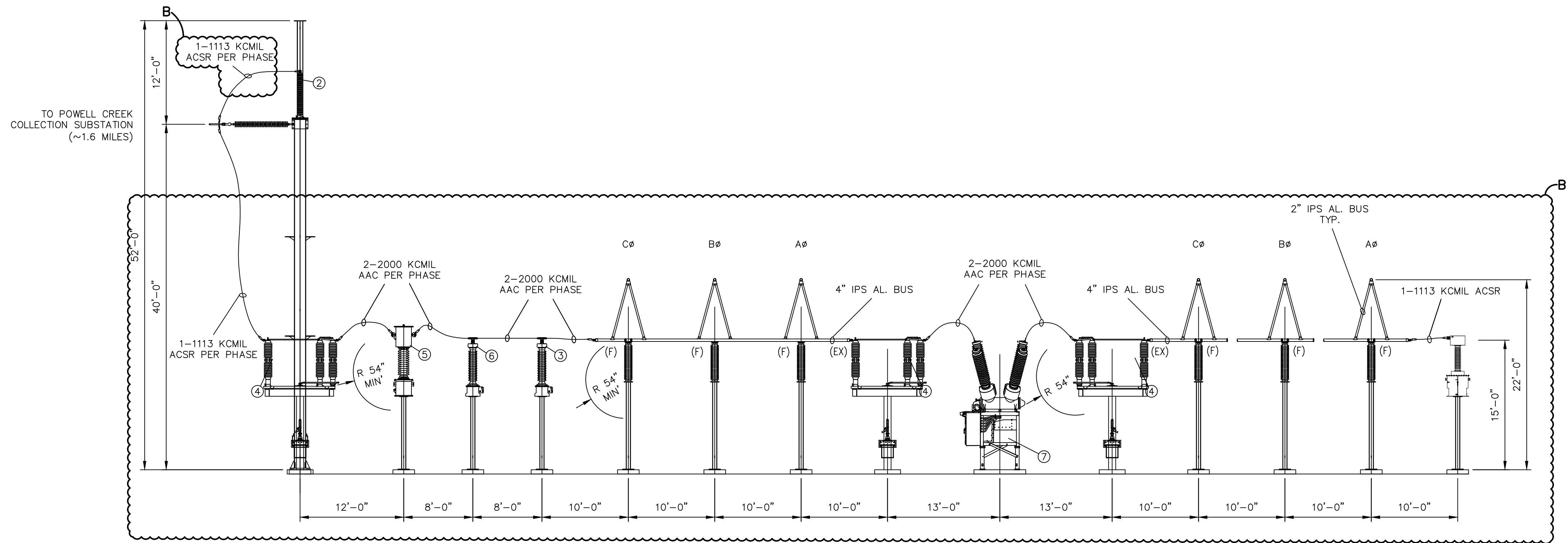
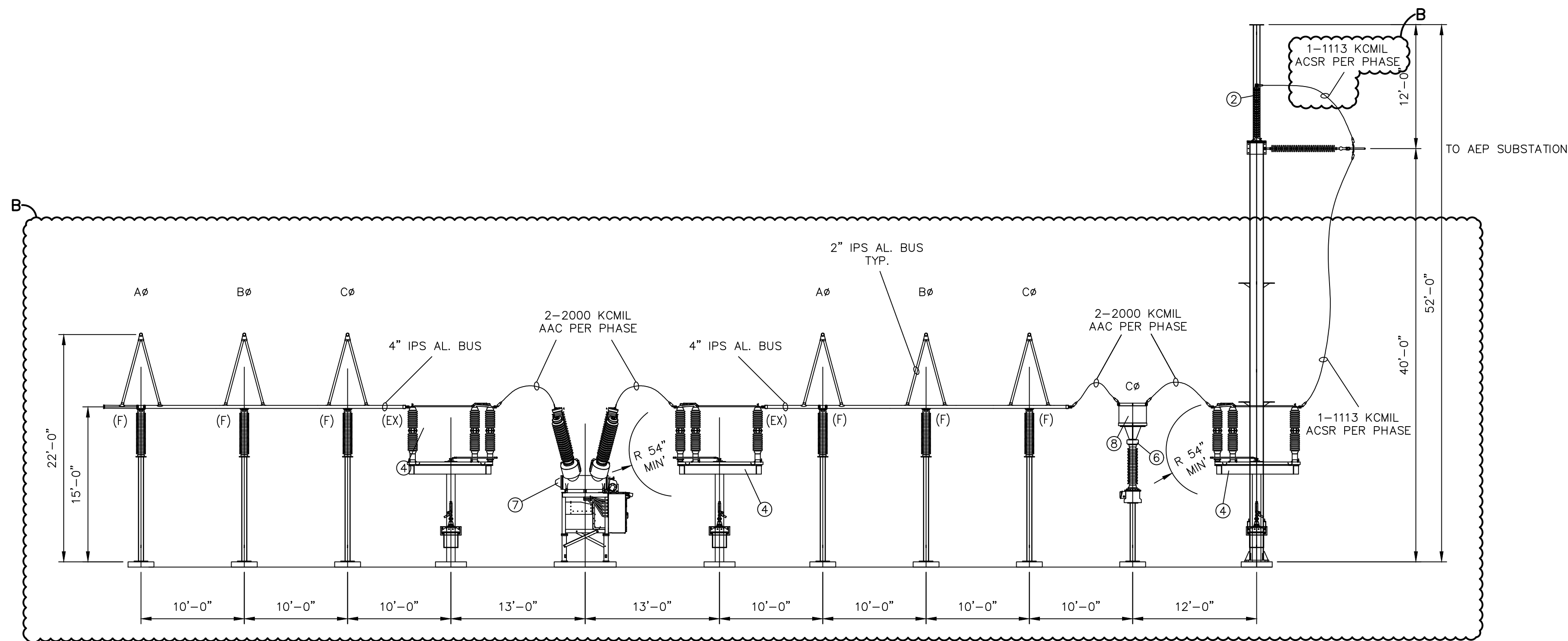




