



1. APPLICATION

- A. Precast concrete vaults, lids, and riser sections are installed outdoors in the ground for EWEB electric and water conductors and equipment.

2. REFERENCE STANDARDS

- A. The precast concrete utility structures shall be designed, manufactured and tested according to the latest editions, revisions, and amendments of the applicable standards of NEMA, ANSI, AWS, ASTM, and IEEE and the following:
- 1) ASTM C 857 - Minimum Structural Design loading for Underground Precast Concrete Utility Structures
 - 2) ACI 318 - Building Code for Reinforced Concrete

3. PRODUCTS

- A. Dimensions. See standard details listed at the end of this specification and included as supplements to this specification for required measurements.
- B. Loads. Design for highway loading, H20 with a 30 percent impact factor unless otherwise noted on standard details.
- C. Concrete. The compressive strength of the concrete at 28 days shall be a minimum $f_c' = 4500$ psi.
- D. Concrete Finish. Concrete shall be dense, smooth and free of voids.
- E. Lift Anchors. Provide hot-dipped galvanized "Burke" lift anchors. Approximate location of anchors shown in standard details. Actual location to be determined by

MATERIAL SPECIFICATION
EUGENE WATER & ELECTRIC BOARD

CONCRETE VAULTS, LIDS, AND RISER SECTIONS

NOV 14, 2014 REV.

ES5-2.1100 0

ENGINEERING REVIEW JZO STANDARDS COMMITTEE APPROVAL LMW Page 1 of 5

manufacturer. Shall be rated for 2 tons unless otherwise shown in the standard details.

F. Nameplate. Provide 2”X3”X 3/16” brass nameplate, suitably anchored into the concrete where shown on standard details.

G. Door Assembly. Provide a door assembly with anti-slip surface of the quantity, location, and dimensions shown in the standard details.

- 1) All material shall be hot dipped, galvanized steel.
- 2) The door shall be mounted in a suitable frame, which includes anchors to anchor the assembly in the concrete.
- 3) The door shall be hinged to the frame and spring assisted unless otherwise shown in the standard details.
- 4) A recessed lift handle shall be provided.
- 5) A recessed 3/8” penta head bolt with a spring-loaded latch shall be provided.
- 6) The anti-slip surface covering shall provide a minimum static coefficient of friction of 0.98, meet requirements of latest edition of ASTM Designation C 1028, and UL Listed as slip resistant. Surface shall be SlipNOT Grade 2 coarse, or equal.

H. Knockouts. Provide knockouts for conduit and ground rods as shown in the standard details.

I. C Channel. Provide hot-dipped galvanized C channels, Unitstrut P4000, or approved equal embedded in the sides of the vaults as shown in the standard details.

J. Sump. Provide sump of the dimensions and location shown in the standard details. Where shown in the standard details provide a removable grate over sump that is flush with vault floor.

K. Pulling Irons. Provide hot-dipped galvanized pulling irons located where shown in the standard details. Pulling irons shall be capable of withstanding 14,000 lbs. tension.

L. Alignment. Provide lips of keys in the lids, riser section, and vault sections where shown in the standard details to align the complete assembly.

MATERIAL SPECIFICATION EUGENE WATER & ELECTRIC BOARD	
CONCRETE VAULTS, LIDS, AND RISER SECTIONS	NOV 14, 2014 REV. ES5-2.1100 0
Page 2 of 5	

4. TEST

A. Factory Tests: As required by applicable standards.

5. WARRANTY

A. Provide a warranty period of eighteen (18) months after the date of final acceptance.

B. Unless otherwise stated, all equipment shall be free and clear of any lien or encumbrances and shall be new and the current model and shall carry full manufacturer warranties.

C. Vendor warrants to EWEB that any goods/equipment furnished will operate and function in the manner represented by Vendor and will achieve the performance stated in the material specification when operating within the design conditions described therein.

D. Vendor warrants the goods/equipment is free from defects in material and workmanship, and agrees to repair or replace any unit that fails or cracks during normal use, including all parts and labor at no cost to EWEB.

6. PACKAGING AND DELIVERY

A. The vendor shall insure the proper protection from damage during transit. Any damage in transit is the vendor's responsibility.

7. SUBMITTALS

A. The manufacturer shall furnish one (1) set of 11" x 17" drawings of each size and type of concrete lid, riser section, and vault for initial product approval and approval of subsequent changes before shipment of product.

B. An electronic copy of all drawings of each size and type of concrete lid, riser section, and vault shall be furnished. These files should be compatible with the latest version of AutoCAD®, or as an alternative in PDF file format.

C. Drawings shall contain the following information:

MATERIAL SPECIFICATION EUGENE WATER & ELECTRIC BOARD	
CONCRETE VAULTS, LIDS, AND RISER SECTIONS	NOV 14, 2014 REV. ES5-2.1100 0
Page 3 of 5	

- 1) Dimensions
- 2) Rebar design information
- 3) Concrete test results
- 4) Description of racking and hardware
- 5) Traffic loading calculations

8. EWEB STORES INFORMATION

A. This specification shall be used to purchase the material with the stock codes and associated standard detail numbers listed below. The standard details are included as supplements and are part of this specification.

<u>Stock Code</u>	<u>Standard Detail No</u>	<u>Revision</u>
348-0000480	ES5-2.1100.01A	0
348-0000481	ES5-2.1100.01B	0
348-0000482	ES5-2.1100.02A	0
348-0000483	ES5-2.1100.02B	0
348-0000491	ES5-2.1100.03A	0
348-0000492	ES5-2.1100.03B	0
348-0000495	ES5-2.1100.04	0
348-0000496	ES5-2.1100.05	0
348-0000497	ES5-2.1100.06A	0
348-0000498	ES5-2.1100.06B	0
348-0000499	ES5-2.1100.07A	0
348-0000500	ES5-2.1100.07B	0
348-0000501	ES5-2.1100.08	0
348-0000502	ES5-2.1100.09	0
348-0000504	ES5-2.1100.10	0
348-0000505	ES5-2.1100.11A	0
348-0000506	ES5-2.1100.11B	0
348-0000507	ES5-2.1100.12	0
348-0000508	ES5-2.1100.13	0
348-0000510	ES5-2.1100.14	0
348-0000511	ES5-2.1100.15A	0
348-0000512	ES5-2.1100.15B	0
348-0000513	ES5-2.1100.16	0

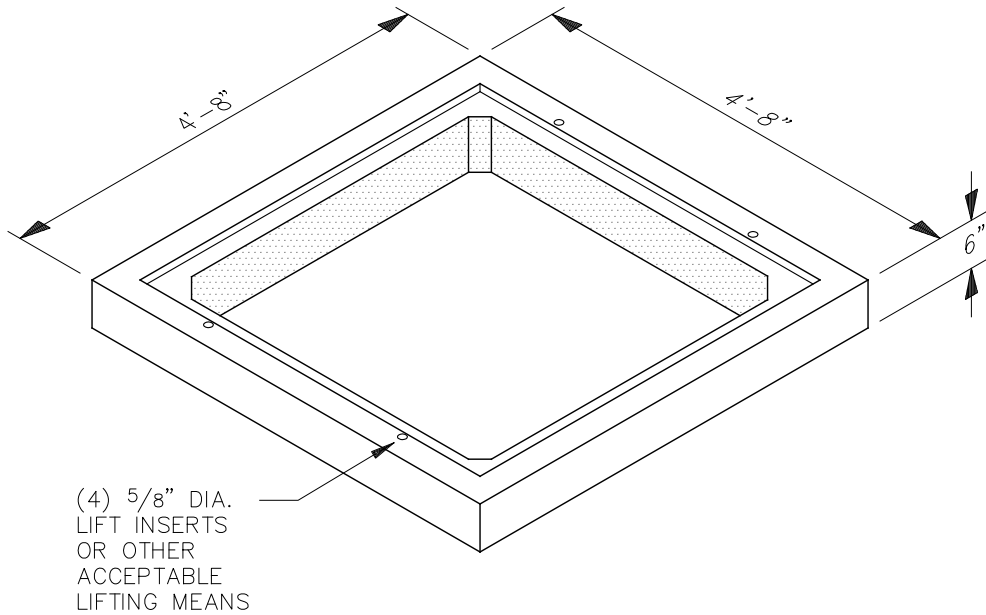
MATERIAL SPECIFICATION	
EUGENE WATER & ELECTRIC BOARD	
CONCRETE VAULTS, LIDS, AND RISER SECTIONS	NOV 14, 2014 REV. ES5-2.1100 0
Page 4 of 5	

