

444 Enclosures, Precast



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2. Scope

This standard covers the detailed requirements for 444 precast enclosures and components (enclosure base and cover with hatch). The basic components can be ordered separately, or they can be ordered as assembled enclosures with covers.

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

Stock Number	444 Enclosure Components
013093	enclosure base , standard 444
013094	cover , 4- by 4-foot with one 3-by 3-foot, non-slip, H-20, solid hatch-"SCL"
013095	cover , 4- by 4-foot with one 42--inch round, solid cover and frame, H-20
013157	cover , oversized, with one 3- by 3-foot, non-slip, solid hatch, H-30-"SCL"
Stock Number	Assembled 444 Enclosures
013120	444 enclosure with 4- by 4-foot cover with one 3-foot by 3-foot, non-slip, H-20, solid hatch-"SCL"
013121	444 enclosure with 4- by 4-foot cover with one 42-inch round, solid cover and frame, H-20
013158	444 enclosure with oversized cover, with one 3- by 3-foot, non-slip, solid hatch, H-30-"SCL"

3. Application

444 enclosures are intended for use in the construction of underground electric systems. The precast concrete structures may be used to house load break junction boxes, communications wires, or service connections and splices for the distribution system.

H20-rated 444 enclosures are not intended to be used in high density traffic locations.

A standard 444 enclosure typically consists of the 444 base (Stock No. 013093) and the 4-ft by 4-ft cover with one 3- by 3-ft non-slip, H-20 solid hatch (Stock No. 013094).

Due to different applications, the enclosure may need to be customized with a different entry opening.

Depending on the application for the enclosure selected, it can be defined as a handhole or a vault.

When Seattle City Light uses the 444 enclosure for primary service, the 444 enclosure will be designated as a vault. For non-primary service the 444 enclosure can typically be referred to as a handhole.

Steps for selecting the proper enclosure assembly for your application:

1. Select the appropriate enclosure base (one option for the 444 size)
2. Select enclosure cover (three options for the 444)

4. General Requirements

This detailed standard is to be used in conjunction with the latest revision of:

- City Light Material Standard 7203.21, "Precast Reinforced Concrete Structures – General"
- City Light Material Standard 7204.70, "Frames and Covers, 42-Inch Round, Iron"

5. Component Requirements

5.1 Grounding

Enclosure grounding shall comply with Material Standard 7203.21, Section 9, Grounding.

5.2 Enclosure Base

The SCL 444 enclosure base (Stock No. 013093) shall have an overall nominal dimension of 4-feet by 4-feet by 3-feet 6-inches high as shown in Table 5.2a and Figure 5.2.

Approximate base weight is 2,200 pounds.

Table 5.2a, Standard 444 Enclosure Base Dimensions

Stock No.	Nominal Dimensions, ft-in					
	Wall, Outside		Wall, Inside		Height	
	Length	Width	Length	Width	Outside	Inside
013093	4-0	4-0	3-4	3-4	3-8	3-1

