

**Three-Phase Loadbreak Vault, 612 and Larger**

**Vault Access:** The adjustable top with two galvanized plate doors must provide 34" x 73-1/2" clear opening without the use of a center support. Bottom of doors shall provide a flat non-skid working surface. Door construction shall be non-skid. Unistrut inside the four sides of the rectangular risers shall be placed within 2" maximum of the inside corners. The risers (see right) are used to adjust both hatches to the same height.

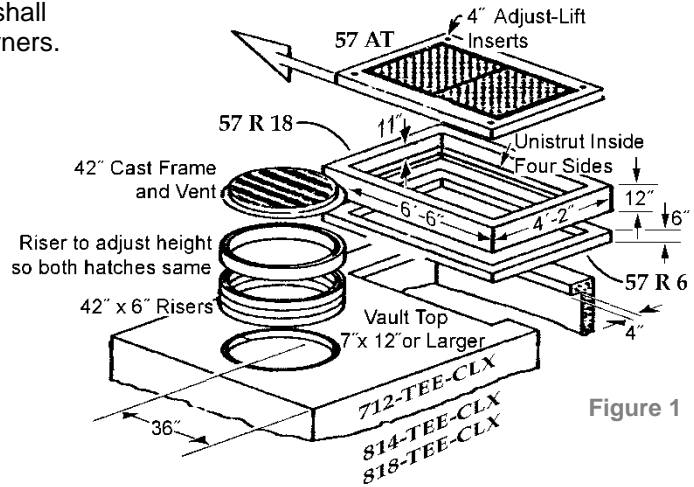


Figure 1

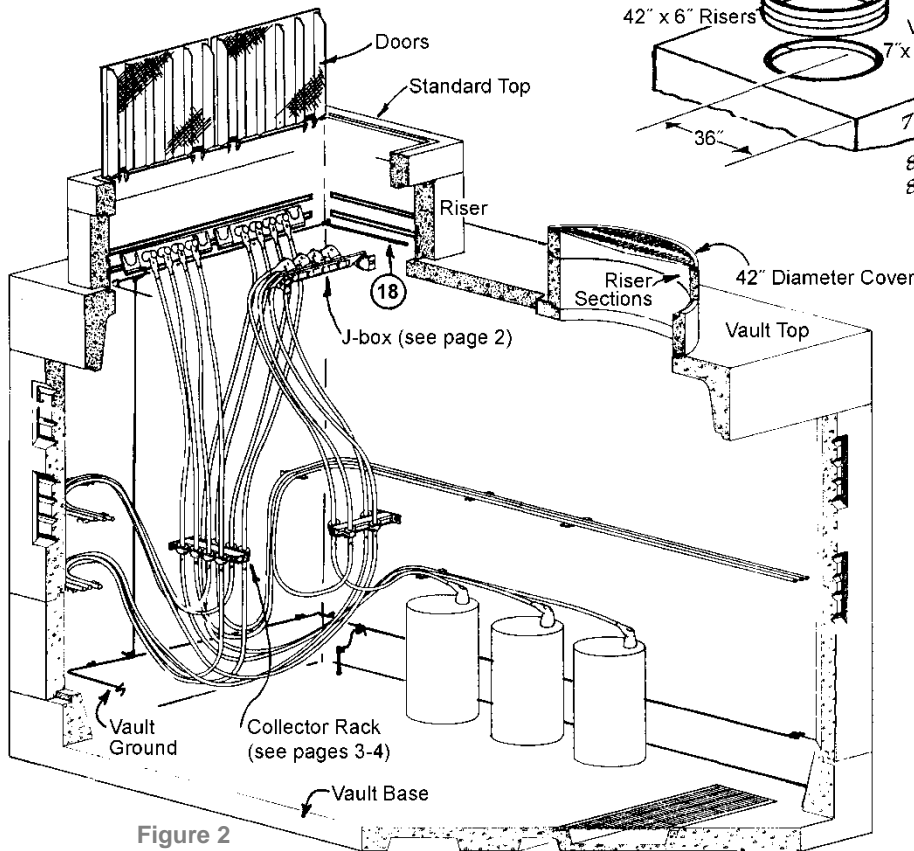


Figure 2  
Three Phase Load Break

**Caution:** High voltage may exist on secondary bushings. Connect center-point ground on lighter and connect teaser to lighter before energizing primaries.

