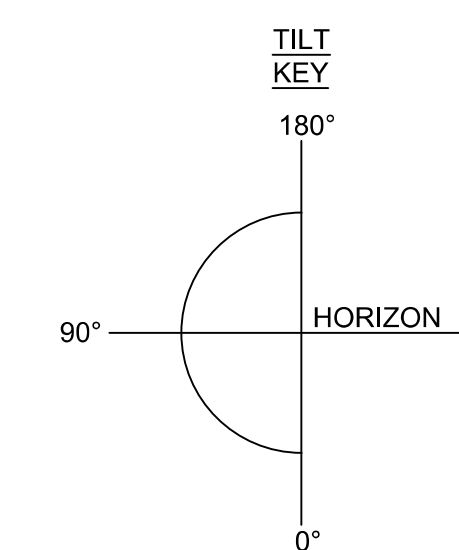
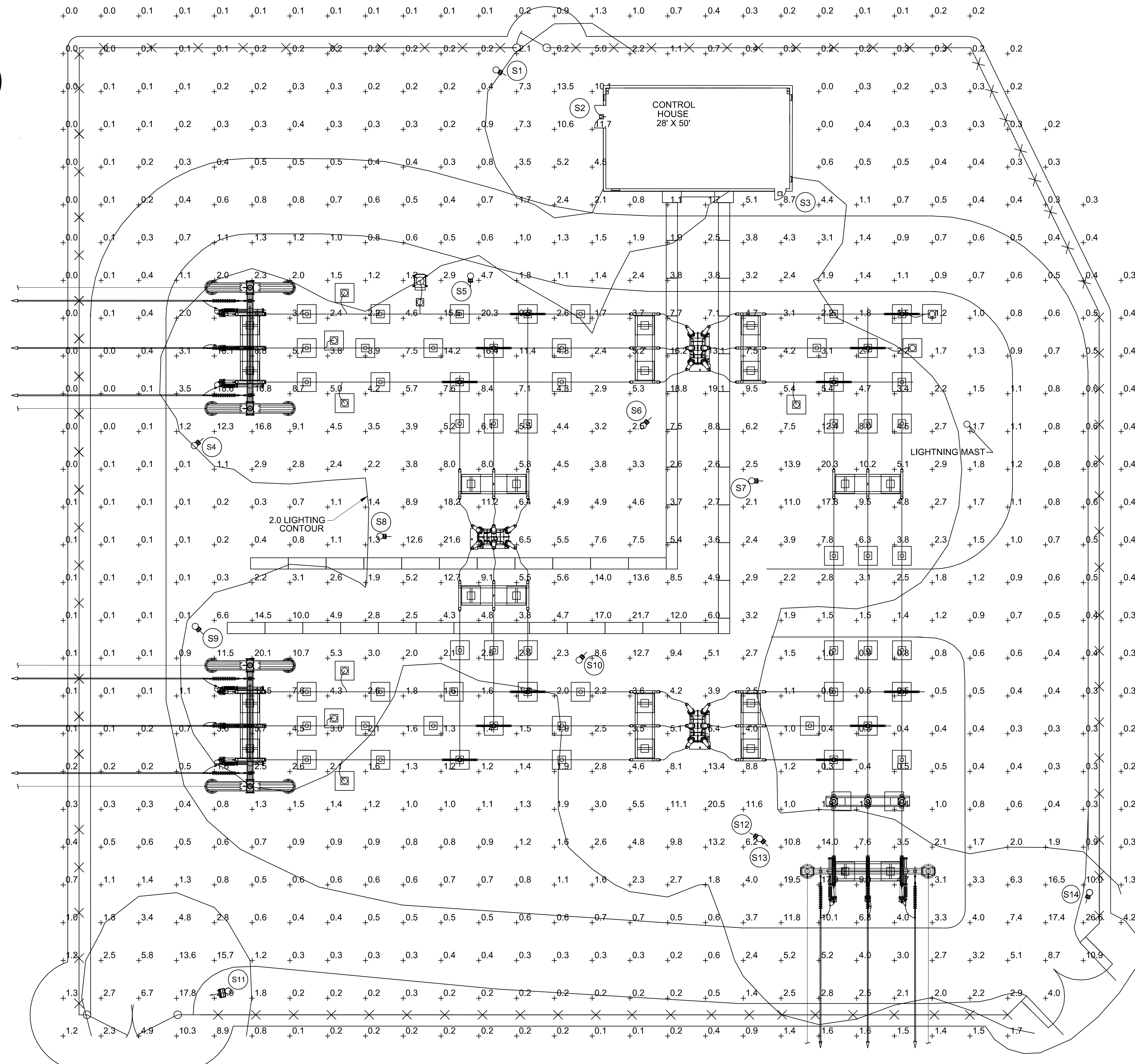
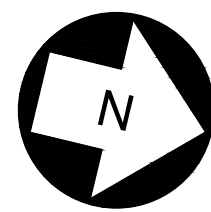


AES T:\Projects\22024\2101010



FIXTURE SCHEDULE				
LIGHT NO.	TYPE	TILT ANGLE	WATTAGE	VOLTAGE
S1	A3	75°	150W	120VAC
S2	A1	75°	25W	120VAC
S3	A1	75°	25W	120VAC
S4	A5	75°	297W	120VAC
S5	A5	75°	297W	120VAC
S6	A5	75°	297W	120VAC
S7	A5	75°	297W	120VAC
S8	A5	75°	297W	120VAC
S9	A5	75°	297W	120VAC
S10	A5	75°	297W	120VAC
S11	A3	45°	150W	120VAC
S12	A5	75°	297W	120VAC
S13	A5	75°	297W	120VAC
S14	A3	45°	150W	120VAC

- NOTES:
- STATION LIGHTING IS COMPRISED OF (2) 25W, (3) 150W, AND (9) 297 W, 120V AC LED FLOODLIGHTS.
 - LIGHT FIXTURES TO BE MOUNTED ON INDICATED STRUCTURES 15' ABOVE FINISHED GRADE. THE FIXTURES SHALL BE AIMED AS SHOWN ON THE DRAWING AND HAVE A TILT ANGLE BASED ON THE FIXTURE SCHEDULE.
 - YARD CONTOURS ARE 2.0 FT CANDLES (F.C.) FOR THIS STATION. 2 FT CANDLES IS THE EQUIVALENT OF 22 LUMENS PER SQUARE METER.
 - FLOODLIGHTS INSTALLED WITH TOP AND SIDE VISORS ACHIEVE FULL CUTOFF REQUIREMENT (0 F.C.) ABOVE FIXTURE.

FIXTURE						LAMP		PHOTO-ELECTRIC CONTROL	
TYPE	WATTAGE	LIGHT SOURCE	VOLTAGE	WEIGHT (LBS)	LUMENS	NEMA CLASS	MANUFACTURER (GE) ITEM #	MANUFACTURER ITEM #	
A1	25W	LED	120V	9.5	2,900	N/A	GE EVOLVE EWAS011A3730N	N/A	
A3	150W	LED	120V	26	18,800	7X6	GE EVOLVE EFH101AA76740 W/ TOP & SIDE VISOR TSDKBZ-EFH	N/A	
A5	297W	LED	120V	26	37,800	7X6	GE EVOLVE EFH101EE76740 W/ TOP & SIDE VISOR TSDKBZ-EFH	N/A	

AVERAGE = 3.0 F.C.
 MAX = 26.6 F.C.
 MIN = 0.0 F.C.

PRELIMINARY

NOT FOR CONSTRUCTION



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.



2180 South 1300 East, Suite 600
 Salt Lake City, UT 84108-2749
 (801) 679-3500



249 Western Avenue
 Augusta, ME 04330

PE STAMP:



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS
1	06/27/2022	ISSUED FOR PERMIT

PROJECT TITLE:

**BROOKSIDE SOLAR
 POI
 SUBSTATION
 115KV**

PROJECT LOCATION:

**TOWNS OF BURKE AND
 CHATEAUGAY, NY**

SHEET TITLE & DESCRIPTION:

**GENERAL
 ARRANGEMENT**

LIGHTING PLAN

PROJ NUM: 422299

DES: D. FARRELL

DWN: D. FARRELL

CHK: C. PASCALE

APV: C. PASCALE

DATE: 05/20/2021

SCALE AT 22" x 34":



1/16" = 1'-0"

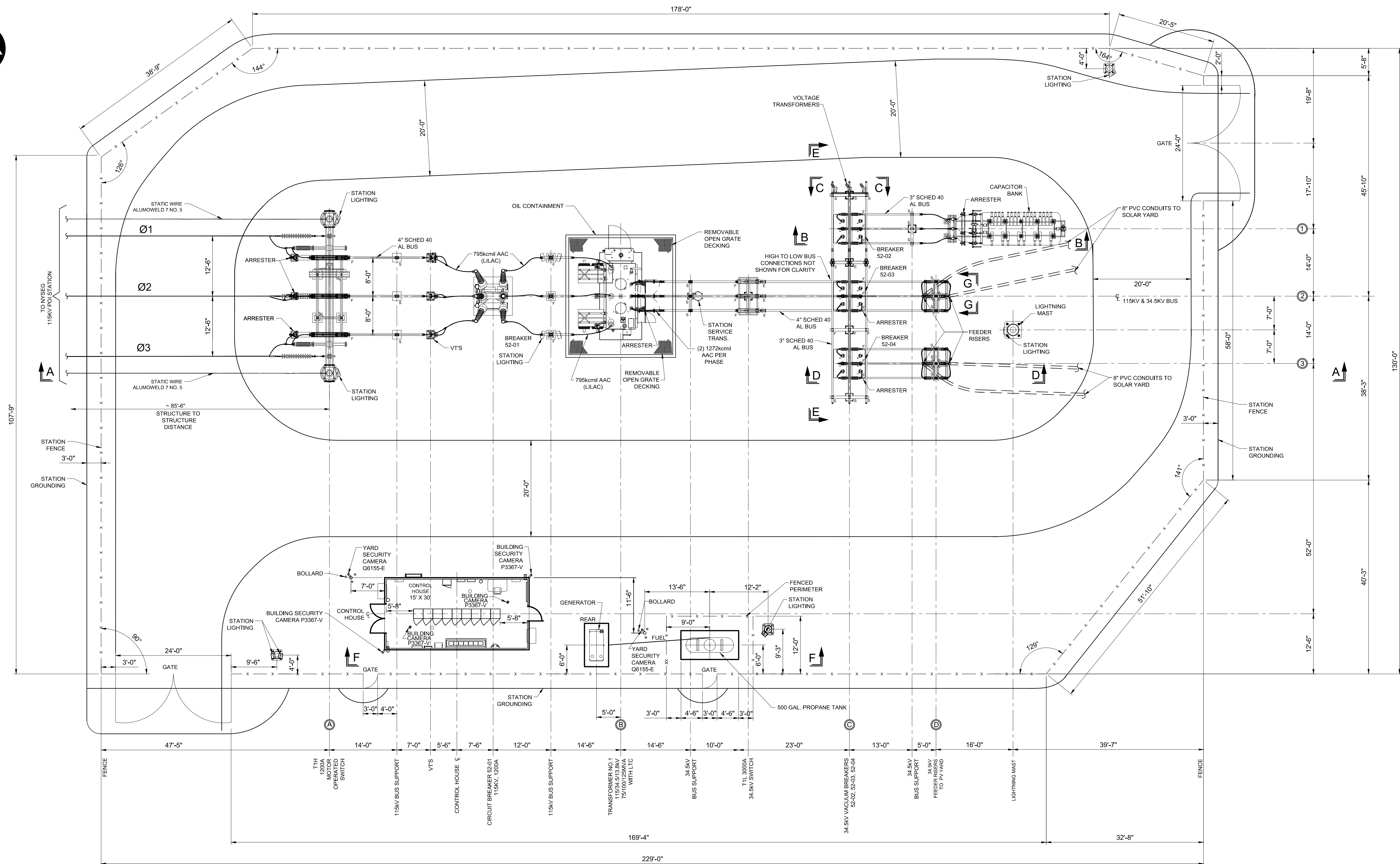
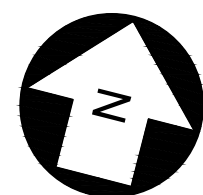
SHEET NO:

422299-006-001

REV:

1

AES Titleblock 2/23/24 12:01:03



aes

2180 South 1300 East, Suite 600
Salt Lake City, UT 84108-2749
(801) 679-3500



249 Western Avenue
Augusta, ME 04330

PE STAMP:



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS
1	06/27/2022	ISSUED FOR PERMIT

PROJECT TITLE:

**BROOKSIDE SOLAR
COLLECTION
SUBSTATION
115KV-34.5KV**

PROJECT LOCATION:

**TOWNS OF BURKE AND
CHATEAUGAY, NY**

SHEET TITLE & DESCRIPTION:

**GENERAL
ARRANGEMENT**

**OVERALL ELECTRICAL
PLAN**

PROJ NUM: 422299

DES: D. FARRELL

DWN: D. FARRELL

CHK: C. PASCALE

APV: C. PASCALE

DATE: 04/02/21

SCALE AT 22" x 34":



3/32" = 1'-0"

SHEET NO:

HV-P.01.01

REV:

1



PRELIMINARY
NOT FOR CONSTRUCTION

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.

