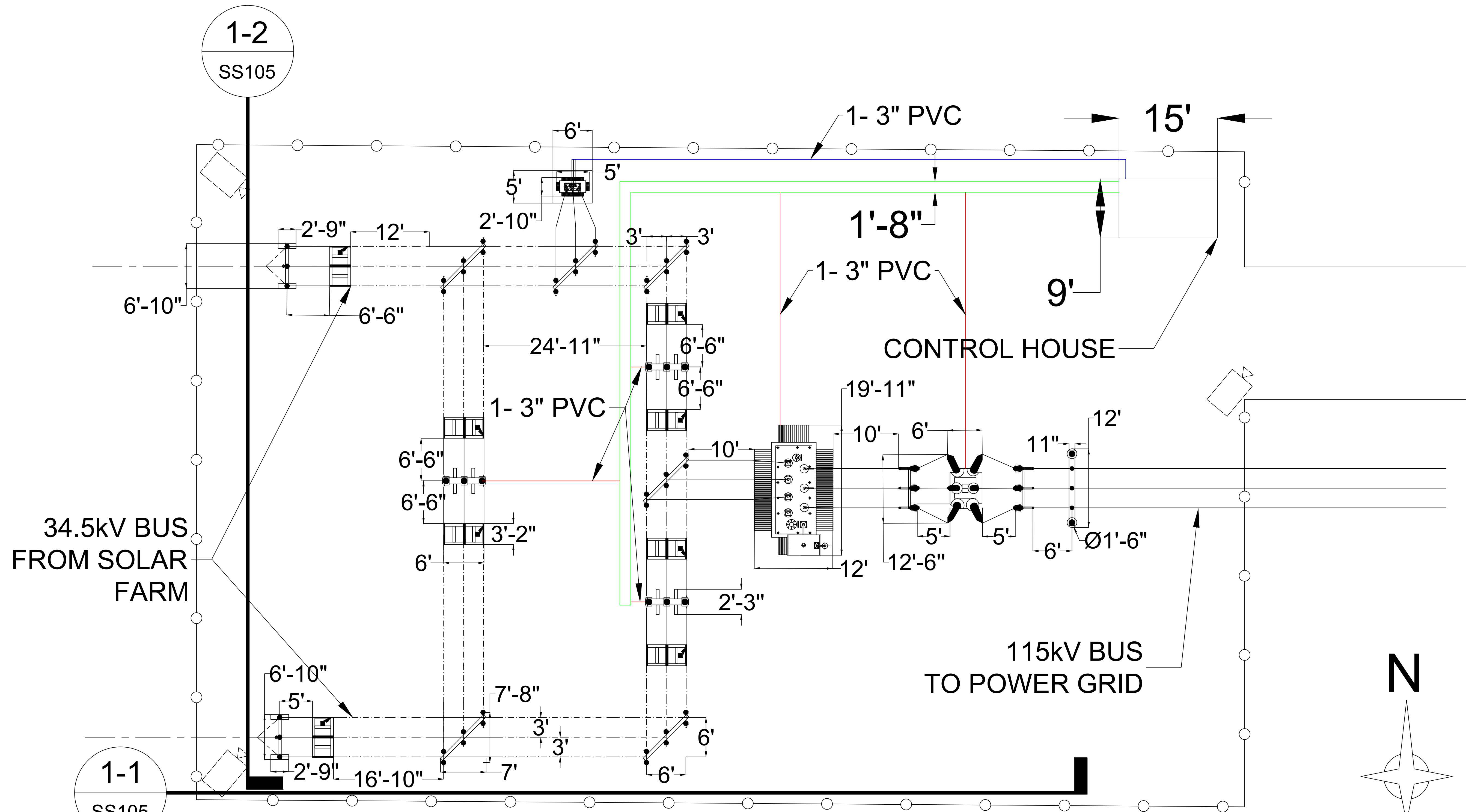
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Project	60MW SOLAR POWER PLANT	Sheet	SS100
Date	2/21/2024	DESIGN SYMBOLS	
Scale	N/A		



SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CONDUIT		UNDERGROUND
	CH FEEDER		RIGID BUS
	TRENCH		STRAIN BUS
			FENCELINE

General Notes

SIGNATURE & SEAL

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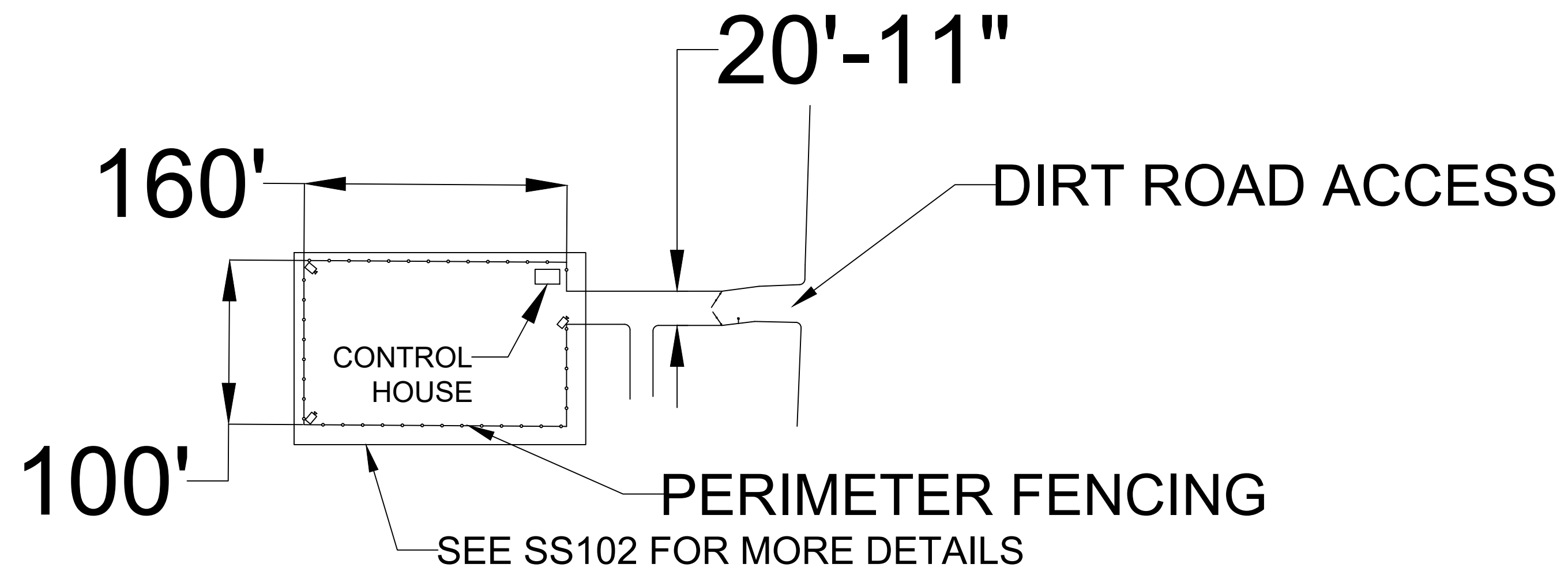
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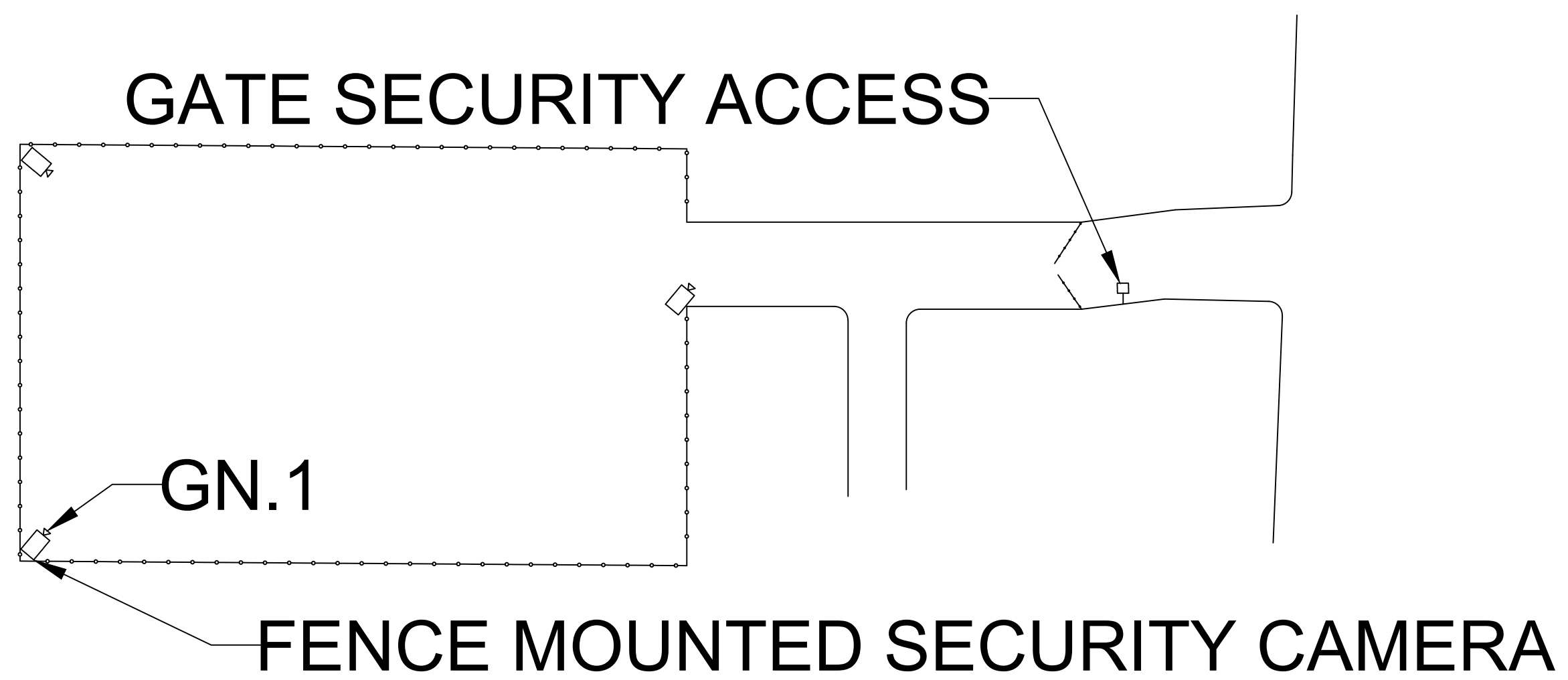
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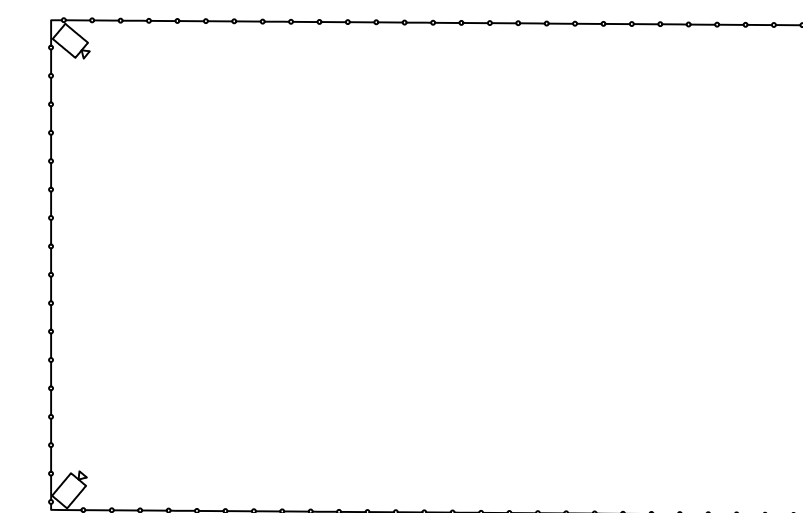
Project	60MW SOLAR POWER PLANT	Sheet	SS102
Date	3/07/2024		SUBSTATION SITE ENLARGED
Scale	1/8" = 1'		



