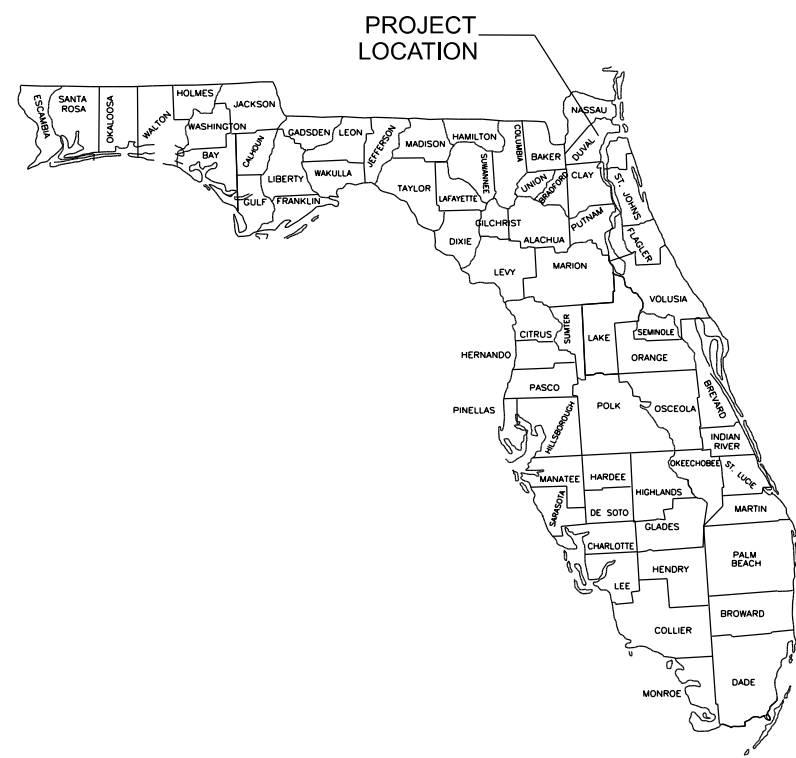


PROJECT LOCATION:
30°19'10.90"N
81°55'2.52"W



VICINITY MAP N.T.S.



ISSUE FOR REVIEW

MILLER 230KV SUBSTATION

BUILDING COMMUNITY

SUBSTATION
ENGINEERING
PROJECT #8009570



225 NORTH PEARL STREET
JACKSONVILLE, FLORIDA 32202

ISSUED FOR REVIEW

CONSULTANT INFORMATION



495 N KELLER ROAD, SUITE 300
MAITLAND, FL 32751
WWW.BURNSMCD.COM

PROFESSIONAL
ENGINEER'S SEAL

ORIGINALLY PREPARED UNDER
THE RESPONSIBLE SUPERVISION OF

PE: Brendan T. Murphy

LIC. NO.: 98687

STATE: FL

DATE: -

REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	
A	02/24/25	8009570	ISSUED FOR 60% REVIEW	BMCD	BTM	DATE	07/29/2025
B	07/29/25	8009570	ISSUED FOR 90% REVIEW	BMCD	BTM	BY	JB
						REVIEW	BTM
						DRAFTING	
						DATE	07/29/2025
						BY	KN
						REVIEW	JB

MILLER SUBSTATION INSTALLATION

COVER AND VICINITY MAP

MILLER SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

PROJ # 8009570

DRAWING NAME:

ML2024-CV1.dgn

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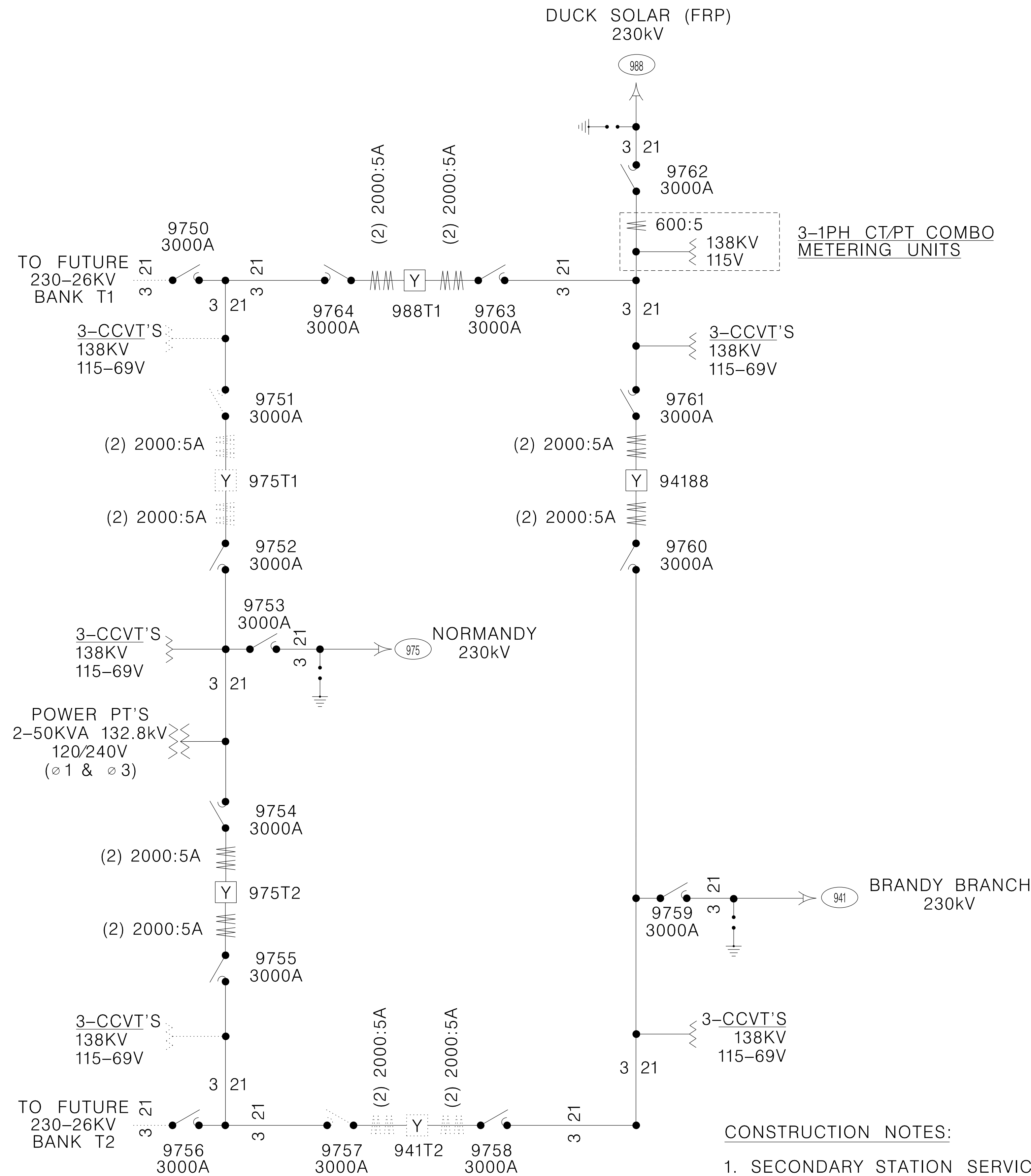
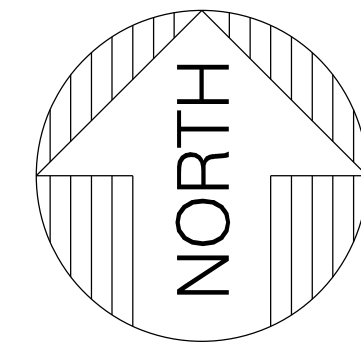
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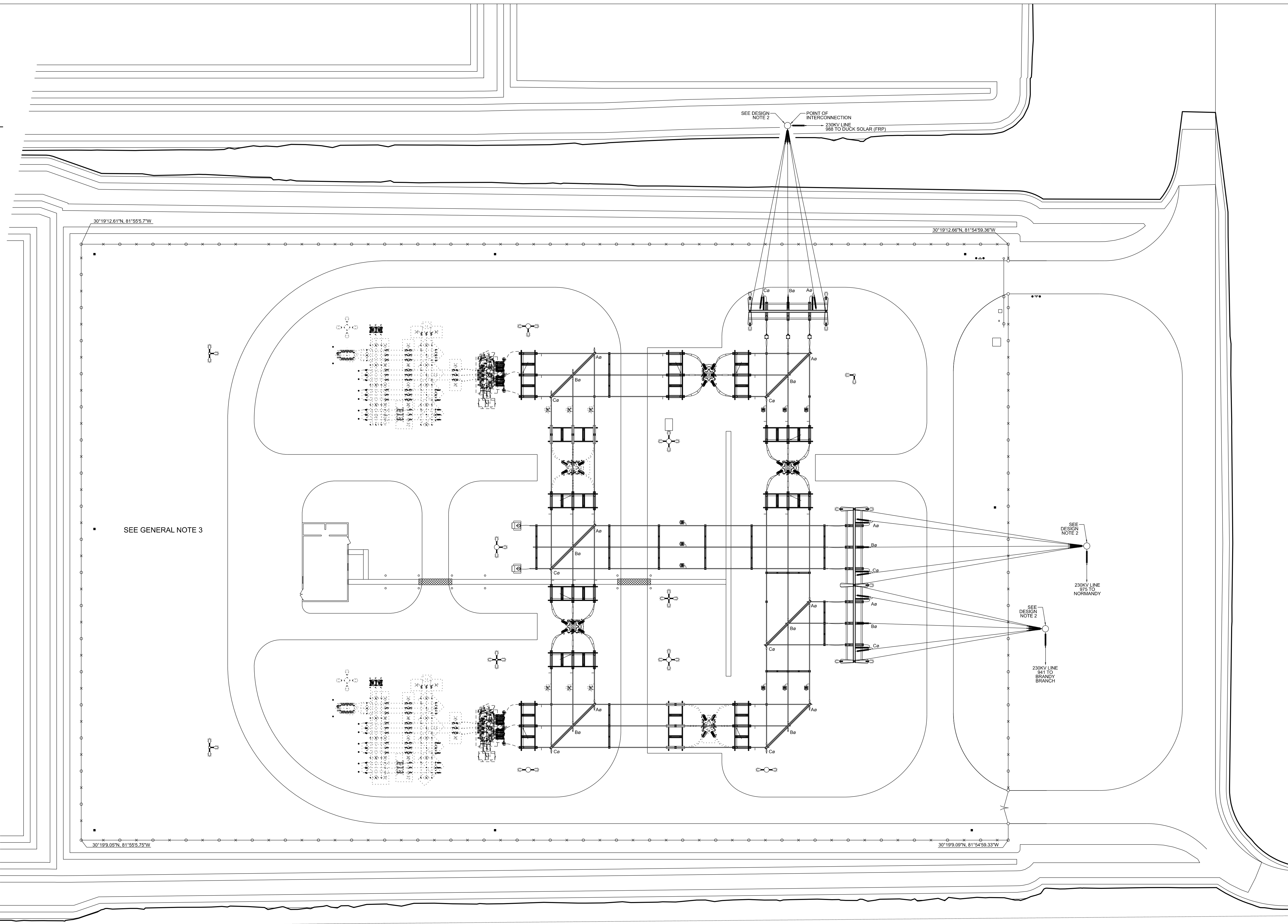
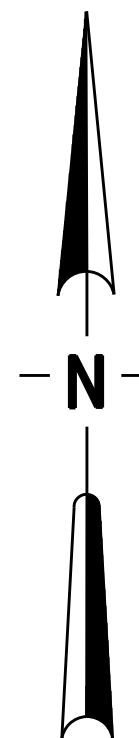
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OF

1 of 1



 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL	<table><tr><th>REV</th><th>DATE</th><th>PROJ #</th><th>REVISION DESCRIPTION</th><th>BY</th><th>REVIEW</th><th colspan="2">ENGINEERING</th></tr><tr><td>A</td><td>9/20/24</td><td>8009570</td><td>ISSUED FOR 10% REVIEW</td><td>BMCD</td><td>BTM</td><td>DATE</td><td>07/29/2025</td></tr><tr><td>B</td><td>11/05/24</td><td>8009570</td><td>ISSUED FOR 30% REVIEW</td><td>BMCD</td><td>BTM</td><td>BY</td><td>JB</td></tr><tr><td>C</td><td>12/03/24</td><td>8009570</td><td>REISSUED FOR 30% REVIEW</td><td>BMCD</td><td>BTM</td><td>REVIEW</td><td>BTM</td></tr><tr><td>D</td><td>02/24/25</td><td>8009570</td><td>ISSUED FOR 60% REVIEW</td><td>BMCD</td><td>BTM</td><td colspan="2">DRAFTING</td></tr><tr><td>E</td><td>07/29/25</td><td>8009570</td><td>ISSUED FOR 90% REVIEW</td><td>BMCD</td><td>BTM</td><td>DATE</td><td>07/29/2025</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>BY</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW</td><td></td></tr></table>	REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING		A	9/20/24	8009570	ISSUED FOR 10% REVIEW	BMCD	BTM	DATE	07/29/2025	B	11/05/24	8009570	ISSUED FOR 30% REVIEW	BMCD	BTM	BY	JB	C	12/03/24	8009570	REISSUED FOR 30% REVIEW	BMCD	BTM	REVIEW	BTM	D	02/24/25	8009570	ISSUED FOR 60% REVIEW	BMCD	BTM	DRAFTING		E	07/29/25	8009570	ISSUED FOR 90% REVIEW	BMCD	BTM	DATE	07/29/2025							BY								REVIEW		MILLER SUBSTATION INSTALLATION		DRAWING NAME: ML2024-SL1.dgn	
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ISSUED FOR REVIEW	 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: <u>Brendan T. Murphy</u> LIC. NO.: <u>98687</u> STATE: <u>FL</u> DATE: <u> </u>	SINGLE LINE DIAGRAM	DRAWING SET: ML2024		DRAWING #: SHEET #:																																																																		
				OF 1 OF 1																																																																				
				MILLER SUBSTATION		SCALE: NONE		SUBSTATION & TRANSMISSION ENGINEERING		PROJ #: 8009570																																																														



GENERAL NOTES

- SITE DESIGN AND CONSTRUCTION BY OTHERS (FRP), INCLUDING CLEARING, GRUBBING AND PAD GRADING WORK. SEE SITE DRAWINGS 92853-000 SH.22 'JEA SWITCHYARD DETAILS AND SECTIONS' FOR PAD DETAILS.
- TRANSMISSION LINE POLE SIZES AND LOCATIONS ARE APPROXIMATE AND FOR REFERENCE ONLY.
- LAYDOWN AREA FOR JEA EQUIPMENT.
- THE ELECTRICAL CLEARANCES FOR JEA SUBSTATION PROJECTS ARE SHOWN IN THE TABLE BELOW. THE CONTRACTOR SHOULD CONSTRUCT THE SUBSTATION AS DEPICTED IN THE DRAWINGS AND REFER TO THESE AS A REFERENCE. NOTE THAT "PHASE SPACING" SHOWN IS RUS 1724E-300 MINIMUM AND HAS BEEN MODIFIED TO 13'-0" PER CLIENT STANDARD.

DESIGN NOTES

- 230KV RIGID BUS IS 4" SCH. 80 ALUMINUM TUBE.
- TRANSMISSION LINE POLE SIZES AND LOCATIONS ARE APPROXIMATE AND FOR REFERENCE ONLY.
- 70'-0" LOWBOY TRUCK USED FOR SIMULATING AUTOTURN THROUGHOUT THE OUTER DRIVE PATH OF THE STATION. DESIGNED TURN RADIUS FOR THIS VEHICLE IS 64.03'. ACCESS ROAD TURN RADIUS REQUIRED TO BE MINIMUM OF 80'-0" FOR THIS VEHICLE TO TURN TO ENTER THE STATION.
- 30'-0" BUCKET TRUCK USED FOR SIMULATING AUTOTURN ON THE STATION DRIVE PATH WITHIN RING BUS. DESIGNED TURN RADIUS FOR THIS VEHICLE IS 38.00'.
- ROAD RADIUS MINIMUM OF 80'-0" REQUIRED TO MEET DESIGNED TURN RADIUS OF 64.03' FOR A 70'-0" LOWBOY TRUCK.

LEGEND:

- 35'-0" LIGHT POLES (25'-0" ABOVE GRADE)
- 35'-0" SECURITY POLES (25'-0" ABOVE GRADE)
- PLASTIC BOLLARD (TRENWA GPJ-78)
- CONCRETE-FILLED PROTECTIVE BOLLARD (FURNISHED AND INSTALLED BY JEA SECURITY)
- ACCESS CONTROL CARD READER (FURNISHED AND INSTALLED BY JEA SECURITY)
- 162W LED SHOEBOX LIGHT (20 TOTAL) - EACL-010-H3-AW-740-NAD1-BLCK-LRV2
- 115W LED LUMINAIRE (44 TOTAL) - ATBM-P20-MVOLT-R3NLC
- 85'-0" STATIC MASTS (70'-0" ABOVE GRADE)

Voltage (kV)	BIL (kV)	Min. Phase-Phase (in)		Min. Phase-Ground (ft-in)		Phase Spacing (ft-in)	Min. Above Grade Personnel (ft-in)		Min. to Fence Horizontal (ft)
13.2	110	12"	1'-0"	7"	0'-7"	2'-0"	9'-0"	21'	10'
34.5	200	18"	1'-6"	13"	1'-1"	3'-0"	9'-6"	22'	10'
69	350	31"	2'-7"	25"	2'-1"	5'-0"	10'-5"	23'	12'
138	650	63"	5'-3"	50"	4'-2"	8'-0"	12'-2"	25'	14'
230	900	89"	7'-5"	71"	5'-11"	11'-0"	14'-10"	27'	16'

Reference RUS Bulletin 1724E-300 (2001), & NESC (2007)





225 NORTH PEARL STREET
JACKSONVILLE, FLORIDA 32202

ISSUED FOR REVIEW

CONSULTANT INFORMATION



495 N KELLER ROAD, SUITE 300
MAITLAND, FL 32751
WWW.BURNSMCD.COM

PROFESSIONAL ENGINEER'S SEAL

ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: Brendan T. Murphy
LIC. NO.: 98687
STATE: FL
DATE:

REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	
A	11/05/24	8009570	ISSUED FOR 30% REVIEW	BMCD	BTM	DATE	07/29/2025
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						DRAFTING	
				DATE	07/29/2025		
				BY	KN		
				REVIEW	JB		

MILLER SUBSTATION INSTALLATION

MILLER SUBSTATION

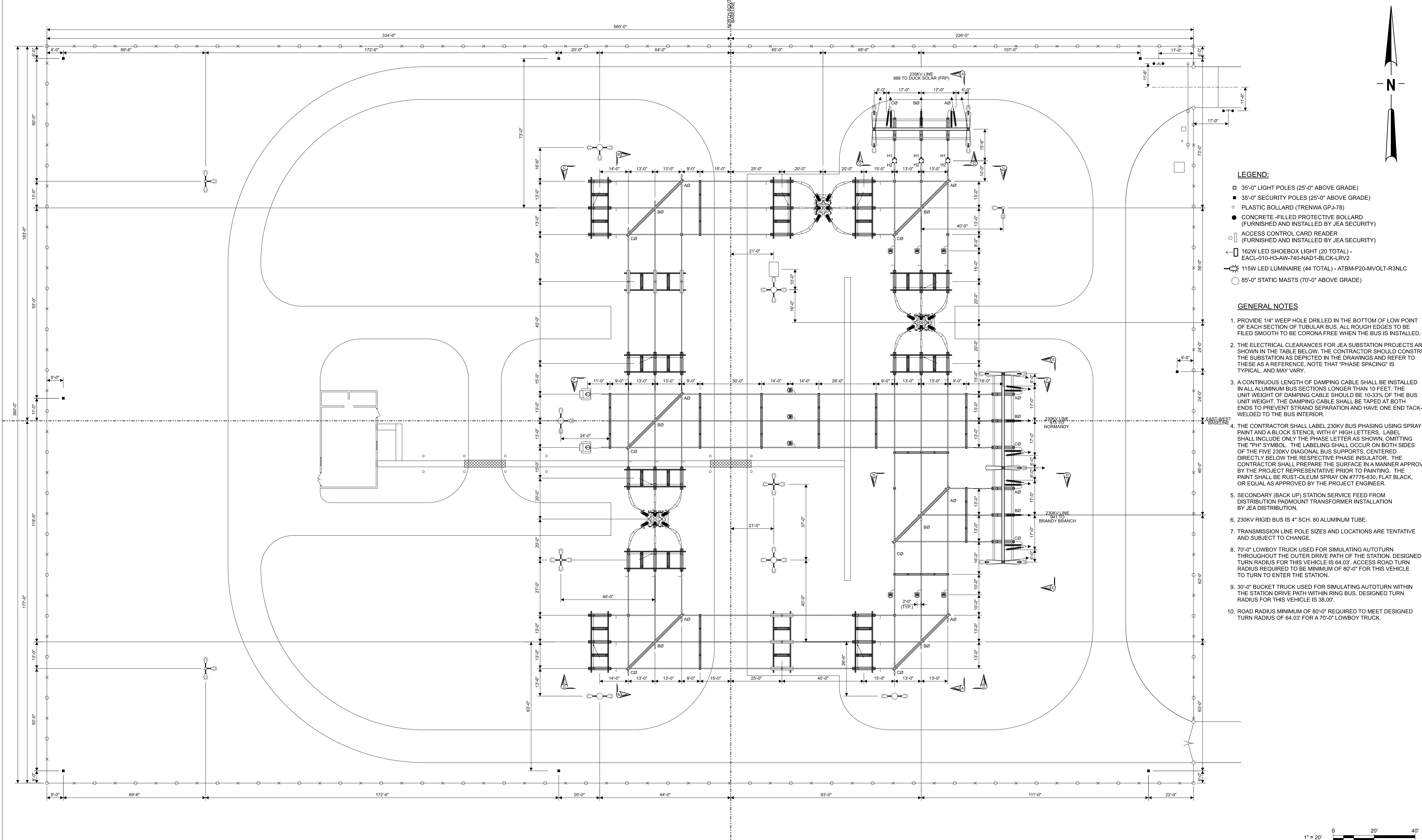
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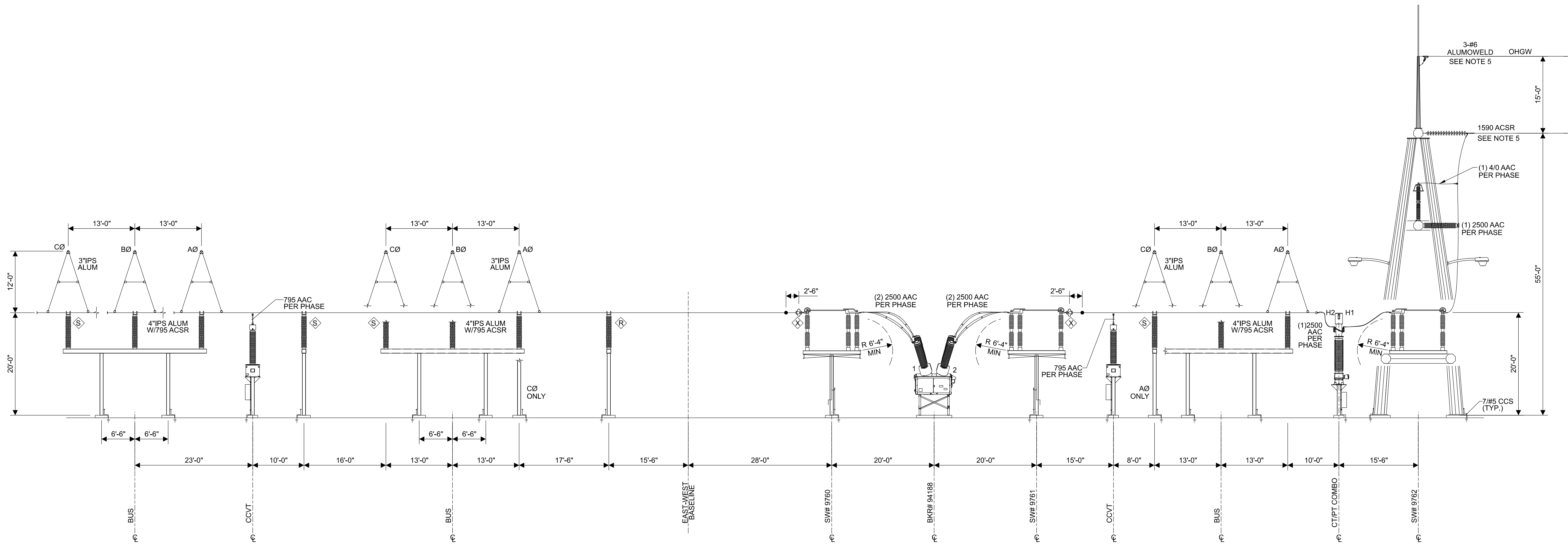
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ML2024-EP1.dgn

DRAWING SET:
ML2024

DRAWING #:
OF

SHEET #:
1 OF 1

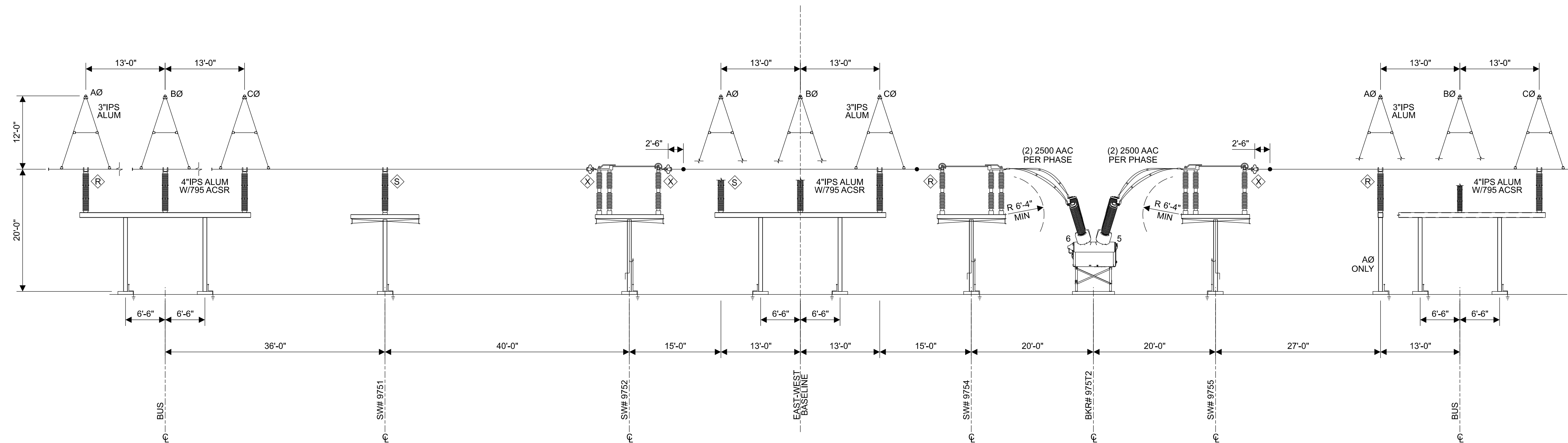




SECTION

A

EP2



SECTION

B

EP2

LEGEND:

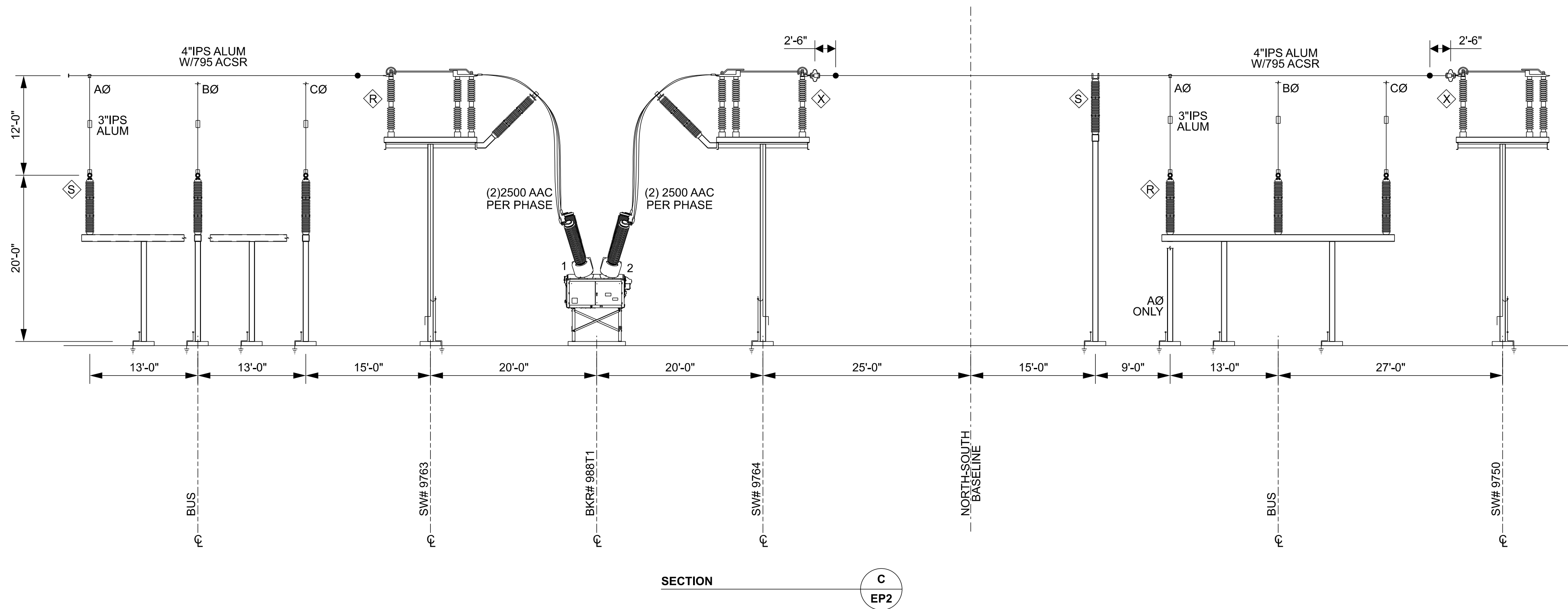
- SLIP FITTING
RIGID FITTING
EXPANSION FITTING

GENERAL NOTES:

- PROVIDE 1/4" WEEP HOLE DRILLED IN THE BOTTOM OF LOW POINT OF EACH SECTION OF TUBULAR BUS. ALL ROUGH EDGES TO BE FILED SMOOTH TO BE CORONA FREE WHEN THE BUS IS INSTALLED.
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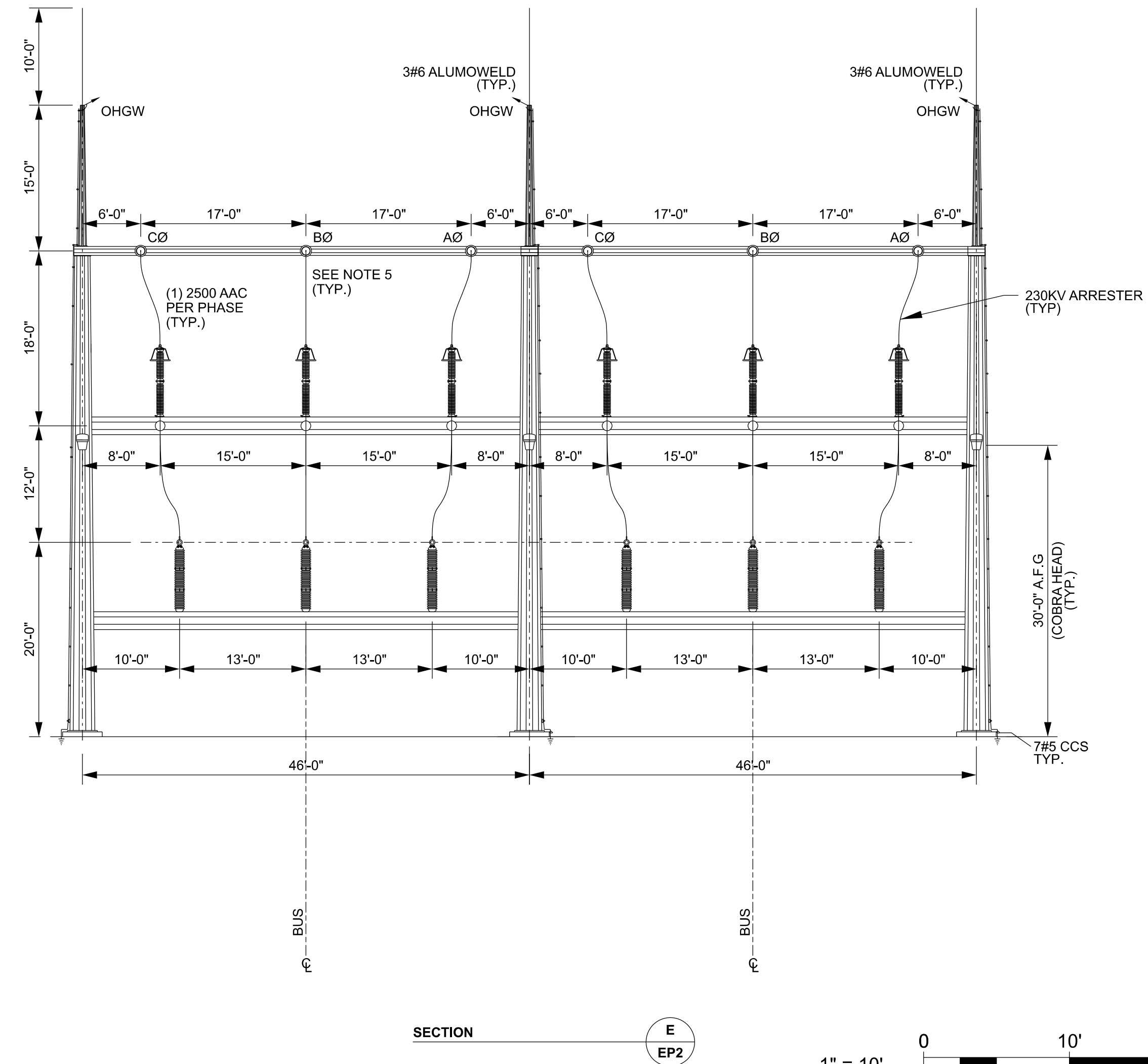
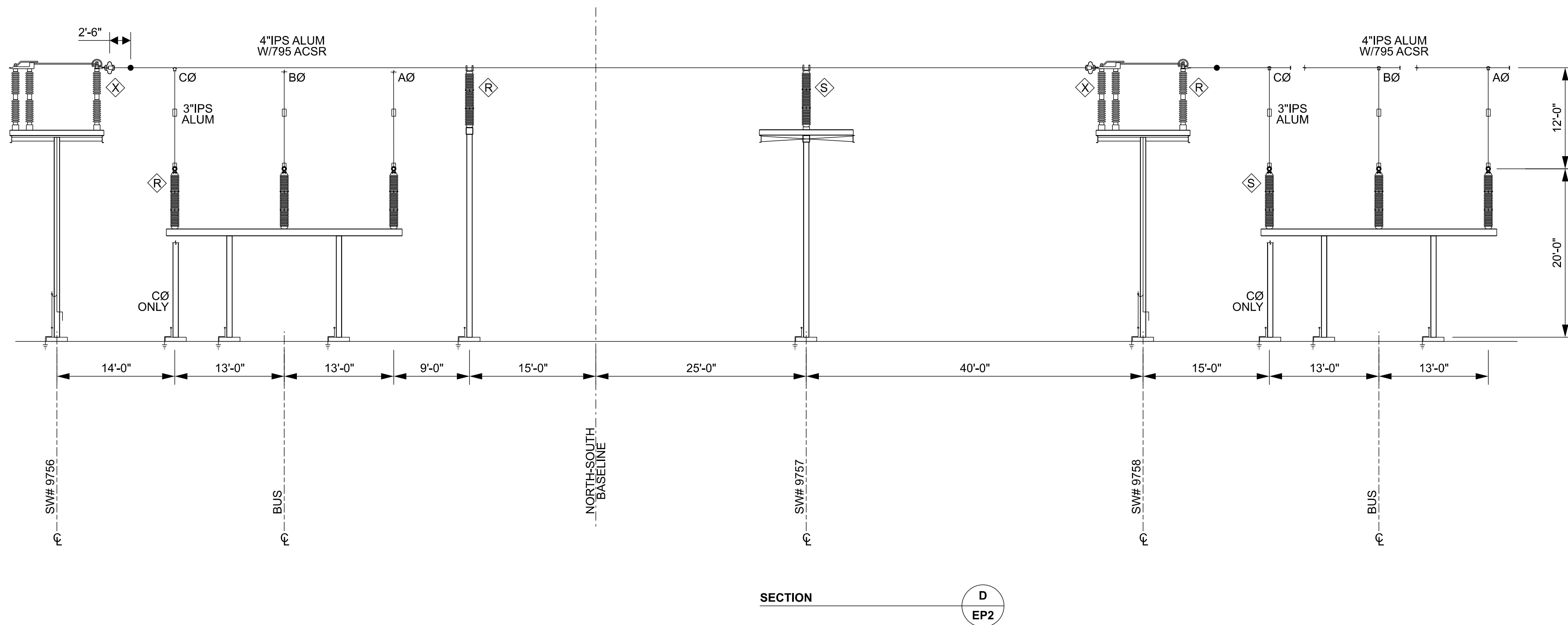
1" = 10' 0 10' 20'

 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL	<table><tr><th>REV</th><th>DATE</th><th>PROJ #</th><th colspan="2">REVISION DESCRIPTION</th><th>BY</th><th>REVIEW</th><th colspan="2">ENGINEERING</th></tr><tr><td>A</td><td>07/29/25</td><td>8009570</td><td colspan="2">ISSUED FOR 90% REVIEW</td><td>BMCD</td><td>BTM</td><td>DATE</td><td>07/29/2025</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>BY</td><td>JB</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>REVIEW</td><td>BTM</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td colspan="2">DRAFTING</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>DATE</td><td>07/29/2025</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>BY</td><td>KN</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>REVIEW</td><td>JB</td></tr></table>				REV	DATE	PROJ #	REVISION DESCRIPTION		BY	REVIEW	ENGINEERING		A	07/29/25	8009570	ISSUED FOR 90% REVIEW		BMCD	BTM	DATE	07/29/2025								BY	JB								REVIEW	BTM								DRAFTING									DATE	07/29/2025								BY	KN								REVIEW	JB	MILLER SUBSTATION INSTALLATION				DRAWING NAME: ML2024-ES1.dg	
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 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM				ELECTRICAL SECTIONS				DRAWING SET: ML2024																																																																													
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ISSUED FOR REVIEW				AS SHOWN				SUBSTATION & TRANSMISSION ENGINEERING		PROJ #: 8009570	OF	1 OF 3																																																																									



