

<b>DOCKETED</b>	
<b>Docket Number:</b>	24-OPT-01
<b>Project Title:</b>	Perkins Renewable Energy Project
<b>TN #:</b>	254402
<b>Document Title:</b>	Appendix F Site Plan Part 2
<b>Description:</b>	Includes Project design, layout, site plans, elevations, and notes.
<b>Filer:</b>	Emily Capello
<b>Organization:</b>	Panorama Environmental, Inc.
<b>Submitter Role:</b>	Applicant Consultant
<b>Submission Date:</b>	2/11/2024 8:25:54 PM
<b>Docketed Date:</b>	2/12/2024

**Appendix F    Site Plan Part 2**

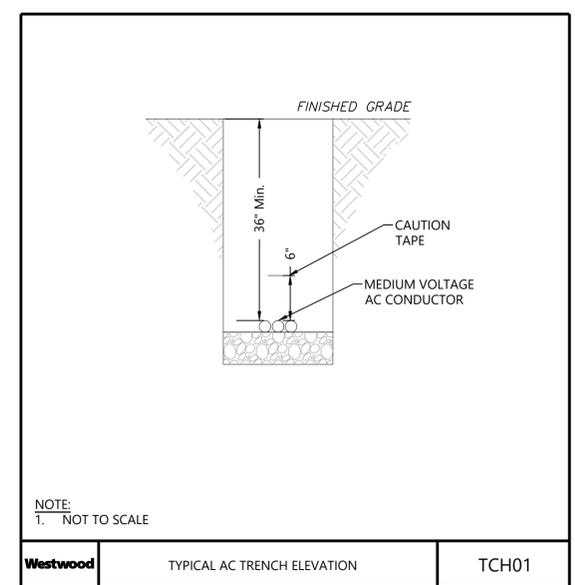
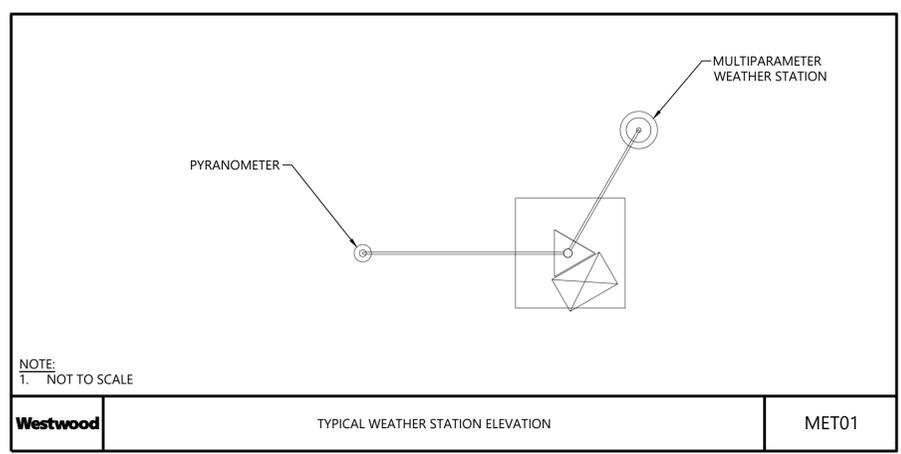
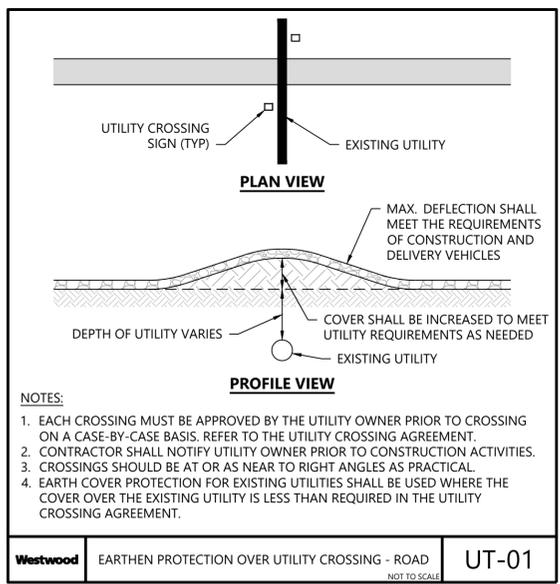
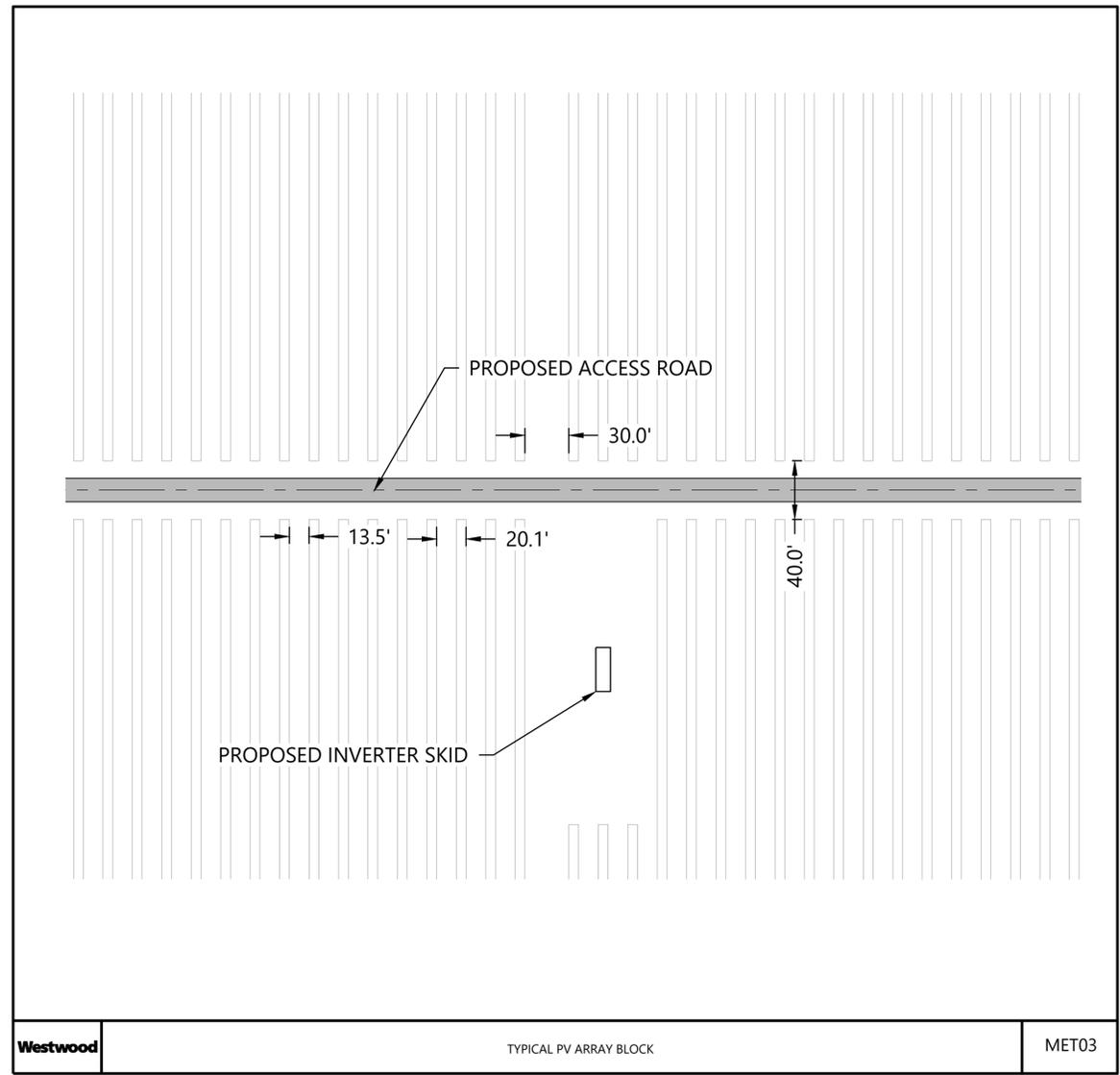
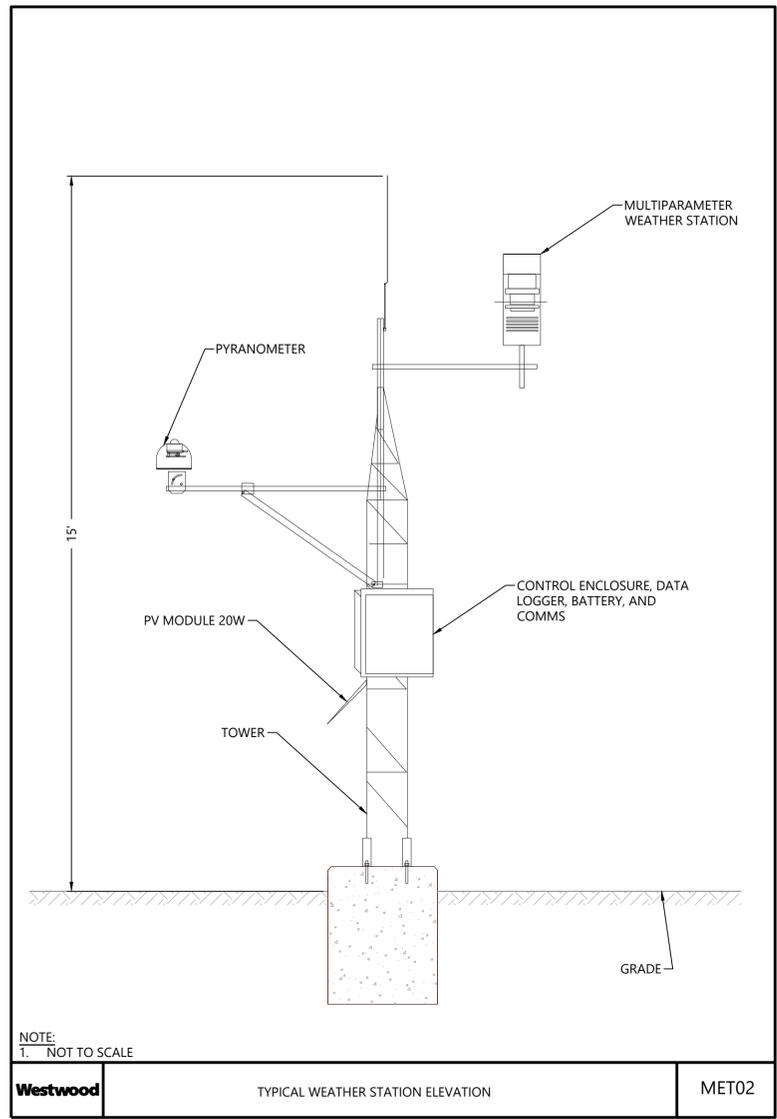
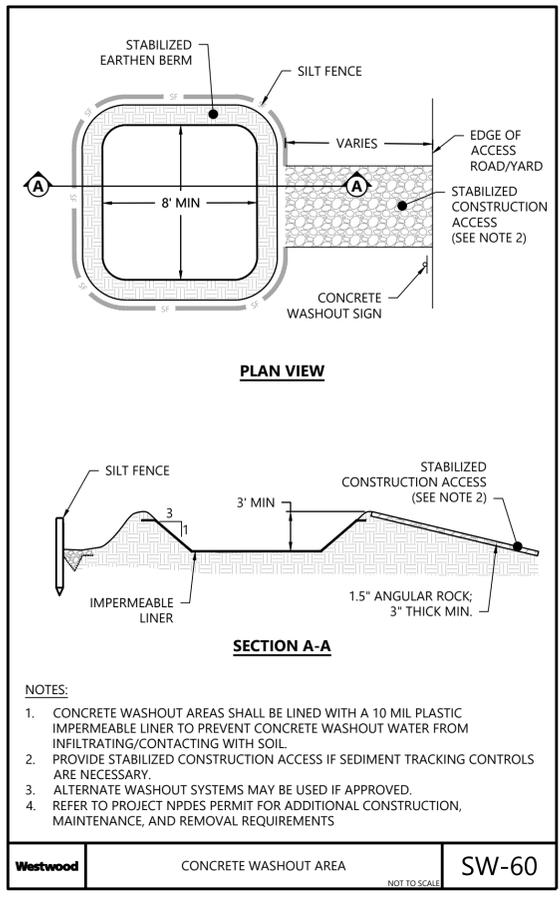