① SUBSTATION SITE DETAIL



② TECH & SECURITY DETAIL



③ CAMERA LOCATIONS

General Notes

1. SECURITY CAMERAS TO BE MOUNTED TO CHAIN LINK FENCE POSTS. TYPE OF CAMERA TO BE COORDINATED WITH OWNER. LOCATION OF DATA BOX WILL BE WITHIN SUBSTATION UNIT.

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Project	Sheet
60MW SOLAR POWER PLANT	SS103 SUBSTATION KEY PLAN
Date	
2/14/2024	
Scale	
N/A	

Plan View of Substation

Not to Scale

Control House

115kV BUS

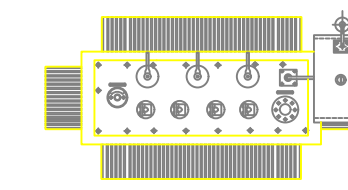
SECTION 1-2

SECTION 1-1

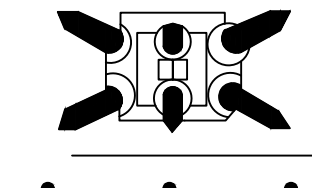
34.5kV BUS

Legend

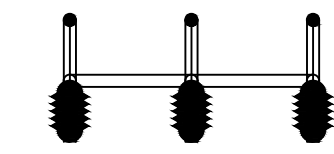
Color	Line Description
Red	Trench Wiring to Component