ELEVATION A-A



ELEVATION B-B

LEGEND

- INDICATES MATERIAL ON DWG-E-227
- (S) SLIP
- (F) FIXED
- (EX) EXPANSION

NOTES

1. ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL: (A) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS; (B) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL OR, WHERE PERMITTED, THAT OF ITS SUBCONTRACTOR(S); AND (C) COMPLY WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROGRAMS AND PRACTICES TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING THE CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.
2. UNDERGROUND OR EMBEDDED UTILITIES [MAY] EXIST WITHIN THE AREA OF AND ADJACENT TO THE LIMITS OF THE WORK. THE LOCATION OR IDENTIFICATION OF SUCH UTILITIES HAS NOT BEEN VERIFIED BY OWNER OR BY S&L. CONTRACTOR/INSTALLER IS RESPONSIBLE FOR FIELD LOCATING AND IDENTIFYING UNDERGROUND OR EMBEDDED UTILITIES AND ANY OTHER UNDERGROUND OR EMBEDDED UTILITY DIMENSIONS.
3. REFERENCES USED HAVE BEEN IDENTIFIED ON EXCAVATION/FOUNDATION/DEMOLITION DRAWINGS AND HAVE BEEN PROVIDED TO ASSIST THE CONTRACTOR/INSTALLER IN THE FIELD LOCATING EXISTING UTILITIES AND OTHER POTENTIAL UNDERGROUND OR EMBEDDED INTERFERENCES. THESE REFERENCES ONLY SHOW THE APPROXIMATE LOCATION OF POTENTIAL UNDERGROUND OR EMBEDDED UTILITIES AND MAY NOT INDICATE OR REFLECT ALL EXISTING UNDERGROUND OR EMBEDDED UTILITIES OR THEIR ACTUAL LOCATIONS.
4. REFERENCES IDENTIFIED SHALL NOT SUBSTITUTE FOR THE CONTRACTOR'S/INSTALLER'S OBLIGATION TO FIELD LOCATE ANY UNDERGROUND OR EMBEDDED UTILITIES OR INTERFERENCES THAT MAY AFFECT THE WORK.
5. DUE CAUTION SHALL BE TAKEN DURING ANY EXCAVATION/FOUNDATION/DEMOLITION WORK WITHIN THE AREA OF AND ADJACENT TO THE LIMITS OF THE WORK DUE TO POSSIBLE INTERFERENCES THAT MAY NOT BE REFLECTED ON THE REFERENCES IDENTIFIED.
6. BIL AND ELECTRICAL CLEARANCES SHALL BE IN ACCORDANCE WITH AEP STANDARDS
7. ALL EQUIPMENT SHOWN IS PRELIMINARY FOR CONCEPTUAL DESIGN. EPC CONTRACTOR TO VERIFY IN DETAILED DESIGN.
8. NOT USED
9. PRECAST CONCRETE CABLE TRENCH SHALL BE HEAVY TRAFFIC, HS-20 RATED AT ALL ROAD CROSSINGS, AS MANUFACTURED BY TRENWA.
10. PHASING TO BE VERIFIED BY ENGINEER OF RECORD.

THIS DRAWING SUPERSEDES DRAWING PCS-E-211-03

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

NO.	REVISIONS	DATE	BY	CHK	APR	NO.	REVISIONS	DATE	BY	CHK	APR
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						B	PRELIMINARY - 30% DESIGN SUBMITTAL	06/05/20	TAA	FH	



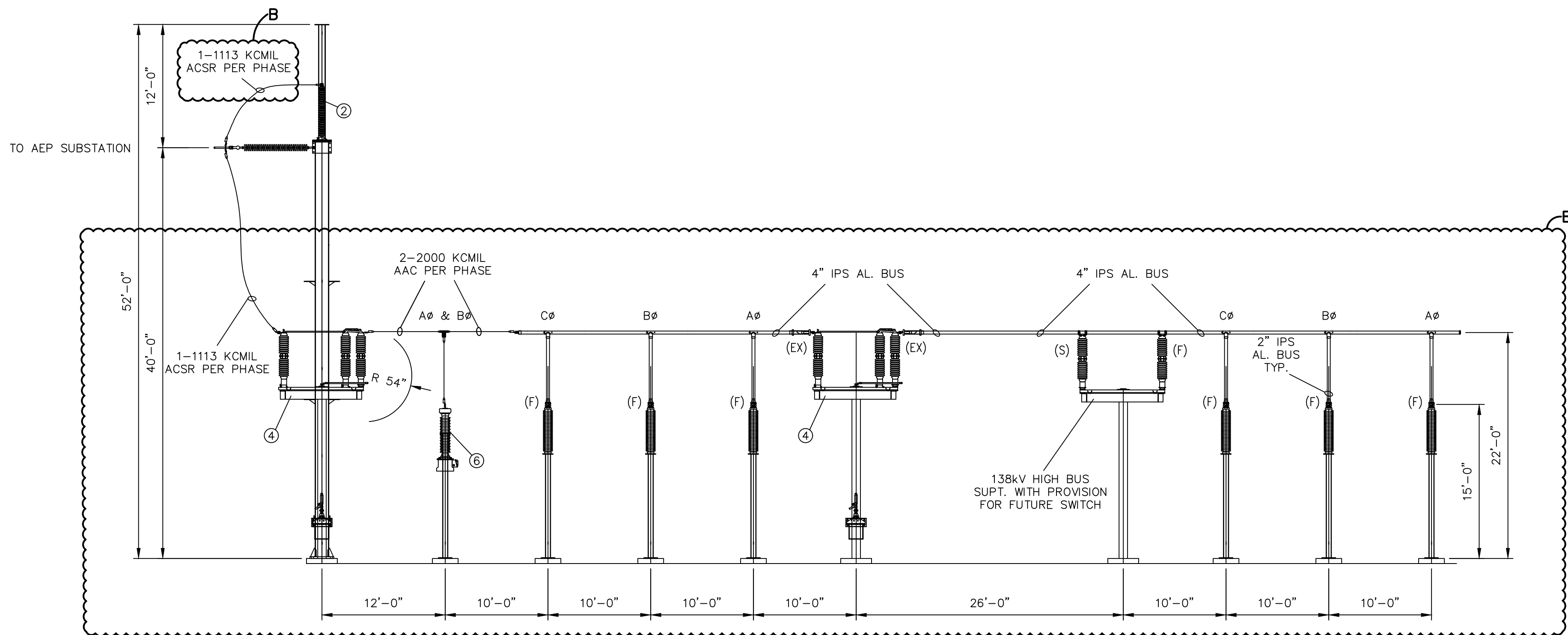
SARGENT & LUNDY
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603-5780

REPLACE THIS TEXT
WITH ENGINEER'S
STAMP AT
CONSTRUCTION
AND/OR FABRICATION.
ISSUE IF REQUIRED
BY PROJECT
ADMINISTRATION
MANUAL