PREPARED FOR:

**IP PERKINS, LLC,  
 IP PERKINS BAAH, LLC  
 AND AFFILIATES**

REVISIONS:

#	DATE	COMMENT	IA	SB	CN
A	01/30/2024	CEC Permit Plans			



**IP Perkins**  
 Imperial County, CA

Construction Details

NOT FOR CONSTRUCTION

DATE: 01/30/2024

SHEET: C.401 A

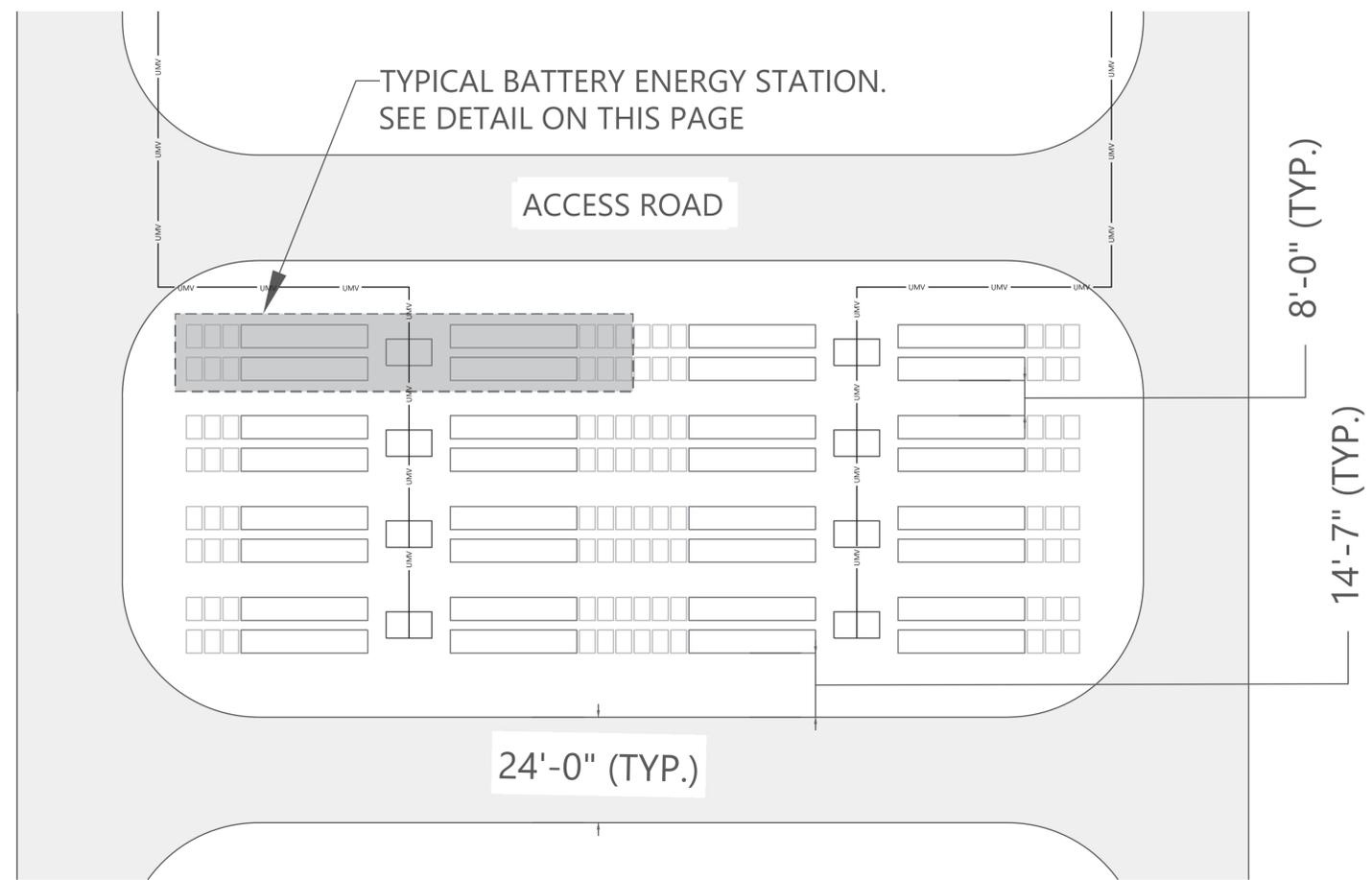


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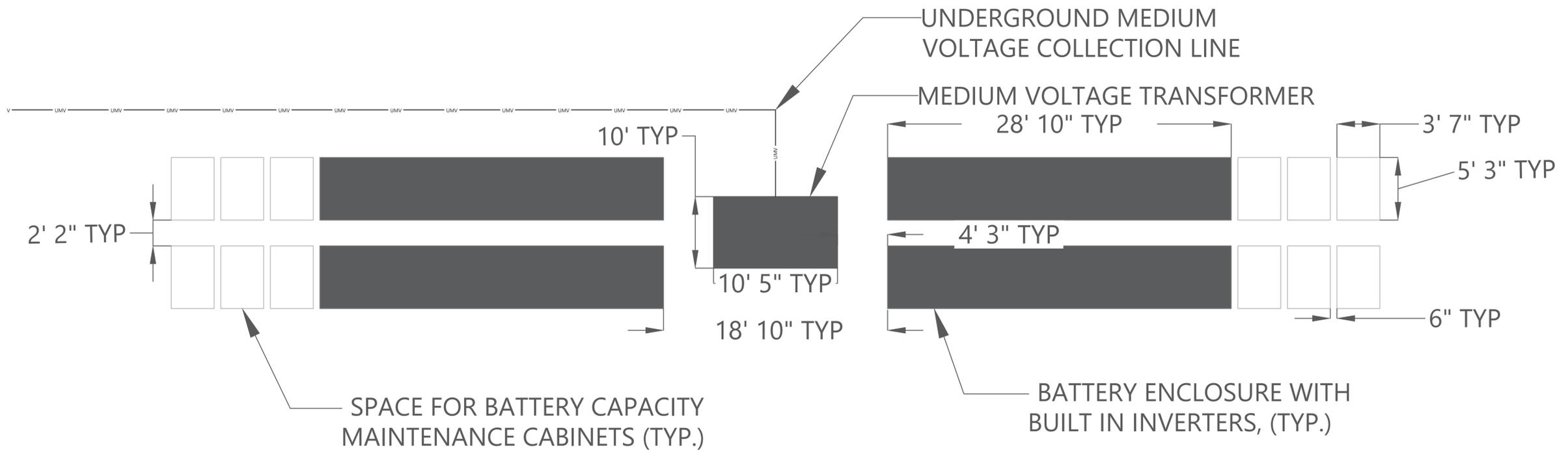
**IP PERKINS, LLC,  
 IP PERKINS BAAH, LLC  
 AND AFFILIATES**

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
A	01/30/2024	CEC Permit Plans	IA	SB	CN



TYPICAL BATTERY ENERGY LAYOUT



TYPICAL BATTERY ENERGY STATION (APPROX. 4MWac)