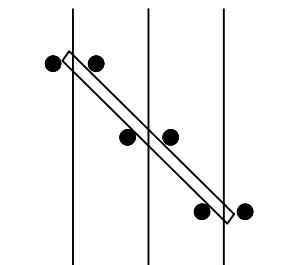
Transformer



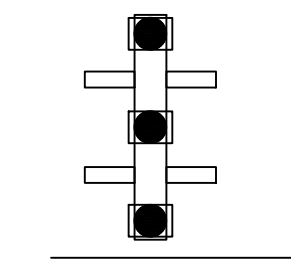
115kV Circuit Breaker



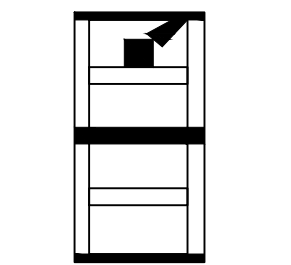
115kV High Voltage Switch



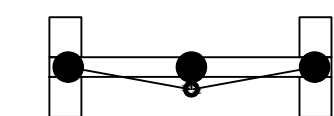
BUS Line



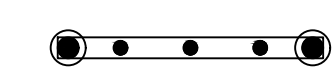
34.5kV Circuit Breaker



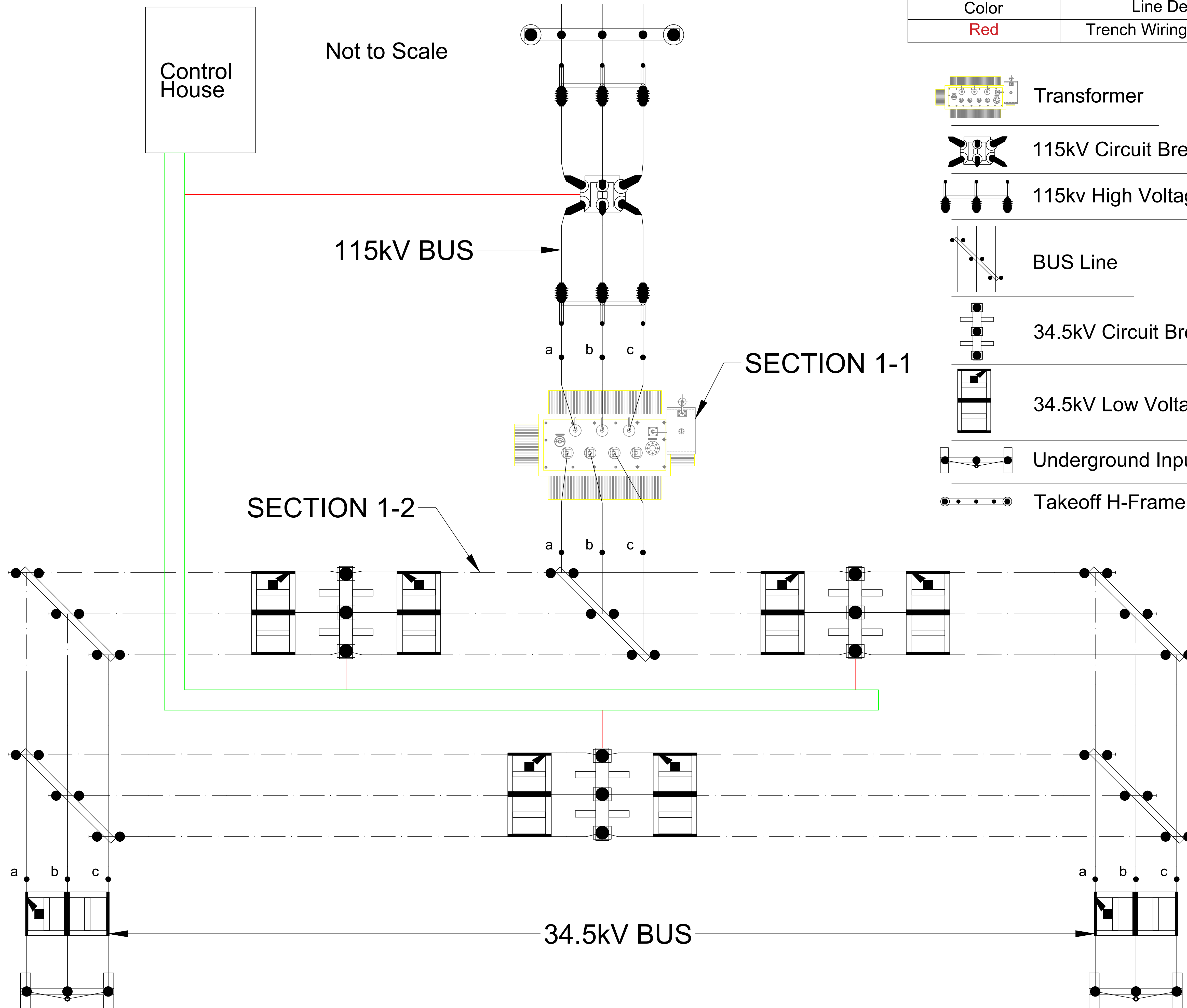
34.5kV Low Voltage Switch



Underground Input Bus Line



Takeoff H-Frame



General Notes

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REVISIONS

NO.	DESCRIPTION	DATE
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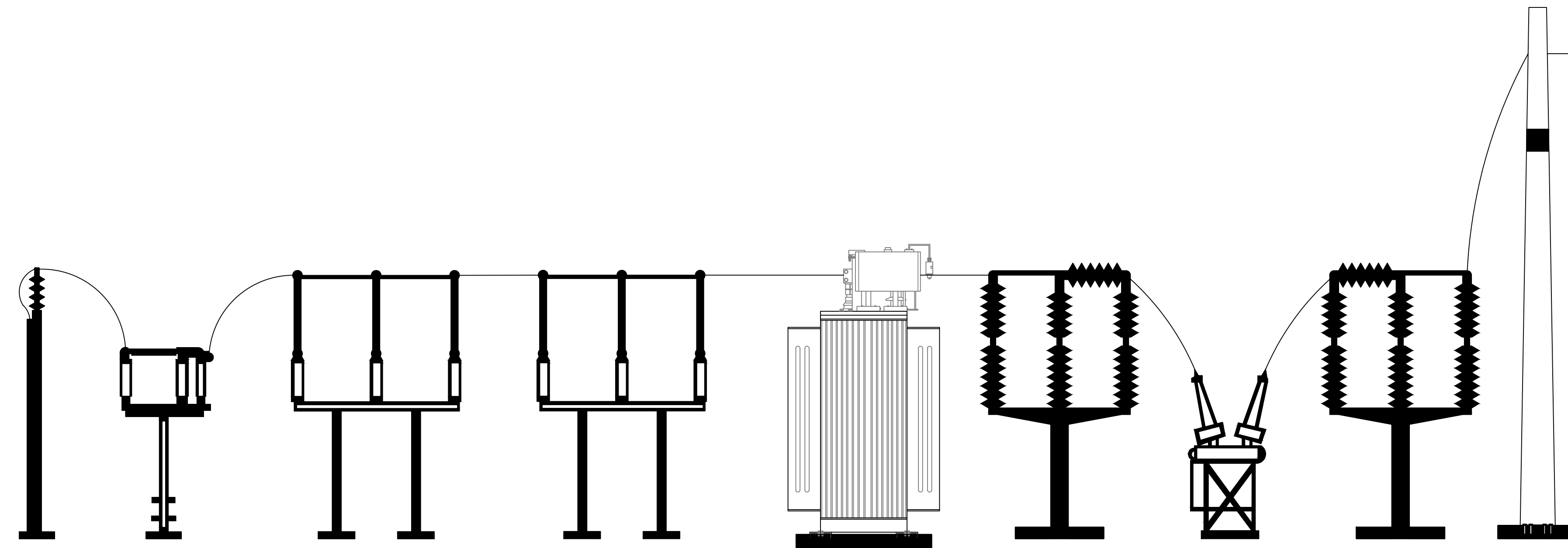
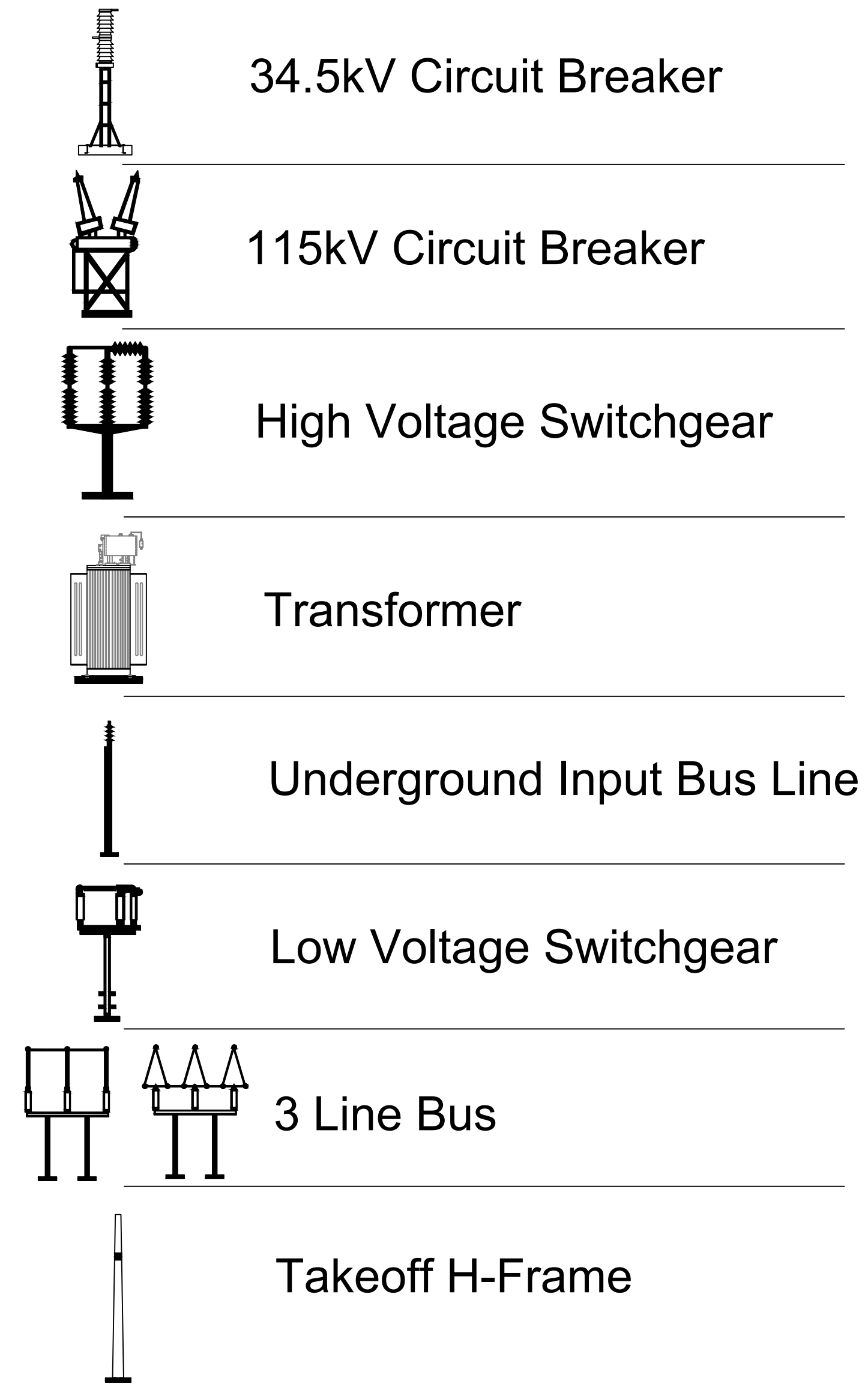
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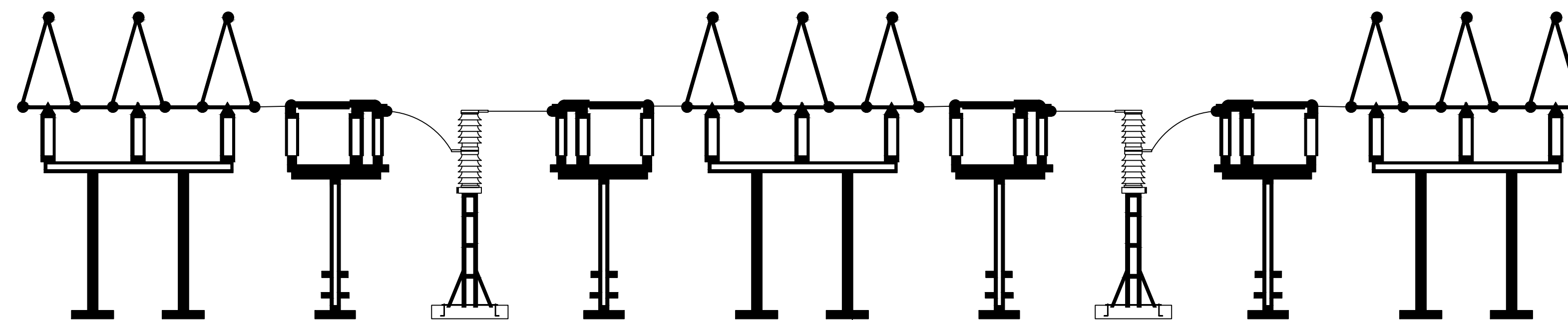
Project	Sheet
60MW SOLAR POWER PLANT	SS104
Date	2/21/2024
Scale	1/4" = 1'-0"
	ONE-LINE PLAN VIEW

Section Views of Substation

Not To Scale



SECTION 1-1
REF. SS102



SECTION 1-2
REF. SS102

General Notes

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Project	60MW SOLAR POWER PLANT	Sheet	SS105
Date	2/21/24	SUBSTATION SECTION VIEW	
Scale	3/16" = 1' -0"		

	Vmax (kV rms)	Isc (kA rms)	Curr Rating (A rms)	Model No.
CB1-X	36	25	2500	OHB 36
CB2-X	126	40	3150	LW25A-126

SEE SS110 FOR MORE INFO
SEE SS111 FOR MORE INFO

	Vmax (kV rms)	Isc (kA rms)	Curr Rating (A rms)	Model No.
DS1-X	38	16	2000	VacClad W 38kV
DS2-X	121	40	2000	657428-Z3

SEE SS112 FOR MORE INFO
SEE SS113 FOR MORE INFO

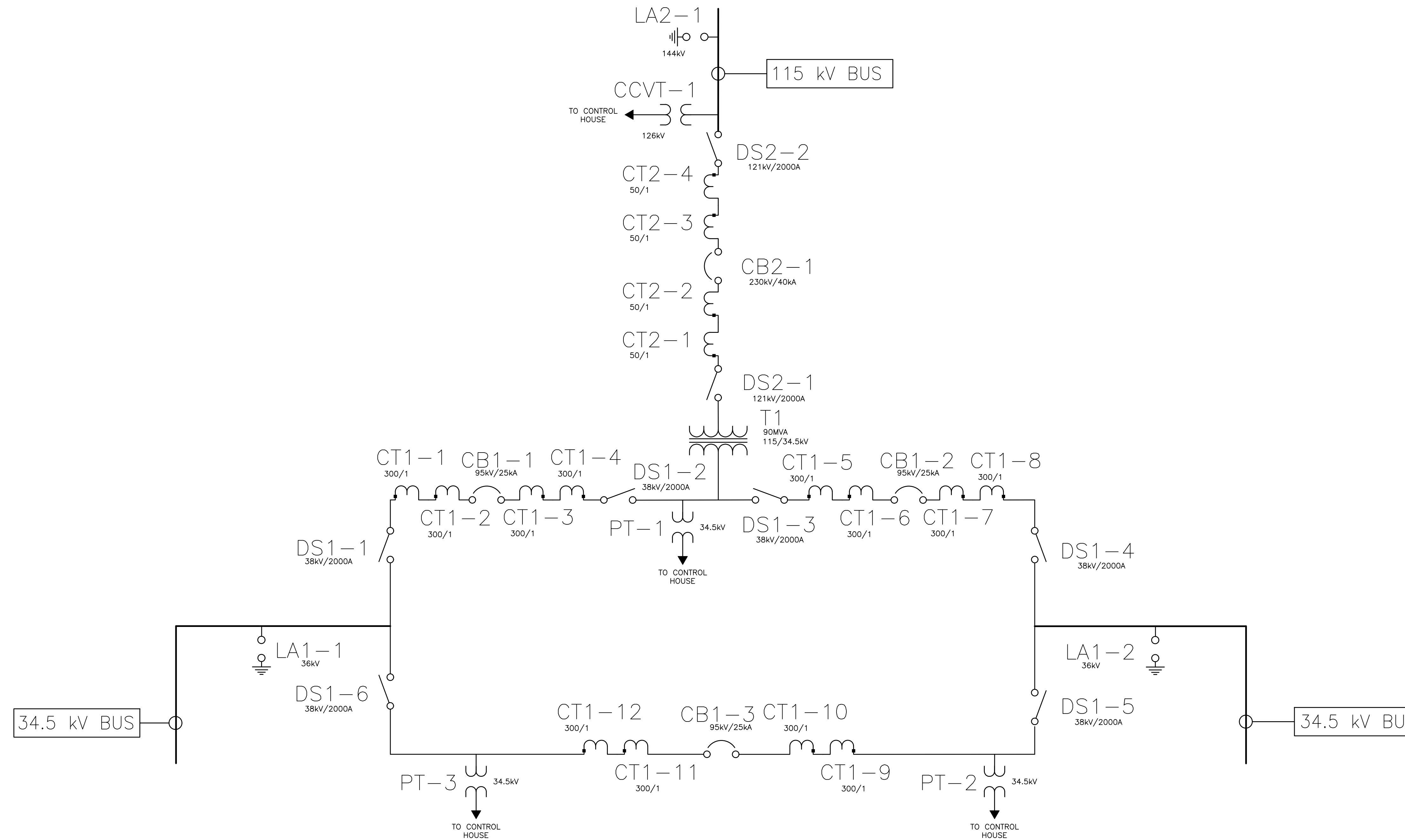
	Vnom (kV)	Vmax (kV)	Isc (kA rms)	Vmcov (kV)	Model No.
LA1-X	36	217	63	99.2	USAA036029A1845A11
LA2-X	144	770	65	378	AZES013G115144