PLOTTED: 6/27/2022 1:28 PM
C:\Users\jpascale\OneDrive\Documents\HV-P.01.DWG

PE STAMP:



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS
1	06/27/2022	ISSUED FOR PERMIT

PROJECT TITLE:

**BROOKSIDE SOLAR
COLLECTION
SUBSTATION
115KV-34.5KV**

PROJECT LOCATION:

**TOWNS OF BURKE AND
CHATEAUGAY, NY**

SHEET TITLE & DESCRIPTION:

**ELECTRICAL
EQUIPMENT
ELEVATIONS**

SECTION A-A

PROJ NUM: 422299

DES: D. FARRELL

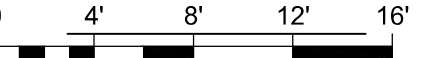
DWN: D. FARRELL

CHK: C. PASCALE

APV: C. PASCALE

DATE: 04/02/2021

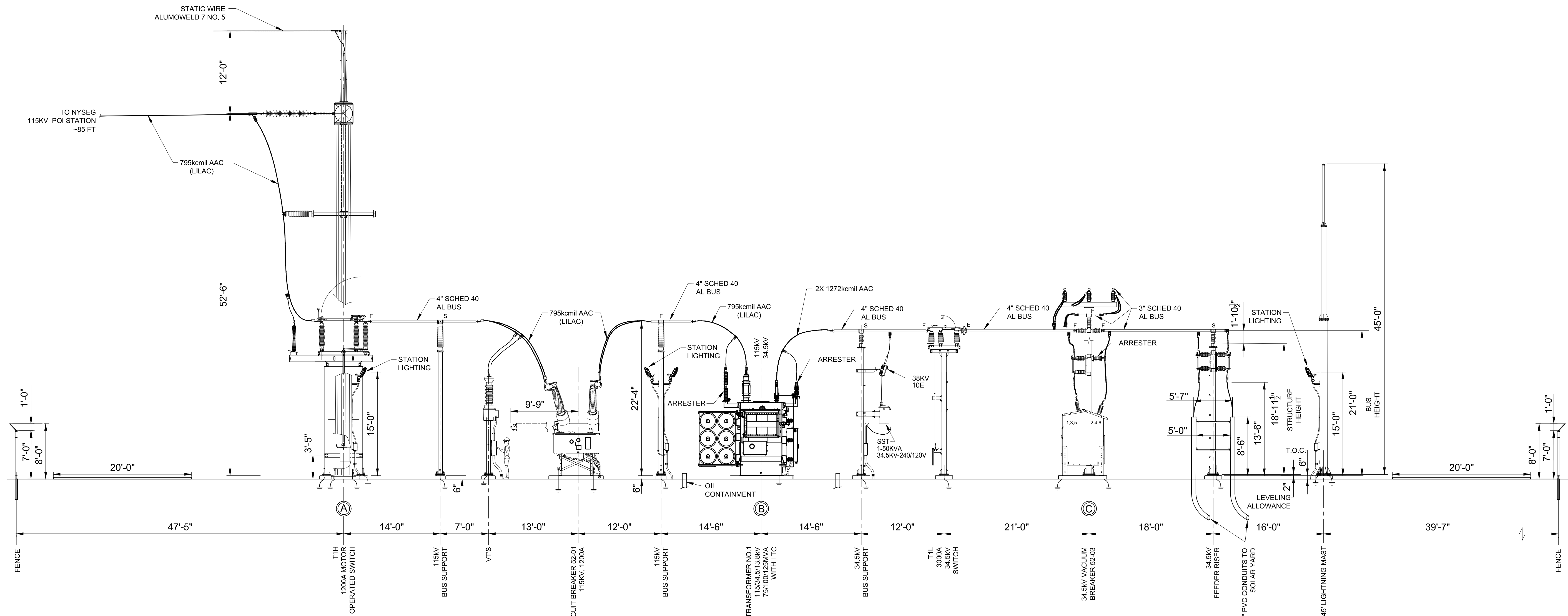
SCALE AT 22" x 34":



1/8" = 1'-0"

SHEET NO: HV-P.02.01

REV: 1



SECTION A-A



PRELIMINARY
NOT FOR CONSTRUCTION

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.

AES Titleblock 2/23/24 12:01:01

PE STAMP:



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS
1	06/27/2022	ISSUED FOR PERMIT

PROJECT TITLE:

**BROOKSIDE SOLAR
COLLECTION
SUBSTATION
115KV-34.5KV**

PROJECT LOCATION:

**TOWNS OF BURKE AND
CHATEAUGAY, NY**

SHEET TITLE & DESCRIPTION:

**ELECTRICAL
EQUIPMENT
ELEVATIONS**

**SECTIONS B-B, C-C
D-D, E-E, F-F, G-G, H-H,
J-J**

PROJ
NUM: 422299

DES: D. FARRELL

DWN: D. FARRELL

CHK: C. PASCALE

APV: C. PASCALE

DATE: 04/02/2021

SCALE AT 22" x 34":



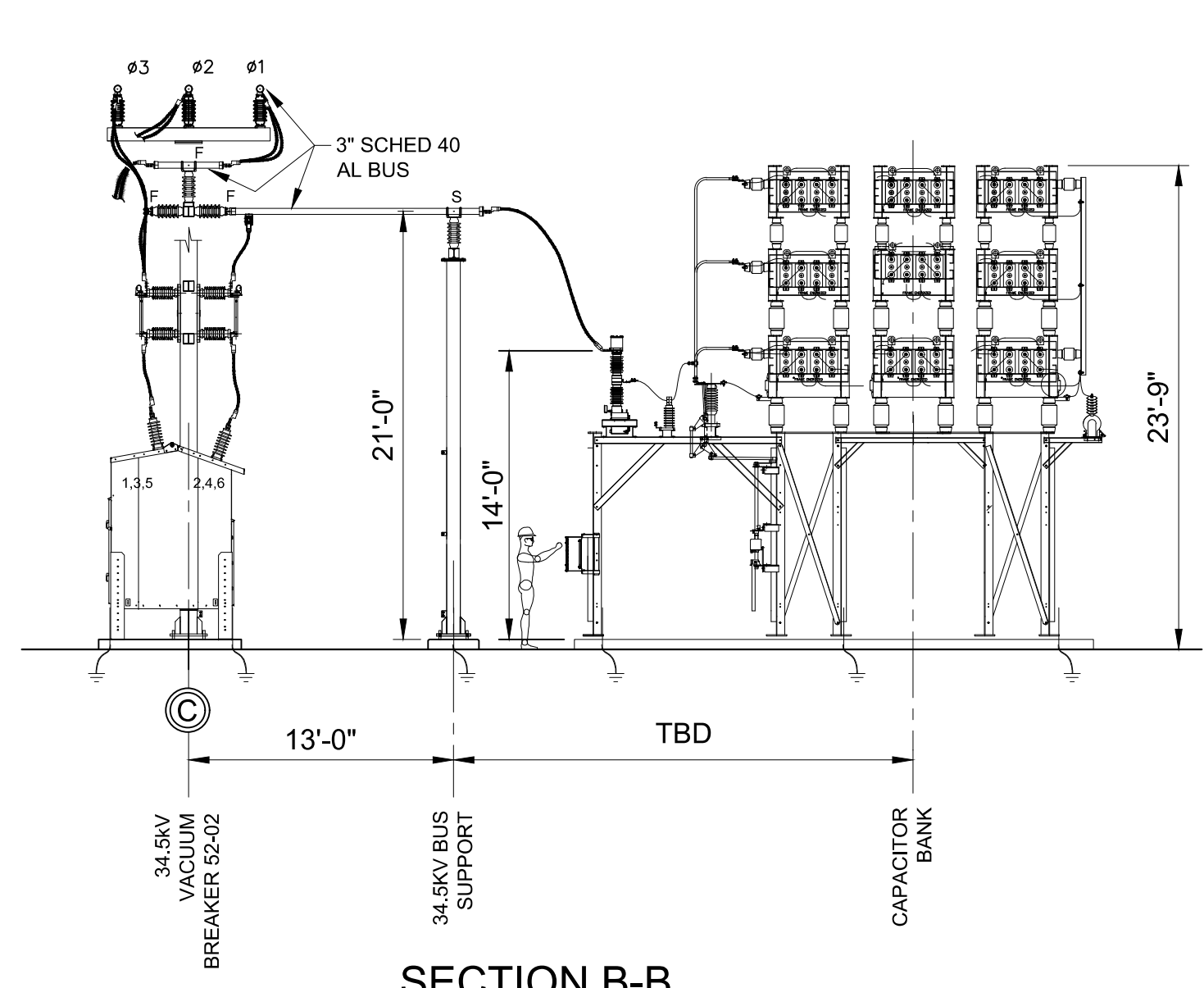
1/8" = 1'-0"

SHEET NO:

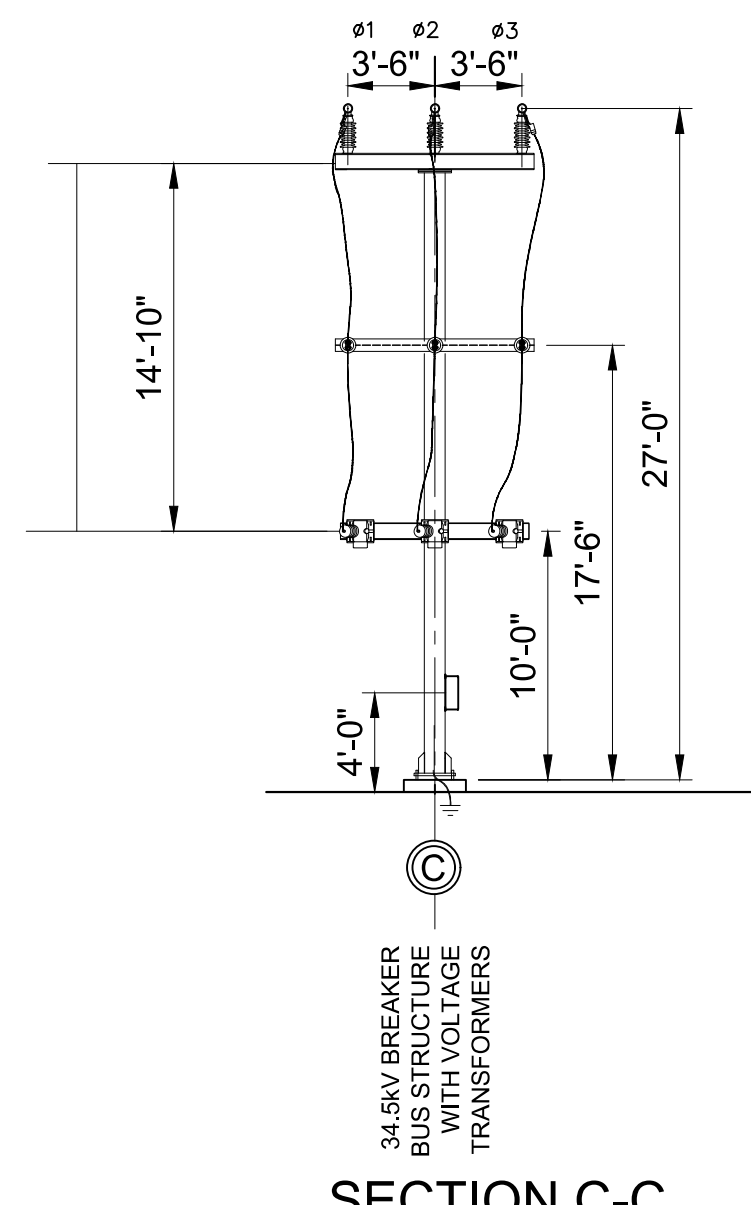
HV-P.02.02

REV:

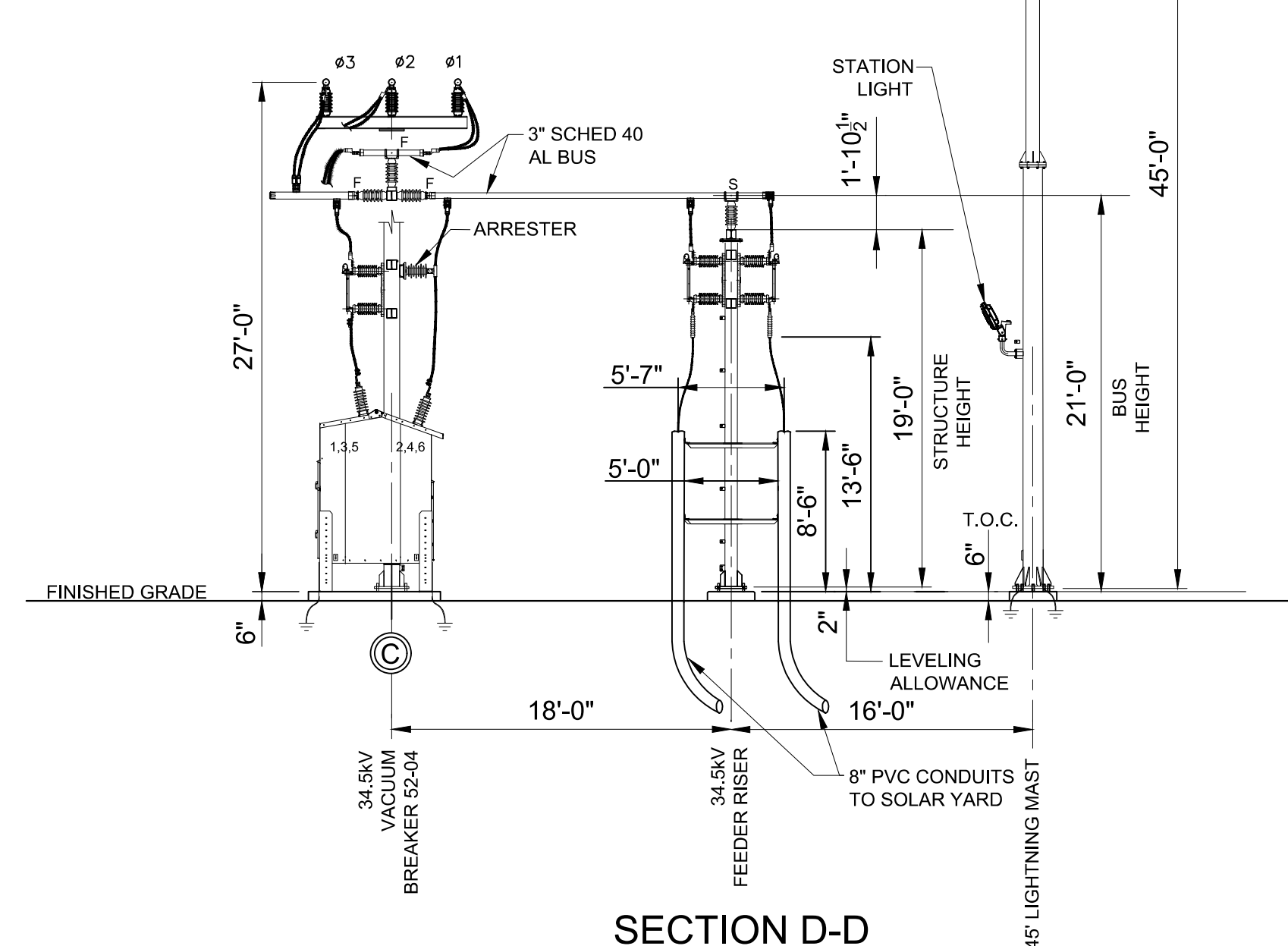
1



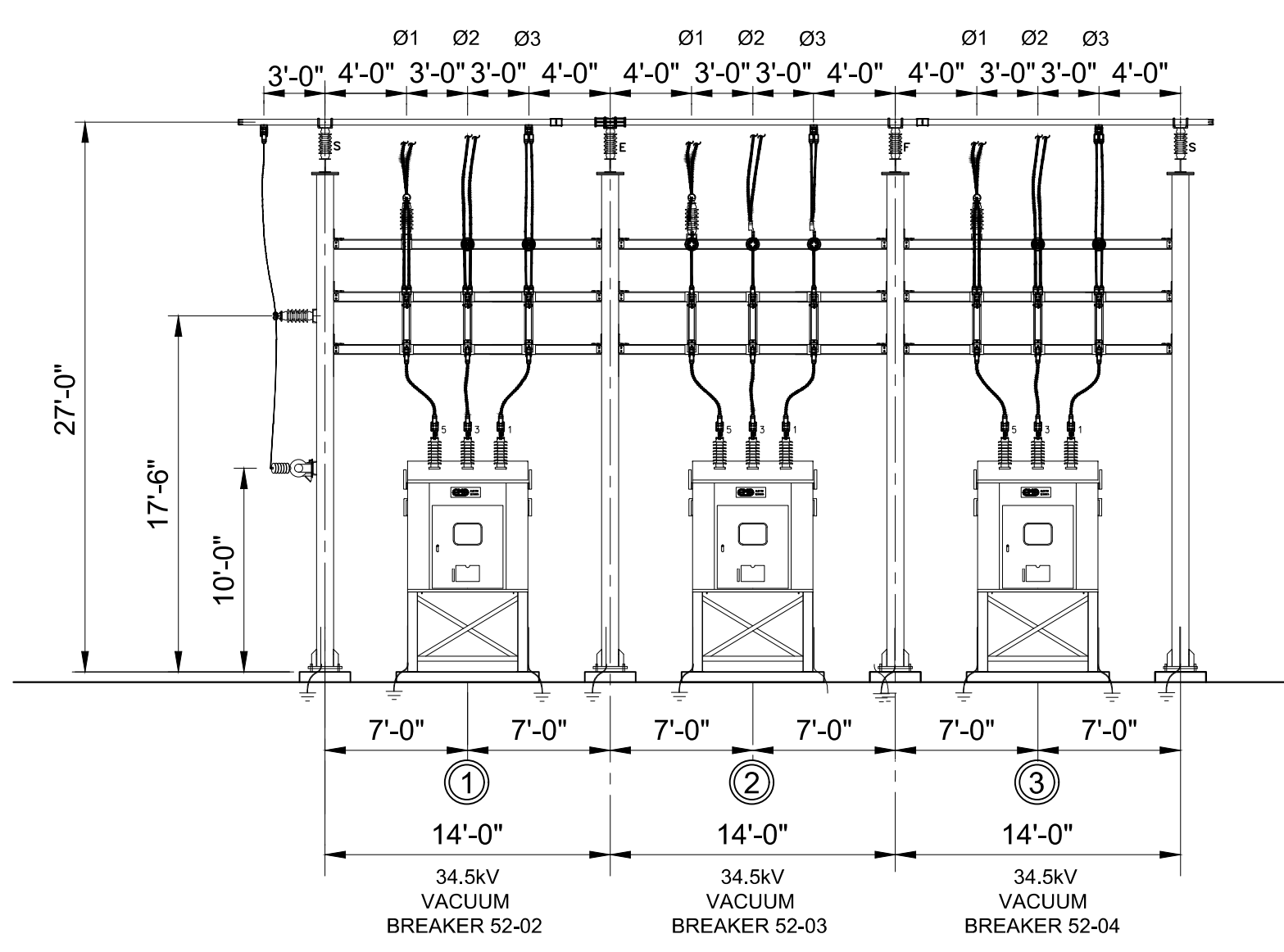
SECTION B-B



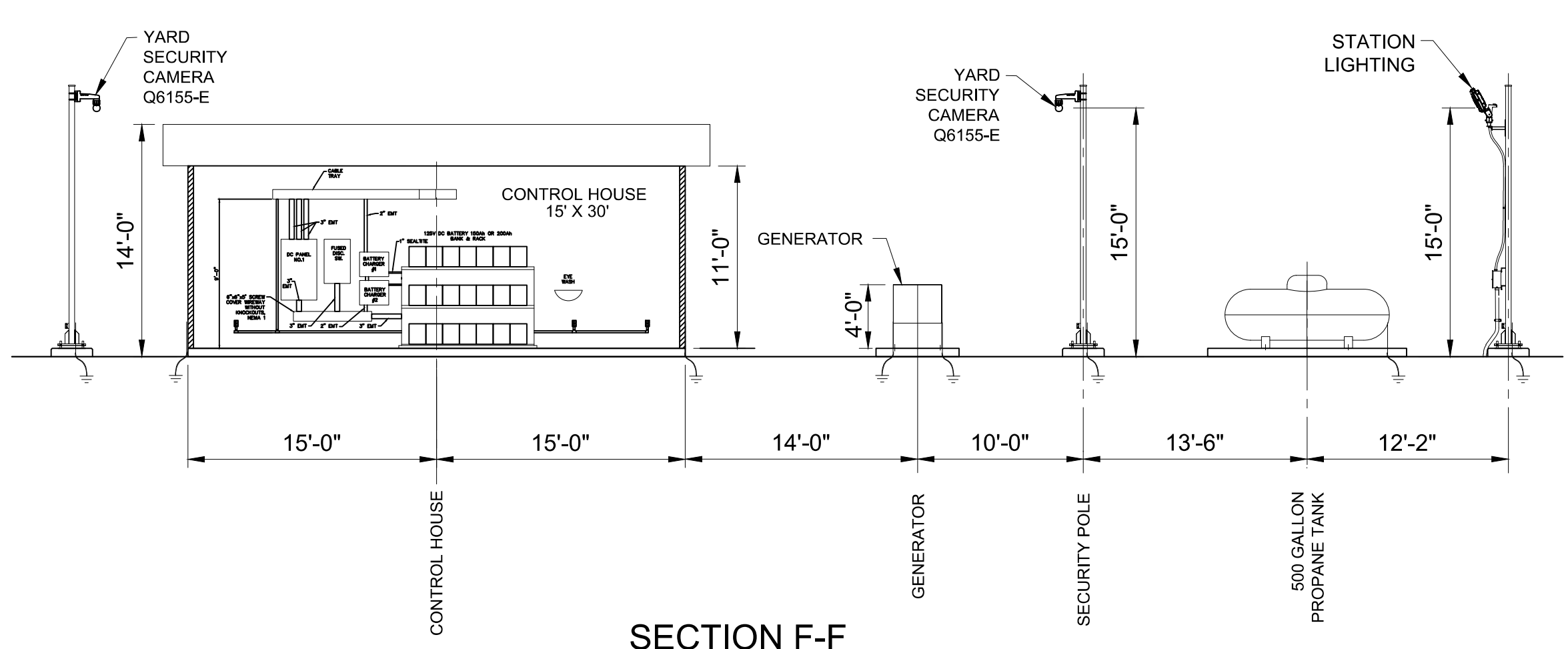
SECTION C-C



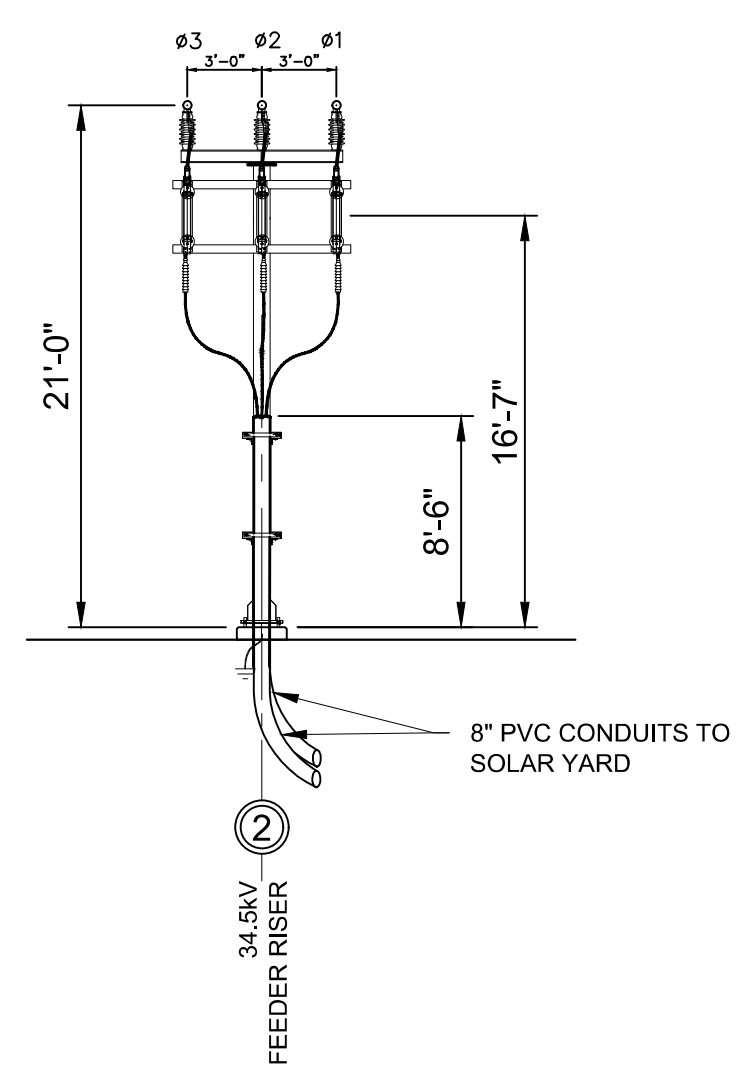
SECTION D-D



SECTION E-E



SECTION F-F



SECTION G-G

- NOTES:
- THE EXTERIOR COLOR OF THE CONTROL HOUSE WILL BE GRAY, AND THE EXTERIOR MATERIAL AND TEXTURE WILL BE METAL.

PRELIMINARY
NOT FOR CONSTRUCTION



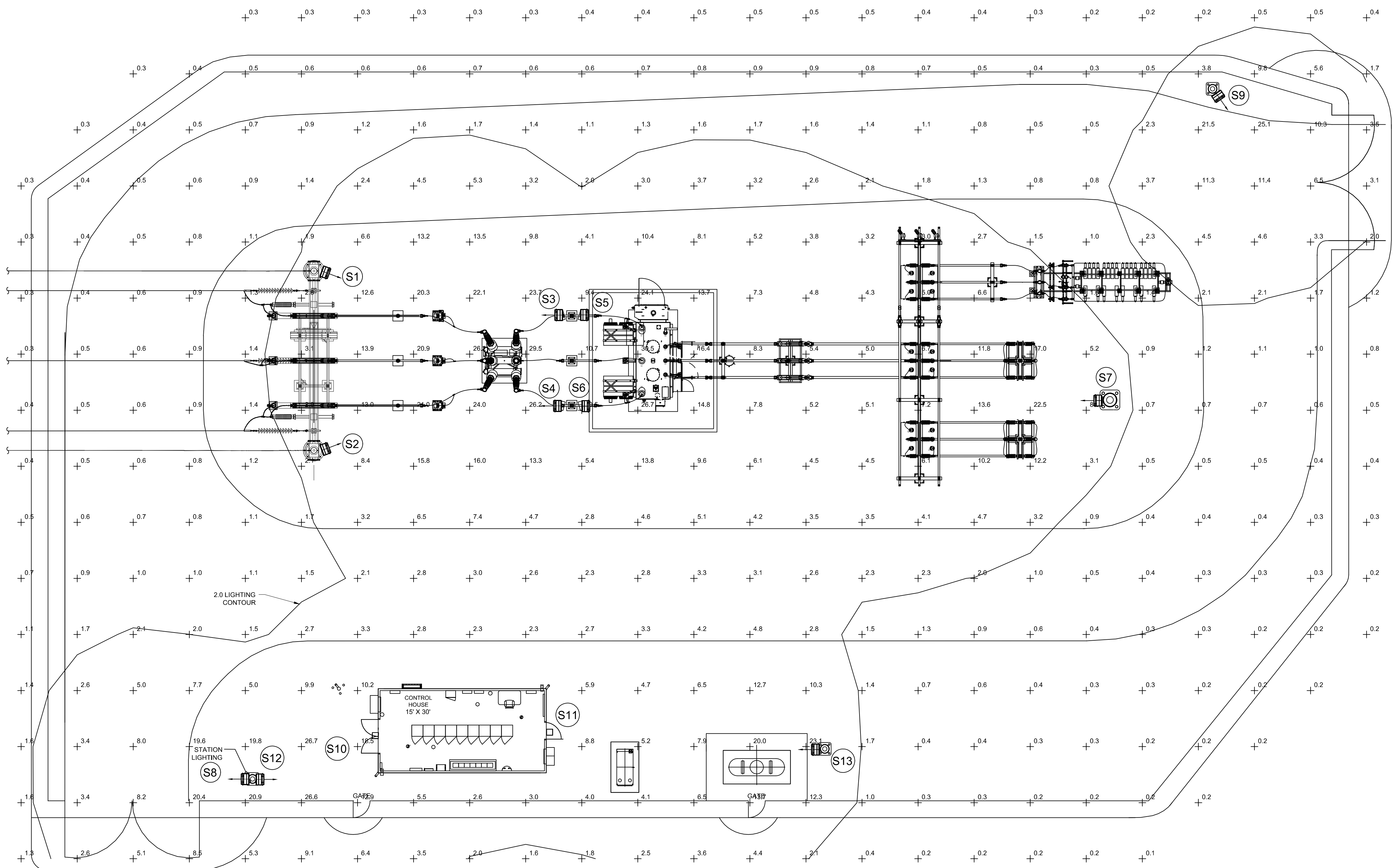


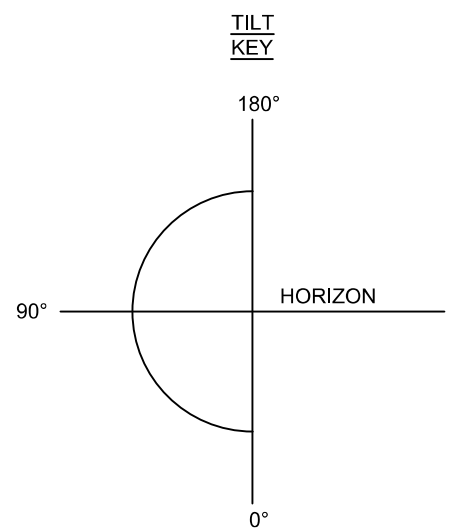
TABLE 1 - LIGHTING FIXTURE SCHEDULE

FIXTURE						LAMP		PHOTO-ELECTRIC CONTROL
TYPE	WATTAGE	LIGHT SOURCE	VOLTAGE	WEIGHT (LBS)	LUMENS	NEMA CLASS	MANUFACTURER (GE) ITEM #	MANUFACTURER ITEM #
A1	25W	LED	120V	9.5	2,900	N/A	GE EVOLVE EWA5011A3730N	N/A
A3	150W	LED	120V	26	18,800	7X6	GE EVOLVE EFH101AA76740 W/ TOP & SIDE VISOR TSDKBZ-EFH	N/A
A5	297W	LED	120V	26	37,800	7X6	GE EVOLVE EFH101EE76740 W/ TOP & SIDE VISOR TSDKBZ-EFH	N/A

FIXTURE SCHEDULE

LIGHT NO.	TYPE	TILT ANGLE	WATTAGE	VOLTAGE
S1	A3	75°	150W	120VAC
S2	A3	75°	150W	120VAC
S3	A3	60°	150W	120VAC
S4	A3	60°	150W	120VAC
S5	A3	60°	150W	120VAC
S6	A3	60°	150W	120VAC
S7	A5	75°	297W	120VAC
S8	A3	45°	150W	120VAC
S9	A3	45°	150W	120VAC
S10	A1	0°	25W	120VAC
S11	A1	0°	25W	120VAC
S12	A3	45°	150W	120VAC
S13	A3	45°	150W	120VAC

AVERAGE = 4.4 F.C.
 MAX = 30.5 F.C.
 MIN = 0.2 F.C.