**IP Perkins**  
 Imperial County, CA

Typical BESS Detail

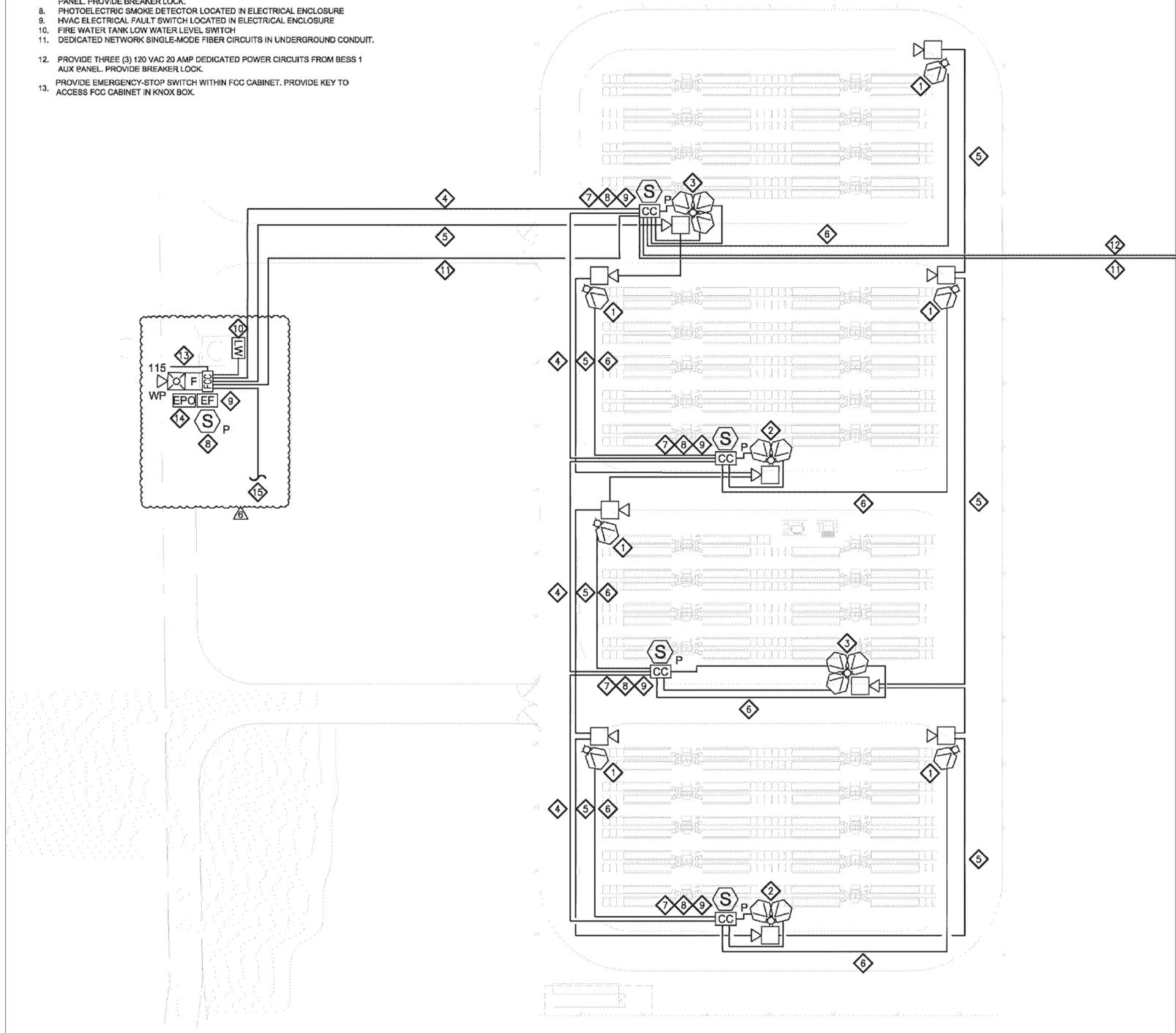
**NOT FOR CONSTRUCTION**

DATE: 01/30/2024  
 SHEET: C.403  
 REV: A

01/30/2024 10:05 AM CAD: C:\Users\Dean\OneDrive\Documents\2024\BESS\Detail.dwg 1/30/2024 11:17 AM Sam.Bjfs

**KEYNOTES:**

1. (1) POLE-MOUNTED THERMAL CAMERA AND (1) HORN (TYPICAL).
2. (2) POLE-MOUNTED THERMAL CAMERA AND (1) HORN (TYPICAL).
3. (3) POLE-MOUNTED THERMAL CAMERA AND (1) HORN (TYPICAL).
4. SIGNALING LINE CIRCUITS AND ETHERNET CIRCUITS IN UNDERGROUND CONDUIT. ROUTING IS CONCEPTUAL.
5. NAC CIRCUITS IN UNDERGROUND CONDUIT. ROUTING IS CONCEPTUAL.
6. INDICATING DEVICE AND POWER CIRCUITS IN UNDERGROUND CONDUIT. ROUTING IS CONCEPTUAL.
7. PROVIDE TWO (2) 120 VAC 20 AMP DEDICATED POWER CIRCUITS FROM BESS 1 AUX PANEL. PROVIDE BREAKER LOCK.
8. PHOTOELECTRIC SMOKE DETECTOR LOCATED IN ELECTRICAL ENCLOSURE
9. HVAC ELECTRICAL FAULT SWITCH LOCATED IN ELECTRICAL ENCLOSURE
10. FIRE WATER TANK LOW WATER LEVEL SWITCH
11. DEDICATED NETWORK SINGLE-MODE FIBER CIRCUITS IN UNDERGROUND CONDUIT.
12. PROVIDE THREE (3) 120 VAC 20 AMP DEDICATED POWER CIRCUITS FROM BESS 1 AUX PANEL. PROVIDE BREAKER LOCK.
13. PROVIDE EMERGENCY-STOP SWITCH WITHIN FCC CABINET. PROVIDE KEY TO ACCESS FCC CABINET IN KNOX BOX.

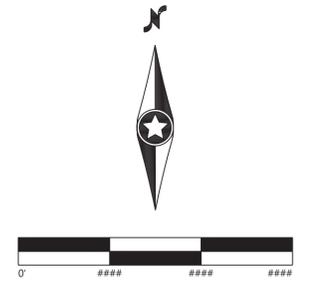


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 IP PERKINS BAAH, LLC  
 AND AFFILIATES**

**REVISIONS:**

#	DATE	COMMENT	BY	CHK	APR
A	01/30/2024	CEC Permit Plans	IA	SB	CN



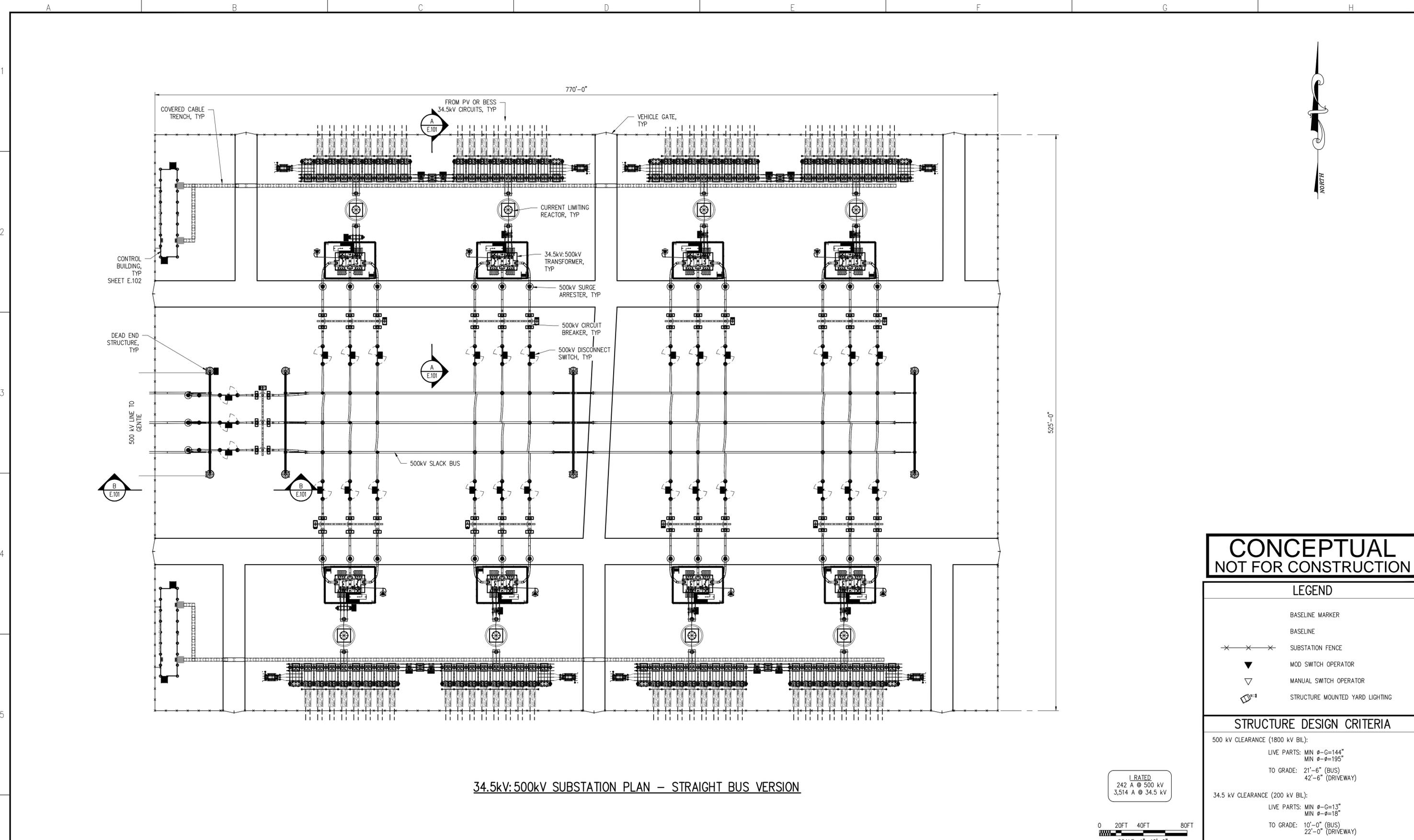
**IP Perkins**  
 Imperial County, CA

Sample BESS Fire  
 Protection Plan

**NOT FOR CONSTRUCTION**

DATE: 01/30/2024  
 SHEET: C.404  
 REV: A

**SAMPLE BESS FIRE PROTECTION PLAN**



34.5kV: 500kV SUBSTATION PLAN - STRAIGHT BUS VERSION

**CONCEPTUAL  
NOT FOR CONSTRUCTION**

**LEGEND**

	BASELINE MARKER
	BASELINE
	SUBSTATION FENCE
	MOD SWITCH OPERATOR
	MANUAL SWITCH OPERATOR
	STRUCTURE MOUNTED YARD LIGHTING