<u>Stock Code</u>	<u>Standard Detail No.</u>	<u>Revision</u>
	ES5-2.1100.17 (Not Used)	-
348-0000516	ES5-2.1100.18	0
	ES5-2.1100.19 (Not Used)	-
348-0000535	ES5-2.1100.20	0
348-0000537	ES5-2.1100.21	0
	ES5-2.1100.22 (Not Used)	-
	ES5-2.1100.23 (Not Used)	-
348-0000538	ES5-2.1100.24	0
348-0000541	ES5-2.1100.25	0
348-0000542	ES5-2.1100.26	0
348-0000493	ES5-2.1100.27	0
348-0000494	ES5-2.1100.28	0

MATERIAL SPECIFICATION
EUGENE WATER & ELECTRIC BOARD

CONCRETE VAULTS, LIDS, AND RISER SECTIONS

NOV 14, 2014 **REV.**
ES5-2.1100 0



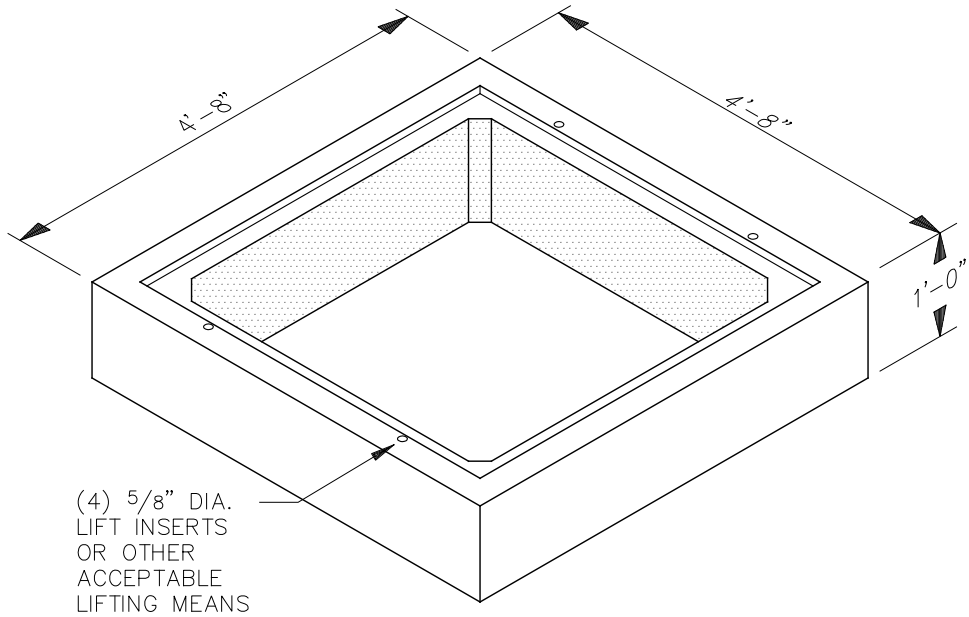
EWB STOCK CODE 348-0000480

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

4'-8" X 4'-8" X 6" CONCRETE RISER SECTION

NOV 14, 2014 **REV**
 ES5-2.1100.01A **0**



EWEB STOCK CODE 348-0000481

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

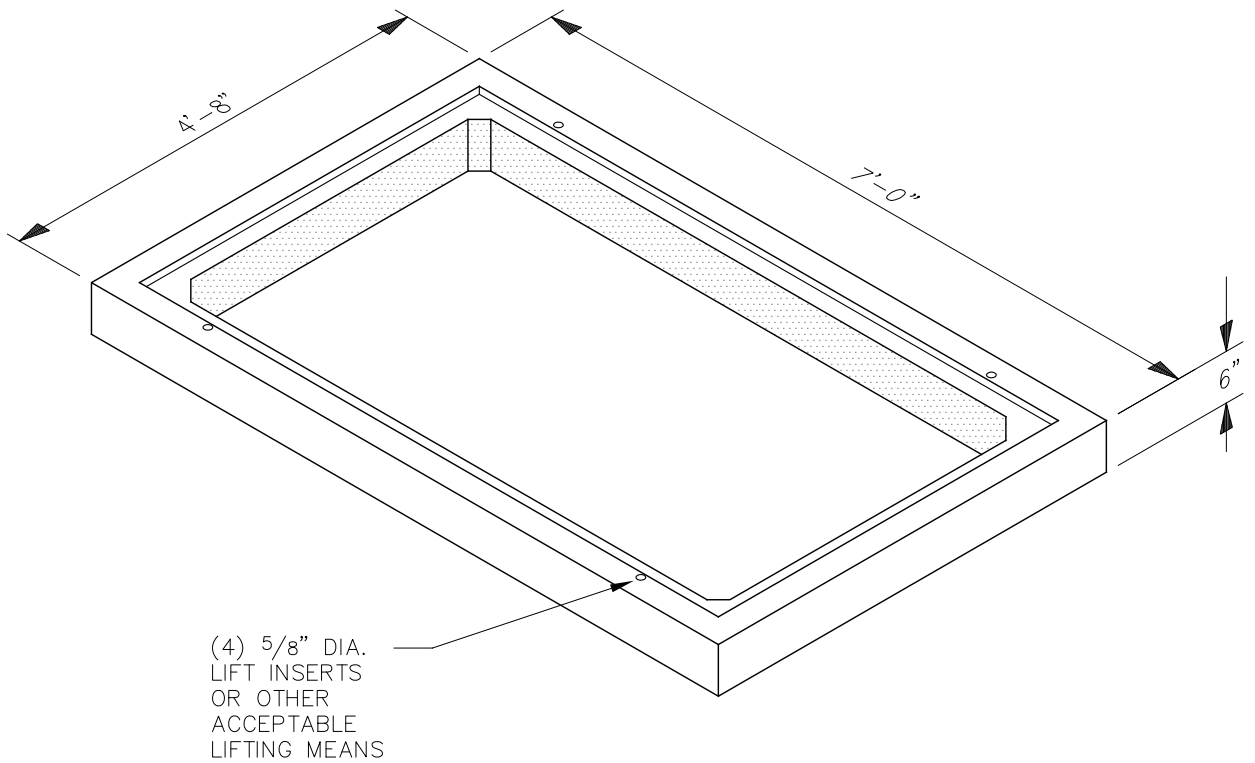
4'-8" X 4'-8" X 1'-0" CONCRETE RISER SECTION

