Appendix D

Facility Schematics

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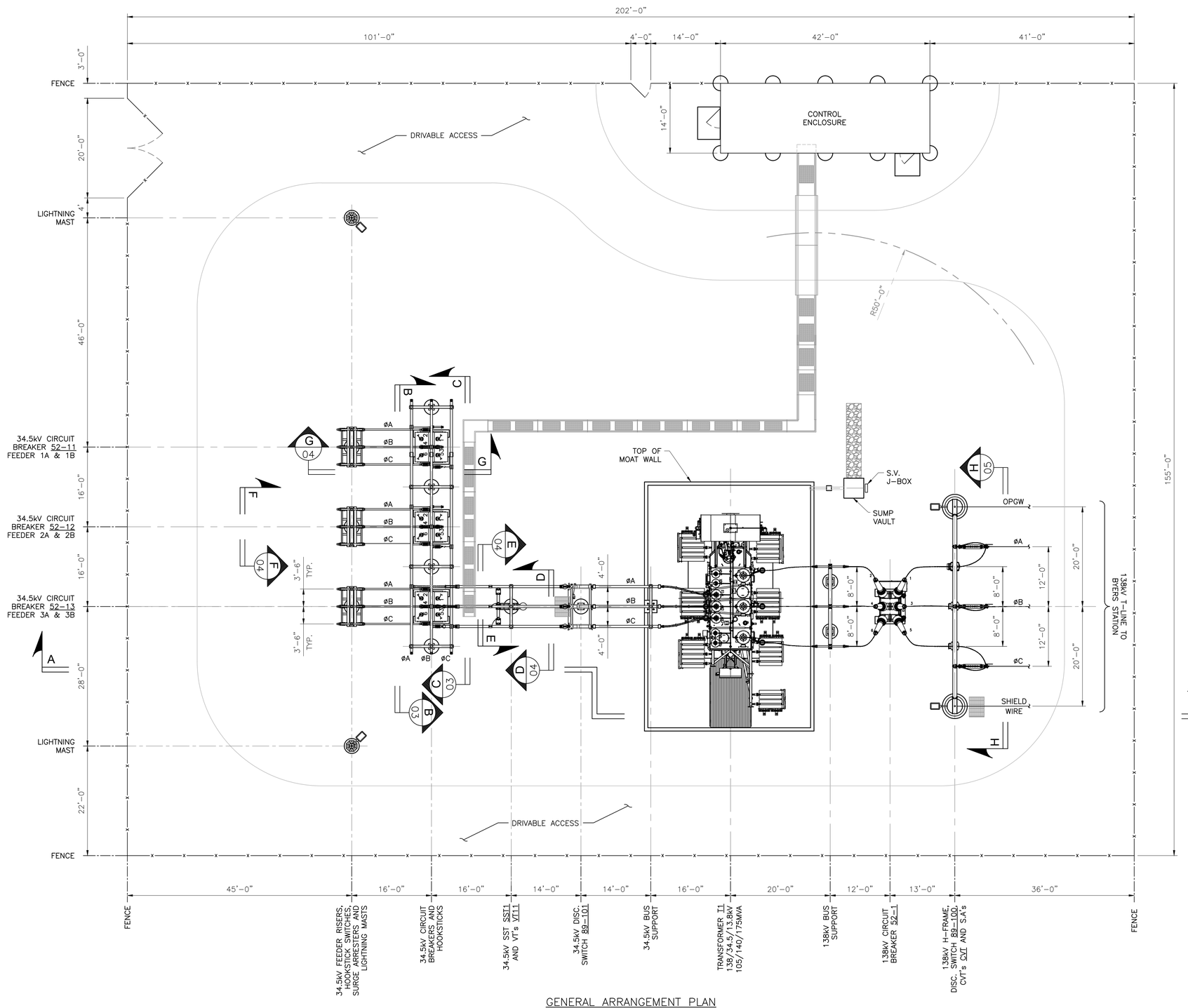
Figure A



GENERAL ARRANGEMENT PLAN

N

LEGEND

SUBSTATION FENCE

OIL CONTAINMENT BERM

ELEVATION / SHEET NUMBER

DESIGN CRITERIA

SUGGESTED CLEARANCES PER APPLICABLE INDUSTRY STANDARDS

138kV CLEARANCE (650KV BIL):

PHASE TO PHASE (CENTER TO CENTER):	8'-0"
MINIMUM METAL TO METAL (PHASE TO PHASE):	5'-3"
PHASE TO GROUND	4'-2"
VERTICAL CLEARANCE TO LIVE PARTS FOR PERSONAL ACCESS:	13'-0"
HORIZONTAL CLEARANCE TO LIVE PARTS FOR PERSONAL ACCESS:	6'-8"
VERTICAL CLEARANCE TO LIVE PARTS OVER ROADWAY:	27'-0"
SAFETY CLEARANCE ZONE TO SUBSTATION FENCE:	14'-0"