**STRUCTURE DESIGN CRITERIA**

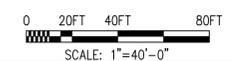
500 kV CLEARANCE (1800 kV BIL):

LIVE PARTS: MIN  $\phi$ -G=144"  
MIN  $\phi$ - $\phi$ =195"  
TO GRADE: 21'-6" (BUS)  
42'-6" (DRIVEWAY)

34.5 kV CLEARANCE (200 kV BIL):

LIVE PARTS: MIN  $\phi$ -G=13"  
MIN  $\phi$ - $\phi$ =18"  
TO GRADE: 10'-0" (BUS)  
22'-0" (DRIVEWAY)

L RATED  
242 A @ 500 kV  
3,514 A @ 34.5 kV



FILE LOCATION: N:\SHARED\01 ECI\INTERSECT POWER\02 PROJECTS\IP-00X DARDEN 500KV\100 CADD\110 WORKING\111 PHYSICAL\CEC DRAWINGS\E.100.1 & 2.DWG LAST SAVED BY: JCVanek 10/11/2023 2:22 PM PLOTTED BY: John C. Vanek 10/11/2023 3:04 PM Tab:E.100.1

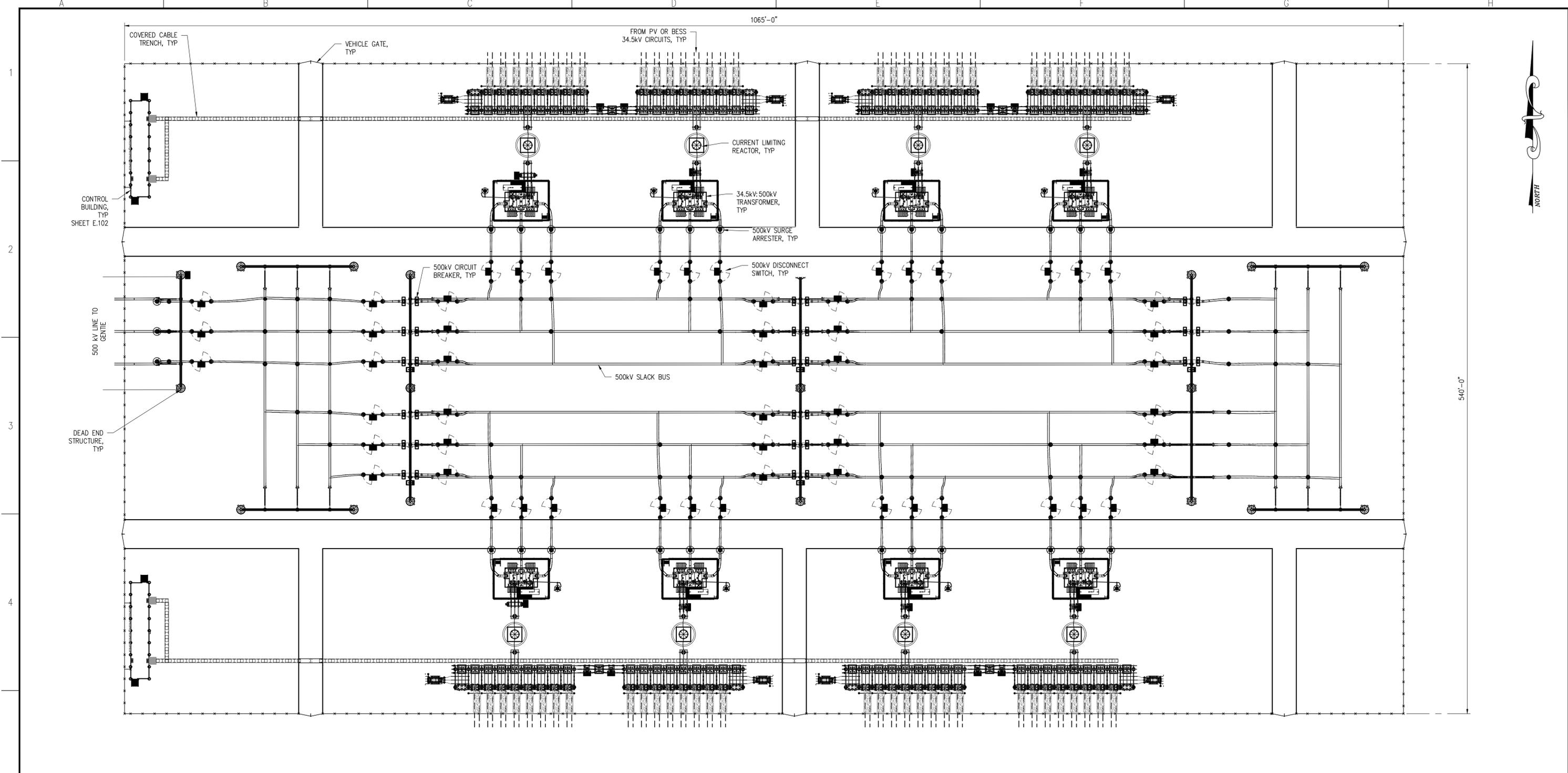


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A	PRELIMINARY	09/29/23	JCV	MAG

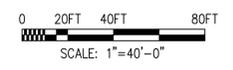


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DRAWN	VANEK	09/23
DESIGNED	GROFF	09/23
CHECKED		
APPROVED		
DWG SCALE: 1"=40'-0"	PLT SCALE: 1:1	

<b>PERKINS PROJECT</b>	
34.5 - 500 kV SUBSTATION	
STRAIGHT BUS VERSION - PLAN	
DWG. NAME:	E.100.1
REVISION NO :	0



34.5kV:500kV SUBSTATION PLAN - RING BUS VERSION



1. RATED  
242 A @ 500 kV  
3,514 A @ 34.5 kV

**CONCEPTUAL**  
NOT FOR CONSTRUCTION

LEGEND	
— x — x — x	SUBSTATION FENCE
▼	MOD SWITCH OPERATOR
▽	MANUAL SWITCH OPERATOR
□	STRUCTURE MOUNTED YARD LIGHTING

STRUCTURE DESIGN CRITERIA	
500 kV CLEARANCE (1800 kV BIL):	
LIVE PARTS:	MIN $\phi$ -G=144"
	MIN $\phi$ - $\phi$ =195"
TO GRADE:	21'-6" (BUS)
	42'-6" (DRIVEWAY)
34.5 kV CLEARANCE (200 kV BIL):	
LIVE PARTS:	MIN $\phi$ -G=13"
	MIN $\phi$ - $\phi$ =18"
TO GRADE:	10'-0" (BUS)
	22'-0" (DRIVEWAY)

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BILLINGS, MONTANA

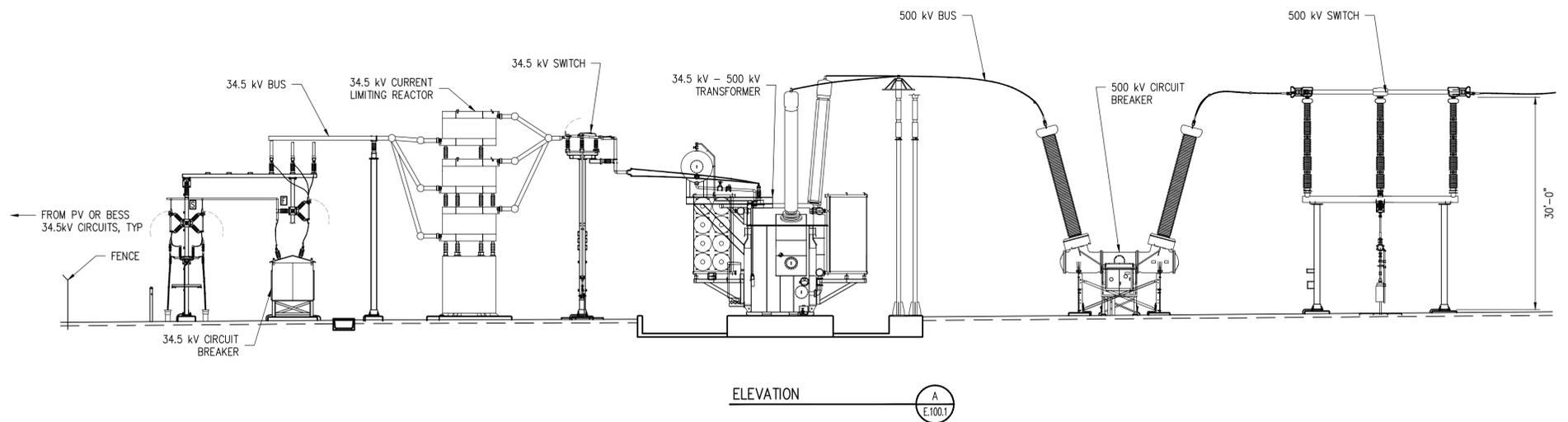
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A	PRELIMINARY	09/29/23	JCV	MAG