- NOTES:**
- STATION LIGHTING IS COMPRISED OF (2) 25W, (10) 150W, AND (1) 297 W, 120V AC LED FLOODLIGHTS.
 - LIGHT FIXTURES TO BE MOUNTED ON INDICATED STRUCTURES 15' ABOVE FINISHED GRADE. THE FIXTURES SHALL BE AIMED AS SHOWN ON THE DRAWING AND HAVE A TILT ANGLE BASED ON THE FIXTURE SCHEDULE.
 - YARD CONTOURS ARE 2.0 FT CANDLES (F.C.) FOR THIS STATION. 2 FT CANDLES IS THE EQUIVALENT OF 22 LUMENS PER SQUARE METER.
 - FLOODLIGHTS INSTALLED WITH TOP AND SIDE VISORS ACHIEVE FULL CUTOFF REQUIREMENT (0 F.C.) ABOVE FIXTURE.
 - LIGHTS SHALL BE CAPABLE OF MANUAL SHUT-OFF.

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.

PRELIMINARY
NOT FOR CONSTRUCTION



PE STAMP:



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS
1	06/27/2022	ISSUED FOR PERMIT

PROJECT TITLE:

**BROOKSIDE SOLAR
 COLLECTION
 SUBSTATION
 115KV-34.5KV**

PROJECT LOCATION:

**TOWNS OF BURKE AND
 CHATEAUGAY, NY**

SHEET TITLE & DESCRIPTION:

**GENERAL
 ARRANGEMENT**

LIGHTING PLAN

PROJ NUM: 422299
 DES: D. FARRELL
 DWN: D. FARRELL
 CHK: C. PASCALE
 APV: C. PASCALE
 DATE: 05/21/21

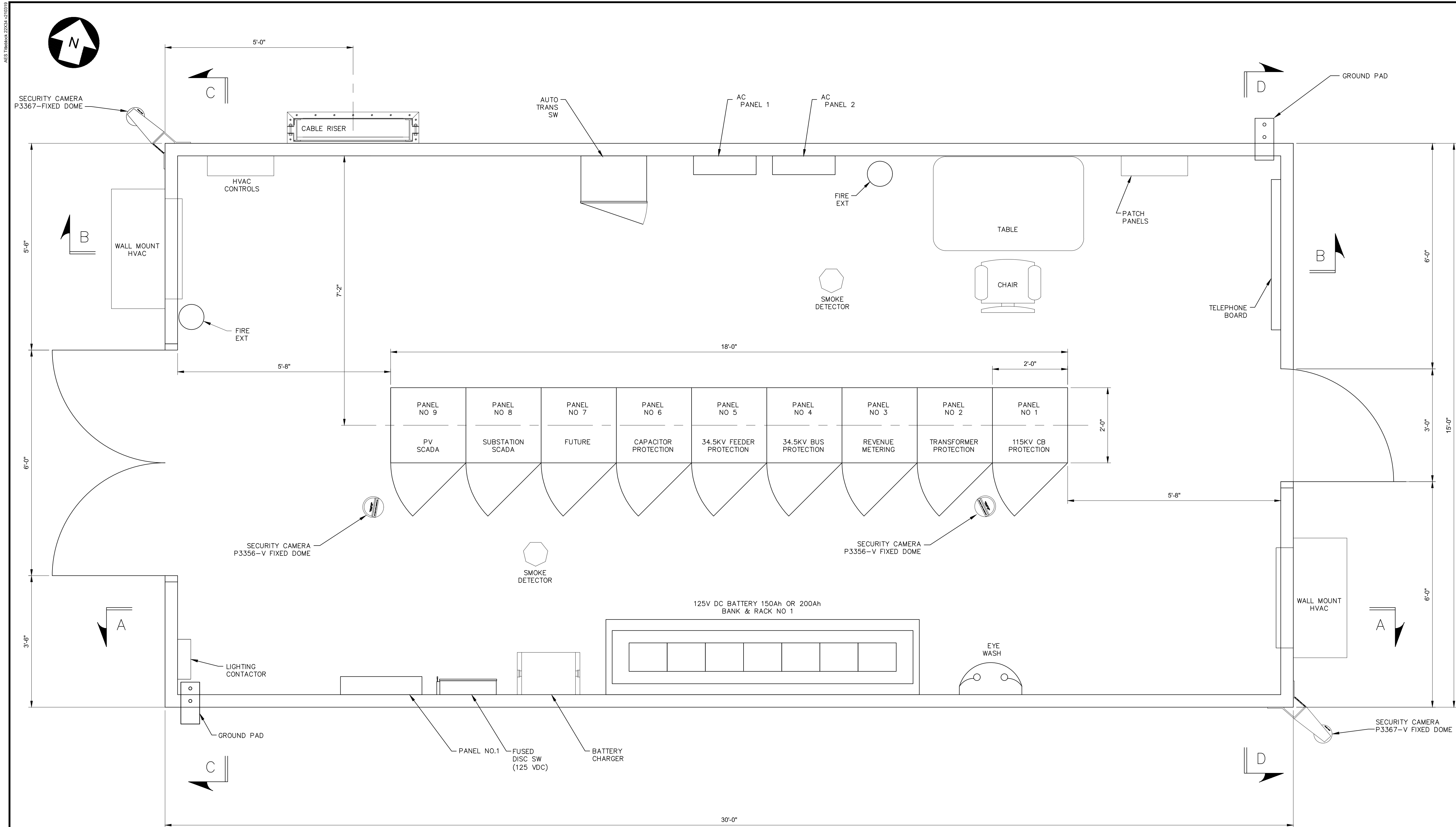


SCALE AT 22" x 34":

 3/32" = 1'-0"

SHEET NO: HV-P.13.01 REV: 1

AES Titleblock 2/23/24 12:03:19



EQUIPMENT ENCLOSURE
PLAN VIEW
SCALE: 3/4" = 1'-0"

aes

2180 South 1300 East, Suite 600
Salt Lake City, UT 84108-2749
(801) 679-3500

TRC

249 Western Avenue
Augusta, ME 04330

PE STAMP:



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS
1	06/27/2022	ISSUED FOR PERMIT

PROJECT TITLE:

**BROOKSIDE SOLAR
COLLECTION
SUBSTATION
115KV-34.5KV**

PROJECT LOCATION:

**TOWNS OF BURKE AND
CHATEAUGAY, NY**

SHEET TITLE & DESCRIPTION:

**GENERAL
ARRANGEMENT**

CONTROL HOUSE PLAN

PROJ NUM: 422299

DES: D. FARRELL

DWN: D. FARRELL

CHK: C. PASCALE

APV: C. PASCALE

DATE: 05/21/2021

SCALE AT 22" x 34":



3/4" = 1'-0"

SHEET NO:

HV-P.14.01

REV:

1

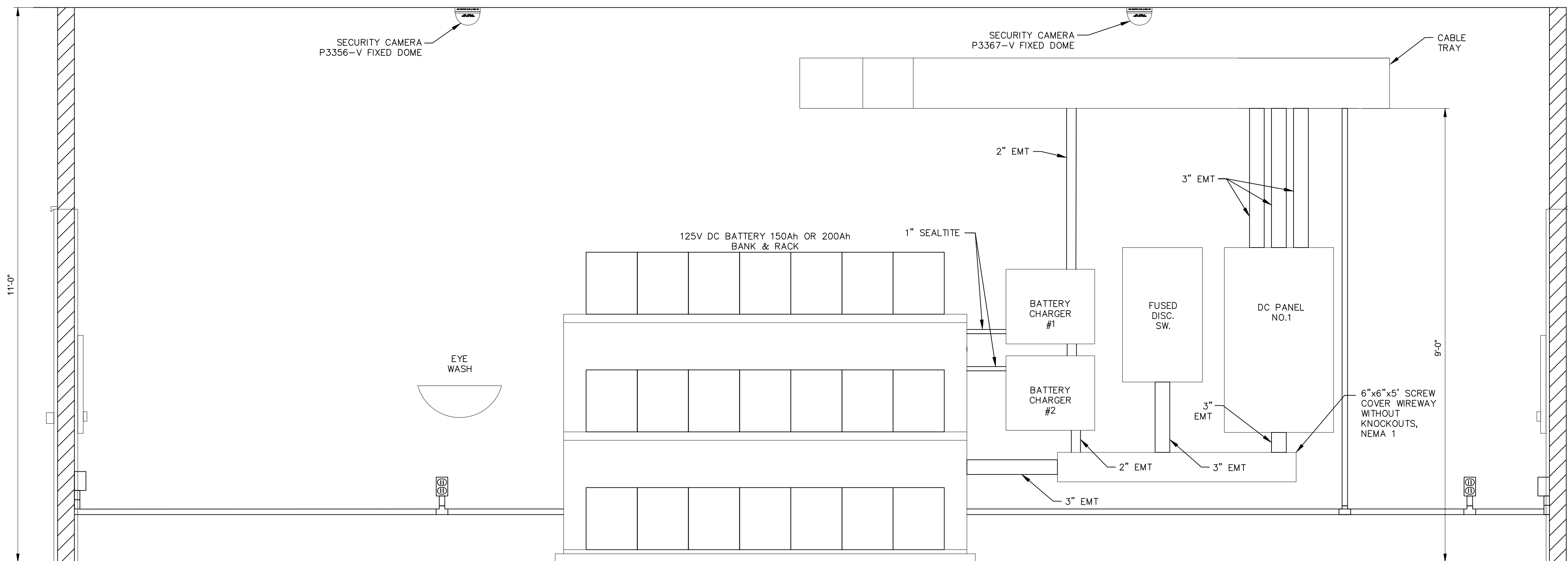


PRELIMINARY
NOT FOR CONSTRUCTION

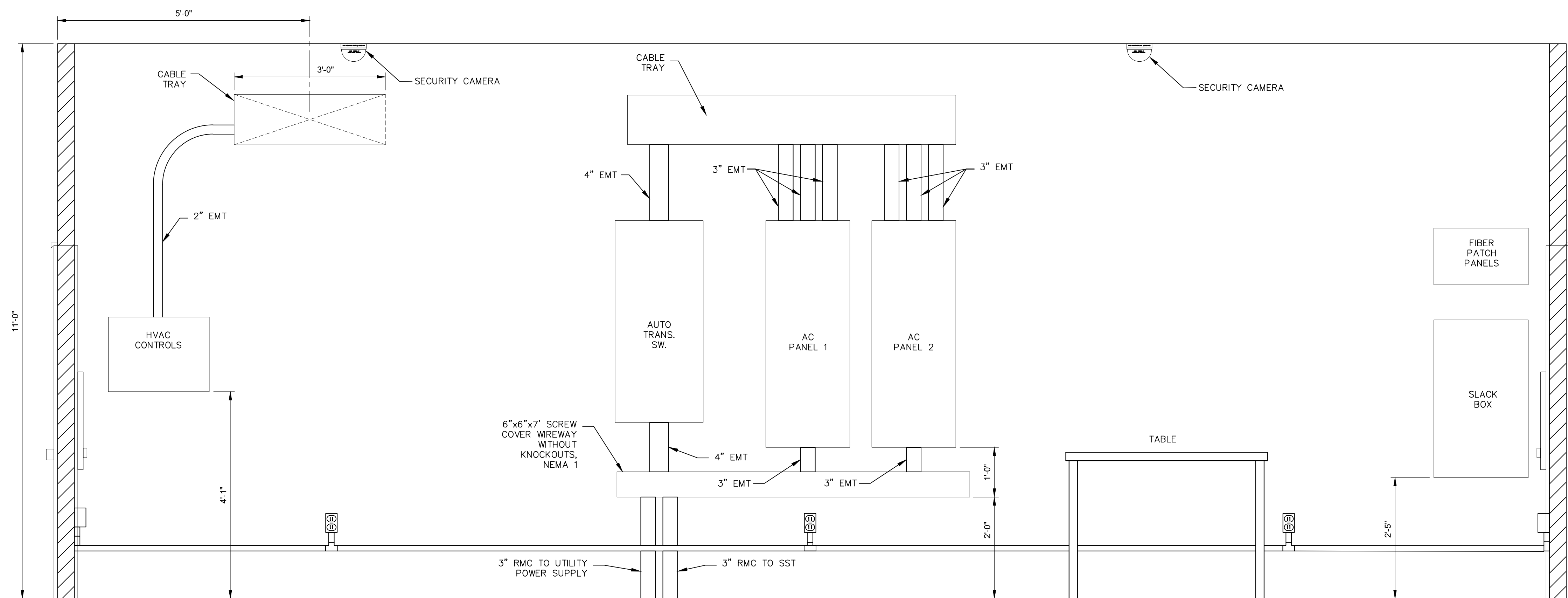
UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

16:01:00 05/21/2021 1:47 PM
AES Titleblock 2/23/24 12:03:19

AES Titleblock 2/23/24 12/10/19



WALL SECTION A-A
SCALE: 3/4" = 1'-0"



WALL SECTION B-B
SCALE: 3/4" = 1'-0"

aes

2180 South 1300 East, Suite 600
Salt Lake City, UT 84106-2749
(801) 679-3500

TRC

249 Western Avenue
Augusta, ME 04330

PE STAMP:



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS
1	06/27/2022	ISSUED FOR PERMIT

PROJECT TITLE:

**BROOKSIDE SOLAR
COLLECTION
SUBSTATION
115KV-34.5KV**

PROJECT LOCATION:

**TOWNS OF BURKE AND
CHATEAUGAY, NY**

SHEET TITLE & DESCRIPTION:

**GENERAL
ARRANGEMENT**

**CONTROL HOUSE
ELEVATIONS
SECTIONS A-A, B-B**

PROJ NUM: 422299

DES: D. FARRELL

DWN: D. FARRELL

CHK: C. PASCALE

APV: C. PASCALE

DATE: 05/21/2021

SCALE AT 22" x 34":



3/4" = 1'-0"

SHEET NO:

HV-P.15.01

REV:

1

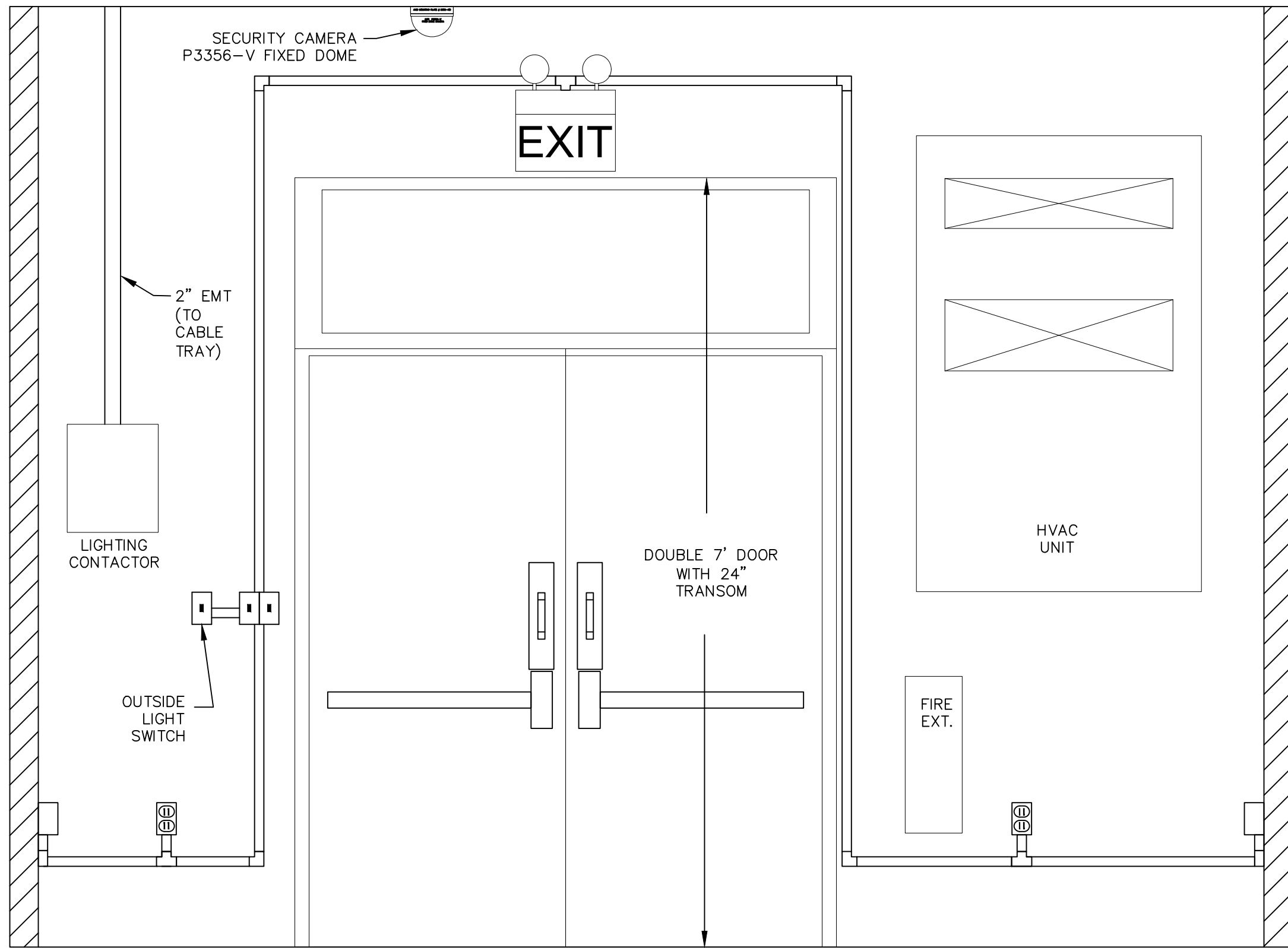


PRELIMINARY
NOT FOR CONSTRUCTION

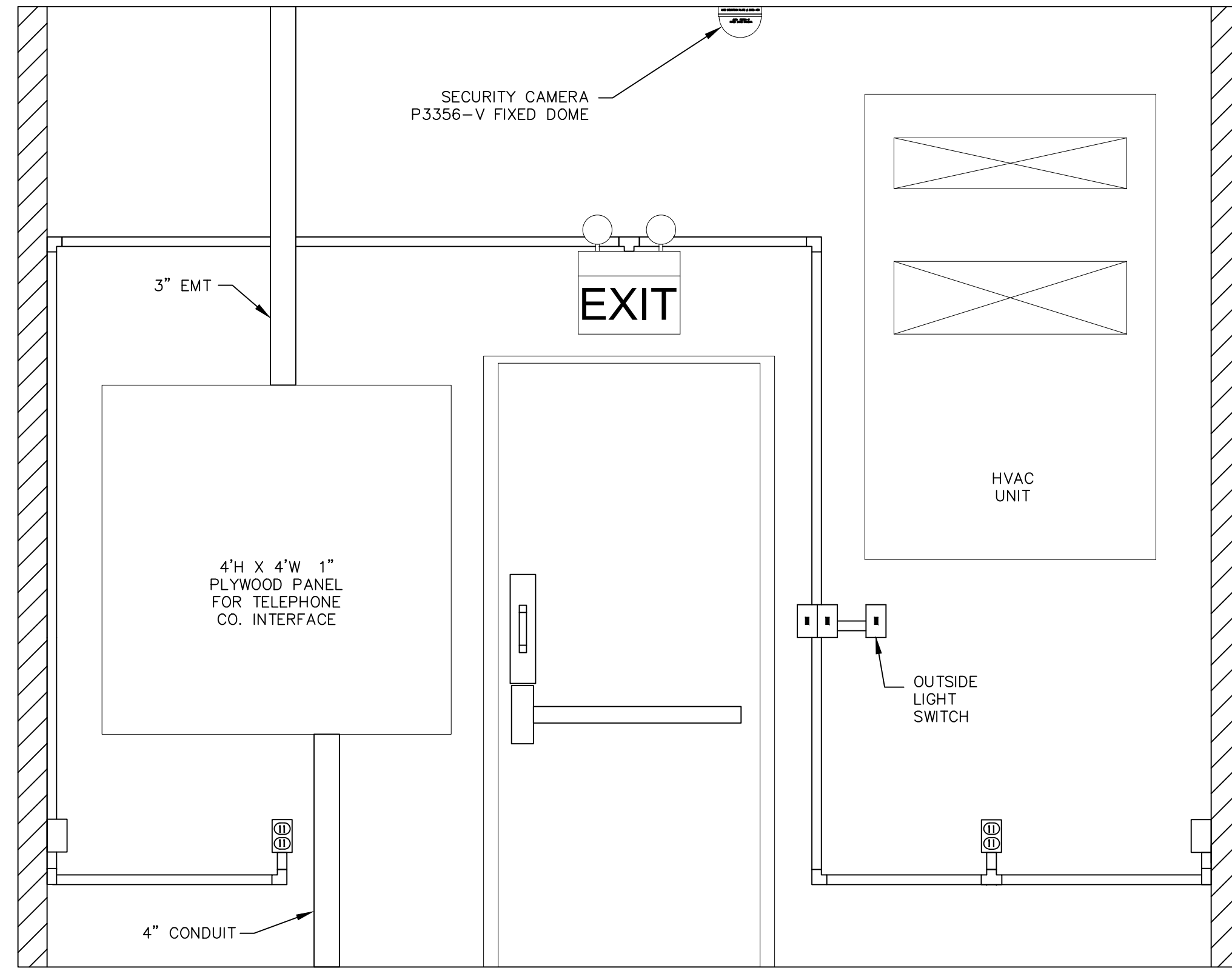
UNDER NEW YORK STATE EDUCATION LAW ARTICLE 145 (ENGINEERING), SECTION 7209 (2), IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

PLOTTER: 6/27/2022 1:48 PM
SCALE: 3/4" = 1'-0"
SHEET: HV-P.15.01

AES Titleblock 2/23/24 12:10:19



WALL SECTION C-C
SCALE: 3/4" = 1'-0"



WALL SECTION D-D
SCALE: 3/4" = 1'-0"

aes

2180 South 1300 East, Suite 600
Salt Lake City, UT 84108-2749
(801) 679-3500

TRC

249 Western Avenue
Augusta, ME 04330

PE STAMP:



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS
1	06/27/2022	ISSUED FOR PERMIT

PROJECT TITLE:

**BROOKSIDE SOLAR
COLLECTION
SUBSTATION
115KV-34.5KV**

PROJECT LOCATION:

**TOWNS OF BURKE AND
CHATEAUGAY, NY**

SHEET TITLE & DESCRIPTION:

**GENERAL
ARRANGEMENT**

**CONTROL HOUSE
ELEVATIONS
SECTIONS C-C, D-D**

PROJ NUM: 422299

DES: D. FARRELL

DWN: D. FARRELL

CHK: C. PASCALE

APV: C. PASCALE

DATE: 05/21/2021

SCALE AT 22" x 34":



3/4" = 1'-0"

SHEET NO:

HV-P.15.02

REV:

1

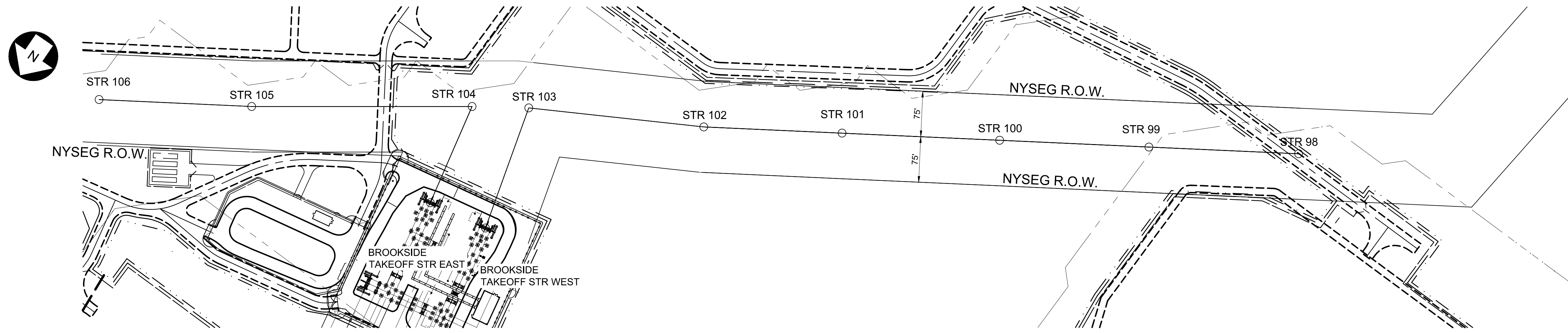


PRELIMINARY
NOT FOR CONSTRUCTION

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.

PLOTTER: 6/27/2022 1:05 PM
SCALE: 3/4" = 1'-0"
FILE: C:\WORK\150 CONTROL ELEV\C-C, D-D.dwg

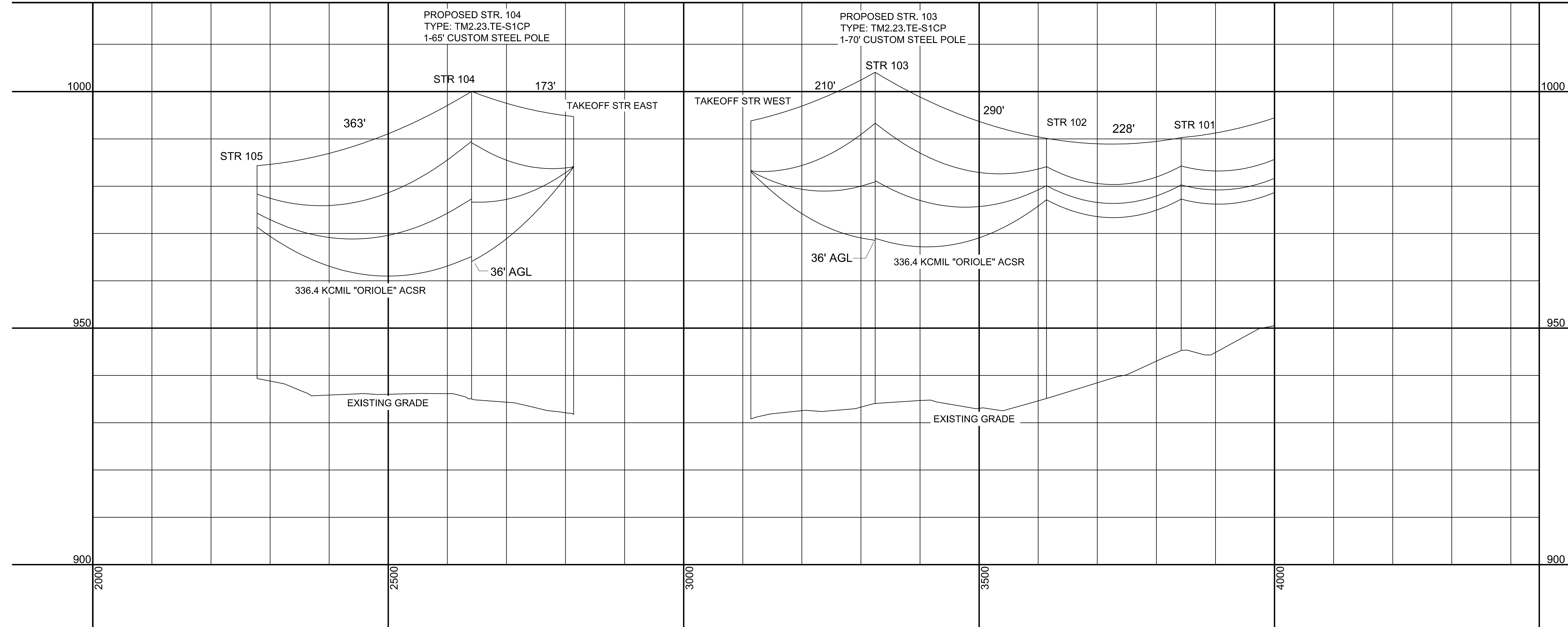
AES: 1/14/2022 10:21 AM
 C:\Users\kdmartin\OneDrive\Documents\Brookside Solar Energy Facility Drawings.dwg
 PLOTTED: 1/14/2022 10:21 AM
 C:\Users\kdmartin\OneDrive\Documents\Brookside Solar Energy Facility Drawings.dwg