5. Component Requirements, continued

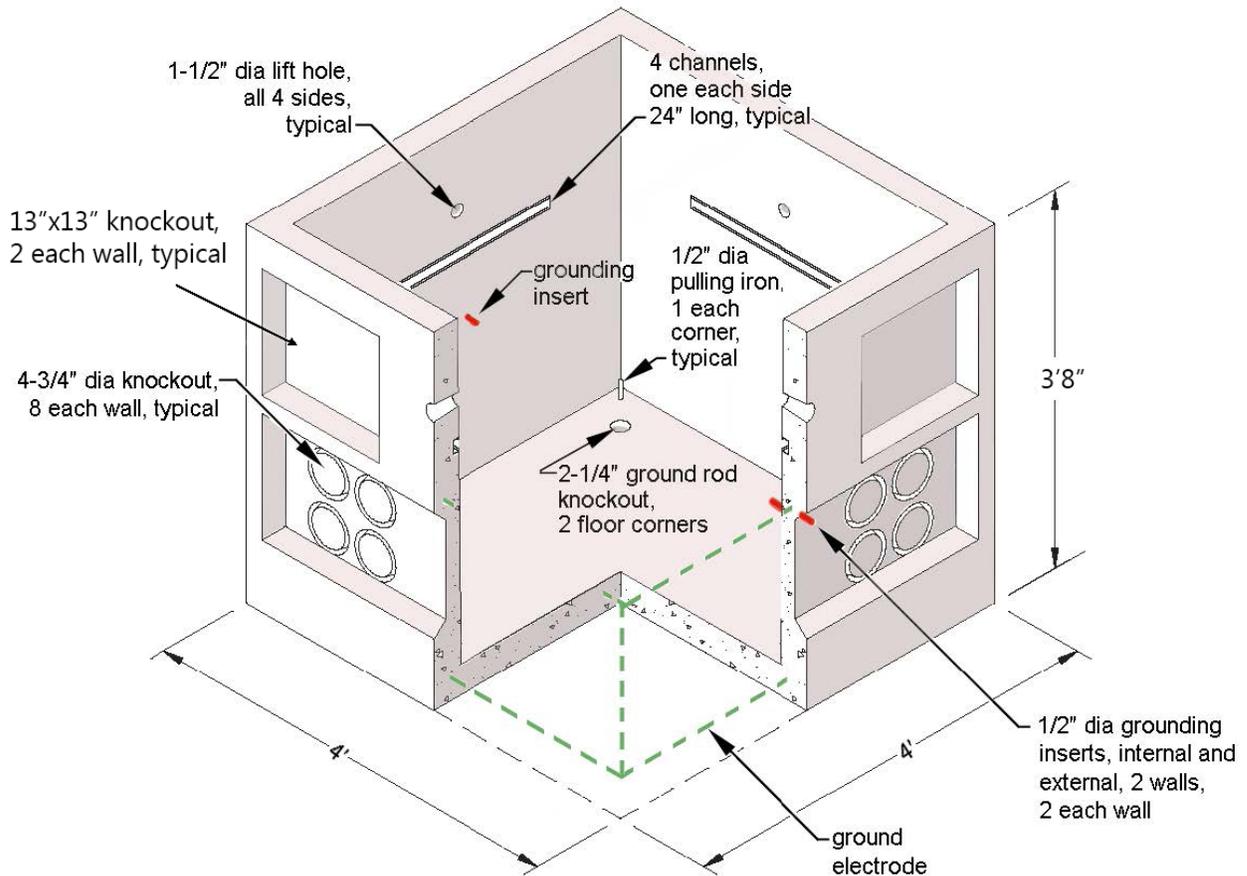
5.2 Enclosure Base, continued

Table 5.2b. Enclosure Base Attributes

All Standard 444 enclosure bases shall have the following features:

	Size, Nominal (in)	Location	Per Location	Total Number
Knockouts				
round	4-3/4 dia	all 4 walls, on bottom	8 ea side	32
ground rod	2 dia	2 corners of floor	1 ea	2
window	13 x 13	All 4 corners of upper wall	2 each per wall	8
Channels				
galvanized "C" channel, horizontal, embedded in walls	24 long	all walls, above all knockouts	1 ea side	4
Pulling Irons	1/2 dia	1 ea corner of floor (typical)	1 ea corner	4
Lift Holes	1-1/2 dia	4 walls, center of wall, above channel	1 ea side	4
Ground Inserts, bronze	1/2 dia	2 walls, opposite, internal and external	2 ea side	4
Ladder		not required		

Figure 5.2. Standard 444 Enclosure Base (dimensions shown are nominal values)



5. Component Requirements, continued

5.3 Enclosure Cover

Covers shall have a nominal overall dimension of 4 feet by 4 feet. Thickness shall be 6 inches. Approximate enclosure cover weight is 650 pounds.

All covers shall have overall dimensions as shown in Table 5.3. Enclosure covers shall have a keyed form to match the base for proper assembly.

All covers shall have 3/4-inch diameter (nominal) lift inserts at each corner on the top, as shown in Figure 5.3a.

Caps shall be provided to cover the lift inserts.

Covers with the 42-inch round cover shall include a 4-inch deep, round frame, as shown in Figure 5.3b.

Note: the iron frame in the cover for round openings extends over the sides of the cover.

All hinged hatches shall open a full 180 degrees, or flat.

All hinged hatches shall include a grounding bracket on the bottom of the hatch for bonding and grounding.