**Note:** Do not place obstructions around vault hatches. See U9-6.

**Related Standards:**

- U2-11 Install ducts
- U2-15.1 Install 687 vault and larger
- U2-12.1 Install sump discharge
- NTP-60 Install vault lighting and receptacles

- U4-3 Arrange, protect and support cables
- U9-6 Clearance around hatch
- U9-7.5 Transformer installation & grounding, 120/240 volt
- U9-7.7 Transformer installation & grounding, 120/208 volt

Standards Coordinator  
Robin Byun

Standards Supervisor  
John Shipek

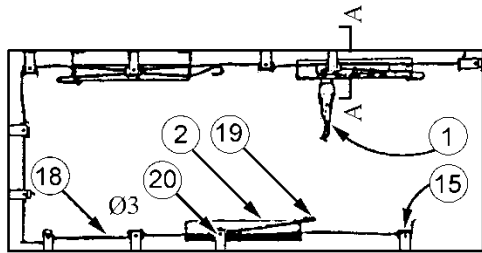
Unit Director  
Darnell Cola

*Robin Byun*

*John Shipek*

*Darnell Cola*

**J-Box Grounding and Primary Neutral Details**



Looking Up

Set opposing J-Boxes toward end of riser away from middle J-box to allow clearances for parking stands.

Figure 3 – Riser with Junction Boxes

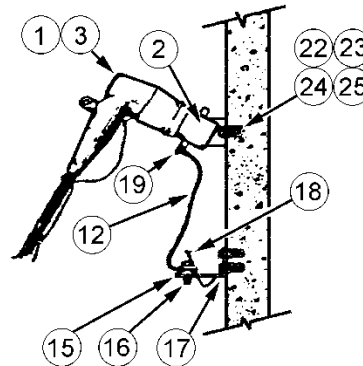
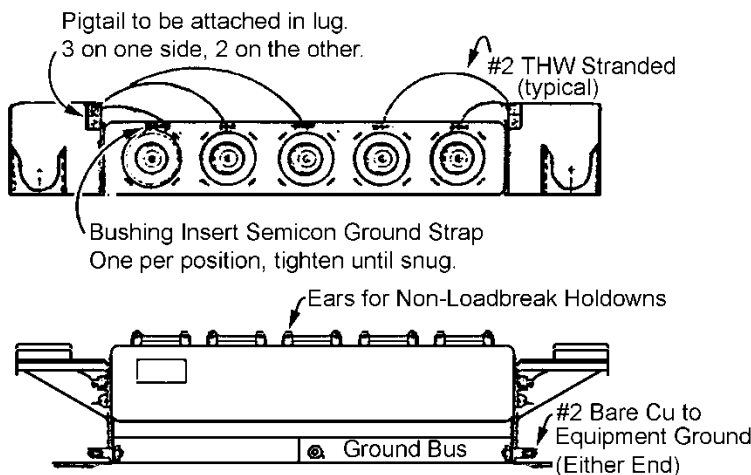


Figure 4 – Section A-A



Bushing inserts must be ordered separately.

