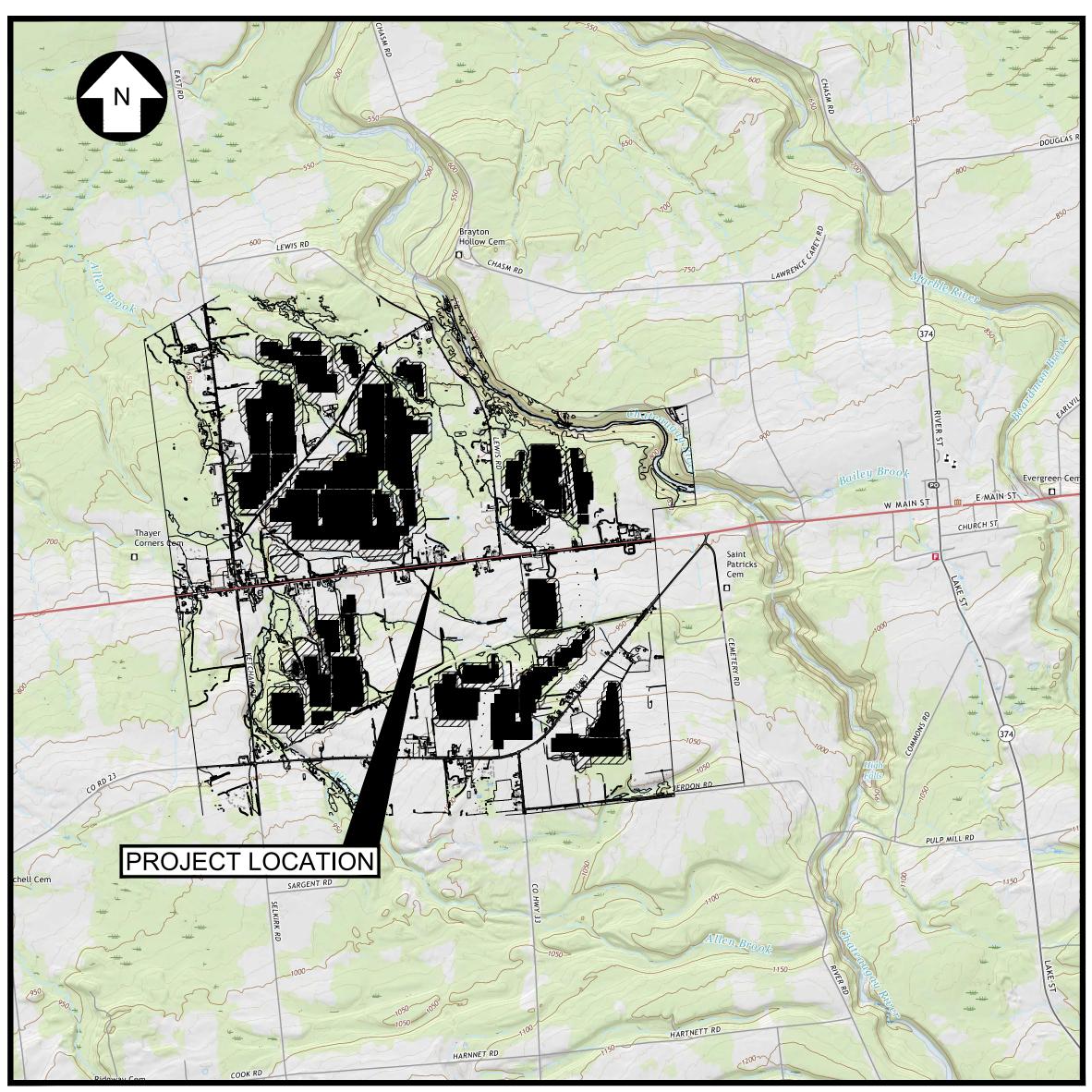
# **BROOKSIDE SOLAR ENERGY FACILITY** TOWNS OF BURKE & CHATEAUGAY FRANKLIN COUNTY, NEW YORK LAT: N038° 49' 14.02" LONG: W076° 13' 38.41"

PREPARED FOR:

AES CLEAN ENERGY 4300 WILSON BLVD. ARLINGTON, VA 22203

# **ELECTRICAL ENGINEER:**

TRC ENGINEERS, LLC 249 WESTERN AVE. AUGUSTA, ME 04330



LOCATION MAP N.T.S.

UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT

# POINT OF INTERCONNECT:

DC CAPACITY: 130,096.98 kW AC CAPACITY: 100,000.00 kW DESIGN TEMP: 31°C MINIMUM TEMP: -32°C

# GENERAL DRAWING INDEX:

**COVER SHEET** PV-G.00.01

PV SYSTEM DRAV	VING INDEX:
PV-E.02.01 THRU 08	ELECTRICAL ONE LINE

	ELECTRICAL ONE LINE DIAGR
PV-E.02.09 THRU 12	ELECTRICAL THREE LINE DIA
PV-E.02.13	ELECTRICAL COLLECTION ON

# SUBSTATION DRAWING INDEX:

422299-0001-001 HV-E.02.01

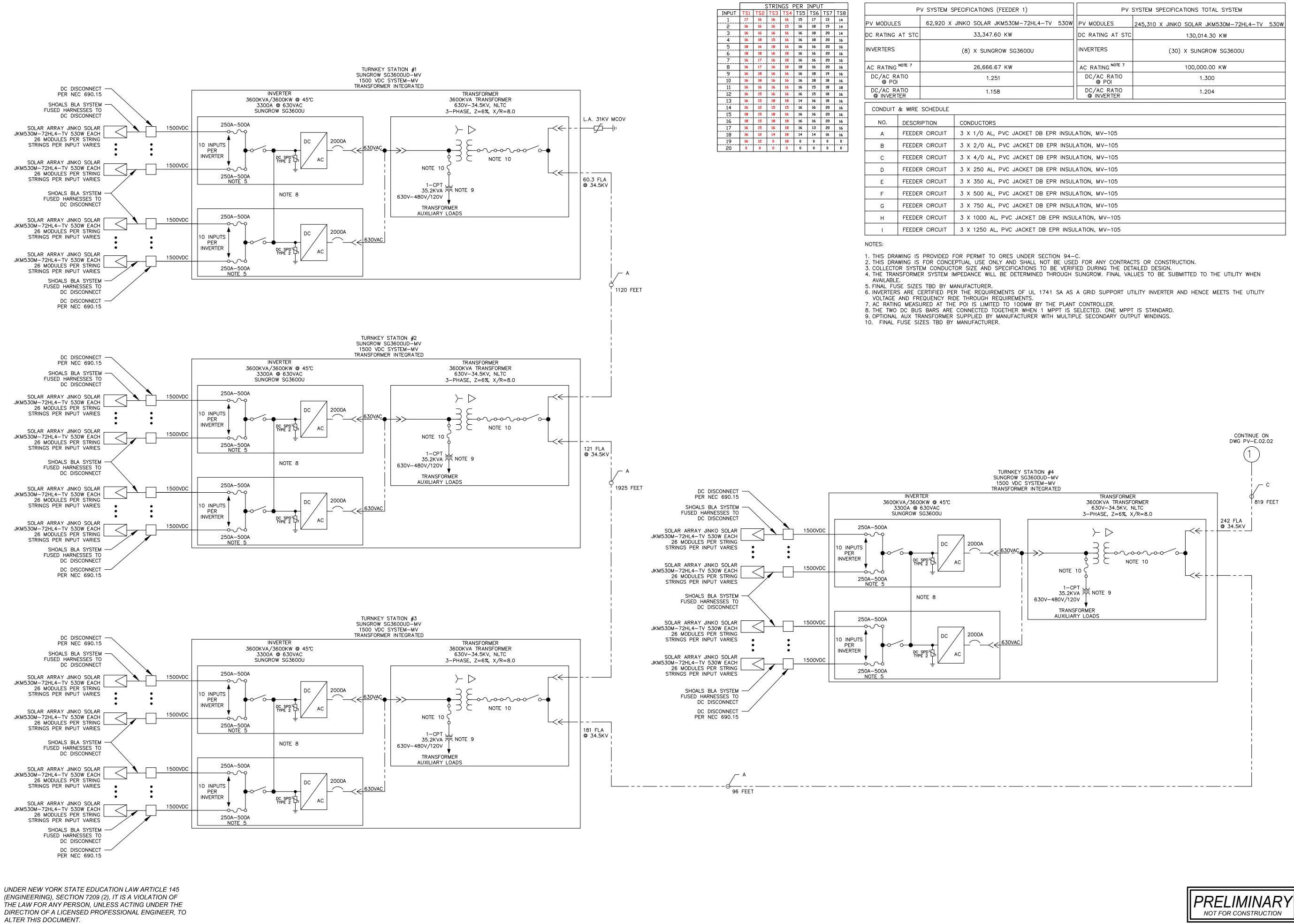
POI SUBSTATION SWITCHING ONE LINE DIAGRAM COLLECTION SUBSTATION SWITCHING ONE LINE DIAGRAM HV-E.04.01 THRU 05 THREE LINE DIAGRAM

IF DIAGRAM AGRAM NE-LINE DIAGRAM



PRELIMINARY NOT FOR CONSTRUCTION

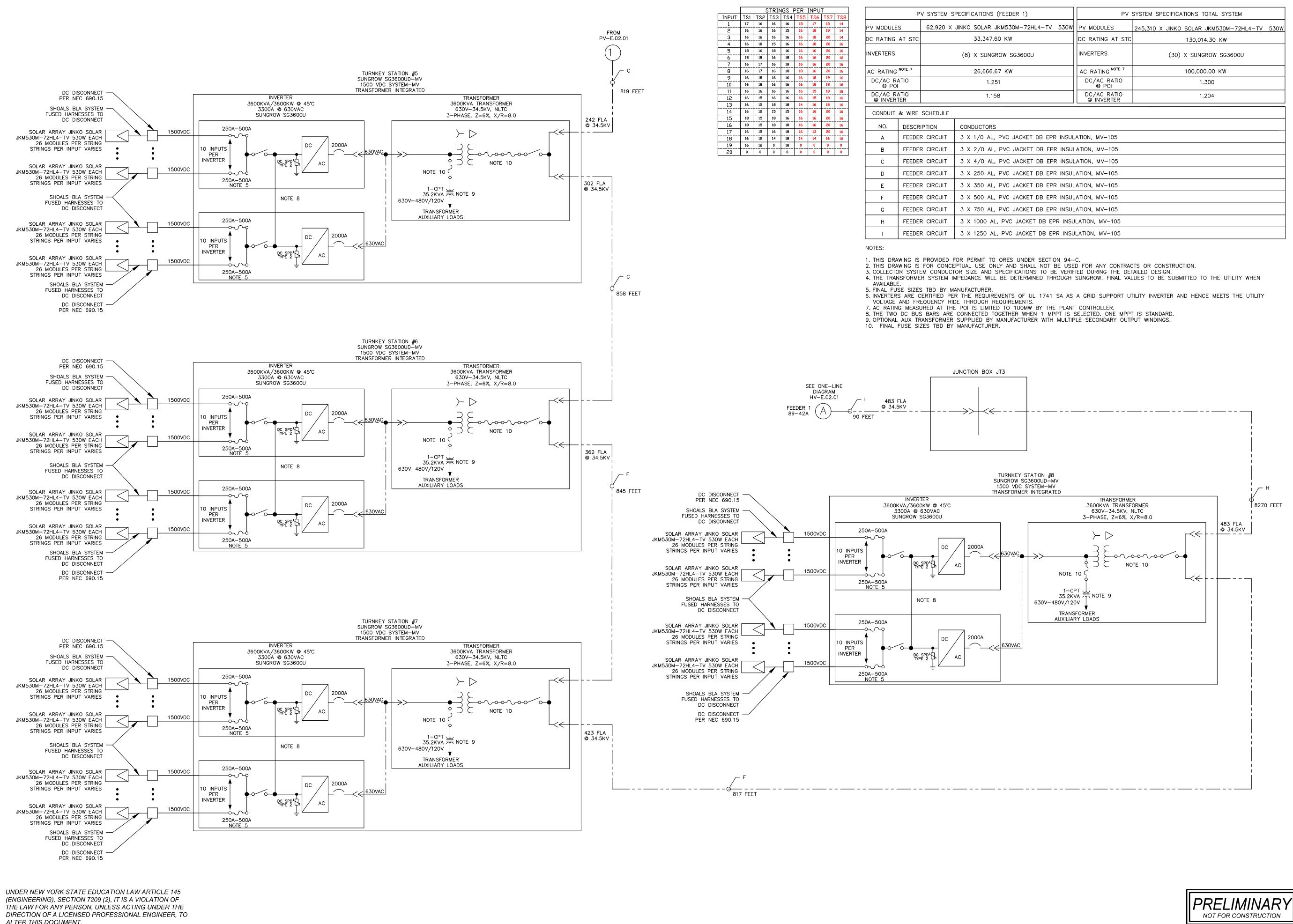
Salt La	<b>URDED</b> uth 1300 East, Suite 600 ke City, UT 84106-2749 (801) 679 - 3500				
Aug	<b>TRRC</b> Western Avenue gusta, ME 04330				
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KEY PLAN:					
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PROJECT TITI					
ENER	BROOKSIDE SOLAR ENERGY FACILITY				
PROJECT LOC	CATION:				
CHATI	OF BURKE AND EAUGAY, NY				
SHEET TITLE	& DESCRIPTION:				
COV	ER SHEET				
PROJ					
NUM:	422299				
	3. TYLOCK				
APV:	-				
DATE: ( SCALE AT 22" x 34'	05/21/2021 ':				
AS	S NOTED				
SHEET NO: PV-G	6.00.01 0				



PV SYSTEM SPECIFICATIONS TOTAL SYSTEM				
PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV 53	ow		
DC RATING AT STC	130,014.30 KW			
INVERTERS	(30) X SUNGROW SG3600U			
AC RATING NOTE 7	100,000.00 KW			
DC/AC RATIO @ POI	1.300			
DC/AC RATIO @ INVERTER	1.204			

TION, MV-105
TION, MV-105
ATION, MV-105
ATION, MV-105

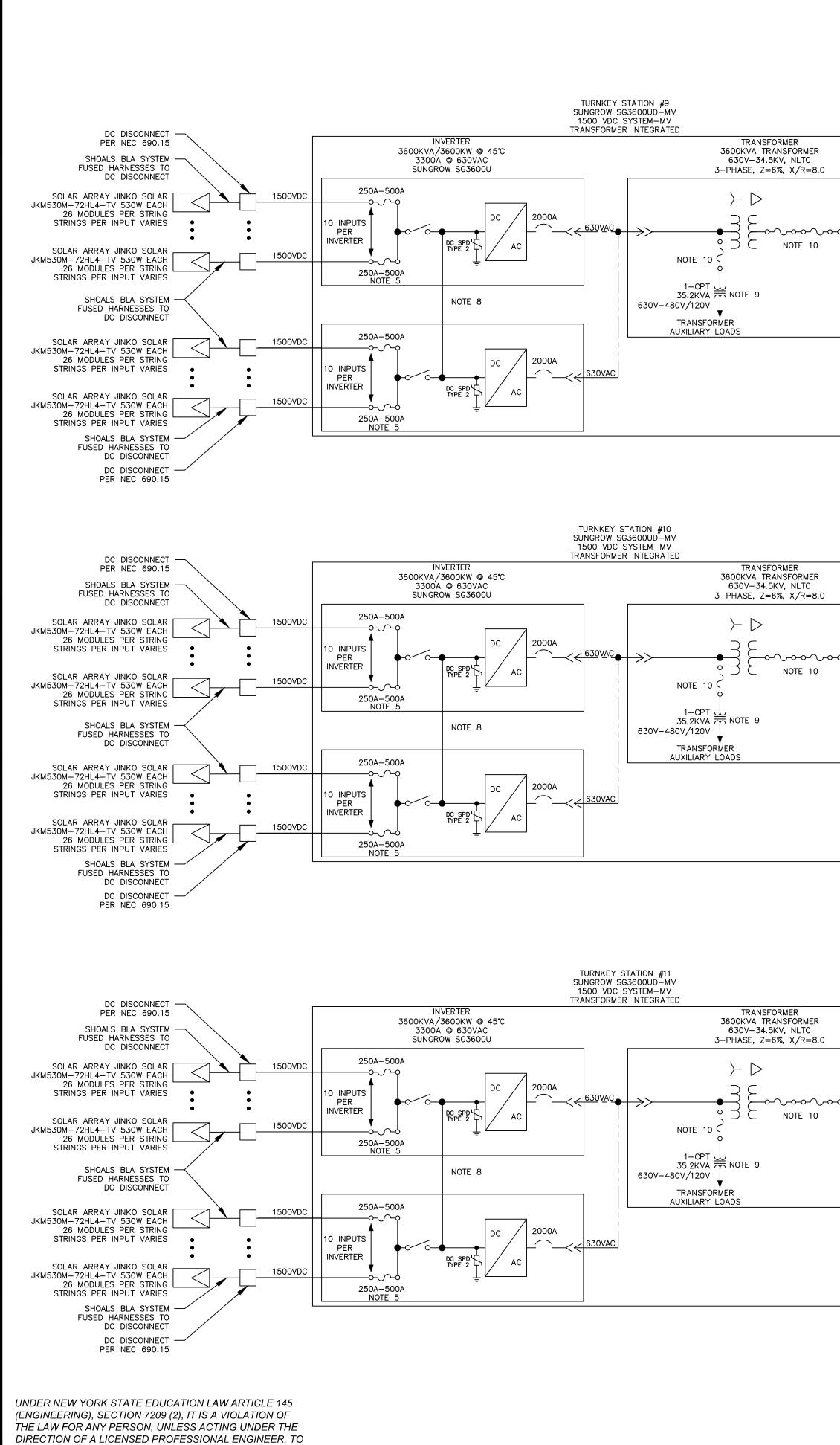
295
2180 South 1300 East, Suite 600 Salt Lake City, UT 84106-2749
(801) 679 - 3500
249 Western Avenue Augusta, ME 04330
PE STAMP:
Gary L Beane Beane KEY PLAN:
KET FLAN.
REVISIONS:
NO.DATEDESCRIPTION001/19/2022DESIGN DRAWINGS
1 06/14/2022 ISSUED FOR PERMIT
PROJECT TITLE:
BROOKSIDE SOLAR PROJECT
PROJECT LOCATION:
TOWNS OF BURKE AND CHATEAUGAY, NY
SHEET TITLE & DESCRIPTION:
ELECTRICAL ONE LINE DIAGRAM
PROJ 422208 NUM:
DES: A. QUIROZ
DWN: A. QUIROZ
CHK: B. TYLOCK
APV: G. BEANE DATE: 04/02/2021
DATE: 04/02/2021 SCALE AT 22" x 34":
NONE
SHEET NO: REV: PV-E.02.01 1



ALTER THIS DOCUMENT.