NOV 14, 2014

REV

ES5-2.1100.01B

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EWEB STOCK CODE 348-0000482

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

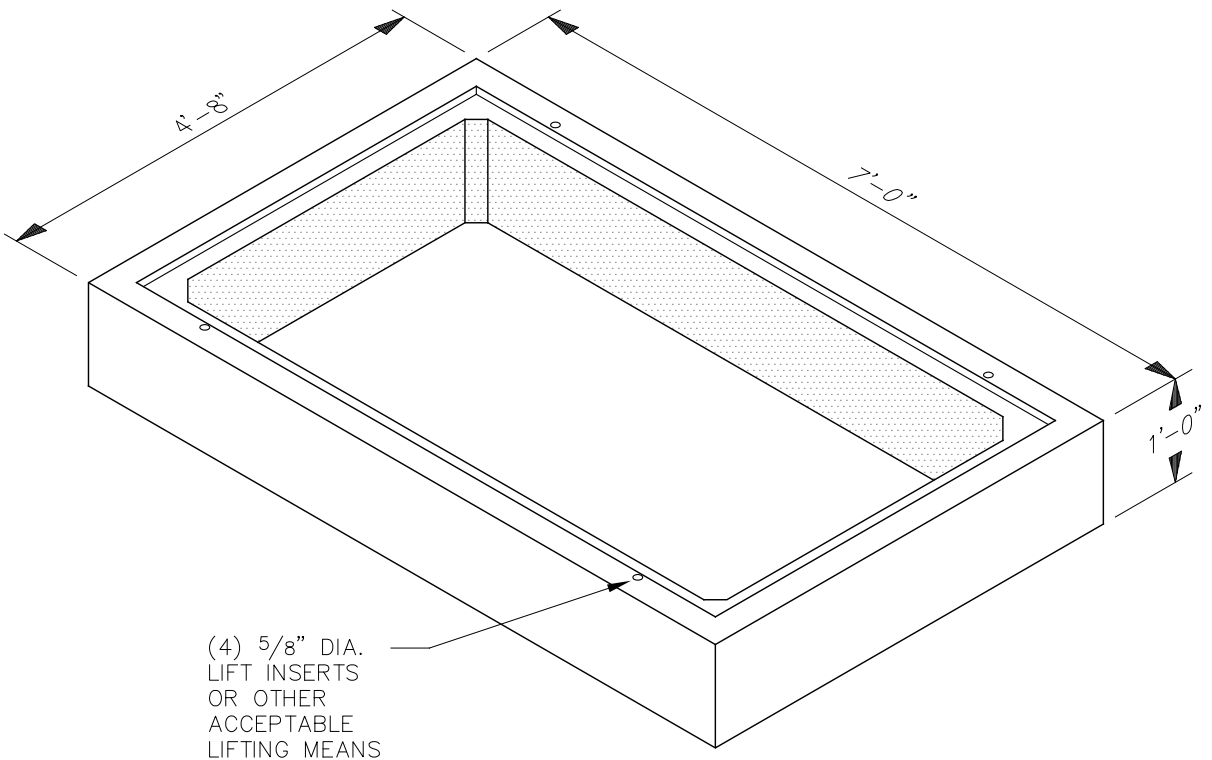
4'-8" X 7'-0" X 6" CONCRETE RISER SECTION

NOV 14, 2014

REV

ES5-2.1100.02A

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EWB STOCK CODE 348-0000483

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

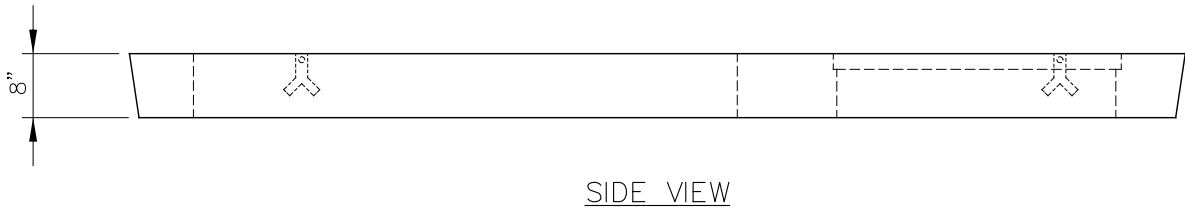
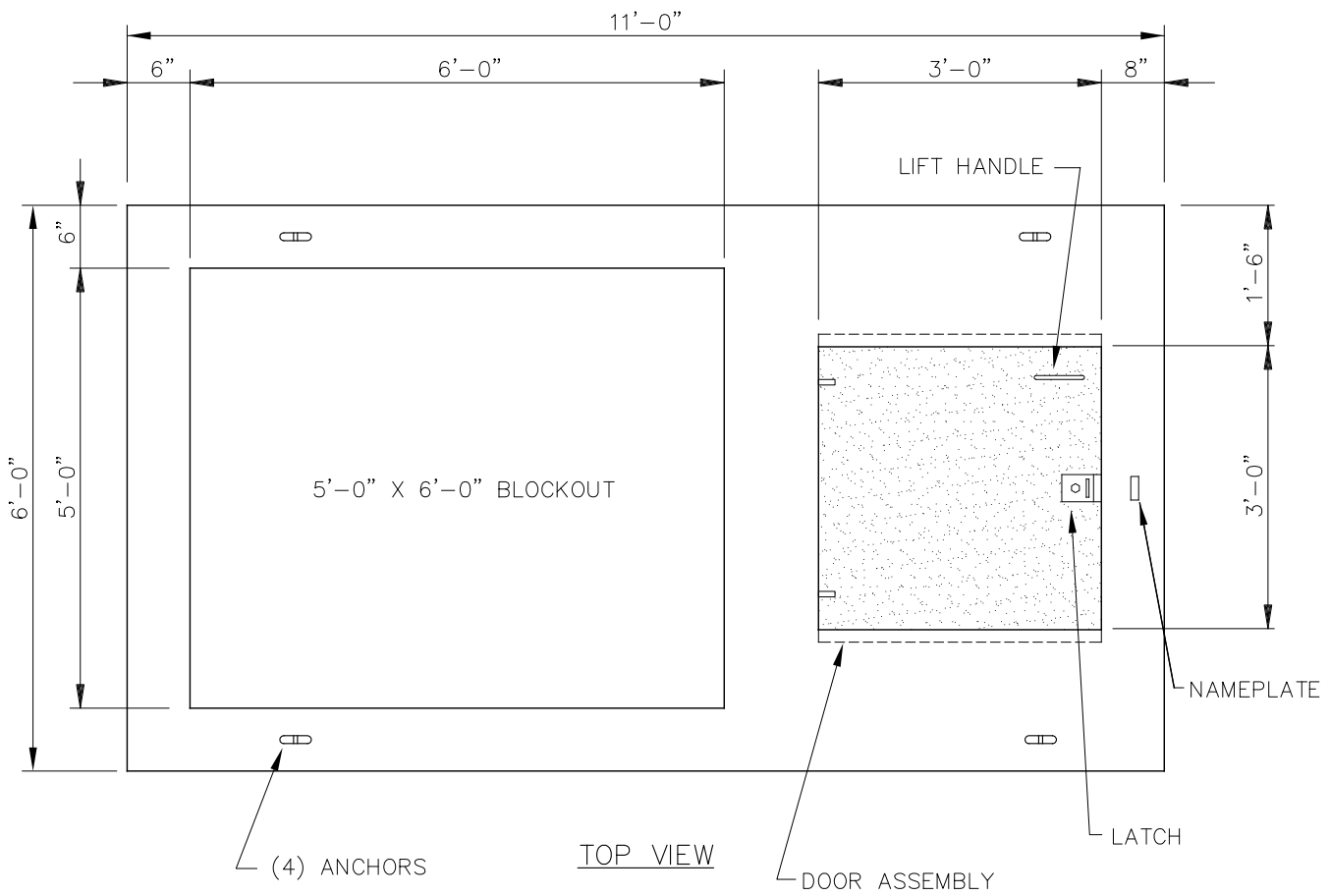
4'-8" X 7'-0" X 1'-0" CONCRETE RISER SECTION