**This J-Box to be installed in 57R18 riser only.**

Figure 5 – 5-Way J-Box, Stock No. 686555

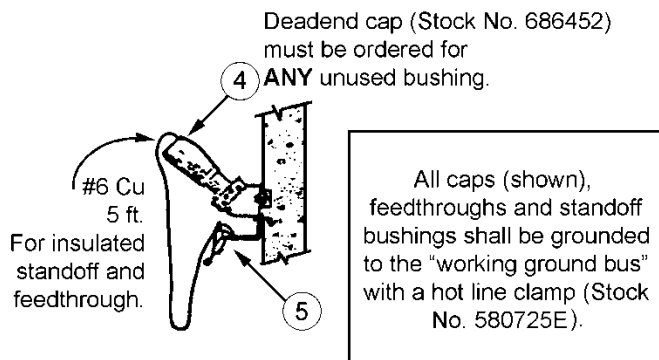


Figure 6 – Deadend Cap

**Notes:**

1. The J-boxes shall be located  $\varnothing 1, \varnothing 2, \varnothing 3$  in clockwise rotation.
2. The positions on the J-boxes shall be 1, 2, 3, 4; left to right when facing the J-box.
3. The #2 bare solid wire for attaching working grounds shall be as tight as possible.

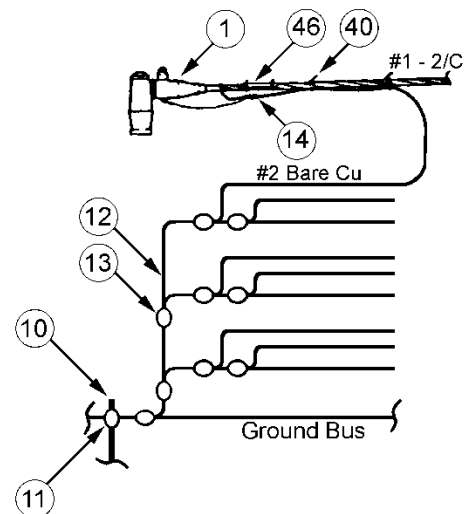


Figure 7 – Neutral Ties from Elbows to Ground Bus

### Cable Support Assembly Details

**Notes:**

1. Bracket (Item 28) to be mounted at 30 inches above vault floor and 2 feet from the corner of the vault.
2. Use of the adapter bracket (Item 36) is optional.
3. Neutrals return to ground as shown in Figure 11, below.