- GENERAL NOTES:**
1. PROVIDE 1/4" WEEP HOLE DRILLED IN THE BOTTOM OF LOW POINT OF EACH SECTION OF TUBULAR BUS. ALL ROUGH EDGES TO BE FILED SMOOTH TO BE CORONA FREE WHEN THE BUS IS INSTALLED.
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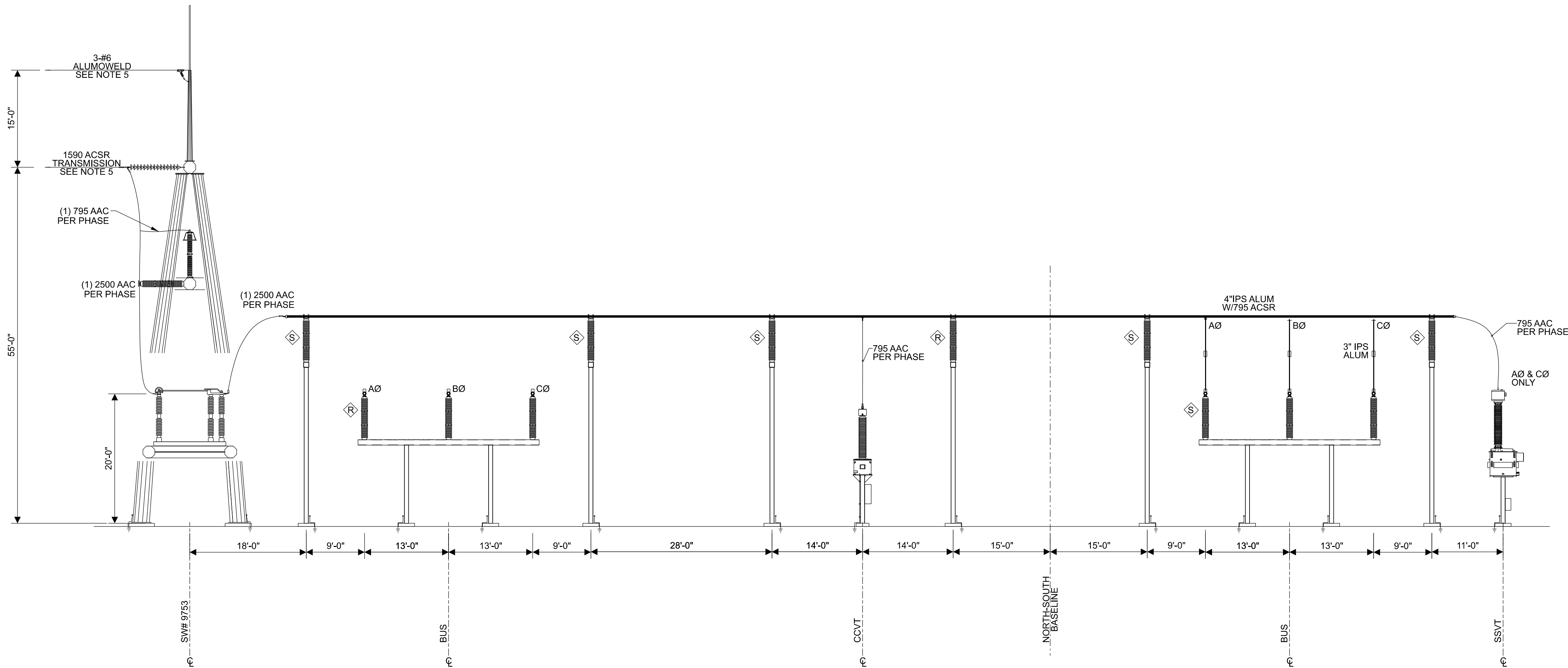
- LEGEND:**
- SLIP FITTING
 - RIGID FITTING
 - EXPANSION FITTING



1" = 10'

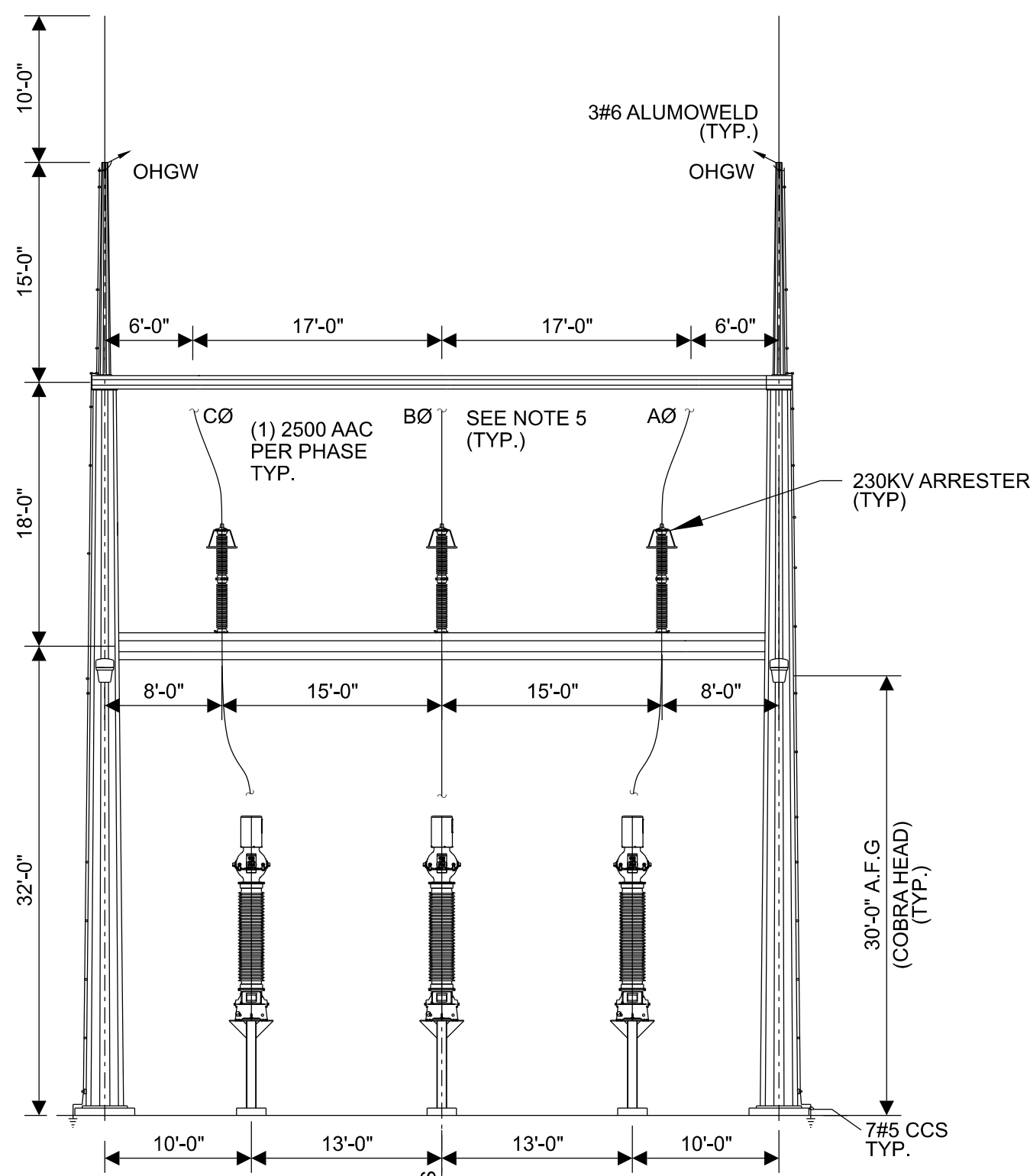
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 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: <u>Brendan T. Murphy</u> LIC. NO.: <u>98687</u> STATE: <u>FL</u> DATE: <u>-</u>	REV A 07/29/25 8009570 ISSUED FOR 90% REVIEW	REVISION DESCRIPTION		BY BMCD	REVIEW BTM	ENGINEERING DATE 07/29/2025		MILLER SUBSTATION INSTALLATION				DRAWING NAME: ML2024-ES2.dgn	
	 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM								BY JB	REVIEW BTM	DRAFTING DATE 07/29/2025					
ISSUED FOR REVIEW									DATE 07/29/2025	BY KN	SCALE: AS SHOWN		PROJ #: 8009570		DRAWING #: OF	SHEET #: 2 OF 3
								REVIEW JB			MILLER SUBSTATION SUBSTATION & TRANSMISSION ENGINEERING					



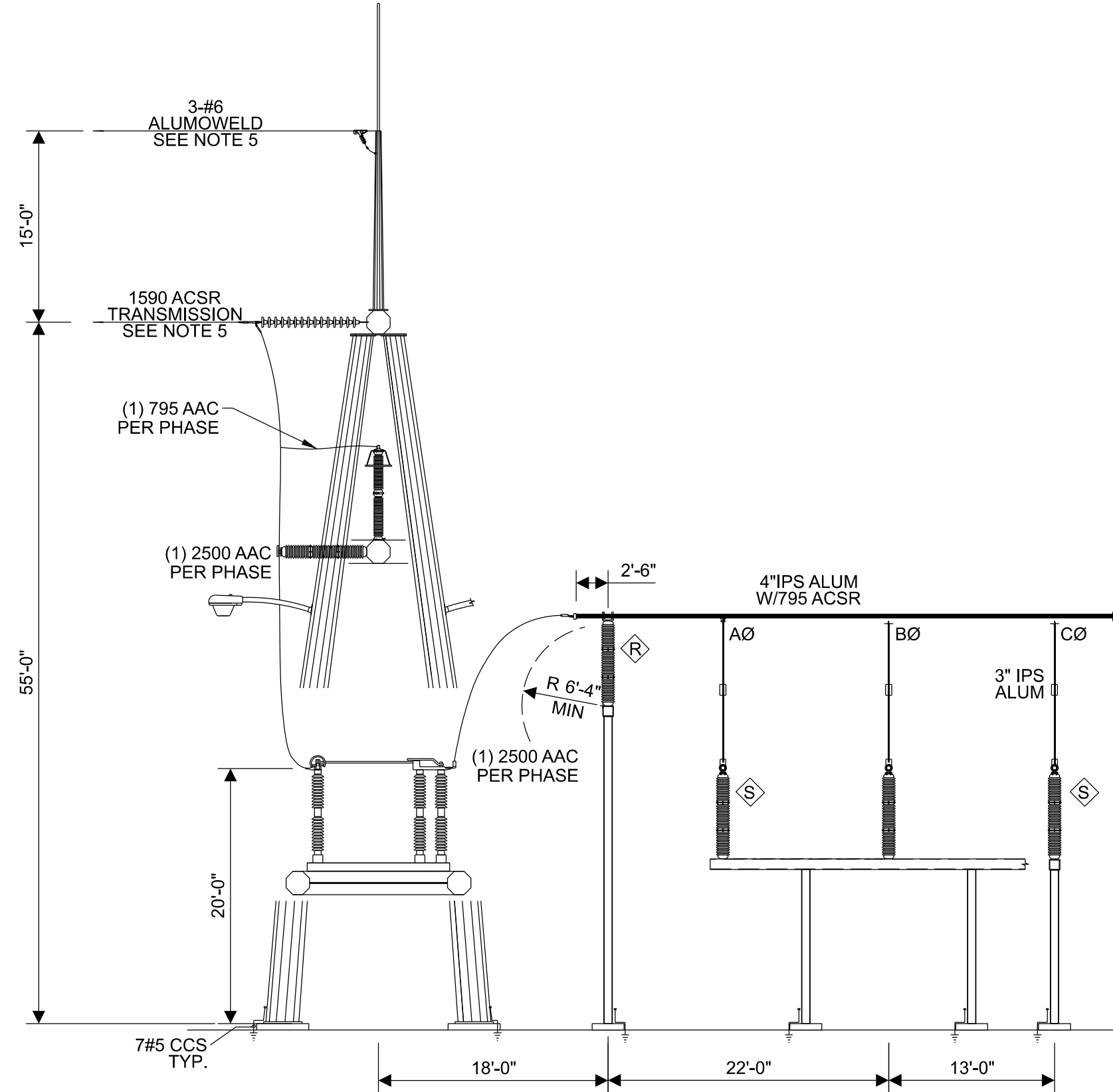
SECTION

F
EP2



SECTION

G
EP2



SECTION

H
EP2

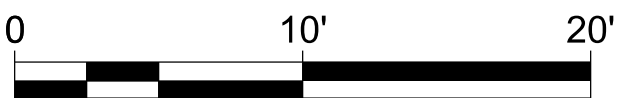
LEGEND:

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1" = 10'



225 NORTH PEARL STREET
JACKSONVILLE, FLORIDA 32202

ISSUED FOR REVIEW

CONSULTANT INFORMATION



495 N KELLER ROAD, SUITE 300
MATLAND, FL 32751
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PROFESSIONAL
ENGINEER'S SEAL

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LIC. NO.: 98687

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MILLER SUBSTATION INSTALLATION

ELECTRICAL SECTIONS

MILLER SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

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ML2024-ES3.dgn

DRAWING SET:

ML2024

DRAWING #:

SHEET #:

OF

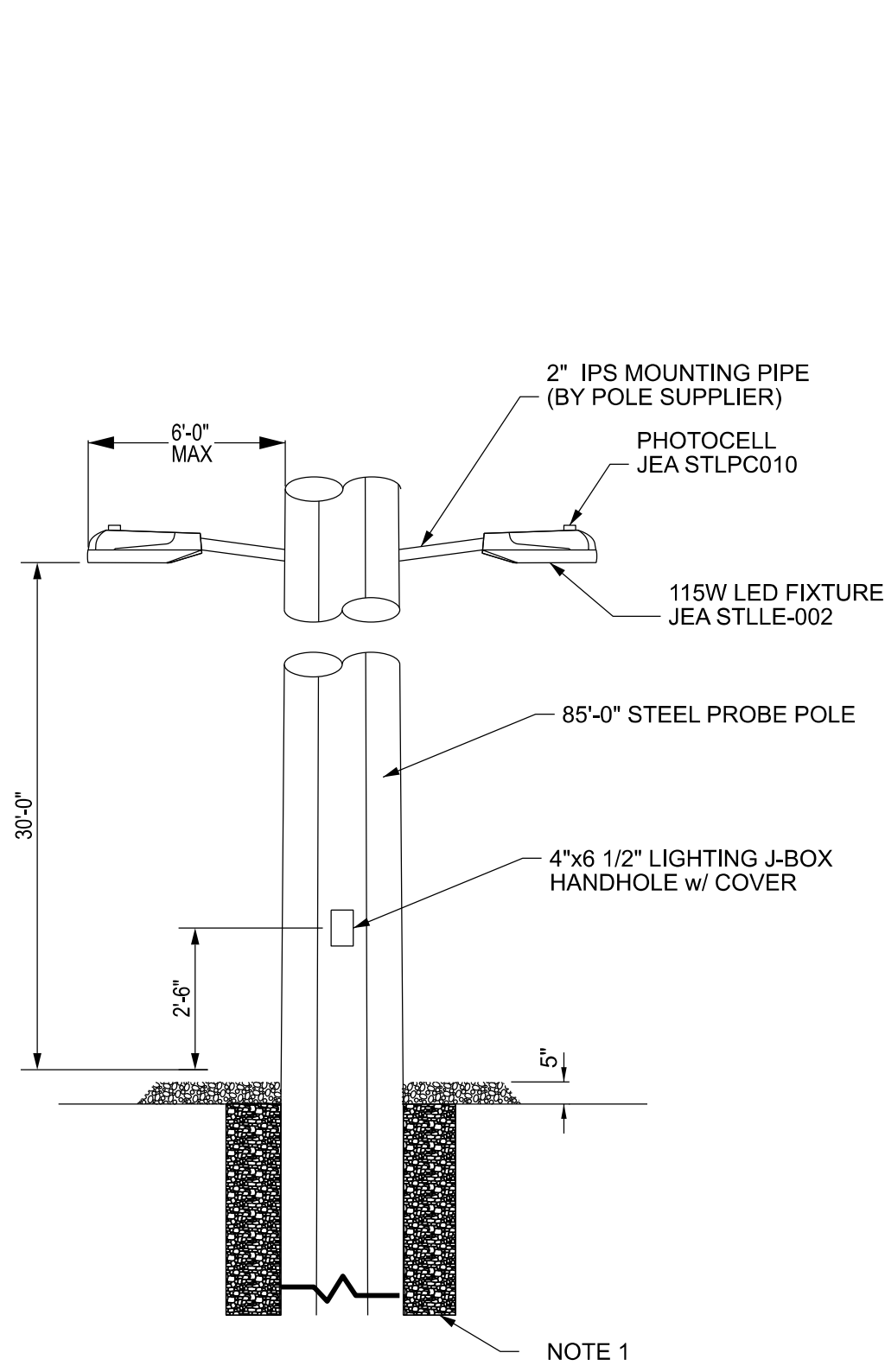
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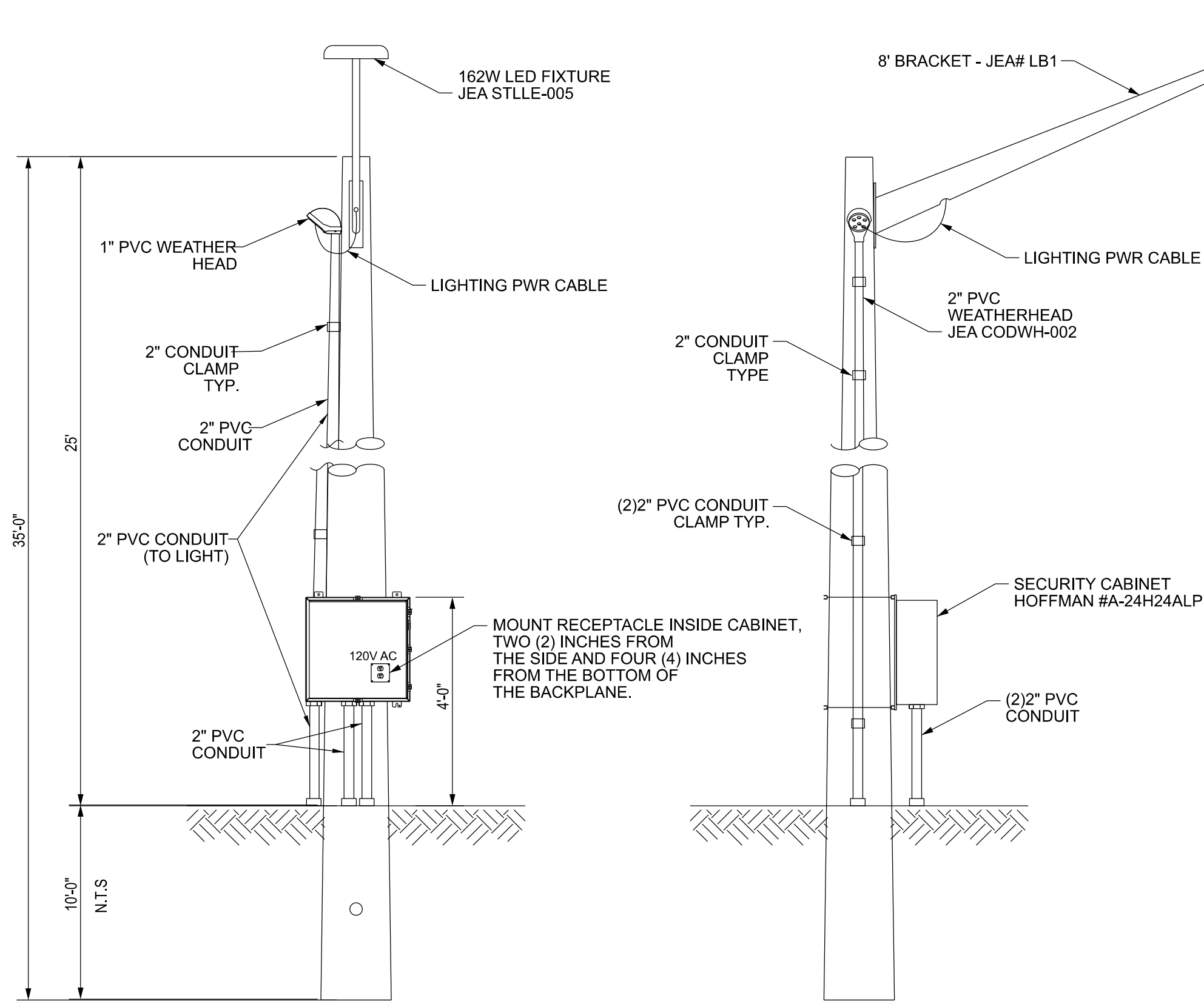
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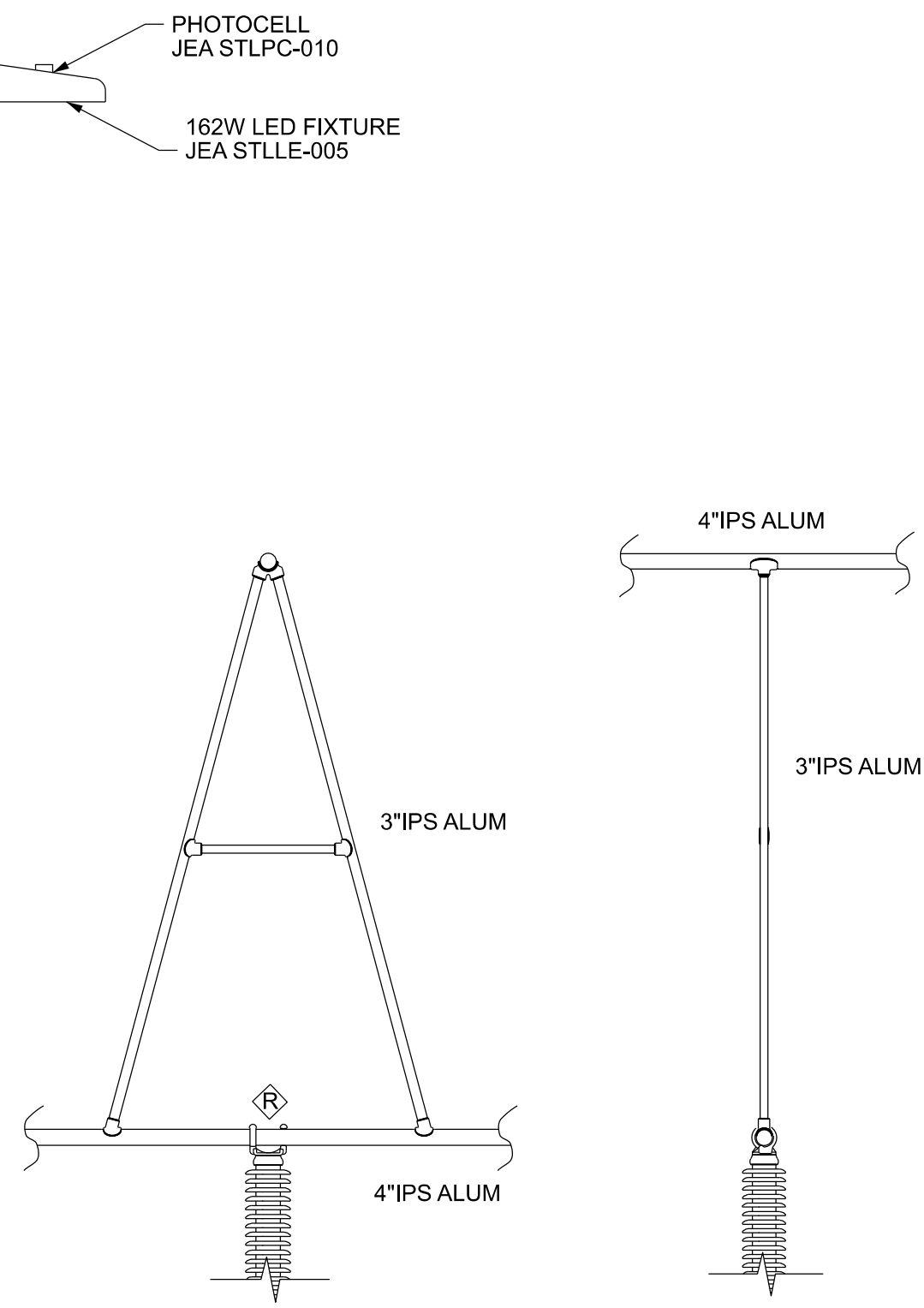
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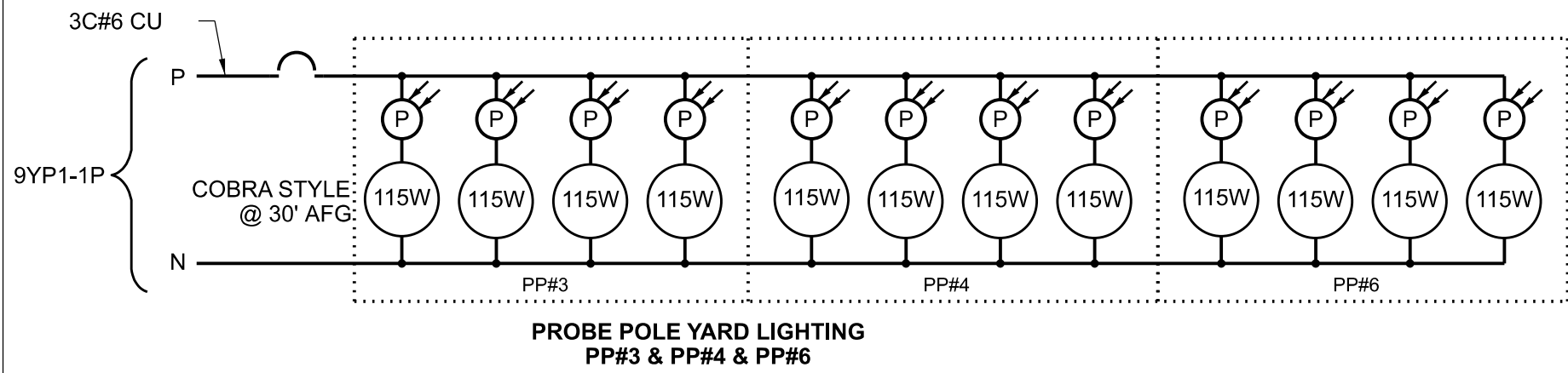
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N.T.S



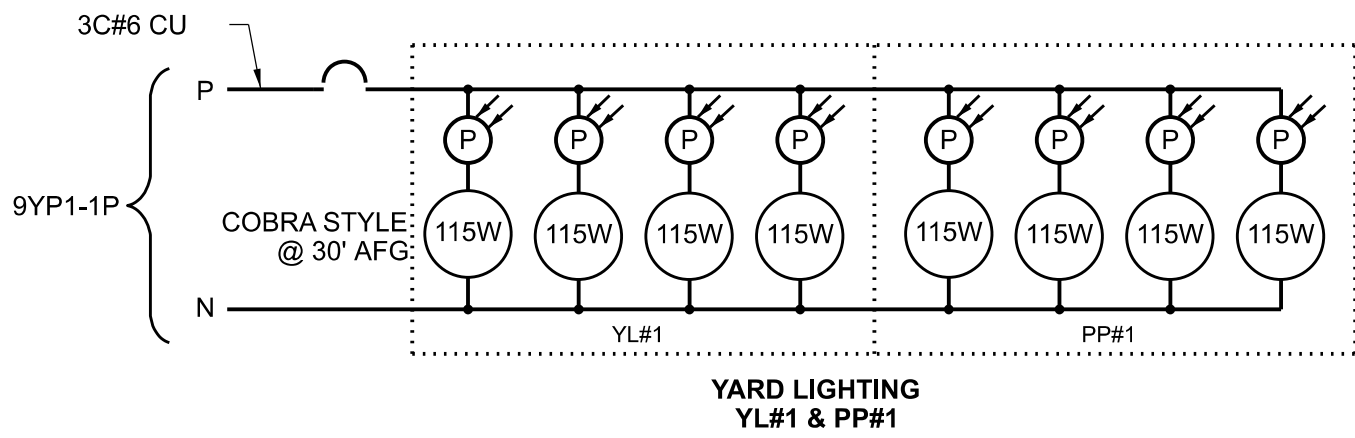
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SECURITY POLE LIGHT (SP)
(SEE NOTE 1)
N.T.S



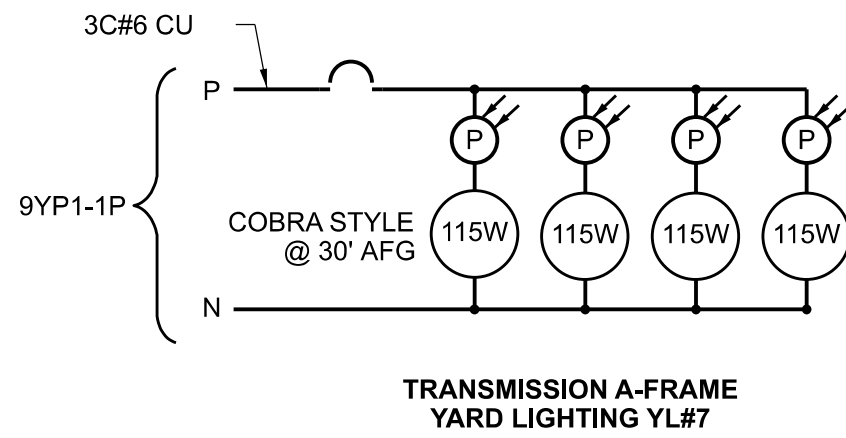
FRONT VIEW
SIDE VIEW
DETAIL
TYPICAL 230KV A-FRAME
CONSTRUCTION
N.T.S



PROBE POLE YARD LIGHTING
PP#3 & PP#4 & PP#6



YARD LIGHTING
YL#1 & PP#1



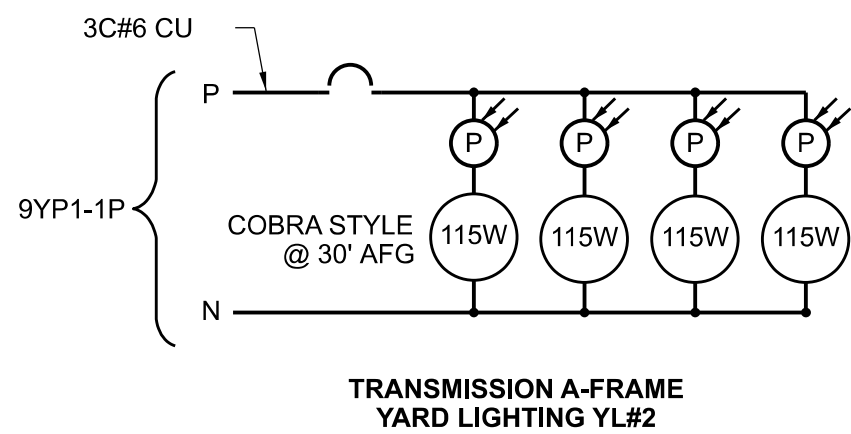
TRANSMISSION A-FRAME
YARD LIGHTING YL#7

YARD LIGHT LEGEND

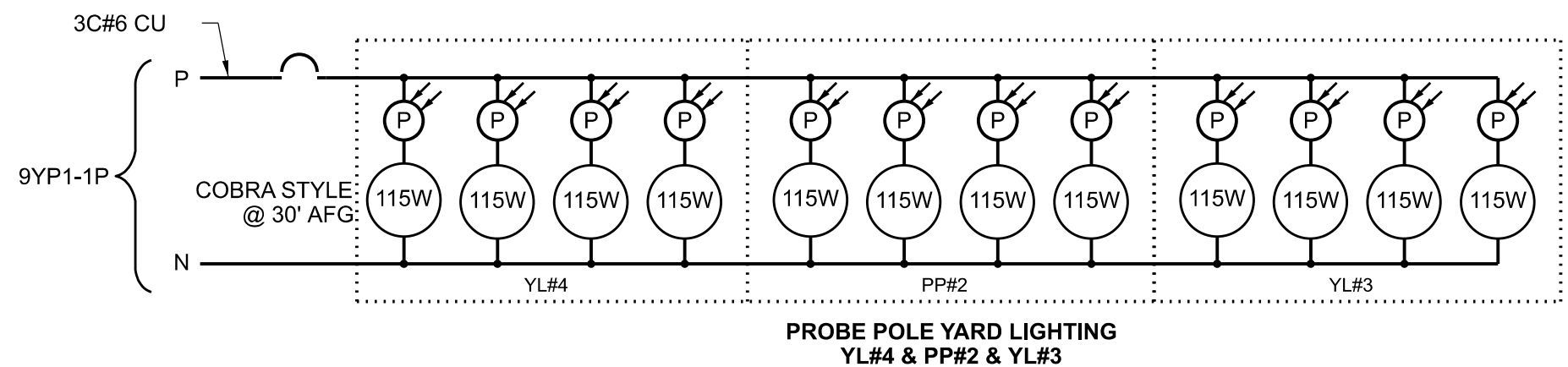
- PHOTOCELL - JEA STOCK #STLPC010 PROVIDED BY JEA, MOUNTED ONTO LUMINAIRE AND WIRED PER MANUFACT. INSTRUCTIONS.
- COBRA-STYLE LED LUMINAIRE - JEA STOCK #STLLE002, PROVIDED BY JEA.
- SHOEBOX-STYLE LED LUMINAIRE - JEA STOCK #STLLE-005, PROVIDED BY CONTRACTOR

NOTES:

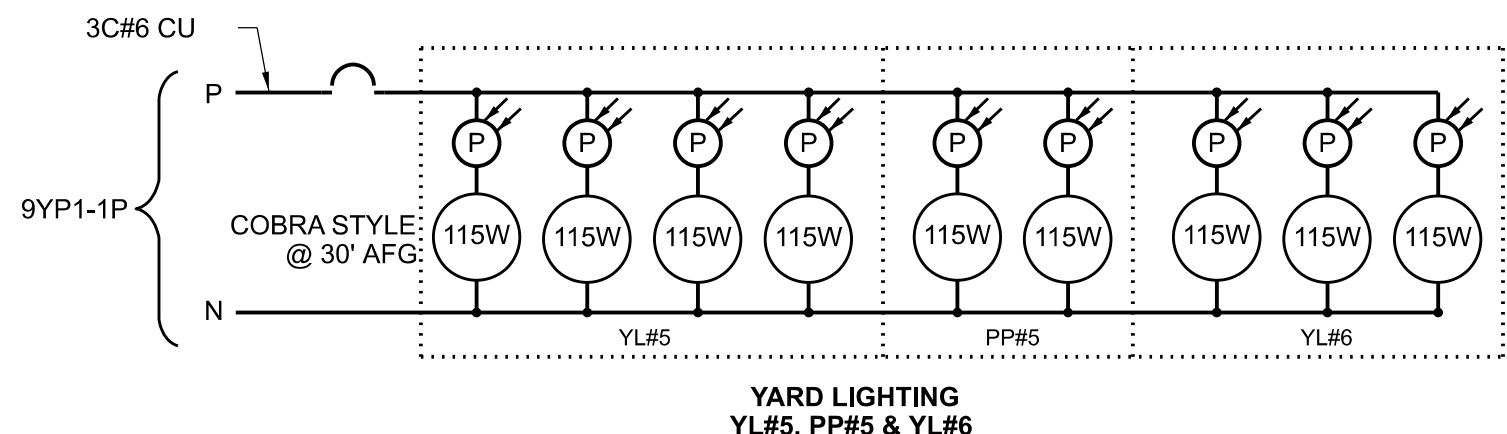
- CAMERAS TO BE INSTALLED BY JEA SECURITY. NOT SHOWN ON DETAIL.
- CONTRACTOR TO REFER TO 'FIBER OPTIC GENERAL INSTALLATION NOTES' ON CONDUIT PLAN DRAWING CP2 FOR FIBER CONDUIT INSTALLATION REQUIREMENTS AND GUIDELINES.
- CONTRACTOR TO FURNISH AND INSTALL HANDHOLES JEA CAT. #BOXPS002 CONTRACTOR TO INSTALL PULL STRINGS AND SEAL BOTH ENDS OF UNUSED CONDUIT WITHIN HANDHOLES. HANDHOLES SHALL HAVE A MINIMUM 6" BASE COURSE OF GRAVEL FOR DRAINAGE AS SHOWN.