NOV 14, 2014

REV

ES5-2.1100.02B

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NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

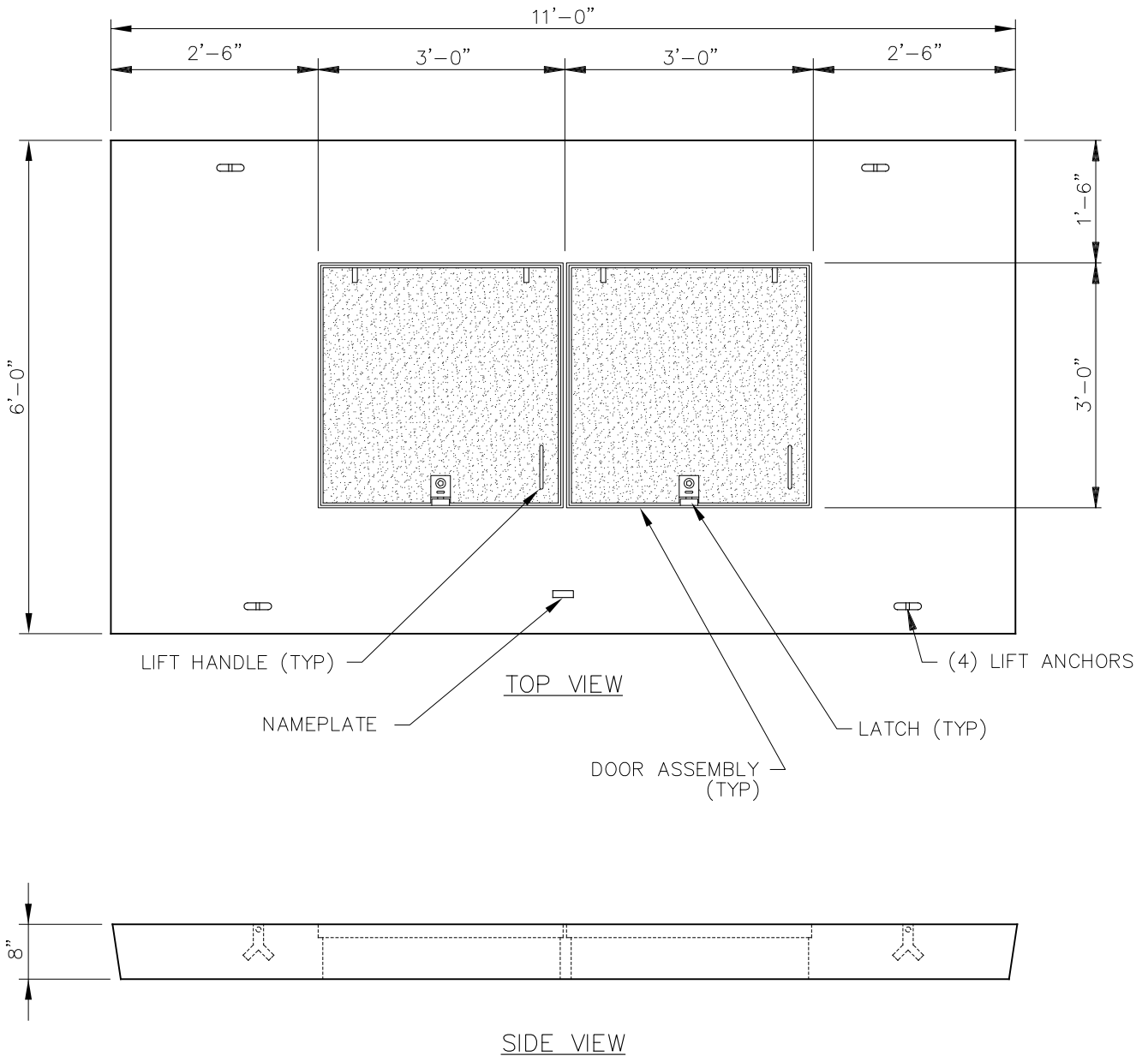
EWEB STOCK CODE 348-0000491

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**6'-0" X 11'-0" X 8" CONCRETE SWITCH VAULT LID
WITH 5'-0" X 6'-0" OPENING AND
3'-0" X 3'-0" HINGED STEEL DOOR**

NOV 14, 2014 **REV.**
ES5-2.1100.03A **0**



NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

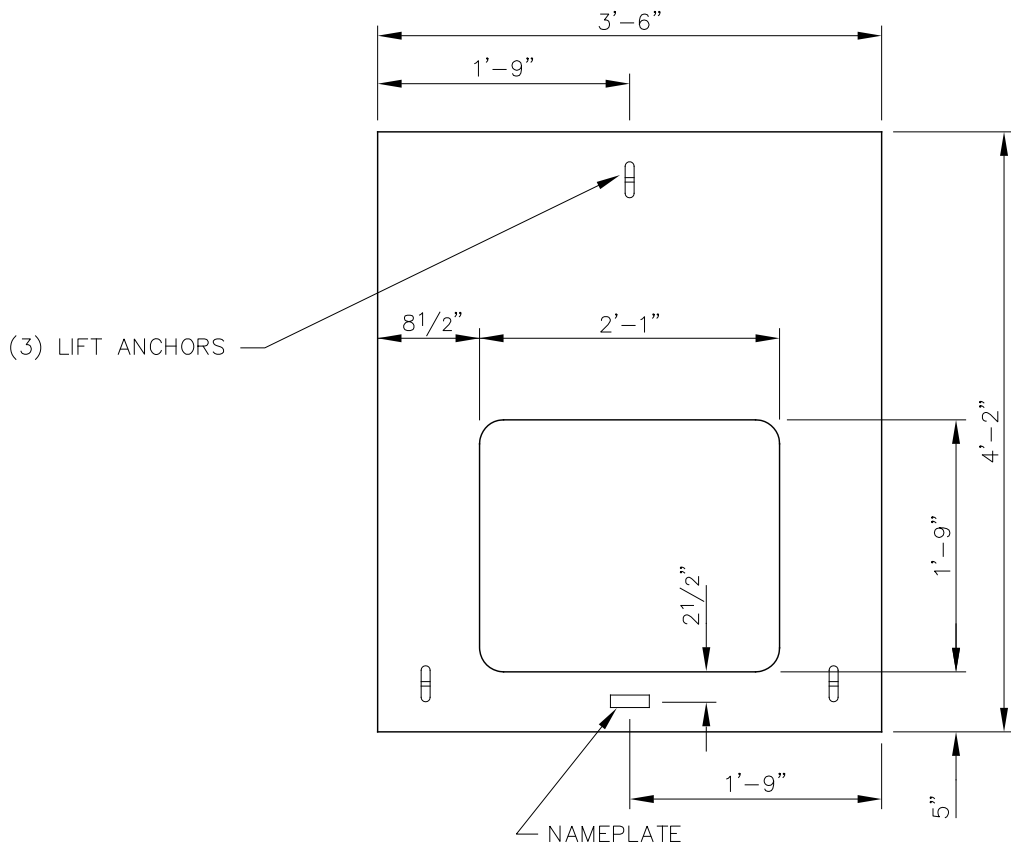
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STANDARD DETAIL