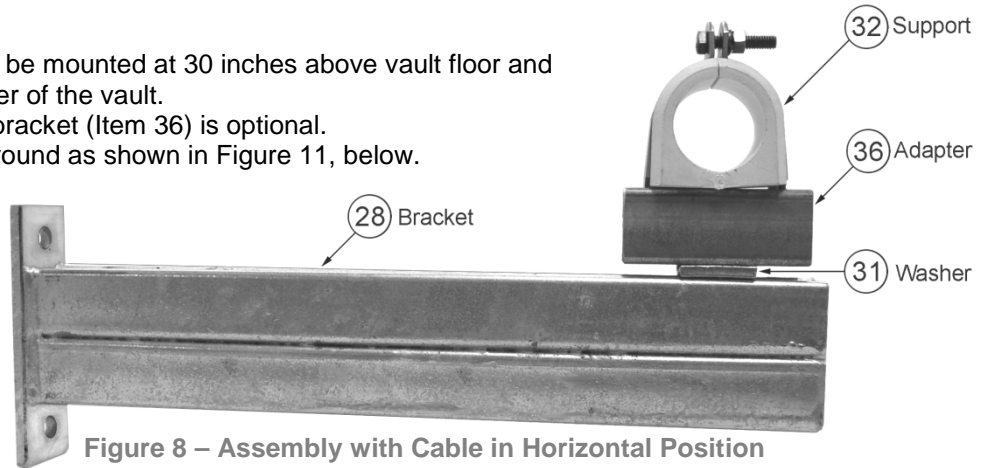


Figure 8 – Assembly with Cable in Horizontal Position

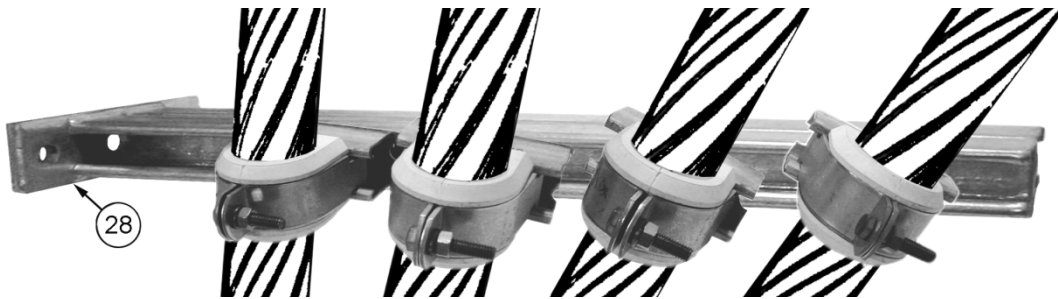


Figure 9 – Assembly with Cable in Vertical Position