TRANSMISSION A-FRAME
YARD LIGHTING YL#2



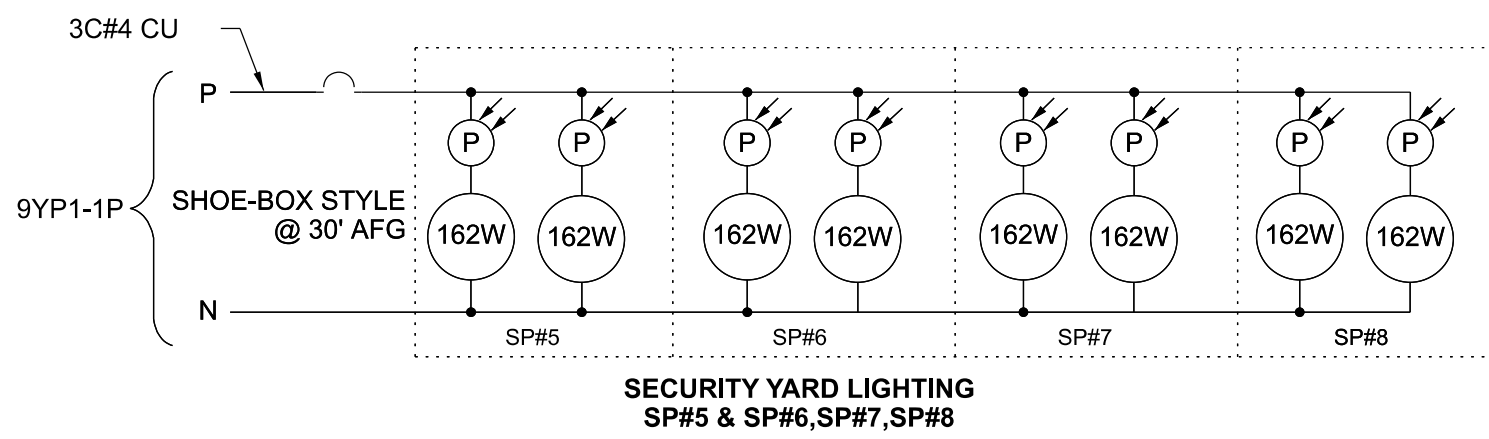
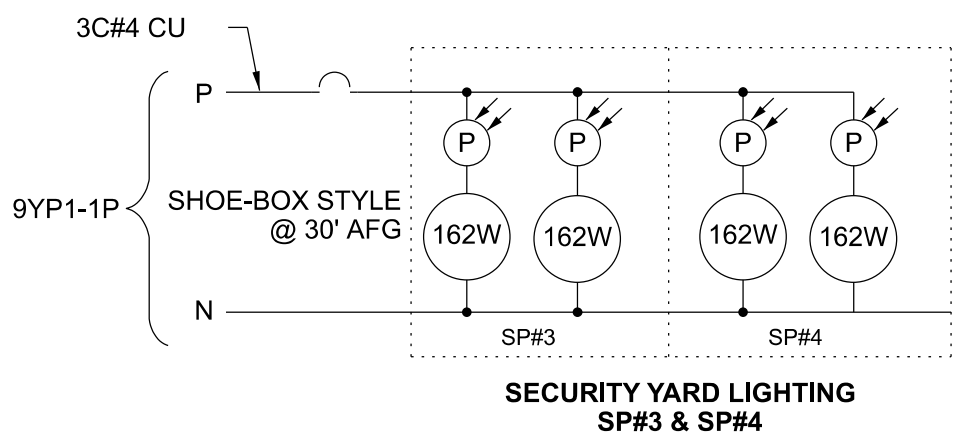
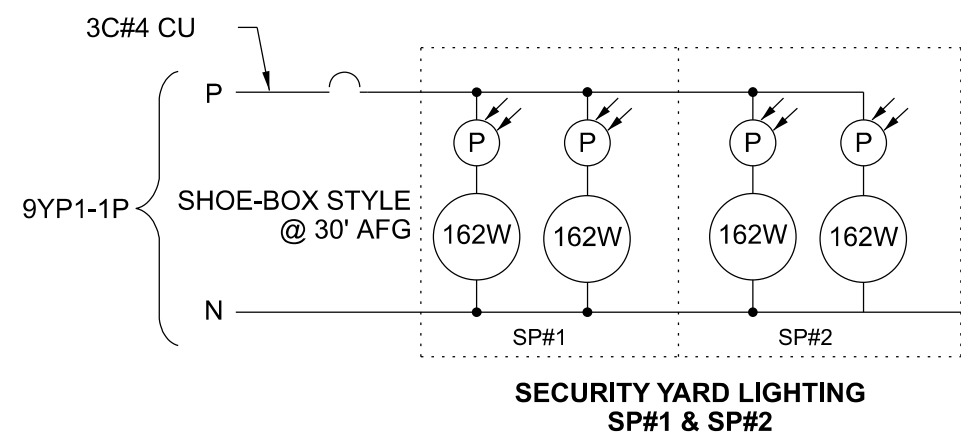
PROBE POLE YARD LIGHTING
YL#4 & PP#2 & YL#3



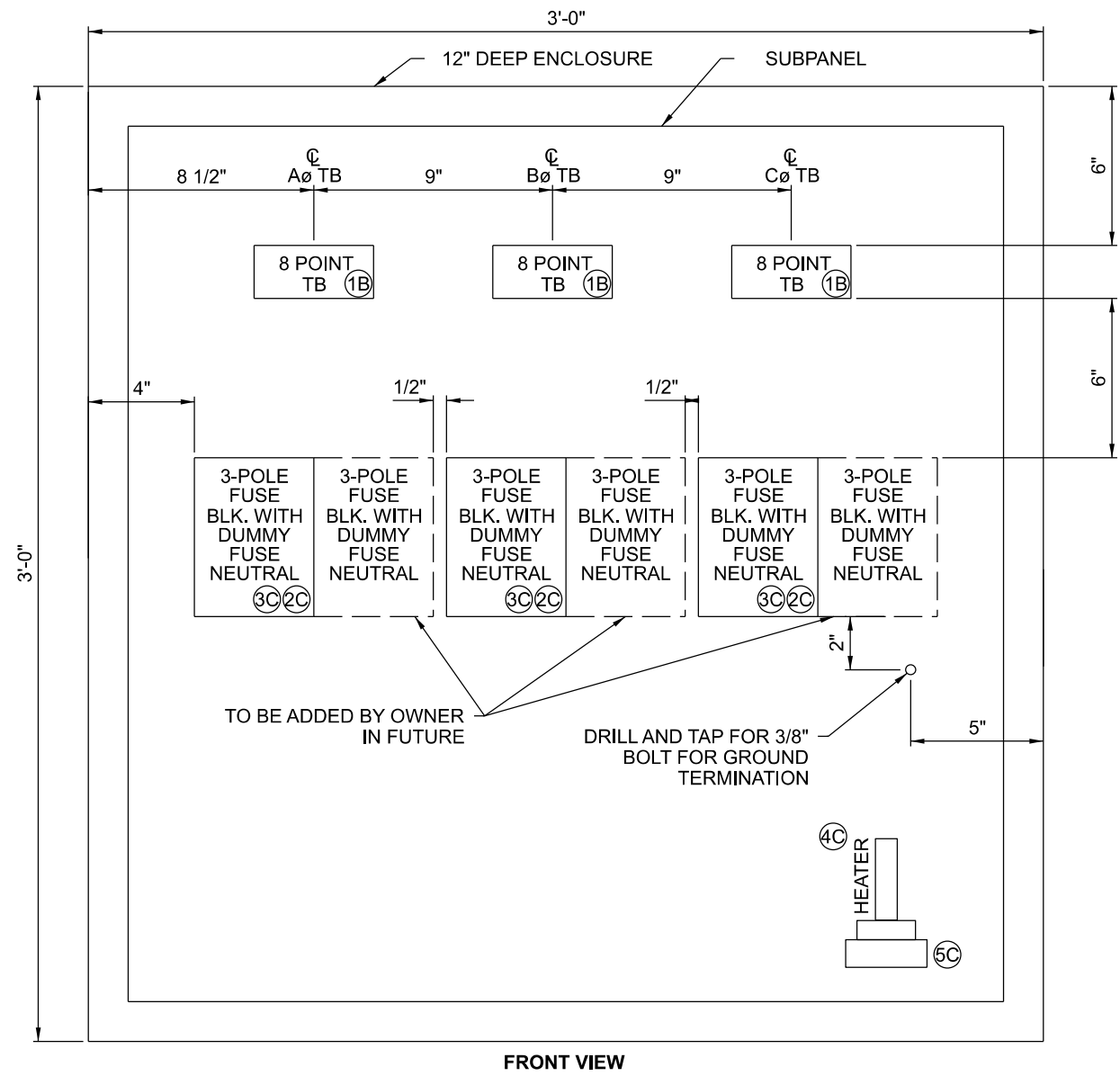
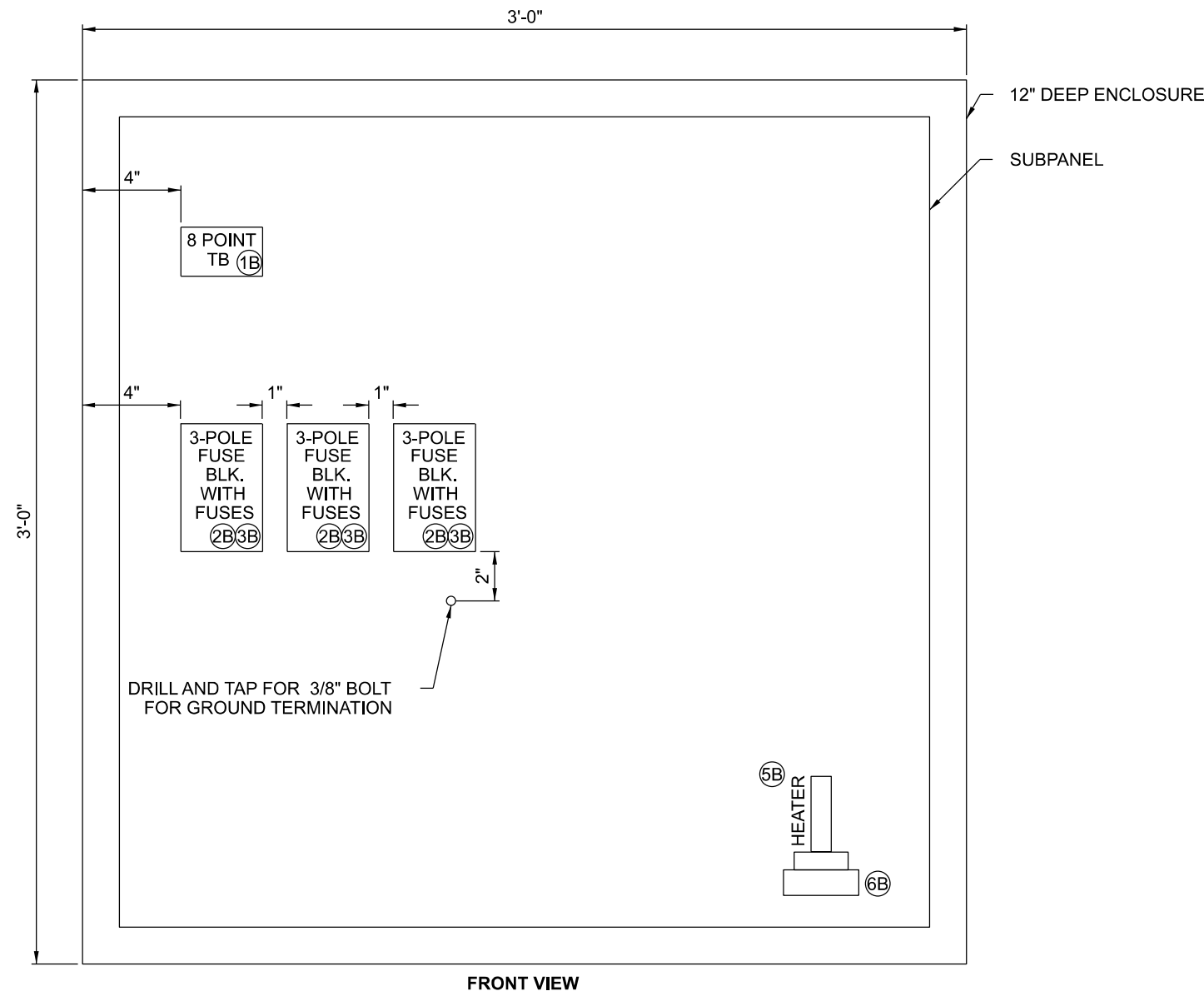
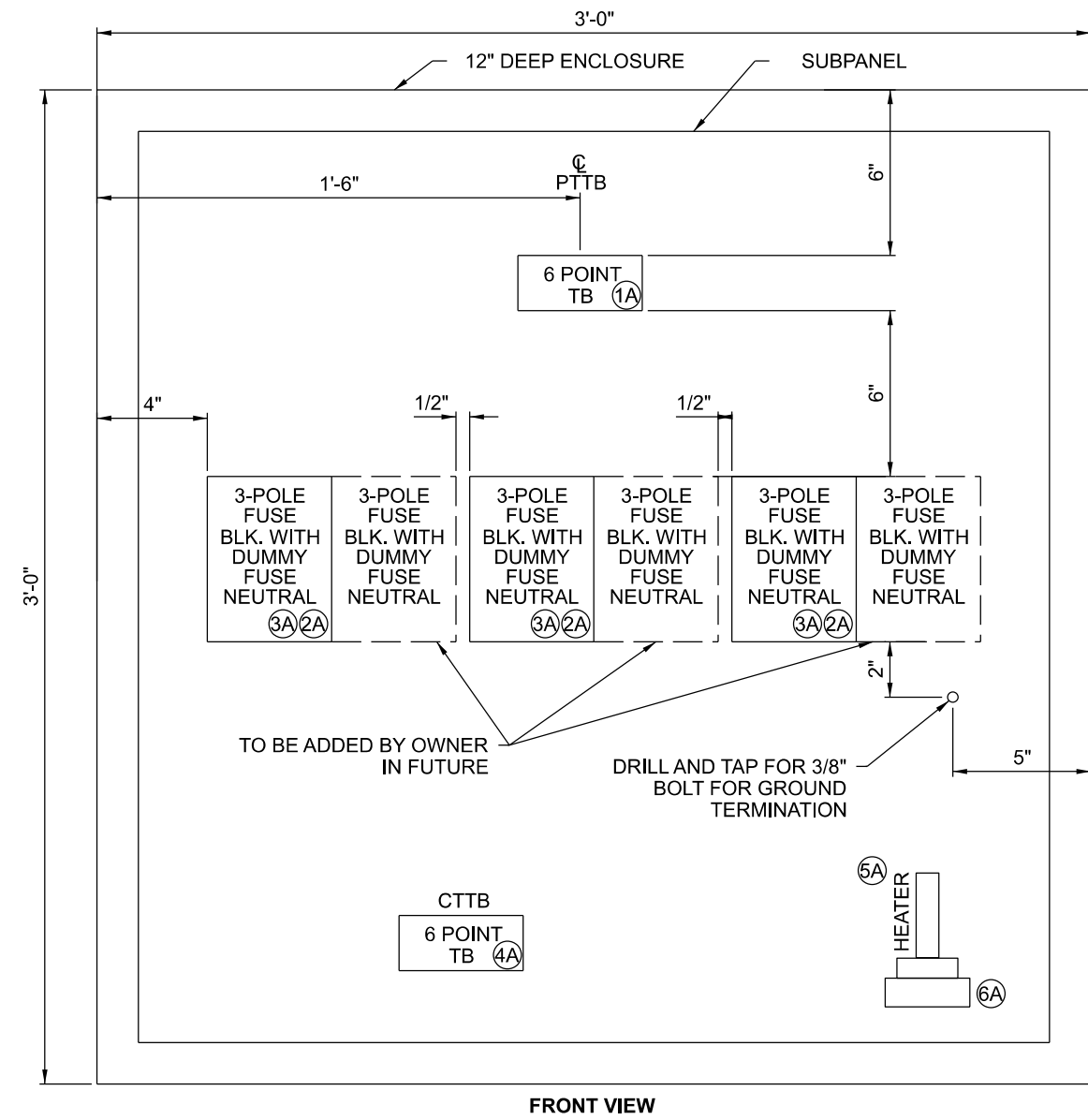
YARD LIGHTING
YL#5, PP#5 & YL#6

DETAIL
YARD LIGHT WIRING DIAGRAM
4

 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL	<table><tr><th>REV</th><th>DATE</th><th>PROJ #</th><th>REVISION DESCRIPTION</th><th>BY</th><th>REVIEW</th><th colspan="2">ENGINEERING</th></tr><tr><td>A</td><td>07/29/25</td><td>8009570</td><td>ISSUED FOR 90% REVIEW</td><td>BMCD</td><td>BTM</td><td>DATE</td><td>07/29/2025</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>BY</td><td>JB</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW</td><td>BTM</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">DRAFTING</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>DATE</td><td>07/29/2025</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>BY</td><td>KN</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW</td><td>JB</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">SCALE: NONE</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">SUBSTATION & TRANSMISSION ENGINEERING</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">PROJ # 8009570</td></tr></table>	REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING		A	07/29/25	8009570	ISSUED FOR 90% REVIEW	BMCD	BTM	DATE	07/29/2025							BY	JB							REVIEW	BTM							DRAFTING								DATE	07/29/2025							BY	KN							REVIEW	JB							SCALE: NONE								SUBSTATION & TRANSMISSION ENGINEERING								PROJ # 8009570		MILLER SUBSTATION INSTALLATION		DRAWING NAME: ML2024-ED1.dgn
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ISSUED FOR REVIEW	 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM		ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: <u>Brendan T. Murphy</u> LIC. NO.: <u>98687</u> STATE: <u>FL</u> DATE: <u>-</u>	ELECTRICAL DETAILS SHEET 1				DRAWING SET: ML2024																																																																																							
				MILLER SUBSTATION				DRAWING #: OF	SHEET #: 1 OF 2																																																																																						



DETAIL
SECURITY LIGHT WIRING DIAGRAM



979CTPT MATERIAL LIST	
1	WEATHERPROOF ENCLOSURE, NEMA 3R STAINLESS STEEL WITH HINGED COVER, AUSTIN AB-363612WLX-T304 WITH SUBPANEL AB-3636TP OR APPROVED EQUAL.
1	PT TERMINAL BLOCK, GE, CAT. #EB25B06C, 6 POINT, 600V, 30A, WITH COVER AND WASHER-HEAD SCREWS.
3	FUSE BLOCK, 3-POLE, 250V, 30A, GOULD SHAWMUT CAT. #20313
3	DUMMY FUSE NEUTRAL, 250 V, 30A, EATON BUSSMAN, CAT. #NTN-R-30 OR APPROVED EQUAL
1	CT TERMINAL BLOCK, G.E. CAT. #EB27B06SC, 6 POINT, 600V, 30A, STANDARD CONNECTORS WITH SHORT CIRCUIT BAR
1	HEATER, EDISON SCREW BASE, 120V, 100W CHROMALOX, P/N SCB-100-253833 (100 WATTS AT 120 VAC)
1	SOCKET, SCREW BASE HEATER, CLEAT RECEPTACLE, PORCELAIN KEYLESS SCREW TERMINALS, 660 WATTS MAX, 250 VAC EAGLE BRANDS P/N 657-BOX OR GE P/N GE5655-7
PROVISIONS FOR BOTTOM ENTRY CONDUIT, AS REQUIRED FURNISHED AND INSTALLED BY CONTRACTOR	

DETAIL
230kV 3a CTPPT FUSE JUNCTION BOX (N.T.S.)

SSVT MATERIAL LIST	
1	TERMINAL BLOCK, 8 POINT, G.E. CAT. #EB25A08WC WITH WHITE MARKING STRIP AND COVER
3	BUSSMAN LPS 400A FUSE, EATON CAT. #LPS-RK-400SP OR APPROVED EQUAL.
3	FUSE BLOCK, 3-POLE, 250V, 30A, GOULD SHAWMU CAT. #20313
1	WEATHERPROOF ENCLOSURE, NEMA 3R STAINLESS STEEL WITH HINGED COVER, AUSTIN AB-363612WLX-T304 WITH SUBPANEL AB-3636TP OR APPROVED EQUAL.
1	HEATER, EDISON SCREW BASE, 120V, 100W CHROMALOX, P/N SCB-100-253833 (100 WATTS AT 120 VAC)
1	SOCKET, SCREW BASE HEATER, CLEAT RECEPTACLE, PORCELAIN KEYLESS SCREW TERMINALS, 660 WATTS MAX, 250 VAC EAGLE BRANDS P/N 657-BOX OR GE P/N GE5655-7
PROVISIONS FOR BOTTOM ENTRY CONDUIT, AS REQUIRED FURNISHED AND INSTALLED BY CONTRACTOR	

DETAIL
230kV 3a CCVT FUSE JUNCTION BOX (NOT TO SCALE)

979CCVTJB, 985CCVTJB, 957CCVTJB MATERIAL LIST (EACH)	
1	WEATHERPROOF ENCLOSURE, NEMA 3R STAINLESS STEEL WITH HINGED COVER, AUSTIN AB-363612WLX-T304 WITH SUBPANEL AB-3636TP OR APPROVED EQUAL.
1	CCVT TERMINAL BLOCK, G.E. CAT. #EB25B06C, 6 POINT, 600V, 30A, WITH COVER AND WASHER-HEAD SCREWS
3	FUSE BLOCK, 3-POLE, 250V, 30A, GOULD SHAWMUT CAT. #20313
3	DUMMY FUSE NEUTRAL, 250 V, 30A, EATON BUSSMAN CAT. #NTN-R-30 OR APPROVED EQUAL
1	HEATER, EDISON SCREW BASE, 120V, 100W CHROMALOX, P/N SCB-100-253833 (100 WATTS AT 120 VAC)
1	SOCKET, SCREW BASE HEATER, CLEAT RECEPTACLE, PORCELAIN KEYLESS SCREW TERMINALS, 660 WATTS MAX, 250 VAC EAGLE BRANDS P/N 657-BOX OR GE P/N GE5655-7
PROVISIONS FOR BOTTOM ENTRY CONDUIT, AS REQUIRED FURNISHED AND INSTALLED BY CONTRACTOR	

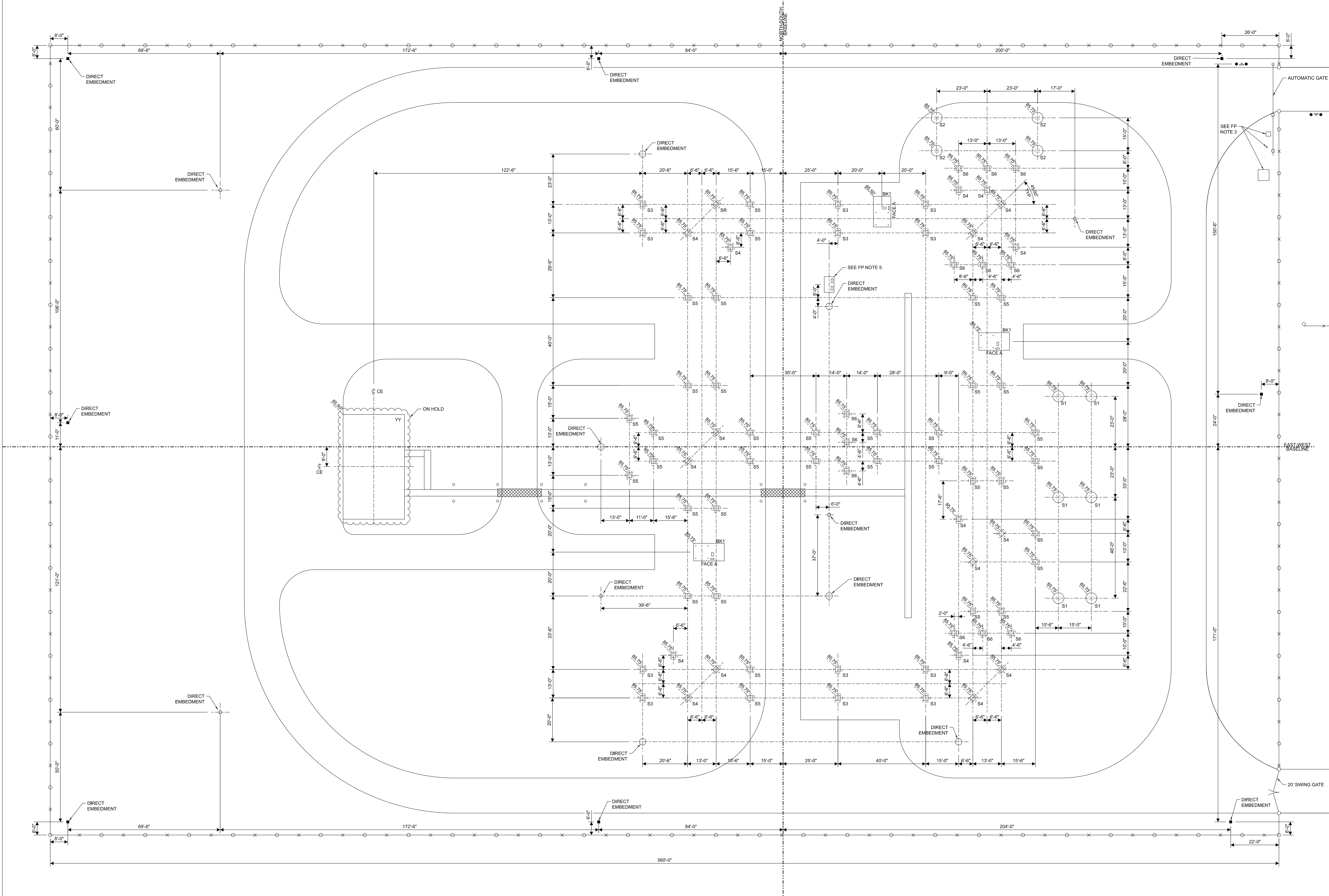
DETAIL
230kV 3a CCVT FUSE JUNCTION BOX (NOT TO SCALE)

YARD LIGHT LEGEND

- PHOTOCELL - JEA STOCK #STLPC010 PROVIDED BY JEA, MOUNTED ONTO LUMINAIRE AND WIRED PER MANUFACT. INSTRUCTIONS.
- COBRA-STYLE LED LUMINAIRE - JEA STOCK #STLLE002, PROVIDED BY JEA.
- SHOEBOX-STYLE LED LUMINAIRE - JEA STOCK #STYLLE-005, PROVIDED BY CONTRACTOR.

NOTES

- CONTRACTOR TO DRILL AND TAP FOR 3/8" BOLT FOR GROUND TERMINATION IN JUNCTION BOXES AT LOCATIONS SHOWN. CONTRACTOR TO FURNISH AND INSTALL ALL GROUNDING PROVISIONS FOR JUNCTION BOXES TO BE CONNECTED TO STATION GRID. CONNECT 7#5 COPPERWELD TO EXTERIOR OF JUNCTION BOX AND #8 COPPER OR LARGER FROM 3/8" INTERIOR BOLT TO 7#5 COPPERWELD SPLIT BOLT CONNECTION.
- CONTRACTOR IS RESPONSIBLE FOR THE WIRING OF ALL SUBSTATION YARD EQUIPMENT AS LISTED IN THE SPECIFICATIONS, INCLUDING JUNCTION BOXES, CIRCUIT BREAKERS, YARD PANELS, ETC. THE CONTRACTOR SHALL NOTIFY THE ONSITE JEA PROJECT REPRESENTATIVE OR PROJECT MANAGER TO REQUEST DETAILED INTERCONNECTION DRAWINGS TWO WEEKS IN ADVANCE OF NEED.
- CONTRACTOR TO PROVIDE ALL HARDWARE FOR MOUNTING TERMINAL BLOCKS INTO NEMA ENCLOSURE.



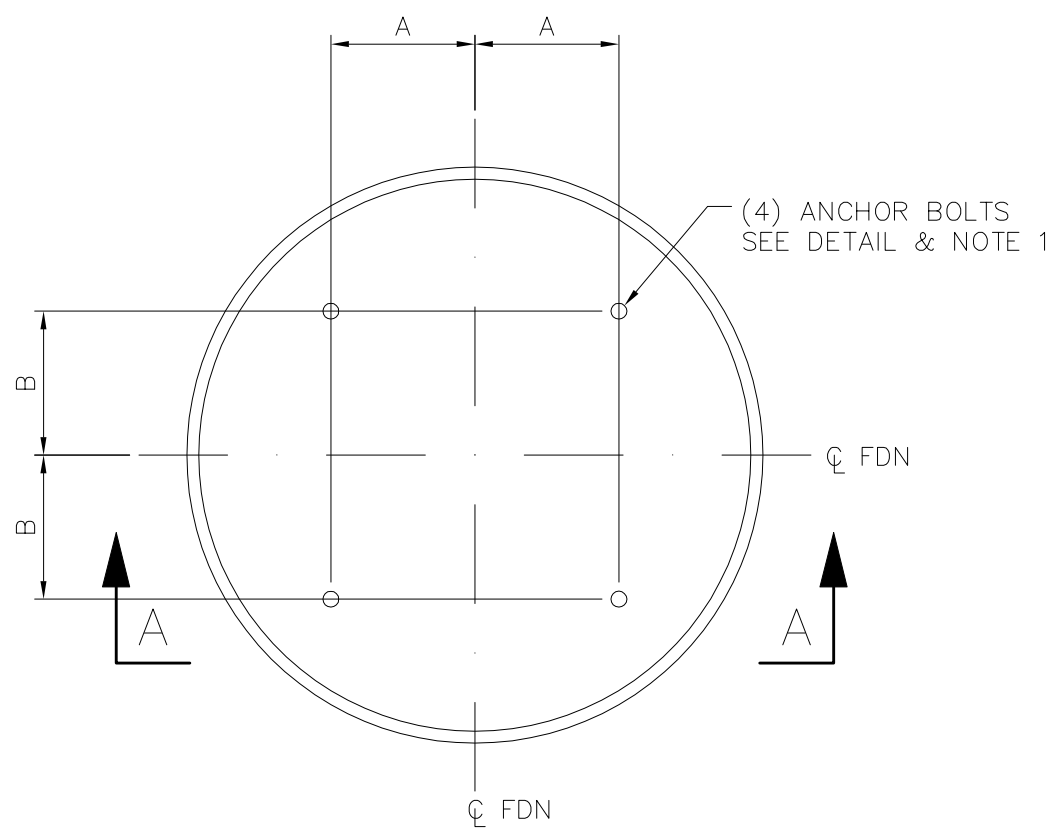
LEGEND:

- 35'-0" LIGHT POLES (SEE NOTE 4)(25'-0" ABOVE GRADE)
- 35'-0" SECURITY POLES (SEE NOTE 4)(25'-0" ABOVE GRADE)
- PLASTIC BOLLARD (TRENWA GPJ-78)
- CONCRETE - FILLED PROTECTIVE BOLLARD (FURNISHED AND INSTALLED BY JEA SECURITY)
- DRIVEABLE CABLE TRENCH, H20, 30"W X 16"D
- CABLE TRENCH, CONCRETE 30"W X 16"D
- ACCESS CONTROL, CARD READER (FURNISHED AND INSTALLED BY JEA SECURITY)
- FENCE

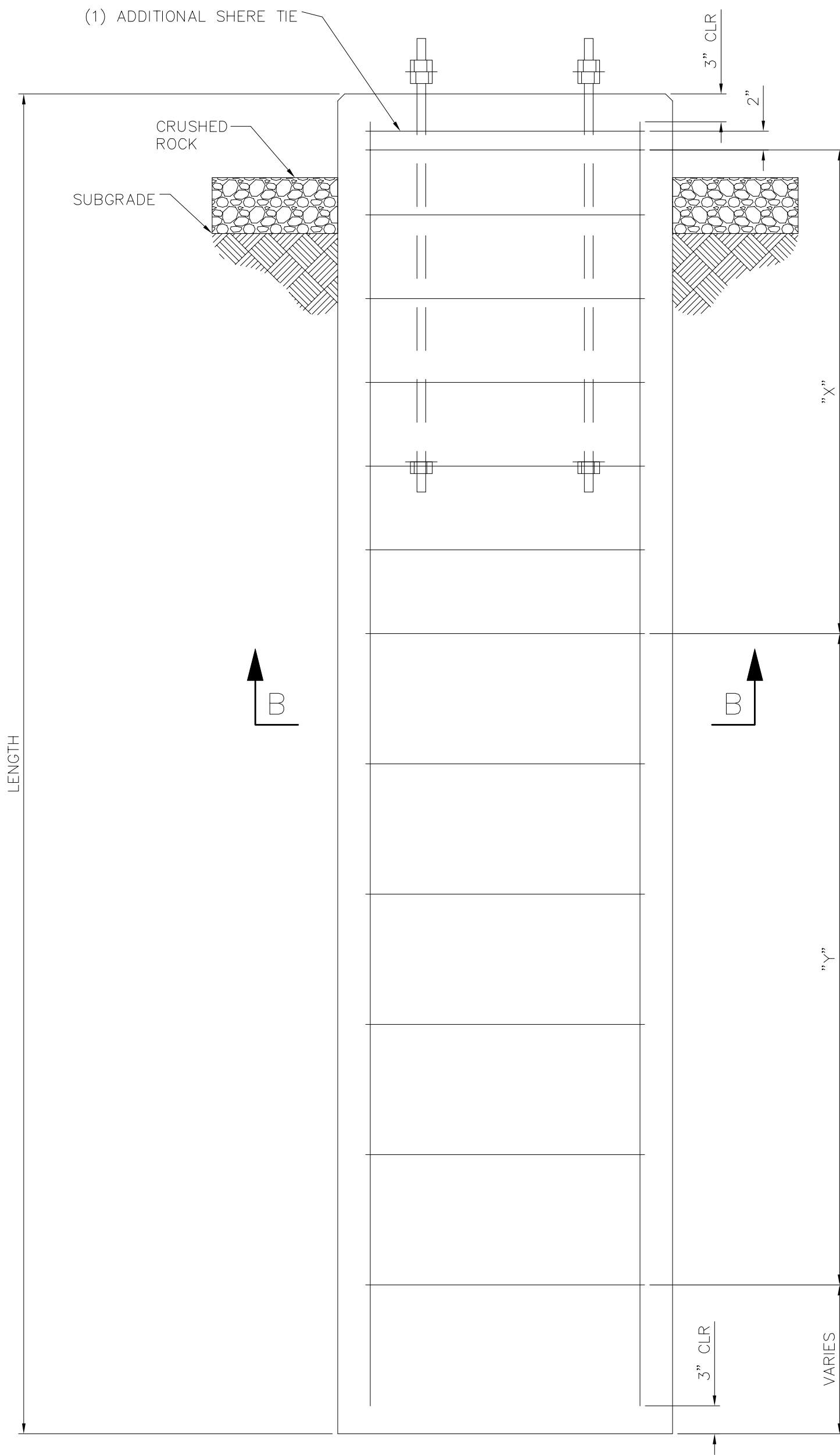
FOUNDATION PLAN NOTES:

- CONTRACTOR SHOULD PAY CLOSE ATTENTION WHEN INSTALLING FOUNDATIONS WITHIN THE VICINITY OF THE SUBSTATION A-FRAME STRUCTURES SPECIFICALLY, THE FOUNDATIONS FOR THE SINGLE PHASE CCVTS HAVE BEEN OFFSET FROM BUS SUPPORT FOUNDATIONS SO THAT THE CCVTS ARE NOT DIRECTLY UNDER THE HIGH VOLTAGE BUS.
- IT IS OF EXTREME IMPORTANCE FOR THE CONTRACTOR TO REVIEW THE "MILLER TRACT SWITCHYARD GEOTECHNICAL ENGINEERING REPORT" FOR INFORMATION REGARDING THE SITE SUBSURFACE SOIL CONDITIONS. THIS REPORT WAS PREPARED BY "TERRACON" ON JUNE 6, 2025. THE CONTRACTOR SHALL PAY SPECIFIC ATTENTION TO THE SITE PREPARATION RECOMMENDATIONS OUTLINED BY THE REPORT AND ABIDE BY THEM.
- JEA SECURITY TO PROVIDE AND INSTALL FOUNDATION AND EQUIPMENT.
- SECURITY AND LIGHT POLES TO BE PROVIDED BY JEA AND INSTALLED BY CONTRACTOR.
- CONTRACTOR SHALL INSTALL PRECAST CONCRETE FOUNDATION FOR EMERGENCY SERVICE PADMOUNT TRANSFORMER. REFER TO DISTRIBUTION STANDARD UPDS FOR DETAILS. FOUNDATION WILL BE PROVIDED BY JEA.