PLAN VIEW

80.0 ft. Horiz. Scale

10.0 ft. Vert. Scale



PROFILE VIEW

PRELIMINARY
 NOT FOR CONSTRUCTION



aes
 2180 South 1300 East, Suite 600
 Salt Lake City, UT 84106-2749
 (801) 679-3500

TRC
 249 Western Avenue
 Augusta, ME 04330

PE STAMP:

 Kevin Martin
 Licensed Professional Engineer
 No. 099090
 Date: 08/22/14 15:18:31-0500

KEY PLAN:
 REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS

PROJECT TITLE:
BROOKSIDE SOLAR PROJECT

PROJECT LOCATION:
**TOWNS OF BURKE AND CHATEAUGAY
 FRANKLIN CO., NY**

SHEET TITLE & DESCRIPTION:
**INTERCONNECTION
 PLAN AND PROFILE**

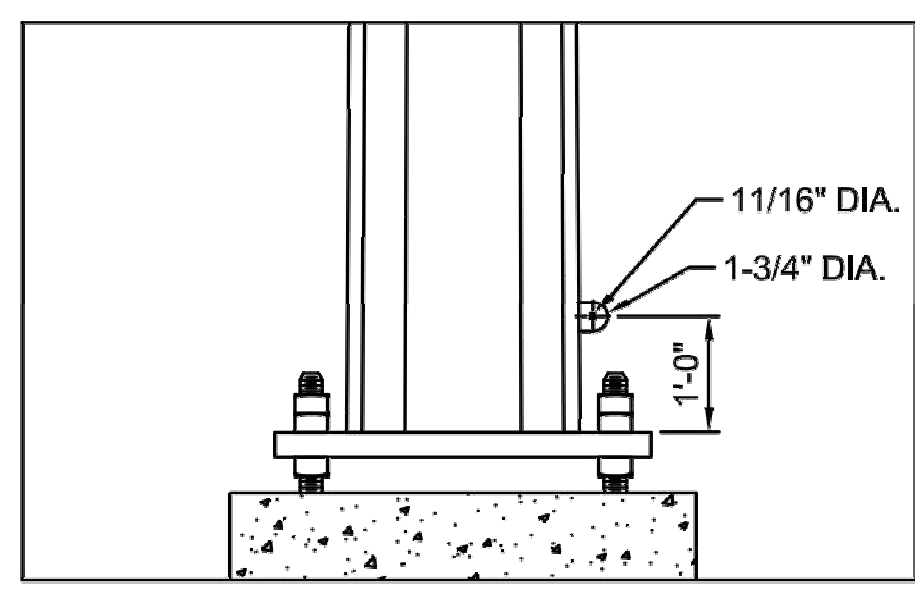
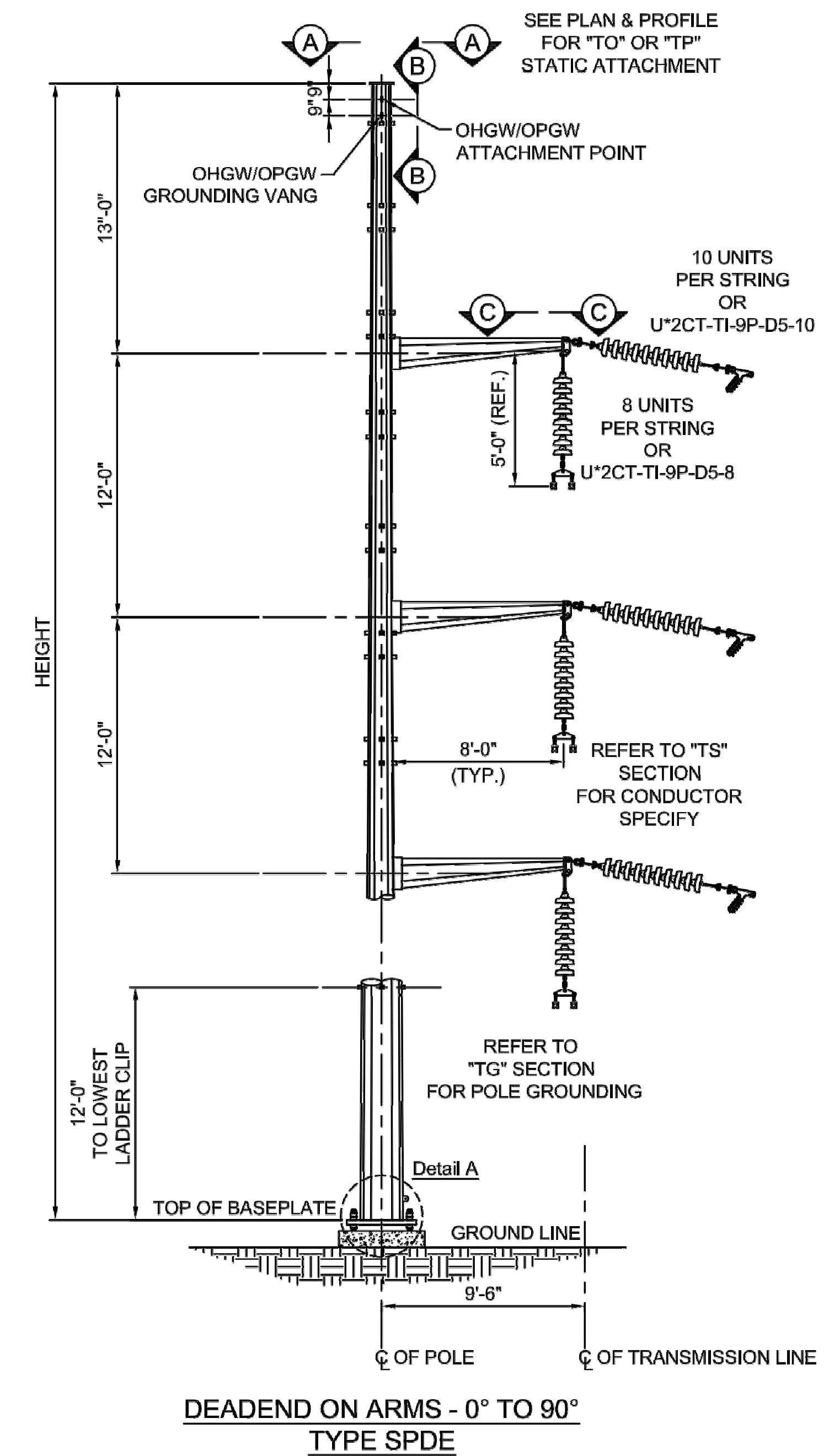
PROJ NUM:	422299
DES:	D. LYONS
DWN:	D. LYONS
CHK:	K. DRZEWIECKI
APV:	K. MARTIN
DATE:	07/08/2021
SCALE AT 24" x 36":	

1"=80" HORIZ. / 1"=10" VERT.
 SHEET NO: **HV-C.09.02** REV: **0**

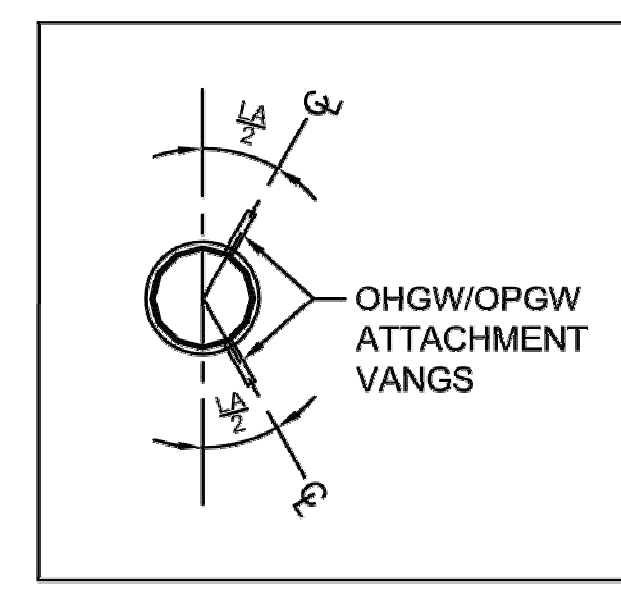
PLOTTED: 11/14/2022 9:29 AM
 C:\Users\jgordon\OneDrive\Documents\Brookside Solar Energy Facility Drawings.dwg
 2/28/2022

THIS IS A COMPUTER GENERATED
 DRAWING - DO NOT REVISE MANUALLY

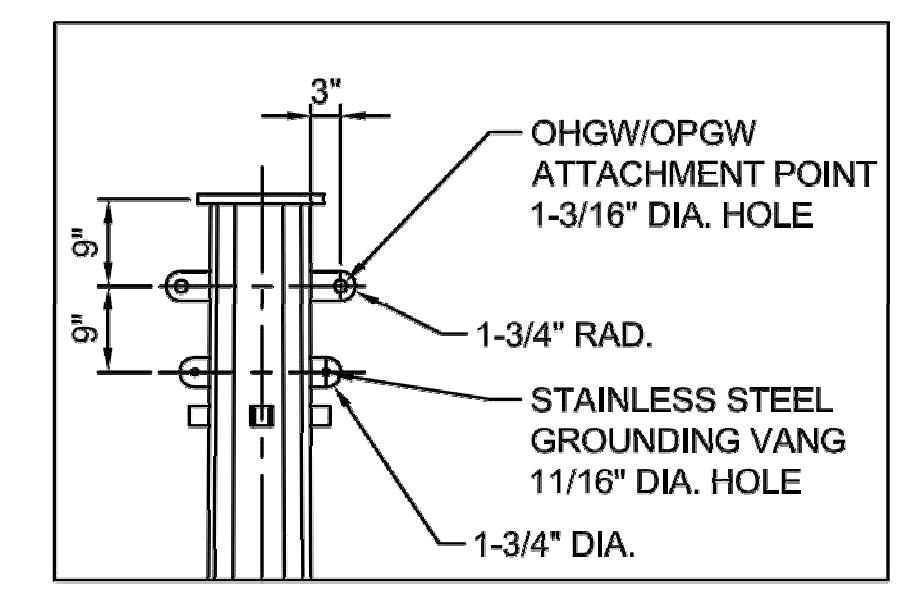
ANSIB
 11" X 17"



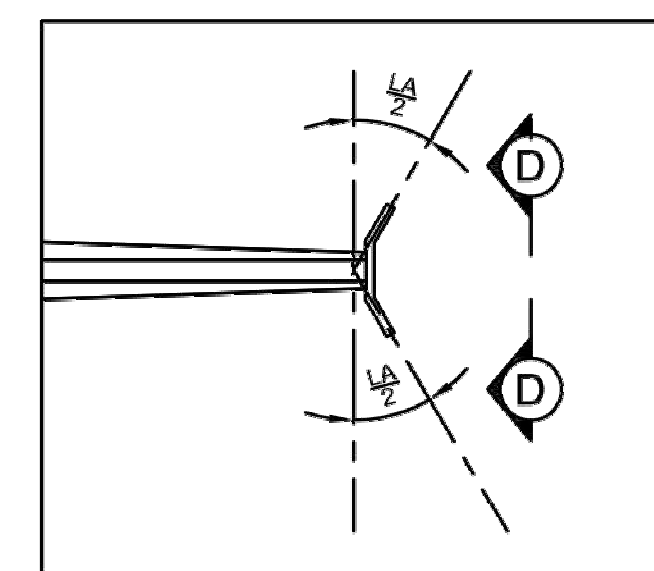
Detail 'A'
STRUCTURE GROUNDING VANG -
STAINLESS STEEL



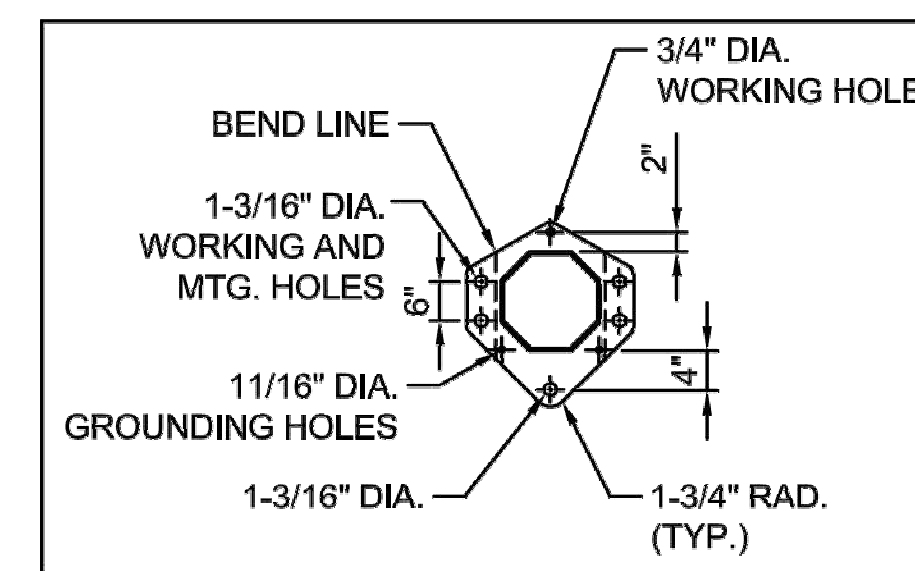
Section 'A-A'
POLE TOP WITH OHGW/OPGW
ATTACHMENTS



Section 'B-B'
OHGW/OPGW ATTACHMENT VANG
MAX. THICKNESS 3/4"



Section 'C-C'



Section 'D-D'
DAVIT ARM END ATTACHMENT
PLATE DETAIL PLAN VIEW

FOR CORRECT CU: SUBSTITUTE 2 FOR NYSEG, 3 FOR CMP OR 4 FOR RG&E IN PLACE OF ASTERISK (U*_).
 CU FUNCTION: U_TL69 FOR 34KV & 46KV, U_TG69 FOR 69KV THRU 344KV, U_T345 FOR 345KV & GREATER.