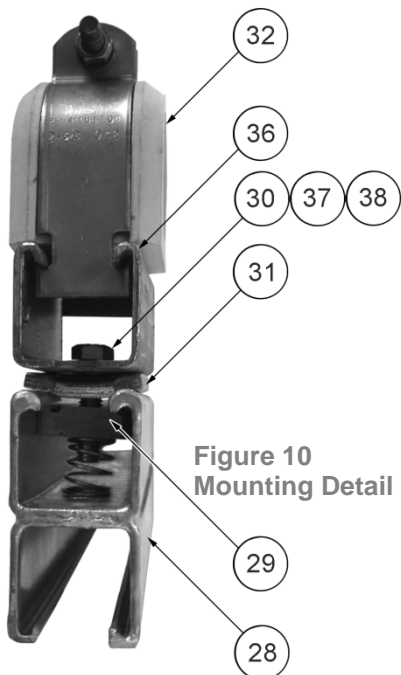


Figure 10  
 Mounting Detail

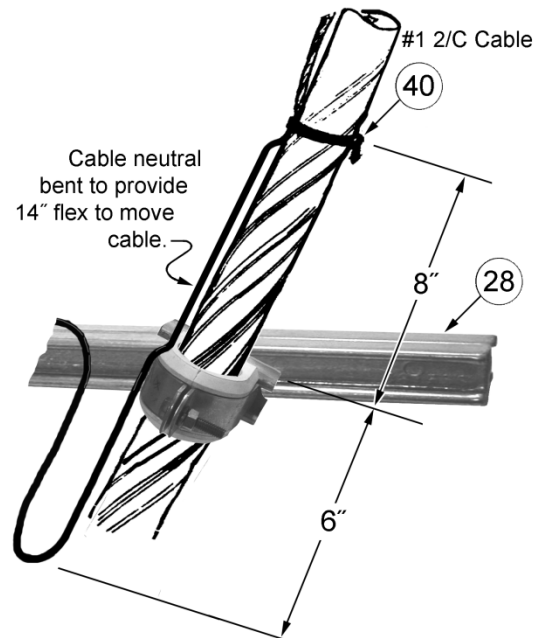
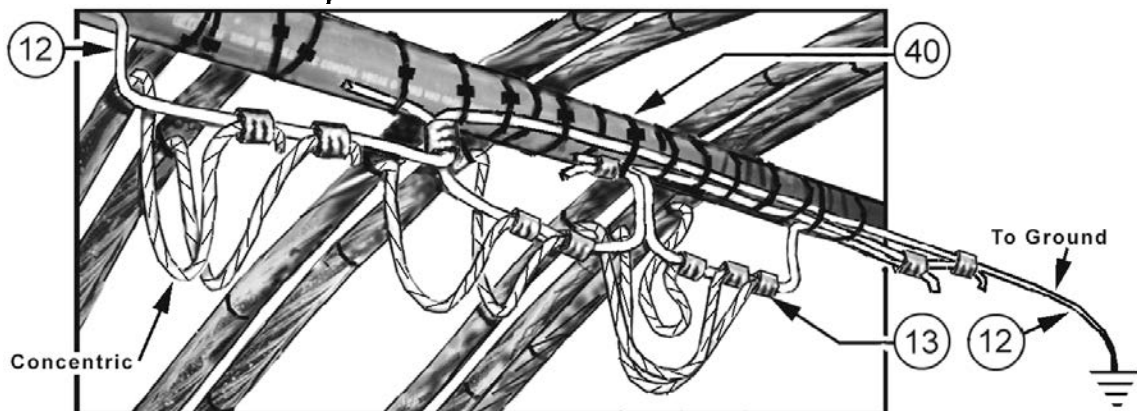
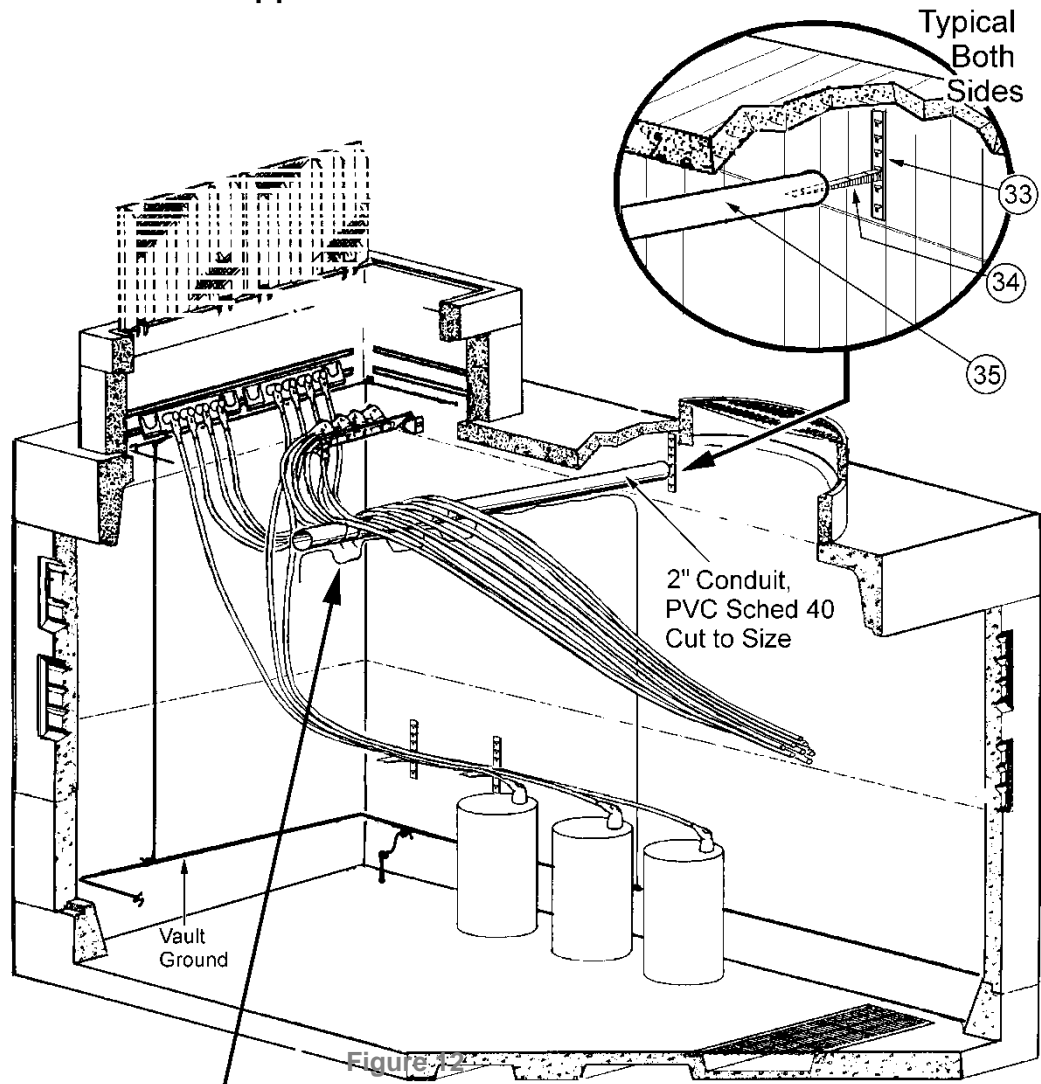