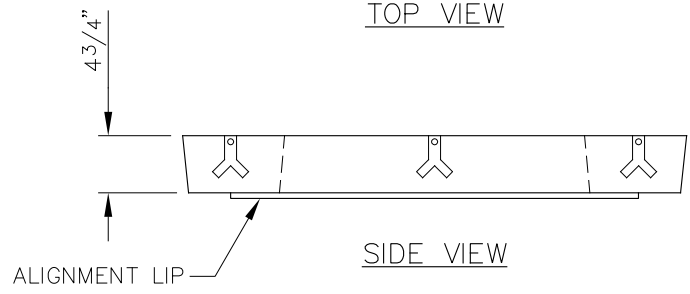
EUGENE WATER & ELECTRIC BOARD

**6'-0" X 11'-0" X 8" CONCRETE VAULT LID WITH
TWO 3'-0" X 3'-0" HINGED STEEL DOORS**

NOV 14, 2014 **REV.**
ES5-2.1100.03B **0**



TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000495

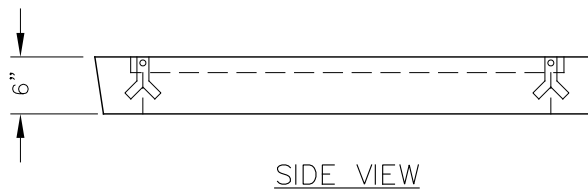
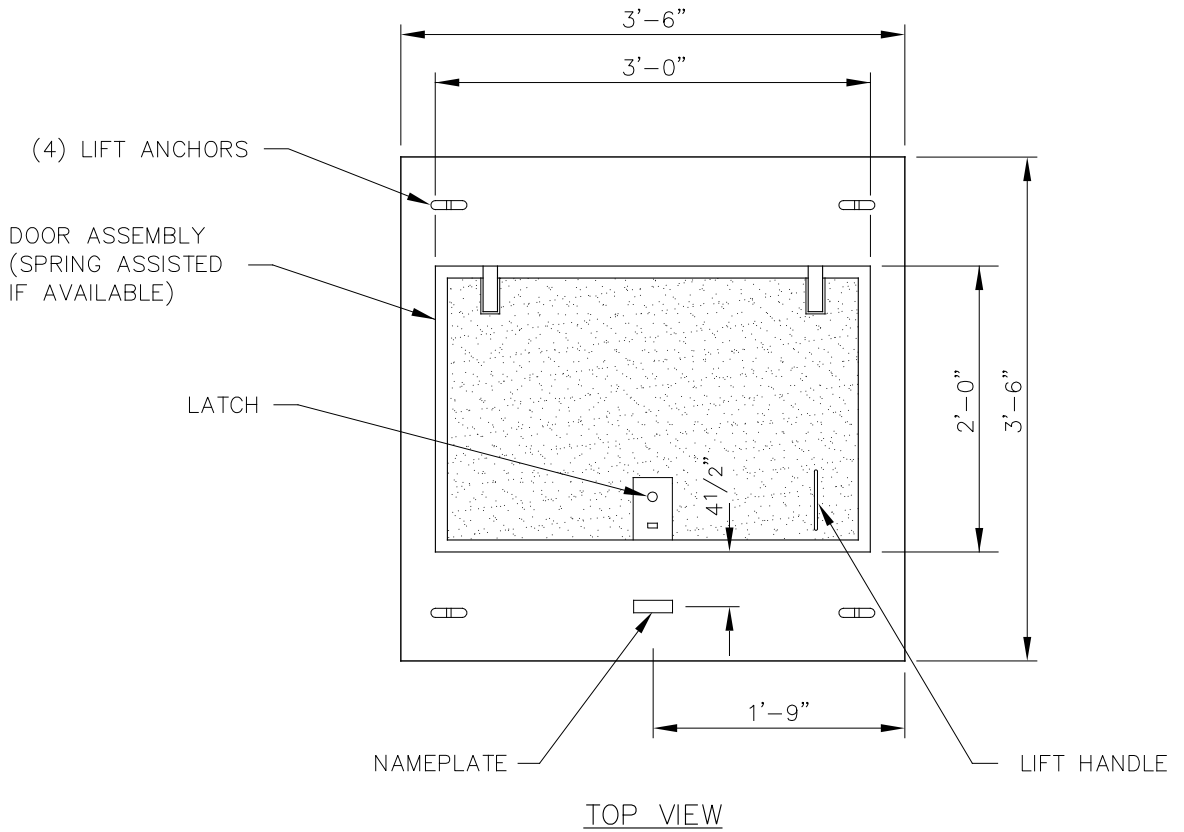
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**3'-6" X 4'-2" X 4 3/4" CONCRETE LID
WITH 1'-9" X 2'-1" OPENING**

NOV 14, 2014
ES5-2.1100.04

REV
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NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000496

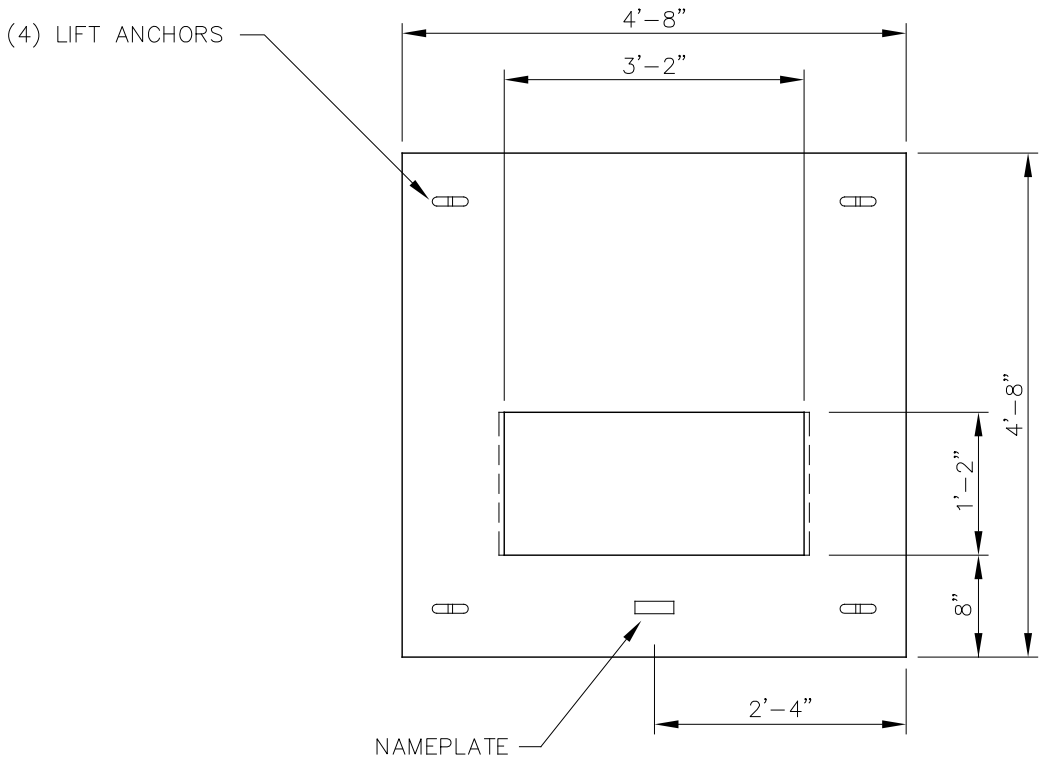
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**3'-6" X 3'-6" X 6" CONCRETE LID WITH 2'-0" X 3'-0"
HINGED STEEL DOOR**