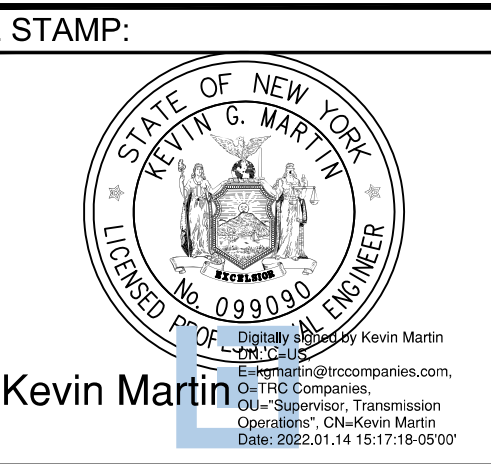
- NOTE A: OTHER STANDARD DRAWINGS REQUIRED:
- TD FOUNDATION & BACKFILL
 - TE STEEL STRUCTURE INFORMATION
 - TG GROUNDING & GROUND ROD DETAIL
 - TK MARKINGS
 - TM CONDUCTOR ATTACHMENT DETAILS STEEL STRUCTURES
 - TO OPGW ATTACHMENT DETAILS
 - TP STATIC WIRE ATTACHMENT DETAILS
 - TS CONDUCTOR SPECIFICS

- NOTE B: ALL HOLES SHALL BE CHAMFERED BOTH SIDES
- NOTE C: LADDER CLIPS SHALL BE POSITIONED SUCH THAT TRANSIT TO ALL SIDES OF THE POLE IS POSSIBLE AROUND ALL CONDUCTOR AND ARM CONNECTIONS.
- NOTE D: GROUNDING VANGS SHALL BE STAINLESS STEEL WITH A THICKNESS OF 1/2"
- NOTE E: MAXIMUM VANG PLATE THICKNESS SHALL NOT BE GREATER THAN 3/4"
- NOTE F: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES
- NOTE G: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC HEAVY LOADING TENSION IS 10,000# OR GREATER USE COMPRESSION DEAD END ASSEMBLIES.

Contact Engineering Standards - Transmission for the creation of new standards and CUs.					Drawing Scale: N/A	
	AVANGRID TRANSMISSION CONSTRUCTION STANDARDS MANUAL		STRUCTURE STANDARDS - STEEL 115KV SINGLE POLE SINGLE CIRCUIT DEADEND ON ARMS - 0° TO 90° TYPE SPDE		Revision	
					1	
Drwn. By: DG/DAS	Date Dr.: 06/27/2017	Checked By: SM/DAS	Date Ck.: 06/28/2017	Approved By: PGZ/DAS	Date App.: 07/20/2017	Date
					11/29/2017	
					Sheets 1 of 3	

Note 1: The Avangrid drawing TM2.23.TE-S1CP is provided as a representation of the structure type that will be utilized. The wire type, tensions, and structure loadings will be determined during detailed design.

PRELIMINARY
 NOT FOR CONSTRUCTION



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS

PROJECT TITLE:
BROOKSIDE SOLAR PROJECT

PROJECT LOCATION:
TOWNS OF BURKE AND CHATEAUGAY FRANKLIN CO., NY

SHEET TITLE & DESCRIPTION:
 SINGLE CIRCUIT DEADEND ON ARMS STRUCTURE DRAWING

SHEET 1 OF 3

PROJ NUM:	422299
DES:	D. LYONS
DWN:	D. LYONS
CHK:	K. DRZEWIECKI
APV:	K. MARTIN
DATE:	07/08/2021

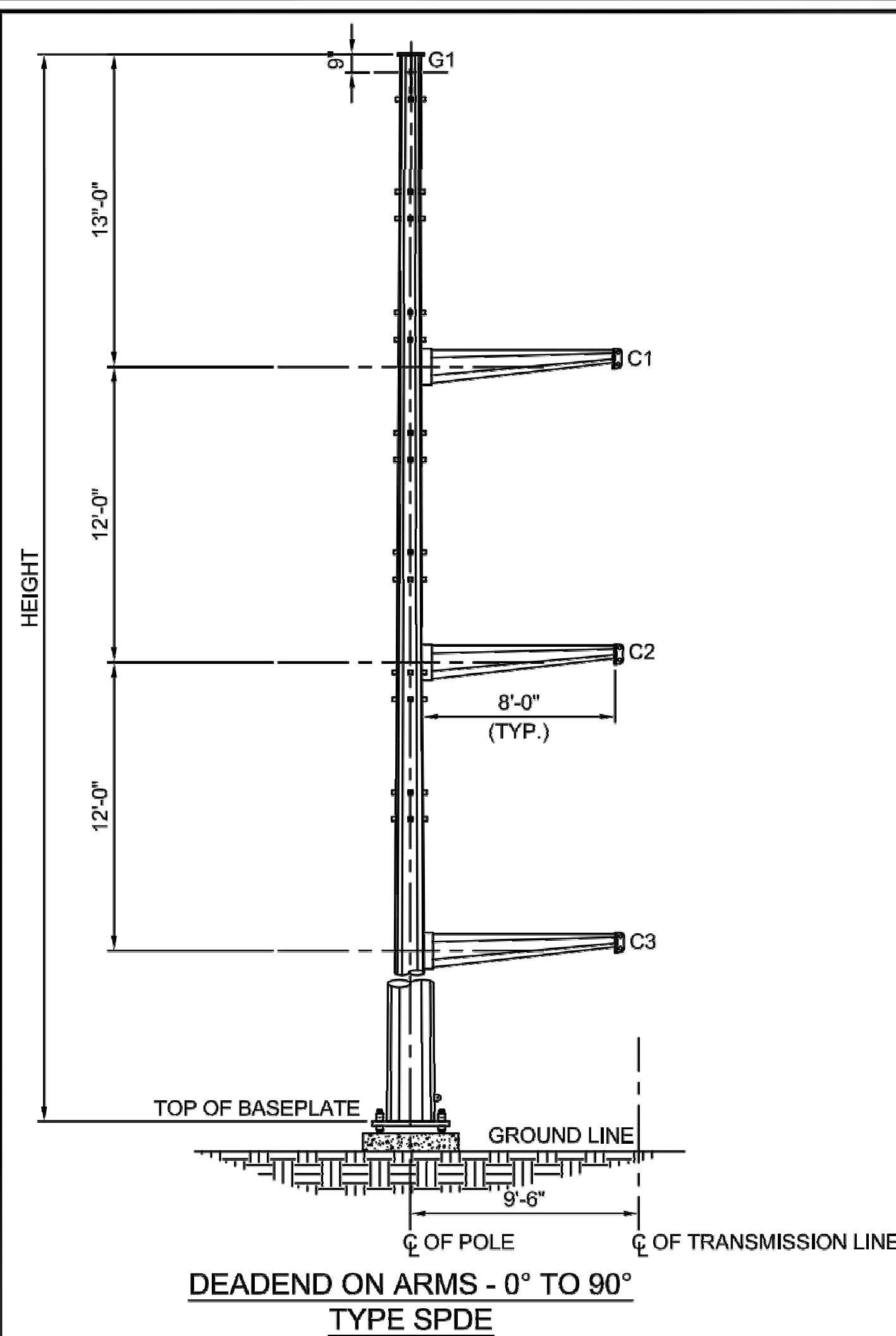
SCALE AT 24" x 36"

NTS

SHEET NO:	HV-C.09.03	REV:	0
-----------	------------	------	---

PLOTTED: 11/14/2022 9:30 AM
 C:\Users\jgordon\Documents\Brookside Solar Energy Facility Drawings.dwg
 2/28/2021

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY
 ANSIB 11" X 17"



LOAD TREE

HEIGHT (FT)
80
85
90
95
100
105
110
115
120

WIRE DESIGNATION				DESIGN LINE TENSIONS (LBS)							
WIRE	TYPE	DIA (INCHES)	WEIGHT (LBS/FT)	NESC HEAVY	NESC HIGH WIND	NESC WIND & ICE	HEAVY ICE	CONSTRUCTION/ MAINTENANCE	CONSTRUCTION/ STRINGING	EVERYDAY/ DEFLECTION	DIFFERENTIAL ICE, 1" ICE/ NO ICE
C1-C3	(2) 795 "DRAKE" ACSR	1.108	1.094	8000	7540	11010	12330	4560	5390	3520	9900/5360
G1	DNO-B230 OPGW	0.913	0.908	7750	6910	10810	12100	4280	5180	3270	9620/5150

TABLE B: DESIGN CRITERIA				
STRUCTURE TYPE	LINE ANGLE, θ (DEG.)	DESIGN RULING SPAN (FT)	DESIGN WIND SPAN (FT)	DESIGN WEIGHT SPAN (FT)
DEADEND	0 - 90	450	500	700

TABLE C: OVERLOAD FACTORS						
WEATHER CASE	TEMPERATURE, °F	WIND PRESSURE (PSF)	RADIAL ICE (IN)	OVERLOAD FACTORS		
				WIND	TENSION	VERTICAL
NESC HEAVY, ALL WIRES INTACT (RULE 250B)	0	4	0.5	2.50	1.65	1.50
NESC HIGH WIND, ALL WIRES INTACT (RULE 250C)	60	30	0	1.00	1.00	1.00
NESC CONCURRENT WIND/ICE, ALL WIRES INTACT (RULE 250D)	-5	9.2	1	1.00	1.00	1.00
HEAVY ICE, ALL WIRES INTACT	32	0	1.5	1.00	1.00	1.00
CONSTRUCTION/MAINTENANCE	30	2	0	1.50	1.50	1.50
CONSTRUCTION/STRINGING	0	2	0	1.00	1.00	1.50
EVERYDAY/DEFLECTION	60	0	0	1.00	1.00	1.00

TABLE D: WIRE LOADS (LBS) (SEE NOTE 1)								
WIRE	LOAD DIRECTION	1.	2.	3.	4.	5A.	5B.	6.
		NESC HEAVY	NESC HIGH WIND	NESC WIND & ICE	HEAVY ICE	CONSTRUCTION/ MAINTENANCE (SEE NOTE 10)	CONSTRUCTION/ MAINTENANCE (SEE NOTE 10)	CONSTRUCTION/ STRINGING
G1	V1	2630	1140	2800	4290	9200	1700	4160
	T1	18700	10600	18100	17200	9160	9160	6890
	L1	0	0	0	0	0	0	4490
C1-C3	V2	6230	2680	6480	9670	11600	4020	9130
	T2	38600	23300	32900	34900	19600	19600	12300
	L2	0	0	0	0	0	0	6300
G1	V1	1140	2470	1690	820	1650	2390	1690
	T1	4620	10500	9240	5170	7920	8560	400
	L1	0	3160	9240	5170	7920	8560	12800
C1-C3	V2	2680	7750	4030	1910	3870	5500	4030
	T2	9960	21600	19200	11400	16200	17500	880
	L2	0	6420	19200	11400	16200	17500	26400

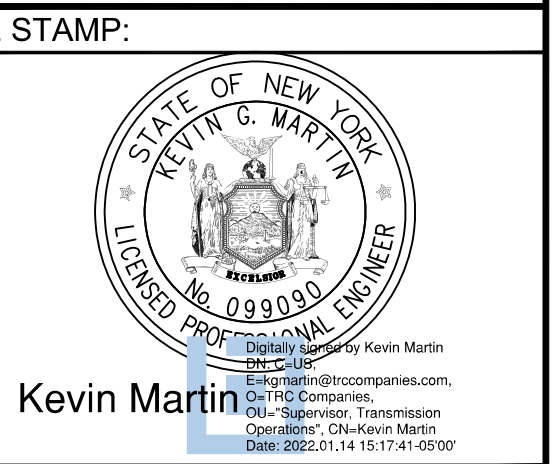
NOTES:

- ALL LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS. VERTICAL LOADS INCLUDE THE WEIGHT OF INSULATORS AND HARDWARE WITH AN ADDITIONAL 500 LB WORKING LOAD (EXCEPT FOR THE EVERYDAY LOAD CASE). UNLESS NOTED OTHERWISE LOADS ARE DERIVED FROM MAXIMUM LINE ANGLE.
- STRUCTURES ARE TO BE DESIGNED IN ACCORDANCE WITH ASCE/SEI 48-11, OR LATEST EDITION, AND TECHNICAL MANUAL (TM2.22.01) "TUBULAR STEEL POLE SPECIFICATION". IN CASE OF CONFLICT, THE MORE STRINGENT DOCUMENT SHALL BE USED.
- FOR STRUCTURE FINISH (I.E. GALVANIZING, WEATHERING, PAINTED) REFER TO TM2.22.01, PART 5.
- WIND PRESSURE SHOWN IN TABLE C SHALL BE APPLIED IN THE WORST CASE DIRECTION FOR THE CORRESPONDING LOAD CASE. THE EXTREME WIND (NESC HIGH WIND) LOAD CASE SHALL ALSO BE APPLIED TO THE STRUCTURE WITHOUT WIRE LOADS APPLIED. THE FOLLOWING SHAPE FACTORS SHALL BE USED: 1.0 FOR 12 OR 16-SIDED, 1.4 FOR 6 OR 8-SIDED, 2.0 FOR SQUARE/FLAT.
- HORIZONTAL STRUCTURE DEFLECTION SHALL BE LIMITED TO 1% OF POLE HEIGHT ABOVE GROUND LINE. RAKING/CAMBERING IS NOT PERMITTED.
- MCGREGOR STYLE LADDERS AND LADDER CLIPS SHALL BE SUPPLIED FOR EACH POLE.
- WORKING HOLES SHALL BE DESIGNED FOR A MINIMUM LOAD OF 60 KIPS APPLIED IN ANY DIRECTION.
- DAVIT ARMS SHALL BE UPSWEPT AT 1 INCH PER LINEAR FOOT AND REMAIN SO UNDER EVERYDAY/DEFLECTION LOADING. VERTICAL DEFLECTION SHALL BE LIMITED TO 1% OF ARM LENGTH UNDER HEAVY ICE LOADING.
- ANCHOR BOLT EMBEDMENT DEPTH SHALL BE CALCULATED IN ACCORDANCE WITH ACI 318, DETERMINED USING ULTIMATE BOND STRESS VALUES BASED ON 4,000 PSI CONCRETE COMPRESSIVE STRENGTH.
- FOR CONSTRUCTION/MAINTENANCE CASE "A", LOADS SHALL BE APPLIED TO ONE ATTACHMENT POINT AT A TIME WHILE REMAINING ATTACHMENT POINTS USE LOADS FROM CORRESPONDING LOAD CASE "B".

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: N/A			
		STRUCTURE STANDARDS - STEEL 115KV SINGLE POLE SINGLE CIRCUIT DEADEND ON ARMS - 0° TO 90° TYPE SPDE				Revision 1 Date 11/29/2017	
Drwn. By: DG/DAS	Date Dr.: 06/27/2017	Checked By: SM/DAS	Date Ck.: 06/28/2017	Approved By: PGZ/DAS	Date App.: 07/20/2017	TM2.23.TE-S1CP Sheets 2 Of 3	

Note 1: The Avangrid drawing TM2.23.TE-S1CP is provided as a representation of the structure type that will be utilized. The wire type, tensions, and structure loadings will be determined during detailed design.