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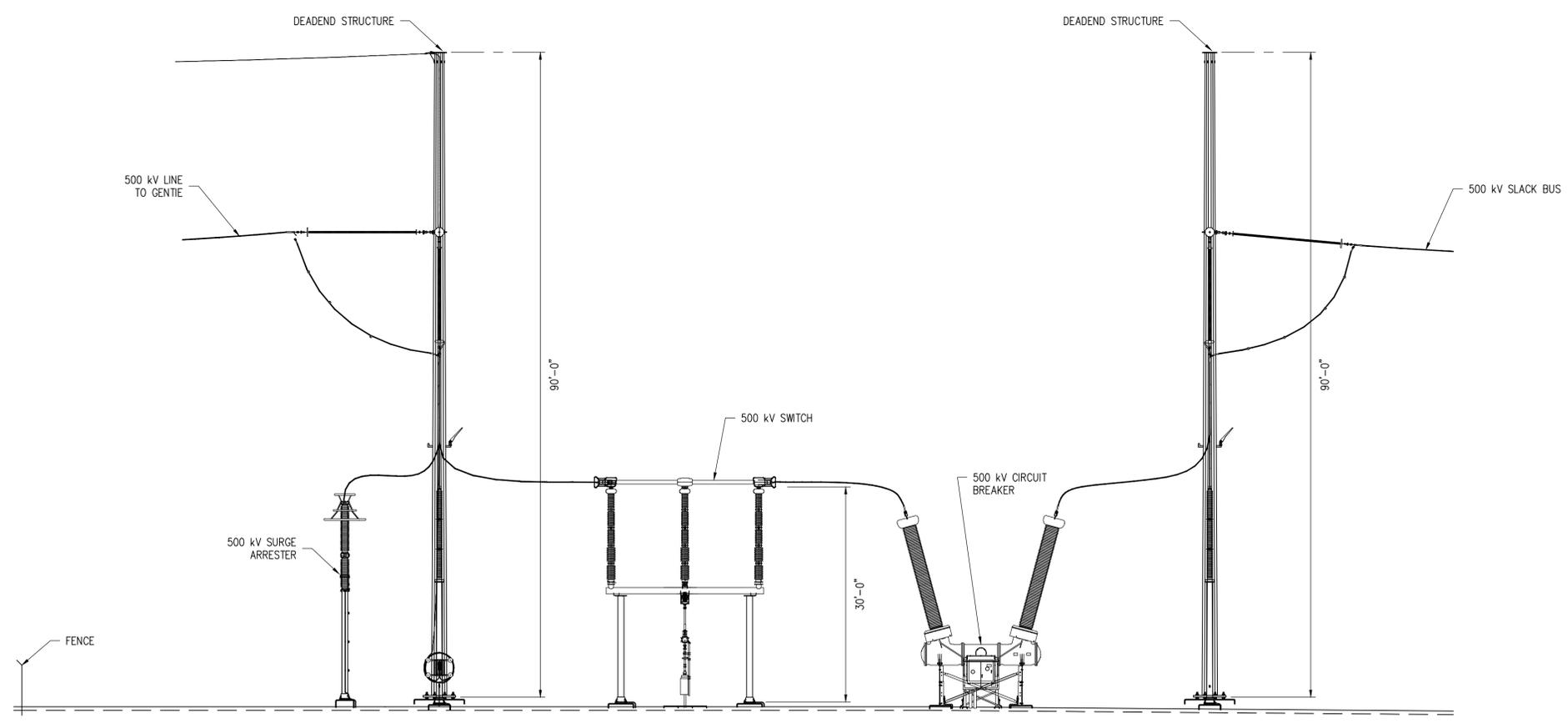
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**PERKINS PROJECT**  
34.5 - 500 kV SUBSTATION  
RING BUS VERSION - PLAN

DWG. NAME: E.100.2 REVISION NO : 0



ELEVATION A  
E.100.1



ELEVATION B  
E.100.1

STRUCTURE DESIGN CRITERIA	
500 kV CLEARANCE (1800 kV BIL):	
LIVE PARTS:	MIN $\phi-G=144"$ MIN $\phi=195"$
TO GRADE:	21'-6" (BUS) 42'-6" (DRIVEWAY)
34.5 kV CLEARANCE (200 kV BIL):	
LIVE PARTS:	MIN $\phi-G=13"$ MIN $\phi=18"$
TO GRADE:	10'-0" (BUS) 22'-0" (DRIVEWAY)

NOTES

- REFER TO DRAWING OSS-B-2001 FOR BILL OF MATERIALS.
- SUBSTATION CONTRACTOR TO PROVIDE BOLTS, NUTS AND WASHERS AS REQUIRED FOR BUS FITTINGS AND TO MOUNT EQUIPMENT TO STRUCTURES.
- PLACE ALL BUS SUPPORT STANDS, SWITCH STANDS, DEAD ENDS AND STATIC MASTS ON LEVELING NUTS. BUS HEIGHTS ARE FROM BOTTOM OF BASE PLATE.
- REFER TO DRAWING OBS-D-P012-1 FOR SURFACE ROCK INSTALLATION NOTES.

LEGEND

- INDICATES DETAIL NUMBER
- INDICATES DRAWING ON WHICH DETAIL APPEARS
- MATERIAL ITEM NUMBER ON BILL OF MATERIALS (NOTE 1)
- BUS SUPPORT FITTINGS: FIXED, SLIP, EXPANSION
- N.S. NEAR SIDE OF STRUCTURE
- F.S. FAR SIDE OF STRUCTURE

**CONCEPTUAL  
NOT FOR CONSTRUCTION**

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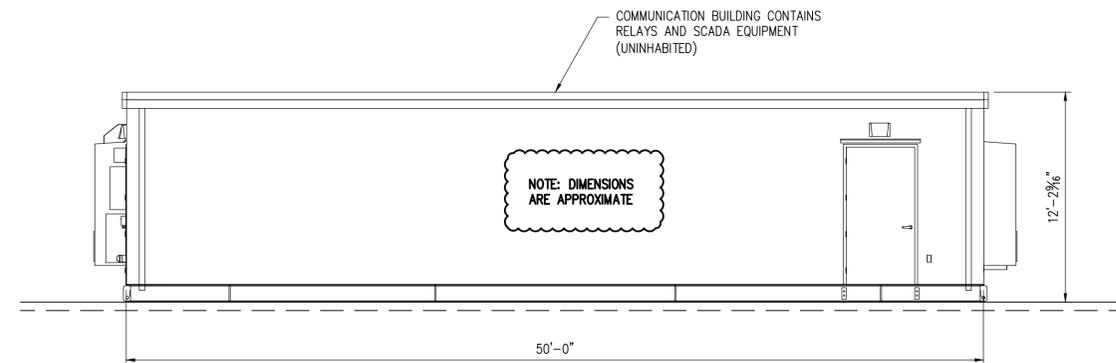
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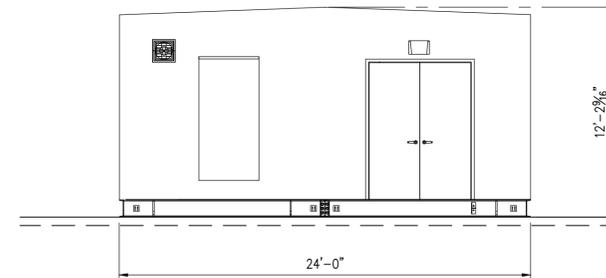
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DESIGNED	GROFF	10/23
CHECKED		
APPROVED		
DWG SCALE: NTS	PLT SCALE: 1:1	

**PERKINS PROJECT**  
34.5 - 500 kV SUBSTATION  
ELEVATIONS

DWG. NAME: E.101 REVISION NO: 0



ELEVATION C  
SCALE: 3/16"=1'-0" E.100



ELEVATION D  
SCALE: 3/16"=1'-0" E.100

**STRUCTURE DESIGN CRITERIA**

500 kV CLEARANCE (1800 kV BIL):  
 LIVE PARTS: MIN  $\phi$ -G=144"  
 MIN  $\phi$ - $\phi$ =195"  
 TO GRADE: 21'-6" (BUS)  
 42'-6" (DRIVEWAY)

34.5 kV CLEARANCE (200 kV BIL):  
 LIVE PARTS: MIN  $\phi$ -G=13"  
 MIN  $\phi$ - $\phi$ =18"  
 TO GRADE: 10'-0" (BUS)  
 22'-0" (DRIVEWAY)

**NOTES**

- REFER TO DRAWING OSS-B-2001 FOR BILL OF MATERIALS.
- SUBSTATION CONTRACTOR TO PROVIDE BOLTS, NUTS AND WASHERS AS REQUIRED FOR BUS FITTINGS AND TO MOUNT EQUIPMENT TO STRUCTURES.
- PLACE ALL BUS SUPPORT STANDS, SWITCH STANDS, DEAD ENDS AND STATIC MASTS ON LEVELING NUTS. BUS HEIGHTS ARE FROM BOTTOM OF BASE PLATE.
- REFER TO DRAWING OBS-D-P012-1 FOR SURFACE ROCK INSTALLATION NOTES.