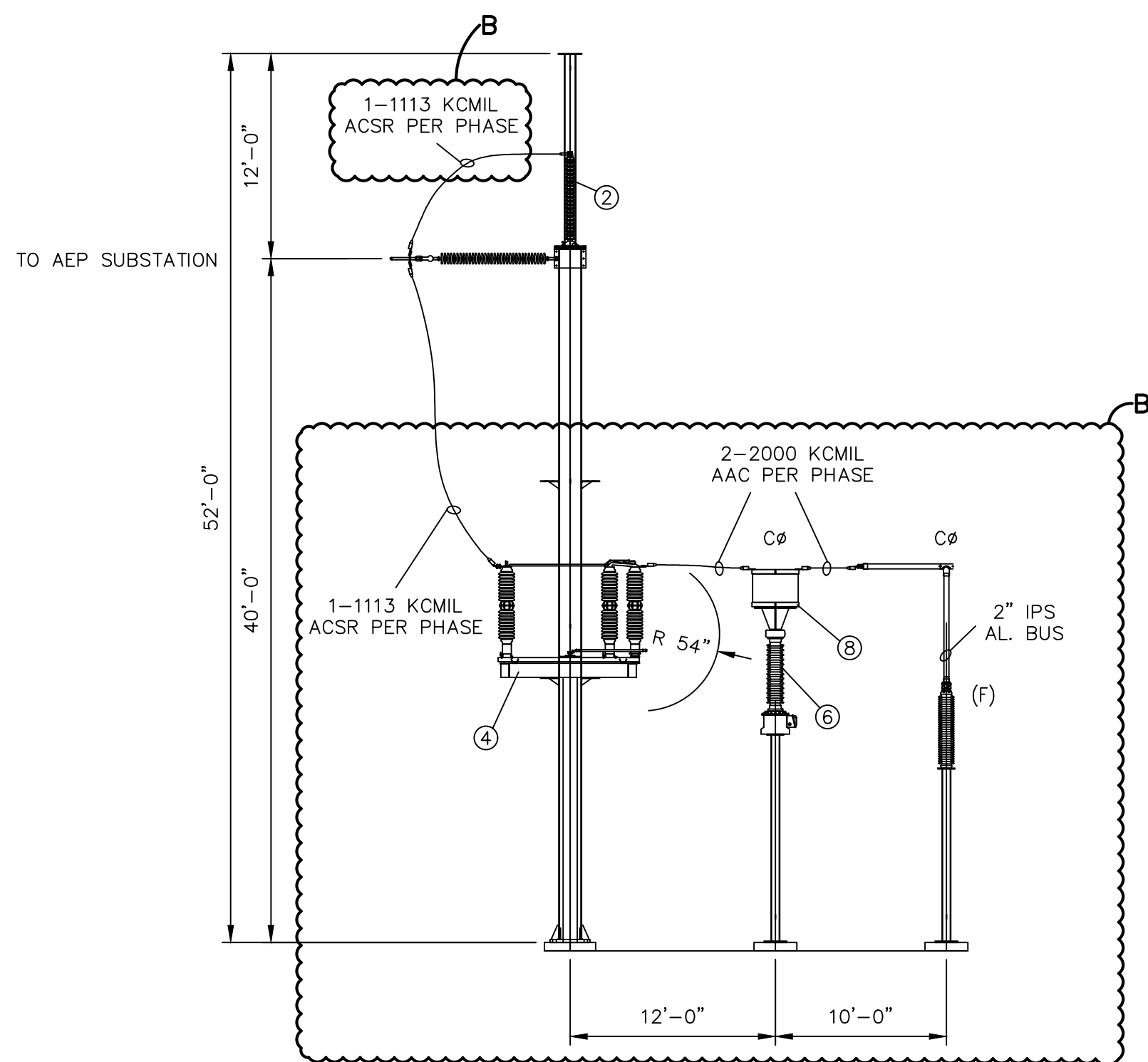
ENGINEERING RECORD	DATE
DRAWN: D. GOLUBOK	03/27/20
DESIGNED: T. AYRES	03/27/20
CHECKED: F. HESS	03/27/20
APPROVED:	
CADFILE: PCI-E-211-01.DWG	SCALE: 1/8"=1'-0"

POWELL CREEK SOLAR PROJECT
138KV INTERCONNECT SWITCHYARD
ELEVATIONS A-A, & B-B

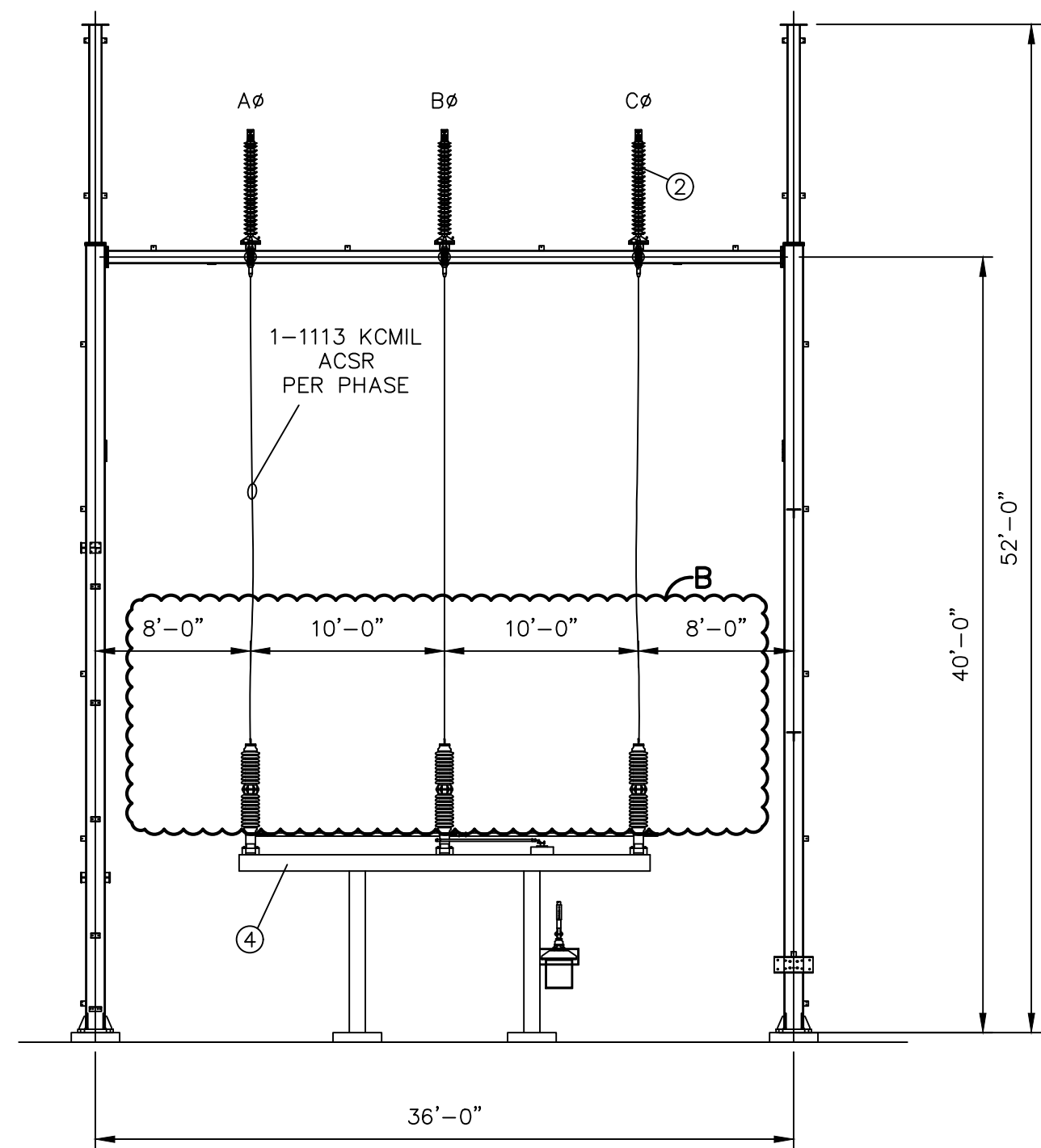
DWG.NO. **PCI-E-211** SHEET 1 OF 2 REV. B