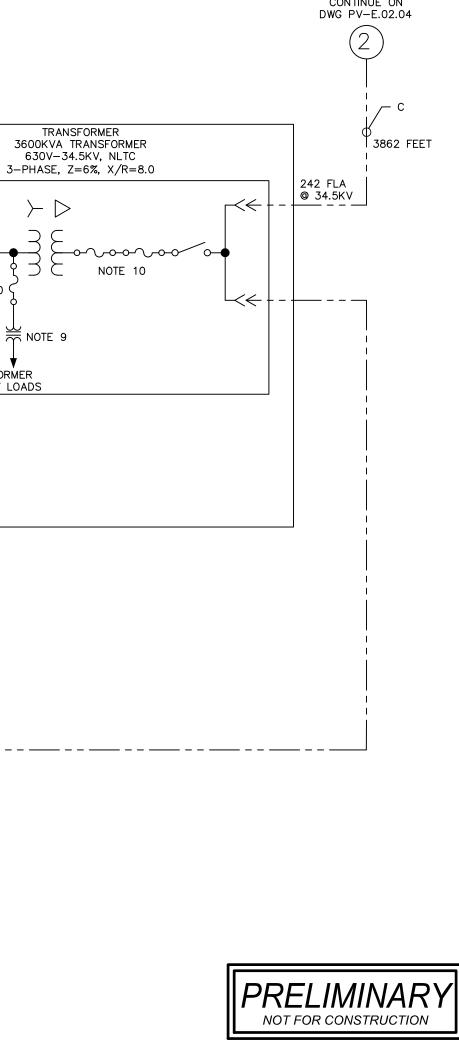
PV SYSTEM SPECIFICATIONS TOTAL SYSTEM				
PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV	530W		
DC RATING AT STC	130,014.30 KW			
INVERTERS	(30) X SUNGROW SG3600U			
AC RATING NOTE 7	100,000.00 KW			
DC/AC RATIO @ POI	1.300			
DC/AC RATIO @ INVERTER	1.204			

2180 South 1300 East, Suite 600 Salt Lake City, UT 84106-2749
(801) 679 - 3500
$\leftrightarrow$ TRC
249 Western Avenue Augusta, ME 04330
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STATE OF NEW LOP
SP GARY L BEANER PT
Gary L Dignally signed
Gary L by Gary L Beane
Beane Date: 2022.06.28
KEY PLAN:
REVISIONS:
NO.     DATE     DESCRIPTION       0     01/19/2022     DESIGN DRAWINGS
1 06/14/2022 ISSUED FOR PERMIT
PROJECT TITLE:
BROOKSIDE SOLAR
PROJECT
PROJECT LOCATION:
TOWNS OF BURKE AND
CHATEAUGAY, NY
SHEET TITLE & DESCRIPTION:
ELECTRICAL ONE LINE
DIAGRAM
PROJ NUM: 422208
DES: A. QUIROZ
DWN: A. QUIROZ
снк: В. ТҮLOCК
APV: G. BEANE
DATE: 04/02/2021
SCALE AT 22" x 34":
NONE
NONE
NONE SHEET NO: PV-E.02.02 1

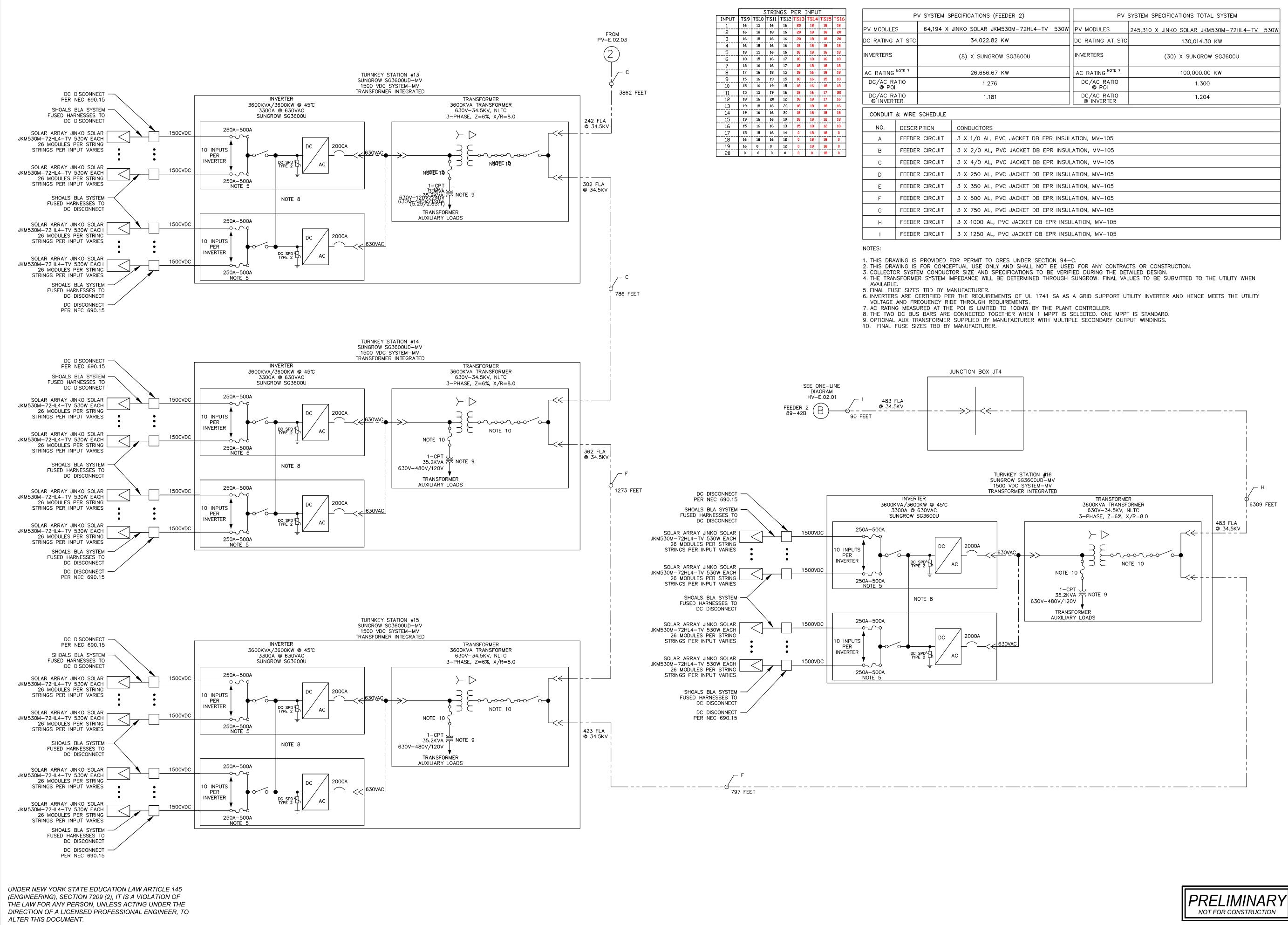


ALTER THIS DOCUMENT.

	STRINGS PER INPUT INPUT TS9 TS10 TS11 TS12 TS13 TS14 TS15 TS	PV SYS	TEM SPECIFICATIONS (FEEDER 2)	PV SYS	TEM SPECIFICATIONS TOTAL SYSTEM
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		94 X JINKO SOLAR JKM530M-72HL4-TV	530W PV MODULES 24	5,310 X JINKO SOLAR JKM530M-72HL4-TV 530W
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	DC RATING AT STC	34,022.82 KW	DC RATING AT STC	130,014.30 KW
	5         18         15         16         16         18         18         16         18           6         18         15         16         17         18         18         16         18		(8) X SUNGROW SG3600U	INVERTERS	(30) X SUNGROW SG3600U
	7         18         16         16         17         18 </td <td></td> <td>26,666.67 KW</td> <td>AC RATING NOTE 7</td> <td>100,000.00 KW</td>		26,666.67 KW	AC RATING NOTE 7	100,000.00 KW
	9         15         16         19         15         18         16         15         18           10         15         16         19         15         18         16         18         16		1.276	DC/AC RATIO @ POI	1.300
	11         15         15         19         16         18         16         17         24           12         18         16         20         12         18         18         17         16		1.1821	DC/AC RATIO @ INVERTER	1.204
	13         19         18         16         20         18         18         16           14         19         16         16         20         18         18         18         16	CONDUIT & WIRE SCHEI	DULE		
L.A. 31KV MCOV	15       19       16       16       13       18       18       12       18         16       15       16       16       13       15       18       12       18         17       15       18       16       14       0       18       18       0         18       16       16       16       16       12       0       18       18       0         19       16       0       0       12       0       18       18       0         20       0       0       0       0       0       0       18       0	NO.       DESCRIPTION         A       FEEDER CIRC         B       FEEDER CIRC         C       FEEDER CIRC         D       FEEDER CIRC         E       FEEDER CIRC         F       FEEDER CIRC         G       FEEDER CIRC         H       FEEDER CIRC         H       FEEDER CIRC         I       FEEDER CIRC         H       FEEDER CIRC         I       IFEEDER CIRC         I       IFEDER CIRC         I       IFEEDER CIRC	CONDUCTORSCUIT3 X 1/0 AL, PVC JACKET DB EPCUIT3 X 2/0 AL, PVC JACKET DB EPCUIT3 X 4/0 AL, PVC JACKET DB EPCUIT3 X 250 AL, PVC JACKET DB EPCUIT3 X 350 AL, PVC JACKET DB EPCUIT3 X 500 AL, PVC JACKET DB EPCUIT3 X 750 AL, PVC JACKET DB EPCUIT3 X 750 AL, PVC JACKET DB EPCUIT3 X 1000 AL, PVC JACKET DB EPCUIT3 X 1250 AL, PVC JACKET DB EPCUIT3 X 1	R INSULATION, MV-105 R INSULATION, MV-105 R INSULATION, MV-105 R INSULATION, MV-105 R INSULATION, MV-105 R INSULATION, MV-105 PR INSULATION, MV-105 PR INSULATION, MV-105 PR INSULATION, MV-105 ON 94-C. BE USED FOR ANY CONTRACTS IE VERIFIED DURING THE DETAILL ROUGH SUNGROW. FINAL VALUES SA AS A GRID SUPPORT UTILIT E PLANT CONTROLLER. PPT IS SELECTED. ONE MPPT IS	ED DESIGN. S TO BE SUBMITTED TO THE UTILITY WHEN Y INVERTER AND HENCE MEETS THE UTILITY S STANDARD.
121 FLA @ 34.5KV 457 FEET	DC DISCONNECT —		TURNKEY STATION #1 SUNGROW SG3600UD-M 1500 VDC SYSTEM-M TRANSFORMER INTEGRA	/∨ √	CONTINUE ON DWG PV-E.02.04
	DC DISCONNECT PER NEC 690.15	INVERTER 3600KVA/3600KW @	45°C	TRANSFORMER 3600KVA TRANSFORM	IER 3862 FEET
	SHOALS BLA SYSTEM FUSED HARNESSES TO DC DISCONNECT	3300A @ 630VA SUNGROW SG3600	C	630V-34.5KV, NLT 3-PHASE, Z=6%, X/R	С I =8.0
	SOLAR ARRAY JINKO SOLAR JKM530M-72HL4-TV 530W EACH 26 MODULES PER STRING STRINGS PER INPUT VARIES SOLAR ARRAY JINKO SOLAR JKM530M-72HL4-TV 530W EACH 26 MODULES PER STRING STRINGS PER INPUT VARIES SHOALS BLA SYSTEM FUSED HARNESSES TO DC DISCONNECT SOLAR ARRAY JINKO SOLAR JKM530M-72HL4-TV 530W EACH 26 MODULES PER STRING STRINGS PER INPUT VARIES SOLAR ARRAY JINKO SOLAR JKM530M-72HL4-TV 530W EACH 26 MODULES PER STRING STRINGS PER INPUT VARIES 10 10 10 10 10 10 10 10 10 10 10 10 10	250A-500A INPUTS VERTER 250A-500A NOTE 5 NOTE 8 250A-500A INPUTS PER VERTER VERTER 250A-500A DC SPD TYPE 2 2 DC SPD TYPE 2 2 DC SPD TYPE 2 2 DC SPD TYPE 2 2 2 2 2 2 2 2 2 2 2 2 2 2	630V-4	I-CPT     NOTE       1-CPT     NOTE       35.2KVA     NOTE       H80V/120V     TRANSFORMER       AUXILIARY LOADS	242 FLA @ 34.5KV 10
]	STRINGS PER INPUT VARIES	NOTE 5			
	SHOALS BLA SYSTEM				
	DC DISCONNECT				
	PER NEC 690.15				
181 FLA   @ 34.5KV					
	/- A				
	995 FEET				