**LEGEND**

- INDICATES DETAIL NUMBER
- INDICATES DRAWING ON WHICH DETAIL APPEARS
- MATERIAL ITEM NUMBER ON BILL OF MATERIALS (NOTE 1)
- BUS SUPPORT FITTINGS: FIXED, SLIP, EXPANSION
- N.S. NEAR SIDE OF STRUCTURE
- F.S. FAR SIDE OF STRUCTURE

**CONCEPTUAL  
NOT FOR CONSTRUCTION**

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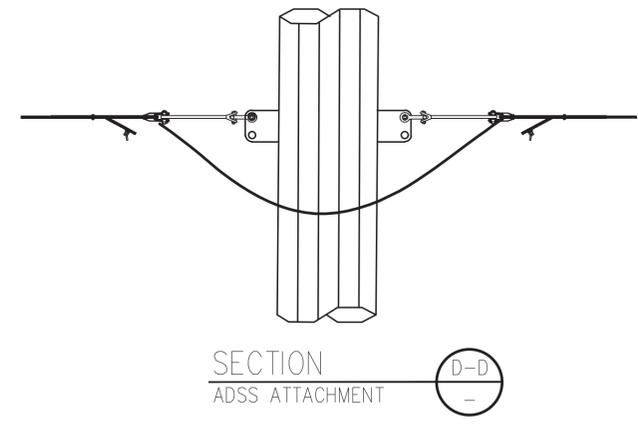
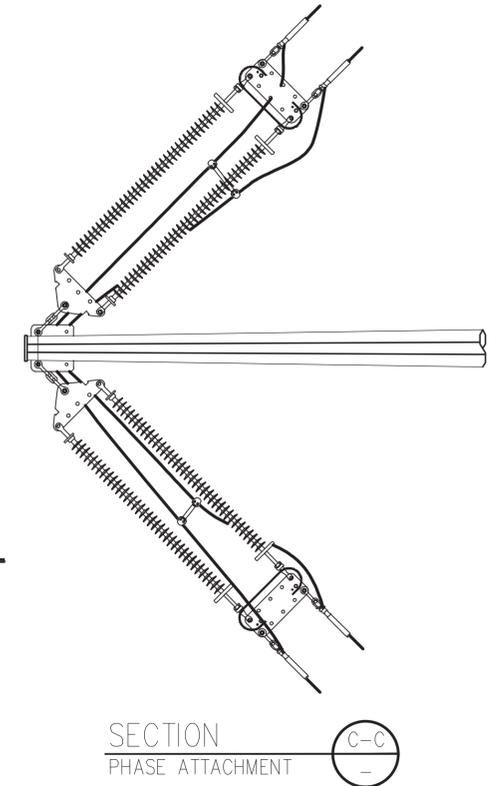
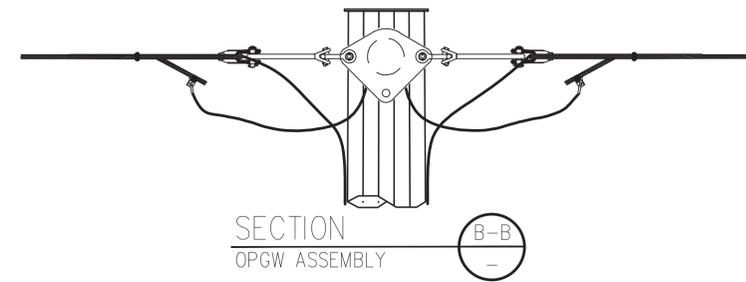
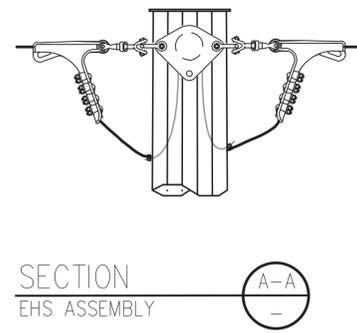
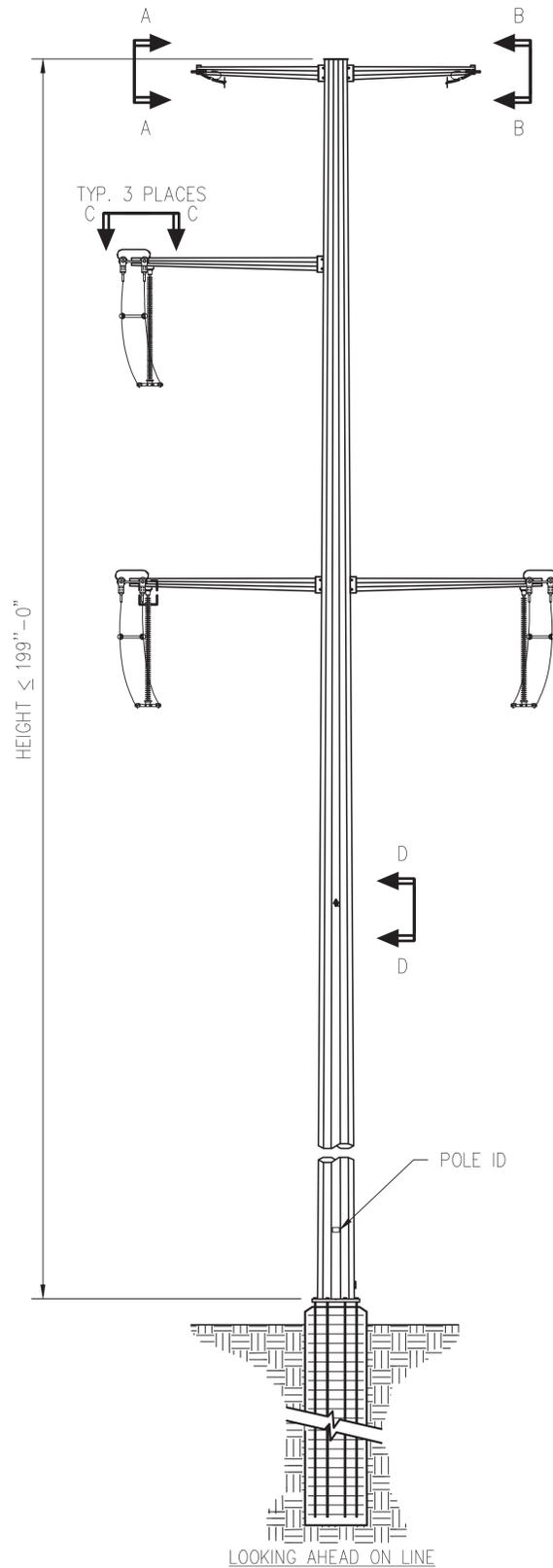


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DESIGNED	GROFF	10/23
CHECKED		
APPROVED		
DWG SCALE: AS NOTED	PLT SCALE: 1:1	

<b>PERKINS PROJECT</b>	
34.5 - 500 kV SUBSTATION	
ELEVATIONS - CONTROL BUILDING	
DWG. NAME: E.102	REVISION NO : 0



**PRELIMINARY**  
NOT FOR CONSTRUCTION

FILE LOCATION: N:\SHARED\01 ECI\INTERSECT POWER\02 PROJECTS\IP-005 PERKINS\040 TRANSMISSION\100 CADD\110 WORKING\1121 MISCELLANEOUS\FRAMING CONCEPT\PKN-B-T010-1-A.DWG LAST SAVED BY: diweir 1/25/2024 2:59 PM PLOTTED BY: David J. Weir 1/29/2024 8:11 AM Tab: TVUDE-345DCS-J

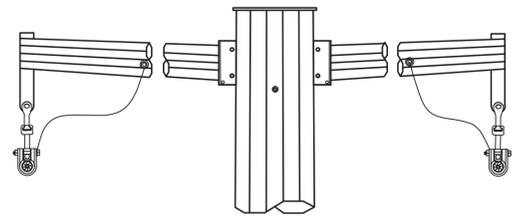
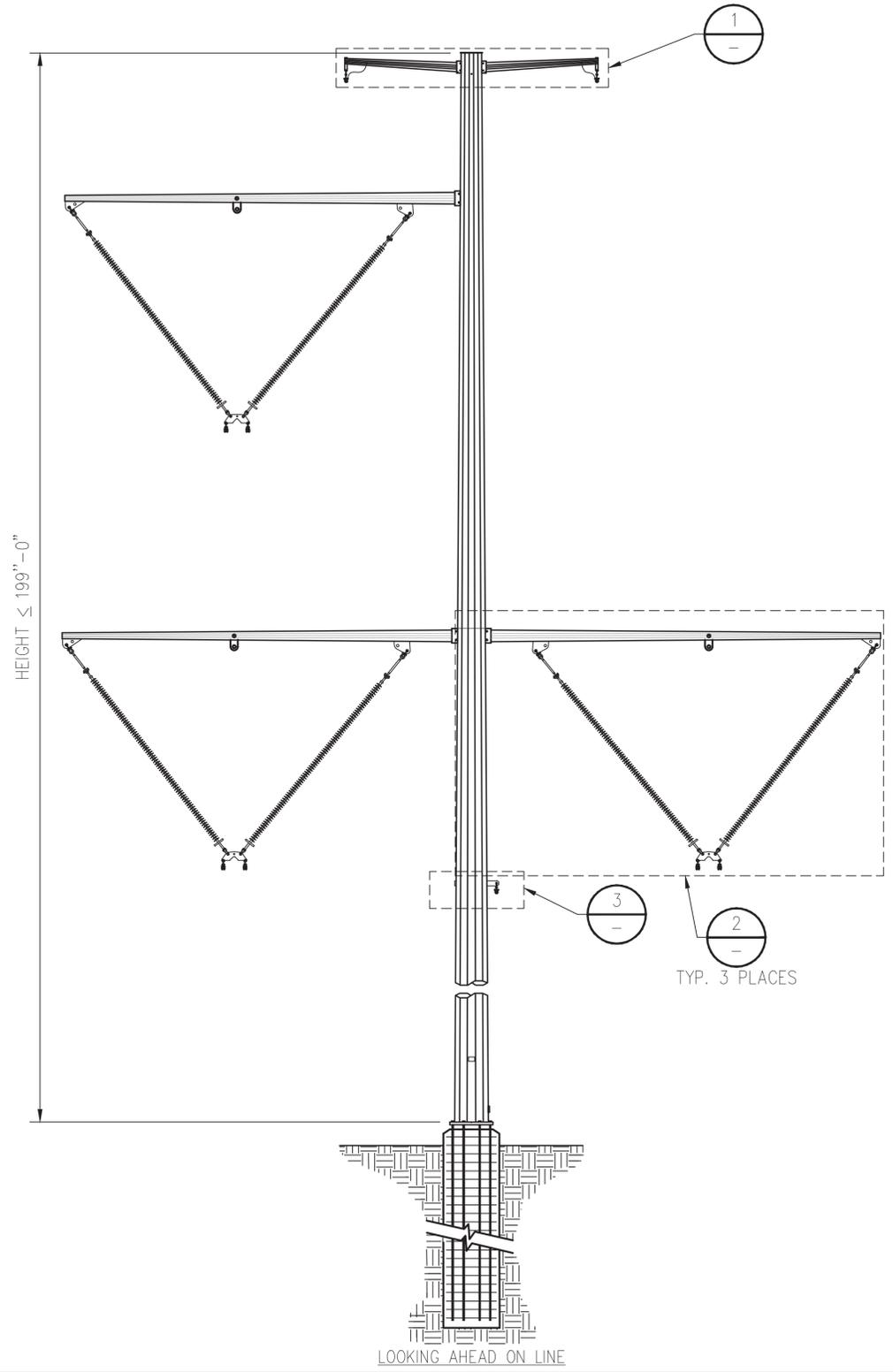