34.5kV CLEARANCE (200kV BIL):

PHASE TO PHASE (CENTER TO CENTER):	3'-0"
MINIMUM METAL TO METAL (PHASE TO PHASE):	1'-6"
PHASE TO GROUND	1'-1"
VERTICAL CLEARANCE TO LIVE PARTS FOR PERSONAL ACCESS:	10'-0"
HORIZONTAL CLEARANCE TO LIVE PARTS FOR PERSONAL ACCESS:	4'-0"
VERTICAL CLEARANCE TO LIVE PARTS OVER ROADWAY:	23'-0"
SAFETY CLEARANCE ZONE TO SUBSTATION FENCE:	11'-0"

GENERAL CLEARANCE:

VERTICAL CLEARANCE TO INDETERMINATE VOLTAGE (MEASURED FROM TOP OF STRUCTURE BASE PLATE)	8'-6"

REFERENCE DRAWINGS:

OVERALL SITE PLAN	CRS-C-100-01
ONE LINE SWITCHING DIAGRAM	CRS-E-001-01

NO	DATE	REVISION	BY	CHK'D	APRV'D
C	09/11/24	ISSUED FOR 90% REVIEW	SDD	MRC	BRB
B	06/27/24	ISSUED FOR 60% REVIEW	SDD	MRC	BRB
A	03/04/24	ISSUED FOR 30% REVIEW	SDD	MRC	BRB