SEE SS114 FOR MORE INFO
SEE SS115 FOR MORE INFO

	LOW SIDE		HIGH SIDE		Rating (MVA)	Model No.
	Vnom (kV)	Inom (kA)	Vnom (kV)	Inom (A)		
T1	34.5	1.5	115	451.8	90	SF-900000/115

SEE SS116 FOR MORE INFO

	Vmax (kV rms)	Curr Ratio
CT1-X	34.5	300:1
CT2-X	123	50:1



① SUBSTATION ONE—LINE
N.T.S.

General Notes

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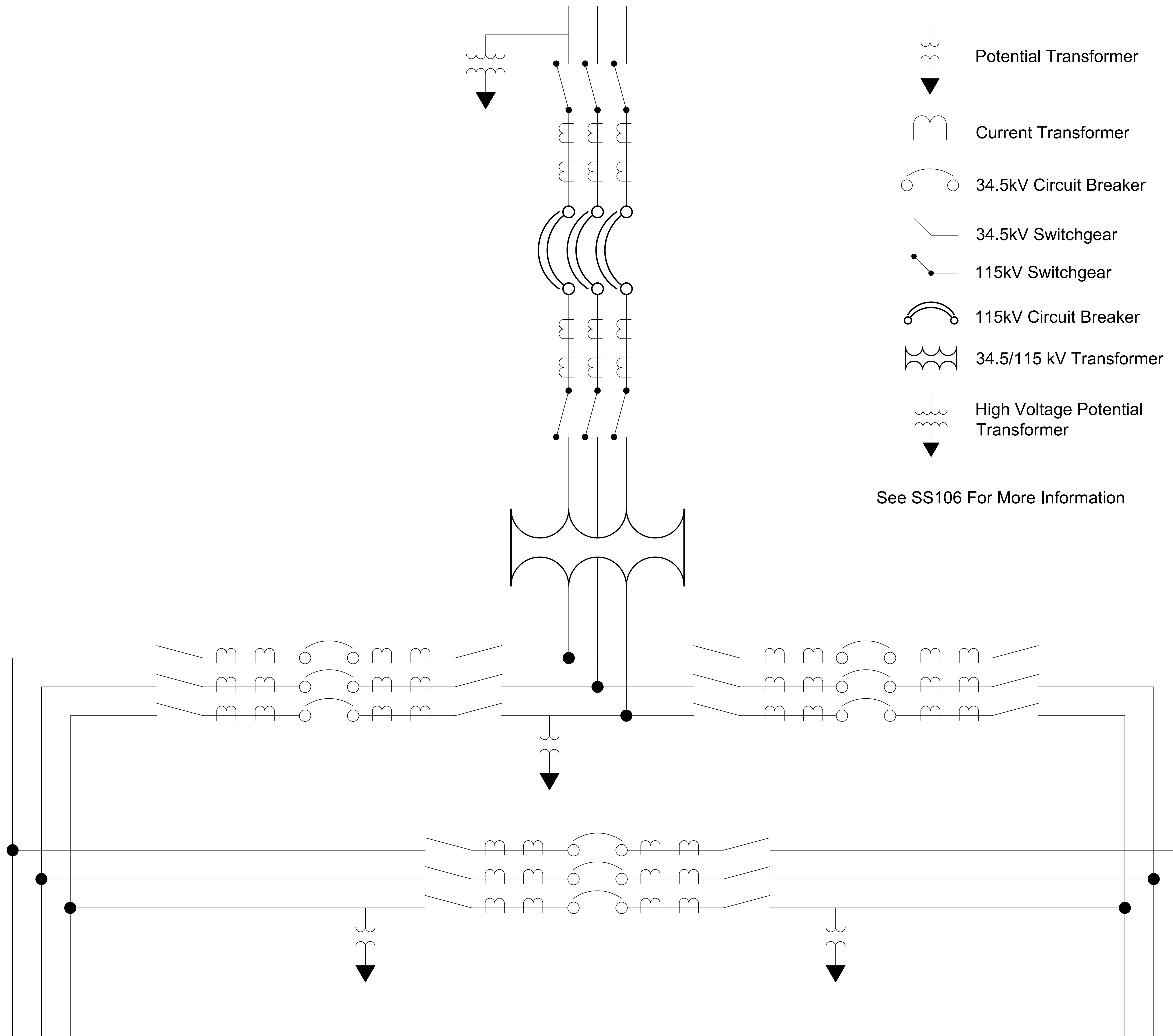
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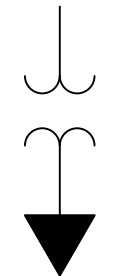


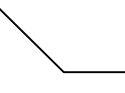
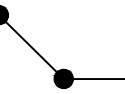


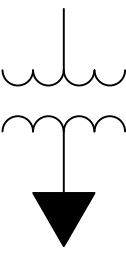
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Project	Sheet
60MW SOLAR POWER PLANT	SS106
Date	ONE-LINE DETAILS
2/21/2024	
Scale	
N/A	

Three Line Drawing



-  Potential Transformer
-  Current Transformer
-  34.5kV Circuit Breaker
-  34.5kV Switchgear
-  115kV Switchgear
-  115kV Circuit Breaker
-  34.5/115 kV Transformer
-  High Voltage Potential Transformer

See SS106 For More Information

General Notes

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REVISIONS

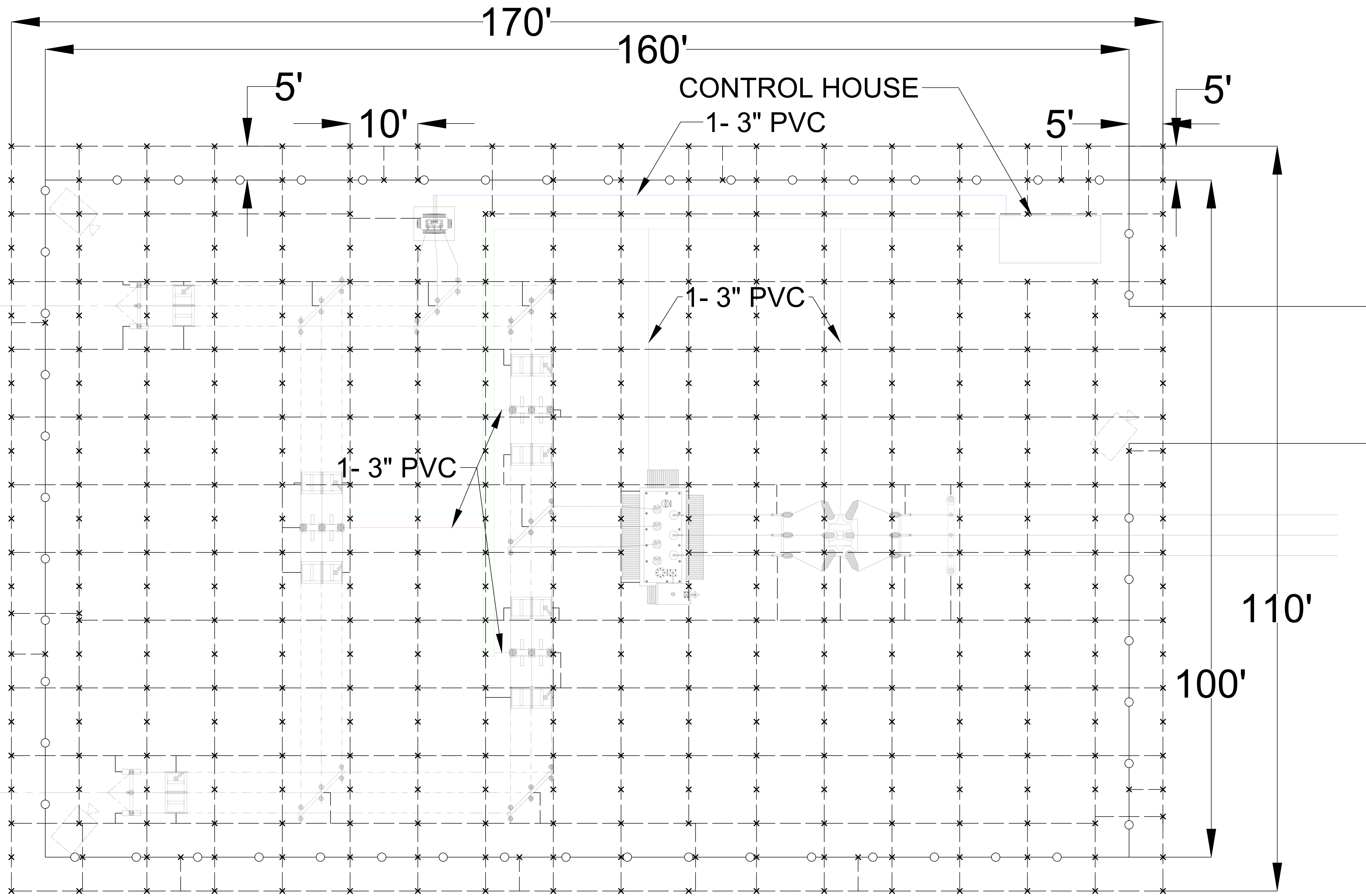
NO.	DESCRIPTION	DATE
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Project	Sheet
60MW SOLAR POWER PLANT	SS107 SUBSTATION THREE-LINE
Date 2/21/2024	
Scale N/A	



- General Notes
1. Grounding grid to be buried 18" below surface.
 2. Grounding rods to be 20' in length.