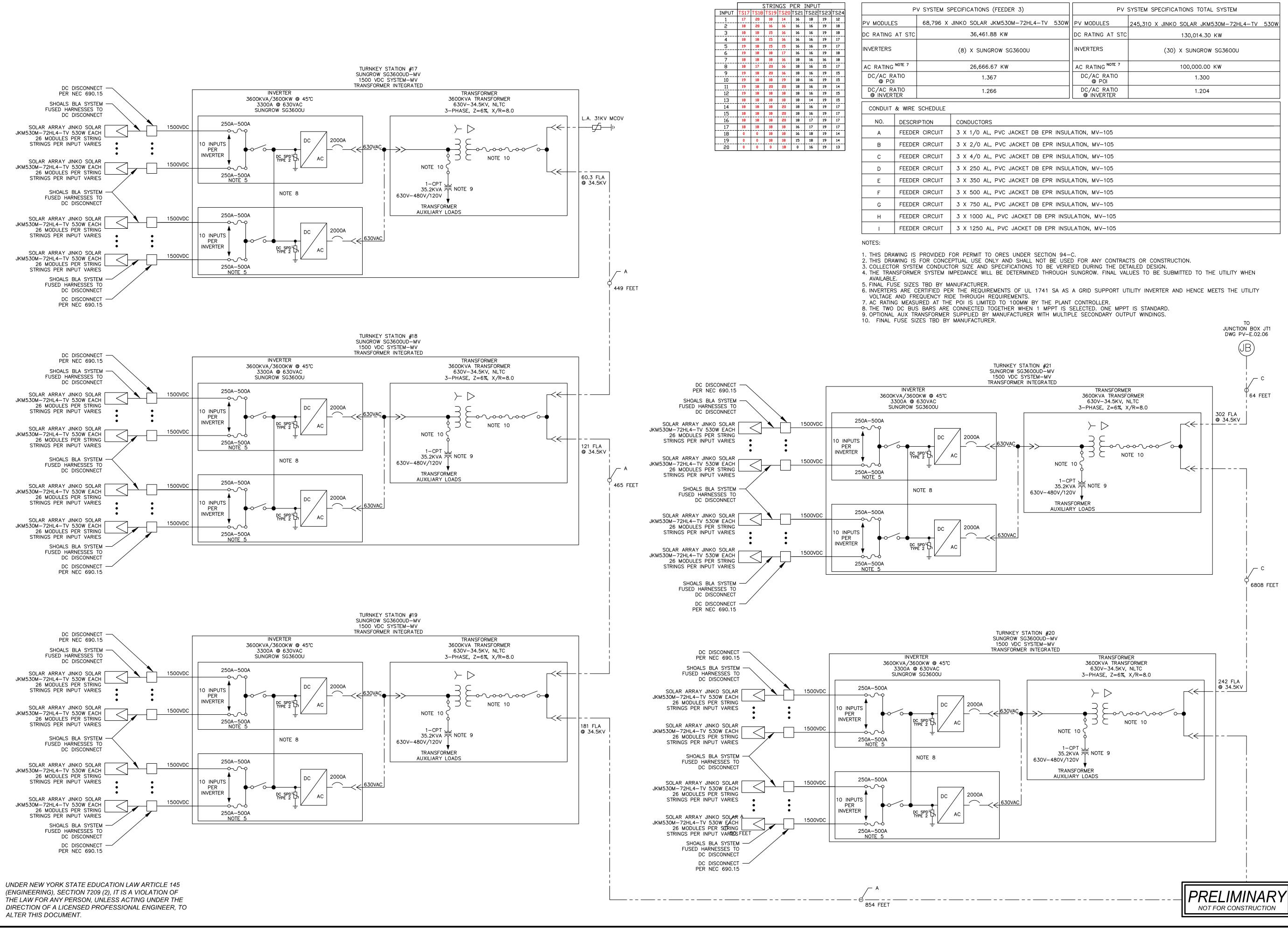
2180 South 1300 East, Suite 600 Salt Lake City, UT 84106-2749 (801) 679 - 3500
249 Western Avenue Augusta, ME 04330
PE STAMP:
REVISIONS:
NO.DATEDESCRIPTION001/19/2022DESIGN DRAWINGS
1         06/14/2022         ISSUED FOR PERMIT
PROJECT TITLE:
BROOKSIDE SOLAR PROJECT
PROJECT LOCATION:
TOWNS OF BURKE AND CHATEAUGAY, NY
SHEET TITLE & DESCRIPTION:
ELECTRICAL ONE LINE DIAGRAM
PROJ 422208
NUM: 422208 DES: A. QUIROZ
DWN: A. QUIROZ
CHK: B. TYLOCK
APV: G. BEANE
DATE: 04/02/2021
SCALE AT 22" x 34":
NONE
PV-E.02.03 1
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PV SYSTEM SPECIFICATIONS TOTAL SYSTEM				
PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV	530W		
DC RATING AT STC	130,014.30 KW			
INVERTERS	(30) X SUNGROW SG3600U			
AC RATING NOTE 7	100,000.00 KW			
DC/AC RATIO @ POI	1.300			
DC/AC RATIO @ INVERTER	1.204			

ATION, MV-105
ATION, MV-105

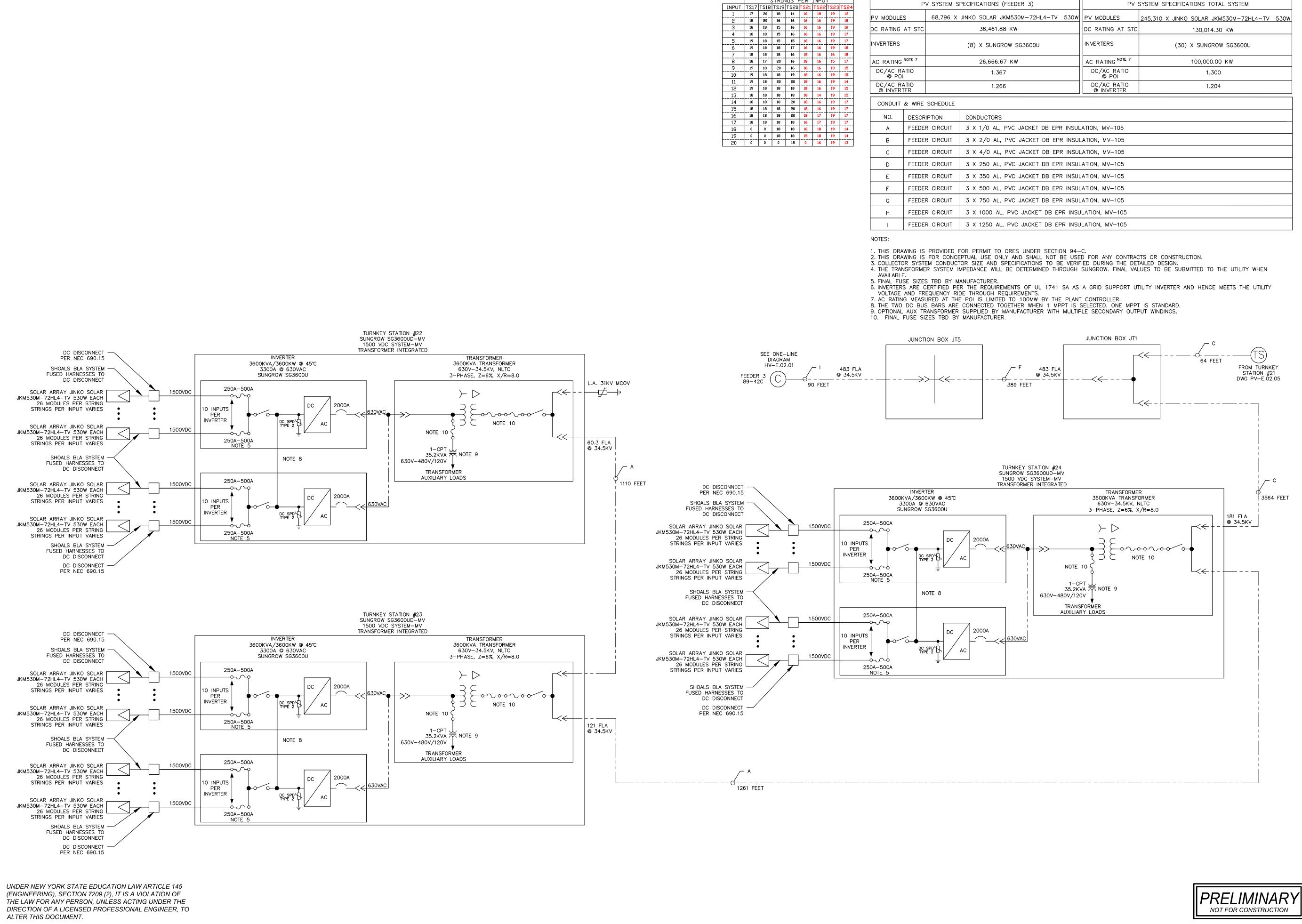
		outh 1300 East, Suite 600 ake City, UT 84106-2749			
	22	(801) 679 - 3500 TTRC 49 Western Avenue ugusta, ME 04330	-		
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T		OF BURKE / EAUGAY, N			
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ELECTRICAL ONE LINE DIAGRAM					
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DES		A. QUIROZ			
DWI		A. QUIROZ			
CHM		B. TYLOCK			
APV		G. BEANE			
DAT		04/02/2021			
SCALE AT 22" x 34": <b>NONE</b>					
SHE	ET NO: <b>PV-I</b>	E.02.04	REV: <b>1</b>		
	, v-L	02.07	1		



PV SYSTEM SPECIFICATIONS TOTAL SYSTEM							
PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV	530W					
DC RATING AT STC	130,014.30 KW						
INVERTERS	(30) X SUNGROW SG3600U						
AC RATING NOTE 7	100,000.00 KW						
DC/AC RATIO @ POI	1.300						
DC/AC RATIO @ INVERTER	1.204						

ATION, MV-105
ATION, MV-105

2180 South 1300 East, Suite 600 Salt Lake City, UT 84106-2749 (801) 679 - 3500				
249 Western Avenue Augusta, ME 04330				
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KEY PLAN:				
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PROJECT TITLE:				
BROOKSIDE SOLAR PROJECT				
PROJECT LOCATION:				
TOWNS OF BURKE AND CHATEAUGAY, NY				
SHEET TITLE & DESCRIPTION:				
ELECTRICAL ONE LINE DIAGRAM				
PROJ 422208 NUM: 422208				
DES: A. QUIROZ				
DWN: A. QUIROZ				
снк: B. ТҮLOCK				
APV: G. BEANE				
DATE: 04/02/2021				
DATE: 04/02/2021 SCALE AT 22" x 34":				
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PV-E.02.05 1				

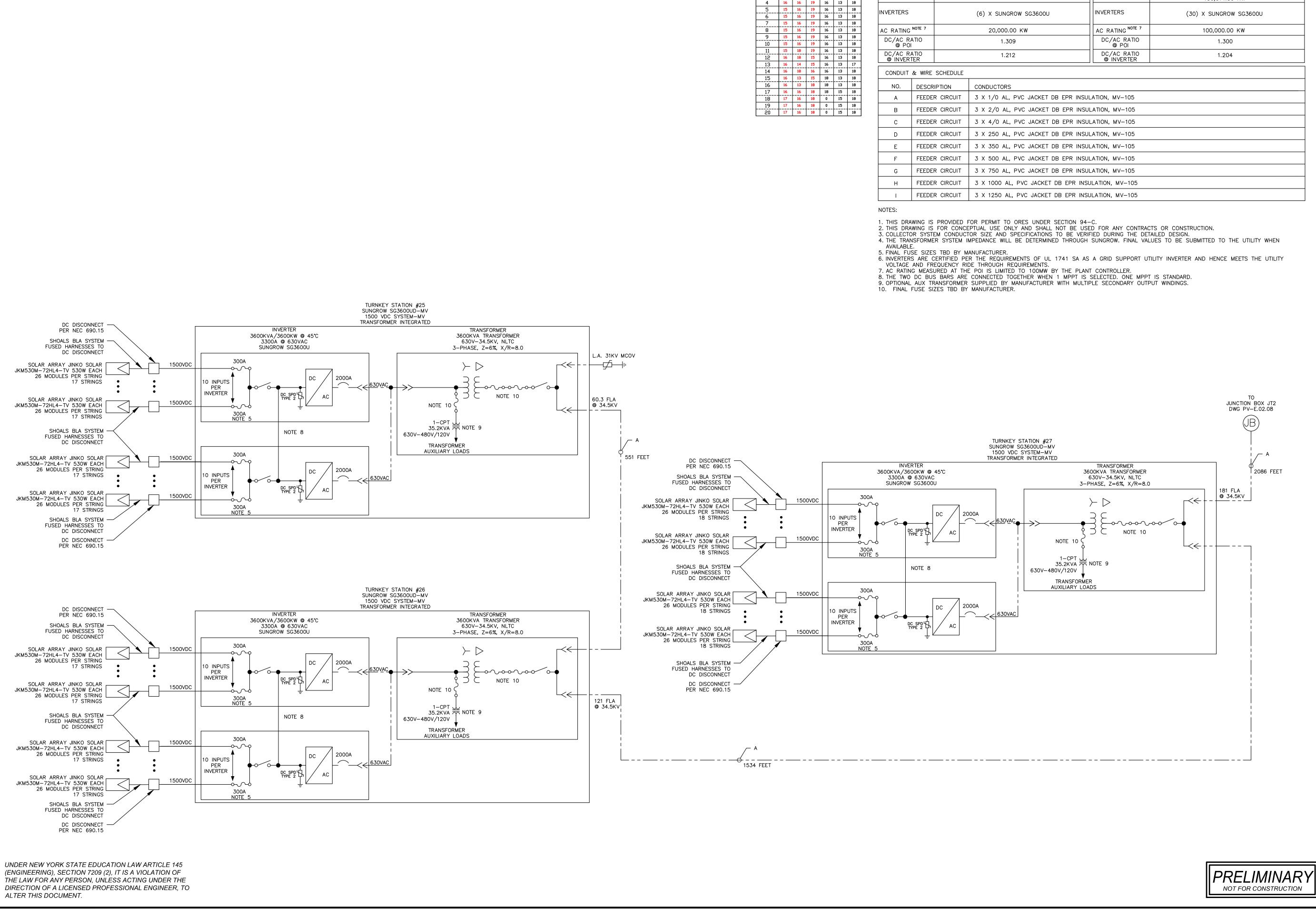


		5	STRIN	IGS F	PER	INPU	Т	
INPUT	TS17	TS18	TS19	TS20	TS21	TS22	TS23	TS24
1	17	20	18	14	16	18	19	12
2	18	20	16	16	16	16	19	18
3	18	18	15	16	16	16	19	18
4	18	18	15	16	16	16	19	17
5	19	18	15	15	16	16	19	17
6	19	18	18	17	16	16	19	18
7	18	18	18	16	18	16	16	18
8	18	17	20	16	18	16	15	17
9	19	18	20	16	18	16	19	15
10	19	18	18	19	18	16	19	15
11	19	18	20	20	18	16	19	14
12	19	18	18	18	18	16	19	15
13	18	18	18	18	18	14	19	15
14	18	18	18	20	18	16	19	17
15	18	18	18	20	18	16	19	17
16	18	18	18	20	18	17	19	17
17	18	18	18	18	16	17	19	17
18	0	0	18	18	16	18	19	14
19	0	0	18	18	15	18	19	14
20	0	0	0	18	0	16	19	13

Р	V SYSTEM SPECIFICATIONS (FEEDER 3)	PV	SYSTEM SPECIFICATIONS TOTAL SYSTEM
PV MODULES	68,796 X JINKO SOLAR JKM530M-72HL4-TV 530	W PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV 530W
DC RATING AT STC	36,461.88 KW	DC RATING AT STC	130,014.30 KW
INVERTERS	(8) X SUNGROW SG3600U	INVERTERS	(30) X SUNGROW SG3600U
AC RATING NOTE 7	26,666.67 KW	AC RATING NOTE 7	100,000.00 KW
DC/AC RATIO @ POI	1.367	DC/AC RATIO @ POI	1.300
DC/AC RATIO @ INVERTER	1.266	DC/AC RATIO @ INVERTER	1.204
CONDUIT & WIRE	SCHEDULE		

NO.	DESCRIPTION	CONDUCTORS
A	FEEDER CIRCUIT	3 X 1/0 AL, PVC JACKET DB EPR INSULATION, MV-105
В	FEEDER CIRCUIT	3 X 2/0 AL, PVC JACKET DB EPR INSULATION, MV-105
С	FEEDER CIRCUIT	3 X 4/0 AL, PVC JACKET DB EPR INSULATION, MV-105
D	FEEDER CIRCUIT	3 X 250 AL, PVC JACKET DB EPR INSULATION, MV-105
E	FEEDER CIRCUIT	3 X 350 AL, PVC JACKET DB EPR INSULATION, MV-105
F	FEEDER CIRCUIT	3 X 500 AL, PVC JACKET DB EPR INSULATION, MV-105
G	FEEDER CIRCUIT	3 X 750 AL, PVC JACKET DB EPR INSULATION, MV-105
н	FEEDER CIRCUIT	3 X 1000 AL, PVC JACKET DB EPR INSULATION, MV-105
I	FEEDER CIRCUIT	3 X 1250 AL, PVC JACKET DB EPR INSULATION, MV-105