ELEVATION C-C



ELEVATION E-E



ELEVATION D-D

LEGEND

- INDICATES MATERIAL ON DWG-E-227
- SLIP
- FIXED
- EXPANSION

NOTES

1. ALL WORK DONE BY CONTRACTOR/INSTALLER PURSUANT TO THIS DRAWING SHALL: (A) CONFORM TO THE GOVERNING CONTRACT DOCUMENTS; (B) BE PERFORMED EXCLUSIVELY BY ITS TRAINED, COMPETENT PERSONNEL OR, WHERE PERMITTED, THAT OF ITS SUBCONTRACTOR(S); AND (C) COMPLY WITH ALL APPLICABLE SAFETY LAWS, REGULATIONS, PROGRAMS AND PRACTICES TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING THE CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF ITS SUBCONTRACTOR(S)) PERFORMING THE WORK.
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6. BIL AND ELECTRICAL CLEARANCES SHALL BE IN ACCORDANCE WITH AEP STANDARDS.
7. ALL EQUIPMENT SHOWN IS PRELIMINARY FOR CONCEPTUAL DESIGN. EPC CONTRACTOR TO VERIFY IN DETAILED DESIGN.
8. NOT USED
9. PRECAST CONCRETE CABLE TRENCH SHALL BE HEAVY TRAFFIC, HS-20 RATED AT ALL ROAD CROSSINGS, AS MANUFACTURED BY TRENWA.
10. PHASING TO BE VERIFIED BY ENGINEER OF RECORD.

THIS DRAWING SUPERSEDES DRAWING PCS-E-211-04

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

NO.	REVISIONS	DATE	BY	CHK	APR	NO.	REVISIONS	DATE	BY	CHK	APR				
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						B	PRELIMINARY - 30% DESIGN SUBMITTAL	06/05/20	TAA	FH					



SARGENT & LUNDY
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603-5780

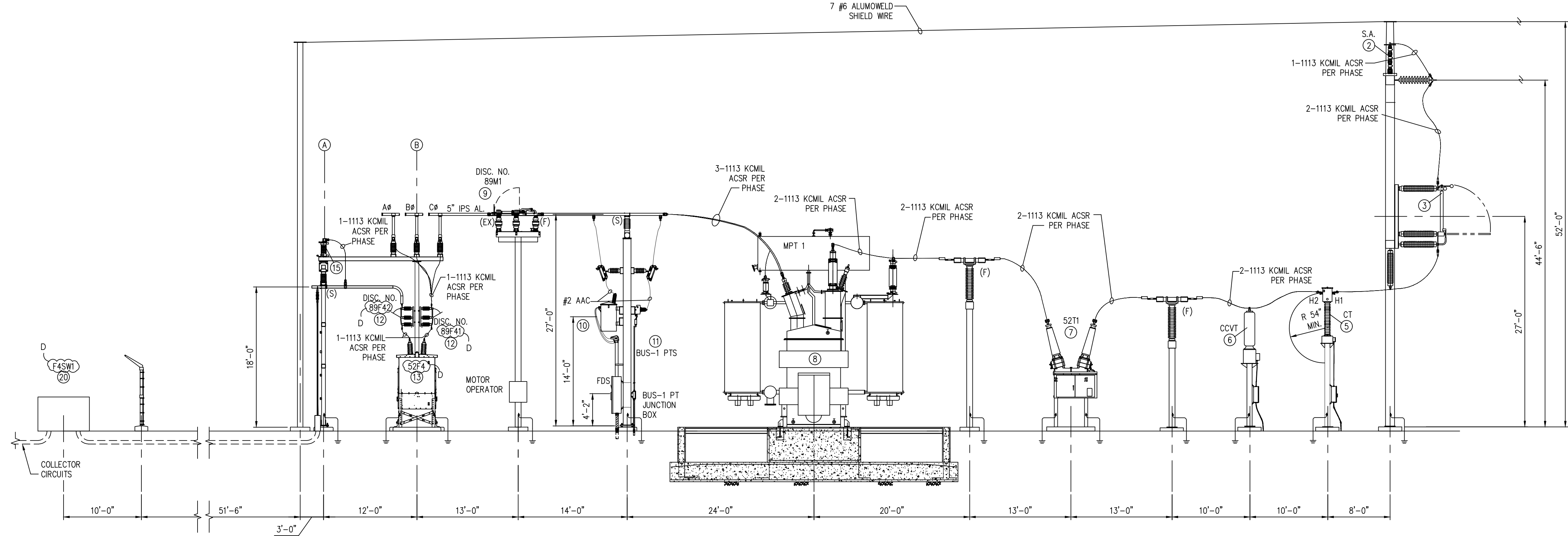
REPLACE THIS TEXT
WITH ENGINEER'S
STAMP AT
CONSTRUCTION
AND/OR FABRICATION.
ISSUE IF REQUIRED
BY PROJECT
ADMINISTRATION
MANUAL

ENGINEERING RECORD	DATE
DRAWN: D. GOLUBOK	03/27/20
DESIGNED: T. AYRES	03/27/20
CHECKED: F. HESS	03/27/20
APPROVED:	
CADFILE: PCI-E-211-02.DWG	

SCALE: 1/8"=1'-0"	DWG. NO. PCI-E-211	SHEET 2 OF 2	REV. B
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POWELL CREEK SOLAR PROJECT
138KV INTERCONNECT SWITCHYARD
ELEVATIONS C-C, D-D, & E-E

VOLTAGE		MINIMUM METAL-TO-METAL CLEARANCE PHASE-TO-PHASE	DESIGN CENTERLINE TO CENTERLINE PHASE SPACING FOR RIGID BUS	CLEARANCE TO GROUNDED PARTS FOR RIGID BUS RECOMMENDED	MINIMUM CLEARANCE BETWEEN OVERHEAD BUS AND GROUND FOR PERSONAL SAFETY	MINIMUM CLEARANCE BETWEEN OVERHEAD BUS AND ROADWAY
KV	BIL					
138	650	7'-0"	11'-0"	4'-8"	13'-2"	25'-0"
34.5	200	1'-6"	3'-0"	1'-3"	10'-0"	22'-0"