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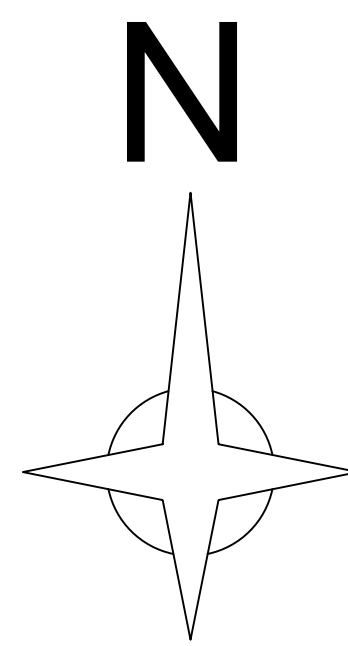
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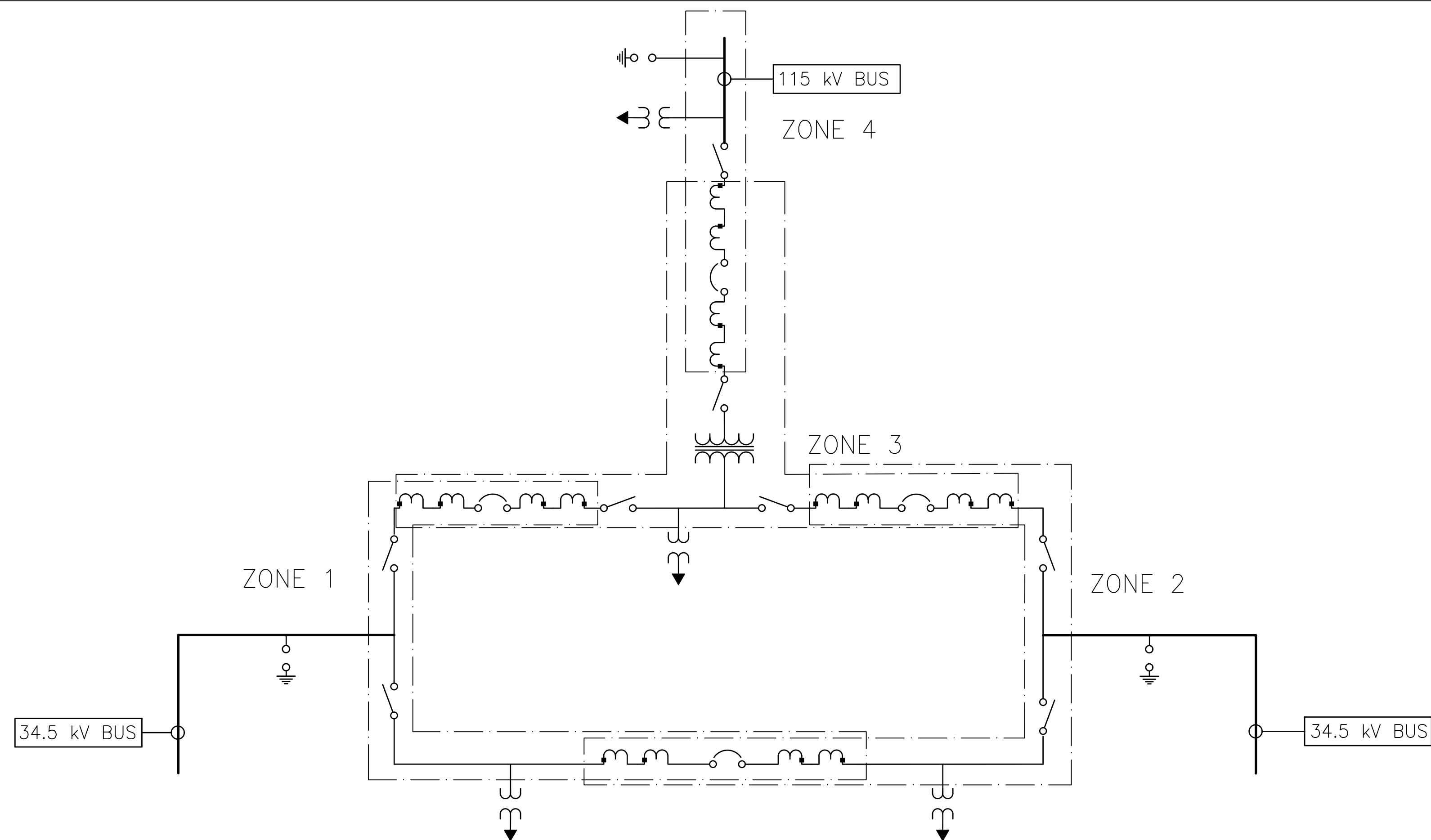
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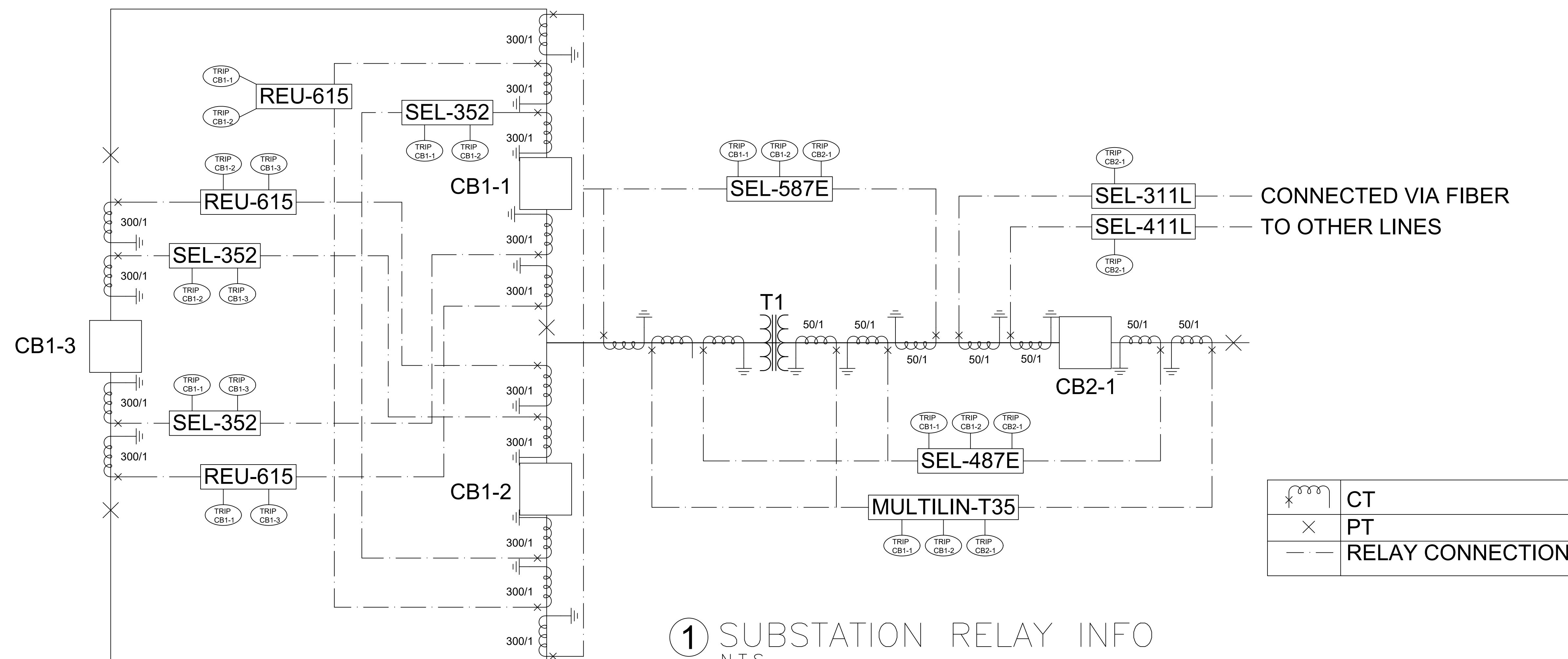
Project	60MW SOLAR POWER PLANT	Sheet	SS108
Date	2/21/2024	SUBSTATION GROUNDING INFO	
Scale	1/8" = 1'		

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	CONDUIT		UNDERGROUND		FENCELINE
	CH FEEDER		RIGID BUS		
	TRENCH		STRAIN BUS		
	ROD LOCATION		GROUNDING GRID		





② SUBSTATION PROTECTION ZONES
N.T.S.



① SUBSTATION RELAY INFO
N.T.S.

