C2022

******This Standard Supercedes portions of BECo Standards CS2.7-1.1, CS2.7-1.5 & CS2.7-1.7******

POWER CABLE RISERS FOR 25 KV AND BELOW

1.0 Purpose

1.1 The purpose of this construction standard is to show the installation of a power cable riser, for all NSTAR distribution voltages.

1.2 Risers shall be built to the highest standard operating voltage in the service center.

2.0 Bill of Materials

ITEM	DESCRIPTION	CAT ID
1	Surge Arrester: 3740GY or 4160GY 4800 delta or 8320GY 13200GY 13800GY 22860GY	 8842 (3 kV) 8843 (6 kV) 8847 (10 kV) 15093 (12 kV) 8848 (18 kV)
2	Cold Shrink Termination Kits: 15 kV (500-1000MCM) & 25 kV (250-800MCM)	13717
	25 kV (900-1750)	9948
	Heat Shrink Termination Kits**:** 4/0 AWG to 350 MCM (HVT-152-BECo) 15kV	1423
	500 MCM to 1000 MCM (HVT-153-BECo) 15kV	1424
	Heat Shrink Skirt Kits For Outdoor Applications 4/0 AWG to 350 MCM (RS-3-2)	1696
	500 MCM to 2500 MCM (RS-4-2)	1697

ITEM	DESCRIPTION	CAT ID
	Heat Shrink Tube (20") for Overhead Applications: #1 A1/ #2 - 350MCM (BPTM 30/12-510) 500 - 2500MCM (BPTM 50/20-510)	 1428 1429
3	Crossarm	8838 (6 pin) 8839 (8 pin)
4	Crossarm braces	8928
5	Cable Support (for termination)	9884
6	Ground Rod (5/8")	9229
7	Ground Rod Connector #4sol-1/0 str	9009
8	Wire, #4 Cu, ground wire	120
9	Ground Wire Moulding	833
10	3" Cable U guard	753
11	RS Conduit	1248 (4") 1249 (5")
12	RS Quarter bend, 36" radius	9898 (4") 9899 (5")
13	PVC to RS Coupling	1099 (4") 1100 (5")
14	Grounding clamp for 4" or 5" steel riser pipe	15363
15	4" riser pipe reducing cap adapter to 2" or 3" molding	9402
16	Conduit Strap	1234 (4") 9348 (4") 1235 (5")
17	Cable Grip – 15 kV – 25 kV	9564 (1.00-1.24") 1395 (1.25-1.40")
18	Duct Seal	1239 (5 lbs) 9469 (1 lb)
19	5 kV, 250 MCM, tap wire	141
20	3 Phase Equipment Bracket	8932
21	Hot line clamp	
22	Disconnect switch	681 (15 kV) 9357 (27kV)
23	600A, Vertical Mount, Unitized Switch	9361 (15kV) 14639 (27kV)

ITEM	DESCRIPTION	CAT ID
24	PVC cap -4 in	9460 (4”) 5”???
25	Recloser	As needed
26	Pin insulator	Various
27	Crossarm pin	Various
28	2 Hole Terminal Lug 250 Cu 500 Cu 700 Cu 750 Cu	 1399 1403 1511 1528
29	Eyebolt Connector	8878

3.0 Construction

3.1 Risers should be located on the pole in the safest available position with respect to climbing space and exposure to traffic damage. install riser and spare duct according on the field side quarter of the pole, away from the direction of traffic flow (See Figure 1).

3.2 Only 1 three phase primary riser shall be allowed on a pole. Where practicable, risers should not be placed on the same pole as communication risers or equipment.

3.3 Spare conduit riser bend should be capped (not with duct plug) or have coupling and second conduit length installed to prevent damage/vandalism.

3.4 Cables that are not to be immediately installed should be left individually coiled and supported above the steel riser pipe. Minimum safe bending radius for the cable shall be 12X cable diameter.

3.5 Vertical electrical supply conductors on riser poles shall be protected by a covering that gives suitable mechanical protection. This protection, conduit and/or U guard, shall extend from secondary pole attachment level to a minimum of 1’ below grade.

3.6 Surge arrester leads should be kept as short as possible to maximize protection. All primary leads are to be made with covered wire.

3.7 Disconnect switches shall be installed vertically. Loadbreak switches (Figure 3) should be installed at locations that are expected to be routine

load switching points. Disconnect switches are intended to isolate underground sections typically, but not always, under no load conditions.