ELEVATION A-A

LEGEND

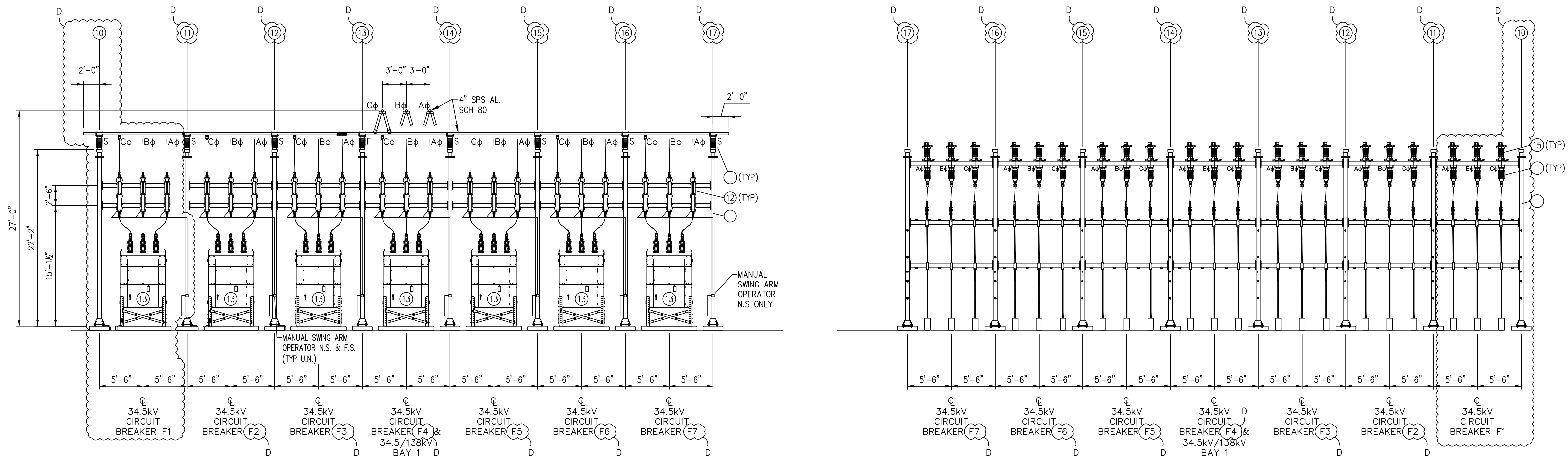
- INDICATES MAJOR EQUIPMENT ON DWG-E-227
- INDICATES MATERIAL ON & DWG-E-229
- INDICATES APPLIC MATERIAL ON DWG-E-229
- (S) INDICATES SLIP FITTING
- (F) INDICATES FIXED FITTING
- (EX) INDICATES EXPANSION FITTING

NOTES:

- SEE MASTER DRAWING LIST FOR COMPLETE LIST OF DRAWINGS.
- FOR AVIAN PROTECTION (APLIC), THE FOLLOWING SHALL BE NOTED:
 - A. AVIAN PROTECTION SHALL BE IN ACCORDANCE WITH SPECIFICATION NUMBER AGR-E-016-01.
 - B. WHEN INSTALLING THE HIGH INSULATION E/FUSING TAPE, FUSING TAPE MUST BE INSTALLED WITH A 2/3 OVERLAP AND A 10% STRETCH.
 - C. USE TAPE TO SECURE THE SPLIT HOSE TO BUSHINGS OR TERMINALS, THEN INSTALL THE BUSHING COVERS.
 - D. ANY JUMPERS LONGER THAN 2' IN LENGTH SHOULD UTILIZE A SPLIT HOSE APPLICATION.
 - E. WRAP CENTER PHASE OF PIPE BUS WITH FUSING TAPE WHERE PHASE SPACING IS LESS THAN 40".

REFERENCE DRAWINGS

- | | |
|----------------------|----------------------|
| DWG-E-210-01 | GENERAL ARRANGEMENT |
| DWG-E-211-01 THRU 02 | ELEVATIONS |
| DWG-E-227-01 | MAJOR EQUIPMENT LIST |



ELEVATION B-B

ELEVATION C-C

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

NO.	REVISIONS	DATE	BY	CHK	APR	NO.	REVISIONS	DATE	BY	CHK	APR
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						B	PRELIMINARY - 30% DESIGN SUBMITTAL	03/27/20	TAA	FH	
						C	PRELIMINARY - 30% DESIGN SUBMITTAL	05/29/20	TAA	FH	
						D	PRELIMINARY - 30% DESIGN SUBMITTAL	06/04/20	TAA	FH	



SARGENT & LUNDY
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603-5780

REPLACE THIS TEXT WITH
ENGINEER'S STAMP AT
CONSTRUCTION AND/OR
FABRICATION ISSUE IF
REQUIRED BY PROJECT
ADMINISTRATION MANUAL

ENGINEERING RECORD		DATE
DRAWN: D. GOLUBOK		02/21/20
DESIGNED: T. AYRES		02/21/20
CHECKED: F. HESS		02/21/20
APPROVED:		
CADFILE: PCS-E-211-01.DWG	SCALE: 1/8"=1'-0"	DWG.NO. PCS-E-211

POWELL CREEK SOLAR PROJECT
138-34.5kV COLLECTOR SUBSTATION
ELEVATIONS A-A, B-B & C-C

VOLTAGE		MINIMUM METAL-TO-METAL CLEARANCE PHASE-TO-PHASE	DESIGN CENTERLINE TO CENTERLINE PHASE SPACING FOR RIGID BUS	CLEARANCE TO GROUNDED PARTS FOR RIGID BUS RECOMMENDED	MINIMUM CLEARANCE BETWEEN OVERHEAD BUS AND GROUND FOR PERSONAL SAFETY	MINIMUM CLEARANCE BETWEEN OVERHEAD BUS AND ROADWAY
KV	BIL					
138	650	7'-0"	11'-0"	4'-8"	13'-2"	25'-0"
34.5	200	1'-6"	3'-0"	1'-3"	10'-0"	22'-0"

LEGEND

- INDICATES MAJOR EQUIPMENT ON DWG-E-227
- INDICATES MATERIAL ON DWG-E-228 & DWG-E-229
- INDICATES APLIC MATERIAL ON DWG-E-229
- INDICATES SLIP FITTING
- INDICATES FIXED FITTING
- HOLD

NOTES:

1. SEE MASTER DRAWING LIST FOR COMPLETE LIST OF DRAWINGS.
2. FOR AVIAN PROTECTION (APLIC), THE FOLLOWING SHALL BE NOTED:

A. AVIAN PROTECTION SHALL BE IN ACCORDANCE WITH SPECIFICATION NUMBER AGR-E-016-01.

B. WHEN INSTALLING THE HIGH INSULATION E/FUSING TAPE, FUSING TAPE MUST BE INSTALLED WITH A 2/3 OVERLAP AND A 10% STRETCH.