General Notes

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Project	Sheet
60MW SOLAR POWER PLANT	SS109
Date	SUB RELAY INFO
4/7/2024	
Scale	
N/A	

Circuit-breaker on Column		OHB 24		OHB 36		OHB 40	
Standard	IEC 62271-100	■	■	■	■	■	■
Rated voltage	Ur [kV]	24	24	36	36	40.5	40.5
Rated insulation voltage	Us [kV]	24	24	36	36	40.5	40.5
Withstand voltage at 50 / 60 Hz	Ud (1 min) [kV]	70 (dry) / 60 (wet)	70 (dry) / 60 (wet)	95 (dry) / 80 (wet)	95 (dry) / 80 (wet)	95 (dry) / 80 (wet)	95 (dry) / 80 (wet)
Impulse withstand voltage	Up [kV]	150	150	170/200	170/200	200	200
Rated frequency	fr [Hz]	50-60	50-60	50-60	50-60	50-60	50-60
Rated normal current (400C)	Ir [A]	1250 2500	1250 2500	1250 2500	1250 2500	1250 2500	1250 2500
Rated breaking capacity	Isc [kA]	25 25	25 25	25 25	25 25	25 25	25 25
		31.5 31.5	31.5 31.5	31.5 31.5	31.5 31.5	31.5 31.5	31.5 31.5
Rated short-time withstand current (3 s)	Ik [kA]	25 25	25 25	25 25	25 25	25 25	25 25
		31.5 31.5	31.5 31.5	31.5 31.5	31.5 31.5	31.5 31.5	31.5 31.5
Making capacity	Ip [kA]	63 63	63 63	63 63	63 63	63 63	63 63
		80 80	80 80	80 80	80 80	80 80	80 80
Operation sequence	[0-0.3s-CO-3min-CO]	■	■	■	■	■	■
Opening time	[ms]	45±10	45±10	45±10	45±10	45±10	45±10
Arcing time	[ms]	10-15	10-15	10-15	10-15	10-15	10-15
Total breaking time	[ms]	55-60	55-60	55-60	55-60	55-60	55-60
Closing time	[ms]	<85	<85	<85	<85	<85	<85
Overall dimensions	on frame						
	H [mm]	3090 – 3840	3090 – 3840	3090 – 3840	3090 – 3840	3090 – 3840	3090 – 3840
	L [mm]	900	900	900	900	900	900
	P [mm]	686	686	686	686	686	686
Weight	[Kg]	900	900	900	900	900	900
SF ₆ gas absolute pressure	Rated service value [kPa]	380	380	380	380	550	550
Operating temperature ⁽¹⁾	[°C]	-25...+40	-25...+40	-25...+40	-25...+40	-25...+40	-25...+40
Tropicalisation	IEC: 60068-2-30, 721-2-1	■	■	■	■	■	■
Electromagnetic compatibility	IEC: 60694, 61000-6-2, 61000-6-4	■	■	■	■	■	■
Solar radiation	[W/m ²]	1000	1000	1000	1000	1000	1000
Presence of pollution	IEC 815 - table 1	Level III	Level III	Level III	Level III	Level III	Level III
Creepage distance	[cm/kV]	2.5	2.5	2.5	2.5	2.75	2.75
Ice coating	[mm]	10	10	10	10	10	10
Wind speed	[m/s]	34	34	34	34	34	34
Earthquake resistance	[g]	0.3	0.3	0.3	0.3	0.3	0.3
Static force on the terminals	Longitudinal [N]	750	750	750	750	750	750
	Transversal [N]	500	500	500	500	500	500
	Vertical [N]	750	750	750	750	750	750

(1) For lower operating temperatures, please consult us.

General Notes

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Project	Sheet
60MW SOLAR POWER PLANT	SS110
Date	CB1-X DATASHEET
2/21/2024	
Scale	
N/A	

Technical Specifications

Technical Data for 72.5-550kV Live Tank Circuit Breakers

PRODUCT TYPE	LW9A-72.5	LW25A-126	LW25A-145	LW25-170	LW25-252	LW15C-252	LW25-363	LW15A-363	LW25-420	LW15A-550
1. Electrical Parameters										
1. 1 Rated volatge (kV)	72.5	126	145	170	252	252	363	363	420	550
1. 2 Rated frequency (Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50	50/60
1. 3 Rated continuous current (A)	4000	3150	3150	3150	4000	5000	4000	5000	4000	5000
1. 4 Rated short circuit breaking current (kA)	40	40	40	40	50	63	50	63	50	63
1. 5 Making current (kA)	100	100	100	100	125	160	125	160	125	160
1. 6 Rated peak withstand current (kA)	100	100	100	100	125	160	125	160	125	160
1. 7 Specific creepage distance (mm/kV)	25/31	25/31	25/31	25/31	25/31	25/31	25/31	25/31	25/31	25/31
1. 9 Short line fault breaking current (kA)	36/30	36/30	36/30	36/30	45/37.5	56.7/47.25	45/37.5	56.7/47.25	45/37.5	56.7/47.25
1.10 Out of phase breaking current (kA)	10	10	10	10	12.5	15.75	12.5	15.75	12.5	15.75
1.11 Rated short-time power-frequency withstand voltage (kV): To earth	160	230	275	325	460	460	510	510	630	740
1.12 Rated lightning impulse withstand voltage (kV): To earth	350	550	650	750	1050	1050	1175	1175	1425	1675



252kV Live Tank SF₆ Circuit Breaker



252kV Live Tank SF₆ Circuit Breaker

General Notes

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LOVINGTON, NM 88260
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Project	Sheet
60MW SOLAR POWER PLANT	SS111
Date	CB2-X DATASHEET
2/21/2024	
Scale	
N/A	

Standard Metal-Clad Switchgear Assembly Ratings

VacClad-W metal-clad switchgear is available for application at voltages up to 38 kV, 50 or 60 Hz. Refer to the table below for complete list of available ratings.

Table 5.6-1. Standard VCP-W (Non-Arc-Resistant) Metal-Clad Switchgear Ratings Per IEEE C37.20.2-2015

Rated Maximum Voltage	(Ref.) Rated Voltage Range Factor K	(Ref.) Rated Short-Circuit Current I	Insulation Level		Rated Main Bus Continuous Current ③	Rated Short-Time Short-Circuit Current Withstand (2-Second)	Rated Momentary Short-Circuit Current Withstand (10-Cycle) (167 ms)	
			Power Frequency Withstand Voltage, 60 Hz, 1 Minute	Lightning Impulse Withstand Voltage [LIWV] (BIL)			K*I ⑤	2.7 *K*I ⑥ 1.6 *K*I ⑦ (Ref. only)
kV rms		kA rms	kV rms	kV Peak	Amperes	kA rms Sym.	kA Crest	kA rms Asym.
4.76	1	25	19	60	1200, 2000, 3000, 4000	25	68	40
	1.24	29			1200, 2000, 3000, 4000	36	97	58
	1	40			1200, 2000, 3000, 4000	40	108	64
	1.19	41			1200, 2000, 3000, 4000	49	132	78
	1	50			1200, 2000, 3000, 4000	50	135	80
8.25	1	63	36	95	1200, 2000, 3000, 4000	63	170	101
	1.25	33			1200, 2000, 3000, 4000	41	111	66
15	1	50	36	95	1200, 2000, 3000, 4000	50	135	80
	1.3	18			1200, 2000, 3000, 4000	23	62	37
	1	25			1200, 2000, 3000, 4000	25	68	40
	1.3	28			1200, 2000, 3000, 4000	36	97	58
	1	40			1200, 2000, 3000, 4000	40	108	64
	1.3	37			1200, 2000, 3000, 4000	48	130	77
	1	50			1200, 2000, 3000, 4000	50	135	80
27	1	63	60	125	1200, 2000, 3000, 4000	63	170	101
	1	16			1200, 2000, 2500, 2700	16	43	26
	1	22			1200, 2000, 2500, 2700	22	60	35
	1	25			1200, 2000, 2500, 2700	25	68	40
	1	31.5			1200, 2000, 2500, 2700	31.5	85	51
38	1	40	80	150 ⑧	1200, 2000, 2500, 2700	40	108	64
	1	16			1200, 2000, 2500	16	43	26
	1	25			1200, 2000, 2500	25	68	40
	1	31.5			1200, 2000, 2500	31.5	85	51
	1.65	23			1200, 2000, 2500	35	95	56
1	40	1200, 2000, 2500	40	108	64			

① The switchgear assembly is designed for use with type VCP-W, VCP-WC and VCP-WG circuit breakers. However, please note that certain VCP-WC circuit breakers may have higher capabilities than required by ANSI standards. In such cases, switchgear assembly ratings as given in this table will apply.
 ② Switchgear assemblies can be supplied with UL/CSA label. Contact Eaton for availability.
 ③ Circuit breaker requires forced air cooling to carry 4000 A at 4.76, 8.25 and 15 kV, and 3000 A at 38 kV.
 ④ 27 kV 2500 A and 2700 A main bus ratings are available in two-high design configurations only.
 ⑤ Please note that use of certain current transformers (for example, bar type CTs) and protective devices may limit the duration to a value less than 2 seconds.
 ⑥ These values exceed 2.6*K*I required by IEEE C37.20.2-2015.
 ⑦ These values exceed 1.55*K*I required by IEEE C37.20.2-2015.
 ⑧ This is a standard IEEE C37.20.2 rating for 38 kV Class of switchgear.

Unusual and Usual Service Conditions

Unusual Service Conditions

Applications of metal-clad switchgear at other than usual altitude or temperature, or where solar radiation is significant, require special consideration. Other unusual service conditions that may affect design and application include:

- Exposure to salt air, hot or humid climate, excessive dust, dripping water, falling dirt, or other similar conditions
- Unusual transportation or storage conditions
- Switchgear assemblies when used as the service disconnecting means
- Installations accessible to the general public
- Exposure to seismic shock
- Exposure to nuclear radiation

Usual Service Conditions

Usual service conditions for operation of metal-clad switchgear are as follows:

- Altitude does not exceed 3300 feet (1000 m)
- Ambient temperature within the limits of -30 °C and +40 °C (-22 °F and +104 °F)
- The effect of solar radiation is not significant

Applications Above 3300 Feet (1006 m)

Equipment utilizing sealed interrupting devices (such as vacuum interrupters) does not require derating of rated maximum voltage. The rated one-minute power frequency withstand voltage, the impulse withstand voltage and the continuous current rating must be multiplied by the appropriate correction factor in **Table 5.6-4** to obtain modified ratings that must equal or exceed the application requirements.

Note: Intermediate values may be obtained by interpolation.

Applications Above or Below 40 °C Ambient

Refer to ANSI C37.20.2, Section 8.4 for load current-carrying capabilities under various conditions of ambient temperature and load.

Applications at Frequencies Less Than 60 Hz

Rated Short-Circuit Current

Based on series of actual tests performed on Type VCP-W circuit breakers and analysis of these test data and physics of vacuum interrupters, it has been found that the current interruption limit for Type VCP-W circuit breakers is proportional to the square root of the frequency. **Table 5.6-2** provides derating factors, which must be applied to breaker interrupting current at various frequencies.

Table 5.6-2. Derating Factors

Interrupting Current Derating Factors	Derating Factors			
	50 Hz	25 Hz	16 Hz	12 Hz
None	0.65	0.52	0.45	

Rated Short-Time and Close and Latch Currents

No derating is required for short time and close and latch current at lower frequency.

Rated Continuous Current

Because the effective resistance of circuit conductors is less at lower frequency, continuous current through the circuit can be increased somewhat. **Table 5.6-3** provides nominal current rating for VCP-W breakers when operated at frequencies below 60 Hz.