JEA 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202 ISSUED FOR REVIEW	CONSULTANT INFORMATION BURNS MCDONNELL 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM	PROFESSIONAL ENGINEER'S SEAL ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: <u>Bryan Surface</u> LIC. NO.: <u>86557</u> STATE: <u>FL</u> DATE: <u>-</u>	<table><tr><th>REV</th><th>DATE</th><th>PROJ #</th><th>REVISION DESCRIPTION</th><th>BY</th><th>REVIEW</th><th colspan="2">ENGINEERING</th></tr><tr><td>A</td><td>02/24/25</td><td>8009570</td><td>ISSUED FOR 30% REVIEW</td><td>BMCD</td><td>BTM</td><td>DATE</td><td>07/29/2025</td></tr><tr><td>B</td><td>07/29/25</td><td>8009570</td><td>ISSUED FOR 60% REVIEW</td><td>BMCD</td><td>BTM</td><td>BY</td><td>JB</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW</td><td>BTM</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">DRAFTING</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>DATE</td><td>07/29/2025</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>BY</td><td>KN</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW</td><td>JB</td></tr></table>	REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING		A	02/24/25	8009570	ISSUED FOR 30% REVIEW	BMCD	BTM	DATE	07/29/2025	B	07/29/25	8009570	ISSUED FOR 60% REVIEW	BMCD	BTM	BY	JB							REVIEW	BTM							DRAFTING								DATE	07/29/2025							BY	KN							REVIEW	JB	MILLER SUBSTATION INSTALLATION FOUNDATION PLAN MILLER SUBSTATION SCALE: AS SHOWN SUBSTATION & TRANSMISSION ENGINEERING PROJ # 8009570	DRAWING NAME: ML2024-FP.dgn DRAWING SET: ML2024 DRAWING #: OF SHEET #: 1 OF 1
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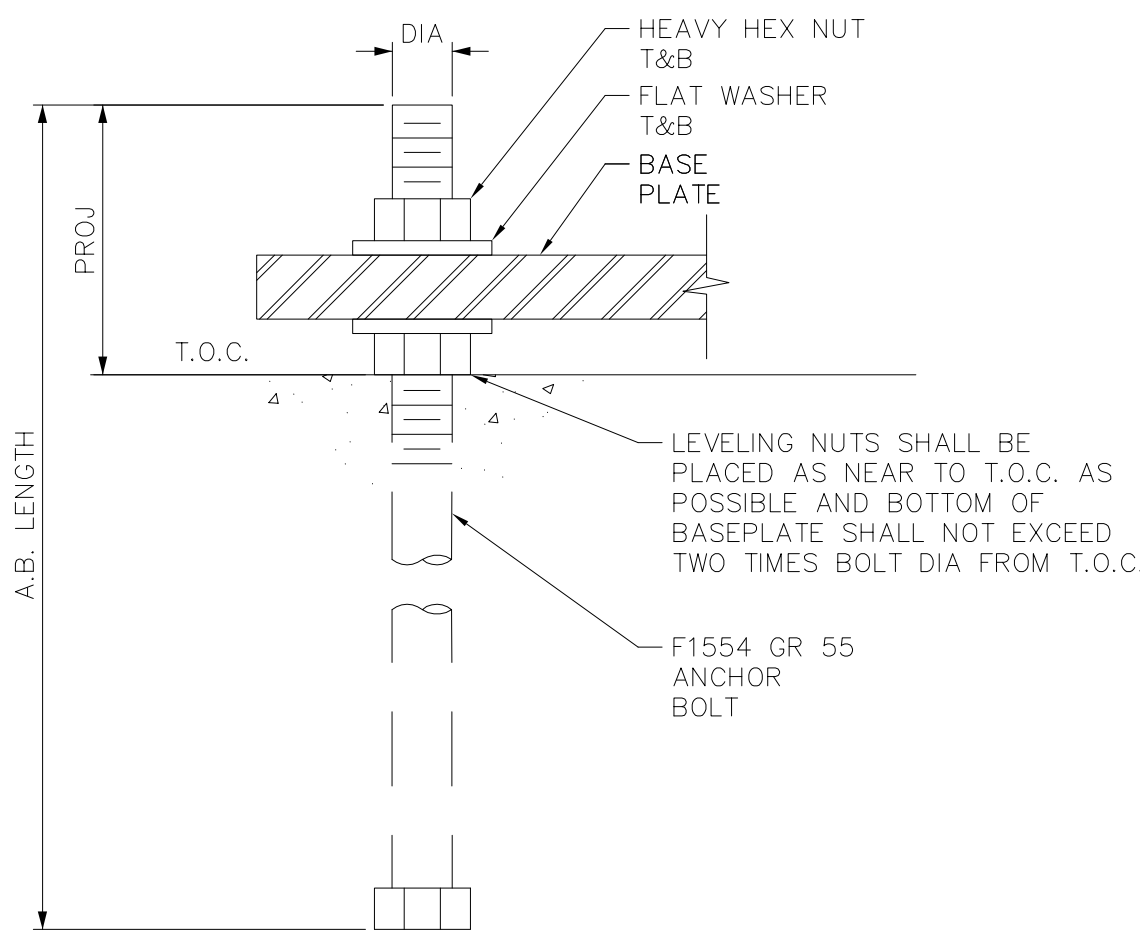


PLAN VIEW

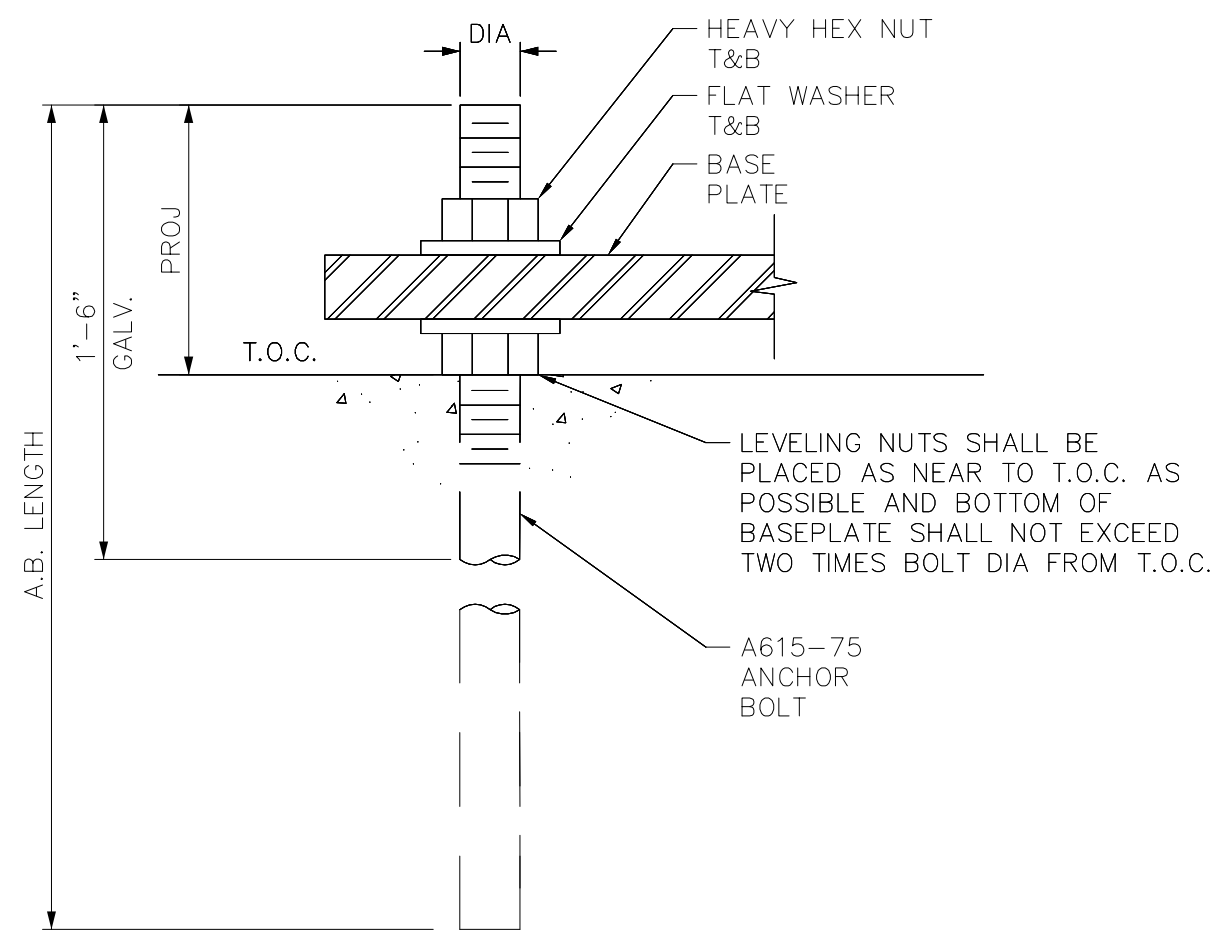


SECTION A-A
TYPICAL DRILLED SHAFT FOUNDATION

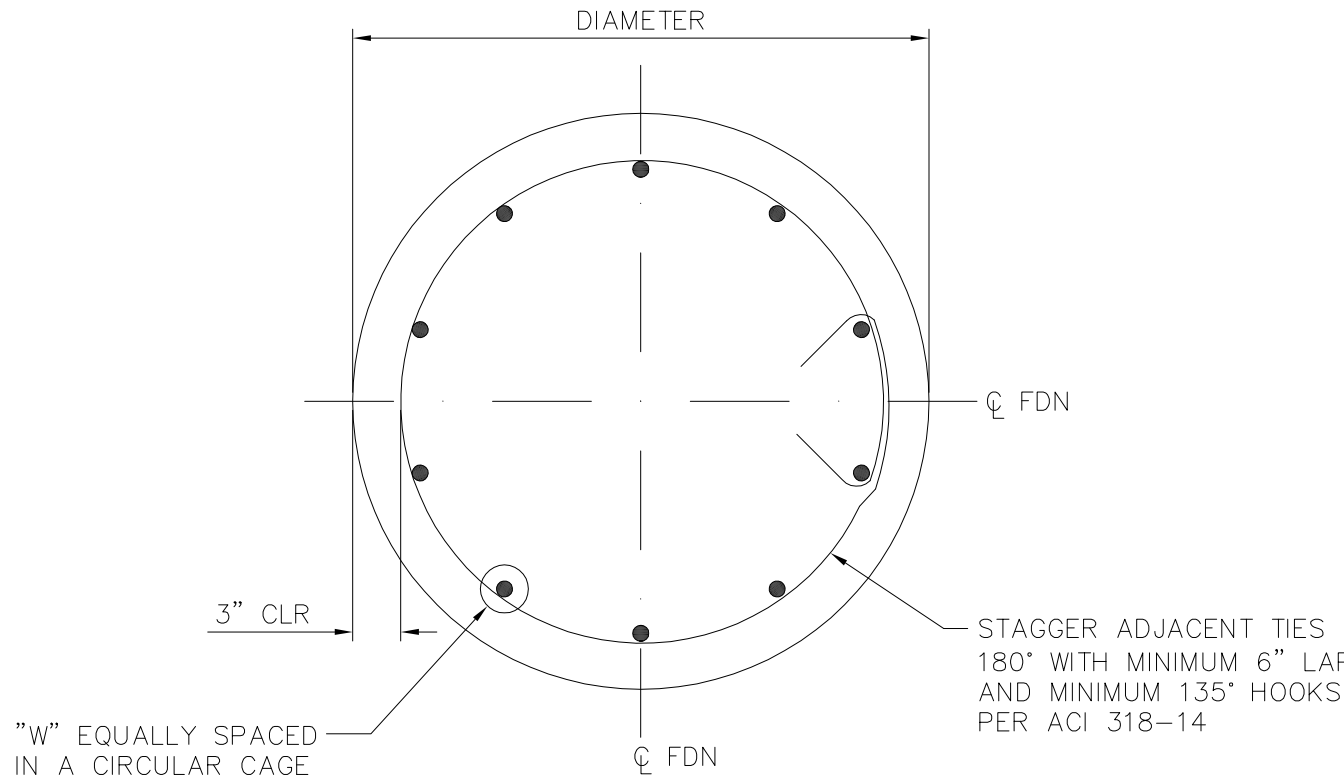
SCALE: NONE



DETAIL 1 - ANCHOR BOLT



DETAIL 2 - ANCHOR BOLT



SECTION B-B
SCALE: NONE

DRILLED SHAFT FOUNDATION SCHEDULE													
FDN ITEM	DESCRIPTION	QTY	FOUNDATION DIMENSIONS		FOUNDATION REINFORCEMENT			ANCHOR BOLT DETAILS (SEE NOTE 1)					REMARKS
			DIAMETER	LENGTH	"W"	"X"	"Y"	A	B	DIA	A.B. LENGTH	PROJ	
S1	DEADEND 2-BAY FOUNDATION	6	6'-0"	48'-6"	(21) - #11	(20) - #4 @ 6"	(38) - #4 @ 12"	--	--	2-1/4"	8'-0"	11"	SEE DETAIL 2
S2	DEADEND SINGLE BAY FOUNDATION	4	6'-0"	31'-6"	(21) - #11	(24) - #4 @ 6"	(19) - #4 @ 12"	--	--	2-1/4"	10'-0"	11"	SEE DETAIL 2
S3	HIGH SWITCH SUPPORT FOUNDATION	12	3'-6"	17'-0"	(15) - #8	(10) - #4 @ 6"	(12) - #4 @ 12"	8"	8"	1-1/2"	4'-0"	7 1/2"	SEE DETAIL 1
S4	LOW DIAGONAL/1PH BUS SUPPORT FOUNDATION	18	3'-6"	13'-0"	(15) - #8	(10) - #4 @ 6"	(8) - #4 @ 12"	8"	8"	1-1/2"	4'-0"	7 1/2"	SEE DETAIL 1, NOTE 6
S5	SWITCH/BUS/SSVT SUPPORT FOUNDATION	36	3'-6"	13'-0"	(15) - #8	(9) - #4 @ 6"	(8) - #4 @ 12"	8"	8"	1-1/4"	3'-0"	6 1/4"	SEE DETAIL 1
S6	CCVT SUPPORT FOUNDATION	12	3'-6"	10'-0"	(15) - #8	(9) - #4 @ 6"	(5) - #4 @ 12"	6"	6"	1"	2'-6"	5"	SEE DETAIL 1

NOTES:

- ANCHOR BOLTS AND TEMPLATES FOR DRILLED SHAFT FOUNDATIONS SHALL BE PROVIDED BY STEEL SUPPLIER AND INSTALLED BY FOUNDATION CONTRACTOR (UNLESS NOTED OTHERWISE).
- CONCRETE COVER FOR REINFORCING SHALL BE 3" (UNLESS NOTED OTHERWISE).
- 3/4" CHAMFER ON ALL EXPOSED EDGES (UNLESS NOTED OTHERWISE).
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 4000 PSI.
- ALL REINFORCING BARS SHALL CONFORM WITH ASTM A615, GRADE 60.
- SEE FOUNDATION PLAN FOR PROPER ORIENTATION OF ANCHOR BOLT PATTERN

REFERENCE DRAWINGS:

ML2024-FP - FOUNDATION PLAN



225 NORTH PEARL STREET
JACKSONVILLE, FLORIDA 32202

ISSUED FOR REVIEW



495 N KELLER ROAD, SUITE 300
MAITLAND, FL 32751
WWW.BURNSMCD.COM

PROFESSIONAL
ENGINEER'S SEAL

ORIGINALLY PREPARED UNDER
THE RESPONSIBLE SUPERVISION OF

PE: Bryan Surface

LIC. NO.: 86557

STATE: FL

DATE: -

REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	
A	07/29/2025	8009570	ISSUED FOR 90% REVIEW	BMCD	GTD	DATE	08/14/2025
						BY	BS
						REVIEW	GTD
						DRAFTING	
						DATE	08/14/2025
						BY	AM
						REVIEW	BS

MILLER SUBSTATION INSTALLATION

FOUNDATION DETAILS

MILLER SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

PROJ # 8009570

DRAWING NAME:

ML2024-FD1.dgn

DRAWING SET:

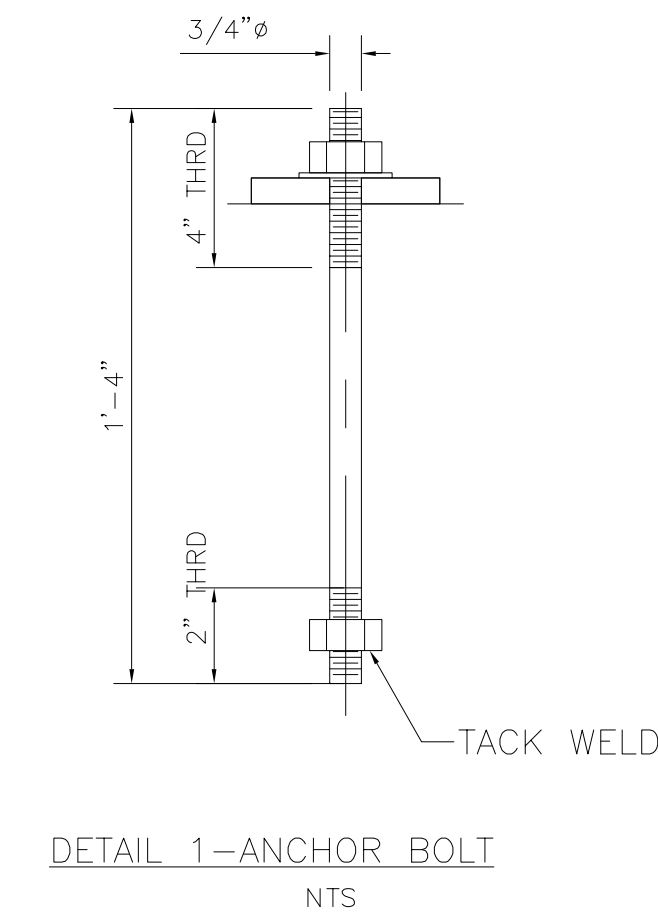
ML2024

DRAWING #:

SHEET #:

OF

1 OF 3



- REFERENCE DRAWING:
ML2024-FP - FOUNDATION PLAN

1'-10"

6"

3" CLR.
(TYP)

4" PROJECTION

(9)#5 @ 12" MAX T&B

(15)#5 @ 12" MAX T&B

3" CLR.

3/4" CHAMFER TYPICAL FOR ALL EXPOSED EDGES

CRUSHED ROCK

3" CLR.

COMPACTED SUBGRADE
SEE NOTE 2

Technical drawing of a foundation cross-section showing two conduit openings. The top opening is 10" wide and 1'-6" high. The bottom opening is 1'-4" wide and 6" high. The foundation is 4'-7" wide. The drawing includes dimensions for the openings, the foundation width, and the distance between the openings. A label "EDGE OF FOUNDATION" points to the right side of the foundation.

DETAIL 2-CONDUIT OPENINGS

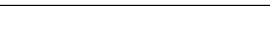
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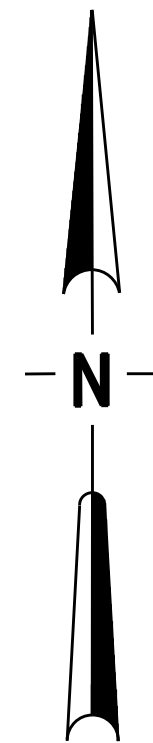
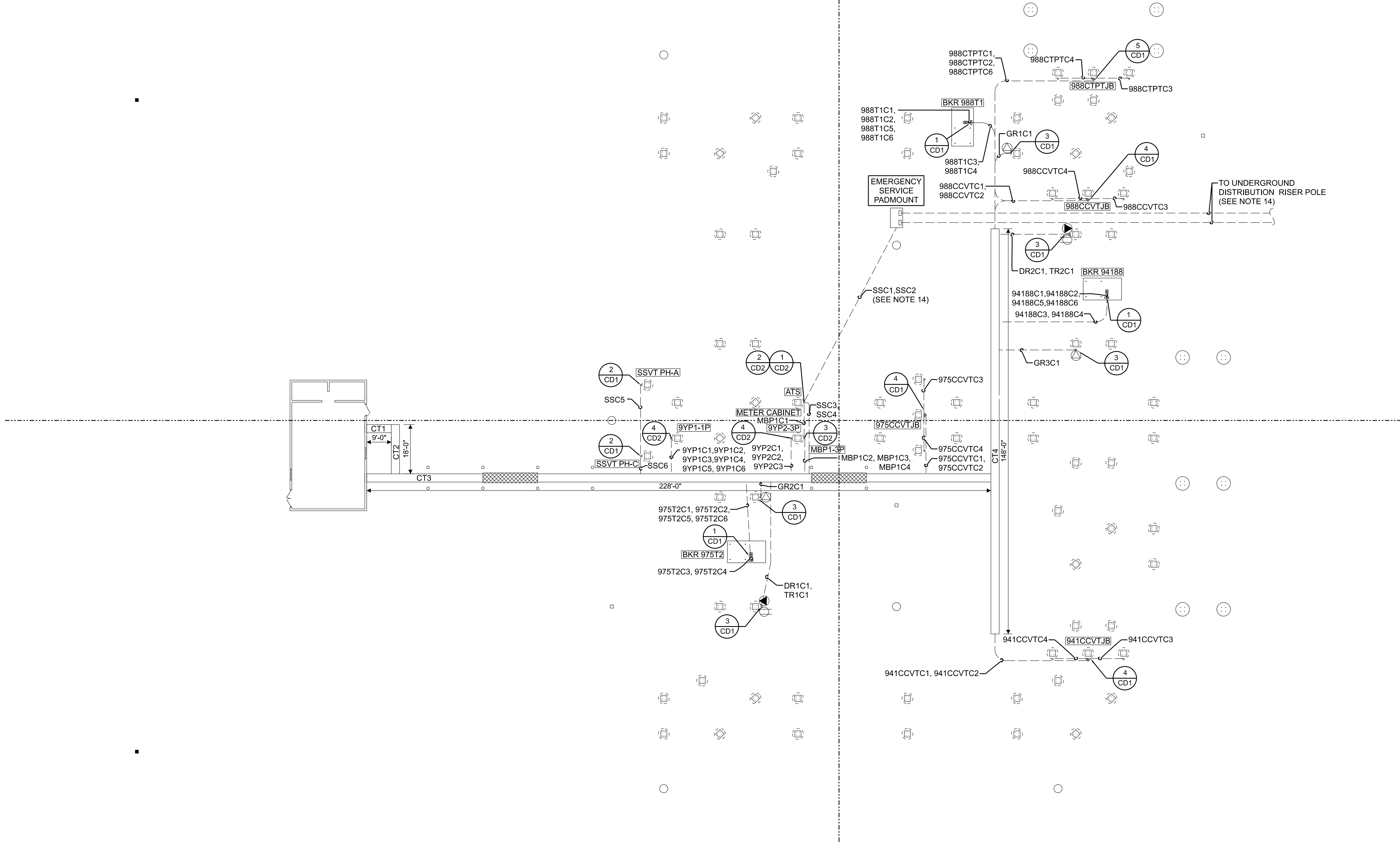
JEA 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL		REV	DATE	PROJ #	REVISION DESCRIPTION		BY	REVIEW	ENGINEERING		MILLER SUBSTATION INSTALLATION					
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														DATE	05/14/2025				
														BY	AM	SCALE: 1"=1'-0"		SUBSTATION & TRANSMISSION ENGINEERING	
ISSUED FOR REVIEW												REVIEW	BS					DRAWING NAME: ML2024-FD2.dgn	
																		DRAWING SET: ML2024	
																		DRAWING #: OF	SHEET #: 2 OF 3



1. CONTRACTOR SHALL PROVIDE AND INSTALL COMPACTED STRUCTURAL FILL. STRUCTURAL FILL MATERIAL SHOULD CLASSIFY AS SP, SP-SM, OR COARSER. STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM 98% OF MATERIAL'S MODIFIED PROCTOR PER ASTM D-1557 MAXIMUM DRY DENSITY IN UNIFORM LIFTS OF MAXIMUM 12-INCH LOOSE THICKNESS. COMPACTED STRUCTURAL FILL SHOULD BE MAINTAINED WITHIN 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT. COMPACTED STRUCTURAL FILL SHALL EXTEND AT LEAST 1 FT BELOW BOTTOM OF FOUNDATION AND 1 FT BEYOND THE EDGE OF SLAB FOUNDATIONS. IF EXCAVATION REMAINS OPEN OVERNIGHT OR A RAIN EVENT HAPPENS AFTER THE SUBGRADE IS COMPACTED, THE SUBGRADE SHALL BE RE-COMPACTED TO THE ABOVE REQUIREMENTS BEFORE PLACING CONCRETE.
2. FOUNDATION DESIGNED FOR AN ALLOWABLE SOIL BEARING 2500 PSF PER GEOTECHNICAL REPORT PROVIDED BY TERRACON DATED MAY 21, 2025.
3. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f_c) OF 4000 PSI.
4. ALL ABOVE GRADE FOUNDATION SURFACES SHALL BE STEEL TROWEL FINISHED, UNLESS NOTED OTHERWISE.

ML2024-FP – FOUNDATION PLAN

 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL	REV		DATE	PROJ #	REVISION DESCRIPTION		BY	REVIEW	ENGINEERING		MILLER SUBSTATION INSTALLATION			
	 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF		A		07/28/2025	8009570	ISSUED FOR 90% REVIEW		BIMCO	GTD	DATE	05/14/2025	ML2024-FD3.dgn			
PE: <u>Bryan Surface</u>										BY	BS	DRAWING SET:		ML2024			
LIC. NO.: <u>86557</u>												REVIEW	GTD	DRAWING #:		SHEET #:	
STATE: <u>FL</u>												DRAFTING		OF		3 OF 3	
DATE: <u>-</u>												DATE	05/14/2025	SCALE: 3/8"=1'-0"		SUBSTATION & TRANSMISSION ENGINEERING	
												BY	AM	PROJ #:		8009570	
												REVIEW	BS			MILLER SUBSTATION	
ISSUED FOR REVIEW																SUBSTATION & TRANSMISSION ENGINEERING	



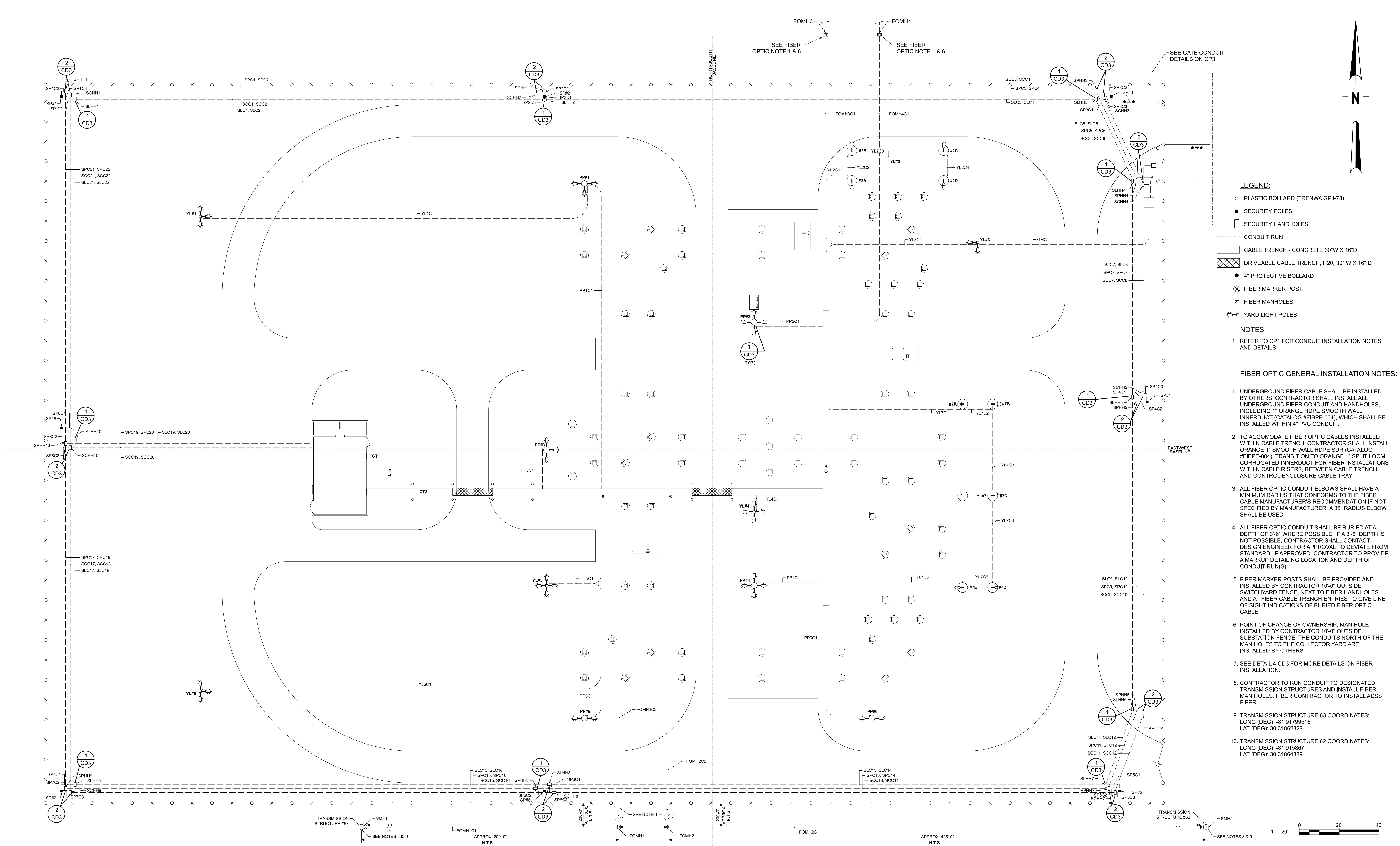
- LEGEND:**
- CONDUIT RUN, SEE NOTE 1
 - CABLE TRENCH - CONCRETE 30"W X 16"D
 - ▨ DRIVEABLE CABLE TRENCH, H20, 30" W X 16" D
 - Ⓢ 240 VOLT GAS CART/VACUUM RECEPTACLE, 60A, THREE PHASE, 4-WIRE, RUSSELLSTOLL TYPE SCA, CATALOG NO. 3324-78
 - Ⓣ 240 VOLT TRUCK RECEPTACLE, 60A, SINGLE PHASE, 3-WIRE RUSSELLSTOLL TYPE SCA, CATALOG NO. 3323-78.
 - Ⓛ 120 VOLT DUPLEX RECEPTACLE, 20A, DUPLEX, GROUNDING TYPE WITH WEATHERPROOF COVER.
 - XXXXXXX EQUIPMENT IDENTIFICATION NUMBER

CONDUIT AND CABEL TRENCH GENERAL INSTALLATION NOTES:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING ALL CONDUIT AND CABLE, AS LISTED IN THE CONDUIT AND CABLE SCHEDULES. THE CONDUIT LOCATIONS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE FINAL CONDUIT RISER LOCATION USING THE EQUIPMENT MANUFACTURER'S FINAL APPROVED DRAWINGS.
- THE CONDUIT ROUTING SHOWN ON THIS DRAWING WAS DESIGNED TO MINIMIZE TRENCHING WHILE REDUCING LENGTHS OF CABLE AND CONDUIT. HOWEVER, WITH THE APPROVAL OF THE PROJECT ENGINEER, THE CONTRACTOR MAY CHOOSE TO FIND OTHER ROUTINGS FOR CONDUITS, PROVIDED THAT SUCH ROUTINGS DO NOT CAUSE A COST INCREASE FOR ADDITIONAL CABLE OR CONDUIT. SUCH CHANGES, IF ANY, SHALL BE NOTED ON THE AS-BUILT DRAWINGS.
- THE CONTRACTOR SHALL FURNISH AND INSTALL THE PRECAST CABLE TRENCH, THIRTY(30") INCHES NOMINAL INSIDE WIDTH AND SIXTEEN (16") INCHES NOMINAL INSIDE DEPTH, IN THE LOCATION AS SHOWN.
- THE CONTRACTOR SHALL SUPPLY ALL SERVICE PANELS WITH BREAKERS, NEMA 3R ENCLOSURE, HINGED COVER, AND HARDWARE TO COMPLETE THE INSTALLATIONS DEPICTED IN DETAIL DRAWINGS. THE CONTRACTOR SHALL ALSO SUPPLY ALL JUNCTION/FUSE BOXES TO COMPLETE THE INSTALLATIONS DEPICTED IN DETAIL DRAWINGS.
- WIRING DETAILS FOR THE SERVICE PANELS, THE AUTOMATIC TRANSFER SWITCH, MAIN BREAKER PANEL, AND THE SSVT/FUSE BOXES ARE PROVIDED ON DRAWING LV1.
- THE AUTOMATIC TRANSFER SWITCH SHALL BE FURNISHED BY THE OWNER AND INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRANSPORT THE TRANSFER SWITCH TO THE JOB SITE FROM A LOCATION WITHIN JACKSONVILLE TO BE SPECIFIED BY THE PROJECT REPRESENTATIVE.
- ALL CABLES SHALL BE CLEARLY LABELED AT BOTH ENDS AND AT ALL ENTRANCE AND EXIT POINTS TO THE CABLE TRENCH. ALL CONDUIT RUNS SHALL ALSO BE CLEARLY LABELED AT BOTH ENDS. REFER TO SPECIFICATION SECTION 8.2 FOR LABELING DETAILS
- ALL CONDUIT ENDS SHALL BE SEALED WITH AN EXPANDING WATERPROOF FOAM SPRAY TO KEEP THE CONDUIT FREE FROM DIRT AND OTHER FOREIGN MATERIAL. ALL CONDUIT MATERIALS SHALL BE THOSE SPECIFIED IN THE CONDUIT SCHEDULE. ABOVE GRADE CONDUIT SHALL BE INSTALLED TO CLOSELY CONFORM TO THE FOUNDATION AND STRUCTURE TO WHICH IT IS STUBBED. AFTER THE INSTALLATION AND BACKFILLING OF THE UNDERGROUND CONDUITS, THE CONTRACTOR SHALL COMPACT THE AREA TO THE SAME DENSITY, AND WITH SIMILAR MATERIAL, AS THE ADJACENT UNDISTURBED MATERIALS.
- ALL CONDUIT ENTRY POINTS INTO THE CABLE TRENCH SHALL BE CONSTRUCTED AS DEPICTED IN DETAIL 8 ON CONDUIT DETAIL DRAWING CD2, UNLESS SPECIFIED OTHERWISE.
- CONTRACTOR SHALL CONFIRM RECEPTACLE MOUNTING BRACKET LOCATION ON STRUCTURAL STEEL BEFORE INSTALLING CONDUIT RUN.
- ELBOW RADIUS FOR 2", 3" & 4" CONDUITS TO BE 24". UNLESS OTHER WISE NOTED. ALL 6" CONDUIT ELBOWS SHALL HAVE A 36" RADIUS.
- HANDHOLES TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR TO INSTALL HANDHOLES PER SPECIFICATIONS REQUIREMENTS AND IN THE APPROXIMATE LOCATIONS SHOWN ON THIS DRAWINGS.
- CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT FOR EMERGENCY (BACKUP) STATION SERVICE FROM DISTRIBUTION PADMOUNT TRANSFORMERS TO 10 FEET OUTSIDE SUBSTATION FENCE.
- CONTRACTOR SHALL INSTALL CONDUITS FOR SECONDARY CIRCUITS OF EMERGENCY SERVICE PADMOUNT TRANSFORMER. REFER TO DISTRIBUTION STANDARD UPD5 FOR DETAILS. FOUNDATION WILL BE PROVIDED BY JEA.



 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL	<table><tr><th>REV</th><th>DATE</th><th>PROJ #</th><th colspan="2">REVISION DESCRIPTION</th><th>BY</th><th>REVIEW</th><th colspan="2">ENGINEERING</th></tr><tr><td>A</td><td>02/24/25</td><td>8009570</td><td colspan="2">ISSUED FOR 60% REVIEW</td><td>BMCD</td><td>BTM</td><td>DATE</td><td>07/29/2025</td></tr><tr><td>B</td><td>07/29/25</td><td>8009570</td><td colspan="2">ISSUED FOR 90% REVIEW</td><td>BMCD</td><td>BTM</td><td>BY</td><td>JB</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>REVIEW</td><td>BTM</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td colspan="2">DRAFTING</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>DATE</td><td>07/29/2025</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>BY</td><td>KN</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td></td><td></td><td>REVIEW</td><td>JB</td></tr></table>	REV	DATE	PROJ #	REVISION DESCRIPTION		BY	REVIEW	ENGINEERING		A	02/24/25	8009570	ISSUED FOR 60% REVIEW		BMCD	BTM	DATE	07/29/2025	B	07/29/25	8009570	ISSUED FOR 90% REVIEW		BMCD	BTM	BY	JB								REVIEW	BTM								DRAFTING									DATE	07/29/2025								BY	KN								REVIEW	JB	MILLER SUBSTATION INSTALLATION				DRAWING NAME: ML2024-CP.dgn	
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ISSUED FOR REVIEW	 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: <u>Brendan T. Murphy</u> LIC. NO.: <u>96687</u> STATE: <u>FL</u> DATE: <u> </u>	CONDUIT PLAN				DRAWING SET: ML2024																																																																											
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			SCALE: AS SHOWN				PROJ #: 8009570																																																																											



LEGEND:

- PLASTIC BOLLARD (TRENWA GPJ-78)
- SECURITY POLES
- SECURITY HANDHOLES
- CONDUIT RUN
- ▭ CABLE TRENCH - CONCRETE 30"W X 16"D
- ▨ DRIVEABLE CABLE TRENCH, H20, 30" W X 16" D
- 4" PROTECTIVE BOLLARD
- ⊗ FIBER MARKER POST
- ⊞ FIBER MANHOLES
- ⚡ YARD LIGHT POLES

NOTES:

- REFER TO CP1 FOR CONDUIT INSTALLATION NOTES AND DETAILS.

FIBER OPTIC GENERAL INSTALLATION NOTES:

- UNDERGROUND FIBER CABLE SHALL BE INSTALLED BY OTHERS. CONTRACTOR SHALL INSTALL ALL UNDERGROUND FIBER CONDUIT AND HANDHOLES, INCLUDING 1" ORANGE HDPE SMOOTH WALL INNERDUCT (CATALOG #FIBPE-004), WHICH SHALL BE INSTALLED WITHIN 4" PVC CONDUIT.
- TO ACCOMMODATE FIBER OPTIC CABLES INSTALLED WITHIN CABLE TRENCH, CONTRACTOR SHALL INSTALL ORANGE 1" SMOOTH WALL HDPE SDR (CATALOG #FIBPE-004). TRANSITION TO ORANGE 1" SPLIT LOOM CORRUGATED INNERDUCT FOR FIBER INSTALLATIONS WITHIN CABLE RISERS, BETWEEN CABLE TRENCH AND CONTROL ENCLOSURE CABLE TRAY.
- ALL FIBER OPTIC CONDUIT ELBOWS SHALL HAVE A MINIMUM RADIUS THAT CONFORMS TO THE FIBER CABLE MANUFACTURER'S RECOMMENDATION IF NOT SPECIFIED BY MANUFACTURER, A 36" RADIUS ELBOW SHALL BE USED.
- ALL FIBER OPTIC CONDUIT SHALL BE BURIED AT A DEPTH OF 3'-6" WHERE POSSIBLE. IF A 3'-6" DEPTH IS NOT POSSIBLE, CONTRACTOR SHALL CONTACT DESIGN ENGINEER FOR APPROVAL TO DEVIATE FROM STANDARD. IF APPROVED, CONTRACTOR TO PROVIDE A MARKUP DETAILING LOCATION AND DEPTH OF CONDUIT RUN(S).
- FIBER MARKER POSTS SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR 10'-0" OUTSIDE SWITCHYARD FENCE, NEXT TO FIBER HANDHOLES AND AT FIBER CABLE TRENCH ENTRIES TO GIVE LINE OF SIGHT INDICATIONS OF BURIED FIBER OPTIC CABLE.
- POINT OF CHANGE OF OWNERSHIP. MAN HOLE INSTALLED BY CONTRACTOR 10'-0" OUTSIDE SUBSTATION FENCE. THE CONDUITS NORTH OF THE MAN HOLES TO THE COLLECTOR YARD ARE INSTALLED BY OTHERS.
- SEE DETAIL 4 CD3 FOR MORE DETAILS ON FIBER INSTALLATION.
- CONTRACTOR TO RUN CONDUIT TO DESIGNATED TRANSMISSION STRUCTURES AND INSTALL FIBER MAN HOLES. FIBER CONTRACTOR TO INSTALL ADSS FIBER.
- TRANSMISSION STRUCTURE 63 COORDINATES:
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LAT (DEG): 30.31862328
- TRANSMISSION STRUCTURE 62 COORDINATES:
LONG (DEG): -81.915867
LAT (DEG): 30.31864839

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225 NORTH PEARL STREET
JACKSONVILLE, FLORIDA 32202

ISSUED FOR REVIEW

495 N KELLER ROAD, SUITE 300
MATLAND, FL 32751
WWW.BURNSMCD.COM

CONSULTANT INFORMATION

PROFESSIONAL ENGINEER'S SEAL

ORIGINALY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF
PE: Brandon T. Murphy
LIC. NO.: 98687
STATE: FL
DATE:

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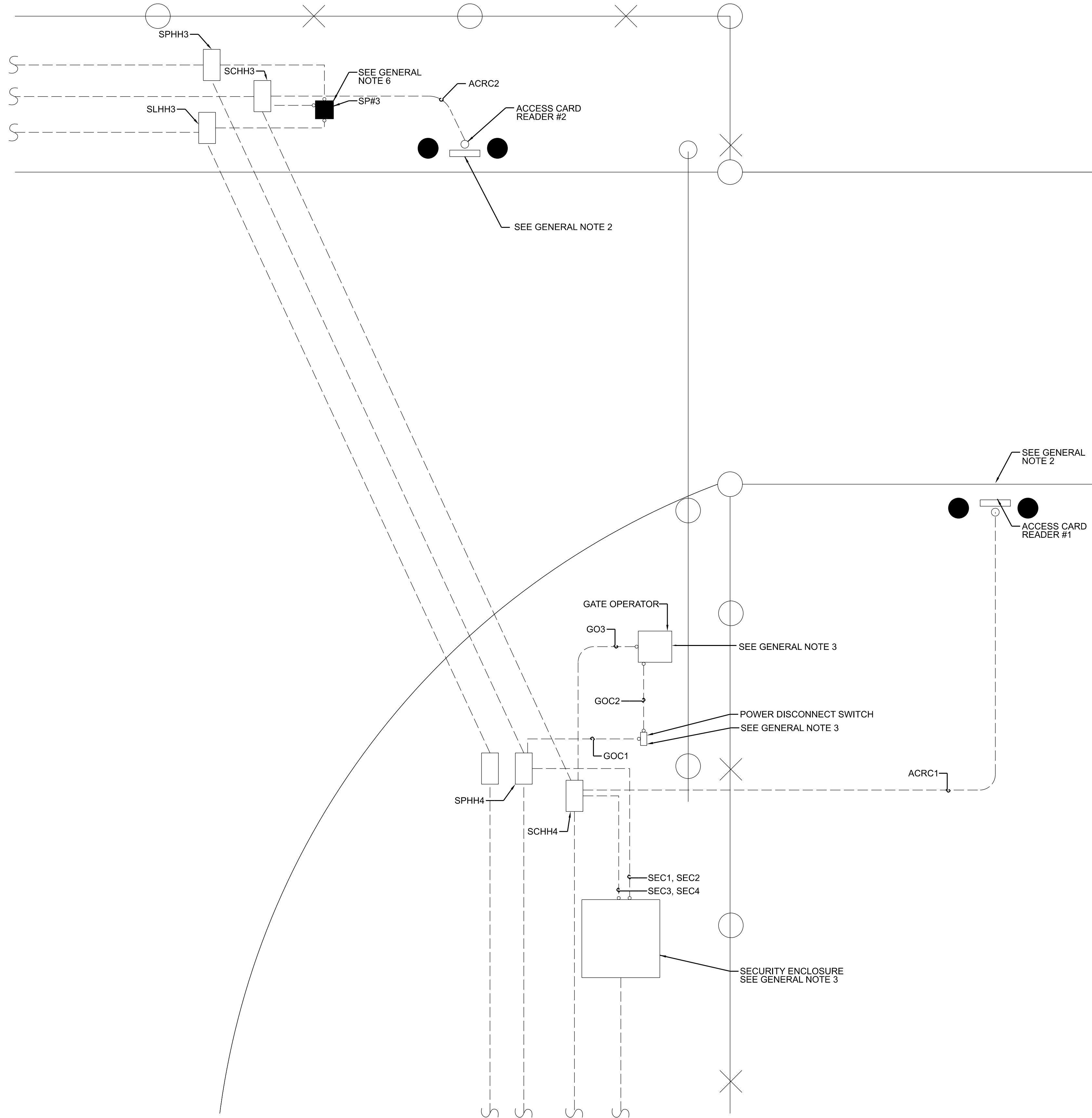
MILLER SUBSTATION INSTALLATION