NOV 14, 2014
ES5-2.1100.05

REV
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TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

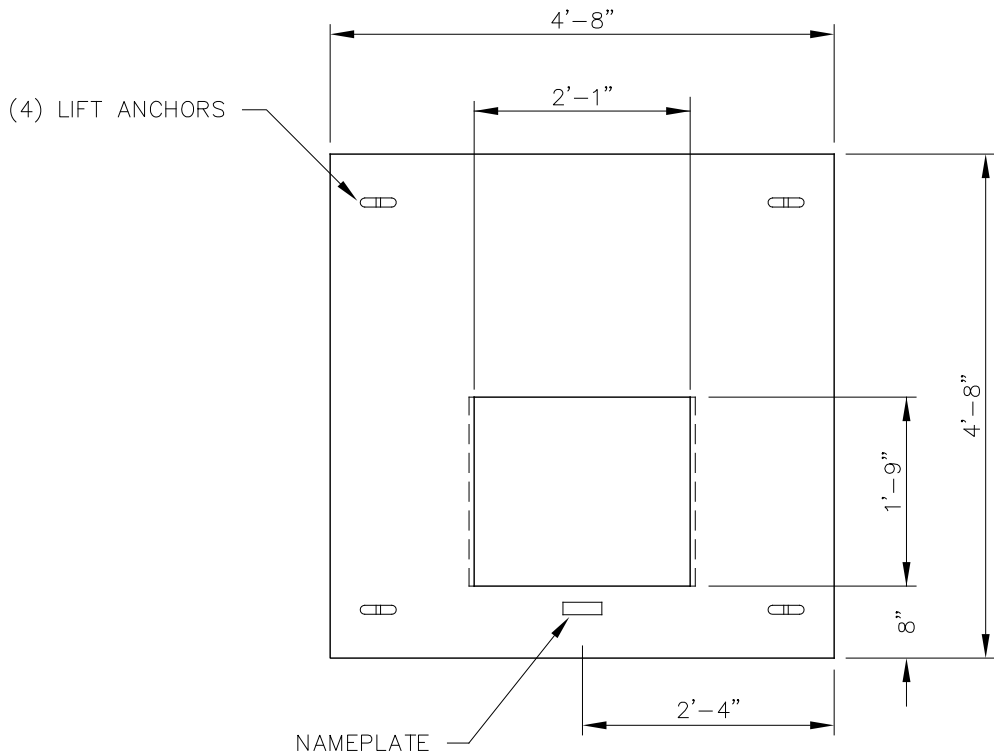
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STANDARD DETAIL

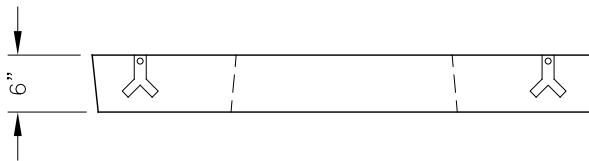
EUGENE WATER & ELECTRIC BOARD

**4'-8" X 4'-8" X 6" CONCRETE LID
WITH 1'-2" X 3'-2" OPENING**

NOV 14, 2014 **REV**
ES5-2.1100.06A **0**



TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

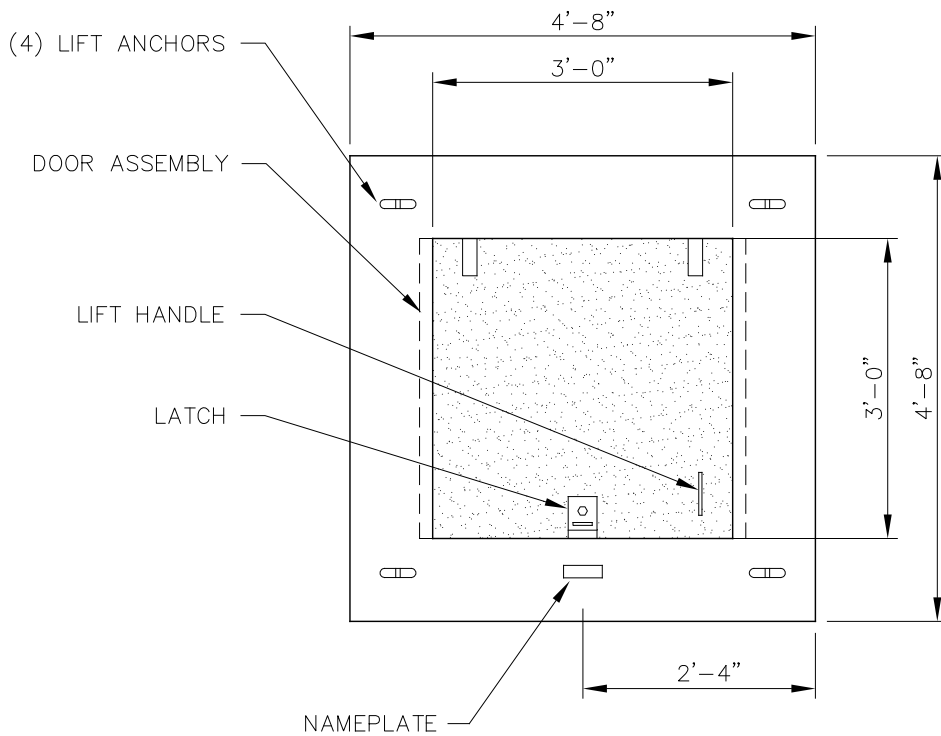
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STANDARD DETAIL

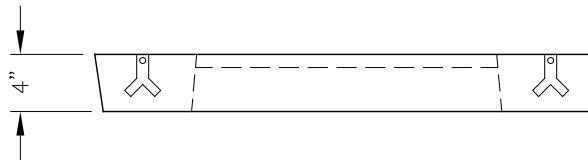
EUGENE WATER & ELECTRIC BOARD

**4'-8" X 4'-8" X 6" CONCRETE LID
WITH 1'-9" X 2'-1" OPENING**

NOV 14, 2014 **REV**
ES5-2.1100.06B **0**



TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.
3. MOST COMMONLY USED TO REPLACE EXISTING 4" LIDS IN SIDEWALK.
4. LID IS NOT TRAFFIC RATED.