Figure 11 – Neutral Path to Ground

**Alternate Method for Cable Support**



## Material List

Item	Quantity	Description	Stock No.
<b>Primary</b>			
1	9, 12, 15	ELBOW, LOADBREAK, 15.2/26.3 kV	686445
2	3	JUNCTION BOX, LOADBREAK, 3 position	686454
		4 position	686455
		5 position	686555 ▲
3	9, 12, 15	COVER, loadbreak elbow (1 per elbow)	686467
4	As required	CAP, Insulating, deadend	686452
5	As required	CLAMP, hot line tap	580725E
6▲	As required	BUSHING INSERT (not included with 5-position J-box, Item 2)	686449
<b>Grounding</b>			
12	120 ft. (estimate)	WIRE, #2 bare stranded copper soft drawn	610434
13	18 (estimate)	CONNECTOR, parallel #2-#2 crimpet	677326E
14	9, 12, 15	SPLICE, straight, copper, #2-#2 (1 per elbow)	677357E
15	8	CONNECTOR, grounding, cable to flat, #4-#2/0	676674
16	11	WASHER, cut, bronze, 3/8 in.	788024E
17	11	BRACKET, ground support, Unistrut	686466
18	28 ft. (estimate)	WIRE, #2 care solid copper hard drawn	610006
19	3	TERMINAL LUG, compression #2	677071E
20	3	CONNECTOR, grounding, two cables to flat	676694
<b>Racking and Mounting</b>			
22	20 (estimate)	BOLT, machine, cd plated 1/2 in. x 1 in.	784825E
	2 (estimate)	BOLT, machine, cd plated 1/2 in. x 1 1/2 in.	784827E
23	20 (estimate)	WASHER, lock, 1/2 in. galvanized	584255E
24	20 (estimate)	WASHER, flat, 1/2 in. galvanized	585025E
25	4	ANCHOR, light duty, 1/2 in. -13	780078E
28	2	BRACKET, 18 in.	678005
29*	9 or 12	NUT, 3/8 in., with long spring for 1-5/8 in. x 1-5/8 in. strut channel	723609
30*	9 or 12	CAP SCREW, steel, hex head, zinc-plated, 3/8 in. x 1-1/2 in.	784767E
31*	9 or 12	WASHER, flat, square, with tabs, and 9/16 in. hole	720658
32	9 or 12	THERMOPLASTIC CABLE SUPPORT, for 28 kV, 1/0, 2/C bare	011961
35	10 ft.	CONDUIT, PVC Schedule 40, 2 in.	734530
36*	9 or 12	ADAPTER BRACKET, 4 in.	012465
37*	9 or 12	WASHER, steel, round, zinc-plated, 3/8 in.	788044E
38*	9 or 12	WASHER, steel, lock, split, zinc-plated, 3/8 in.	010468
<b>Miscellaneous</b>			
40	65 (estimate)	TIE STRAP, 7 in., plastic	735805E
	5 (estimate)	TIE STRAP, 14 in., plastic	735811E
46	9, 12, 15	TAG, cable identification	735800E
10	2	ROD, ground 5/8 in. x 8 ft., copper clad	564238E
11	2	CLAMP, ground rod, 5/8 in. to #2 copper	564012E

Notes:

▲ 5-position J-box (686555) requires bushing insert (686449).

\* Use of adapter bracket (Item 36) is optional. Use Items 29, 30, 31, 37 and 38 only if Item 36 is used.