3.8 Bond all steel riser pipes to common neutral and pole ground.

3.9 In 4800 Volt delta primary areas, do not connect the arrester grounds to the secondary/system neutral. See C4402 for more details.

3.10 The installation should be designed so that water does not stand in riser pipes above the frost line. Seal any gaps between the cable and the riser cap or adapter with duct seal.

3.11 Preferred construction for recloser installations is to have the disconnect located on a separate pole.

3.12 Minimum 45' pole size with 50/50(equal) ownership is required.

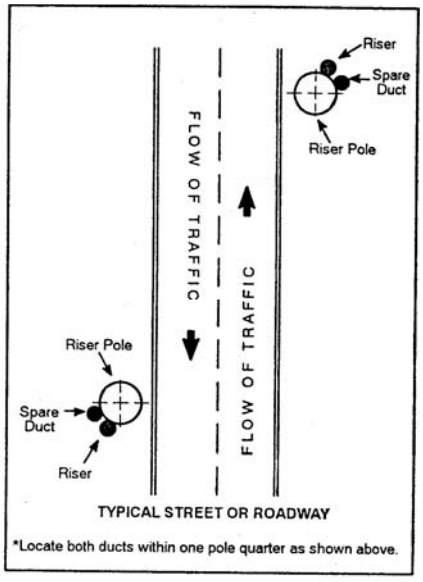

Figure 1 – Location of Riser

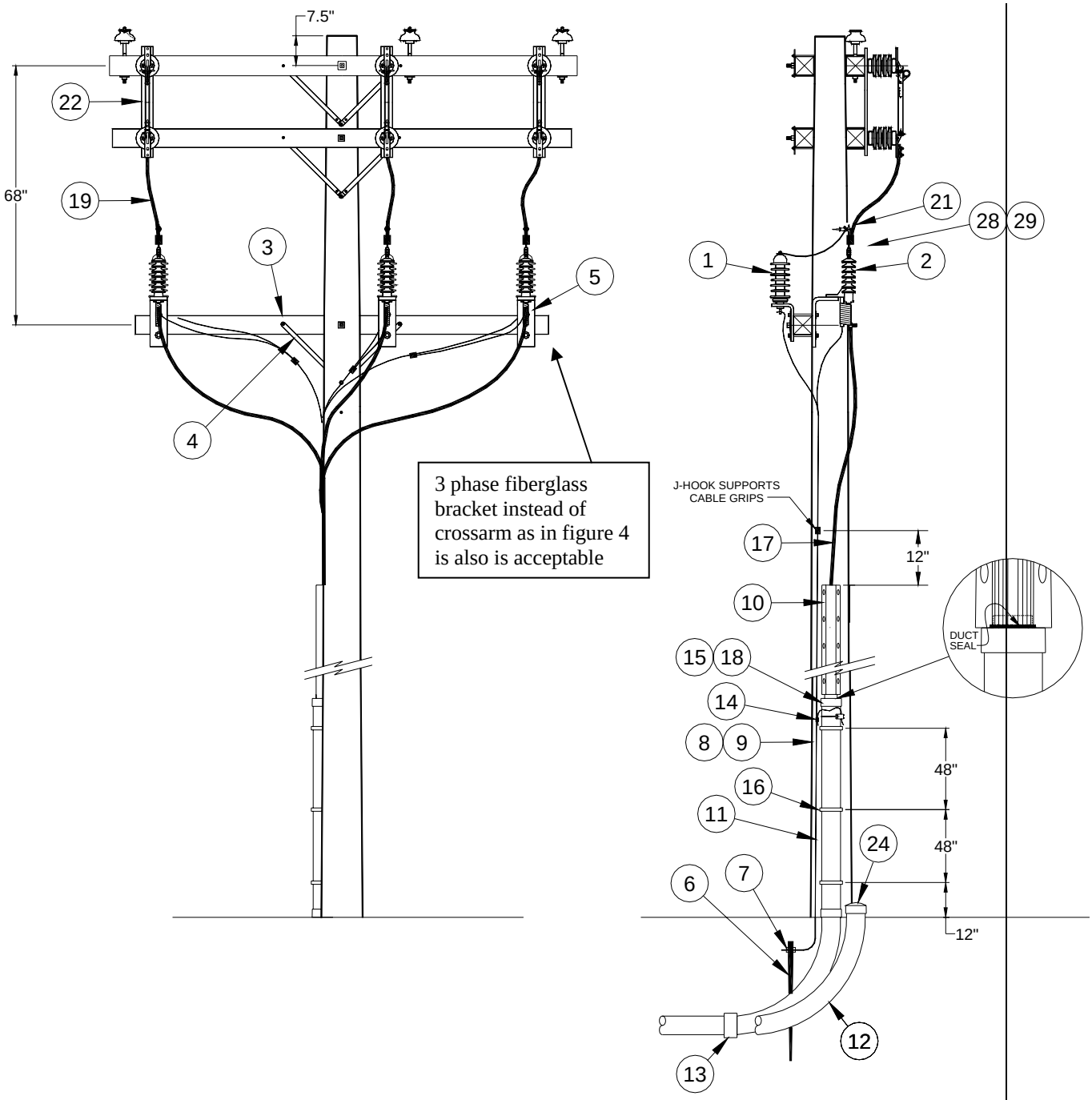

Figure 2 -– Disconnect

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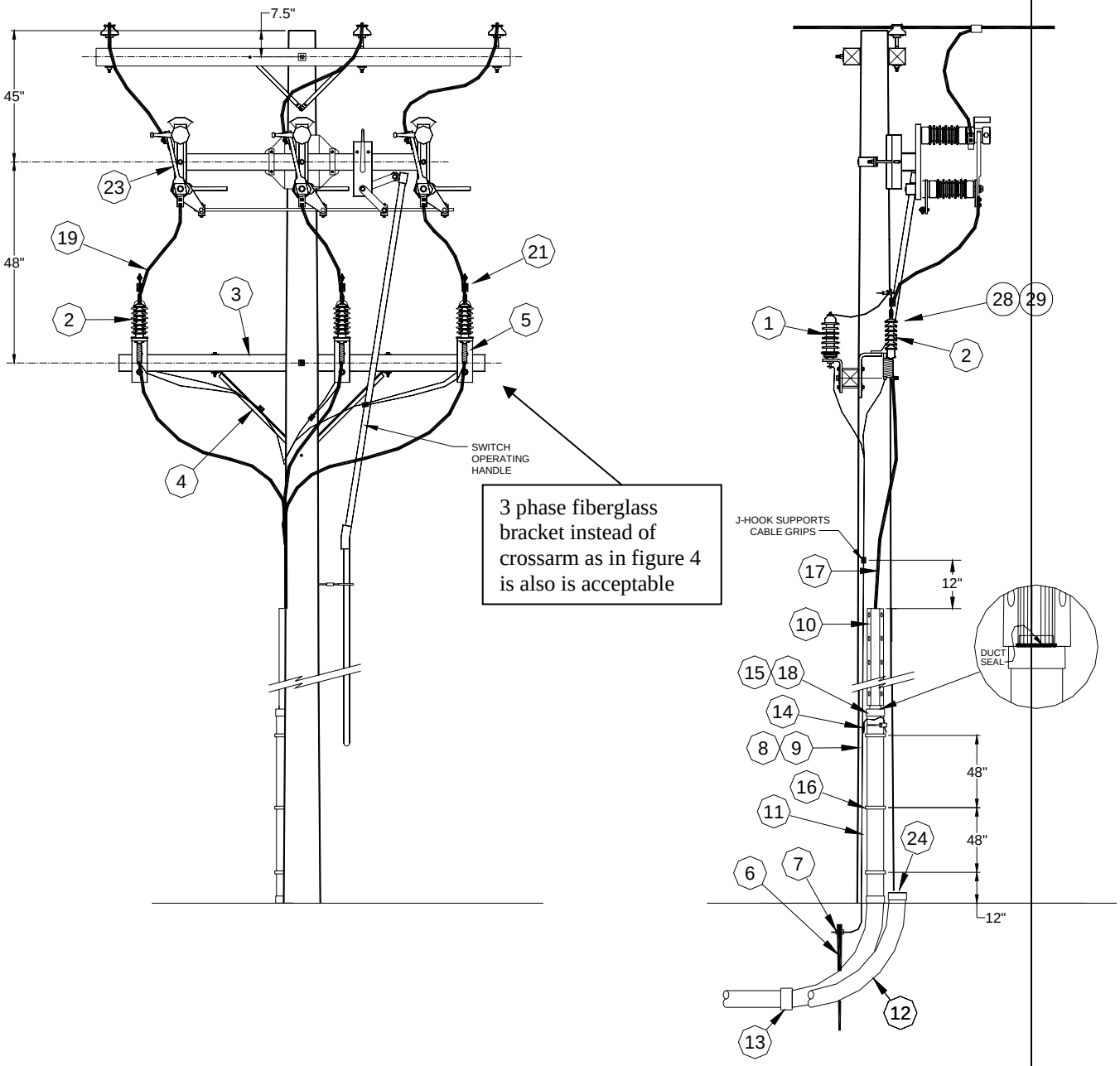

