

Covers and Risers for Electric Vaults



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2. Scope

This standard covers the requirements for precast reinforced concrete risers and vault covers used with electric vaults.

This standard applies to the following Seattle City Light stock numbers:

Stock No.	Description
013105	5-ft x 7-ft x 6-in riser without galvanized "C" channel
013106	5-ft x 7-ft x 18-in riser with galvanized "C" channels
013362	5-ft x 7-ft x 24-in riser with galvanized "C" channels
013107	42-in diameter x 4-in high round riser
013108	42-in diameter x 6-in high round riser
013109	42-in diameter x 12-in high round riser
013110	5-ft x 7-ft cover with one 42-in round access opening
013111	5-ft x 7-ft adjustable cover with two, H-20, 3-ft x 3-ft solid hatches
013353	5-ft x 7-ft cover with two H-30 solid hatches

Specific requirements shall be according to the detailed material standard and Purchase Order issued subsequent to competitive solicitations.

For cast-in-place 42-in round and 54-in by 96-in rectangular risers, refer to Construction Standard 0231.03.

3. Application

Risers and covers are parts of a vault assembly used in the construction of underground electric systems. The risers are used to bring the access opening of the vault to the surface of the grade. The covers are used to transition from a larger opening of the vault to the appropriate access opening for surface access.

Depending on the application, the vault may need to be customized with different covers; and depending on the depth of the vaults, various risers may be required to bring the access entry to surface grade.

4. General Requirements

This detailed standard is to be used in conjunction with the latest version of SCL 7203.21, "Precast Reinforced Concrete Structures – General."

5. 5 ft x 7 ft Riser

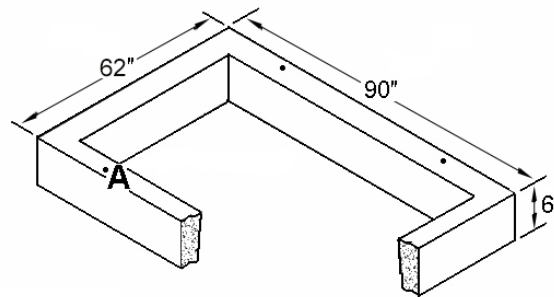
5.1 Dimensions

Five-foot by seven-foot risers shall be constructed according to the dimensions shown in Table 5.1.

Table 5.1. 5-ft x 7-ft Riser Dimensions

Stock No.	Riser Dimensions, nominal (in)						Fig. No.
	Wall, Outside			Access Opening			
	Length	Width	Height/ Thickness	Length	Width		
013105	90	62	6	78	50	5.1a	
013106	90	62	18	78	50	5.1b	
013362	84	56	24	72	44	5.1c	

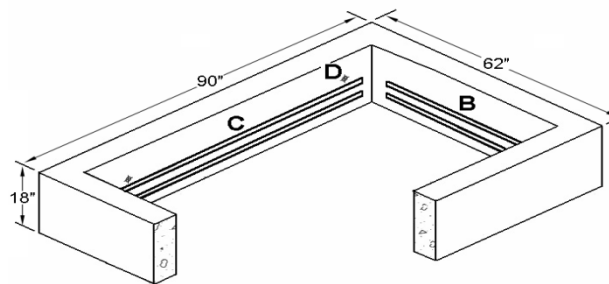
Figure 5.1a. 5-ft x 7-ft Riser, 6-in H (Stock No. 013105)



NOTE:

A = 3/4-in lift insert, 4 places on top (2 each side along length of riser)

Figure 5.1b. 5-ft x 7-ft Riser, 18-in H with Strut (Stock No. 013106)



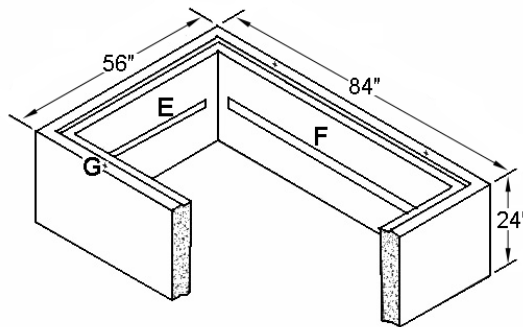
NOTES:

B = 2 channels each side, 2 short wall, 48-in length, typical

C = 2 channels each side, 2 long wall, 72-in length, typical

D = 3/4-in lift insert, 2 each side, 1 at each end of 2 long walls

Figure 5.1c. 5-ft x 7-ft Riser, 24-in H with Strut (Stock No. 013162)



NOTES:

- E = 1 channel each side, 2 short wall, 48-in length, typical
- F = 1 channel each side, 2 long wall, 60-in length, typical
- G = 4-in lift insert, 4 places on top (2 each side, length of riser)