PRELIMINARY
 NOT FOR CONSTRUCTION



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS

PROJECT TITLE:
 BROOKSIDE SOLAR PROJECT

PROJECT LOCATION:
 TOWNS OF BURKE AND CHATEAUGAY
 FRANKLIN CO., NY

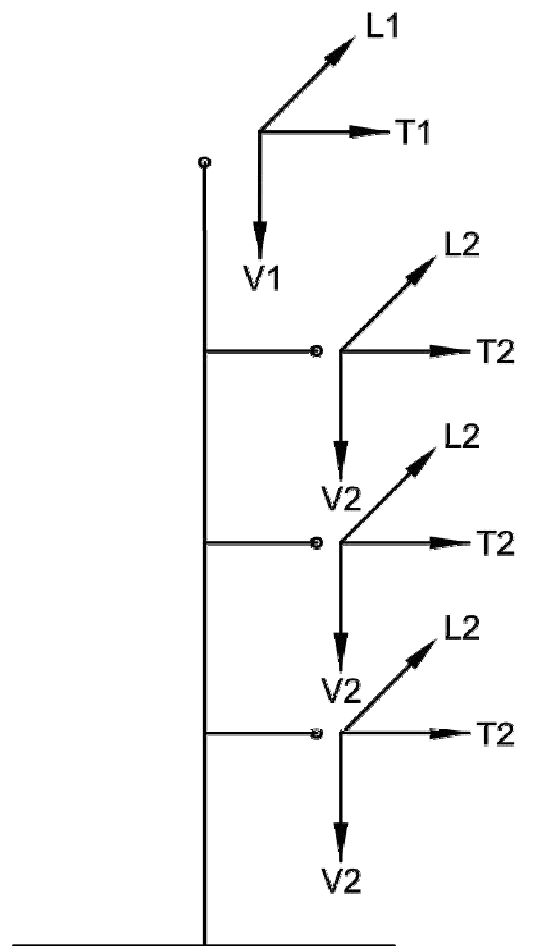
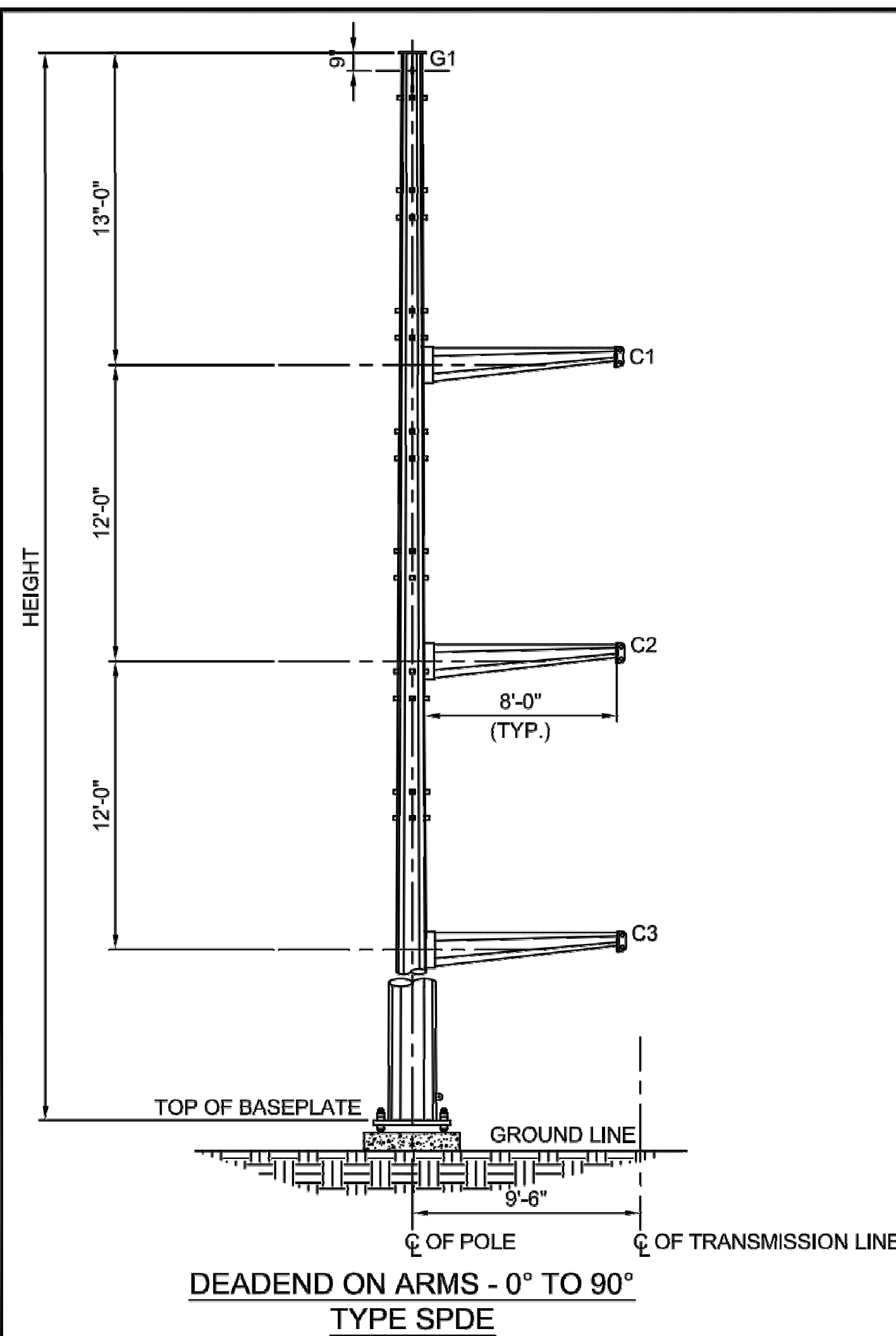
SHEET TITLE & DESCRIPTION:
 SINGLE CIRCUIT
 DEADEND ON ARMS
 STRUCTURE DRAWING

SHEET 2 OF 3

PROJ NUM:	422299
DES:	D. LYONS
DWN:	D. LYONS
CHK:	K. DRZEWIECKI
APV:	K. MARTIN
DATE:	07/08/2021
SCALE AT 24" x 36":	
NTS	
SHEET NO:	HV-C.09.04
REV:	0

PLOTTED: 11/14/2022 9:32 AM
 C:\Users\jgordon\Documents\Brookside Solar Energy Facility\Drawings.dwg
 ANSIB 11" X 17"

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY



LOAD TREE

HEIGHT (FT)
80
85
90
95
100
105
110
115
120

WIRE DESIGNATION				DESIGN LINE TENSIONS (LBS)							
WIRE	TYPE	DIA (INCHES)	WEIGHT (LBS/FT)	NESC HEAVY	NESC HIGH WIND	NESC WIND & ICE	HEAVY ICE	CONSTRUCTION/ MAINTENANCE	CONSTRUCTION/ STRINGING	EVERYDAY/ DEFLECTION	DIFFERENTIAL ICE, 1" ICE/ NO ICE
C1-C3	(2) 795 "DRAKE" ACSR	1.108	1.094	11200	10730	14740	16440	7240	8270	5360	13440/8230
G1	DNO-8230 OPGW	0.913	0.908	10530	9460	14240	15980	6440	7500	4760	12800/7460

TABLE B: DESIGN CRITERIA				
STRUCTURE TYPE	LINE ANGLE, θ (DEG.)	DESIGN RULING SPAN (FT)	DESIGN WIND SPAN (FT)	DESIGN WEIGHT SPAN (FT)
DEADEND	0 - 90	650	700	950

TABLE C: OVERLOAD FACTORS						
WEATHER CASE	TEMPERATURE, °F	WIND PRESSURE (PSF)	RADIAL ICE (IN)	OVERLOAD FACTORS		
				WIND	TENSION	VERTICAL
NESC HEAVY, ALL WIRES INTACT (RULE 250B)	0	4	0.5	2.50	1.65	1.50
NESC HIGH WIND, ALL WIRES INTACT (RULE 250C)	60	30	0	1.00	1.00	1.00
NESC CONCURRENT WIND/ICE, ALL WIRES INTACT (RULE 250D)	-5	9.2	1	1.00	1.00	1.00
HEAVY ICE, ALL WIRES INTACT	32	0	1.5	1.00	1.00	1.00
CONSTRUCTION/MAINTENANCE	30	2	0	1.50	1.50	1.50
CONSTRUCTION/STRINGING	0	2	0	1.00	1.00	1.50
EVERYDAY/DEFLECTION	60	0	0	1.00	1.00	1.00

TABLE D: WIRE LOADS (LBS) (SEE NOTE 1)								
WIRE	LOAD DIRECTION	NESC			CONSTRUCTION/ MAINTENANCE (SEE NOTE 10)		CONSTRUCTION/ STRINGING	
		1. NESC HEAVY	2. NESC HIGH WIND	3. NESC WIND & ICE	4. HEAVY ICE	5A.	5B.	6.
G1	V1	3300	1360	3620	5640	9540	2040	5600
	T1	25400	14600	21300	22600	13800	13800	8550
	L1	0	0	0	0	0	0	4490
C1-C3	V2	7800	3230	8330	12700	12400	4840	12700
	T2	54100	33100	44100	46500	31000	31000	16400
	L2	0	0	0	0	0	0	6300
G1	V1	1360	2990	2020	930	2060	3070	2020
	T1	6730	14400	12600	7090	10500	11300	560
	L1	0	3780	12600	7090	10500	11300	17400
C1-C3	V2	3230	9610	4810	2190	4800	6990	4810
	T2	15200	30700	26800	16200	21700	23300	1230
	L2	0	7370	26800	16200	21700	23300	37000

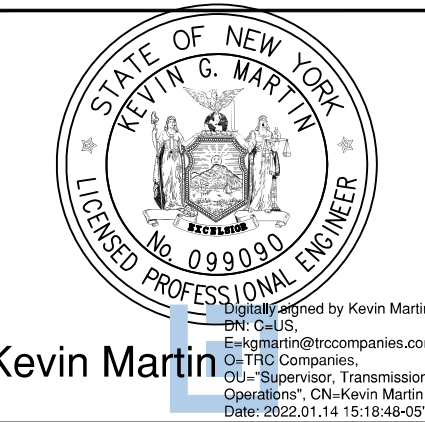
NOTES:

- ALL LOADS ARE ULTIMATE VALUES AND INCLUDE OVERLOAD FACTORS. VERTICAL LOADS INCLUDE THE WEIGHT OF INSULATORS AND HARDWARE WITH AN ADDITIONAL 500 LB WORKING LOAD (EXCEPT FOR THE EVERYDAY LOAD CASE). UNLESS NOTED OTHERWISE LOADS ARE DERIVED FROM MAXIMUM LINE ANGLE.
- STRUCTURES ARE TO BE DESIGNED IN ACCORDANCE WITH ASCE/SEI 48-11, OR LATEST EDITION, AND TECHNICAL MANUAL (TM2.22.01) "TUBULAR STEEL POLE SPECIFICATION". IN CASE OF CONFLICT, THE MORE STRINGENT DOCUMENT SHALL BE USED.
- FOR STRUCTURE FINISH (I.E. GALVANIZING, WEATHERING, PAINTED) REFER TO TM2.22.01, PART 5.
- WIND PRESSURE SHOWN IN TABLE C SHALL BE APPLIED IN THE WORST CASE DIRECTION FOR THE CORRESPONDING LOAD CASE. THE EXTREME WIND (NESC HIGH WIND) LOAD CASE SHALL ALSO BE APPLIED TO THE STRUCTURE WITHOUT WIRE LOADS APPLIED. THE FOLLOWING SHAPE FACTORS SHALL BE USED: 1.0 FOR 12 OR 16-SIDED, 1.4 FOR 6 OR 8-SIDED, 2.0 FOR SQUARE/FLAT.
- HORIZONTAL STRUCTURE DEFLECTION SHALL BE LIMITED TO 1% OF POLE HEIGHT ABOVE GROUND LINE. RAKING/CAMBERING IS NOT PERMITTED.
- MCGREGOR STYLE LADDERS AND LADDER CLIPS SHALL BE SUPPLIED FOR EACH POLE.
- WORKING HOLES SHALL BE DESIGNED FOR A MINIMUM LOAD OF 60 KIPS APPLIED IN ANY DIRECTION.
- DAVIT ARMS SHALL BE UPSWEPT AT 1 INCH PER LINEAR FOOT AND REMAIN SO UNDER EVERYDAY/DEFLECTION LOADING. VERTICAL DEFLECTION SHALL BE LIMITED TO 1% OF ARM LENGTH UNDER HEAVY ICE LOADING.
- ANCHOR BOLT EMBEDMENT DEPTH SHALL BE CALCULATED IN ACCORDANCE WITH ACI 318, DETERMINED USING ULTIMATE BOND STRESS VALUES BASED ON 4,000 PSI CONCRETE COMPRESSIVE STRENGTH.
- FOR CONSTRUCTION/MAINTENANCE CASE "A", LOADS SHALL BE APPLIED TO ONE ATTACHMENT POINT AT A TIME WHILE REMAINING ATTACHMENT POINTS USE LOADS FROM CORRESPONDING LOAD CASE "B".

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: N/A				
		AVANGRID TRANSMISSION CONSTRUCTION STANDARDS MANUAL				STRUCTURE STANDARDS - STEEL 115KV SINGLE POLE SINGLE CIRCUIT DEADEND ON ARMS - 0° TO 90° TYPE SPDE		Revision 1 Date 11/29/2017
Drwn. By: DG/DAS	Date Dr.: 06/27/2017	Checked By: SM/DAS	Date Ck.: 06/28/2017	Approved By: PGZ/DAS	Date App.: 07/20/2017	TM2.23.TE-S1CP		Sheets 3 OF 3

Note 1: The Avangrid drawing TM2.23.TE-S1CP is provided as a representation of the structure type that will be utilized. The wire type, tensions, and structure loadings will be determined during detailed design.

PRELIMINARY
NOT FOR CONSTRUCTION



KEY PLAN:

REVISIONS:

NO.	DATE	DESCRIPTION
0	01/14/2022	DESIGN DRAWINGS

PROJECT TITLE:

BROOKSIDE SOLAR PROJECT

PROJECT LOCATION:

TOWNS OF BURKE AND CHATEAUGAY
FRANKLIN CO., NY

SHEET TITLE & DESCRIPTION:

SINGLE CIRCUIT
DEADEND ON ARMS
STRUCTURE DRAWING

SHEET 3 OF 3

PROJ NUM:	422299
DES:	D. LYONS
DWN:	D. LYONS
CHK:	K. DRZEWIECKI
APV:	K. MARTIN
DATE:	07/08/2021

SCALE AT 24" x 36"

NTS
SHEET NO: HV-C.09.05 REV: 0