SECURITY, YARD LIGHT & FIBER CONDUIT PLAN

MILLER SUBSTATION
SUBSTATION & TRANSMISSION ENGINEERING

SCALE:
AS SHOWN

PROJ #:
8009570



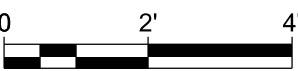
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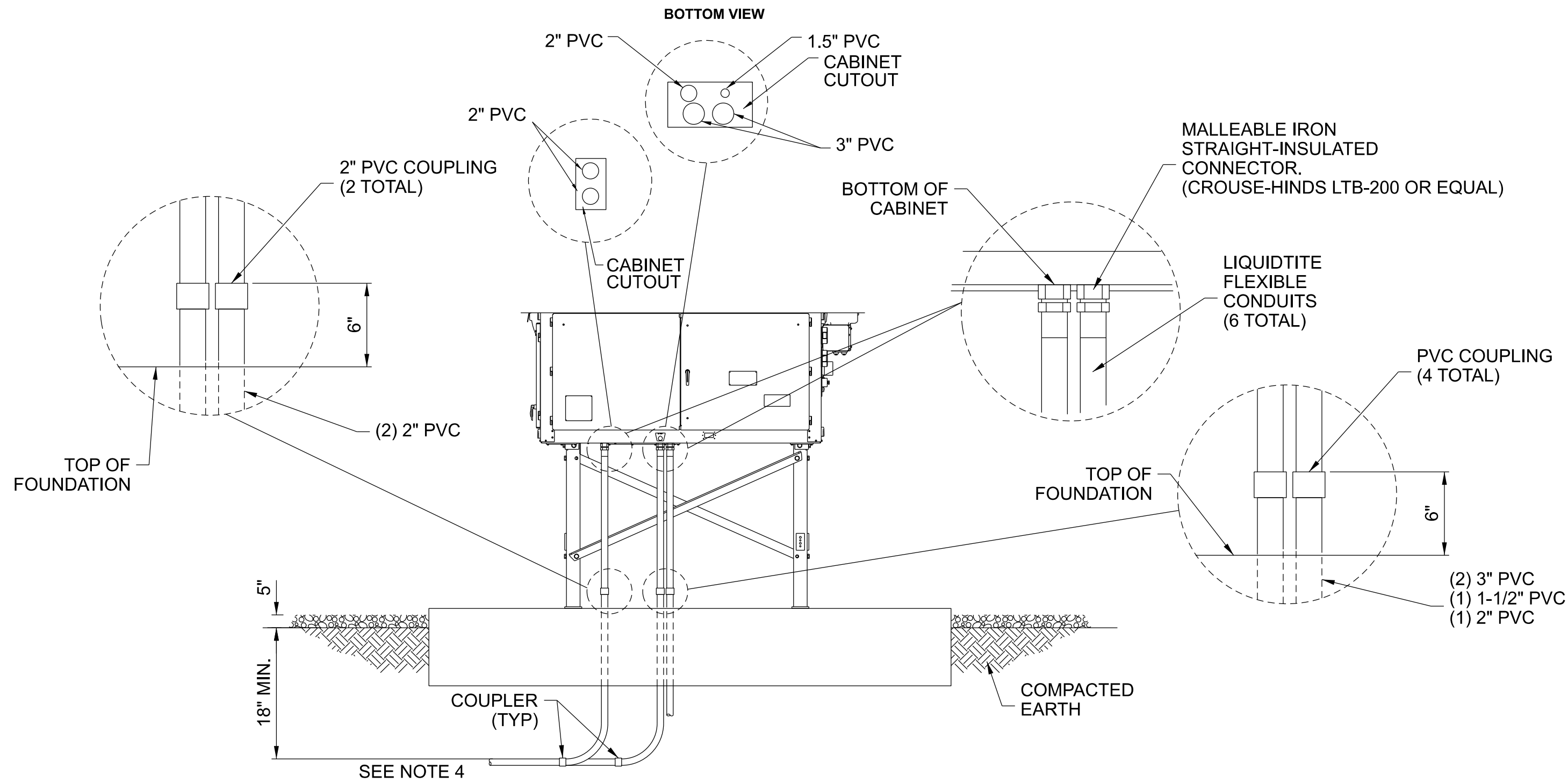
- 35'-0" SECURITY POLES (25'-0" ABOVE GRADE)
- CONCRETE - FILLED PROTECTIVE BOLLARD (FURNISHED AND INSTALLED BY JEA SECURITY)
- ACCESS CONTROL CARD READER (FURNISHED AND INSTALLED BY JEA SECURITY)

GENERAL NOTES:

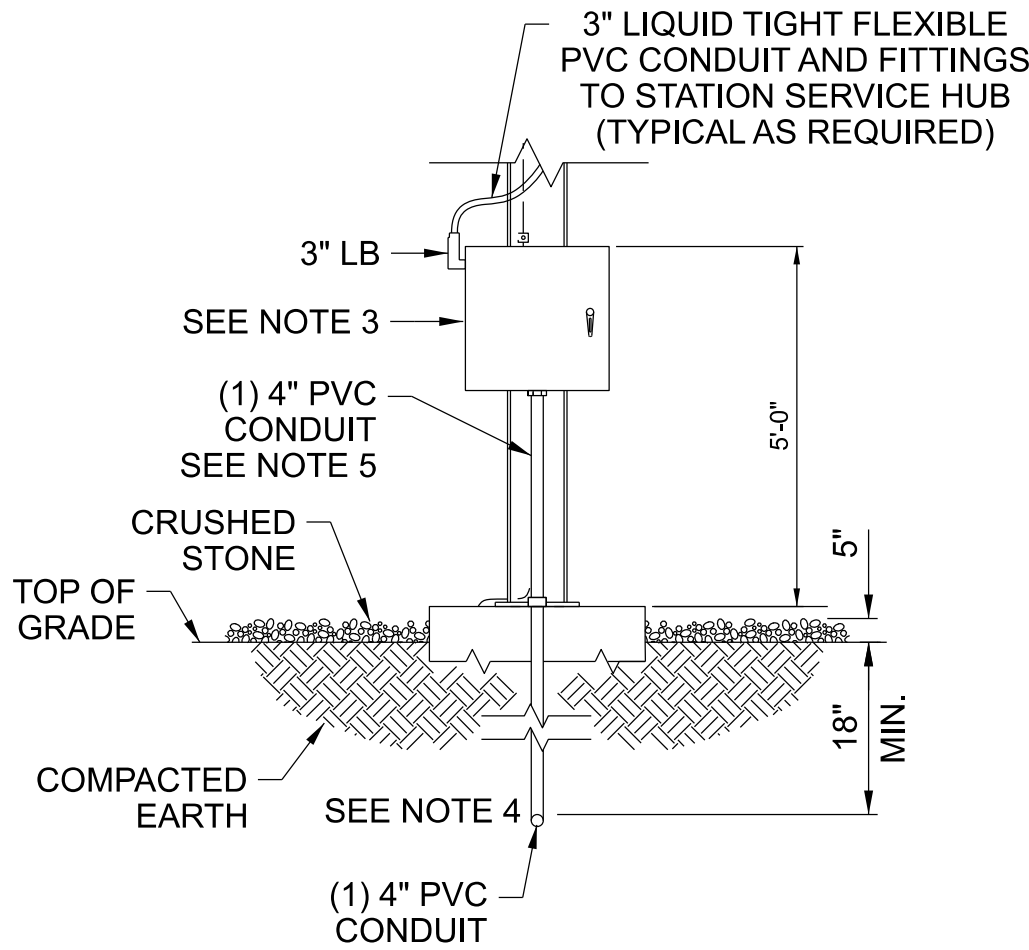
- REFER TO DRAWINGS CP1 AND CP2 FOR CONDUIT NOTES AND INSTALLATION DETAILS.
- SEE JEA STANDARD DRAWING ST-5D FOR CARD READER INSTALLATION. CARD READER AND BOLLARDS FURNISHED AND INSTALLED BY JEA SECURITY.
- SEE JEA STANDARD DRAWING ST-5B FOR GATE INFRASTRUCTURE. THE SECURITY ENCLOSURE, POWER DISCONNECT, AND GATE OPERATOR FURNISHED AND INSTALLED BY JEA SECURITY.
- SEE JEA STANDARD DRAWING ST-7A FOR SECURITY ENCLOSURE AND CAMERA ENCLOSURE DETAILS (FURNISHED AND INSTALLED BY JEA SECURITY).
- CONDUITS AND HANDHOLES SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
- CAMERA POLES SHALL BE FURNISHED BY JEA AND INSTALLED BY CONTRACTOR.

1/4" = 1'-0"

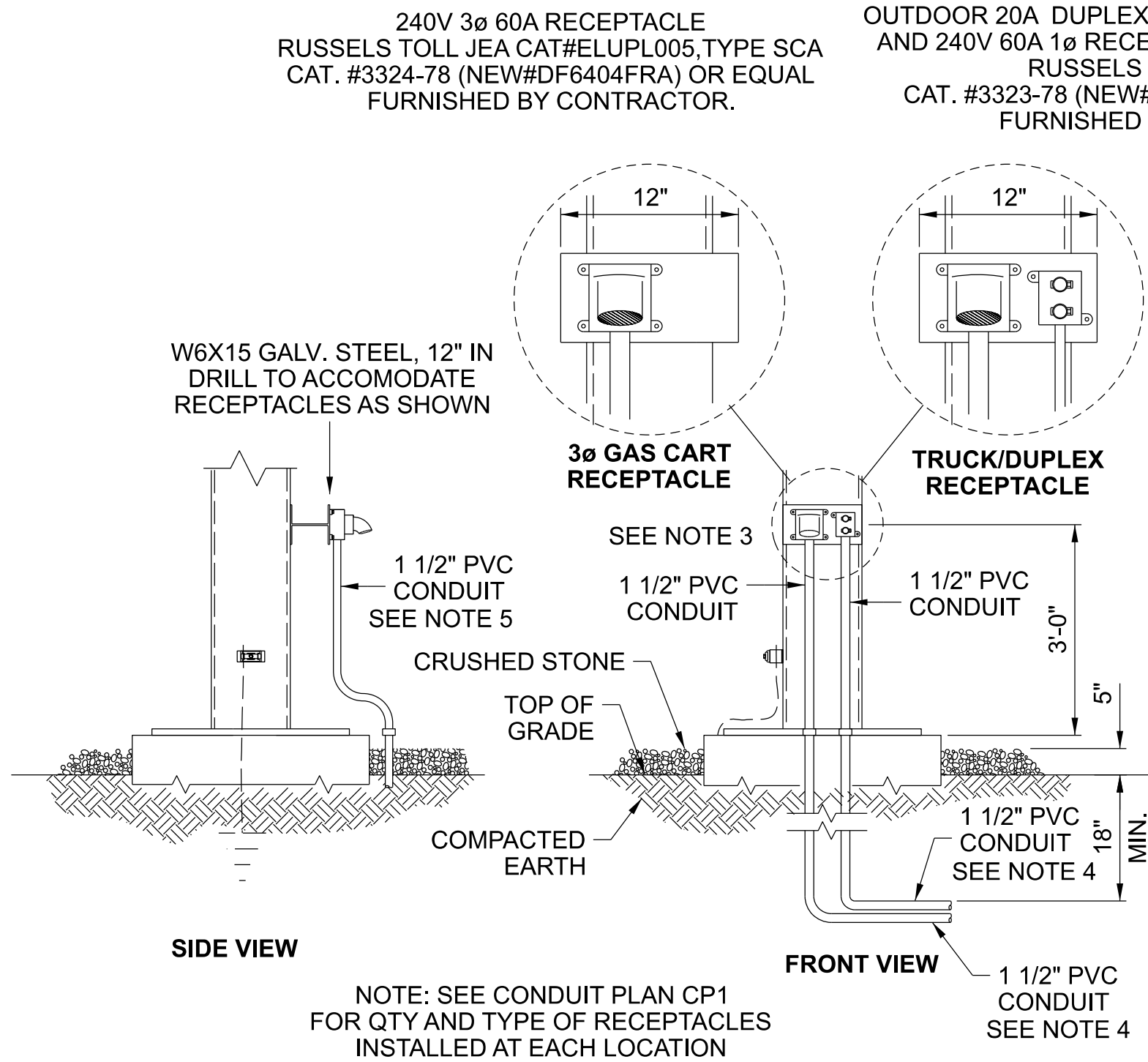




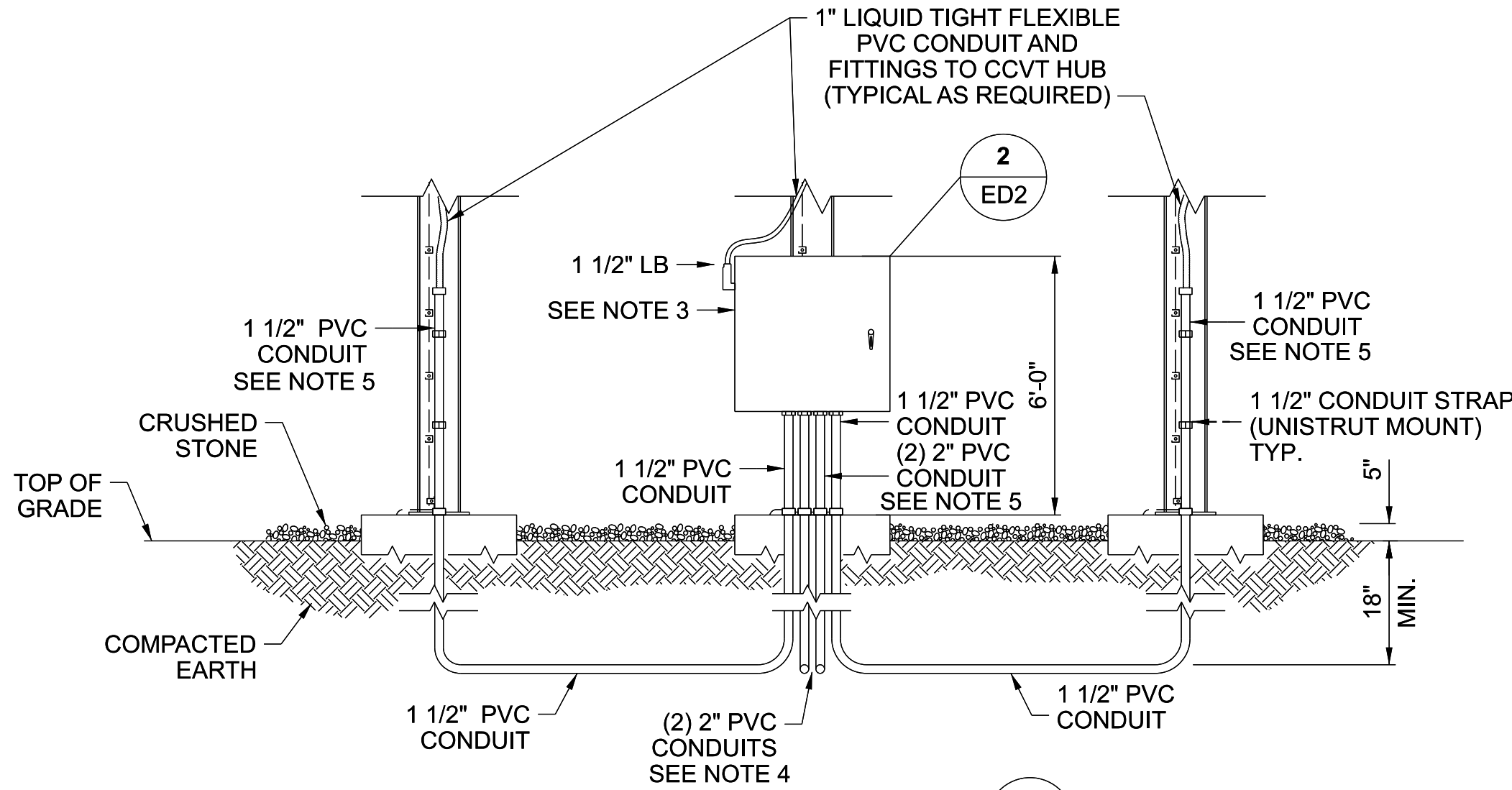
DETAIL 1
CONDUIT STUB UP
AT 230KV BREAKERS
N.T.S.



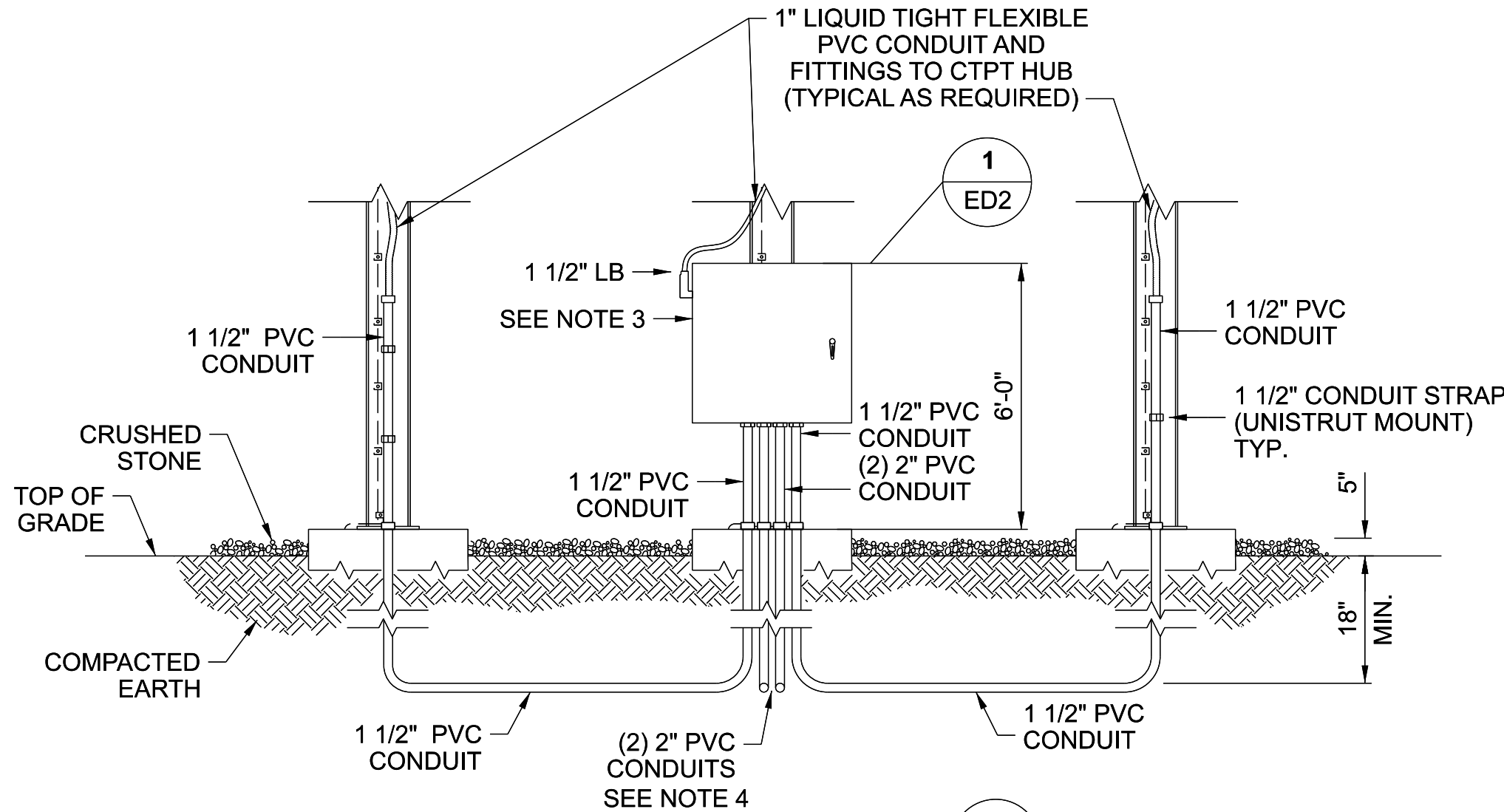
DETAIL 2
A & C PHASE STATION SERVICE
CONDUIT RISER AND JUNCTION BOX
N.T.S.



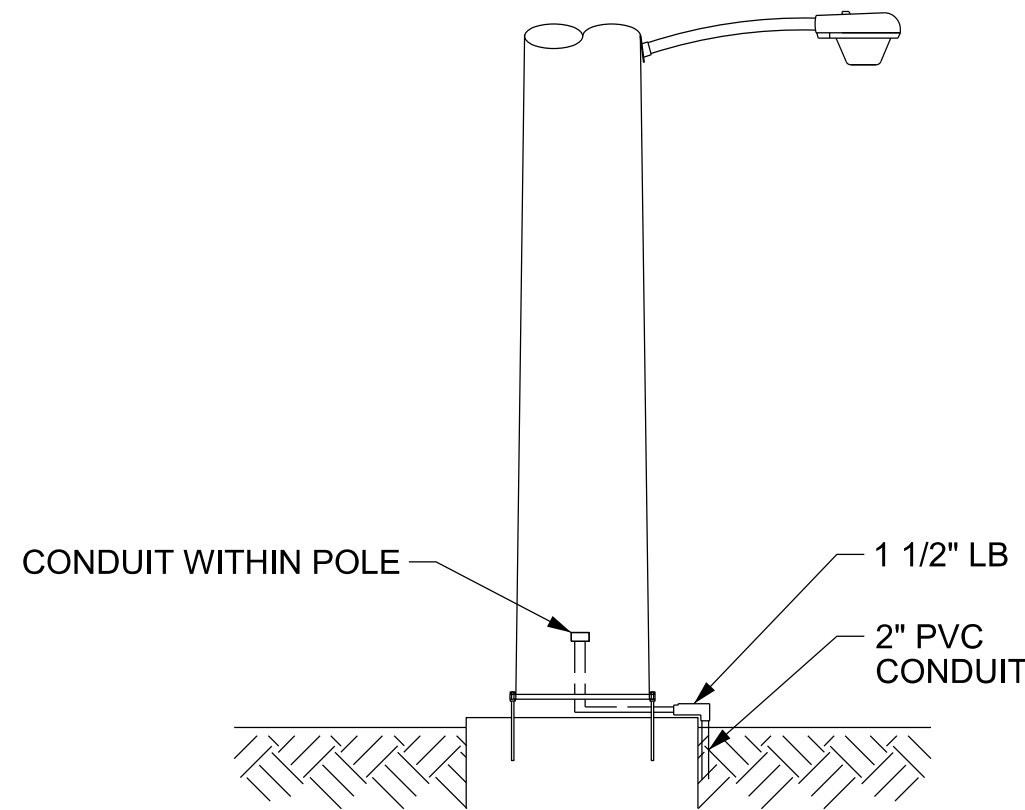
DETAIL 3
TYPICAL INSTALLATION FOR
BREKAER GAS CART, TRUCK CHARGING
AND DUPLEX RECEPTACLES
N.T.S.



DETAIL 4
3 SINGLE PHASE 230KV
CAPACITIVE COUPLED
VOLTAGE TRANSFORMERS
CONDUIT RISERS AND JUNCTION BOX
N.T.S.



DETAIL 5
3 SINGLE PHASE 230KV
CTPT COMBO
CONDUIT RISER AND JUNCTION BOX
N.T.S.

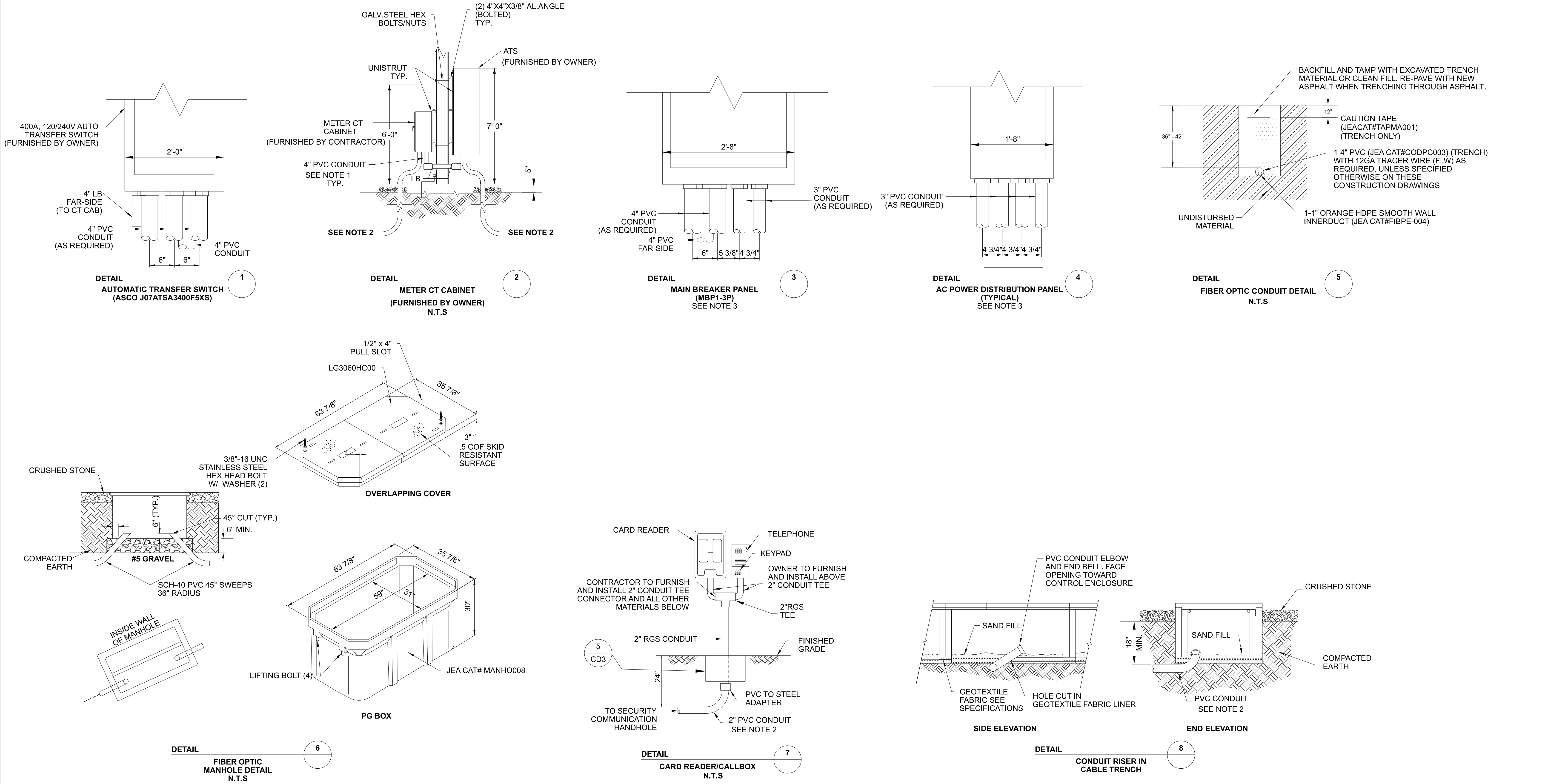


DETAIL 6
DEAD-END LIGHT CONDUIT RISER
N.T.S.

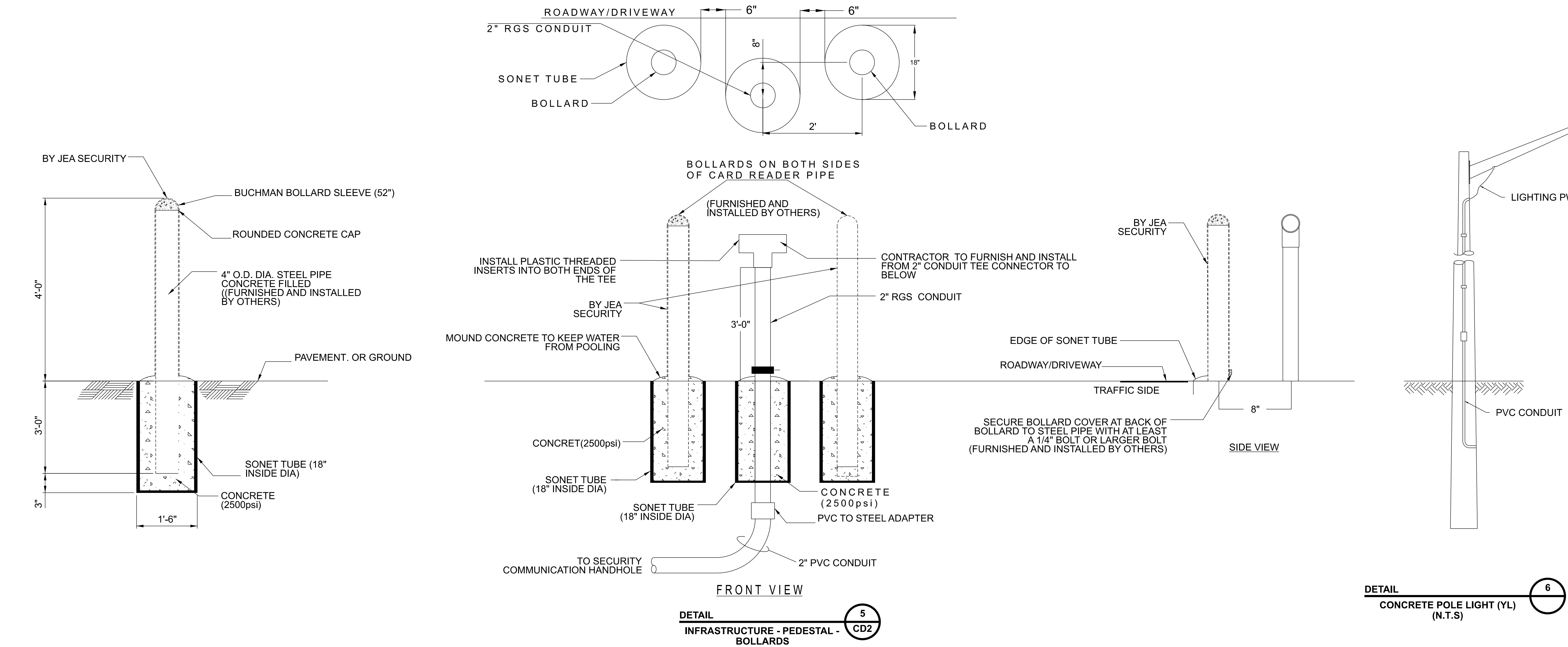
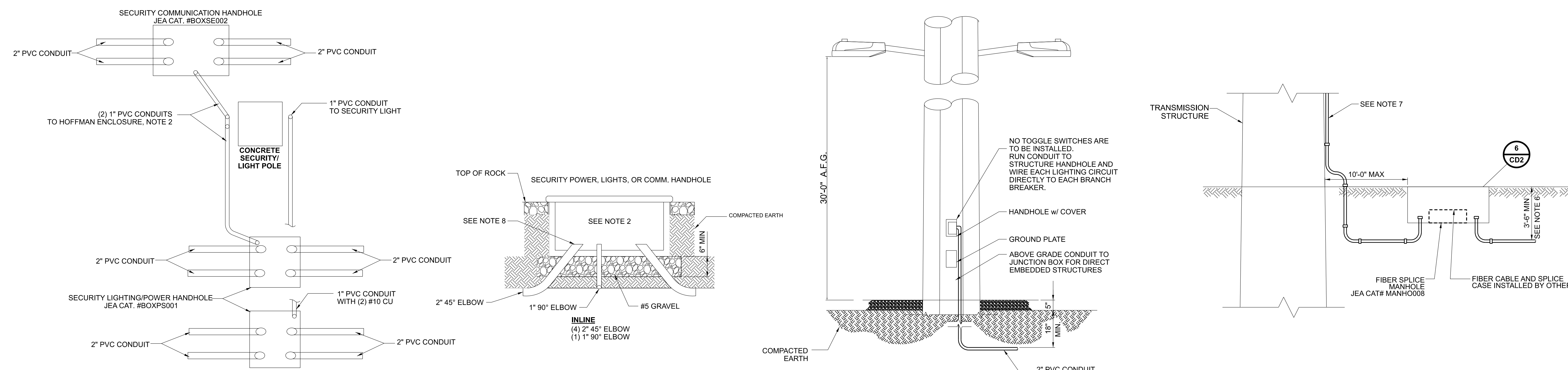
NOTES:

1. APPROPRIATE CONDUIT CLAMPS SHALL BE INSTALLED BY CONTRACTOR TO ATTACH CONDUIT TO STEEL STRUCTURES AS NEEDED. THIS SHALL INCLUDE A CLAMP AT EACH BEND WHERE THE CONDUIT RUN DEPARTS FROM THE STRUCTURE AND A MAXIMUM SPACING BETWEEN CLAMPS OF 4'. CONTRACTOR SHALL USE PROVISIONS ON STRUCTURES TO MOUNT STRAPS/UNISTRUT, AND SHALL NOT DRILL INTO TUBULAR STEEL.
2. FLEXIBLE LIQUIDTITE CONDUIT LENGTH SHALL NOT BE MORE THAN 6'-0".
3. CONTRACTOR TO FURNISH AND INSTALL IN A NON-PENETRATING FASHION TO STRUCTURAL STEEL, ALL RECEPTACLES, CCVT AND CTPT JUNCTION BOXES. FOR DETAILS ON THE JUNCTION BOXES REQUIRED, SEE THE ELECTRICAL DETAILS DRAWING.
4. THE DIRECTION/ORIENTATION OF CONDUIT RUN IN DETAIL IS FOR REFERENCE ONLY. CONTRACTOR TO REFER TO STATION CONDUIT PLAN DRAWINGS FOR EACH EQUIPMENT'S CONDUIT RUN DIRECTION AND ORIENTATION DURING INSTALLATION.
5. CONTRACTOR TO BEND PVC CONDUIT TO FIT CLOSELY AROUND FOUNDATION AND CLOSE TO STRUCTURE.

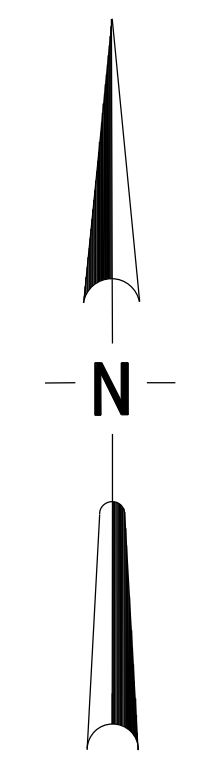
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ISSUED FOR REVIEW		 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM	ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: <u>Brendan T. Murphy</u> LIC. NO.: <u>98687</u> STATE: <u>FL</u> DATE: <u>-</u>	CONDUIT DETAILS				DRAWING SET: ML2024																																																																		
				MILLER SUBSTATION				DRAWING #:	SHEET #:																																																																	
				SCALE: NONE		SUBSTATION & TRANSMISSION ENGINEERING		PROJ #:	8009570	OF	1 OF 3																																																															



- NOTES:**
- THE CONTRACTOR TO BEND PVC CONDUIT TO FIT CLOSELY AROUND FOUNDATION AND CLOSE TO STRUCTURE.
 - THE DIRECTION/ORIENTATION OF CONDUIT RUN IN DETAIL IS FOR REFERENCE ONLY. CONTRACTOR TO REFER TO STATION CONDUIT PLAN DRAWINGS FOR EACH EQUIPMENT'S CONDUIT RUN DIRECTION AND ORIENTATION DURING INSTALLATION.
 - THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE POWER DISTRIBUTION PANELS AND CONDUIT AS SHOWN. IN SOME CASES, IT MAY BE NECESSARY TO PROVIDE A SEPARATE "CONDUIT ENTRY CABINET" INTO THE BOTTOM OF PANELS; SHOULD THIS PROVE NECESSARY THE CONTRACTOR SHALL ALSO PROVIDE AND INSTALL.
 - CARD READER/CALL BOX INSTALLATION DONE BY JEA SECURITY. CONTRACTOR TO ONLY FURNISH AND INSTALL BELOW GRADE PVC CONDUIT AND RGS ABOVE GRADE IN THE LOCATIONS SHOWN ON CONDUIT PLAN DRAWING CP2.



- NOTES:**
1. THE CONTRACTOR SHALL FURNISH AND INSTALL HANDHOLES JEA CAT. #BOXPS001, #BOXSE002. CONTRACTOR TO INSTALL PULL STRINGS AND SEAL BOTH ENDS OF UNUSED CONDUITS WITHIN HANDHOLES. HANDHOLES SHALL HAVE A MINIMUM 6" BASE COURSE OF GRAVEL FOR DRAINAGE AS SHOWN.
 2. (2) 1" CONDUITS TO BE INSTALLED INTO BOTTOM OF HOFFMAN ENCLOSURE, ON POLES SP1 THROUGH SP8. SEE SECURITY STANDARD DRAWING ST-5H FOR DETAILS.
 3. CONTRACTOR TO INSTALL A WATERPROOF AC POWER SYSTEM IN HANDHOLE AS SHOWN. THE CONTRACTOR SHALL FORMULATE A LIST WITH QUANTITIES OF JEA MATERIAL NEEDED TO COMPLETE THE INSTALLATION AS SHOWN, AND SUBMIT TO PROJECT REP. AT LEAST TWO WEEKS IN ADVANCE OF NEED.
 4. CONTRACTOR TO FURNISH AND INSTALL HOFFMAN #A24H24ALP OR EQUAL ENCLOSURE WITH ONE ENCLOSED DUPLEX RECEPTACLE WITHIN THE ENCLOSURE FOR CAMERA AC POWER ON POLES SP1 THROUGH SP4.
 5. CONTRACTOR TO CONNECT AC POWER AND LIGHTING TO CIRCUITS AS SHOWN ON DRAWINGS LV1 AND ED1.
 6. CONTRACTOR TO REFER TO 'FIBER OPTIC GENERAL INSTALLATION NOTES' ON CONDUIT PLAN DRAWING CP2 FOR FIBER INSTALLATION REQUIREMENTS AND GUIDELINES.
 7. CONTRACTOR SHALL INSTALL FIBER CONDUIT, INNERDUCT AND ELBOWS BETWEEN NEW SPLICE HANDHOLE AND EXISTING TRANSMISSION POLES (SHOWN ON DRAWING CP2). CONTRACTOR TO RUN AND CAP CONDUIT 10'-0" ABOVE GRADE, SECURING CONDUIT TO POLE WITH CLAMPS AS NEEDED. INSTALLATION OF FIBER CABLE AND SPLICING WILL BE DONE BY OTHERS.
 8. SAND DOWN SHARP EDGES ON THE PVC CONDUIT TO ENSURE CABLE IS NOT PUNCTURED.