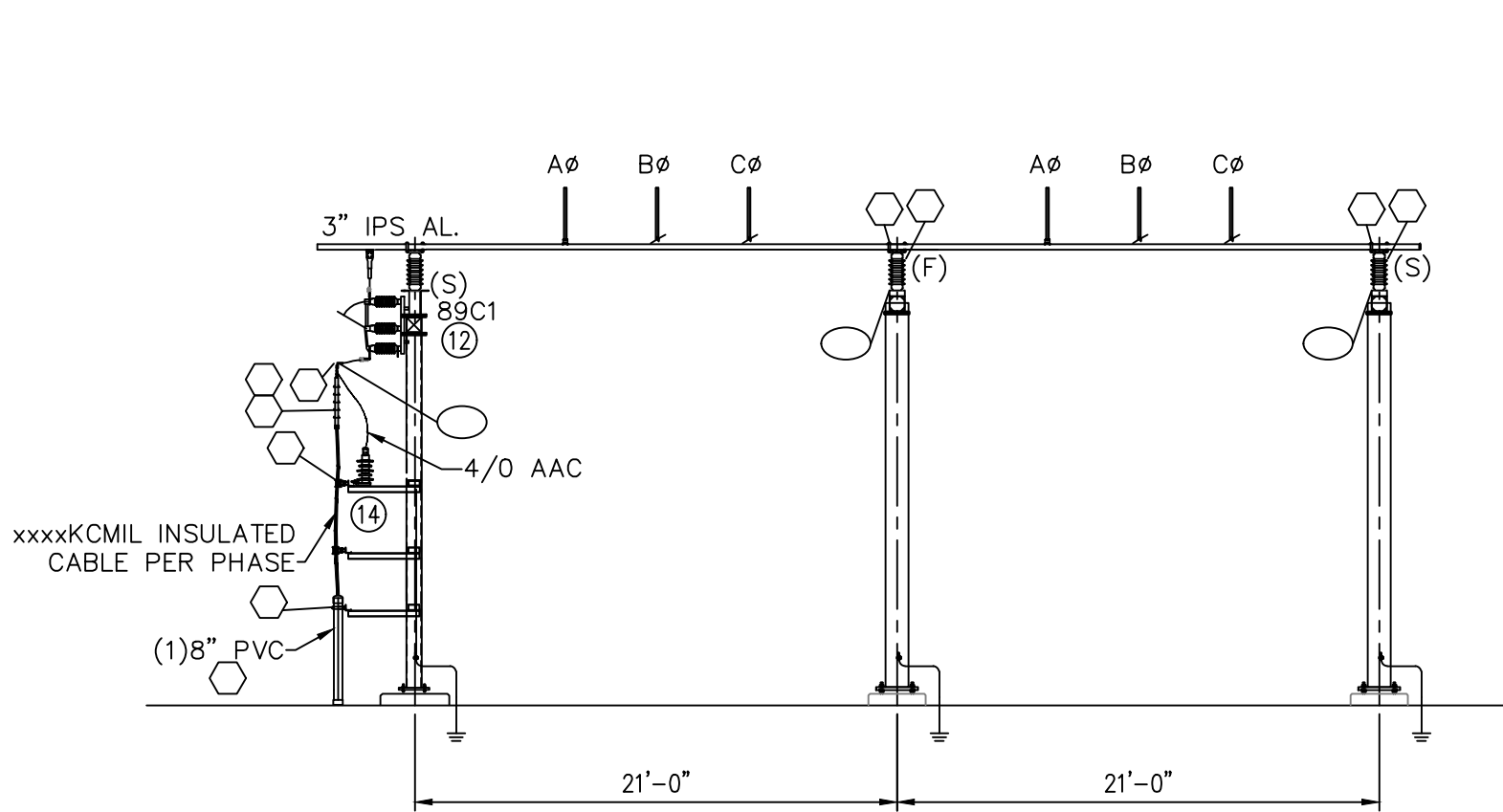
C. USE TAPE TO SECURE THE SPLIT HOSE TO BUSHINGS OR TERMINALS, THEN INSTALL THE BUSHING COVERS.

D. ANY JUMPERS LONGER THAN 2' IN LENGTH SHOULD UTILIZE A SPLIT HOSE APPLICATION.

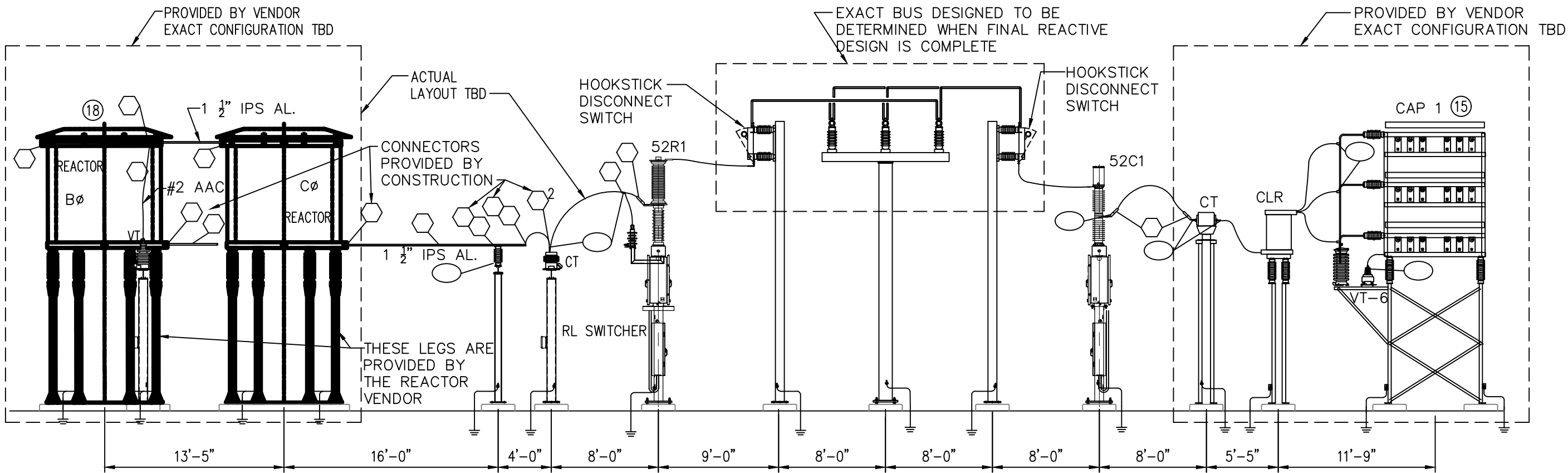
E. WRAP CENTER PHASE OF PIPE BUS WITH FUSING TAPE WHERE PHASE SPACING IS LESS THAN 40".