Figure 5.3a. 4-Foot Square Enclosure Cover with 3-Foot Square Hatch
 dimensions shown are nominal values

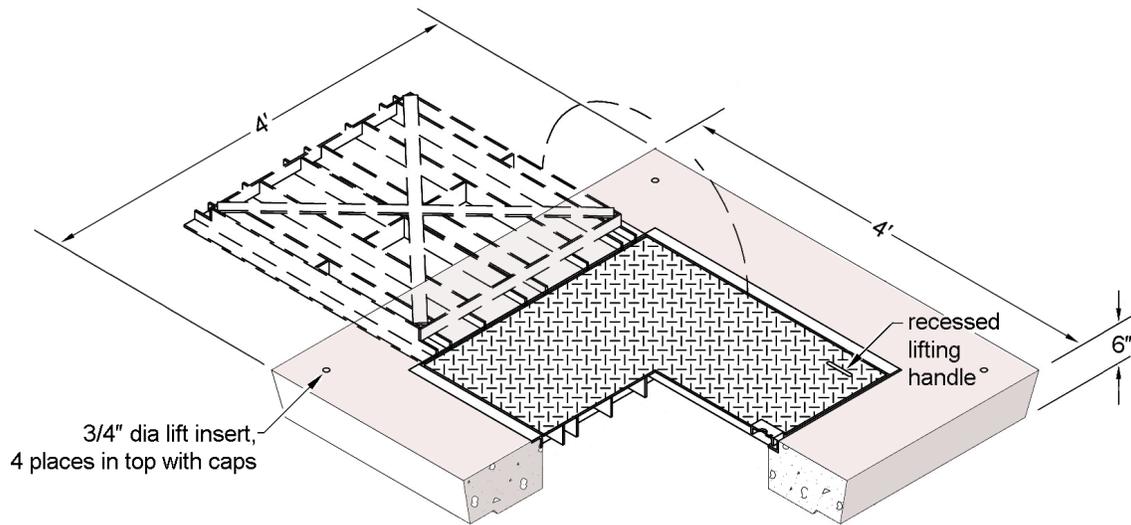


Table 5.3. Enclosure Cover

Stock No.	Cover Dimensions, Nominal, ft-in			Opening, in	Cover/Hatch
	Length	Width	Thickness		
013094	4-0	4-0	0-6	36 by 36, square	one 3- by 3-foot, non-slip, solid cover hatch, H-20
013095	4-0	4-0	0-6	38, dia, round	one 42-inch round, solid cover and frame, H-20
013157	4-8	4-8	0-8	36 by 36, square	one 36- by 36-inch, non-slip, solid cover hatch, H-30

5. Component Requirements, continued

5.3 Enclosure Cover, continued

4-Ft Square Cover, dimensions shown are nominal values

Figure 5.3b. Enclosure Cover with 42-Inch Round Cover

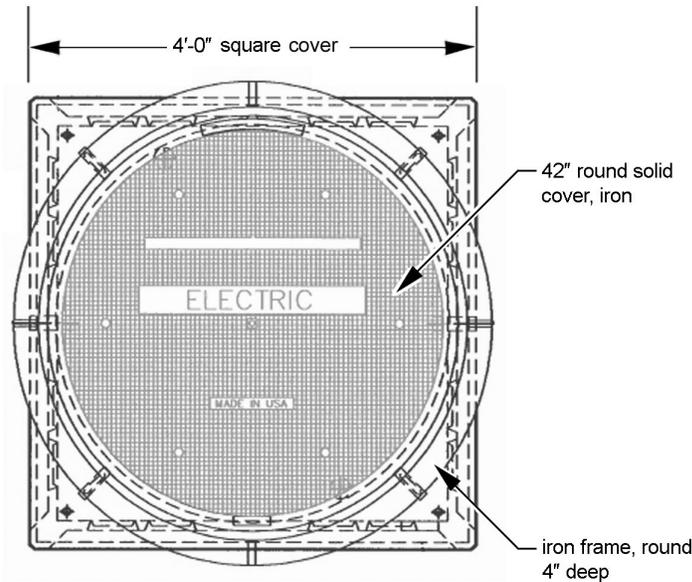
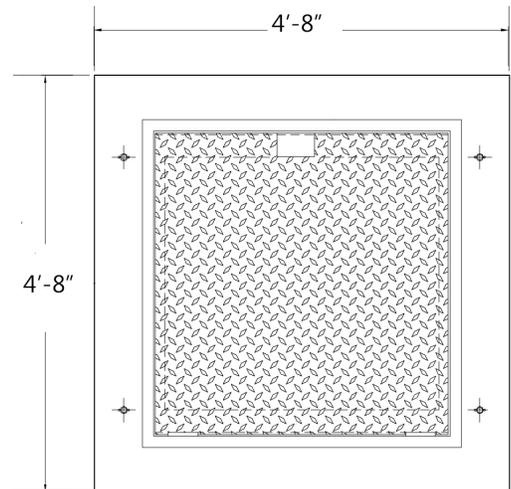