Table 5.6-3. Current Ratings

Rated Continuous Current at 60 Hz	Nominal Current at Frequency Below 60 Hz			
	50 Hz	25 Hz	16 Hz	12 Hz
1200 A	1243	1410	1519	1589
2000 A	2075	2374	2573	2703
3000 A	3119	3597	3923	4139

Power Frequency and Impulse Withstand Voltage Ratings

No derating is required for lower frequency.

CTs, VTs, Relays and Instruments

Application at frequency other than rated frequency must be verified for each device on an individual basis.

Table 5.6-4. Altitude Derating Factors

Altitude Above Sea Level in Feet (m)	Altitude Correction Factor to be Applied to:	
	Voltage	Rated Continuous Current
3300 (1006) (and Below)	1.0	1.0
4000 (1219)	0.98	0.995
5000 (1524)	0.95	0.991
6000 (1829)	0.92	0.987
6600 (2012)	0.91	0.985
7000 (2137)	0.89	0.98
8000 (2438)	0.86	0.97
9000 (2743)	0.83	0.965
10,000 (3048)	0.80	0.96
12,000 (3658)	0.75	0.95
13,200 (4023)	0.72	0.94
14,000 (4267)	0.70	0.935
16,000 (4877)	0.65	0.925
16,400 (5000)	0.64	0.92
18,000 (5486)	0.61	0.91
20,000 (6096)	0.56	0.90

Load Current Switching

Table 5.6-6 showing number of operations is a guide to normal maintenance for circuit breakers operated under usual service conditions for most repetitive duty applications including isolated capacitor bank switching and shunt reactor switching, but not for arc furnace switching. The numbers in the table are equal to or in excess of those required by ANSI C37.06.

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REVISIONS

NO.	DESCRIPTION	DATE
C	75% SET SUBMITTAL	3/29/24
D	90% SET SUBMITTAL	4/12/24
E	100% SET SUBMITTAL	4/22/24

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CHICHENG TANG, SITI MOHD RADZI,
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4100 MARSTON HALL
533 MORRILL ROAD
AMES, IA 50011

BLACK & VEATCH

LOVINGTON, NM 88260
(LEA COUNTY)

Project	Sheet
60MW SOLAR POWER PLANT	SS112
Date	DS1-X DATASHEET
2/21/2024	
Scale	
N/A	

Line-Rupter™ Switches

Table 2. Line-Rupter Switches—Three-Pole Vertical-Break Style^{①②③}

Rating						No. of Interrupting Gaps	Applications (See Table 2 on page 4)	Insulator T.R. No.	Catalog Number	Page Reference for Dimensional Information
kV			Amperes, RMS							
Nom.	Max	BIL	Cont.	Short-Time						
				Mom.	3-Sec.					
115	121	550	1200	61 000	40 000	2	BEHNK	286	257428	10
			2000	61 000	40 000	2	BEHNK	286	657428	
138	145	650	1200	61 000	40 000	2	BEHNK	288	257429	
			2000	61 000	40 000	2	BEHNK	288	657429	
161	169	750	1200	61 000	40 000	2	BEHNK	291	257420	
			2000	61 000	40 000	2	BEHNK	291	657420	
230	242	900	1600	61 000	40 000	3	BEHNK	304	457461	
			2000	61 000	40 000	3	BEHNK	304	657461	

① Line-Rupter Switches do not include connectors. Refer to Table 1 on page 3. **Note:** Standard color for all porcelain is gray (Munsell Number 5 BG 7.0/0.4).

② Line-Rupter Switches do not include services of an S&C field service specialist for checkout of the Line-Rupter Switch.

③ Line-Rupter Switches do not include manual geared operating handle or Type LS-2 Switch Operator. See Table 6 on page 7 or S&C Specification Bulletin 753-31, as applicable.

General Notes

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Project	60MW SOLAR POWER PLANT	Sheet	SS113
Date	2/21/2024	DS2-X DATASHEET	
Scale	N/A		

SUMMARY 4-18

Accessories

Ground terminal options

NEMA 4-hole pad max. 0.82" dia

Line terminal options

NEMA 4-hole pad

Nameplate options

IEEE nameplate

Electrical Ratings

Basic impulse level 1.2/50 wave

217 kV

Creep distance

69.1 in

Duty cycle voltage rating

36 KV

Energy rating

3.9 kJ/kV MCOV 1-impulse

Equivalent front-of-wave

99.2 KV

Frequency rating

50/60 Hz

Discharge voltage - max

77.2; 81.7; 86; 94.2; 104; 118 kV (@1.5; 3; 5; 10; 20; 40 kA)

Short circuit rating

63 kA

Wet 50/60 Hz per 60 seconds

126 kV (Wet 60s)

Additional Specifications

Packaging options

Cardboard packaging

Descriptions

Grading ring

No

Special features

Short catalog number version

Mounting

Mounting

Upright base

Ratings

Cantilever strength MDCL static

6000 in-lbs

Cantilever strength ultimate

15,000 in-lbs

Type

Arrester type

UltraSIL standard energy handling arrester

Material type

Silicone rubber

Resources

Catalogs

Ultrasil Polymer Housed Varistar Station Class Surge Arrester Catalog

Specifications and datasheets

Eaton Specification Sheet - USAA036A

General Notes

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(LEA COUNTY)

Project	Sheet
60MW SOLAR POWER PLANT	SS114
Date	LA1-X DATASHEET
2/21/2024	
Scale	
N/A	

Accessories

Ground terminal options

NEMA 4-hole pad max. 20 mm dia

Line terminal options

NEMA 4-hole pad

Nameplate options

IEEE nameplate

Electrical Ratings

Basic impulse level 1.2/50 wave

770 kV

Creep distance

147.4 in

Duty cycle voltage rating

144 KV

Energy rating

5.6 kJ/kV MCOV 1-impulse

Equivalent front-of-wave

378 KV

Frequency rating

50/60 Hz

Lightning impulse residual voltage

301; 313; 319; 333; 367; 425 kV (@1.5; 3; 5; 10; 20; 40 kA)

Discharge voltage - max

300; 315; 327; 350; 385; 430 kV (@1.5; 3; 5; 10; 20; 40 kA)

Short circuit rating

65 kA

Wet 50/60 Hz per 60 seconds

400 kV (Wet 60s)

Additional Specifications

Packaging options

Cardboard packaging

Descriptions

Grading ring

No

Mounting

Mounting

Upright base

Ratings

Cantilever strength ultimate

120,000 in-lbs

Type

Arrester type

VariSTAR type AZE station-class arrester

Material type

Porcelain

Resources

Catalogs

VariSTAR Type AZE station-class surge arresters for systems through 345 kV IEEE certified

Installation instructions

VariSTAR type AZE station class surge arresters installation and maintenance instructions

Specifications and datasheets

Eaton Specification Sheet - AZES013G115144

Overhead line installation and protective equipment specifiers guide

General Notes

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 (LEA COUNTY)

Project	Sheet
60MW SOLAR POWER PLANT	SS115
Date	LA2-X DATASHEET
4/08/24	
Scale	
N/A	

POWER TRANSFORMER

TYPE	SF-60000/110
SERIAL NUMBER	A2012175
PRODUCT CODE	100.110.0777
DATE OF MANUFACTURE	2012.06
PLACE OF MANUFACTURE	XI'AN P.R.CHINA
547296MVA AT 50°C RISE OVER 30°C AVERAGE AMBIENT	
COOLING CLASS	ONAN/ONAF/ONAF
3-PHASE 60HZ OUTDOORS 4000 METERS	
STANDARDS	IEEE C57.12.90-2000, ANSI C57.12.10-1987

	WINDINGS	BUSHINGS
H.V.H. 110KV DELTA	450KV / 3L	550KV / 3L
L.V.V. 34.5KV WYE	200KV / 3L	300KV / 3L
L.V. NEUTRAL	150KV / 3L	200KV / 3L