REFERENCE DRAWINGS

- DWG-E-210-01
- DWG-E-211-01
- DWG-E-227-01
- GENERAL ARRANGEMENT
- ELEVATIONS
- MAJOR EQUIPMENT LIST



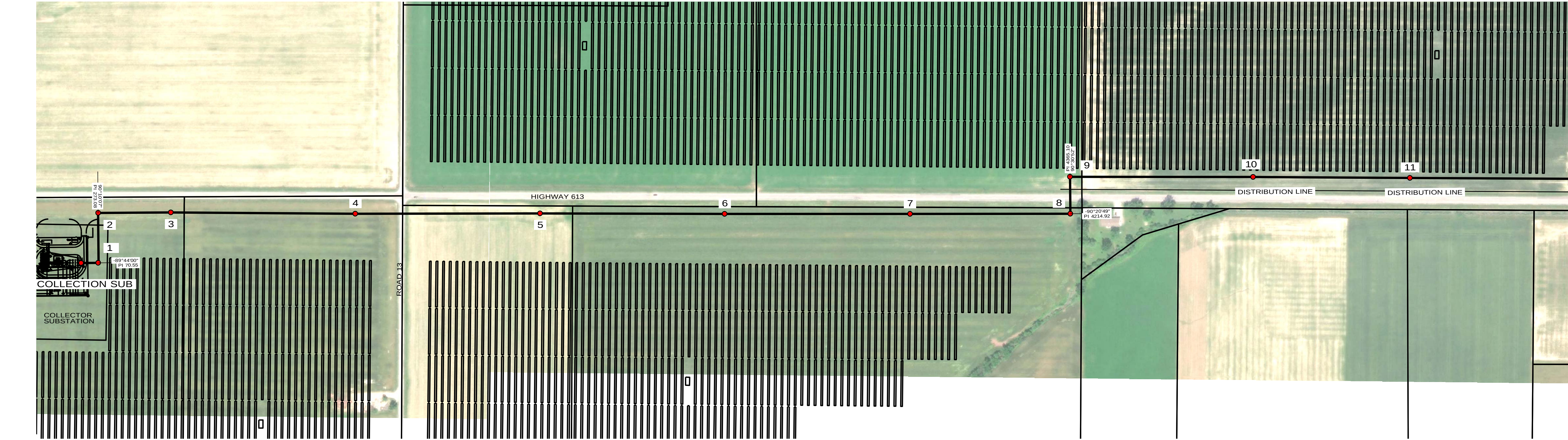
ELEVATION D-D



ELEVATION E-E

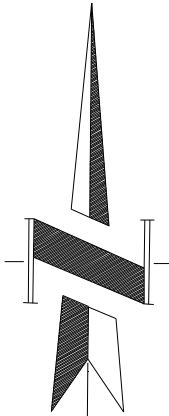
PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION

NO.					REVISIONS					DATE	BY	CHK	APR	NO.					REVISIONS					DATE	BY	CHK	APR	 AVANGRID RENEWABLES	 SARGENT & LUNDY 55 EAST MONROE STREET CHICAGO, ILLINOIS 60603-5780	REPLACE THIS TEXT WITH ENGINEER'S STAMP AT CONSTRUCTION AND/OR FABRICATION. ISSUE IF REQUIRED BY PROJECT ADMINISTRATION MANUAL	ENGINEERING RECORD		DATE	POWELL CREEK SOLAR PROJECT 138-34.5KV COLLECTOR SUBSTATION ELEVATIONS D-D & E-E
																									DRAWN: D. GOLUBOK		02/21/20							
																									DESIGNED: T. AYRES		02/21/20							
																									CHECKED: F. HESS		02/21/20							
																									APPROVED:									
																									CADFILE: PCS-E-211-02.DWG		SCALE: 1/8"=1'-0"				DWG.NO: PCS-E-211	SHEET 2 OF 2	REV B	

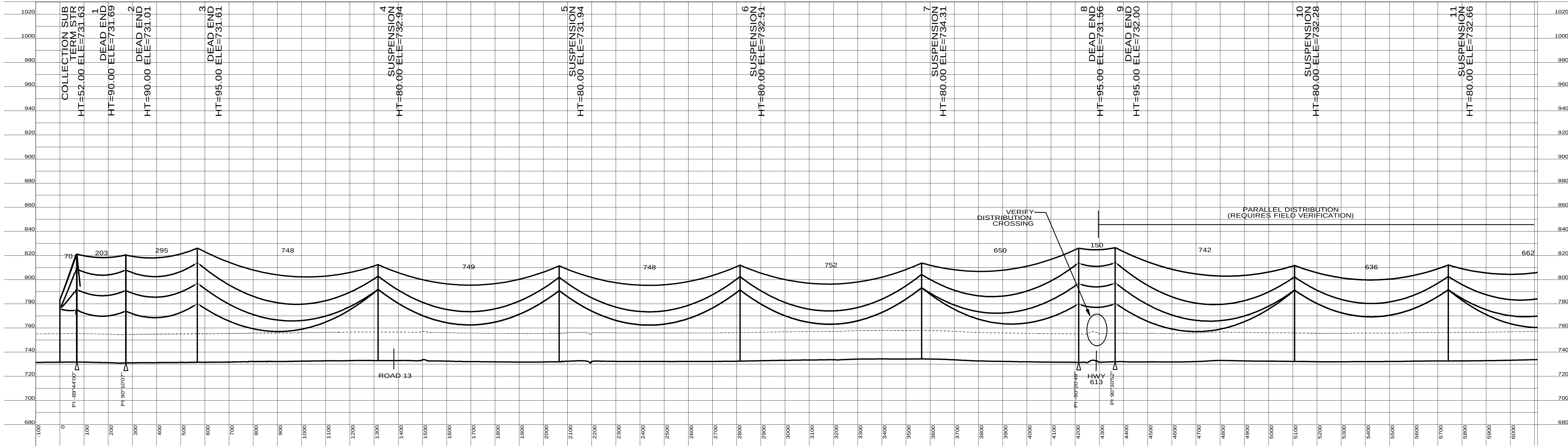


- NOTES:
1. HORIZONTAL DATUM: STATE PLANE NAD 83 OHIO NORTH. VERTICAL DATUM: NAVD 88.
 2. GROUND CLEARANCE LINE IS SHOWN AT 23.6 FEET ABOVE GRADE.
 3. DESIGN SHOWN IS CONCEPTUAL ONLY. BIDDER IS RESPONSIBLE FOR THE FINAL DESIGN TO ADHERE TO NESC 2017.
 4. THE DESIGN ASSUMES SINGLE 1272 ACSR "BITTERN" FOR TRANSMISSION.
 5. STATIC WIRE IS ASSUMED TO BE OPGW. AFL DNO-9269 OPGW IS NOT AVAILABLE IN PLS-CADD AND IS MODELED AS AC-37-552.
 6. CONDUCTORS ARE DISPLAYED AT MAXIMUM OPERATING TEMPERATURE OF 275 DEG. F; STATIC WIRES ARE DISPLAYED AT 120 DEG. F