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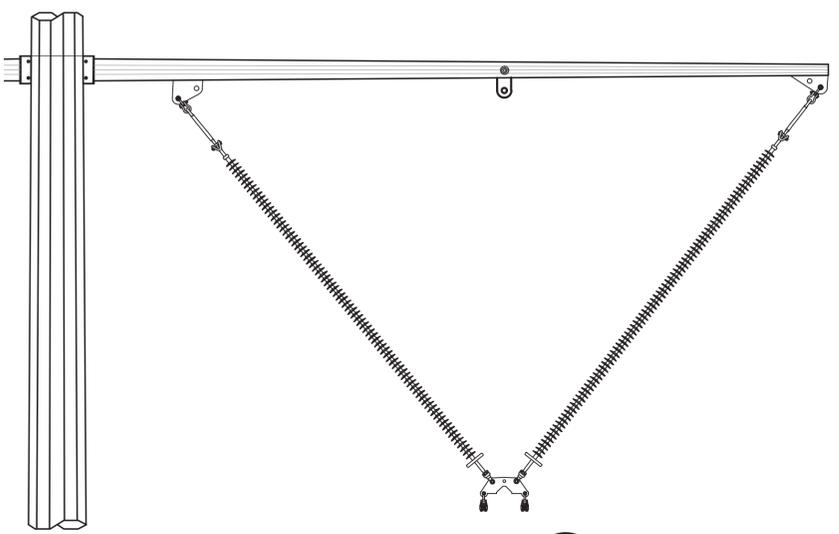


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APPROVED	AJM	01/29/24
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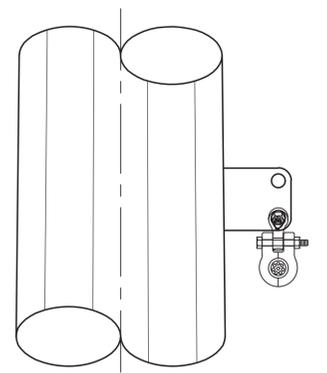
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<b>STEEL MONOPOLE DEADEND/STRAIN STRUCTURE</b>		
DWG. NAME:	E.200	PKN-B-T010-1
REVISION NO :	A	



DETAIL  
EHS AND OPGW ATTACHMENT



DETAIL  
PHASE ATTACHMENT



DETAIL  
ADSS ATTACHMENT

**PRELIMINARY**  
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FILE LOCATION: N:\SHARED\01 ECI\INTERSECT POWER\02 PROJECTS\IP-005 PERKINS\040 TRANSMISSION\100 CADD\110 WORKING\121 MISCELLANEOUS\FRAMING CONCEPT\PKN-B-T010-2-A.DWG LAST SAVED BY: dweir 1/25/2024 2:41 PM PLOTTED BY: David J. Weir 1/29/2024 8:17 AM Tab: TDVS-5005

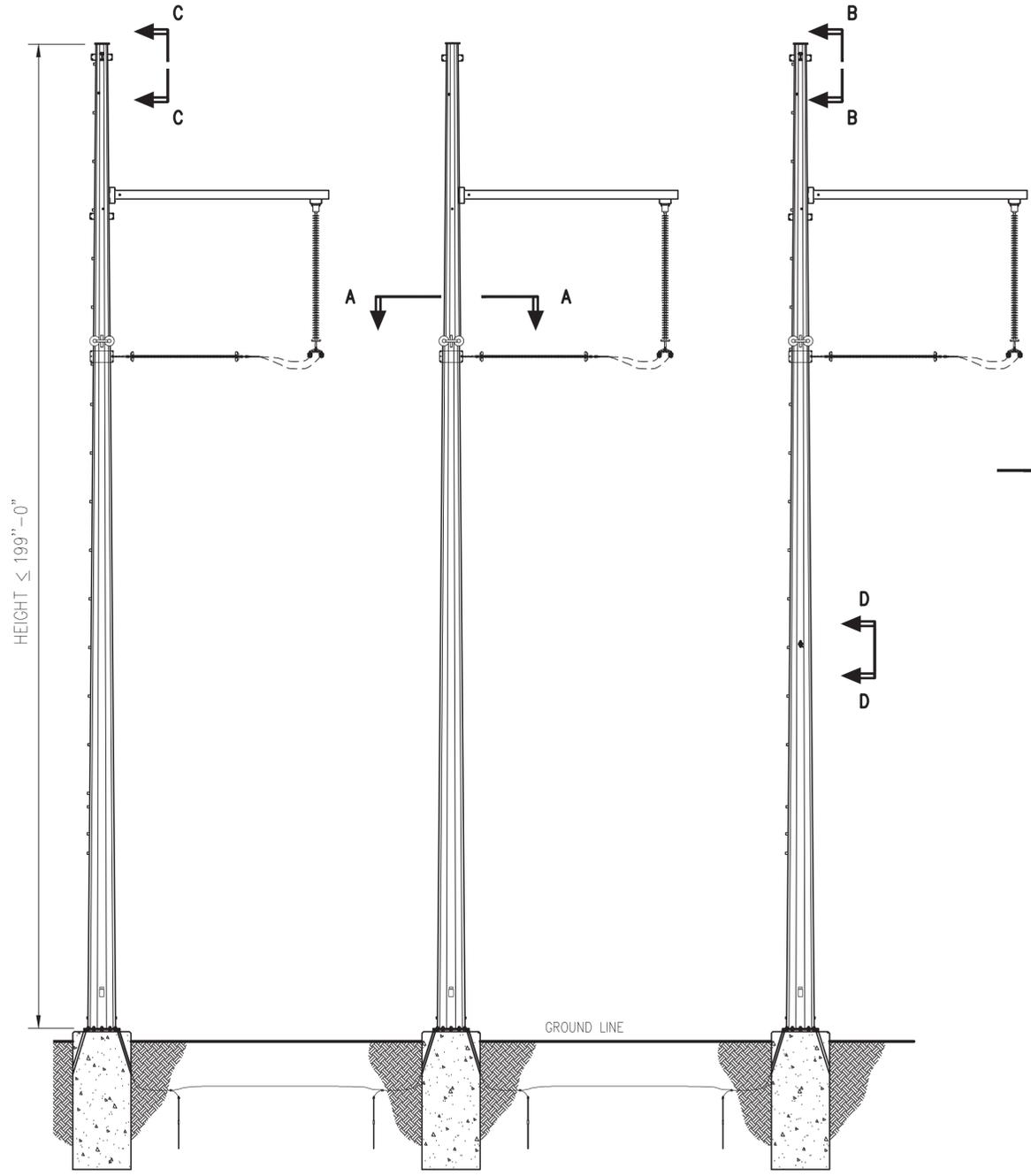


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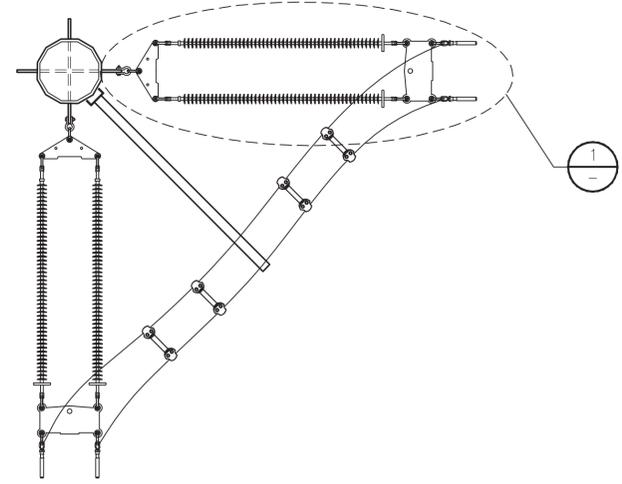
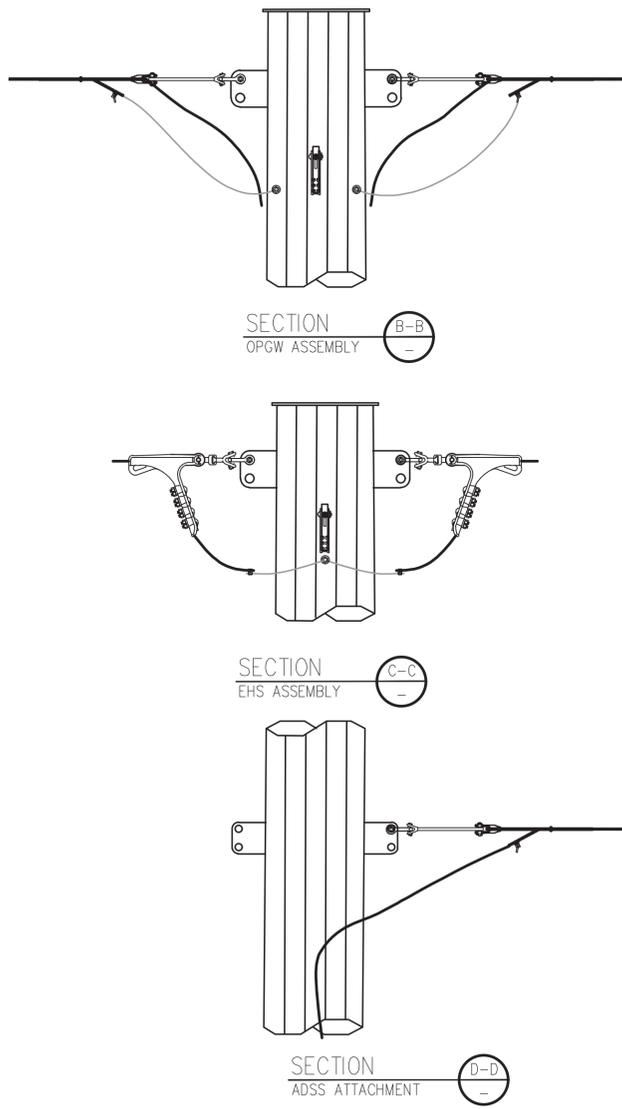