2180 South 1300 East, Suite 600
Salt Lake City, UT 84106-2749 (801) 679 - 3500
249 Western Avenue
Augusta, ME 04330
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STATE OF NEW LOP STATE OF NEW LOP
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KEY PLAN:
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FROJECT
PROJECT LOCATION:
TOWNS OF BURKE AND
CHATEAUGAY, NY
SHEET TITLE & DESCRIPTION:
ELECTRICAL ONE LINE DIAGRAM
DIAGINAIVI
PROJ 422208
DES: A. QUIROZ
DWN: A. QUIROZ
CHK: B. TYLOCK
DATE: 04/02/2021
SCALE AT 22" x 34":
NONE SHEET NO: REV:
PV-E.02.06 1
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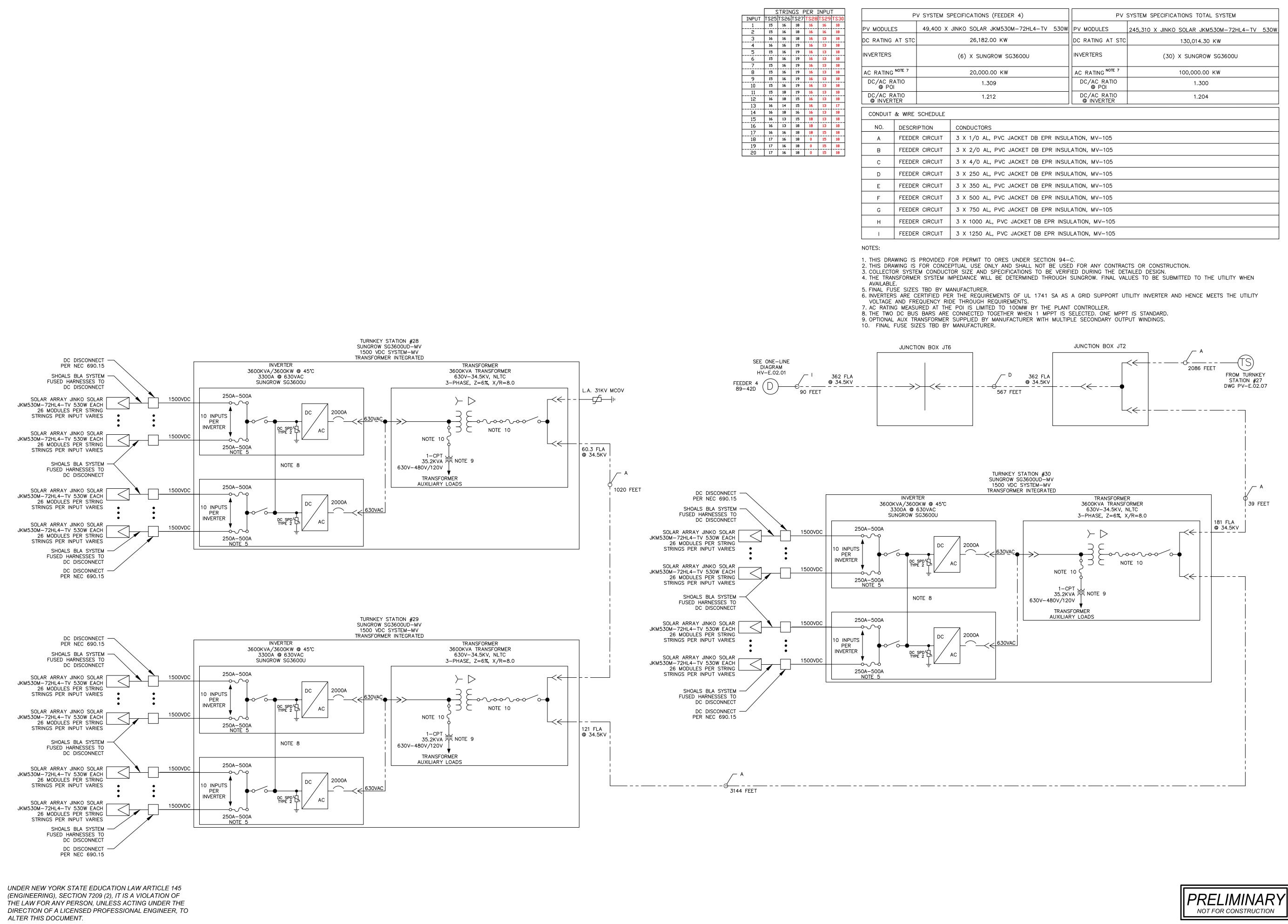


	S	TRIN	IGS F	PER :	INPU <sup>-</sup>	Г
INPUT	TS25	TS56	TS27	TS28	TS29	TS30
1	15	16	18	16	16	18
2	15	16	18	16	16	18
3	16	16	18	16	13	18
4	16	16	19	16	13	18
5	15	16	19	16	13	18
6	15	16	19	16	13	18
7	15	16	19	16	13	18
8	15	16	19	16	13	18
9	15	16	19	16	13	18
10	15	16	19	16	13	18
11	15	18	19	16	13	18
12	16	18	15	16	13	18
13	16	14	15	16	13	17
14	16	18	16	16	13	18
15	16	13	15	18	13	18
16	16	13	18	18	13	18
17	16	16	18	18	15	18
18	17	16	18	0	15	18
19	17	16	18	0	15	18
20	17	16	18	0	15	18

P	V SYSTEM SPECIFICATIONS (FEEDER 4)	PV	SYSTEM SPECIFICATIONS TOTAL SYSTEM
PV MODULES	49,400 X JINKO SOLAR JKM530M-72HL4-TV 530W	PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV 530W
DC RATING AT STC	26,182.00 KW	DC RATING AT STC	130,014.30 KW
INVERTERS	(6) X SUNGROW SG3600U	INVERTERS	(30) X SUNGROW SG3600U
AC RATING NOTE 7	20,000.00 KW	AC RATING NOTE 7	100,000.00 KW
DC/AC RATIO @ POI	1.309	DC/AC RATIO @ POI	1.300
DC/AC RATIO © INVERTER	1.212	DC/AC RATIO @ INVERTER	1.204

	& MILE SOMEDOLE	
NO.	DESCRIPTION	CONDUCTORS
A	FEEDER CIRCUIT	3 X 1/0 AL, PVC JACKET DB EPR INSULATION, MV-105
В	FEEDER CIRCUIT	3 X 2/0 AL, PVC JACKET DB EPR INSULATION, MV-105
с	FEEDER CIRCUIT	3 X 4/0 AL, PVC JACKET DB EPR INSULATION, MV-105
D	FEEDER CIRCUIT	3 X 250 AL, PVC JACKET DB EPR INSULATION, MV-105
E	FEEDER CIRCUIT	3 X 350 AL, PVC JACKET DB EPR INSULATION, MV-105
F	FEEDER CIRCUIT	3 X 500 AL, PVC JACKET DB EPR INSULATION, MV-105
G	FEEDER CIRCUIT	3 X 750 AL, PVC JACKET DB EPR INSULATION, MV-105
н	FEEDER CIRCUIT	3 X 1000 AL, PVC JACKET DB EPR INSULATION, MV-105
I	FEEDER CIRCUIT	3 X 1250 AL, PVC JACKET DB EPR INSULATION, MV-105

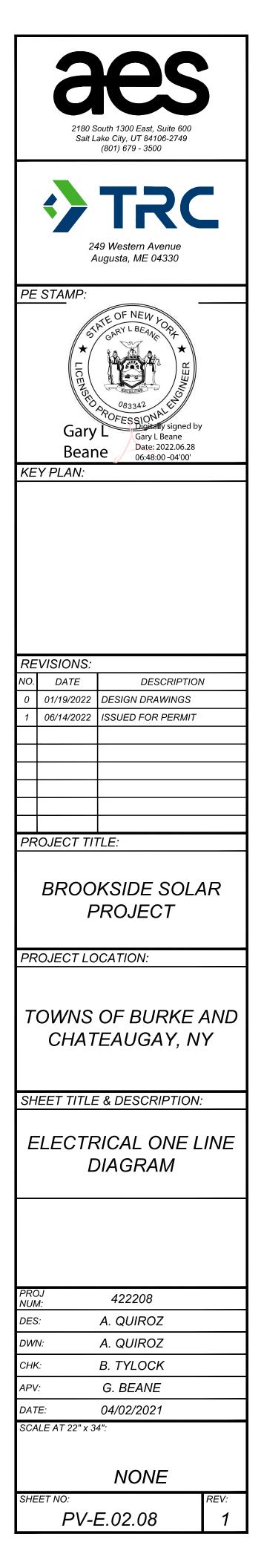
2180 South 1300 East, Suite 600 Salt Lake City, UT 84106-2749 (801) 679 - 3500						
249 Western Avenue Augusta, ME 04330						
PE STAMP:						
<u>NET PLAN:</u>						
REVISIONS: NO. DATE DESCRIPTION						
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1 06/14/2022 ISSUED FOR PERMIT						
PROJECT TITLE:						
BROOKSIDE SOLAR PROJECT						
PROJECT LOCATION:						
TOWNS OF BURKE AND CHATEAUGAY, NY						
SHEET TITLE & DESCRIPTION:						
ELECTRICAL ONE LINE DIAGRAM						
PROJ 422208						
NUM: 422208						
DES: A. QUIROZ						
DWN: A. QUIROZ						
снк: B. TYLOCK						
APV: G. BEANE						
DATE: 04/02/2021						
SCALE AT 22" x 34":						
NONE SHEET NO: REV:						
PV-E.02.07 1						

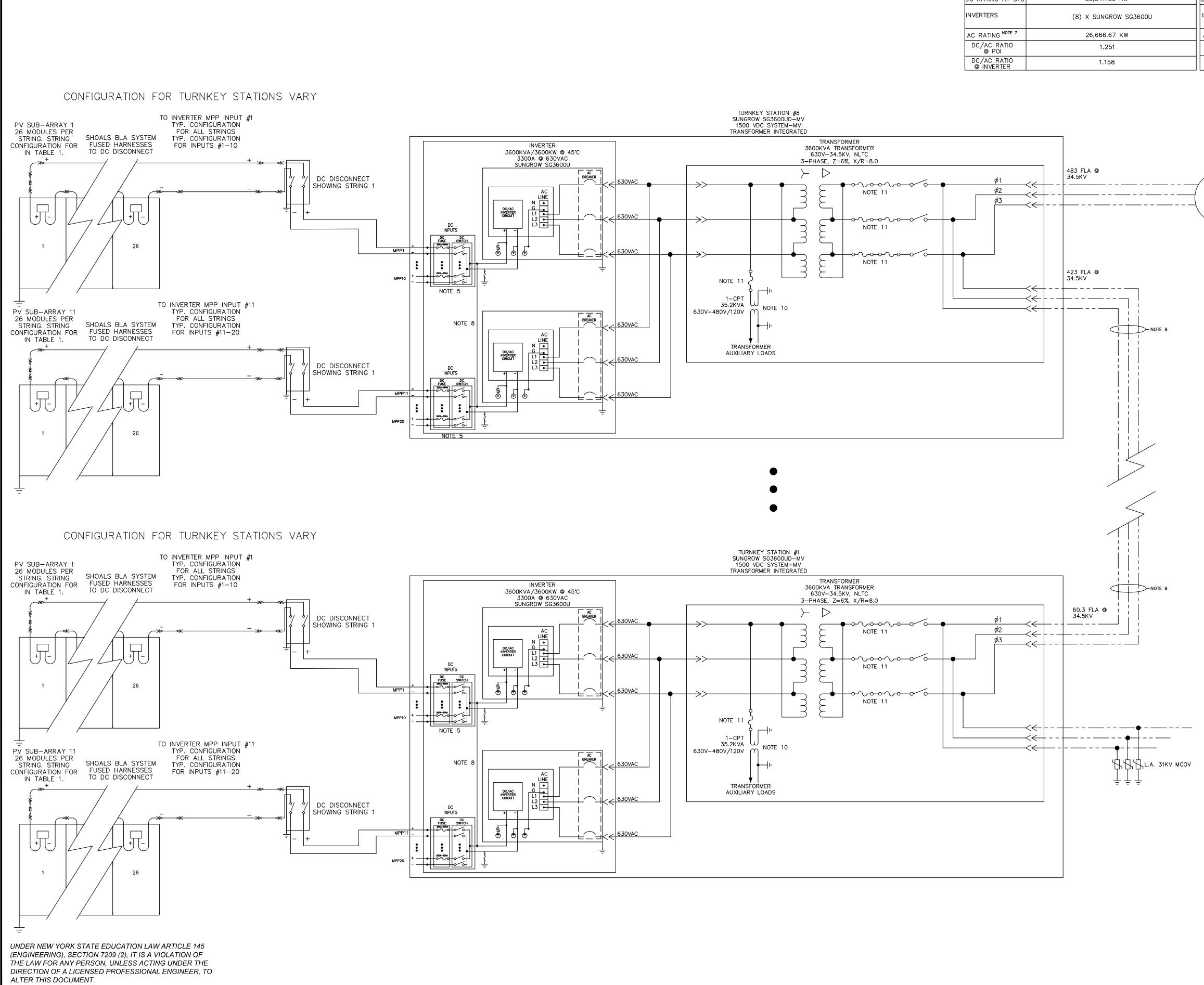


STRINGS PER INPUT							
			-		INPU		
INPUT	TS25	TS26	TS27	TS28	TS29	TS30	
1	15	16	18	16	16	18	
2	15	16	18	16	16	18	
3	16	16	18	16	13	18	
4	16	16	19	16	13	18	
5	15	16	19	16	13	18	
6	15	16	19	16	13	18	
7	15	16	19	16	13	18	
8	15	16	19	16	13	18	
9	15	16	19	16	13	18	
10	15	16	19	16	13	18	
11	15	18	19	16	13	18	
12	16	18	15	16	13	18	
13	16	14	15	16	13	17	
14	16	18	16	16	13	18	
15	16	13	15	18	13	18	
16	16	13	18	18	13	18	
17	16	16	18	18	15	18	
18	17	16	18	0	15	18	
19	17	16	18	0	15	18	
20	17	16	18	0	15	18	

P	V SYSTEM SPECIFICATIONS (FEEDER 4)	PV SYSTEM SPECIFICATIONS TOTAL SYSTEM				
PV MODULES	49,400 X JINKO SOLAR JKM530M-72HL4-TV 530W	PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV 530W			
DC RATING AT STC	26,182.00 KW	DC RATING AT STC	130,014.30 KW			
INVERTERS	(6) X SUNGROW SG3600U	INVERTERS	(30) X SUNGROW SG3600U			
AC RATING NOTE 7	20,000.00 KW	AC RATING NOTE 7	100,000.00 KW			
DC/AC RATIO @ POI	1.309	DC/AC RATIO @ POI	1.300			
DC/AC RATIO @ INVERTER	1.212	DC/AC RATIO @ INVERTER	1.204			

NO.	DESCRIPTION	CONDUCTORS
A	FEEDER CIRCUIT	3 X 1/0 AL, PVC JACKET DB EPR INSULATION, MV-105
В	FEEDER CIRCUIT	3 X 2/0 AL, PVC JACKET DB EPR INSULATION, MV-105
С	FEEDER CIRCUIT	3 X 4/0 AL, PVC JACKET DB EPR INSULATION, MV-105
D	FEEDER CIRCUIT	3 X 250 AL, PVC JACKET DB EPR INSULATION, MV-105
E	FEEDER CIRCUIT	3 X 350 AL, PVC JACKET DB EPR INSULATION, MV-105
F	FEEDER CIRCUIT	3 X 500 AL, PVC JACKET DB EPR INSULATION, MV-105
G	FEEDER CIRCUIT	3 X 750 AL, PVC JACKET DB EPR INSULATION, MV-105
н	FEEDER CIRCUIT	3 X 1000 AL, PVC JACKET DB EPR INSULATION, MV-105
I	FEEDER CIRCUIT	3 X 1250 AL, PVC JACKET DB EPR INSULATION, MV-105





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Р	V SYSTEM SPECIFICATIONS (FEEDER 1)	PV SYSTEM SPECIFICATIONS TOTAL SYSTEM			
PV MODULES	62,920 X JINKO SOLAR JKM530M-72HL4-TV 530W	PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV 530W		
DC RATING AT STC	33,347.60 KW	DC RATING AT STC	130,014.30 KW		
INVERTERS	(8) X SUNGROW SG3600U	INVERTERS	(30) X SUNGROW SG3600U		
AC RATING NOTE 7	26,666.67 KW	AC RATING NOTE 7	100,000.00 KW		
DC/AC RATIO @ POI	1.251	DC/AC RATIO @ POI	1.300		
DC/AC RATIO @ INVERTER	1.158	DC/AC RATIO @ INVERTER	1.204		