DESIGNED BY: APPLIED HIGH VOLTAGE

PRELIMINARY: NOT FOR CONSTRUCTION

EPC CONTRACTOR: Barton Malow

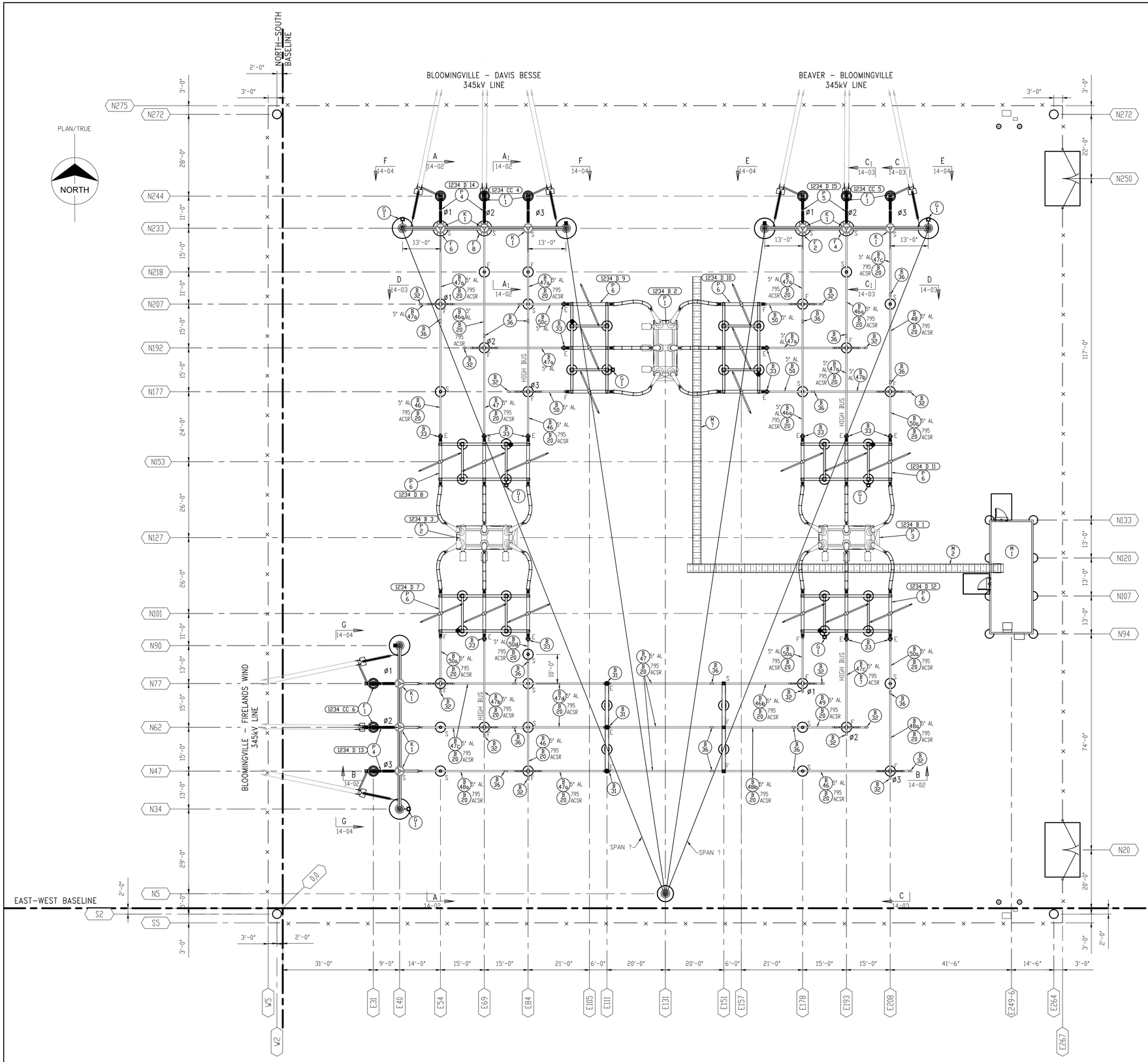
OWNER: APEX CLEAN ENERGY

CONTRACT: 19317

SUBSTATION GENERAL ARRANGEMENT PLAN PLAN VIEW

DRAWN DATE	SCALE	DRAWING NUMBER	REV
02/02/24	3/32" = 1'-0"	CRS-E-101-01	C

Figure B



NOTES:

1. IF THE CONNECTOR IS SUBJECT TO FREEZING AND IS INSTALLED SUCH THAT THE BARREL MAY COLLECT WATER (UPRIGHT POSITION OR IF THE CONDUCTOR IS ENTERING THE FITTING FROM ABOVE), THEN A ¼" DIAMETER WEEP HOLE SHOULD BE DRILLED FROM THE LOWEST POINT OF THE BARREL INTO THE END OF THE BORE.
2. DRILL ¼" DIAMETER WEEP HOLE AT THE LOWEST POINT OF EACH BUS SECTION FOR DRAINAGE.
3. BUS LENGTHS SHOWN ARE ESTIMATED AND THAT EXACT FIELD MEASUREMENTS MUST BE TAKEN SO THAT ACCURATE BUS LENGTHS CAN BE CUT.
4. BUS DAMPER WIRE MUST BE INSTALLED IN ALL BUSSES NOTED ON THE DRAWING. BUS DAMPER WIRE SHOULD BE PRE-STRETCHED AND TACK WELDED AT BOTH ENDS INSIDE THE TUBING.
5. ALL CONNECTORS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. LEVELING DISTANCE SHALL BE 3' MEASURED FROM TOP OF CONCRETE TO BOTTOM OF BASEPLATE UNLESS OTHERWISE SPECIFIED. LEVELING HEIGHT SHALL NOT EXCEED 3-1/4". CONTACT ENGINEER ABOUT ANY LEVELING HEIGHTS THAT EXCEED THIS REQUIREMENT.
7. SUBCONTRACTOR FURNISH & INSTALL JUNCTION BOX FOR YARD LIGHT WIRING CONNECTIONS AS NEEDED.

LEGEND:

E - EXPANSION FITTING
F - FIXED FITTING
S - SLIP FITTING
● MANUAL OPERATING SHAFT LOCATION
■ MOTOR OPERATING SHAFT LOCATION

ALL SPANS – 235'-0" STRINGING CHART: (NETWORK #16774902)

TEMP. (°F)	0	10	20	30	40	50	60	70	80	90	100
APPROX. TENSION (lb)	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD

ELECTRICAL DESIGN CLEARANCES				
MAX. SYSTEM VOLTAGE	MINIMUM	DESIGN	MINIMUM	DESIGN
	Ø-G	Ø-G	Ø-Ø	Ø-Ø
362 KV 1300 BIL	104"	106"	119"	174"
FE ENGINEERING TO BE CONTACTED BEFORE LESS THAN DESIGN CLEARANCES NEED TO BE USED.				

FOR REVIEW

NOT FOR CONSTRUCTION

BY: AMH APP: RT DATE: 11/19/21 ISSUE: REVIEW	FirstEnergy Energy Delivery Technical Services	DIST. CODE: SCALE: 1/16"=1'-0" SIZE: 36x24	OPERATING COMPANY: OHIO EDISON (OE)	REGION: OH-CE	AREA: VERMILLION
PRELIMINARY LAYOUT BY BURNS & McDONNELL.			FACILITY: BLOOMINGVILLE		
			TITLE: ELECTRICAL LAYOUT 345KV PLAN VIEW		
			SAP NETWORK NO.: 16774902	DOC. ID: 0-1234-14-01	REV.: -
					RevisionNote