1. INSTALLATION SHALL BE PERFORMED OR SUPERVISED BY AN LPI CERTIFIED MASTER INSTALLER OR UL LISTED INSTALLER, AND IN ACCORDANCE WITH UL 96A AND NFPA 780. THIS INSTALLER SHALL BE HIRED BY THE CONTRACTOR.
2. CONTRACTOR SHALL REFER TO GROUNDING PLAN AND DETAIL DRAWING PRIOR TO INSTALLATION OF CONNECTIONS OF MASTS TO THE SUBSTATION GROUND GRID.
3. THE LIGHTNING PROTECTION GROUND CONDUCTOR SHALL BE BONDED EXOTHERMICALLY TO THE SUBSTATION GRID VIA DOWN-LEADS IN THE LOCATION APPROXIMATELY AS SHOWN. REFER TO DWG GD1 FOR TYPICAL GROUNDING AND LIGHTNING PROTECTION DETAILS.
4. ALL BENDS IN THE CONDUCTOR SHALL HAVE A MINIMUM 8 INCH RADIUS AND SHALL HAVE A MAXIMUM ANGLE BEND OF 90 DEGREES.
5. METAL BODIES WITHIN 6'-0" OF THE LIGHTNING PROTECTION SYSTEM SHALL BE BONDED TO THE SYSTEM IN ACCORDANCE WITH UL96A. EQUIPMENT NOT SHOWN ON THIS DRAWING SHALL BE PROTECTED AS REQUIRED TO MEET THE REQUIREMENTS LISTED ABOVE INCLUDING THE INSTALLATION OF AIR TERMINALS AND/OR BONDING.

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						REVIEW	BTM
						DRAFTING	
						DATE	07/29/2025
						BY	KN
						REVIEW	JB

MILLER SUBSTATION INSTALLATION

LIGHTNING PROTECTION PLAN

MILLER SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

SCALE:

DRAWING NAME:

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DRAWING SET:

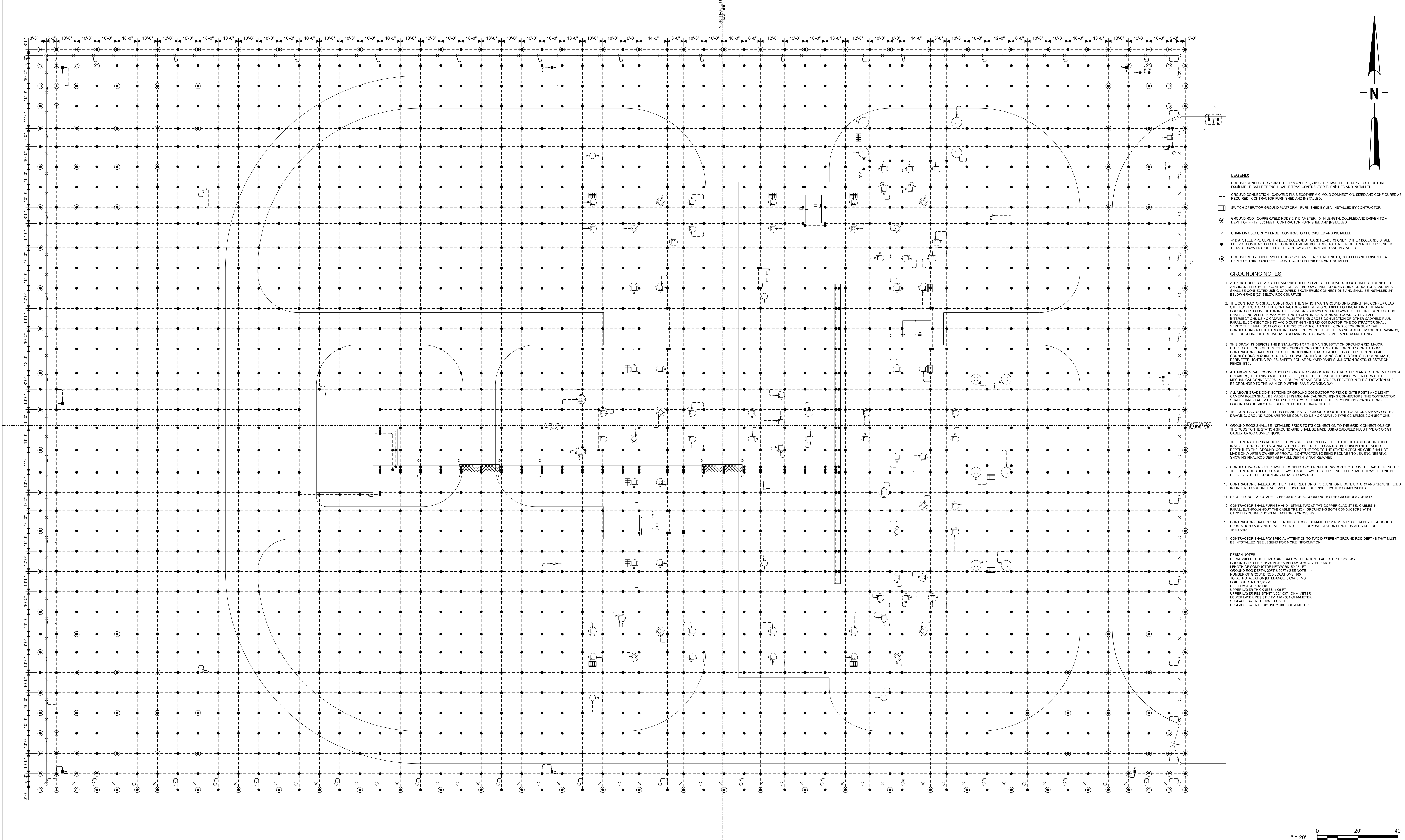
ML2024

DRAWING #: SHEET:

SHEET #:

OF

1 OF 1



- LEGEND:**
- GROUND CONDUCTOR - 1/4" CU FOR MAIN GRID, 7/8" COPPERWELD FOR TAPS TO STRUCTURE, EQUIPMENT, CABLE TRENCH, CABLE TRAY, CONTRACTOR FURNISHED AND INSTALLED.
 - + GROUND CONNECTION - CADWELD PLUS EXOTHERMIC MOLD CONNECTION, SIZED AND CONFIGURED AS REQUIRED, CONTRACTOR FURNISHED AND INSTALLED.
 - SWITCH OPERATOR GROUND PLATFORM - FURNISHED BY JEA, INSTALLED BY CONTRACTOR.
 - ⊙ GROUND ROD - COPPERWELD RODS 5/8" DIAMETER, 10' IN LENGTH, COUPLED AND DRIVEN TO A DEPTH OF FIFTY (50) FEET, CONTRACTOR FURNISHED AND INSTALLED.
 - × CHAIN LINK SECURITY FENCE, CONTRACTOR FURNISHED AND INSTALLED.
 - 4" DIA. STEEL PIPE CEMENT-FILLED ROLLAR AT CARD READERS ONLY. OTHER BOLLARDS SHALL BE PVC. CONTRACTOR SHALL CONNECT METAL BOLLARDS TO STATION GRID PER THE GROUNDING DETAILS DRAWINGS OF THIS SET. CONTRACTOR FURNISHED AND INSTALLED.
 - ⦿ GROUND ROD - COPPERWELD RODS 5/8" DIAMETER, 10' IN LENGTH, COUPLED AND DRIVEN TO A DEPTH OF THIRTY (30) FEET, CONTRACTOR FURNISHED AND INSTALLED.
- GROUNDING NOTES:**
- ALL 1/4" COPPER CLAD STEEL AND 7/8" COPPER CLAD STEEL CONDUCTORS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR. ALL BELOW GRADE GROUND GRID CONDUCTORS AND TAPS SHALL BE CONNECTED USING CADWELD EXOTHERMIC CONNECTIONS AND SHALL BE INSTALLED 24" BELOW GRADE (2" BELOW ROCK SURFACE).
 - THE CONTRACTOR SHALL CONSTRUCT THE STATION MAIN GROUND GRID USING 1/4" COPPER CLAD STEEL CONDUCTORS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE MAIN GROUND GRID CONDUCTOR IN THE LOCATIONS SHOWN ON THIS DRAWING. THE GRID CONDUCTORS SHALL BE INSTALLED IN MAXIMUM LENGTH CONTINUOUS RUNS AND CONNECTED AT ALL INTERSECTIONS USING CADWELD PLUS TYPE AB CROSS CONNECTION OR OTHER CADWELD PLUS PARALLEL CONNECTIONS TO AVOID CUTTING THE GRID CONDUCTOR. THE CONTRACTOR SHALL VERIFY THE FINAL LOCATION OF THE 7/8" COPPER CLAD STEEL CONDUCTOR GROUND TAP CONNECTIONS TO THE STRUCTURES AND EQUIPMENT USING THE MANUFACTURERS SHOP DRAWINGS. THE LOCATIONS OF GROUND TAPS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY.
 - THIS DRAWING DEPICTS THE INSTALLATION OF THE MAIN SUBSTATION GROUND GRID. MAJOR ELECTRICAL EQUIPMENT GROUND CONNECTIONS AND STRUCTURE GROUND CONNECTIONS. CONTRACTOR SHALL REFER TO THE GROUNDING DETAILS PAGES FOR OTHER GROUND GRID CONNECTIONS REQUIRED, BUT NOT SHOWN ON THIS DRAWING. SUCH AS SWITCH GROUND MATS, PERMITTED LIGHTING POLES, SAFETY BOLLARDS, YARD PANELS, JUNCTION BOXES, SUBSTATION FENCE, ETC.
 - ALL ABOVE GRADE CONNECTIONS OF GROUND CONDUCTOR TO STRUCTURES AND EQUIPMENT, SUCH AS BREAKERS, LIGHTING ARRESTERS, ETC., SHALL BE CONNECTED USING OWNER FURNISHED MECHANICAL CONNECTORS. ALL EQUIPMENT AND STRUCTURES ERECTED IN THE SUBSTATION SHALL BE GROUNDED TO THE MAIN GRID WITHIN SAME WORKING DAY.
 - ALL ABOVE GRADE CONNECTIONS OF GROUND CONDUCTOR TO FENCE, GATE POSTS AND LIGHT/ CAMERA POLES SHALL BE MADE USING MECHANICAL GROUNDING CONNECTORS. THE CONTRACTOR SHALL FURNISH ALL MATERIALS NECESSARY TO COMPLETE THE GROUNDING CONNECTIONS. GROUNDING DETAILS HAVE BEEN INCLUDED IN DRAWING SET.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL GROUND RODS IN THE LOCATIONS SHOWN ON THIS DRAWING. GROUND RODS ARE TO BE COUPLED USING CADWELD TYPE CC SPLICE CONNECTIONS.
 - GROUND RODS SHALL BE INSTALLED PRIOR TO ITS CONNECTION TO THE GRID. CONNECTIONS OF THE RODS TO THE STATION GROUND GRID SHALL BE MADE USING CADWELD PLUS TYPE GR OR GT CABLE-TO-ROD CONNECTIONS.
 - THE CONTRACTOR IS REQUIRED TO MEASURE AND REPORT THE DEPTH OF EACH GROUND ROD INSTALLED PRIOR TO ITS CONNECTION TO THE GRID IF IT CAN NOT BE DRIVEN THE DESIRED DEPTH INTO THE GROUND. CONNECTION OF THE ROD TO THE STATION GROUND GRID SHALL BE MADE ONLY AFTER OWNER APPROVAL. CONTRACTOR TO SEND RESULTS TO JEA ENGINEERING SHOWING FINAL ROD DEPTHS IF FULL DEPTH IS NOT REACHED.
 - CONNECT TWO 7/8" COPPERWELD CONDUCTORS FROM THE 7/8" CONDUCTOR IN THE CABLE TRENCH TO THE CONTROL BUILDING CABLE TRAY. CABLE TRAY TO BE GROUNDED PER CABLE TRAY GROUNDING DETAILS. SEE THE GROUNDING DETAILS DRAWINGS.
 - CONTRACTOR SHALL ADJUST DEPTH & DIRECTION OF GROUND GRID CONDUCTORS AND GROUND RODS IN ORDER TO ACCOMMODATE ANY BELOW GRADE DRAINAGE SYSTEM COMPONENTS.
 - SECURITY BOLLARDS ARE TO BE GROUNDED ACCORDING TO THE GROUNDING DETAILS.
 - CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) 7/8" COPPER CLAD STEEL CABLES IN PARALLEL THROUGHOUT THE CABLE TRENCH. GROUNDING BOTH CONDUCTORS WITH CADWELD CONNECTIONS AT EACH GRID CROSSING.
 - CONTRACTOR SHALL INSTALL 5 INCHES OF 3000 OHM-CENTIMETER MINIMUM ROCK EVENLY THROUGHOUT SUBSTATION YARD AND SHALL EXTEND 3 FEET BEYOND STATION FENCE ON ALL SIDES OF THE YARD.
 - CONTRACTOR SHALL PAY SPECIAL ATTENTION TO TWO DIFFERENT GROUND ROD DEPTHS THAT MUST BE INSTALLED. SEE LEGEND FOR MORE INFORMATION.
- DESIGN NOTES:**
- PERMISSIBLE TOUCH LIMITS ARE SAFE WITH GROUND FAULTS UP TO 28.32KA.
GROUND GRID DEPTH: 24 INCHES BELOW COMPACTED EARTH
LENGTH OF CONDUCTOR NETWORK: 5050 FT
GROUND ROD DEPTH: 30 FT & 50 FT (SEE NOTE 14)
NUMBER OF GROUND ROD LOCATIONS: 185
TOTAL INSTALLATION IMPEDANCE: 0.694 OHMS
GRID CURRENT: 17.317 A
SPILT FACTOR: 0.81148
UPPER LAYER THICKNESS: 1.25 FT
UPPER LAYER RESISTIVITY: 324.074 OHM-METER
LOWER LAYER RESISTIVITY: 176.854 OHM-METER
SURFACE LAYER THICKNESS: 5 IN
SURFACE LAYER RESISTIVITY: 3000 OHM-METER

 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL	<table><tr><th>REV</th><th>DATE</th><th>PROJ #</th><th>REVISION DESCRIPTION</th><th>BY</th><th>REVIEW</th><th colspan="2">ENGINEERING</th></tr><tr><td>A</td><td>02/24/25</td><td>8009570</td><td>ISSUED FOR 60% REVIEW</td><td>BMCD</td><td>BTM</td><td>DATE</td><td>07/29/2025</td></tr><tr><td>B</td><td>07/29/25</td><td>8009570</td><td>ISSUED FOR 90% REVIEW</td><td>BMCD</td><td>BTM</td><td>BY</td><td>JB</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW</td><td>BTM</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">DRAFTING</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>DATE</td><td>07/29/2025</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>BY</td><td>KN</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW</td><td>JB</td></tr></table>	REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING		A	02/24/25	8009570	ISSUED FOR 60% REVIEW	BMCD	BTM	DATE	07/29/2025	B	07/29/25	8009570	ISSUED FOR 90% REVIEW	BMCD	BTM	BY	JB							REVIEW	BTM							DRAFTING								DATE	07/29/2025							BY	KN							REVIEW	JB
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ISSUED FOR REVIEW

MILLER SUBSTATION INSTALLATION

GROUNDING PLAN

MILLER SUBSTATION

AS SHOWN

SUBSTATION & TRANSMISSION ENGINEERING

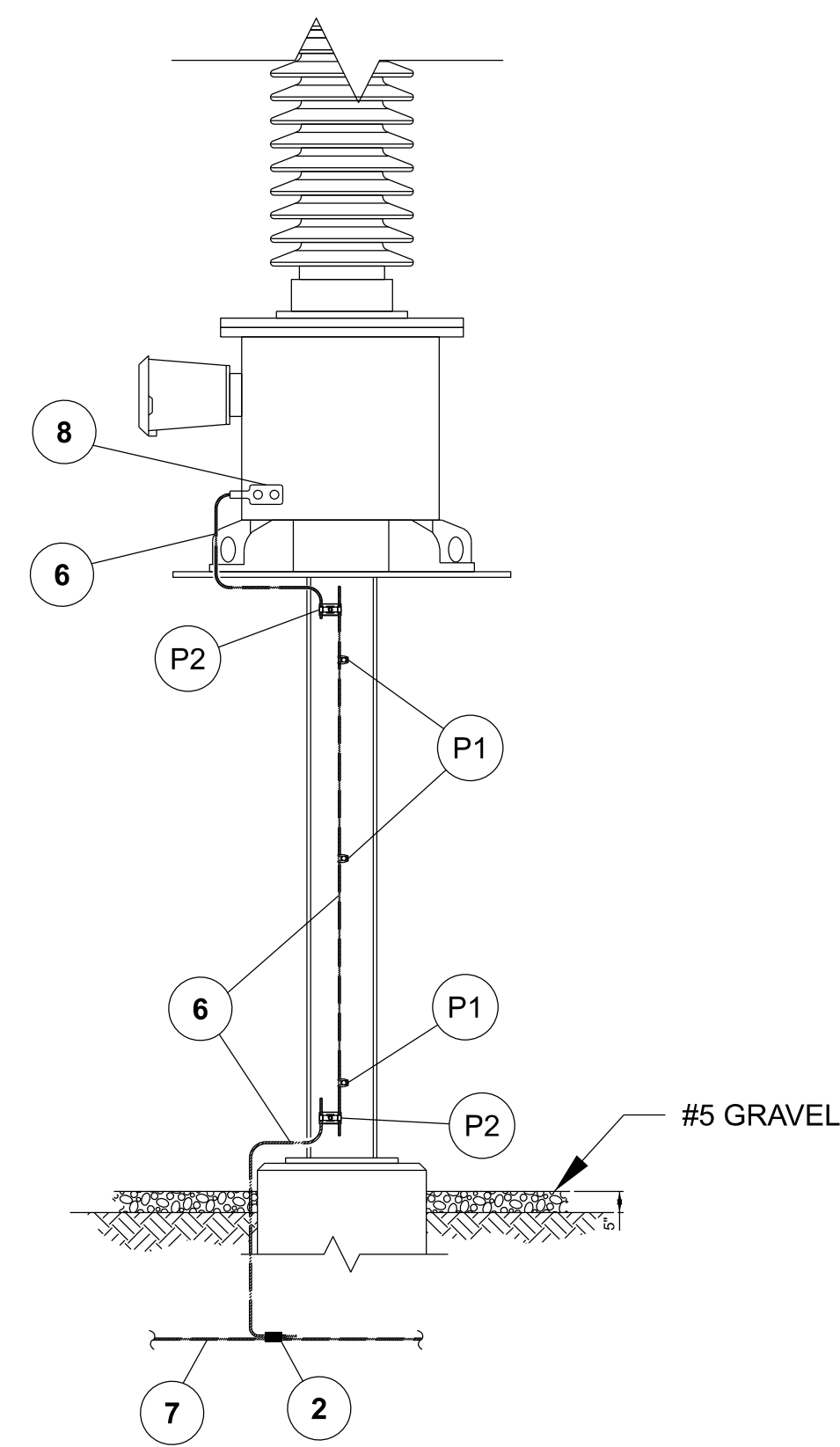
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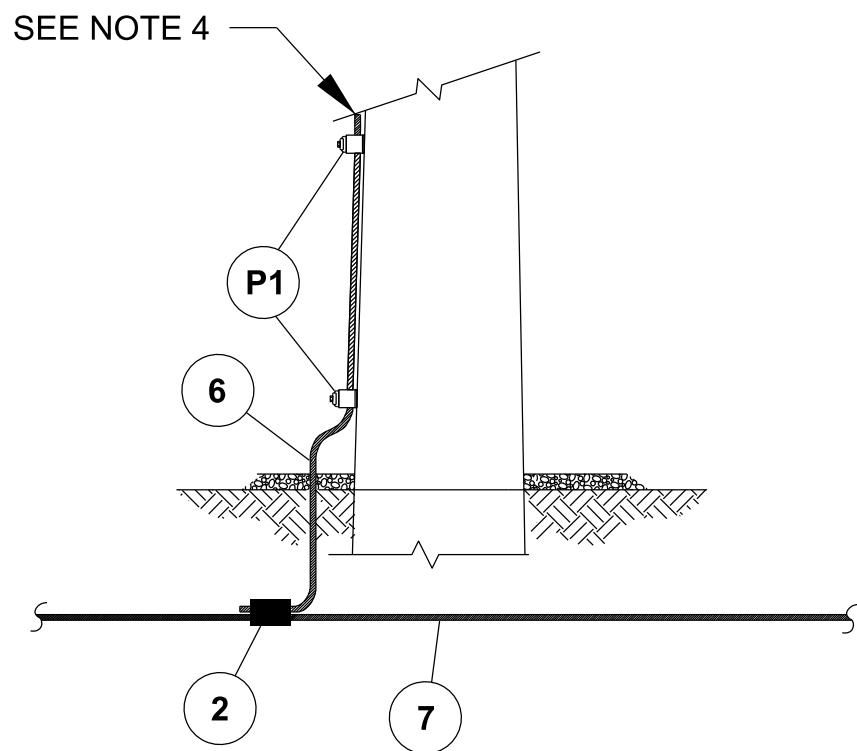
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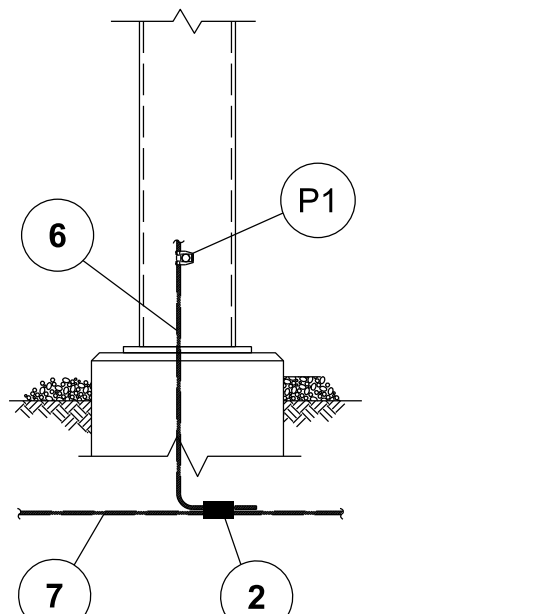
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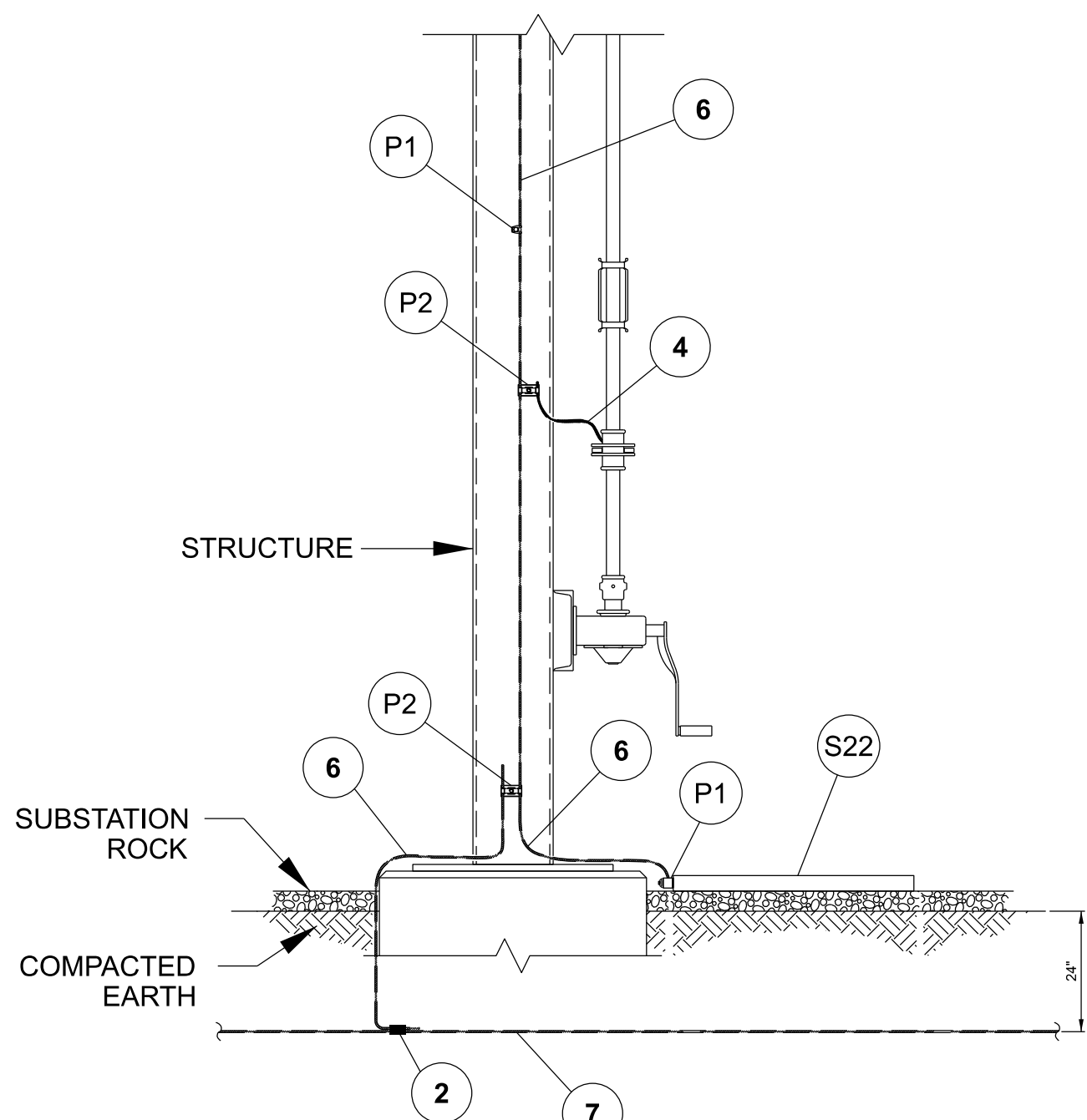
DETAIL
CCVT GROUNDING
N.T.S



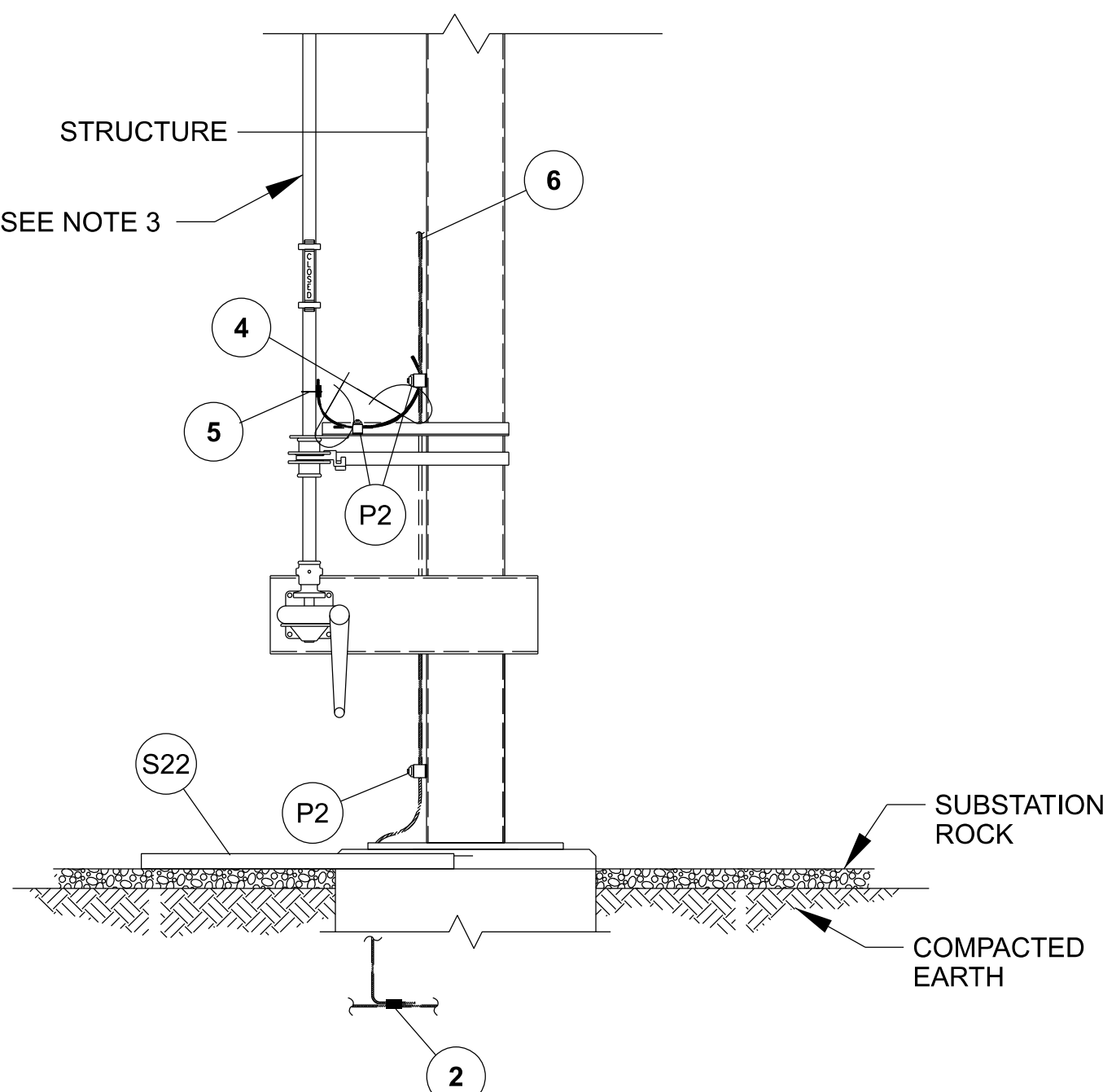
DETAIL
PROBE LIGHT/85' YARD POLE
GROUNDING
N.T.S



DETAIL
TYPICAL STRUCTURE GROUNDING



SIDE VIEW



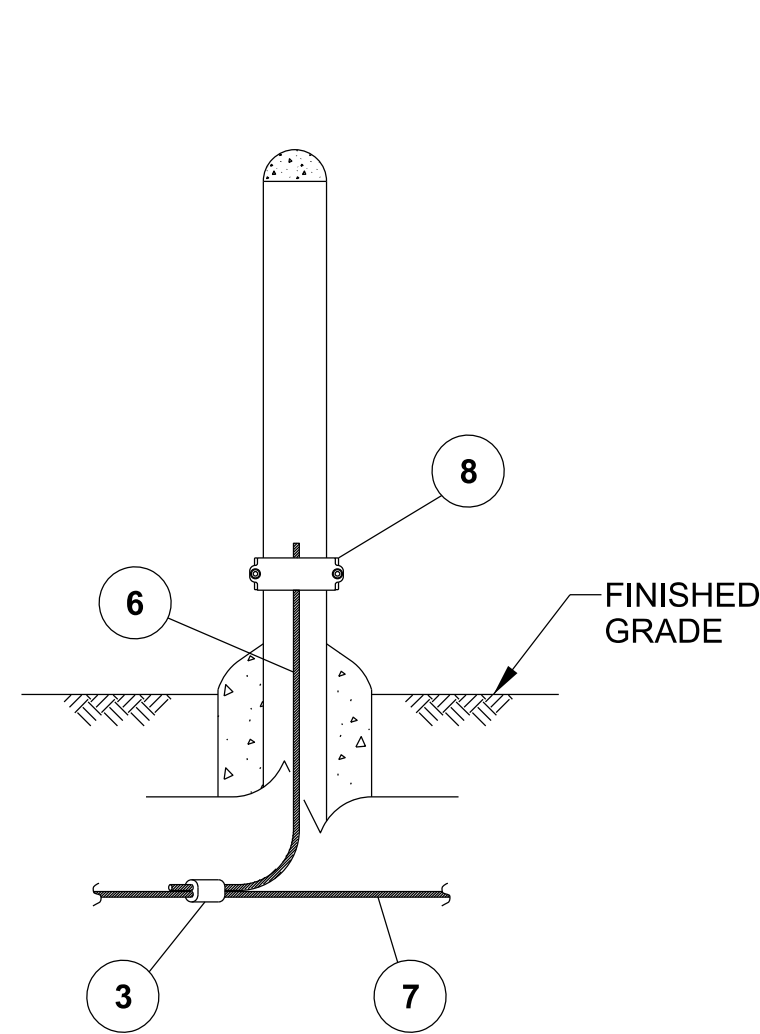
FRONT VIEW

DETAIL
TYPICAL SWITCH GROUNDING
& OPERATOR'S PLATFORM

ITEM	DESCRIPTION
1	WELDED GROUND CONNECTION, CABLE TO CABLE, 19#8 CABLE THROUGH CROSS, CADWELD PLUS MOLD TYPE XBZ9G9G AND (2) #200 WELD METAL AS REQUIRED.
2	WELDED GROUND CONNECTION, 19#8 CABLE MAIN TO 7#5 CABLE TAP, CADWELD PLUS MOLD TYPE TAC3D2V AND (1) #200 WELD METAL AS REQUIRED.
3	WELDED GROUND CONNECTION, 500KCM CABLE TO 19#8 CABLE THROUGH CROSS, CADWELD PLUS MOLD TYPE XBV3Q3D AND (3) #200 WELD METAL AS REQUIRED.
4	FLEXIBLE COPPER BRAID, FURNISHED BY THE SWITCH MFG.
5	GROUND CONNECTOR, BRONZE BOLTED, OPERATOR PIPE TO FLAT, FURNISHED BY THE SWITCH MFG.
6	7#5 COPPERWELD CONDUCTOR, FURNISHED BY THE CONTRACTOR.
7	19#8 COPPERWELD CONDUCTOR, STATION GRID 24" BELOW GRADE FURNISHED BY CONTRACTOR.
8	GROUND CONNECTOR, BRONZE BOLTED, 7#5 COPPERWELD CONDUCTOR TO NEMA 2-HOLE PAD, FURNISHED BY THE OWNER.
P1	GROUND CONNECTOR, BRONZE BOLTED, 7#5 COPPERWELD TO FLAT, ANDERSON CATALOG NO. GC-141A-G2 OR EQUAL, FURNISHED BY THE OWNER.
P2	GROUND CONNECTOR, BRONZE BOLTED, TWO (2) 7#5 COPPERWELD TO FLAT, ANDERSON CATALOG NO. GC-143A-GS OR EQUAL, FURNISHED BY THE OWNER.
S22	SWITCH OPERATOR'S PLATFORM, 4' X 6' GALVANIZED STEEL GRATING, FURNISHED BY THE OWNER.

- NOTES:
1. THE CONTRACTOR SHALL GROUND THE SWITCH OPERATOR PIPE DIRECTLY TO THE SWITCH OPERATOR'S PLATFORM AS SHOWN ON THIS DETAIL.
 2. THE CONTRACTOR SHALL CONNECT EACH COLUMN OF THE SWITCH STRUCTURE TO THE STATION GROUND GRID. THE COLUMNS SHALL NOT BE CONNECTED TO THE SAME GRID CONDUCTOR, WHERE POSSIBLE.
 3. SWITCH OPERATOR LOCATION SHOWN FOR REFERENCE AND MAY VARY DEPENDING ON SWITCH MANUFACTURER DESIGN.
 4. THE CONTRACTOR SHALL INSTALL 7#5 CCS GROUND CABLE THE LENGTH OF SHIELD MAST USING BOLTED CONNECTORS AT EACH GROUND TAB PROVISION ON STRUCTURE.

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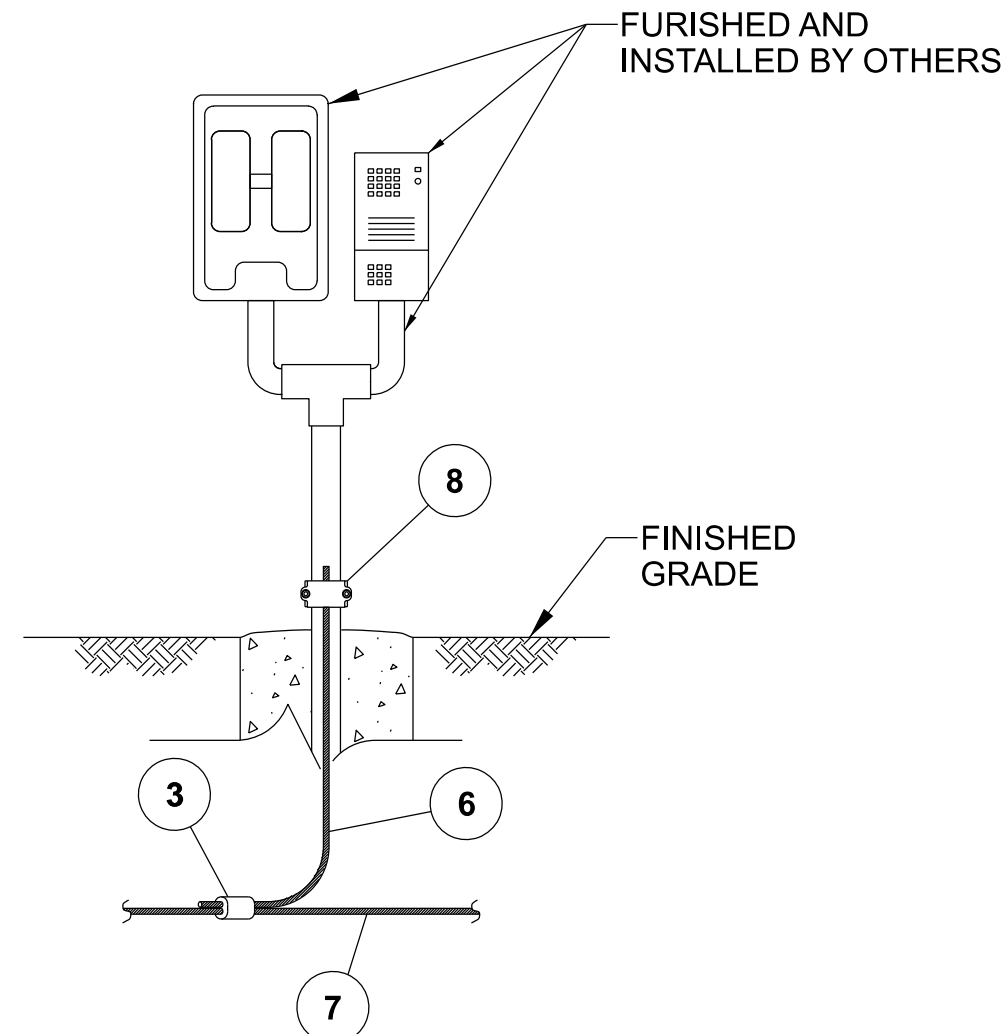
METAL BOLLARDS AT CARD READERS. FURNISHED AND INSTALLED BY OTHERS BOLLARDS SHALL BE PVC. GROUNDING FURNISHED AND INSTALLED BY CONTRACTOR

DETAIL

CONCRETE - FIELD METAL PIPE BOLLARD

N.T.S

1



NOTE

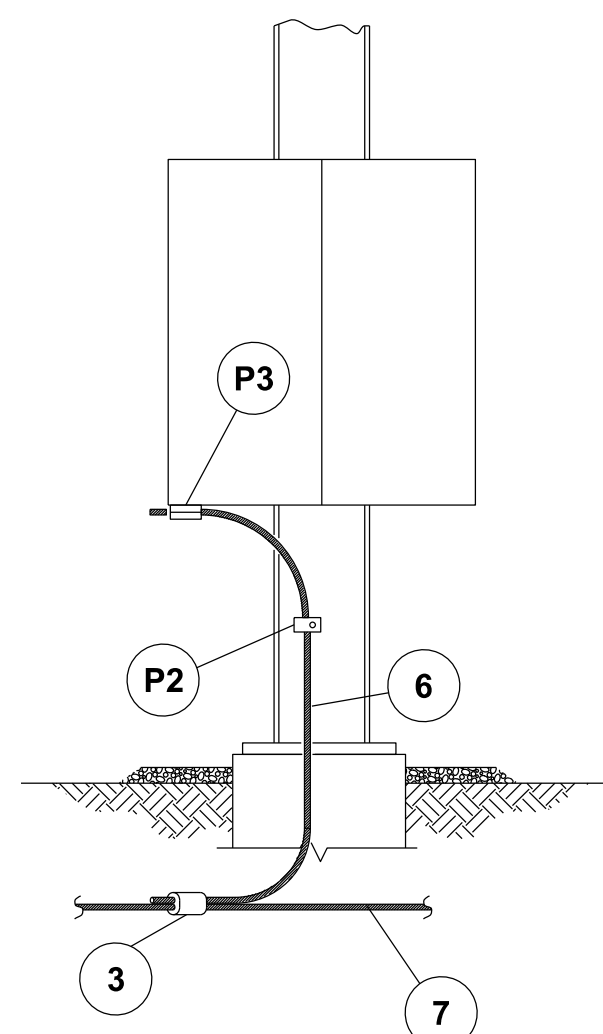
FOR CARD READER OUTSIDE SUBSTATION FENCE, INSTALL A 4' X 6' RING OF 19#8 COPPERWELD GROUND CONDUCTOR (CENTERED ON CARD READER) AND CONNECT TO SUBSTATION GROUND GRID IN TWO LOCATIONS. GROUNDS FOR CARD READER POST AND METALLIC BOLLARDS SHALL CONNECT TO THIS RING.