Figure 5.3c. Oversized Cover with 36- by 36-Inch Hatch



6. 444 Enclosure Assemblies

Table 6. 444 Enclosure Components

Assembled Enclosure Stock Number	Enclosure Base Stock Number	Enclosure Cover Stock Number	Hatch
013120	013093	013094	H-20 solid square hatch, 3- by 3-foot
013121	013093	013095	H-20 solid round, 42-inch
013158	013093	013157	H-30 solid square hatch, 3- by 3-foot

Refer to Tables 5.2a, 5.2b, and 5.3 for the various components included in each enclosure assembly.

6.1 Assembly Options

All enclosure assemblies use the same enclosure base. Depending on the type of hatch desired, the enclosure base may be paired with a different cover size with appropriate hatch, as shown in Table 6.

6.2 Assembly Requirements

All solid hatches have non-slip surfaces. Each section of the enclosure components shall have keyways for proper assembly.

7. Issuance

Stock unit: EA

8. Approved Manufacturers

Stock No.	Description	Manufacturer Catalog No.	
		Oldcastle/Utility Vault	H2 Precast
013093	standard base	444-LA Base w/ Iron and GRD In and Out	444 SCL Electrical Vault Base
013094	cover , 4-foot by 4-foot with one 3- by 3-foot, non-slip solid hatch	44-33F Cover w/ I.D. Marker-3150065	440-13 SCL SlipNot Vault Lid
013095	cover , 4- by 4-foot with one 42-inch round, solid cover and frame, H-20	44-38C Cover w/ I.D. Marker with 42" Cover and Frame	440-02 SCL Lid w/42" MH R&C
013157	cover, oversized , with one 36-inch by 36-inch, non-slip, solid hatch, H-30	Oversized Special 44 Top w/3636 LW Hatch (4'-8" x 4'-8" x 8")	440-13 Oversized H-30 SlipNot Vault Lid (4'-10" x 4'-10" x 9")
013120	assembled enclosure with 4-foot by 4-foot cover with one 3-foot by 3-foot, non-slip, H-20, solid hatch	444-LA Base w/ Iron and GRD In and Out w/332P Non-Slip-SCL-3150065	444 SCL Base and Lid with 13 SlipNot Hatch
013121	assembled enclosure with 4-foot by 4-foot cover with one 42-inch round, solid cover and frame, H-20	444-LA Base w/ Iron and GRD In & Out w/42" Cover and Frame-SCL	444 SCL Base and Lid with 42" Ring and Cover
013158	assembled enclosure, oversized , with one 36-inch by 36-inch, non-slip, solid hatch, H-30	444-LA Base w/ Iron and GRD In & Out w/ Oversized Special 44 Top w/3636 LW Hatch	444 SCL Base and Oversized H-30 SlipNot Vault Lid

9. References

Detter, Chris; SCL Distribution Engineer and subject matter expert for 7203.26

Ng, Sharon; SCL Civil Engineer and subject matter expert for 7203.26

SCL 7203.21; "Precast Reinforced Concrete Structure, General"; Material Standard

SCL 7204.70; "Frames and Covers, 42-Inch Round, Iron"; Material Standard

SCL 9246.10; "Pulling Irons - Fundamentals and Detailed Requirements, Looped Radial and Network Systems"; Design Standard

Wang, Quan; SCL Standards Engineer, originator, and subject matter expert for 7203.26