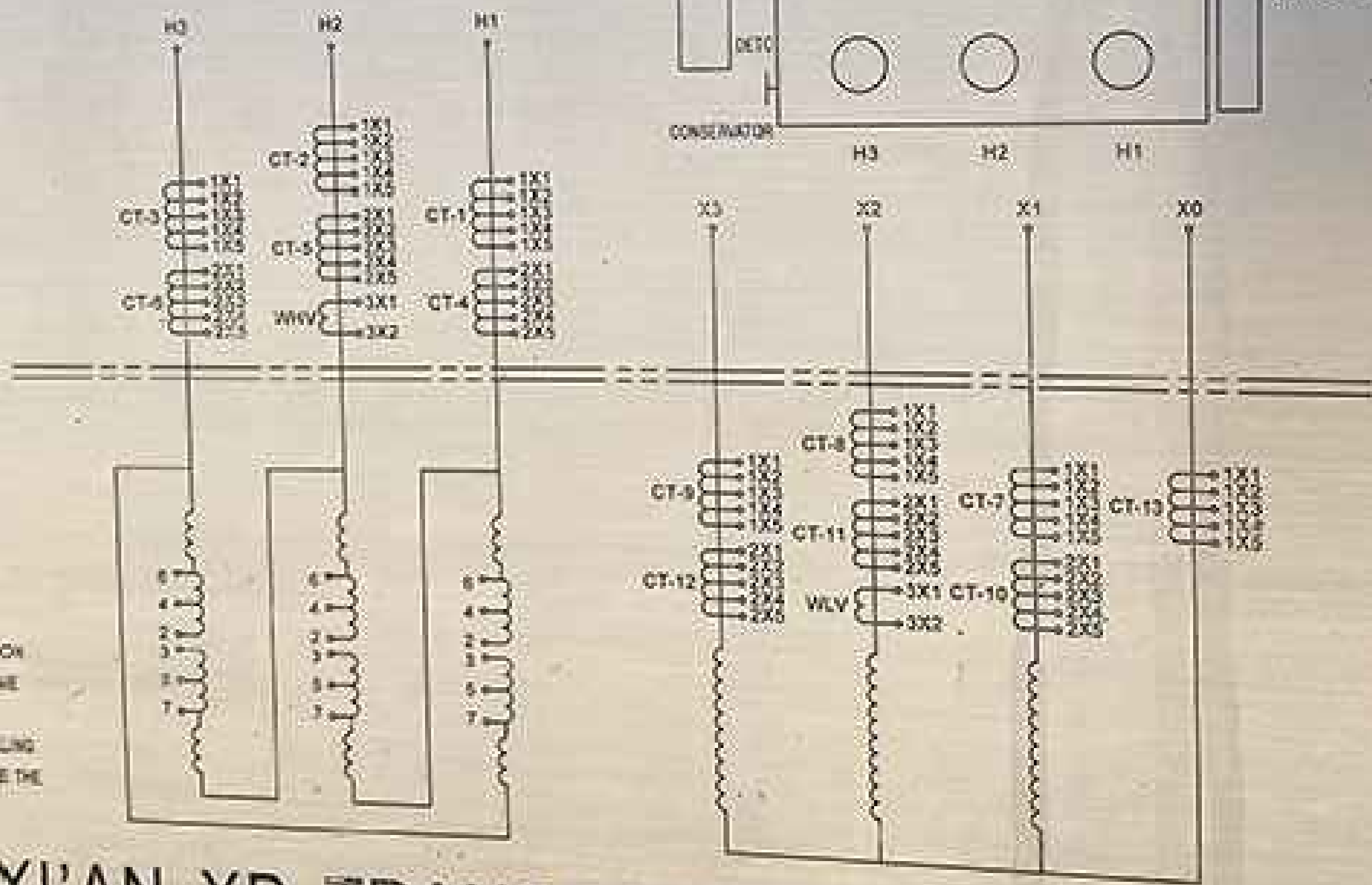
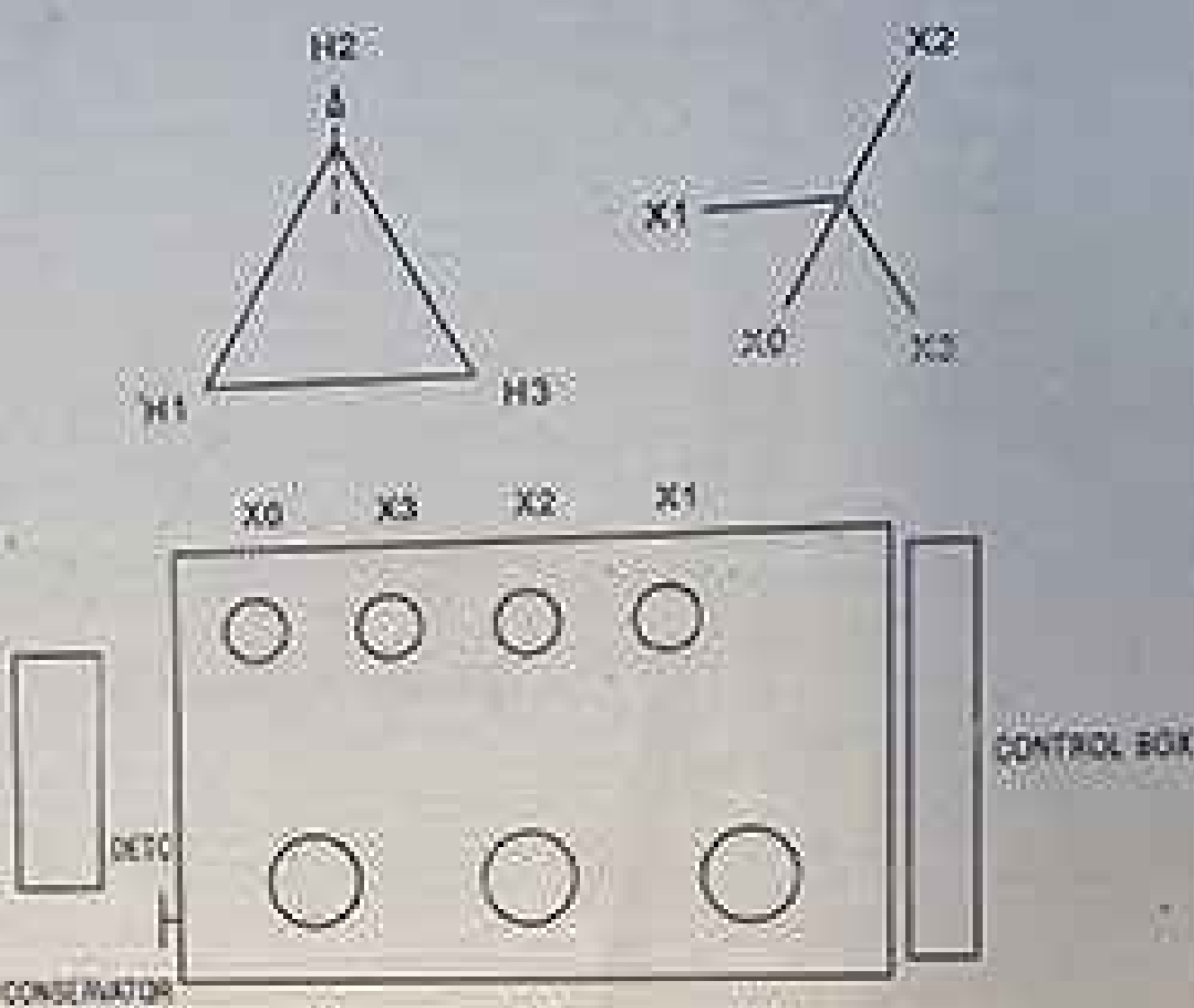
H.V. TESTED IMPEDANCE	8.35 %
50MVA BASE AT DETC TAP 3	

APPROX. HEIGHT	LITRES/GALS	KG/LBS
CORE AND COIL	-----	4720/10500
TANK AND FITTING	-----	30100/66200
OIL TANK	17344/362	150/33400
OIL CONSERVATOR	78200	79/172
OIL RADIATOR	286270	234/521
TOTAL OIL	222225071	2000/4450
SOME HOLES IN STOCK CASES ARE PLUGGED	-----	36100/7950
TOTAL WEIGHT WITH OIL	-----	8600/18750

NOTES:

- 1 THE TRANSFORMER IS SUITABLE FOR STEP-UP AND STEP-DOWN OPERATION
- 2 CONTAINS NO DETECTABLE LEVEL OF PCB (LESS THAN 1 PPM) AT THE TIME OF MANUFACTURE
- 3 TANK ARE DESIGNED FOR 75 MMHg POSITIVE AND FULL VACUUM FILLING
- 4 THE DE-ENERGIZED TAP CHANGER(DTCC) MUST NOT BE OPERATED WHILE THE TRANSFORMER IS ENERGIZED.

H.V. SIDE				L.V. SIDE	
NO-LOAD TAP CHANGER	VOLTAGE V	CURRENT A AT 50MVA	VOLTAGE V	CURRENT A AT 50MVA	
NO POSITION	NO CONNECTION				
1	2-3	120750	430.3	34500	1500.1
2	3-4	117875	440.8		
3	4-5	115000	451.8		
4	5-6	112125	463.4		
5	6-7	109250	475.0		



CURRENT TRANSFORMER				
NO.	TERMINAL NO.	CURRENT RATIO	ACCURACY CLASS	
CT-1	1X3-1X4	300/5	C800 AT 2000/5 RF=2.0	
	1X1-1X2	400/5		
	1X4-1X5	500/5		
CT-2	1X2-1X4	1100/5		
	1X1-1X3	1200/5		
	1X2-1X5	1600/5		
CT-3	1X1-1X4	1500/5	C800 AT 2000/5 RF=2.0	
	1X2-1X5	2000/5		
	1X1-1X5	2000/5		
CT-4	2X3-3X4	300/5		C800 AT 2000/5 RF=2.0
	2X1-2X2	400/5		
	2X4-2X5	500/5		
CT-5	2X2-2X3	800/5	C800 AT 2000/5 RF=2.0	
	2X2-2X4	1100/5		
	2X1-2X3	1200/5		
CT-6	2X1-2X4	1500/5		C800 AT 2000/5 RF=2.0
	2X2-2X5	1600/5		
	2X1-2X5	2000/5		
WLV	3X1-3X2	600/5	0.6B1.0	
	1X3-1X4	300/5		
	1X4-1X5	500/5		
CT-7	1X3-1X5	800/5		C800 AT 3000/5 RF=2.0
	1X1-1X2	1000/5		
	1X2-1X3	1200/5		
CT-8	1X2-1X4	11500/5	C800 AT 3000/5 RF=2.0	
	1X2-1X5	2000/5		
	1X1-1X3	2200/5		
CT-9	1X1-1X4	2500/5		C800 AT 3000/5 RF=2.0
	1X1-1X5	3000/5		
	2X3-2X4	300/5		
CT-10	2X4-2X5	500/5	C800 AT 3000/5 RF=2.0	
	2X3-2X5	800/5		
	2X1-2X2	1000/5		
CT-11	2X2-2X3	1200/5		C800 AT 3000/5 RF=2.0
	2X2-2X4	1500/5		
	2X2-2X5	2000/5		
CT-12	2X1-2X3	2200/5	C800 AT 3000/5 RF=2.0	
	2X1-2X4	2500/5		
	2X1-2X5	3000/5		
WLV	3X1-3X2	2000/5		0.6B1.0
	1X3-1X4	300/5		
	1X4-1X5	500/5		
CT-13	1X3-1X5	800/5	C800 AT 3000/5 RF=2.0	
	1X1-1X2	1000/5		
	1X2-1X3	1200/5		
CT-14	1X2-1X4	1500/5		C800 AT 3000/5 RF=2.0
	1X2-1X5	2000/5		
	1X1-1X3	2200/5		
CT-15	1X1-1X4	2500/5	C800 AT 3000/5 RF=2.0	
	1X1-1X5	3000/5		
	1X1-1X5	3000/5		

XI'AN XD TRANSFORMER CO., LTD.
PEOPLE'S REPUBLIC OF CHINA

WIND
858.860.9130
AFTERMARKET

General Notes

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REVISIONS

NO.	DESCRIPTION	DATE
C	75% SET SUBMITTAL	3/29/24
D	90% SET SUBMITTAL	4/12/24
E	100% SET SUBMITTAL	4/22/24

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Project	Sheet
60MW SOLAR POWER PLANT	SS116
Date	T1 NAMEPLATE
2/21/2024	
Scale	
N/A	