SEE ONE-LINE DIAGRAM HV-E.02.01

## NOTES:

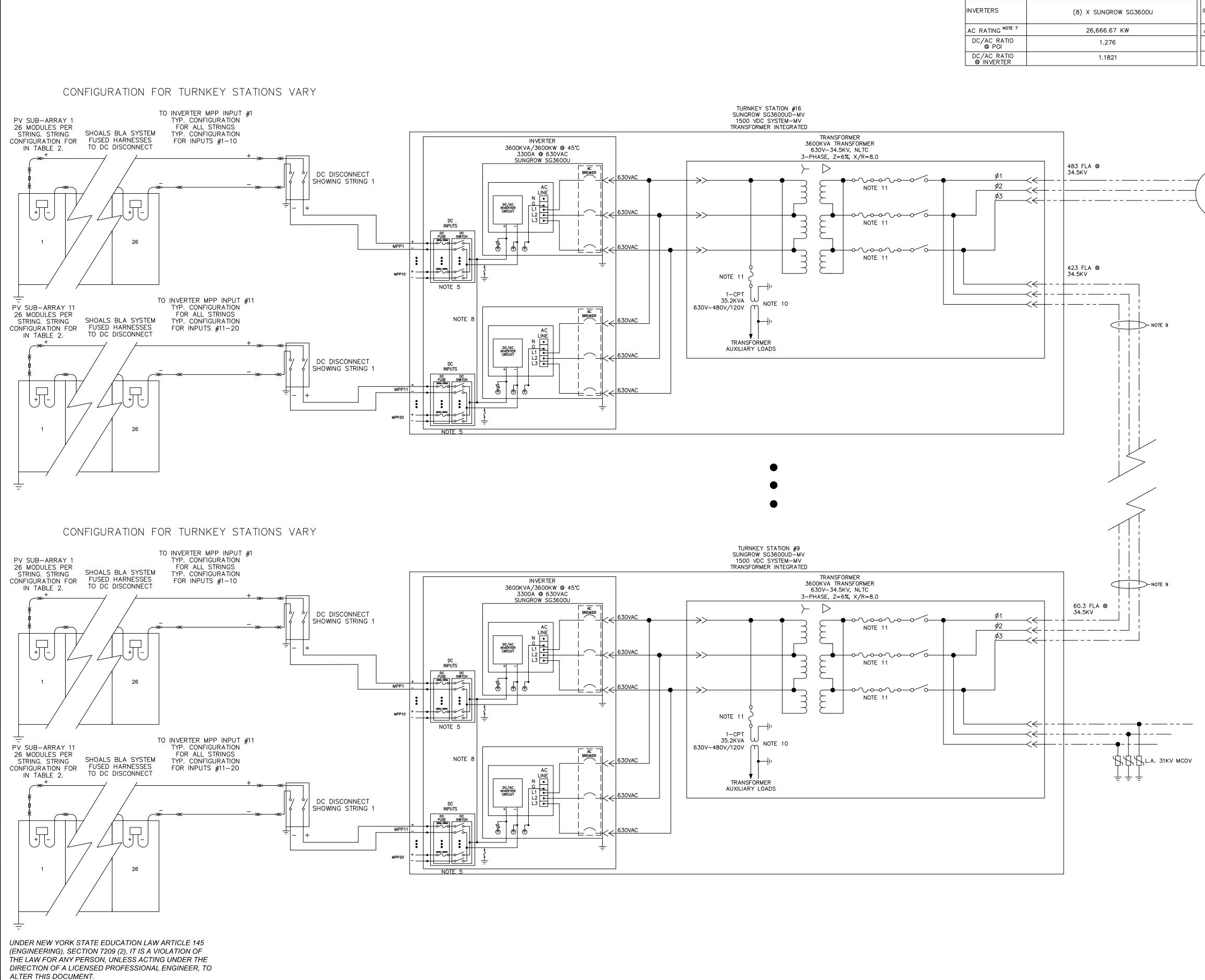
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- 4. THE TRANSFORMER SYSTEM IMPEDANCE WILL BE DETERMINED THROUGH SUNGROW. FINAL VALUES TO BE SUBMITTED TO THE UTILITY WHEN AVAILABLE.
- 5. FUSE SIZE VARIES BASED ON NUMBER OF STRINGS CONNECTED. FINAL FUSE SIZE TO BE CONFIRMED AT THE ISSUING OF THE CONSTRUCTION DRAWING SET.
- 6. INVERTERS ARE CERTIFIED PER THE REQUIREMENTS OF UL 1741 SA AS A GRID SUPPORT UTILITY INVERTER AND HENCE MEETS THE UTILITY VOLTAGE AND FREQUENCY RIDE THROUGH REQUIREMENTS. 7. AC RATING MEASURED AT THE POI IS LIMITED TO 100MW BY THE
- PLANT CONTROLLER. 8. THE TWO DC BUS BARS ARE CONNECTED TOGETHER
- WHEN 1 MPPT IS SELECTED. ONE MPPT IS STANDARD.
- 9. CABLE SIZING AND COLLECTION LENGTHS CAN BE FOUND IN DWG PV-E.02.13. FEEDER 1 CABLE SIZES RANGE FROM 1/0 TO 1250.
   10. OPTIONAL AUX TRANSFORMER SUPPLIED BY MANUFACTURER WITH MULTIPLE SECONDARY OUTPUT WINDINGS.
- 11. FINAL FUSE SIZES TBD BY MANUFACTURER.

FEEDER 1 TURNKEY STATION (TS) PV STRINGING								
TURNKEY STATION (TS)	PV SERIES MODULES	INPUT NUMBER	PARALLEL STRINGS	PV MODULES PER TS				
1	26	20	SEE TABLE 1	8,138				
2	26	20	SEE TABLE 1	7,722				
3	26	20	SEE TABLE 1	7,592				
4	26	20	SEE TABLE 1	8,268				
5	26	20	SEE TABLE 1	7,410				
6	26	20	SEE TABLE 1	7,592				
7	26	20	SEE TABLE 1	8,814				
8	26	20	SEE TABLE 1	7,384				
	TOTAL PV MODULES FOR TS ON FEEDER 1 62,920							

	TABLE 1									
	STRINGS PER INPUT									
INPUT	TS1	TS2	TS3	TS4	TS5	TS6	TS7	TS8		
1	17	16	16	16	15	17	13	14		
2	16	16	16	15	16	18	19	14		
3	17	16	16	16	16	18	20	14		
4	16	18	15	16	16	18	20	16		
5	18	16	18	16	16	16	20	16		
6	18	18	16	18	16	16	20	16		
7	16	17	16	18	16	16	20	16		
8	16	17	16	18	18	16	20	16		
9	16	18	16	16	16	18	19	16		
10	16	18	16	16	16	18	18	16		
11	16	16	16	16	16	15	18	18		
12	16	15	16	16	16	15	18	16		
13	16	15	18	16	14	16	18	16		
14	16	12	15	15	16	16	20	16		
15	18	15	18	16	16	16	20	16		
16	18	15	18	18	16	16	20	16		
17	16	15	18	18	16	13	20	16		
18	16	12	17	18	14	14	16	16		
19	16	12	0	18	0	0	0	0		
20	0	0	0	0	0	0	0	0		



2180 South 1300 East, Suite 600 Salt Lake City, UT 84106-2749 (801) 679 - 3500					
249 Western Avenue Augusta, ME 04330					
PE STAMP:					
REVISIONS:					
NO. DATE DESCRIPTION					
0 01/19/2022 DESIGN DRAWINGS 1 06/14/2022 ISSUED FOR PERMIT					
PROJECT TITLE: BROOKSIDE SOLAR PROJECT					
PROJECT LOCATION:					
TOWNS OF BURKE AND CHATEAUGAY, NY					
SHEET TITLE & DESCRIPTION:					
ELECTRICAL THREE-LINE DIAGRAM					
PROJ 100000					
NUM: 422208					
DES: A. QUIROZ					
DWN: A. QUIROZ					
CHK: B. TYLOCK					
APV: G. BEANE					
DATE: 04/02/2021					
SCALE AT 22" x 34":					
NONE					
SHEET NO: REV: PV-E.02.09 1					



AES Titleblock

P	V SYSTEM SPECIFICATIONS (FEEDER 2)	PV	SYSTEM SPECIFICATIONS TOTAL SYSTEM
PV MODULES	64,194 X JINKO SOLAR JKM530M-72HL4-TV 530W	PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV 530W
DC RATING AT STC	34,022.82 KW	DC RATING AT STC	130,014.30 KW
INVERTERS	(8) X SUNGROW SG3600U	INVERTERS	(30) X SUNGROW SG3600U
AC RATING NOTE 7	26,666.67 KW	AC RATING NOTE 7	100,000.00 KW
DC/AC RATIO @ POI	1.276	DC/AC RATIO @ POI	1.300
DC/AC RATIO @ INVERTER	1.1821	DC/AC RATIO @ INVERTER	1.204

В

SEE ONE-LINE DIAGRAM HV-E.02.01

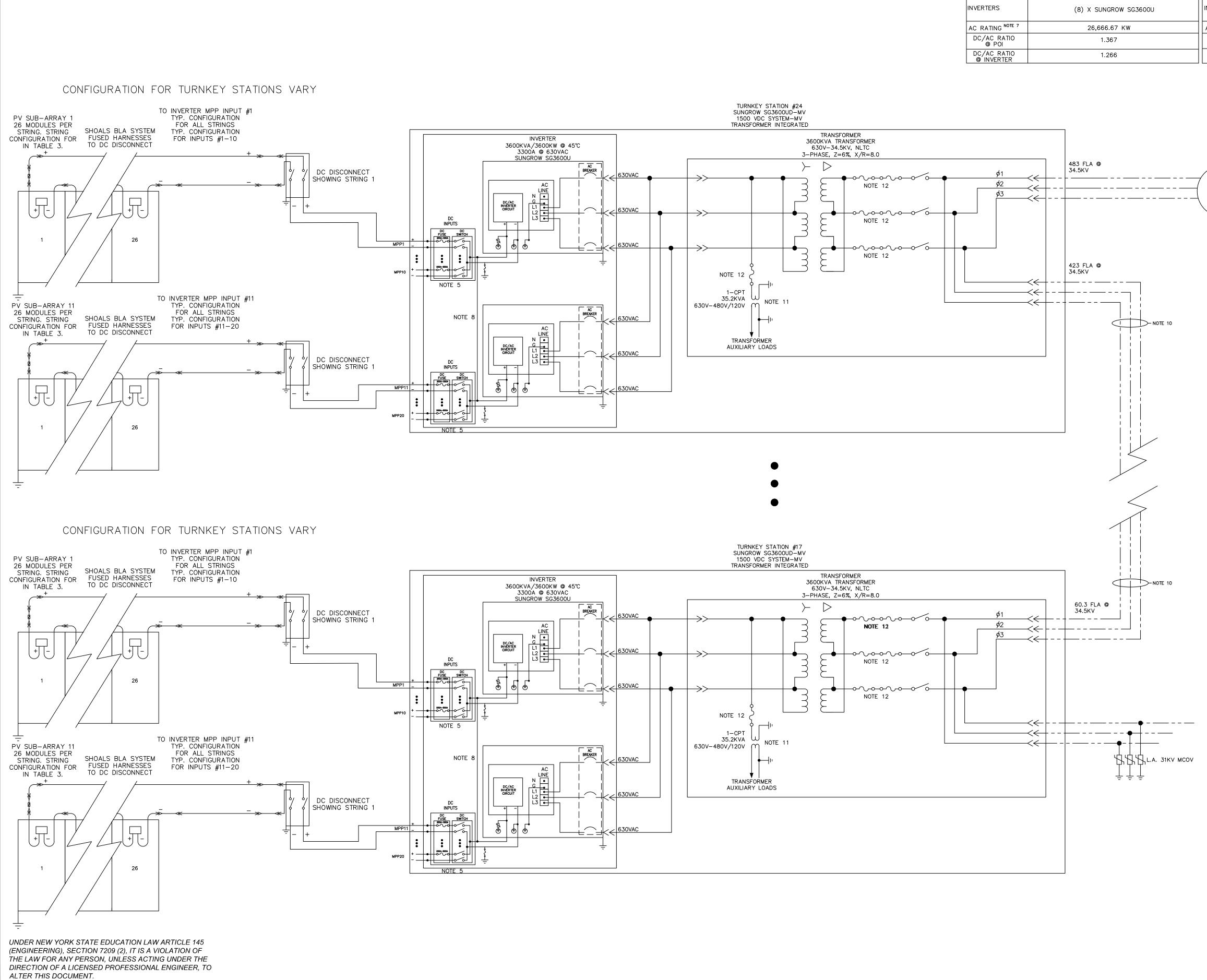
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- PLANT CONTROLLER. 8. THE TWO DC BUS BARS ARE CONNECTED TOGETHER
- WHEN 1 MPPT IS SELECTED. ONE MPPT IS STANDARD.
- 9. CABLE SIZING AND COLLECTION LENGTHS CAN BE FOUND IN DWG PV-E.02.13. FEEDER 2 CABLE SIZES RANGE FROM 1/0 TO 1250.
   10. OPTIONAL AUX TRANSFORMER SUPPLIED BY MANUFACTURER WITH MULTIPLE SECONDARY OUTPUT WINDINGS.
   11. FINAL FUSE SIZES TBD BY MANUFACTURER.
- FEEDER 2 TURNKEY STATION (TS) PV STRINGING TURNKEYPV SERIESINPUTPARALLELPV MODULESSTATION (TS)MODULESNUMBERSTRINGSPER TS MODULES 9 26 20 SEE TABLE 2 8,242 10 20 SEE TABLE 2 7,696 26 11 26 20 SEE TABLE 2 7,930 12 26 20 |SEE TABLE 2 | 7,722 13 26 20 SEE TABLE 2 7,566 14 26 20 SEE TABLE 2 8,684 20 SEE TABLE 2 8,814 15 26 20 SEE TABLE 2 16 26 7,540 TOTAL PV MODULES FOR TS ON FEEDER 2 64,194

	TABLE 2									
		STRINGS PER INPUT								
INPUT	TS9	TS10	TS11	TS12	TS13	TS14	TS15	TS16		
1	16	15	16	16	20	18	18	18		
2	16	18	18	16	20	18	18	20		
3	16	18	16	16	20	18	18	20		
4	16	18	16	16	18	18	18	18		
5	18	15	16	16	18	18	16	18		
6	18	15	16	17	18	18	16	18		
7	18	16	16	17	18	18	18	18		
8	17	16	18	15	18	16	18	18		
9	15	16	19	15	18	16	15	18		
10	15	16	19	15	18	16	18	18		
11	15	15	19	16	18	16	17	20		
12	18	16	20	12	18	18	17	16		
13	19	18	16	20	18	18	18	16		
14	19	16	16	20	18	18	18	18		
15	19	16	16	19	18	18	12	18		
16	15	16	16	13	15	18	12	18		
17	15	18	16	14	0	18	18	0		
18	16	18	16	12	0	18	18	0		
19	16	0	0	12	0	18	18	0		
20	0	0	0	0	0	0	18	0		



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2180 South 1300 East, Suite 600 Salt Lake City, UT 84106-2749 (801) 679 - 3500	
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Augusta, ME 04330	
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Gary L Dotter Signed	
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BROOKSIDE SOLAR	
PROJECT	
PROJECT LOCATION:	
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SHEET TITLE & DESCRIPTION:	
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THREE-LINE DIAGRAM	
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PROJ NUM: 422208	
DES: A. QUIROZ	
DWN: A. QUIROZ	┨
CHK: B. TYLOCK	$\neg$
APV: G. BEANE	$\neg$
DATE: 04/02/2021	
SCALE AT 22" v 21".	_
SCALE AT 22" x 34":	
SCALE AT 22" x 34":	
SCALE AT 22" x 34": <b>NONE</b>	
NONE	_



AES Titleblock

P	V SYSTEM SPECIFICATIONS (FEEDER 3)	PV	SYSTEM SPECIFICATIONS TOTAL SYSTEM
PV MODULES	68,796 X JINKO SOLAR JKM530M-72HL4-TV 530W		245,310 X JINKO SOLAR JKM530M-72HL4-TV 530W
DC RATING AT STC	36,461.88 KW	DC RATING AT STC	130,014.30 KW
INVERTERS	(8) X SUNGROW SG3600U	INVERTERS	(30) X SUNGROW SG3600U
AC RATING NOTE 7	26,666.67 KW	AC RATING NOTE 7	100,000.00 KW
DC/AC RATIO @ POI	1.367	DC/AC RATIO @ POI	1.300
DC/AC RATIO @ INVERTER	1.266	DC/AC RATIO @ INVERTER	1.204



SEE ONE-LINE DIAGRAM HV-E.02.01

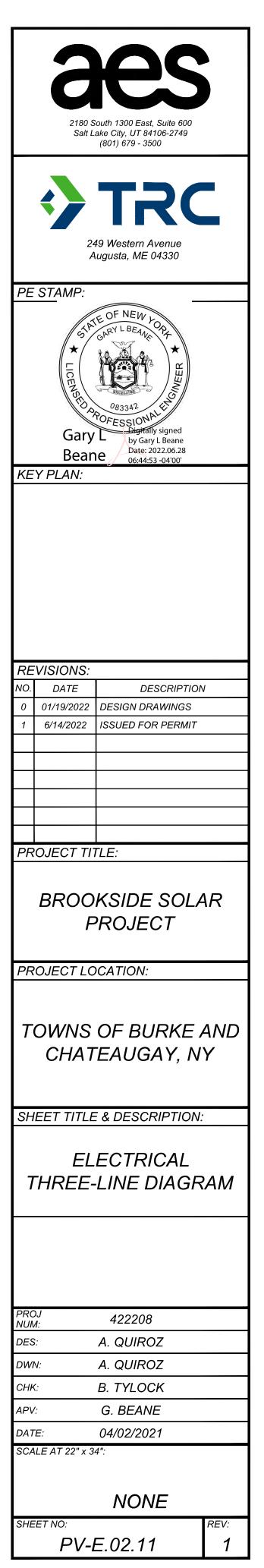
### NOTES:

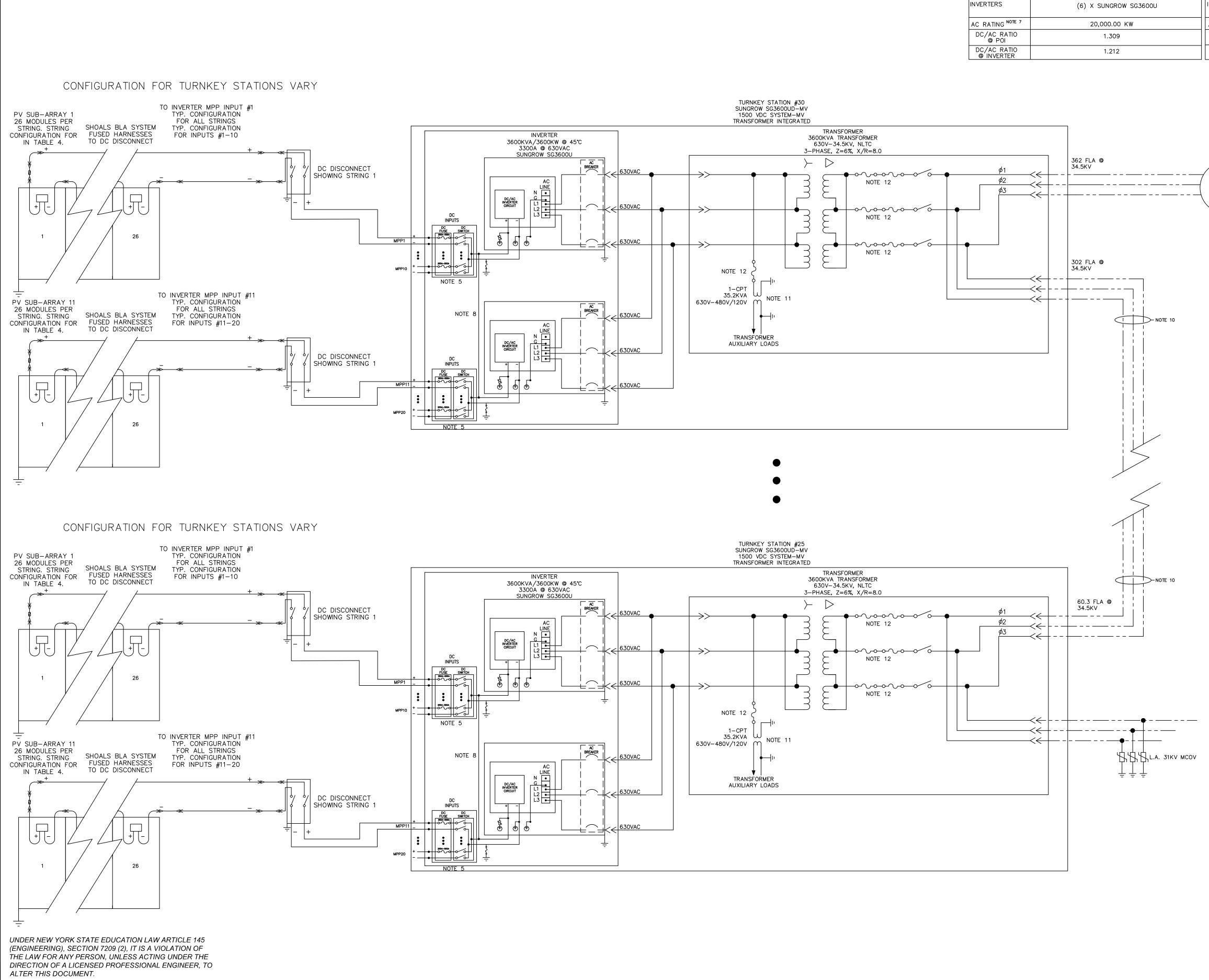
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  7. AC RATING MEASURED AT THE POI IS LIMITED TO 100MW BY THE PLANT CONTROLLER.
- 8. THE TWO DC BUS BARS ARE CONNECTED TOGETHER
- WHEN 1 MPPT IS SELECTED. ONE MPPT IS STANDARD.
- 9. JUNCTION BOX #1 LOCATED PRIOR TO COLLECTOR SUBSTATION TO COMBINE TS17-21 AND TS22-24. SEE DWG. PV-E.02.13 FOR FEEDER BREAKDOWN.
  10. CABLE SIZING AND COLLECTION LENGTHS CAN BE FOUND IN DWG
- PV-E.02.13. FEEDER 3 CABLE SIZES RANGE FROM 1/0 TO 1250.
  11. OPTIONAL AUX TRANSFORMER SUPPLIED BY MANUFACTURER WITH MULTIPLE SECONDARY OUTPUT WINDINGS.
  12. FINAL FUSE SIZES TBD BY MANUFACTURER.

FE	EEDER 3 TURNH	KEY STATIO	N (TS) PV STR	INGING
TURNKEY STATION (TS)	PV SERIES MODULES	INPUT NUMBER	PARALLEL STRINGS	PV MODULES PER TS
17	26	20	SEE TABLE 3	8,086
18	26	20	SEE TABLE 3	8,034
19	26	20	SEE TABLE 3	8,762
20	26	20	SEE TABLE 3	9,074
21	26	20	SEE TABLE 3	8,398
22	26	20	SEE TABLE 3	8,476
23	26	20	SEE TABLE 3	9,698
24	26	20	SEE TABLE 3	8,268
			PV MODULES ON FEEDER 3	68,796

				TABL	_E 3			
		S	STRIN	IGS F	PER	INPU	Т	
INPUT	TS17	TS18	TS19	TS20	TS21	TS22	TS23	TS24
1	17	20	18	14	16	18	19	12
2	18	20	16	16	16	16	19	18
3	18	18	15	16	16	16	19	18
4	18	18	15	16	16	16	19	17
5	19	18	15	15	16	16	19	17
6	19	18	18	17	16	16	19	18
7	18	18	18	16	18	16	16	18
8	18	17	20	16	18	16	15	17
9	19	18	20	16	18	16	19	15
10	19	18	18	19	18	16	19	15
11	19	18	20	20	18	16	19	14
12	19	18	18	18	18	16	19	15
13	18	18	18	18	18	14	19	15
14	18	18	18	20	18	16	19	17
15	18	18	18	20	18	16	19	17
16	18	18	18	20	18	17	19	17
17	18	18	18	18	16	17	19	17
18	0	0	18	18	16	18	19	14
19	0	0	18	18	15	18	19	14
20	0	0	0	18	0	16	19	13







AES Title

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		]		
P'	V SYSTEM SPECIFICATIONS (FEEDER 4)	PV SYSTEM SPECIFICATIONS TOTAL SYSTEM		
PV MODULES	49,400 X JINKO SOLAR JKM530M-72HL4-TV 530W	PV MODULES	245,310 X JINKO SOLAR JKM530M-72HL4-TV 530W	
DC RATING AT STC	26,182.00 KW	DC RATING AT STC	130,014.30 KW	
INVERTERS	(6) X SUNGROW SG3600U	INVERTERS	(30) X SUNGROW SG3600U	
AC RATING NOTE 7	20,000.00 KW	AC RATING NOTE 7	100,000.00 KW	
DC/AC RATIO @ POI	1.309	DC/AC RATIO @ POI	1.300	
DC/AC RATIO @ INVERTER	1.212	DC/AC RATIO INVERTER	1.204	



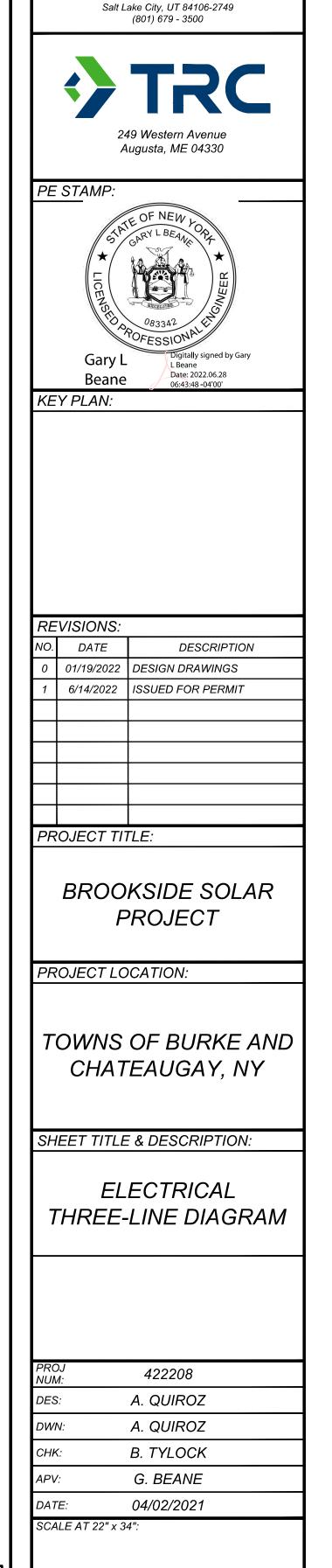
SEE ONE-LINE DIAGRAM HV-E.02.01

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  7. AC RATING MEASURED AT THE POI IS LIMITED TO 100MW BY THE
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- WHEN 1 MPPT IS SELECTED. ONE MPPT IS STANDARD. 9. JUNCTION BOX #2 LOCATED PRIOR TO COLLECTOR SUBSTATION TO
- COMBINE TS25-27 AND TS28-30. SEE DWG. PV-E.02.13 FOR FEEDER BREAKDOWN. 10. CABLE SIZING AND COLLECTION LENGTHS CAN BE FOUND IN DWG DV-E.02.13 FEEDER 4 CAPLE SIZES BANCE FROM 1 (0 TO 1250)
- PV-E.02.13. FEEDER 4 CABLE SIZES RANGE FROM 1/0 TO 1250.
  11. OPTIONAL AUX TRANSFORMER SUPPLIED BY MANUFACTURER WITH MULTIPLE SECONDARY OUTPUT WINDINGS.
  12. FINAL FUSE SIZES TBD BY MANUFACTURER.

FEEDER 4 TURNKEY STATION (TS) PV STRINGING				
TURNKEY STATION (TS)	PV SERIES MODULES	INPUT NUMBER	PARALLEL STRINGS	PV MODULES PER TS
25	26	19	SEE TABLE 4	8,164
26	26	20	SEE TABLE 4	8,268
27	26	18	SEE TABLE 4	9,282
28	26	19	SEE TABLE 4	7,228
29	26	20	SEE TABLE 4	7,124
30	26	20	SEE TABLE 4	9,334
TOTAL PV MODULES FOR TS ON FEEDER 4 49,400				

			TABL	.E 4		
	S	STRIN	IGS F	PER 🛛	INPU'	Г
INPUT	TS25	TS26	TS27	TS28	TS29	TS30
1	15	16	18	16	16	18
2	15	16	18	16	16	18
3	16	16	18	16	13	18
4	16	16	19	16	13	18
5	15	16	19	16	13	18
6	15	16	19	16	13	18
7	15	16	19	16	13	18
8	15	16	19	16	13	18
9	15	16	19	16	13	18
10	15	16	19	16	13	18
11	15	18	19	16	13	18
12	16	18	15	16	13	18
13	16	14	15	16	13	18
14	16	18	16	16	13	18
15	16	13	15	18	13	18
16	16	13	18	18	13	18
17	16	16	18	18	15	18
18	17	16	18	0	15	18
19	17	16	18	0	15	18
20	17	16	18	0	15	18



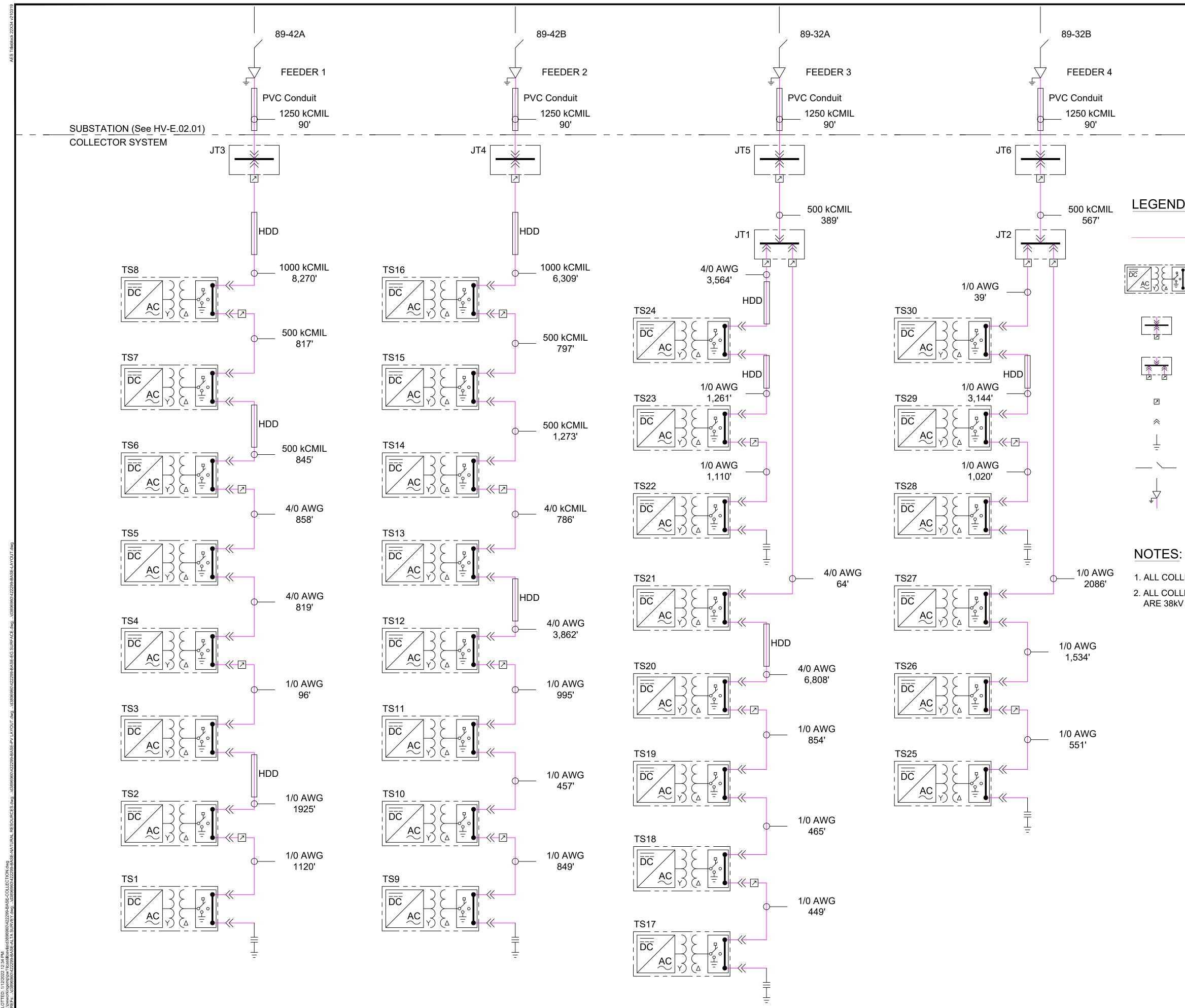
NONE

*PV-E.02.12* 

SHEET NO

2180 South 1300 East, Suite 600





|--|

	34.5kV UNDERGROUND CABLE
	TURNKEY STATION SUNGROW SG3600UD-MV 1500 VDC SYSTEM-MV TRANSFORMER INTEGRATED
_	34.5kV ABOVE GROUND 2-WAY JUNCTION BOX
× Ø	34.5kV ABOVE GROUND 3-WAY JUNCTION BOX
	FAULT INDICATOR
	DEAD BREAK CONNECTION
	GROUND
	DISCONNECT SWITCH