DETAIL

CARD READER/CALLBOX

N.T.S

2

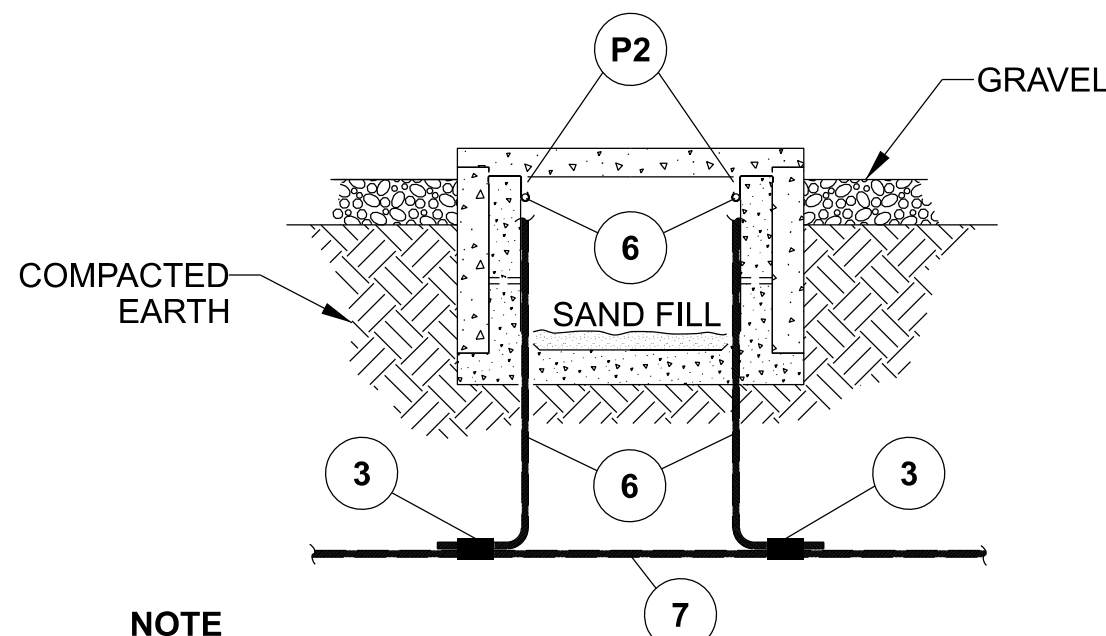


DETAIL

TYPICAL YARD & EQUIPMENT ENCLOSURE/J.BOX/CABINET GROUNDING

N.T.S

3



NOTE

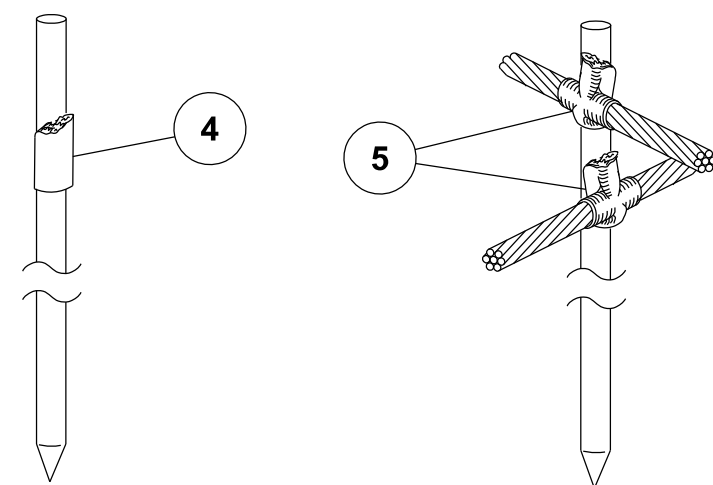
7#5 COPPERWELD GROUND CONDUCTOR SHALL BE INSTALLED AT TOP OF THE CABLE TRENCH AND SUPPORTED BY CABLE CLIPS APPROXIMATELY EVERY FIVE FEET (TRENWA TYPE GC-1 OR EQUAL). CONTRACTOR TO INSTALL A CONTINUOUS RUN FROM THE TRENCH, LOOP THROUGH CONTROL BUILDING CABLE TRAY, THEN ROUTE OUTSIDE TO CONNECT TO A SECOND POINT OF THE STATION GRID. THE GROUND CONDUCTOR SHALL RUN THE ENTIRE LENGTH OF THE CABLE TRENCH AND CONNECT TO THE STATION GROUND GRID AT ALL POINTS OF INTERSECTION.

DETAIL

TYPICAL GROUND CONNECTIONS

N.T.S

4

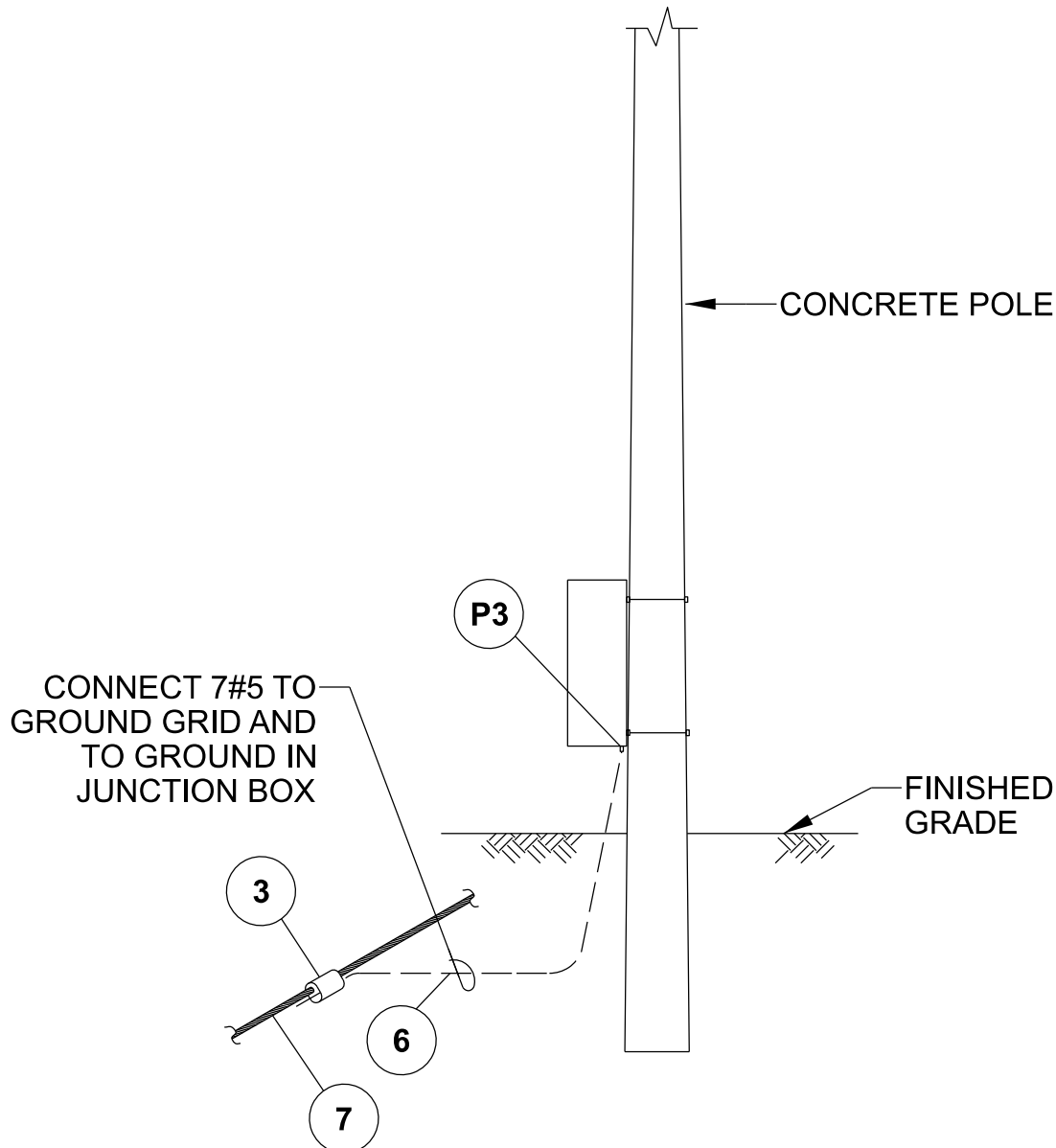


DETAIL

TYPICAL GROUND ROD CONNECTIONS

N.T.S

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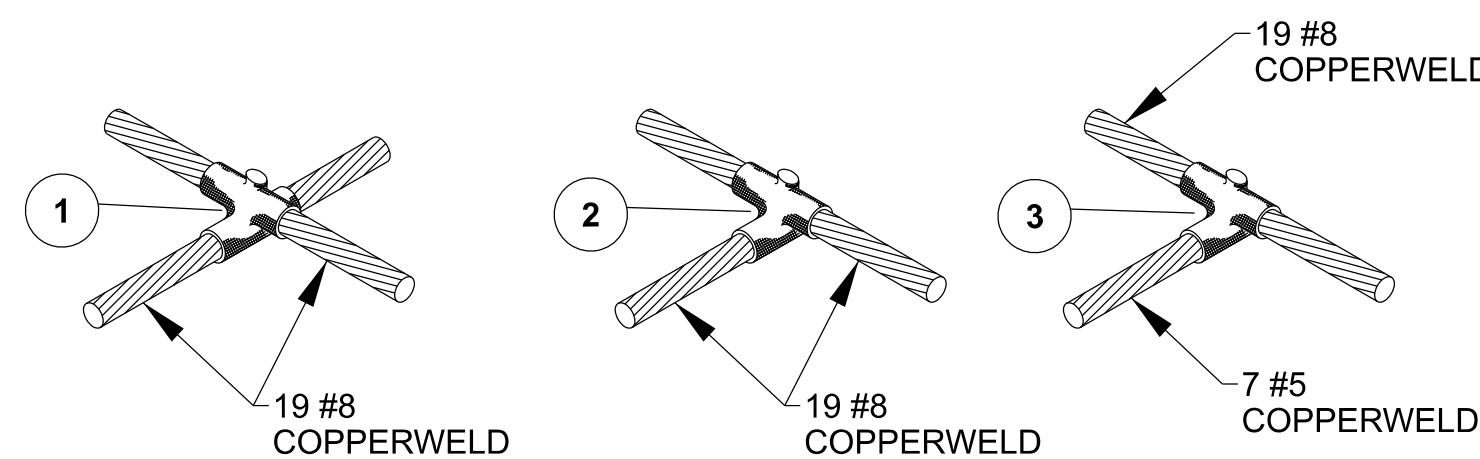


DETAIL

PERIMETER SECURITY POLE (SP1-SP4)

N.T.S

6



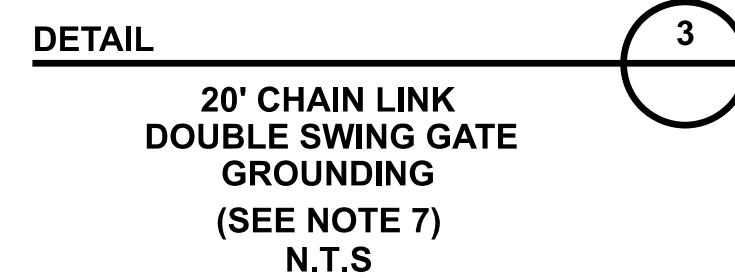
DETAIL

TYPICAL GROUND CONNECTIONS

7

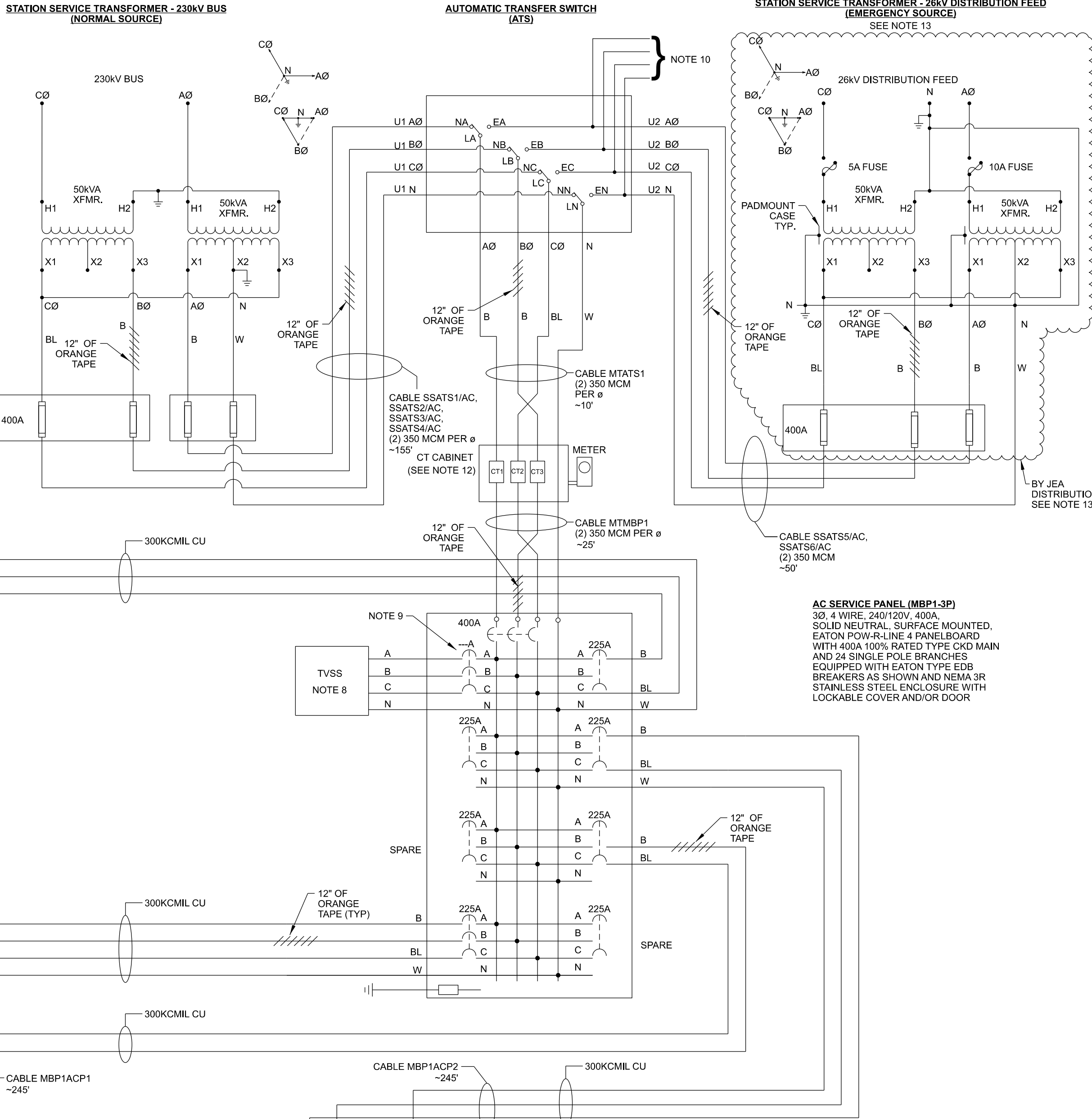
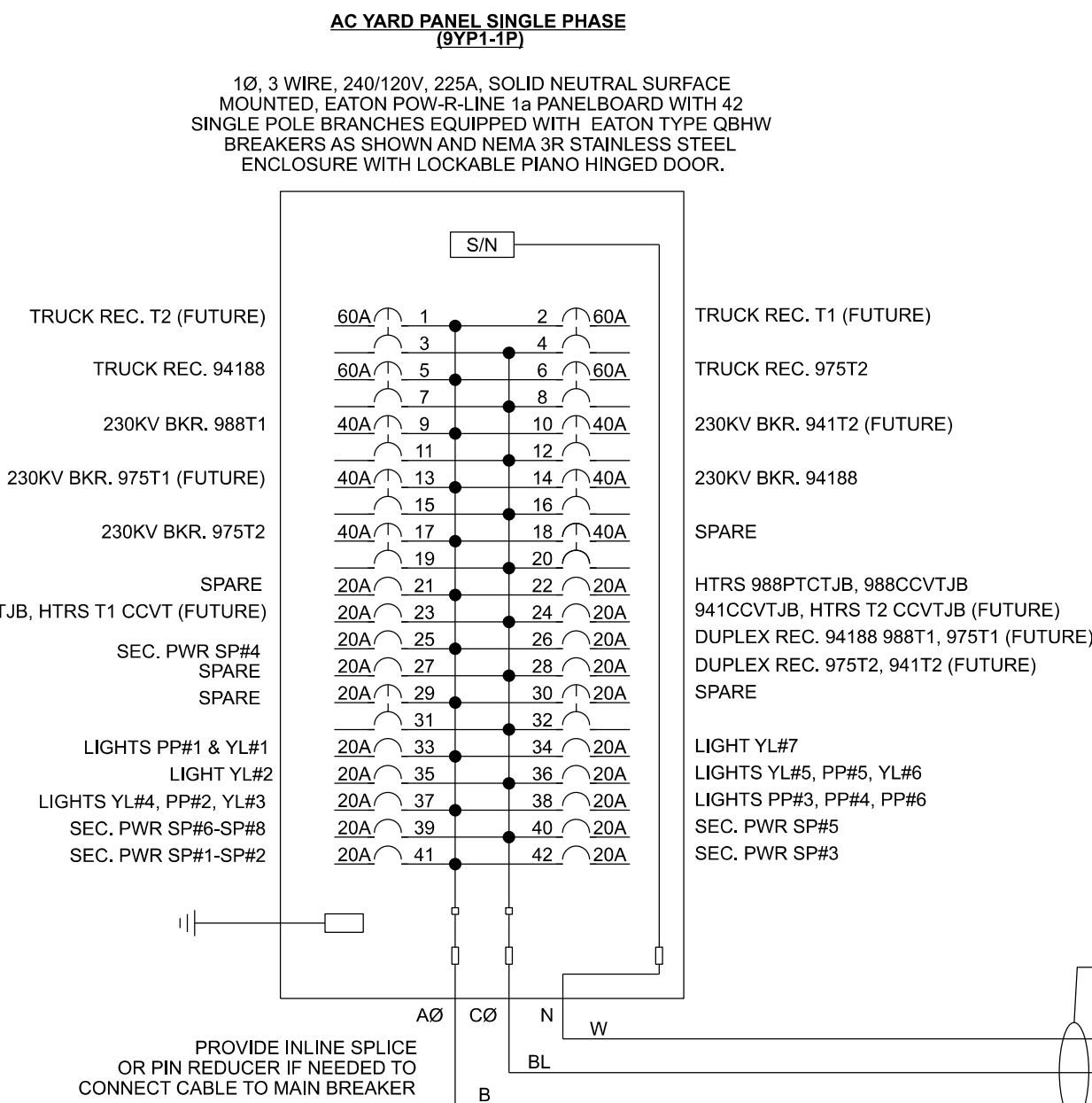
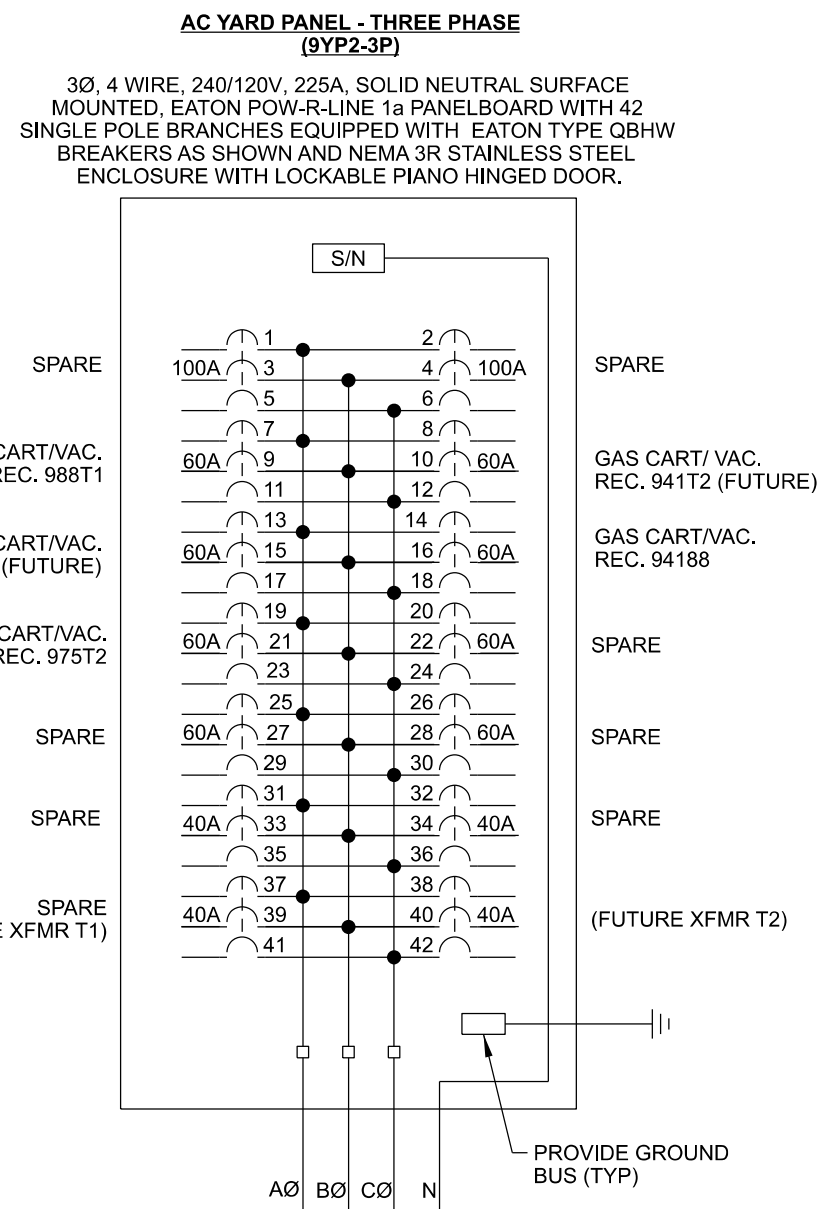
ITEM	DESCRIPTION
1	WELDED GROUND CONNECTION, CABLE TO CABLE, 19#8 CABLE THROUGH CROSS, CADWELD PLUS MOLD TYPE XBZ9G9G AND (2) #200 WELD METAL AS REQUIRED.
2	WELDED GROUND CONNECTION, 19#8 CABLE MAIN TO 19#8 CABLE TAP, CADWELD PLUS MOLD TYPE TAC3D3D AND (1) #200 WELD METAL AS REQUIRED.
3	WELDED GROUND CONNECTION, 19#8 CABLE MAIN TO 7#5 CABLE TAP, CADWELD PLUS MOLD TYPE TAC3D2V AND (1) #200 WELD METAL AS REQUIRED.
4	WELDED GROUND CONNECTION, GROUND ROD TO GROUND ROD, CADWELD PLUS MOLD TYPE HDGBD-16 AND #2-150 WELD METAL AS REQUIRED.
5	WELDED GROUND CONNECTION, GROUND ROD TO CABLE CROSS, CADWELD PLUS MOLD TYPE GYE-163D AND #250 WELD MATERIAL AS REQUIRED.
6	7 #5 COPPERWELD CONDUCTOR, FURNISHED BY THE CONTRACTOR.
7	19 #8 COPPERWELD CONDUCTOR, STATION GRID 24" BELOW GRADE FURNISHED BY CONTRACTOR.
8	GROUND CONNECTOR, BRONZE BOLTED, SINGLE CABLE TO 4" O.D. PIPE. CONDUCTOR RANGE SHALL BE FOR 2/0 SOLID - 250MCM CU. SEFCOR GU1-6312 OR BURNDY CATALOG NO. GD1929.
P1	GROUND CONNECTOR, BRONZE BOLTED, 7#5 COPPERWELD TO FLAT, ANDERSON CATALOG NO. GC-141A-G2 OR EQUAL, FURNISHED BY THE OWNER.
P2	GROUND CONNECTOR, BRONZE BOLTED, TWO (2) 7#5 COPPERWELD TO FLAT, ANDERSON CATALOG NO. GC-143A-GS OR EQUAL, FURNISHED BY THE CONTRACTOR.
P3	GROUND CONNECTOR, COPPER ALLOY SERVIT SPILT-BOLT, 7#5 COPPERWELD, BURNDY CATALOG NO. KS29, FURNISHED BY THE CONTRACTOR.

 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION		PROFESSIONAL ENGINEER'S SEAL ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: <u>Brendan T. Murphy</u> LIC. NO.: <u>98687</u> STATE: <u>FL</u> DATE: <u>-</u>	REV A 07/29/25 8009570 ISSUED FOR 90% REVIEW	REVISION DESCRIPTION			BY BMCD	REVIEW BTM	ENGINEERING DATE 07/29/2025 BY JB REVIEW BTM DRAFTING DATE 07/29/2025 BY KN REVIEW JB		MILLER SUBSTATION INSTALLATION GROUNDING DETAILS MILLER SUBSTATION SUBSTATION & TRANSMISSION ENGINEERING			DRAWING NAME: ML2024-GD2.dgn DRAWING SET: ML2024 DRAWING #: OF SHEET #: 2 OF 3	
	 495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM		ISSUED FOR REVIEW SCALE: NONE PROJ # 8009570													



ITEM	QTY.	DESCRIPTION	MANUFACTURER	CATALOG NO.
(G01)	3	FESTOON TROLLEY	WAMPFLER	024210-125X100
(G02)	32 ft.*	FESTOON CABLE, #4/0 WELDING CABLE	SOUTHWIRE	BY DESC.
(G03)	2	FESTOON C-RAIL, 4 M LENGTH, GALVANIZED STEEL	WAMPFLER	024100-4
(G04)	1	FESTOON RAIL COUPLER	WAMPFLER	024105
(G05)	5	FESTOON RAIL SUPPORT	WAMPFLER	024123
(G06)	5	SUPPORT ARM, 1'-0", CUT TO FIT BETWEEN GATE AND FENCE	WAMPFLER	23200-01
(G07)	1	FESTOON END CLAMP	WAMPFLER	024230-100X062
(G08)	2	FESTOON END CAP	WAMPFLER	020662-40
(G09)	1	FESTOON END STOP	WAMPFLER	024111
(G10)	5	SUPPORT ARM BRACKET	WAMPFLER	020285
(G11)	2	U-BOLT, GALVANIZED, TRADE SIZE 2 ½"	O-Z/GEDNEY	U-250SG
(G12)	2	U-BOLT, GALVANIZED, TRADE SIZE 4"	O-Z/GEDNEY	U-400SG
(G13)	30 ft.*	STRUCTURE STEEL ANGLE, GALVANIZED, L3 x 3 x ¾	-	-

1. GROUND INSTALLATION SHALL BE PROVIDED AT INTERMEDIATE POSTS, SPACED NO MORE THAN FORTY (40') FEET APART. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ABOVE GRADE GROUND CONNECTORS AND GROUND CONDUCTOR.
2. GROUND INSTALLATION SHALL BE PROVIDED AT ALL CORNER POSTS. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL ABOVE GRADE GROUND CONNECTORS AND GROUND CONDUCTOR.
3. THE CONTRACTOR SHALL PROVIDE AT LEAST THREE (3) BOND POINTS TO THE FENCE POST.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A CONTINUOUS #2 SOLID COPPER CONDUCTOR THROUGH THE BOND POINTS. THE CONDUCTOR SHALL BE WOVEN INTO THE FENCE FABRIC AND POSITIVELY BONDED TO EACH STRAND OF BARBED WIRE.
5. THE CONTRACTOR SHALL REMOVE ANY THREAD PROJECTION IN EXCESS OF 1/4" BEYOND THE NUT.
6. CONTRACTOR TO FURNISH AND INSTALL THE ABOVE GROUNDING MATERIALS FOR THE SUBSTATION ENTRANCE GATES.
7. CONTRACTOR SHALL INSTALL DOUBLE SWING GATE SO THAT IT ONLY SWINGS INWARD, TOWARD SUBSTATION YARD.



AC LOADINGS FOR PANELS ARE CALCULATED/ASSUMED AS FOLLOWS:
(SEE CONSTRUCTION NOTE 1)

1a INDOOR CONTROL HOUSE PANELS:
0.33A @ 120V PER INTERIOR/EXTERIOR CONTROL HOUSE LIGHT AND EXHAUST FAN
1A @ 120V PER ENTIRE SMOKE DET. CIRCUIT
1.5A @ 120V PER DUPLEX RECEPTACLE
5A @ 120V PER SCADA RTU AND SECURITY/COMM. RACK
22A @ 240V PER AIR HANDLER, HEAT STRIPS AND BLOWER
1A @ 120V FOR EACH RELAY PANEL CIRCUIT (3 PANELS)
36A @ 240V PER BATTERY CHARGER
60A @ 240V PER OUTDOOR TRUCK REC. (2 LIGHTS, 150W EACH)

1a OUTDOOR 120V PANELS:
1A @ 120V PER 100W JUNCTION BOX HEATER
1.5A @ 120V PER DUPLEX RECEPTACLE
0.33A @ 120V PER 60W YARD LIGHT
15A @ 240V PER 230KV BREAKER
60A @ 240V, FOR TRUCK REC.
3a OUTDOOR YARD PANELS:
10A, 3ø @ 240V FOR ENTRANCE GATE MOTOR, NON-SIMULTANEOUS OPERATION
60A 3ø @ 240V, FOR GAS CART/VAC. REC. ALLOWS FOR 2 OF EACH (30A EA)

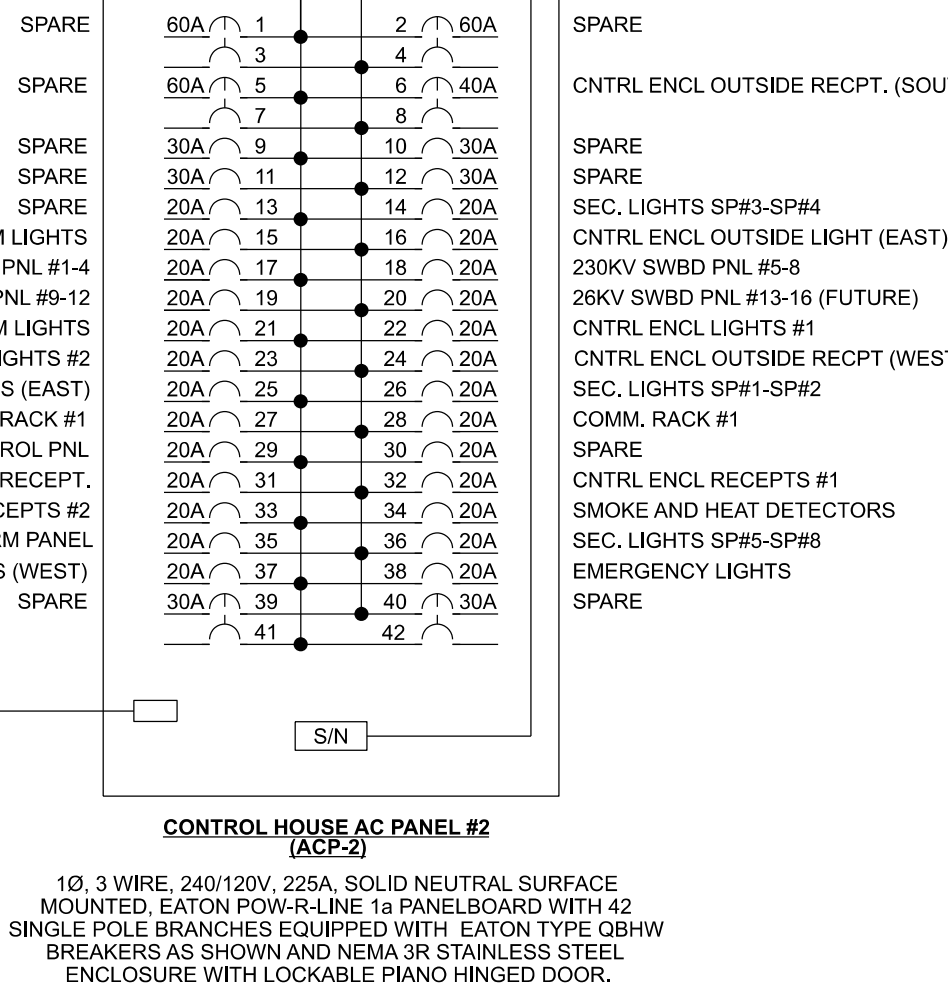
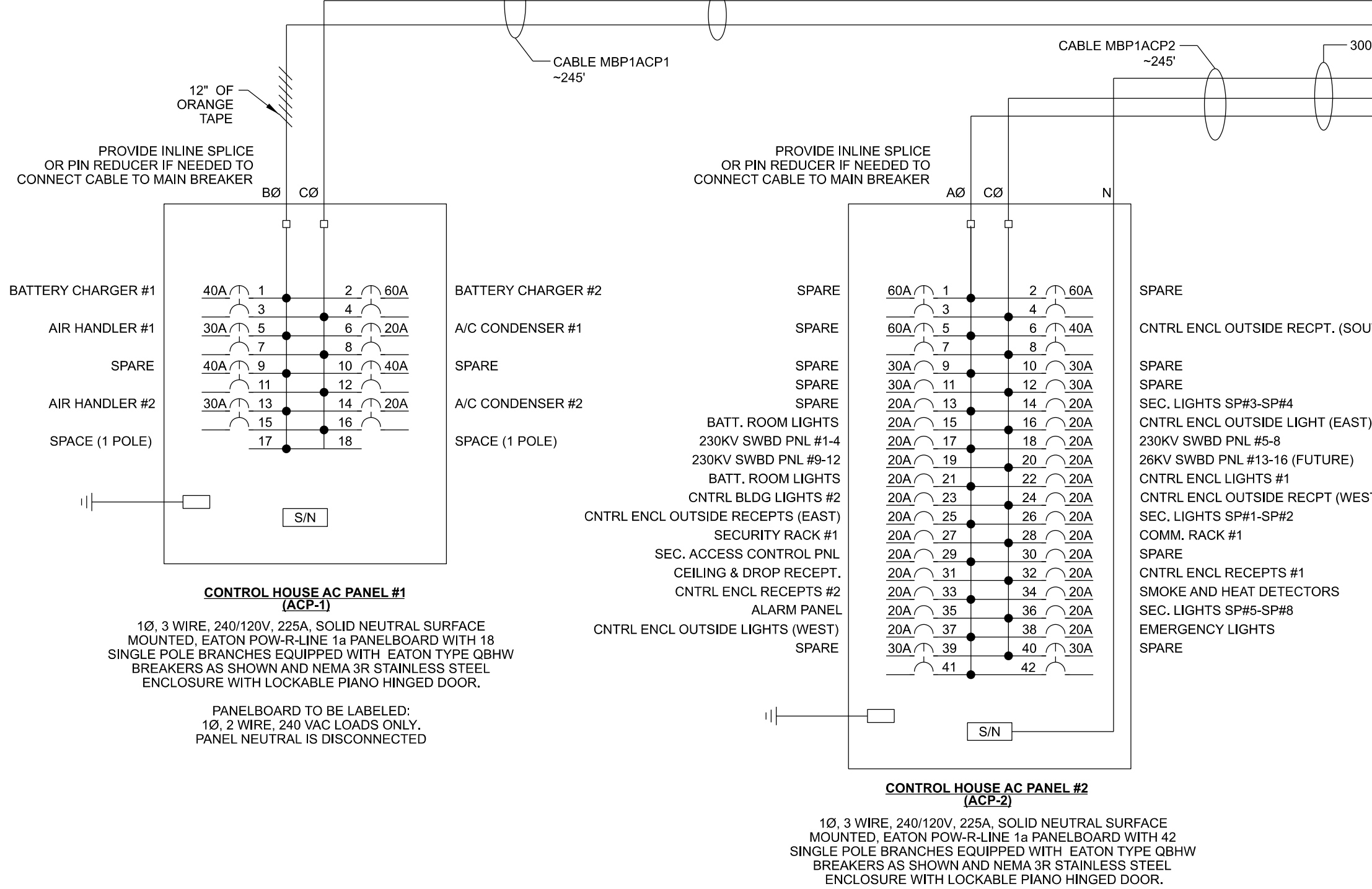
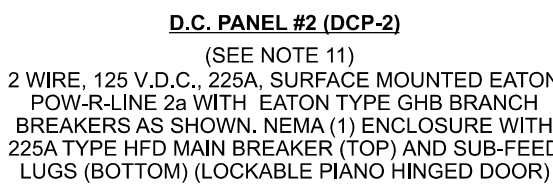
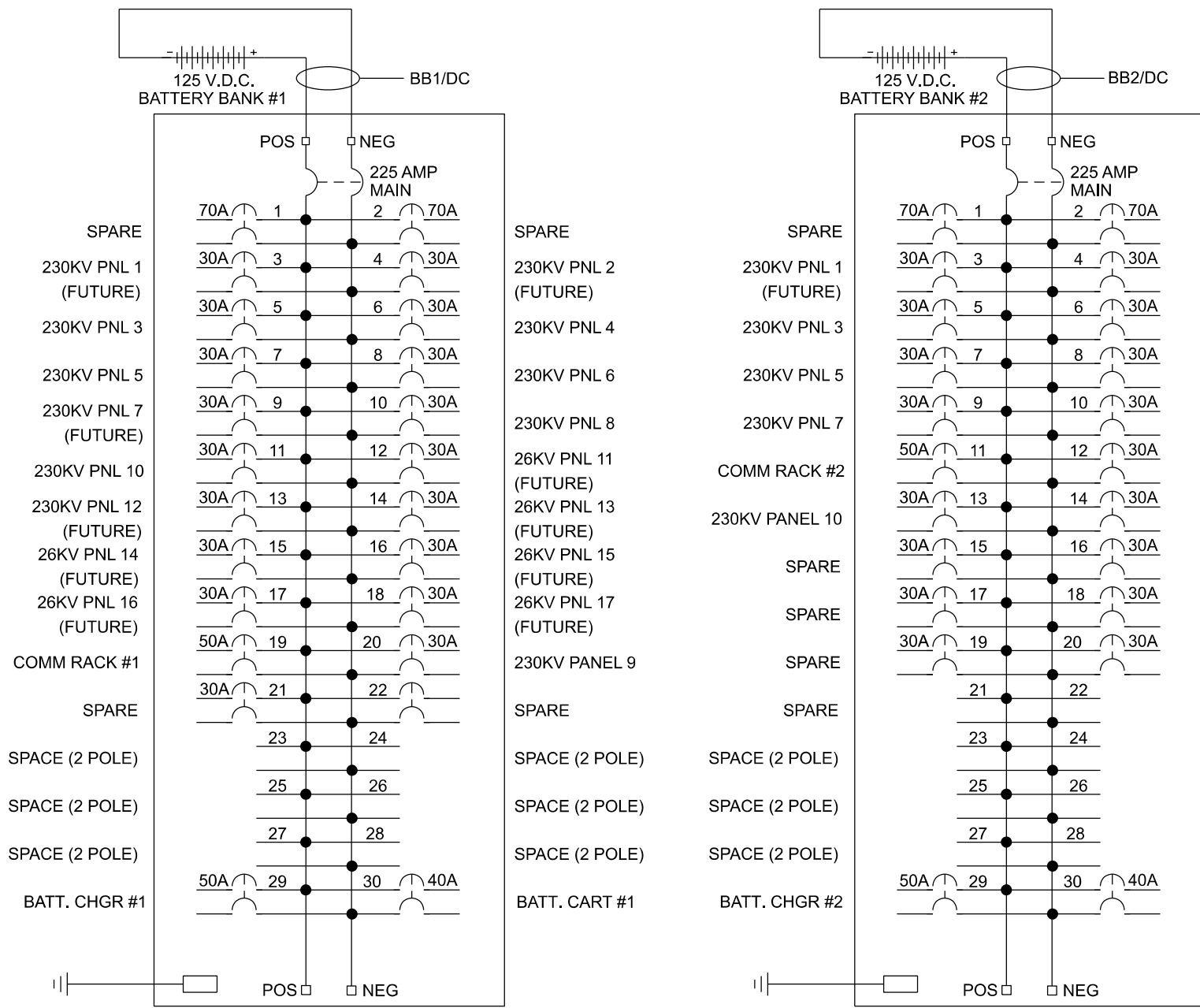
LOADS ARE FURTHER ANALYZED BY THE FOLLOWING:

FOR CURRENT PANEL LOADING:
ONLY (2) 230KV BREAKERS PER PANEL TRIP SIMULTANEOUSLY;
(2) PER PANEL @ 13.5A, REMAINDER @ 4A
60A TOTAL, PER PANEL FOR TRUCK REC., REGARDLESS OF NUMBER.

