



**NOTES:**

1. ALL BUS LENGTHS SHOWN ARE ESTIMATED. THE INSTALLER MUST TAKE EXACT FIELD MEASUREMENT SO THAT ACCURATE BUS LENGTHS CAN BE CUT.
2. ALL SWAGE CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED INSTRUCTIONS.
3. ANY CONNECTOR THAT IS SUBJECT TO FREEZING AND IS ORIENTED SUCH THAT THE BARREL MAY COLLECT WATER (UPRIGHT POSITION OR IF THE CONDUCTOR IS ENTERING FROM ABOVE) SHALL HAVE A 1/4" DIAMETER WEEP HOLE DRILLED FROM THE LOWEST POINT OF THE BARREL INTO THE END OF THE BORE. REMOVE ALL BURRS.
4. ALL TUBING BUS WORK SHALL HAVE A 1/4" DIAMETER WEEP HOLE DRILLED IN THE LOWEST POINT OF EACH SPAN. REMOVE ALL BURRS.
5. ALL LOW VOLTAGE ENERGIZED CONDUCTORS INCLUDING BUS WORK, BUS FITTINGS, LOW SIDE BUSHINGS AND BUSHING CONDUCTOR FITTINGS ARE TO BE ANIMAL GUARDED WITH MESSON E/INSULATION, E/FUSING TAPE AND ANIMAL GUARDS AS SHOWN ON SECTION A-A. EXPANSION FITTINGS & GROUNDING STIRRUPS NEED NOT BE ANIMAL GUARDED.
6. ANIMAL GUARDS TO HAVE A SLOT CUT INTO THEM THAT WILL ALLOW FOR VISUAL INSPECTION OF BUSHING OIL LEVEL. THE SLOTS SHOULD BE VISIBLE FROM GROUND LEVEL IF PRACTICAL AND SHOULD BE POSITIONED SUCH THAT ON THE OUTSIDE PHASE THE SLOT ARE ON THE FAR SIDE OF THE CENTER PHASE. THE CENTER PHASE SHOULD HAVE THE SLOT LOCATED TOWARD THE SWITCHGEAR.
7. EXPANSION FITTING LAMINATIONS SHALL BE VERTICAL TO INCREASE PHASE TO PHASE CLEARANCE.
8. STAGGER EXPANSION COUPLERS ACROSS THE THREE PHASE OF TUBING.

**REFERENCE DRAWINGS:**

- JC-1261-13-02 ELECTRICAL LAYOUT 34.5KV SUBSTATION ELEVATION A-A
- JC-1261-13-03 ELECTRICAL LAYOUT 34.5KV SUBSTATION ELEVATION B-B & C-C

**LEGEND:**

- x - x - x - x - FENCE
- XX DESIGNED BUS LENGTH (FIELD CUT AS REQUIRED)

ELECTRICAL DESIGN CLEARANCES				
MAX. SYSTEMS VOLTAGE	PHASE TO GROUND		PHASE TO PHASE	
	MINIMUM	DESIGN	MINIMUM	DESIGN
15.5KV	7'	10'	12'	24'
38KV	13'	15'	18'	36'

FE ENGINEERING TO BE CONTACTED BEFORE LESS THAN DESIGN CLEARANCES ARE USED

PLAN

SL: R, M-BV APP: DD-BV DATE: 03/21/24 THIS CONSTRUCTION REVISION BY BLACK & VEATCH.	<b>FirstEnergy</b> Energy Delivery Technical Services	REV. CODE: SCALE: 1/8"=1'-0" DATE: 3/24/24	OPERATING COMPANY: JCP&L (JC)	REGION: NJ-CE	AREA: WALL
TITLE: <b>ELECTRICAL LAYOUT          34.5KV SUBSTATION          PLAN VIEW</b>			SHEET NO: 17093922		
PROJECT: 17093922			REV. 13: JC-1261-13-01		