MV	TERM. TO SOLID
DI-I	ELECTRIC UG CABLE

1. ALL COLLECTION CIRCUITS OPERATED AT 34.5kV 2. ALL COLLECTION SYSTEM FEEDER BREAKERS ARE 38kV EMA GROUNDING TYPE

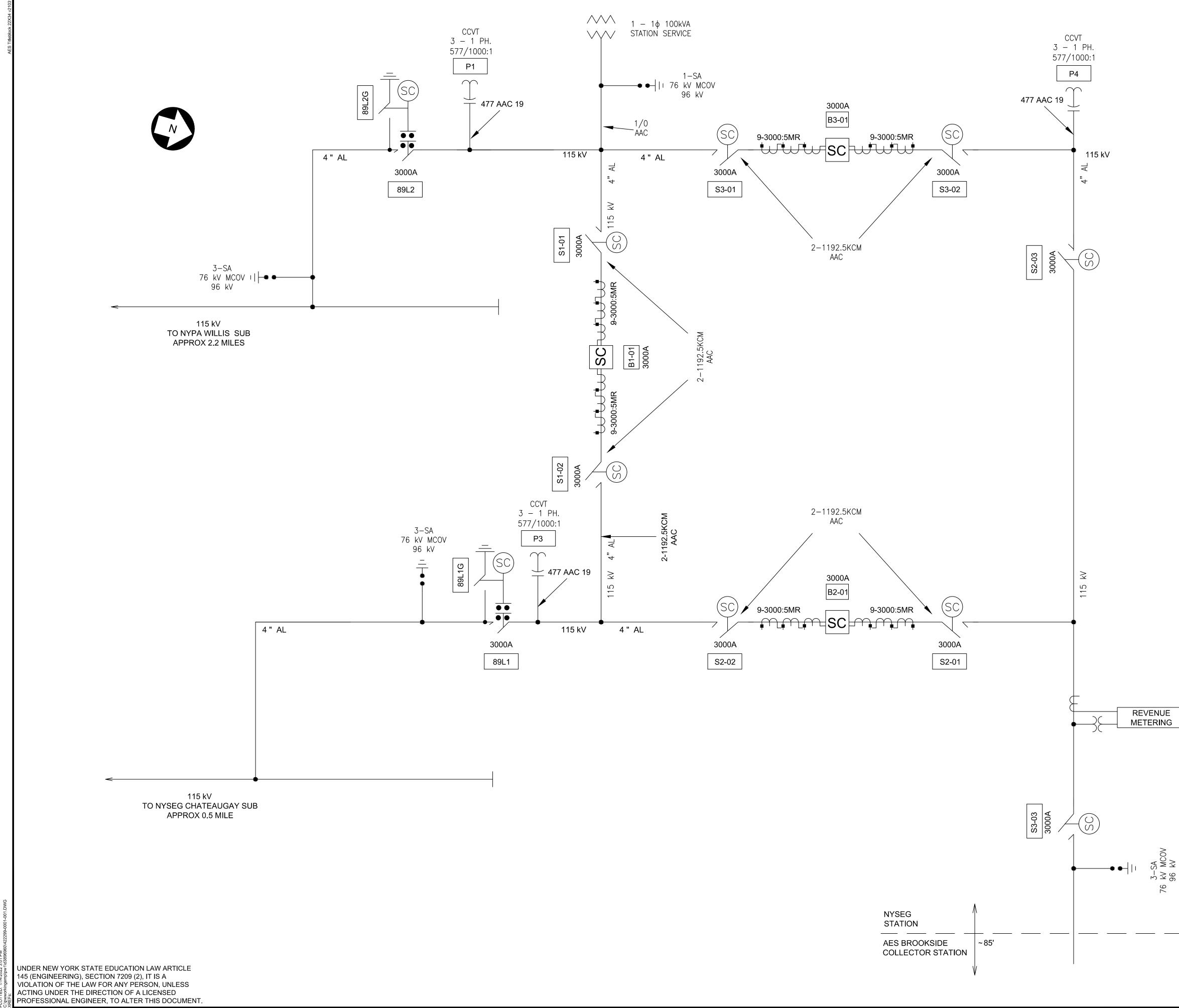
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		RGY FACILITY	
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T		RGY FACILITY	1D
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NOT FOR CONSTRUCTION

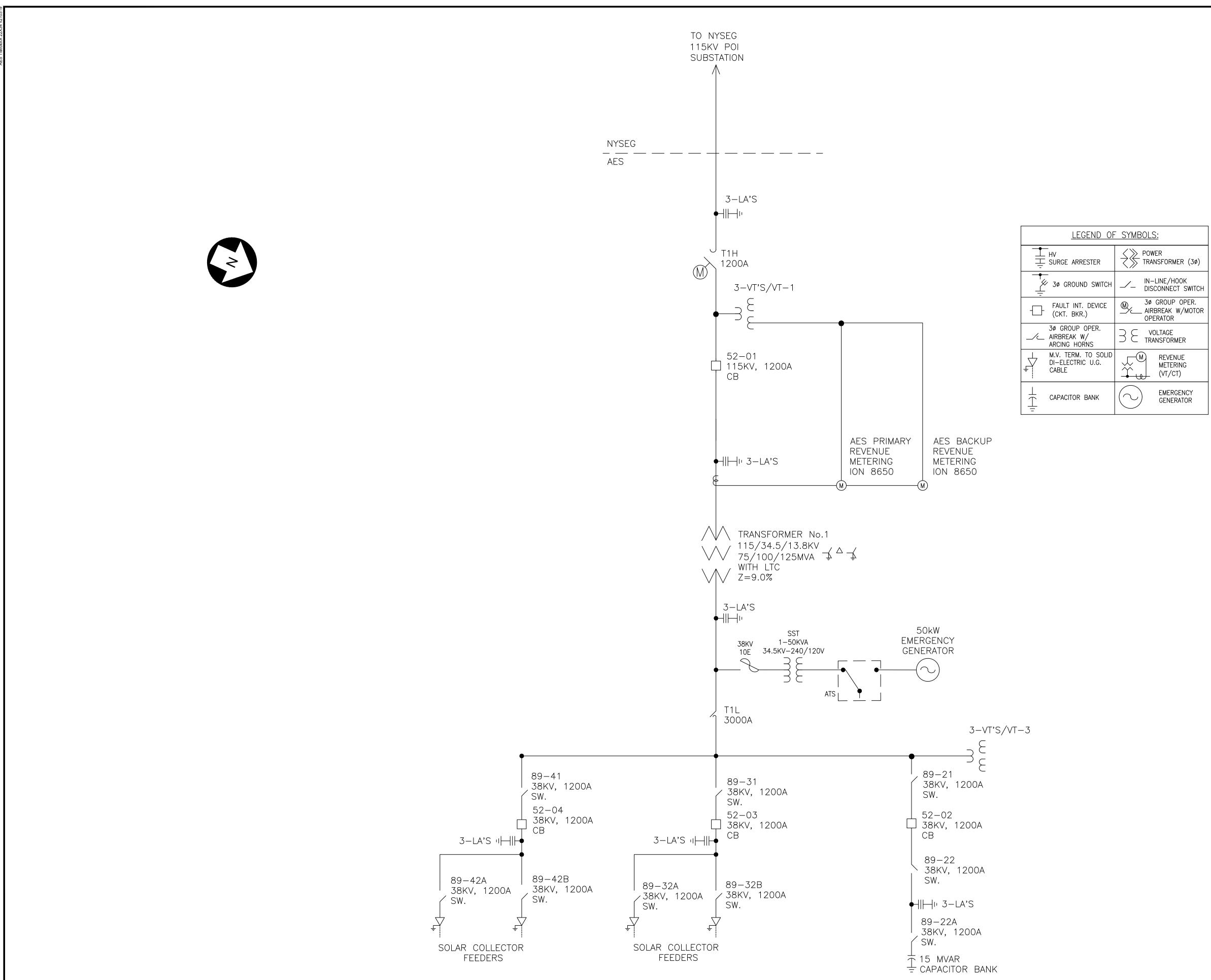


	<b>2180</b> South 1300 East, Suite 600 Salt Lake City, UT 84106-2749 (801) 679 - 3500
	249 Western Avenue Augusta, ME 04330
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	KEY PLAN:
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	PROJECT TITLE:
	BROOKSIDE SOLAR
	POI SUBSTATION 115KV
	PROJECT LOCATION:
	TOWNS OF BURKE AND CHATEAUGAY, NY
	SHEET TITLE & DESCRIPTION:
	POI
	SUBSTATION
	SWITCHING ONE-LINE DIAGRAM
	NUM: 422299
	DES: D. FARRELL
	DWN: D. FARRELL
	CHK: C. PASCALE
	APV: C. PASCALE
	DATE: 04/02/2021 SCALE AT 22" x 34":
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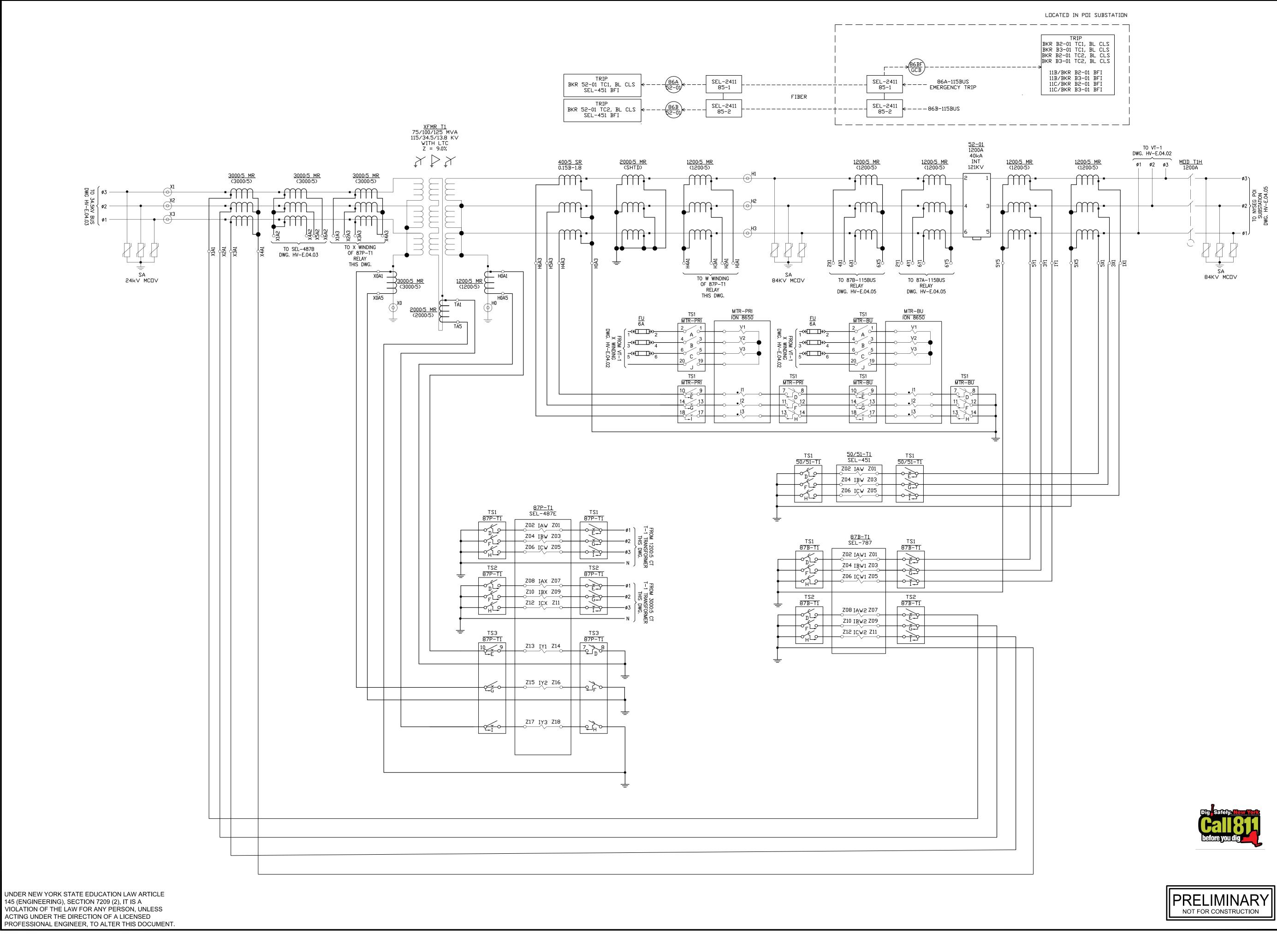
UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

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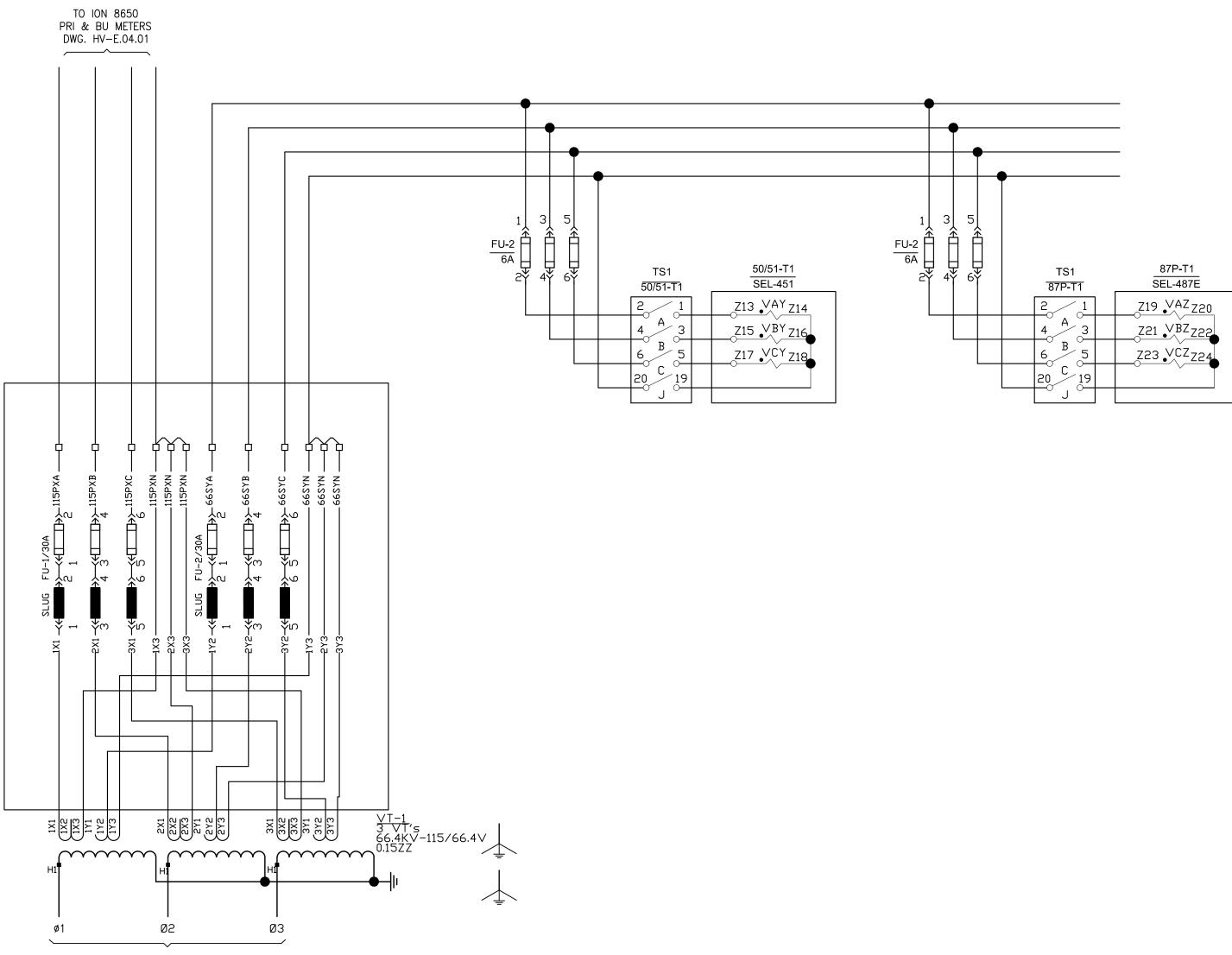
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PROJECT LOCATION:		
TOWNS OF BURKE AND CHATEAUGAY, NY		
SHEET TITLE & DESCRIPTION:		
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SWITCHING ONE-LINE DIAGRAM		
PROJ NUM: 422299 DES: D. FARRELL		
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CHK: C. PASCALE		
APV: C. PASCALE DATE: 04/02/2021		
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145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED

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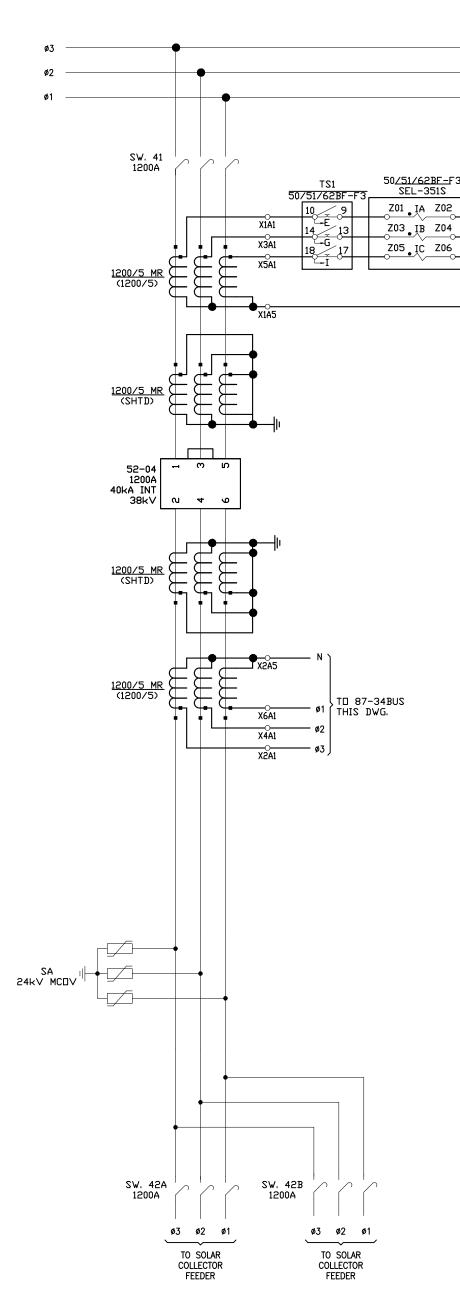
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UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

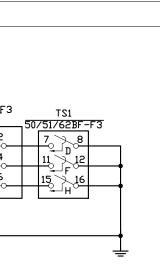
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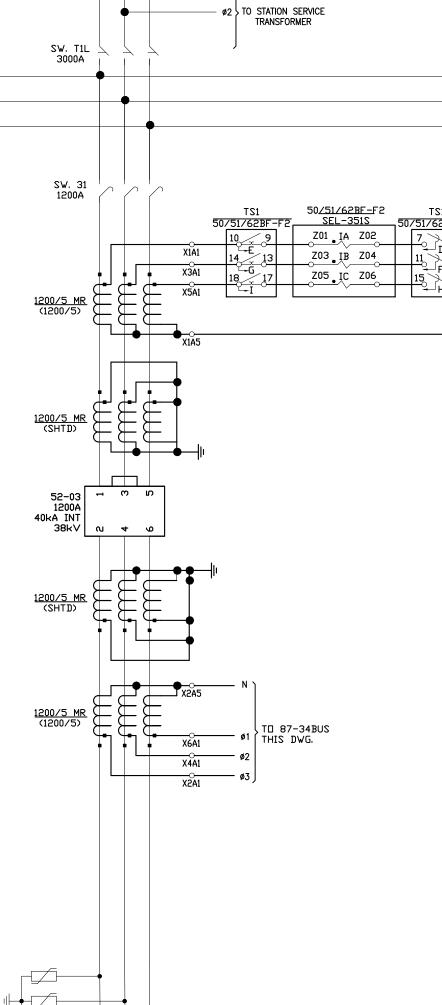






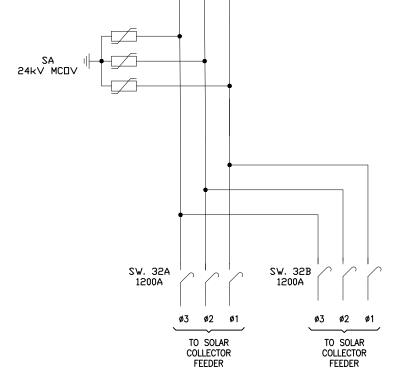
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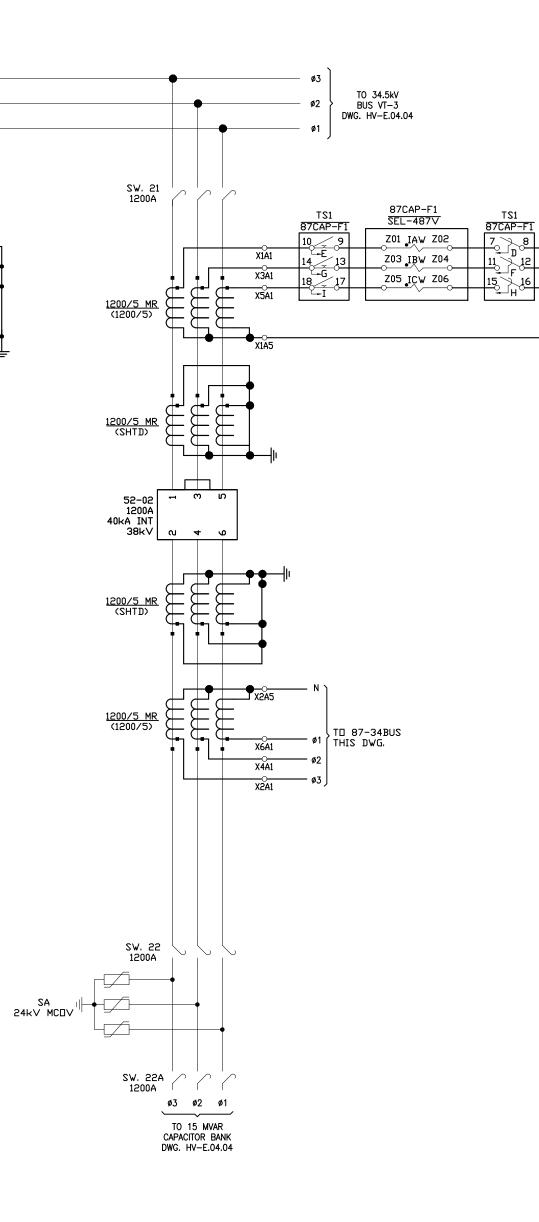




TO 115/34.5kV TRANSFORMER T1 DWG. HV-E.04.01

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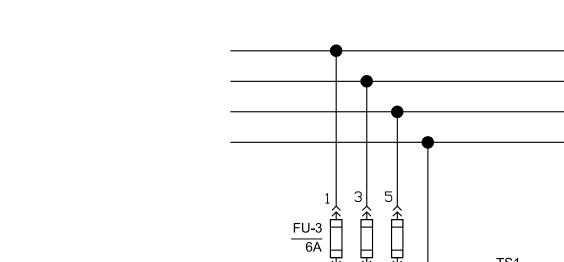


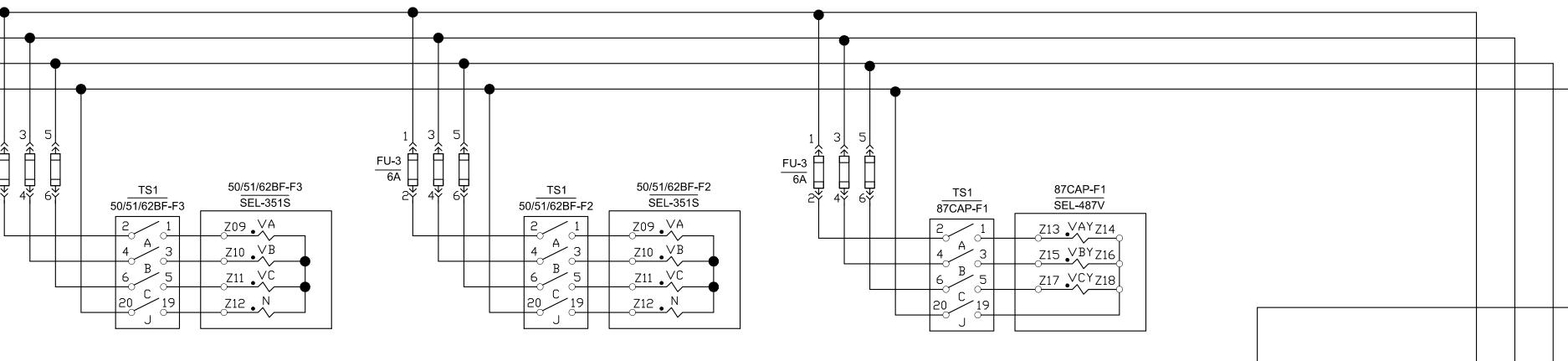


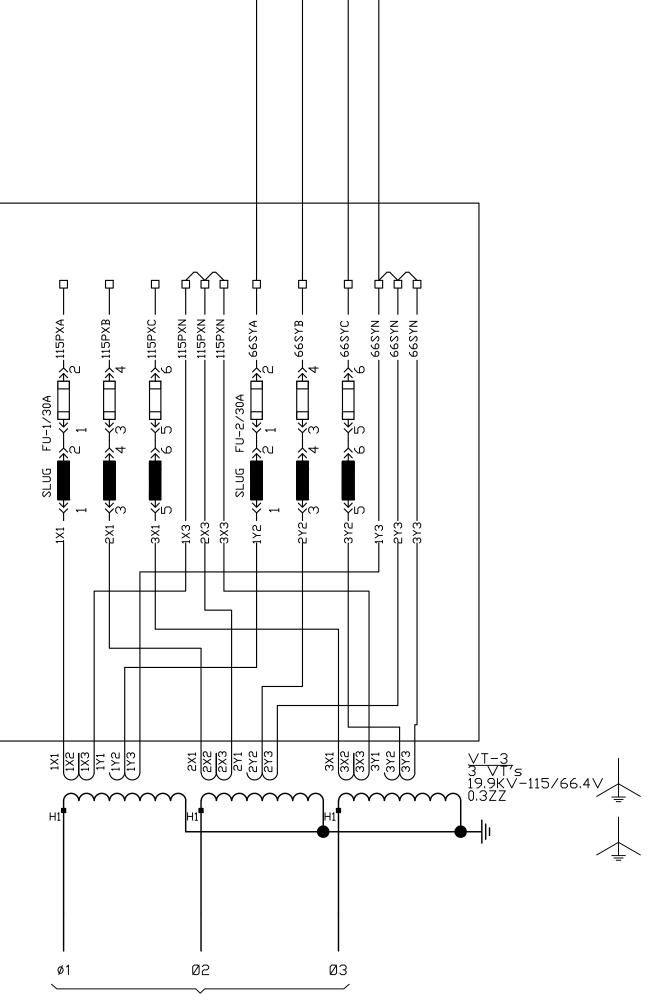
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	<b>2180</b> South 1300 East, Suite 600 Salt Lake City, UT 84106-2749 (801) 679 - 3500
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	SHEET TITLE & DESCRIPTION: COLLECTION SUBSTATION
	THREE-LINE DIAGRAM
	DES: D. FARRELL DWN: D. FARRELL CHK: C. PASCALE APV: C. PASCALE DATE: 05/21/2021
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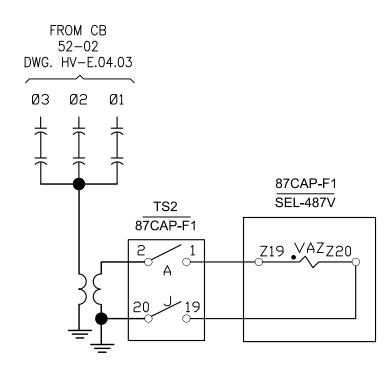




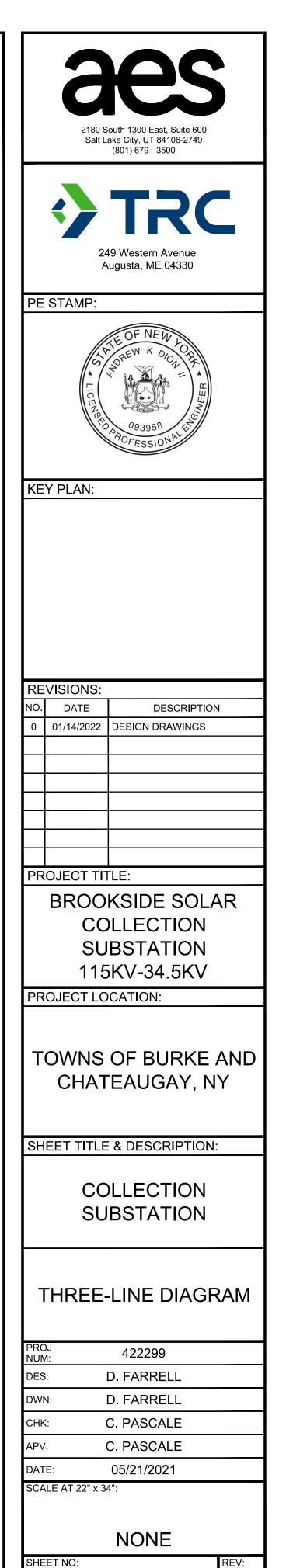




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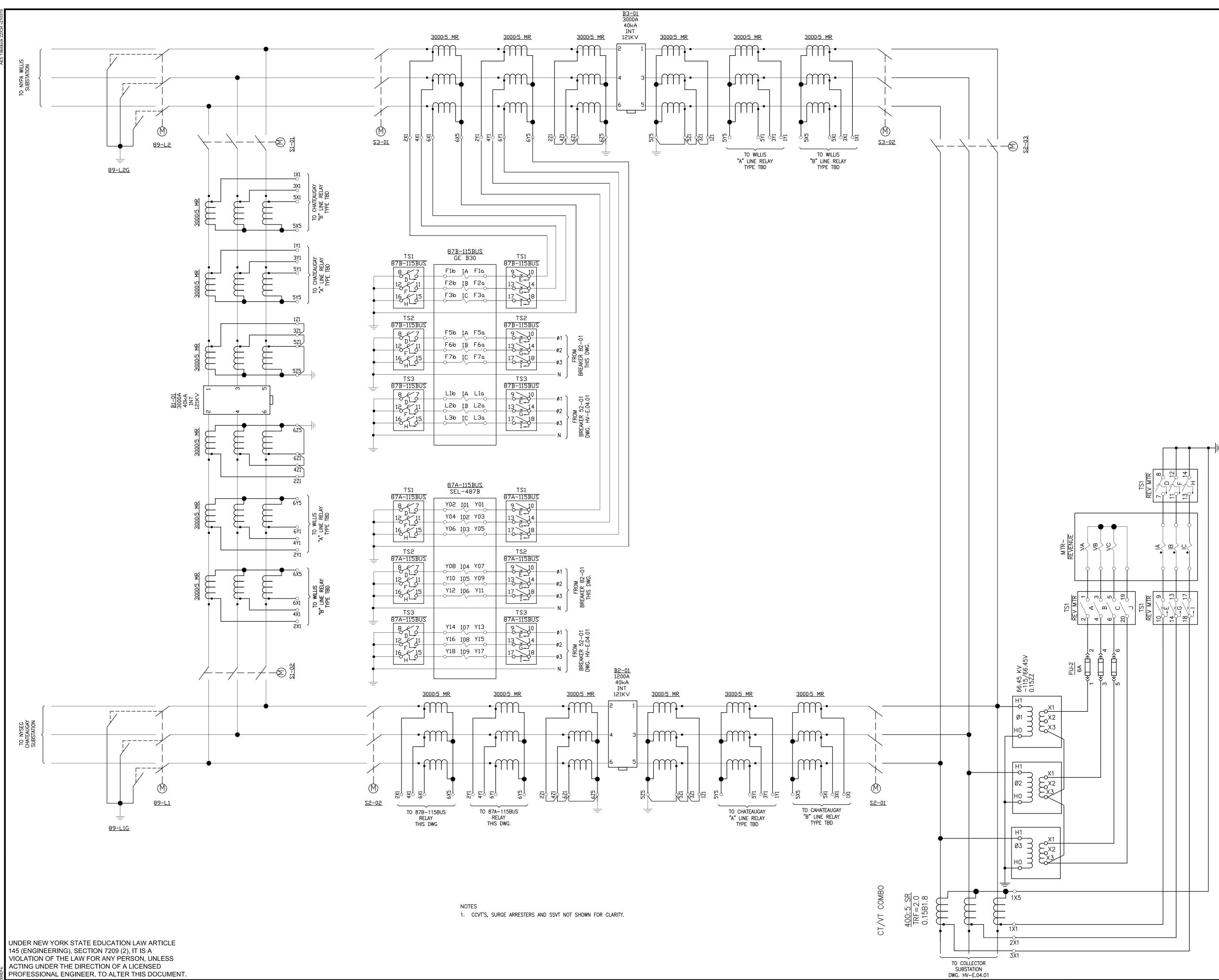






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	249 Western Avenue Augusta, ME 04330
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