5.2 Attributes

Table 5.2. 5-ft x 7-ft Riser Attributes

Description	Stock No.	Size, nominal (in)	Location	Per Location	Total
Galvanized "C" channel, horizontal, embedded in walls	013105	-	-	-	-
	013106	48 length	Short walls, approximately center of wall, 4-1/2 in apart	2 ea side	4
		72 length	Long walls, approximately center of wall, 4-1/2 in apart	2 ea side	4
	013362	36	Short walls, center of wall	1 ea side	2
		60	Long walls, center of wall	1 ea side	2
Lift Inserts	013105	3/4 dia	2 on the top of riser, along length side	2 ea side	4
	013106	3/4 dia	2 on long wall above the channels, 1 at each end of long wall	2 ea side	4
	013362	3/4 dia	2 on the top of riser, along length side	2 ea side	4

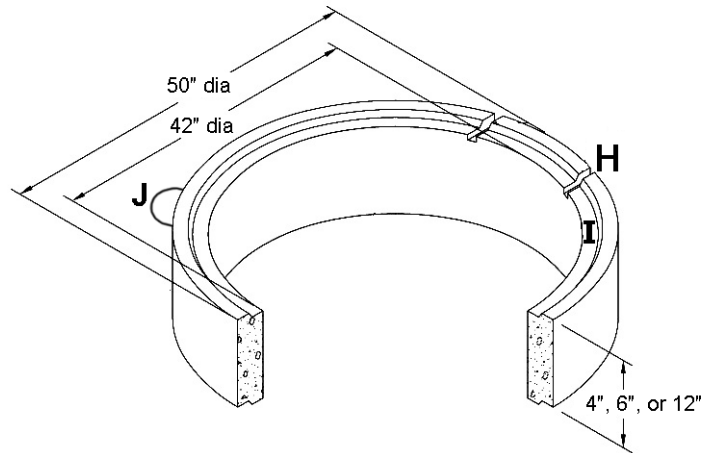
6. 42-in Round Riser

6.1 Dimensions

Table 6.1. 42-in Round Riser Dimensions

Stock No.	Riser Dimensions, nominal (in)				Fig. No.
	Wall, Outside		Access Opening		
	Diameter	Height/Thickness	Diameter		
013107	50	4	42		6.1
013108	50	6	42		6.1
013109	50	12	42		6.1

Figure 6.1. 42-in Riser



NOTES:
 H = recessed ladder rung grooves
 I = 42-in diameter keyway
 J = wire lift loops, 3 evenly spaced

6.2 Attributes

All 42-in risers shall have two recessed ladder rung grooves, as shown in Figure 6.1.

All 42-in risers shall have three (3) wire lift loops.

Wire lift loops shall be equally spaced apart around the perimeter of the riser; positioned 120 degrees apart.

Wire lift loops on 6-in and 12-in risers shall be parallel with the riser's top surface.

Ends of wire lift loops on 4-in risers shall be even with the riser's top surface.

7. Covers

7.1 Dimensions

Covers shall have overall dimensions as indicated in Table 7.1.

Covers shall have a 3/4-in lift insert at each corner on the top, as shown in Figure 7.2.

Caps shall be provided to cover the lift inserts.

Table 7.1. Cover Dimensions

Stock No.	Cover Dimensions, nominal (in)			Access Opening (in)	Hatches	Fig. No.
	Length	Width	Height/Thickness			
013110	90	62	6	42 diameter	–	7.2
013111	90	62	8	72 x 36	Two H-20, non-slip	7.3
013153	90	62	8	72 x 36	Two H-30, non-slip	7.4

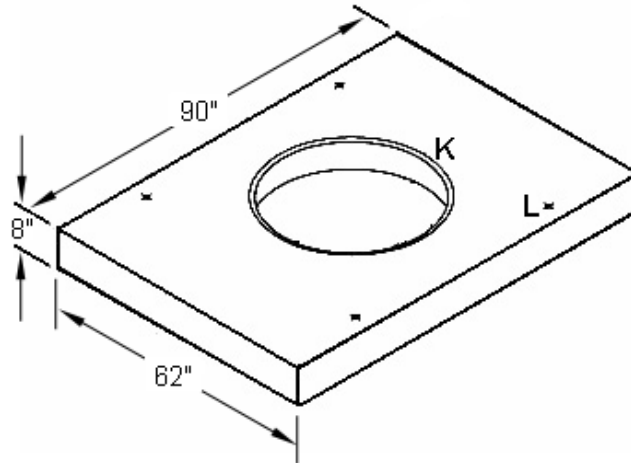
7.2 Attributes, 5 ft x 7 ft Cover with 42-in Access Opening (Stock No. 013110)

Cover shall have a keyway all around the perimeter on the bottom of the cover.

Cover shall have a 42-in access opening to allow for 42-in risers.