FOR ADJUSTED MAXIMUM STATION SERVICE TRANSFORMER BANK LOADING:
60A FOR TRUCK REC. FOR A MAXIMUM OF ONE (1) TRUCK @ FULL LOAD,
ONLY 110A, 3ø, FOR STATION FOR ALL GAS CART 2 @ (25A)/VAC, 2 @ (30A) REC

CABLE AMPACITY DETERMINED FOR THWN CONDUCTOR @ 75°C
VOLTAGE DROP NOT TO EXCEED 5%

CONSTRUCTION NOTES:
1. ANY DEVIATIONS FROM THE LOADS LISTED WILL REQUIRE RE-ANALYSIS BY ENGINEERING BEFORE IMPLEMENTATION.



- NOTES:**
- THE STATION SERVICE TRANSFORMERS WILL BE FURNISHED BY THE OWNER AND SHALL BE INSTALLED BY THE CONTRACTOR.
 - THE AUTOMATIC TRANSFER SWITCH WILL BE FURNISHED BY THE OWNER AND SHALL BE INSTALLED BY THE CONTRACTOR.
 - THE CONTRACTOR SHALL DETERMINE THE "HIGH LEG" OF THE THREE PHASE STATION SERVICE AND MARK WITH TWELVE (12") INCHES OF ORANGE TAPE AT ALL TERMINATION POINTS. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT NO 120 VOLT CIRCUITS ARE CONNECTED TO THE "HIGH LEG".
 - THE CONTRACTOR SHALL FURNISH AND INSTALL ALL OUTDOOR STATION SERVICE PANELS (MBP1-3P, 9YP1-1P, & 9YP2-3P) AND ASSOCIATED BREAKERS. THE CONTROL ENCLOSURE VENDOR SHALL FURNISH ALL CONTROL ENCLOSURE AC AND DC STATION SERVICE PANELS AND ASSOCIATED BREAKERS. ENCLOSURES SHALL BE NEMA 3R STAINLESS STEEL OUTDOOR, AND NEMA 1 INDOOR, HINGED COVER, AND HARDWARE TO COMPLETE THE INSTALLATION DEPICTED, PANEL BREAKERS SHALL BE BOLT-ON TYPE AND POSITIONED AND RATED IN ACCORDANCE WITH THIS DRAWING. PANELS SHALL HAVE 75°C LUGS.
 - AVAILABLE FAULT CURRENT FROM 50/50KVA STATION SERVICE BANK IS 23,000A (REDUCES TO 18,000A AT ATS). CONTRACTOR TO SUPPLY MBP1-3P WITH 22KAIC BREAKERS MINIMUM. FOR ALL OTHER PANELS, CONTRACTOR TO FURNISH AND INSTALL BREAKERS MINIMUM. SUFFICIENT SECONDARY IMPEDANCE HAS BEEN INSTALLED DOWNSTREAM OF MBP1-3P TO LIMIT AVAILABLE FAULT CURRENT TO LESS THAN 14,000A.
 - SUPPORT BRACKETS FOR THE YARD PANELS, THE ATS AND THE MAIN BREAKER PANEL SHALL BE PROVIDED BY THE OWNER ON THE APPROPRIATE STRUCTURES TO BE INSTALLED BY THE CONTRACTOR. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY HARDWARE SUPPORT CHANNELS/FITTINGS NECESSARY FOR FASTENING THE PANELS TO THE STRUCTURE SUPPORT BRACKETS AS NEEDED.
 - THE CONTRACTOR SHALL LABEL THE BRANCH BREAKERS ACCORDING TO THE INSTRUCTIONS OF THE LABELING SUBSECTION OF SPECIFICATION SECTION 3.0.
 - CONTRACTOR TO FURNISH AND INSTALL TVSS. SURGE SUPPRESSION MODEL #SKLA301 WITH NEMA 3R STAINLESS STEEL ENCLOSURE. MOUNT ON BACK OF PANEL MBP1-3P AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - SIZE TVSS CIRCUIT BREAKER PER MANUFACTURER'S RECOMMENDATIONS.
 - CONTRACTOR SHALL PROVIDE TEMPORARY POWER DURING OUTAGE IF REQUIRED.
 - ADDITIONAL NOTES PERTAINING TO LOADING CALCULATIONS ARE AT THE BOTTOM LEFT CORNER OF THIS DRAWING.
 - THE CONTRACTOR SHALL FURNISH AND INSTALL CT CABINET. THE OWNER WILL FURNISH THREE (3) CTs (TYPE WHICH THE CONTRACTOR SHALL INSTALL, CTs TO CONTAIN THE HIGH LEG (MARKED WITH ORANGE PHASING TAPE) AND BE THE RIGHT-MOST CT IN THE CT CABINET.
 - EMERGENCY SERVICE DISTRIBUTION FEED AND PADMOUNT TRANSFORMERS WILL BE FURNISHED AND INSTALLED BY OWNER. CONTRACTOR TO FURNISH AND INSTALL CABLES FOR 120/240V FEED AS SHOWN.

 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202	CONSULTANT INFORMATION  495 N KELLER ROAD, SUITE 300 MAITLAND, FL 32751 WWW.BURNSMCD.COM	PROFESSIONAL ENGINEER'S SEAL ORIGINALLY PREPARED UNDER THE RESPONSIBLE SUPERVISION OF PE: <u>Brandon T. Murphy</u> LIC. NO.: <u>98687</u> STATE: <u>FL</u> DATE: <u>-</u>	<table><thead><tr><th>REV</th><th>DATE</th><th>PROJ #</th><th>REVISION DESCRIPTION</th><th>BY</th><th>REVIEW</th><th>ENGINEERING</th></tr></thead><tbody><tr><td>A</td><td>02/24/24</td><td>8009570</td><td>ISSUED FOR 60% REVIEW</td><td>BMCD</td><td>BTM</td><td>DATE 07/29/2025</td></tr><tr><td>B</td><td>07/29/25</td><td>8009570</td><td>ISSUED FOR 90% REVIEW</td><td>BMCD</td><td>BTM</td><td>BY JB</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW BTM</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>DRAFTING</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>DATE 07/29/2025</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>BY KN</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>REVIEW JB</td></tr></tbody></table>	REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	ENGINEERING	A	02/24/24	8009570	ISSUED FOR 60% REVIEW	BMCD	BTM	DATE 07/29/2025	B	07/29/25	8009570	ISSUED FOR 90% REVIEW	BMCD	BTM	BY JB							REVIEW BTM							DRAFTING							DATE 07/29/2025							BY KN							REVIEW JB	DRAWING NAME: MILLER SUBSTATION INSTALLATION	DRAWING SET: ML2024	DRAWING #: ML2024-LV1.dgn SHEET #: 1 OF 1
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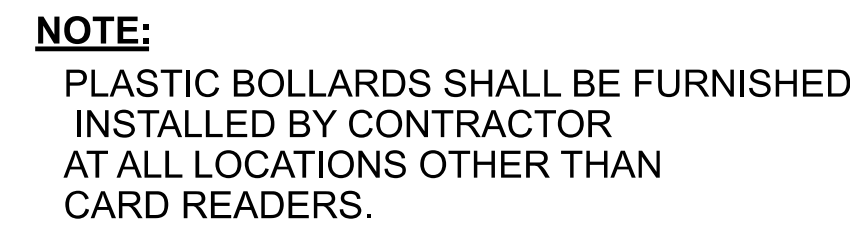
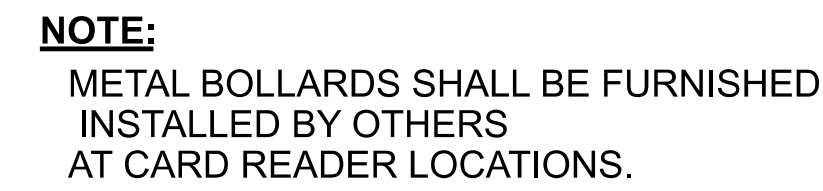
LOW VOLTAGE DISTRIBUTION PLAN

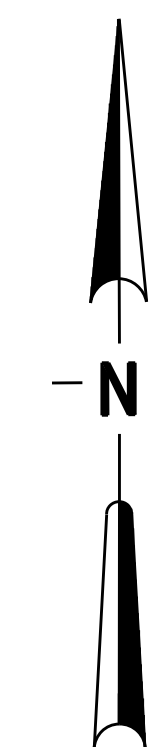
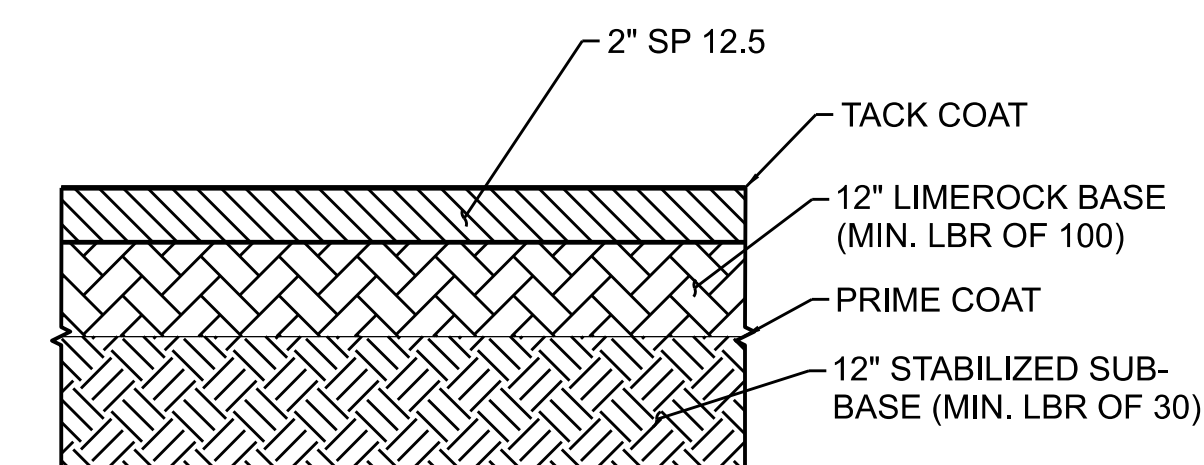
MILLER SUBSTATION

SUBSTATION & TRANSMISSION ENGINEERING

PROJ # 8009570

SCALE: NONE



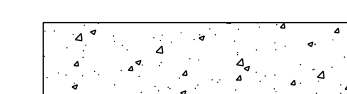


DETAIL 1

DRIVE PATH
(SEE GENERAL NOTE 1)
N.T.S.

LEGEND:

ASPHALT
DRIVE PATH

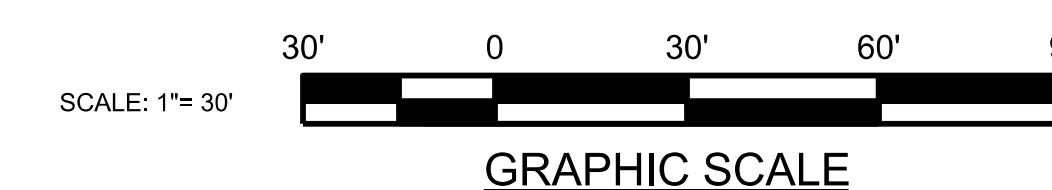


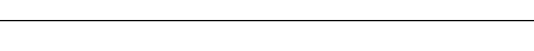
DESIGN NOTES

1. 70'-0" LOWBOY TRUCK USED FOR SIMULATING AUTOTURN THROUGHOUT THE OUTER DRIVE PATH OF THE STATION. REQUIRED TURN RADIUS FOR THIS VEHICLE IS 64'. ACCESS ROAD TURN RADIUS DESIGNED TO BE MINIMUM OF 80'-0" FOR THIS VEHICLE TO ENTER AND CIRCLE THE STATION.
2. 30'-0" BUCKET TRUCK USED FOR SIMULATING AUTOTURN ON THE STATION DRIVE PATH WITHIN RING BUS. REQUIRED TURN RADIUS FOR THIS VEHICLE IS 38.00'. DESIGNED TURN RADIUS TO BE MINIMUM OF 50'-0" FOR THIS VEHICLE TO ENTER AND EXIT WITHIN RING BUS.

GENERAL NOTES

1. THE IMPROVEMENTS SHALL COMPLY WITH THE JEA STANDARDS MANUAL.



 225 NORTH PEARL STREET JACKSONVILLE, FLORIDA 32202		 495 N KELLER ROAD, SUITE 300 MIAMI, FL 33151 WWW.BURNSMCD.COM		<table><tr><th>REV</th><th>DATE</th><th>PROJ #</th><th>REVISION DESCRIPTION</th><th>BY</th><th>REVIEW</th></tr><tr><td>A</td><td>07/29/25</td><td>8009570</td><td>ISSUED FOR 90% REVIEW</td><td>BMCD</td><td>BTM</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>		REV	DATE	PROJ #	REVISION DESCRIPTION	BY	REVIEW	A	07/29/25	8009570	ISSUED FOR 90% REVIEW	BMCD	BTM																																																	<table><tr><th colspan="2">ENGINEERING</th></tr><tr><td>DATE</td><td>07/29/2025</td></tr><tr><td>BY</td><td>JB</td></tr><tr><td>REVIEW</td><td>BTM</td></tr><tr><th colspan="2">DRAFTING</th></tr><tr><td>DATE</td><td>07/29/2025</td></tr><tr><td>BY</td><td>KN</td></tr><tr><td>REVIEW</td><td>JB</td></tr></table>		ENGINEERING		DATE	07/29/2025	BY	JB	REVIEW	BTM	DRAFTING		DATE	07/29/2025	BY	KN	REVIEW	JB	MILLER SUBSTATION INSTALLATION DRIVE PATH PLAN MILLER SUBSTATION SCALE: AS SHOWN SUBSTATION & TRANSMISSION ENGINEERING PROJ # 8009570		DRAWING NAME: ML2024-DP.dgn DRAWING SET: ML2024 DRAWING #: OF SHEET #: 1 OF 1	
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CONDUIT #	From	To	Size (IN)	TYPE	LENGTH (FT)	CABLE IN CONDUIT	REMARKS	REV
Breaker 975T2								
975T2C1	CABLE TRENCH	BREAKER 975T2	3"	PVC		35 975T2/C1		
975T2C2	CABLE TRENCH	BREAKER 975T2	3"	PVC		35 975T2/C2		
975T2C3	CABLE TRENCH	BREAKER 975T2	2"	PVC		35 975T2/941PR, 975T2/941SC		
975T2C4	CABLE TRENCH	BREAKER 975T2	2"	PVC		35 975T2/975PR, 975T2/975SC		
975T2C5	CABLE TRENCH	BREAKER 975T2	1 1/2"	PVC		35 975T2/AC		
975T2C6	CABLE TRENCH	BREAKER 975T2	2"	PVC		35	SPARE	
Breaker 94188								
94188C1	CABLE TRENCH	BREAKER 94188	3"	PVC		60 94188/C1		
94188C2	CABLE TRENCH	BREAKER 94188	3"	PVC		60 94188/C2		
94188C3	CABLE TRENCH	BREAKER 94188	2"	PVC		60 94188/941PR, 94188/941SC		
94188C4	CABLE TRENCH	BREAKER 94188	2"	PVC		60 94188/988PR, 94188/988SC		
94188C5	CABLE TRENCH	BREAKER 94188	1 1/2"	PVC		60 94188/AC		
94188C6	CABLE TRENCH	BREAKER 94188	2"	PVC		60	SPARE	
Breaker 988T1								
988T1C1	CABLE TRENCH	BREAKER 988T1	3"	PVC		55 988T1/C1		
988T1C2	CABLE TRENCH	BREAKER 988T1	3"	PVC		55 988T1/C2		
988T1C3	CABLE TRENCH	BREAKER 988T1	2"	PVC		55 988T1/988PR, 988T1/988SC		
988T1C4	CABLE TRENCH	BREAKER 988T1	2"	PVC		55 988T1/975PR, 988T1/975SC		
988T1C5	CABLE TRENCH	BREAKER 988T1	1 1/2"	PVC		55 988T1/AC		
988T1C6	CABLE TRENCH	BREAKER 988T1	2"	PVC		55	SPARE	
230KV 941 CCVTS								
941CCVTC1	CABLE TRENCH	941CCVT1B	2"	PVC		50 941PT1B, 941PT1/AC		
941CCVTC2	CABLE TRENCH	941CCVT1B	2"	PVC		50	SPARE	
941CCVTC3	985CCVT1B	941CCVT - APH	1 1/2"	PVC		50 941PT/PHA		
941CCVTC4	985CCVT1B	941CCVT - CPH	1 1/2"	PVC		50 941PT/PHC		
941CCVTC5	985CCVT1B	941CCVT - BPH	1"	LTF		50 941PT/PHB	Above grade conduit. Not shown on conduit plan.	
230KV 988 CCVTS								
988CCVTC1	CABLE TRENCH	988CCVT1B	2"	PVC		40 988PT1B, 988PT1/AC		
988CCVTC2	CABLE TRENCH	988CCVT1B	2"	PVC		40	SPARE	
988CCVTC3	988CCVT1B	988CCVT - APH	1 1/2"	PVC		40 988PT/PHA		
988CCVTC4	988CCVT1B	988CCVT - CPH	1 1/2"	PVC		40 988PT/PHC		
988CCVTC5	988CCVT1B	988CCVT - BPH	1"	LTF		40 988PT/PHB	Above grade conduit. Not shown on conduit plan.	
230KV 975 CCVTS								
975CCVTC1	CABLE TRENCH	975CCVT1B	2"	PVC		25 975PT1B, 975PT1/AC		
975CCVTC2	CABLE TRENCH	975CCVT1B	2"	PVC		25 SSVT1/AC, SSVT2/AC		
975CCVTC3	975CCVT1B	975CCVT - APH	1 1/2"	PVC		25 975PT/PHA		
975CCVTC4	975CCVT1B	975CCVT - CPH	1 1/2"	PVC		25 975PT/PHC		
975CCVTC5	975CCVT1B	975CCVT - BPH	1"	LTF		25 975PT/PHB	Above grade conduit. Not shown on conduit plan.	
988 CT/PT COMBO								
988CTPTC1	Cable Trench	988CTPT1B	2"	PVC		100 988MT/PT, 988MT/CT		
988CTPTC2	Cable Trench	988CTPT1B	2"	PVC		100 988MT/AC		
988CTPTC3	988CTPT1B	988CTPT - APH	1 1/2"	PVC		100 988MT/PTA, 988MT/CTA		
988CTPTC4	988CTPT1B	988CTPT - CPH	1 1/2"	PVC		100 988MT/PTC, 988MT/CTC		
988CTPTC5	988CTPT1B	988CTPT - BPH	1"	LTF		100 988MT/PTB, 988MT/CTB	Above grade conduit. Not shown on conduit plan.	
988CTPTC6	988CCVT1B	988CTPT1B	2"	PVC		100	SPARE	
STATION SERVICE								
SSMTC1	ATS	METER CABINET	4"	PVC		10 MTATS1	Above grade conduit. Not shown on conduit plan.	
MBP1C1	METER CABINET	MBP1-3P	4"	PVC		15 MTMBP1		
SSMTC2	METER CABINET	CABLE TRENCH	4"	PVC		30 MTSOC1		
SSC1	CABLE TRENCH	EMERGENCY STA SERV PAMDOUNT	4"	PVC		330 SSATS5/AC		
SSC2	CABLE TRENCH	EMERGENCY STA SERV PAMDOUNT	4"	PVC		330 SSATS6/AC		
SSC3	ATS	CABLE TRENCH	4"	PVC		30 SSATS1/AC, SSATS4/AC		
SSC4	ATS	CABLE TRENCH	4"	PVC		30 SSATS2/AC, SSATS3/AC		
SSC5	SSA1B	CABLE TRENCH	4"	PVC		40 SSATS1/AC, SSATS4/AC, SSVT2/AC		
SSC6	SSC1B	CABLE TRENCH	4"	PVC		10 SSATS2/AC, SSATS3/AC, SSVT1/AC		
SSC7	STATION SERVICE - APH	SSA1B	3"	LTF		10	Above grade conduit. Not shown on conduit plan.	
SSC8	STATION SERVICE - CPH	SSC1B	3"	LTF		10	Above grade conduit. Not shown on conduit plan.	
SSC9	EMERGENCY STA SERV PAMDOUNT	DISTRIBUTION POLE RISER	3"	PVC		TBD	Cable installed and provided by distribution	
SSC10	EMERGENCY STA SERV PAMDOUNT	DISTRIBUTION POLE RISER	3"	PVC		TBD	Cable installed and provided by distribution	
AC DISTRIBUTION								
MBP1C2	CABLE TRENCH	MBP1-3P	4"	PVC		15 MBP19VP1		
MBP1C3	CABLE TRENCH	MBP1-3P	4"	PVC		15 MBP19VP2		
MBP1C4	CABLE TRENCH	MBP1-3P	4"	PVC		15 MBP1ACP1, MBP1ACP2		
MBP1C5	CABLE TRENCH	MBP1-3P	3"	PVC		70	SPARE	
9YP1C1	CABLE TRENCH	9YP1-1P	3"	PVC		15 94188/AC, 975T2/AC, 988T1/AC		
9YP1C2	CABLE TRENCH	9YP1-1P	3"	PVC		15 941PT1/AC, 988PT1/AC, 975PT1/AC		
9YP1C3	CABLE TRENCH	9YP1-1P	3"	PVC		15 MBP19YP1, DR94188/AC, DR975T2/AC		
9YP1C4	CABLE TRENCH	9YP1-1P	3"	PVC		15 TR94188/AC, TR975T2/AC		
9YP1C5	CABLE TRENCH	9YP1-1P	3"	PVC		15 L001, L003, L004, L007, L010, L012, L018		
9YP1C6	CABLE TRENCH	9YP1-1P	3"	PVC		15	SPARE	
9YP2C1	CABLE TRENCH	9YP2-3P	3"	PVC		15 GC94188/AC, GC988T1/AC, GC975T2/AC		
9YP2C2	CABLE TRENCH	9YP2-3P	3"	PVC		15 MBP19YP2, SGATE1/AC		
9YP2C3	CABLE TRENCH	9YP2-3P	3"	PVC		15	SPARE	
DUPLEX RECEPTACLES								
DR1C1	CABLE TRENCH	DUPLEX REC. AT 975T2	1"	PVC		55 DR975T2/AC		
DR2C1	CABLE TRENCH	DUPLEX REC. AT 94188	1"	PVC		30 DR94188/AC		
TRUCK RECEPTACLES								
TR1C1	CABLE TRENCH	TRUCK REC. AT 975T2	1-1/2"	PVC		55 TR975T2/AC		
TR2C1	CABLE TRENCH	TRUCK REC. AT 94188	1-1/2"	PVC		30 TR94188/AC		
GAS CART RECEPTACLES								
GR1C1	CABLE TRENCH	GAS CART REC. 988T1	1-1/2"	PVC		40 GC988T1/AC		
GR2C1	CABLE TRENCH	GAS CART REC. 975T2	1-1/2"	PVC		10 GC975T2/AC		
GR3C1	CABLE TRENCH	GAS CART REC. 94188	1-1/2"	PVC		35 GC94188/AC		
YARD LIGHTING								
YL1C1	PROBE POLE #1	YARD LIGHT #1	2"	PVC		230 L002		
PP1C1	CABLE TRENCH	PROBE POLE #1	2"	PVC		175 L001		
YL2C1	CABLE TRENCH	YARD LIGHT #2A	2"	PVC		90 L018		
YL2C2	YARD LIGHT #2A	YARD LIGHT #2B	2"	PVC		45 L019		
YL2C3	YARD LIGHT #2B	YARD LIGHT #2C	2"	PVC		90 L020		
YL2C4	YARD LIGHT #2C	YARD LIGHT #2D	2"	PVC		45 L021		
PP2C1	CABLE TRENCH	PROBE POLE #2	2"	PVC		55 L008, L009		
YL3C1	CABLE TRENCH	YARD LIGHT #3	2"	PVC		140 L009		
PP3C1	CABLE TRENCH	PROBE POLE #3	2"	PVC		40 L003		
YL4C1	CABLE TRENCH	YARD LIGHT #4	2"	PVC		25 L007, L008		
PP4C1	CABLE TRENCH	PROBE POLE #4	2"	PVC		55 L010, L011		
YL5C1	CABLE TRENCH	YARD LIGHT #5	2"	PVC		95 L004		
PP5C1	YARD LIGHT #5	PROBE POLE #5	2"	PVC		145 L005		
YL6C1	YARD LIGHT #5	YARD LIGHT #6	2"	PVC		305 L006		
PP6C1	CABLE TRENCH	PROBE POLE #6	2"	PVC		85 L011		
YL7C1	CABLE TRENCH	YARD LIGHT #7A	2"	PVC		90 L012		
YL7C2	YARD LIGHT #7A	YARD LIGHT #7B	2"	PVC		35 L013		
YL7C3	YARD LIGHT #7B	YARD LIGHT #7C	2"	PVC		65 L014		
YL7C4	YARD LIGHT #7C	YARD LIGHT #7D	2"	PVC		65 L015		
YL7C5	YARD LIGHT #7D	YARD LIGHT #7E	2"	PVC		35 L016		

CONDUIT #	From	To	Size (IN)	TYPE	LENGTH (FT)	CABLE IN CONDUIT	REMARKS	REV
YL7C6	YARD LIGHT #7E	CABLE TRENCH	2"	PVC	90	L017		
SECURITY LIGHTING								
SLC1	SLHH01	SLHH02	2"	PVC	260	SLIG2/AC, SLIG3/AC, SLIG4/AC		
SLC2	SLHH01	SLHH02	2"	PVC	260			
SLC3	SLHH02	SLHH03	2"	PVC	305	SLIG3/AC, SLIG4/AC		
SLC4	SLHH02	SLHH03	2"	PVC	305			
SLC5	SLHH03	SLHH04	2"	PVC	50			
SLC6	SLHH03	SLHH04	2"	PVC	50			
SLC7	SLHH04	SLHH05	2"	PVC	120	SLIG4/AC		
SLC8	SLHH04	SLHH05	2"	PVC	120			
SLC9	SLHH05	SLHH06	2"	PVC	170			
SLC10	SLHH05	SLHH06	2"	PVC	170			
SLC11	SLHH06	SLHH07	2"	PVC	45			
SLC12	SLHH06	SLHH07	2"	PVC	45			
SLC13	SLHH07	SLHH08	2"	PVC	305	SLIG5/AC		
SLC14	SLHH07	SLHH08	2"	PVC	305			
SLC15	SLHH08	SLHH09	2"	PVC	265	SLIG5/AC, SLIG6/AC		
SLC16	SLHH08	SLHH09	2"	PVC	265			
SLC17	SLHH09	SLHH01	2"	PVC	195	SLIG5/AC, SLIG6/AC, SLIG7/AC		
SLC18	SLHH09	SLHH01	2"	PVC	195			
SLC19	SLHH10	Control House	3"	PVC	130	SLIG1/AC, SLIG2/AC, SLIG3/AC, SLIG4/AC, SLIG5/AC, SLIG6/AC, SLIG7/AC, SLIG8/AC		
SLC20	SLHH10	Control House	3"	PVC	130			
SLC21	SLHH10	SLHH1	2"	PVC	185	SLIG1/AC, SLIG2/AC, SLIG3/AC, SLIG4/AC		
SLC22	SLHH10	SLHH1	2"	PVC	185			
SP1C1	SLHH1	SP #1	2"	PVC	10	SLIG1/AC		
SP2C1	SLHH2	SP #2	2"	PVC	10	SLIG2/AC		
SP3C1	SLHH3	SP #3	2"	PVC	10	SLIG3/AC		
SP4C1	SLHH5	SP #4	2"	PVC	10	SLIG4/AC		
SP5C1	SLHH7	SP #5	2"	PVC	10	SLIG5/AC		
SP6C1	SLHH8	SP #6	2"	PVC	10	SLIG6/AC		
SP7C1	SLHH9	SP #7	2"	PVC	10	SLIG7/AC		
SP8C1	SLHH10	SP #8	2"	PVC	10	SLIG8/AC		
SECURITY POWER								
SPC1	SPHH01	SPHH02	2"	PVC	260	SCAM1/AC, SCAM2/AC, SCAM3/AC		
SPC2	SPHH01	SPHH02	2"	PVC	260			
SPC3	SPHH02	SPHH03	2"	PVC	305	SCAM1/AC, SCAM2/AC		
SPC4	SPHH02	SPHH03	2"	PVC	305			
SPC5	SPHH03	SPHH04	2"	PVC	50	SCAM1/AC		
SPC6	SPHH03	SPHH04	2"	PVC	50			
SPC7	SPHH04	SPHH05	2"	PVC	120	SCAM1/AC		
SPC8	SPHH04	SPHH05	2"	PVC	120			
SPC9	SPHH05	SPHH06	2"	PVC	170			
SPC10	SPHH05	SPHH06	2"	PVC	170			
SPC11	SPHH06	SPHH07	2"	PVC	45			
SPC12	SPHH06	SPHH07	2"	PVC	45			
SPC13	SPHH07	SPHH08	2"	PVC	305	SCAM8/AC		
SPC14	SPHH07	SPHH08	2"	PVC	305			
SPC15	SPHH08	SPHH09	2"	PVC	265	SCAM7/AC, SCAM8/AC		
SPC16	SPHH08	SPHH09	2"	PVC	265			
SPC17	SPHH09	SPHH10	2"	PVC	195	SCAM6/AC, SCAM8/AC		
SPC18	SPHH09	SPHH10	2"	PVC	195			
SPC19	SPHH10	Control House	2"	PVC	130	SCAM1/AC, SCAM2/AC, SCAM4/AC,		
SPC20	SPHH10	Control House	2"	PVC	130	SCAM5/AC, SCAM6/AC, SCAM8/AC		
SPC21	SPHH10	SPHH1	2"	PVC	185	SCAM1/AC, SCAM2/AC, SCAM4/AC		
SPC22	SPHH10	SPHH1	2"	PVC	185			
SP1C2	SPHH1	SP #1	2"	PVC	10	SCAM3/AC, SCAM4/AC		
SP2C2	SPHH2	SP #2	2"	PVC	10	SCAM3/AC		
SP3C2	SPHH3	SP #3	2"	PVC	10	SCAM2/AC		
SP4C2	SPHH5	SP #4	2"	PVC	10	SCAM1/AC		
SP5C2	SPHH7	SP #5	2"	PVC	10	SCAM8/AC		
SP6C2	SPHH8	SP #6	2"	PVC	10	SCAM7/AC		
SP7C2	SPHH9	SP #7	2"	PVC	10	SCAM6/AC, SCAM7/AC		
SP8C2	SPHH10	SP #8	2"	PVC	10	SCAM5/AC		
SECURITY COMMUNICATION								
SCC1	SCHH01	SCHH02	2"	PVC	260	CABLE BY JEA SECURITY		
SCC2	SCHH01	SCHH02	2"	PVC	260	CABLE BY JEA SECURITY		
SCC3	SCHH02	SCHH03	2"	PVC	305	CABLE BY JEA SECURITY		
SCC4	SCHH02	SCHH03	2"	PVC	305	CABLE BY JEA SECURITY		
SCC5	SCHH03	SCHH04	2"	PVC	50	CABLE BY JEA SECURITY		
SCC6	SCHH03	SCHH04	2"	PVC	50	CABLE BY JEA SECURITY		
SCC7	SCHH04	SCHH05	2"	PVC	120	CABLE BY JEA SECURITY		
SCC8	SCHH04	SCHH05	2"	PVC	120	CABLE BY JEA SECURITY		
SCC9	SCHH05	SCHH06	2"	PVC	170	CABLE BY JEA SECURITY		
SCC10	SCHH05	SCHH06	2"	PVC	170	CABLE BY JEA SECURITY		
SCC11	SCHH06	SCHH07	2"	PVC	45	CABLE BY JEA SECURITY		
SCC12	SCHH06	SCHH07	2"	PVC	45	CABLE BY JEA SECURITY		
SCC13	SCHH07	SCHH08	2"	PVC	305	CABLE BY JEA SECURITY		
SCC14	SCHH07	SCHH08	2"	PVC	305	CABLE BY JEA SECURITY		
SCC15	SCHH08	SCHH09	2"	PVC	265	CABLE BY JEA SECURITY		
SCC16	SCHH08	SCHH09	2"	PVC	265	CABLE BY JEA SECURITY		
SCC17	SCHH09	SCHH10	2"	PVC	195	CABLE BY JEA SECURITY		
SCC18	SCHH09	SCHH10	2"	PVC	195	CABLE BY JEA SECURITY		
SCC19	SCHH10	CONTROL HOUSE	2"	PVC	130	CABLE BY JEA SECURITY		
SCC20	SCHH10	CONTROL HOUSE	2"	PVC	130	CABLE BY JEA SECURITY		
SCC21	SCHH10	SCHH01	2"	PVC	40	CABLE BY JEA SECURITY		
SCC22	SCHH10	SCHH01	2"	PVC	40	CABLE BY JEA SECURITY		
SP1C3	SCHH1	SP #1	2"	PVC	10	CABLE BY JEA SECURITY		
SP2C3	SCHH2	SP #2	2"	PVC	10	CABLE BY JEA SECURITY		
SP3C3	SPHH3	SP #3	2"	PVC	10	CABLE BY JEA SECURITY		
SP4C3	SCHH5	SP #4	2"	PVC	10	CABLE BY JEA SECURITY		
SP5C3	SCHH7	SP #5	2"	PVC	10	CABLE BY JEA SECURITY		
SP6C3	SCHH8	SP #6	2"	PVC	10	CABLE BY JEA SECURITY		
SP7C3	SCHH9	SP #7	2"	PVC	10	CABLE BY JEA SECURITY		
SP8C3	SCHH10	SP #8	2"	PVC	10	CABLE BY JEA SECURITY		
GATE SECURITY								
ACRC1	SCHH4	CARD READER #1	2"	PVC	50	CABLE BY JEA SECURITY		
ACRC2	SCHH3	CARD READER #2	2"	PVC	20	CABLE BY JEA SECURITY		
SEC1	HOFF. SECURITY ENCLOSURE	SCHH4	2"	PVC	10	CABLE BY JEA SECURITY		
SEC2	HOFF. SECURITY ENCLOSURE	SCHH4	2"	PVC	10	CABLE BY JEA SECURITY		
SEC3	HOFF. SECURITY ENCLOSURE	SPHH4	2"	PVC	20	CABLE BY JEA SECURITY		
SEC4	HOFF. SECURITY ENCLOSURE	SPHH4	2"	PVC	20	CABLE BY JEA SECURITY		
GOC1	SPHH4	POWER DISCONNECT SWITCH	1"	PVC	10	CABLE BY JEA SECURITY		
GOC2	POWER DISCONNECT SWITCH	GATER OPERATOR	1"	PVC	5			
GOC3	SCHH4	GATER OPERATOR	1"	PVC	15	CABLE BY JEA SECURITY		
GMC1	CABLE TRENCH	HOFFMAN ENCLOSURE	1"	PVC	245	SGATE1/AC		

CONDUIT #	From	To	Size (IN)	TYPE	LENGTH (FT)	CABLE IN CONDUIT	REMARKS	REV
FIBER OPTIC								
FOMH1C1	SMH1	FOMH1	4"	PVC	210	CABLE BY OTHERS		
FOMH1C2	FOMH1	CABLE TRENCH	4"	PVC	400	CABLE BY OTHERS		
FOMH2C1	SMH2	FOMH2	4"	PVC	425	CABLE BY OTHERS		
FOMH2C2	FOMH2	CABLE TRENCH	4"	PVC	400	CABLE BY OTHERS		
FOMH3C1	FOMH3	CABLE TRENCH	4"	PVC	140	CABLE BY OTHERS		
FOMH4C1	FOMH4	CABLE TRENCH	4"	PVC	175	CABLE BY OTHERS		