POWELL_CREEK_30PERCENT_P&P
2/25/2020
PAGE 1/2



200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE



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PROJ. No. 13830-010

AVANGRID RENEWABLES
POWELL CREEK SOLAR PROJECT
115KV TRANSMISSION LINE
OHIO

REVISION
A

PCS-T-552-01

SHEET
1

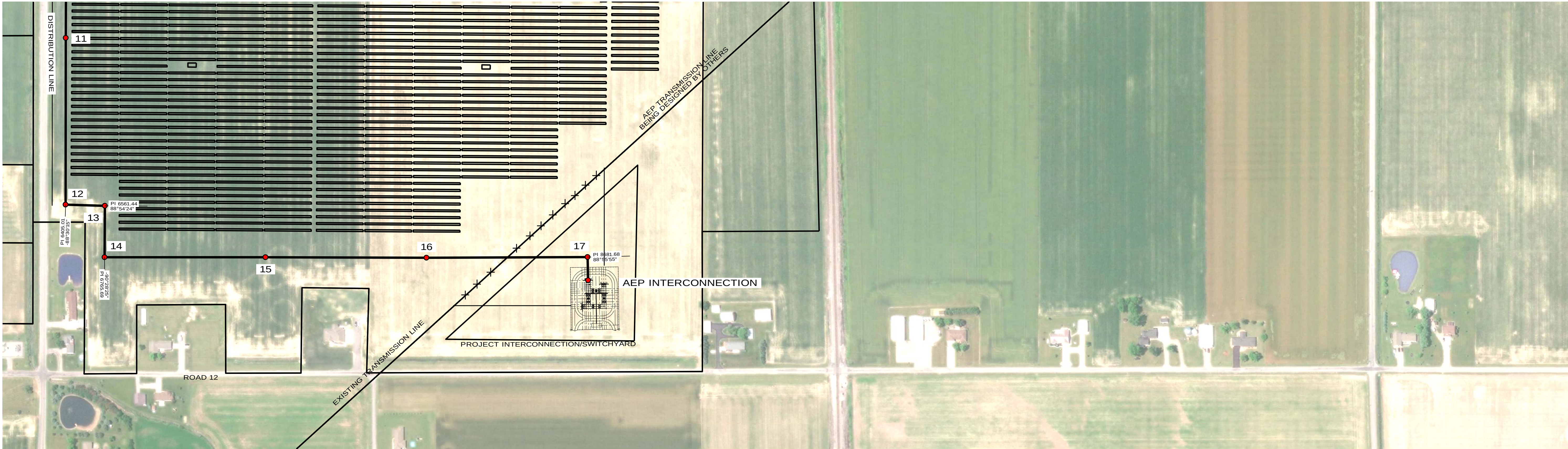
PROJECT MANAGER
DENNIS O'REILLY
DISCIPLINE ENG.
ROBERT PEACE
PROJECT ENG.
ROBERT PEACE
APPROVAL ENG.
ROBERT PEACE

PROJ.# 13830-010
PL#
DATE 02/26/20
DR. R. PEACE
DES. J. FLAHERTY
CH. R. PEACE
SCALE: 1" = 200' H, 1" = 40' V.

NO. DATE
A 02/26/20

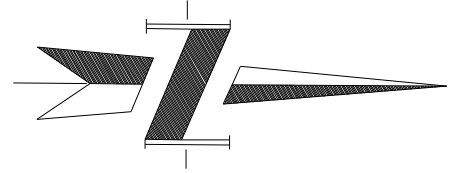
REV. DESCRIPTIONS
PRELIMINARY - 30% DESIGN SUBMITTAL

ENGINEER DES./ DR. CHECKED APPROVED
RGP RGP RGP RGP

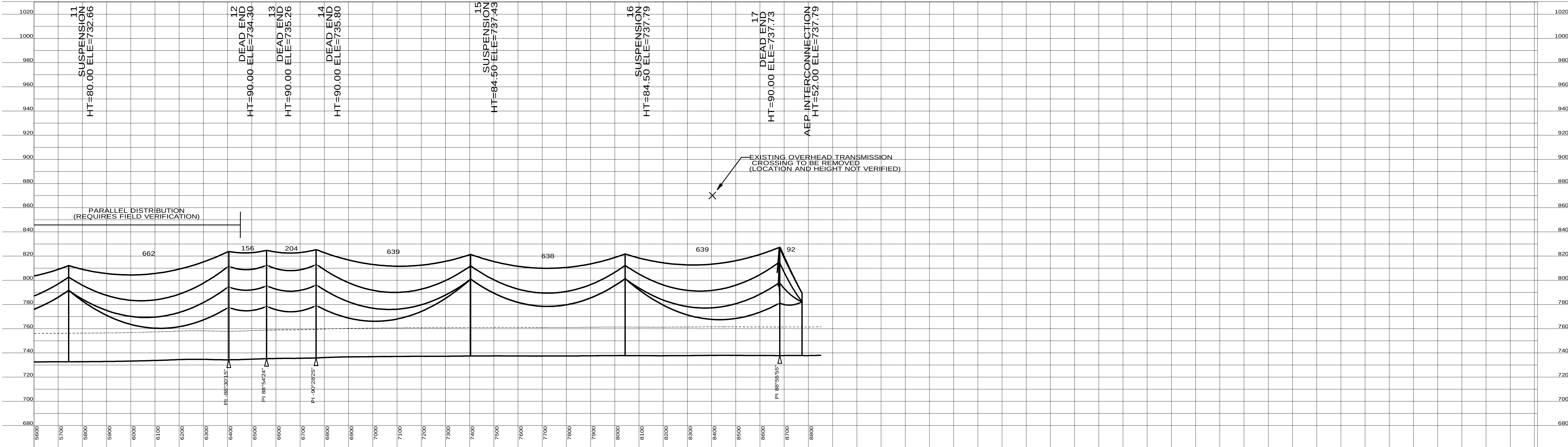


- NOTES:
1. HORIZONTAL DATUM: STATE PLANE NAD 83
OHIO NORTH. VERTICAL DATUM: NAVD 88.
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POWELL_CREEK_30PERCENT_P&P
2/25/2020
PAGE 2/2



200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE



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THAN SARGENT & LUNDY IS NOT THE
RESPONSIBILITY OF SARGENT & LUNDY

PROJ. No. 13830-010

AVANGRID RENEWABLES
POWELL CREEK SOLAR PROJECT
115KV TRANSMISSION LINE
OHIO

REVISION A

PCS-T-552-02

SHEET 2

PROJECT/REV# 13830-010
PL#
DATE 02/26/20
ENG. R. PEACE
DR. R. PEACE

PROJECT MANAGER DENNIS O'REILLY
DISCIPLINE ENG. ROBERT PEACE
PROJECT ENG. ROBERT PEACE
APPROVAL ENG. ROBERT PEACE

NO. A
DATE 02/26/20
REVISIONS PRELIMINARY - 30% DESIGN SUBMITTAL

ENGINEER RGP
DES./ DR. JDF

CHECKED RGP
APPROVED RGP

DD DRAWING

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/7/2020 10:11:59 AM

in

Case No(s). 20-1084-EL-BGN

Summary: Application Exhibit C - Preliminary Substation and Transmission Drawings
electronically filed by Teresa Orahoud on behalf of Dylan F. Borchers