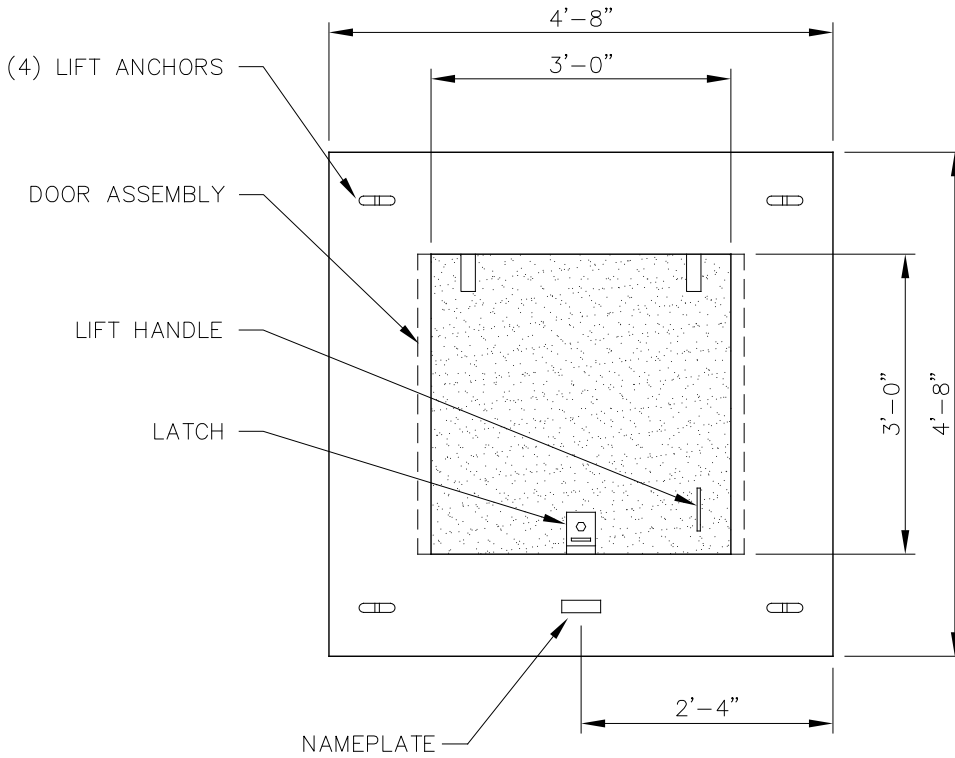
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STANDARD DETAIL

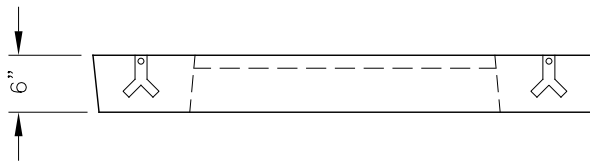
EUGENE WATER & ELECTRIC BOARD

**4'-8" X 4'-8" X 4" CONCRETE LID
WITH 3'-0" X 3'-0" HINGED STEEL DOOR**

NOV 14, 2014 **REV**
ES5-2.1100.07A **0**



TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

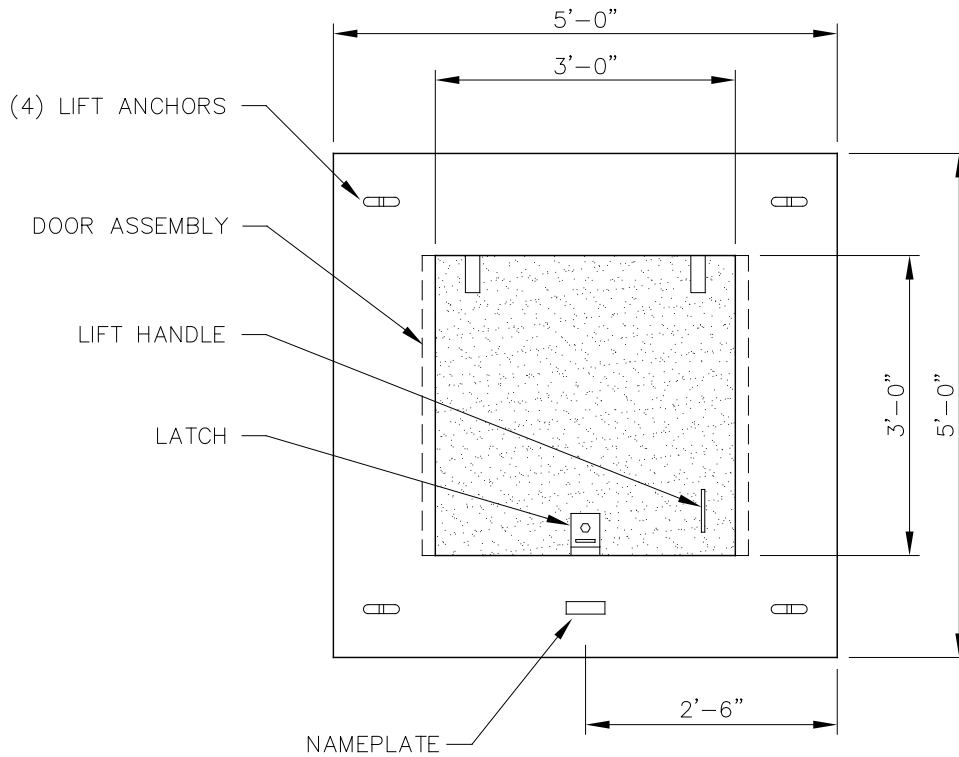
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STANDARD DETAIL

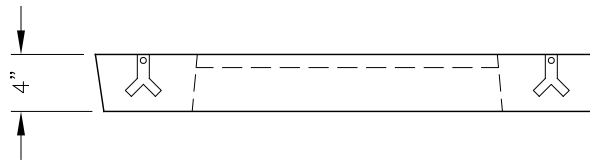
EUGENE WATER & ELECTRIC BOARD

**4'-8" X 4'-8" X 6" CONCRETE LID
WITH 3'-0" X 3'-0" HINGED STEEL DOOR**

NOV 14, 2014 **REV**
ES5-2.1100.07B **0**



TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.
3. MOST COMMONLY USED TO REPLACE EXISTING 4" LIDS IN SIDEWALK.
4. LID IS NOT TRAFFIC RATED.

EWEB STOCK CODE 348-0000501

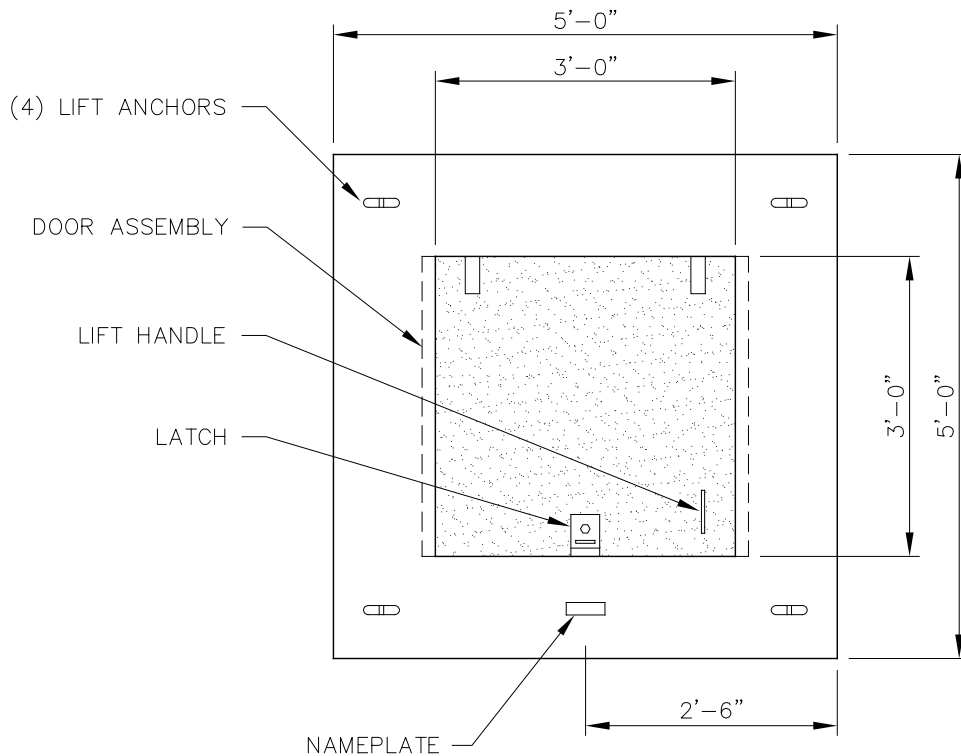
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