Cover shall have a keyway around the upper inside edge of the 42-in access opening to allow for proper joint with 42-in risers, as shown in Figure 7.2.

Figure 7.2. 5-ft x 7-ft with 42-in Round Access Cover



NOTES:

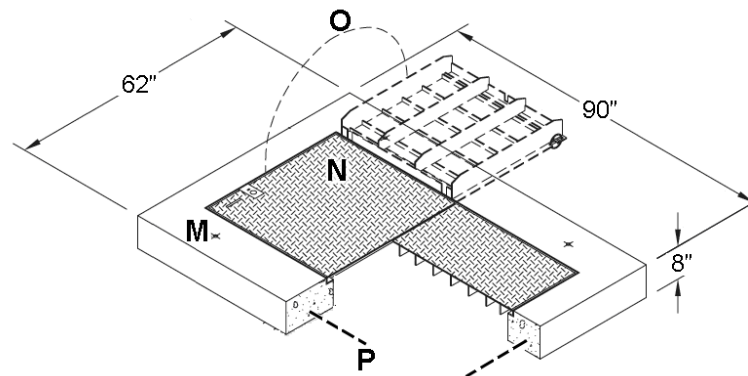
- K = 42-in diameter keyway for 42-in riser
- L = 3/4-in lift insert, 4 places on top with caps

7.3 Attributes, 5 ft x 7 ft Adjustable Cover, H-20, Non-Slip Solid Hatches (Stock No. 013111)

Cover shall have a 72-in x 36-in access opening.

Cover shall include frame with two 3-ft x 3-ft, H-20, non-slip hatches, as shown in Figure 7.3.

Figure 7.3. 5-ft x 7-ft Adjustable Cover, H-20, Non-Slip Solid Hatches



NOTES:

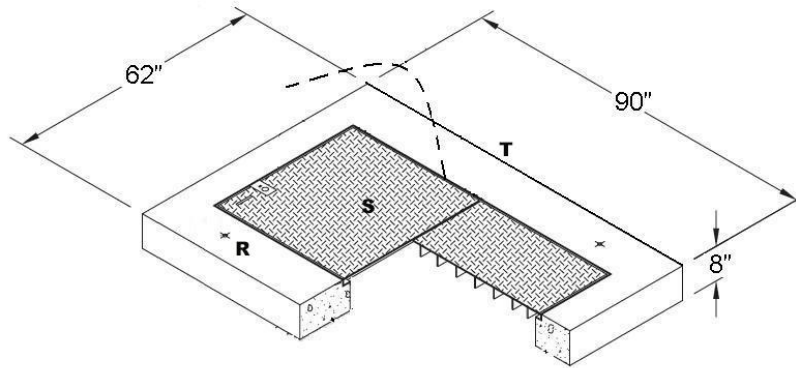
- M = 3/4-in diameter lift insert, 4 places in top with caps
- N = Non-slip solid hatches with locking latch
- O = Opens full 180 degrees, or flat. All hinges for the lids shall be along the length of the cover.

7.4 Attributes, 5-ft x 7-ft Cover, H-30, Non-Slip Solid Hatches (Stock No. 013153)

Cover shall have a 72-in x 36-in access opening.

Cover shall include frame with two 36-in x 36-in, H-30, non-slip hatches, as shown in Figure 7.4.

Figure 7.4. 5-ft x 7-ft Cover, Two 3-ft x 3-ft, H-30, Non-Slip Solid Hatches



NOTES:

R = 3/4-in diameter lift insert, 4 places in top with caps

S = Non-slip solid hatches with locking latch

T = Opens full 180 degrees, or flat, on the short end; butterfly style

8. Issuance

Unit: EA

9. Approved Manufacturers

Stock No.	Components	Oldcastle Precast Catalog No.
013105	5-ft x 7-ft x 6-in riser without galvanized "C" channels	57R6 – CLX
013106	5-ft x 7-ft x 18-in riser with galvanized "C" channels	57R18 – CLX
013107	42-in diameter x 4-in high round riser	4204 Round Riser
013108	42-in diameter x 6-in high round riser	4206 Round Riser
013109	42-in diameter x 12-in high round riser	4212 Round Riser
013110	5-ft x 7-ft cover with one 42-in round access opening	57-CLX-42C Cover w/ Key
013111	5-ft x 7-ft adjustable cover with two 3-ft x 3-ft non-slip, solid hatches	57-2-332-AT-80 Style
013362	5-ft x 7-ft x 24-in riser with galvanized "C" channels	57R24 – CLX
013153	5-ft x 7-ft cover with two 3-ft x 3-ft, H-30, non-slip, solid hatches	57 CLX w. Key, LW

10. References

SCL Construction Standard 0231.03; “Cast-in-Place Risers”

SCL Material Standard 7203.21; “Precast Reinforced Concrete Structures – General,”
June 2012

11. Sources

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