Figure 3 - Loadbreak Switch

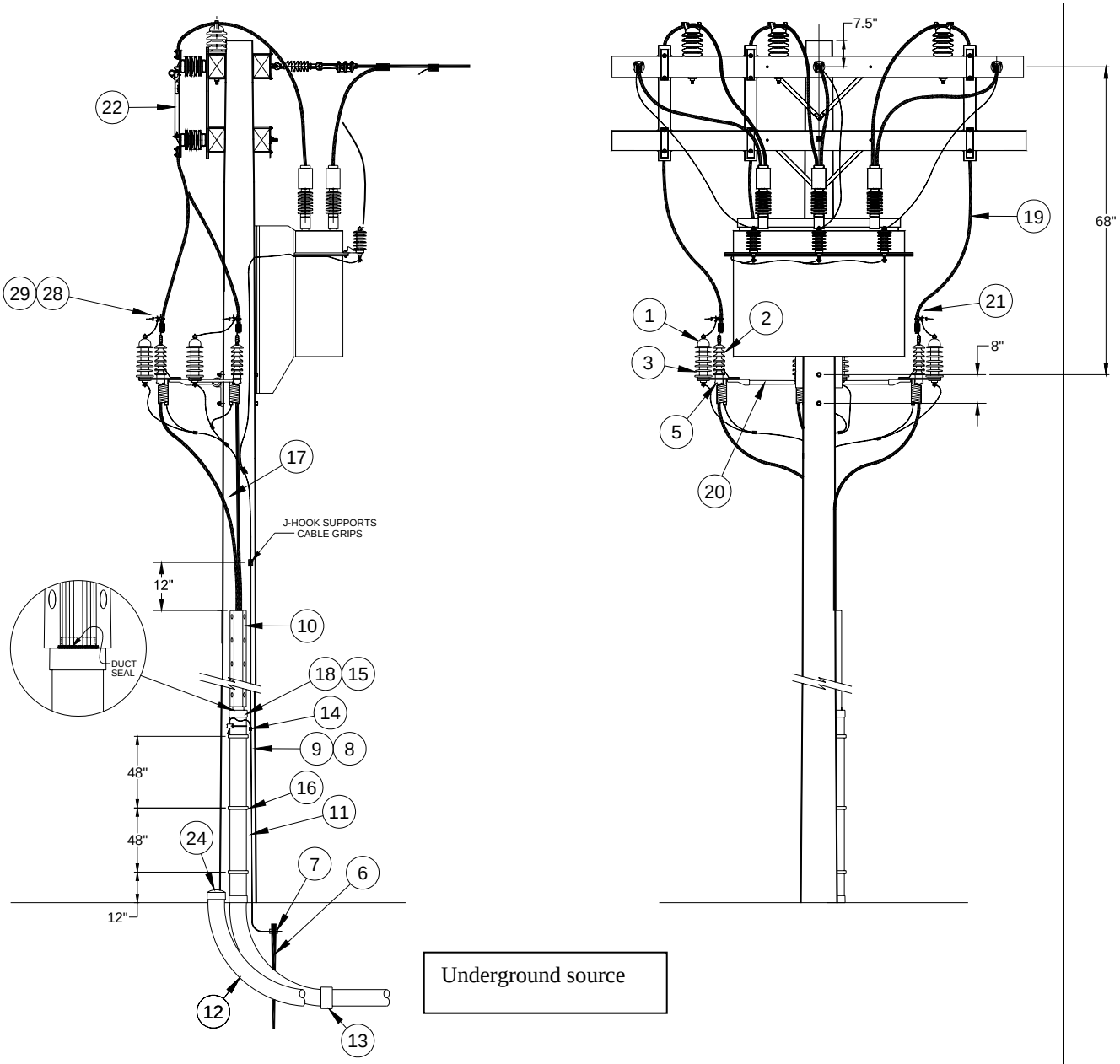

Figure 4 - Recloser

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