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APPROVED	AJM	01/29/24
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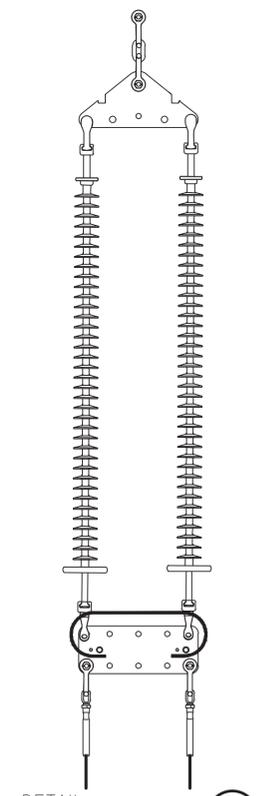
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<b>STEEL MONOPOLE TANGENT</b>		
DWG. NAME: E.201	PKN-B-T010-2	REVISION NO : A



ELEVATION  
(LOOKING AHEAD ON LINE)  
RIGHT TURNING STRUCTURE SHOWN



SECTION A-A  
CONDUCTOR ATTACHMENT



DETAIL DEADEND ASSEMBLY

**PRELIMINARY**  
NOT FOR CONSTRUCTION

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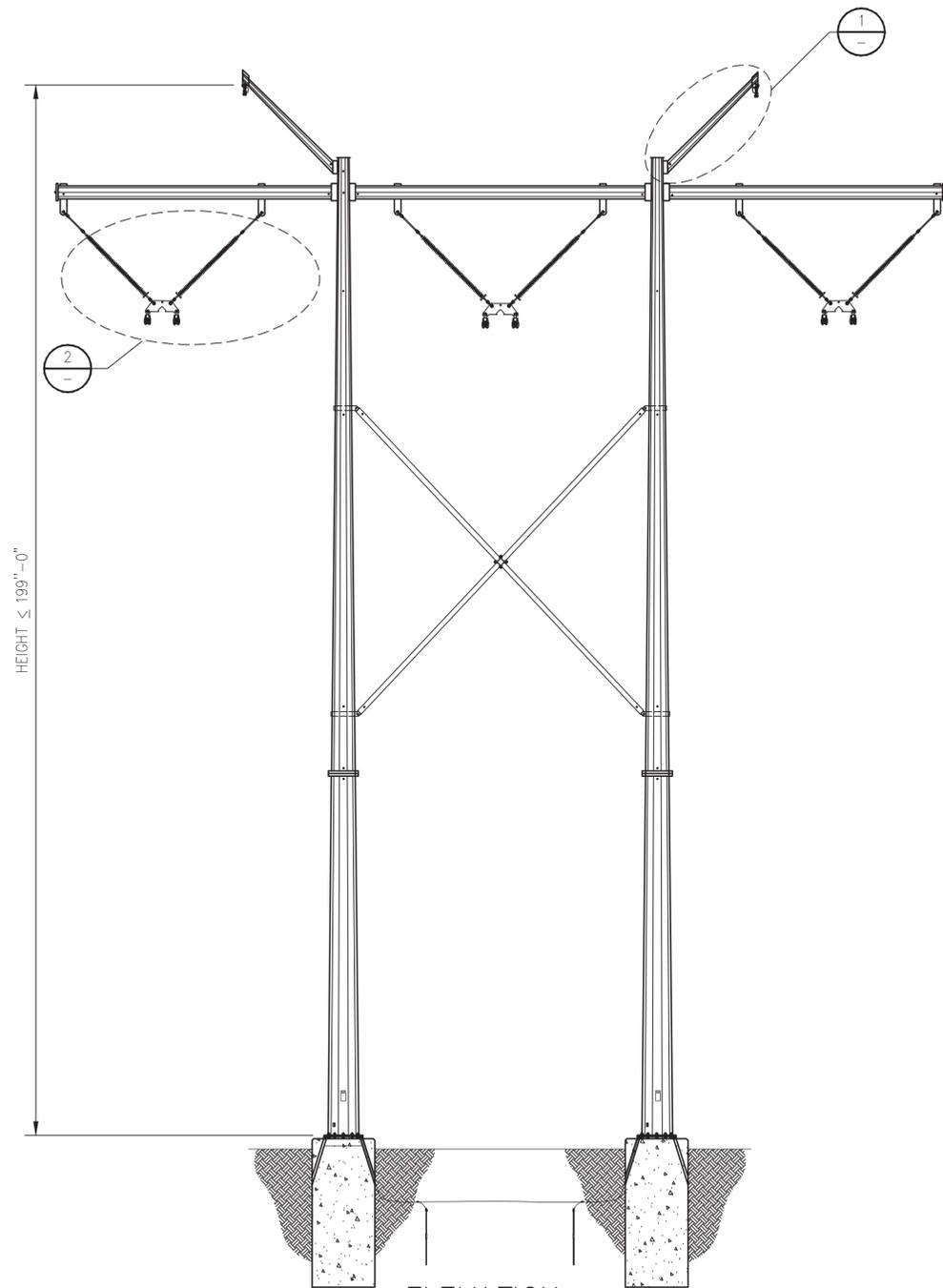


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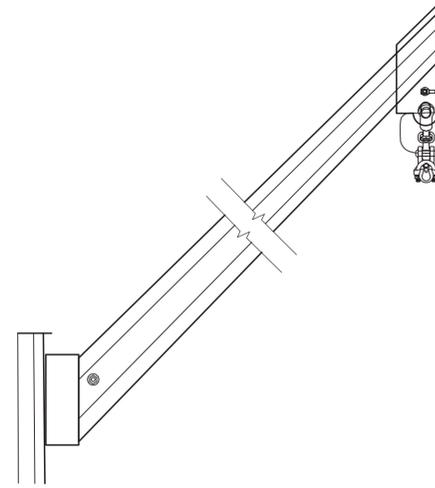


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CHECKED	KWV	01/29/24
APPROVED	AJM	01/29/24
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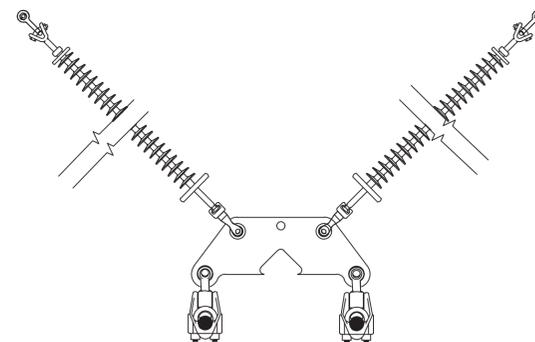
<b>PERKINS 500 kV TRANSMISSION LINE</b>		
<b>3-POLE DEADEND STRUCTURES</b>		
DWG. NAME: E.202	PKN-B-T010-3	REVISION NO : A



ELEVATION  
(LOOKING AHEAD ON LINE)



DETAIL  
OPGW VANG  
TYP. BOTH POLES



DETAIL  
V-STRING ASSEMBLY

**PRELIMINARY**  
NOT FOR CONSTRUCTION

FILE LOCATION: N:\SHARED\01\_EC\INTERSECT POWER\02\_PROJECTS\IP-005\_PERKINS\040\_TRANSMISSION\100\_CADD\110\_WORKING\1121\_MISCELLANEOUS\FRAMING\_CONCEPT\PKN-B-T010-4-A.DWG LAST SAVED BY: dweir 1/25/2024 1:51 PM PLOTTED BY: David J. Weir 1/29/2024 8:20 AM Tab: TVSP-230DCS

**ECI** ELECTRICAL CONSULTANTS, INC.  
BILLINGS, MONTANA

NO	REVISION	DATE	BY	APR
A	ISSUED FOR PERMITTING	01/29/24	KWV	AJM



ENGINEERING RECORD		DATE
DRAWN	DJW	01/29/24
DESIGNED	KWV	01/29/24
CHECKED	KWV	01/29/24
APPROVED	AJM	01/29/24
DWG SCALE: NONE		PLT SCALE: 1:1

<b>PERKINS 500 kV TRANSMISSION LINE</b>		
<b>STEEL H-FRAME TANGENT STRUCTURE</b>		
DWG. NAME: E.203	PKN-B-T010-4	REVISION NO : A