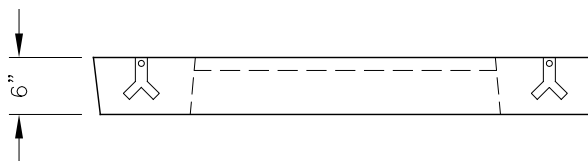
**5'-0" X 5'-0" X 4" CONCRETE LID
WITH 3'-0" X 3'-0" HINGED STEEL DOOR**

NOV 14, 2014
ES5-2.1100.08

REV
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TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000502

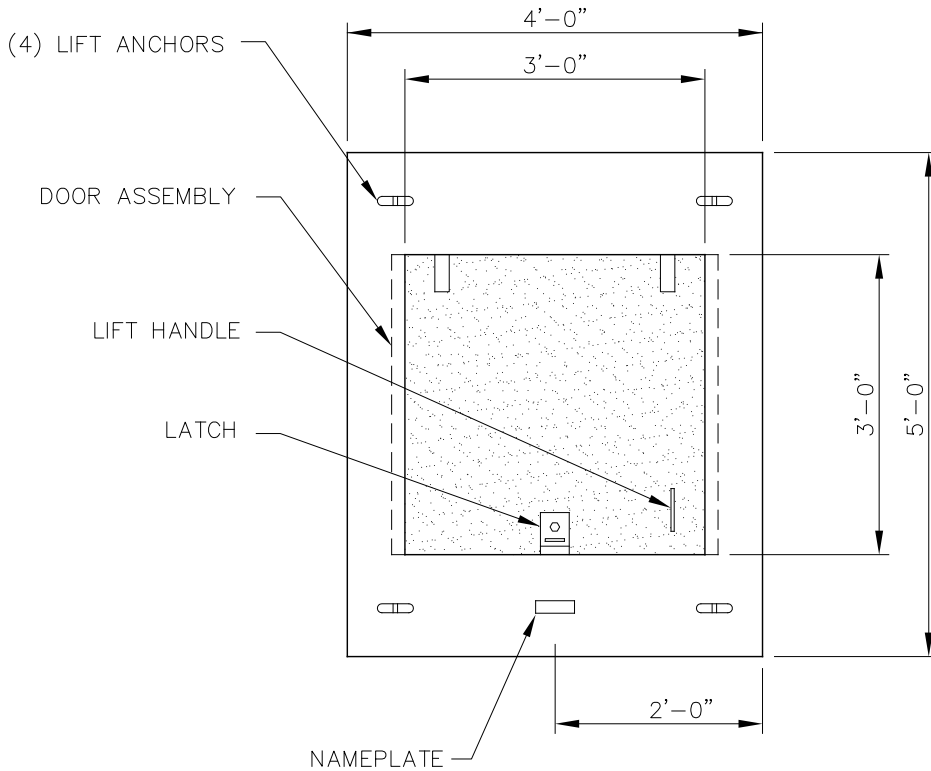
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

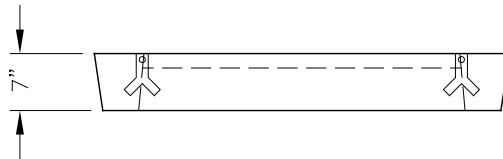
**5'-0" X 5'-0" X 6" CONCRETE LID
WITH 3'-0" X 3'-0" HINGED STEEL DOOR**

NOV 14, 2014
ES5-2.1100.09

**REV
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TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.
3. MOST COMMONLY USED TO REPLACE EXISTING SUBMERSIBLE TRANSFORMER LIDS LOCATED IN SIDEWALK.

EWEB STOCK CODE 348-0000504

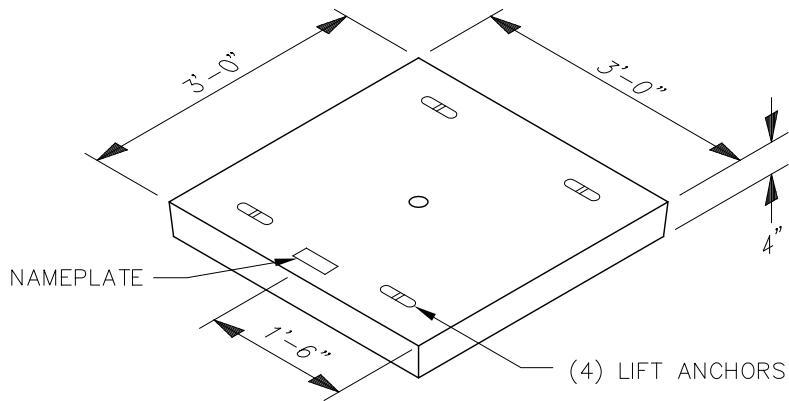
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**5'-0" X 4'-0" X 7" CONCRETE LID
WITH 3'-0" X 3'-0" HINGED STEEL DOOR**

NOV 14, 2014
ES5-2.1100.10

REV
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NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000505

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

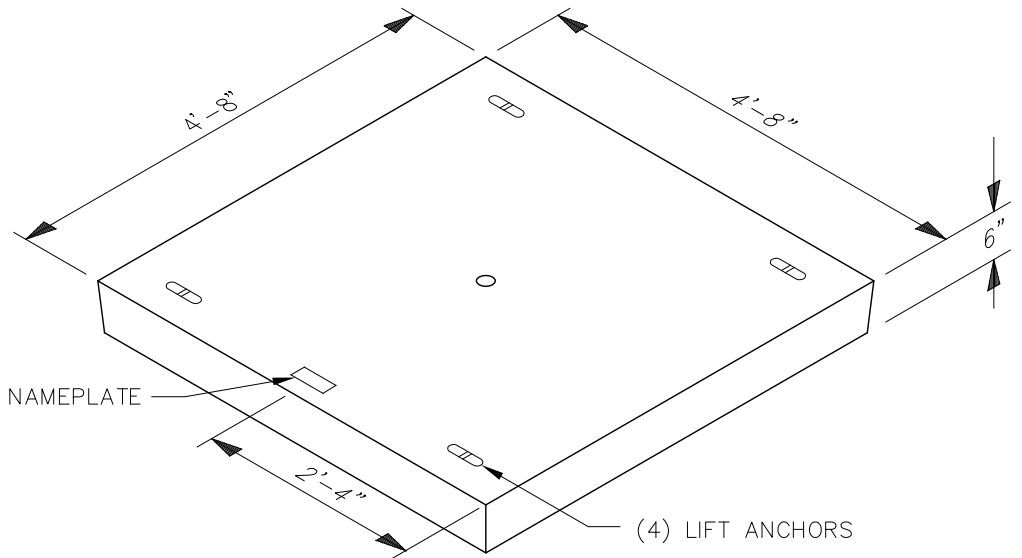
3'-0" X 3'-0" X 4" SOLID CONCRETE LID

NOV 14, 2014

ES5-2.1100.11A

REV

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NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000506

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

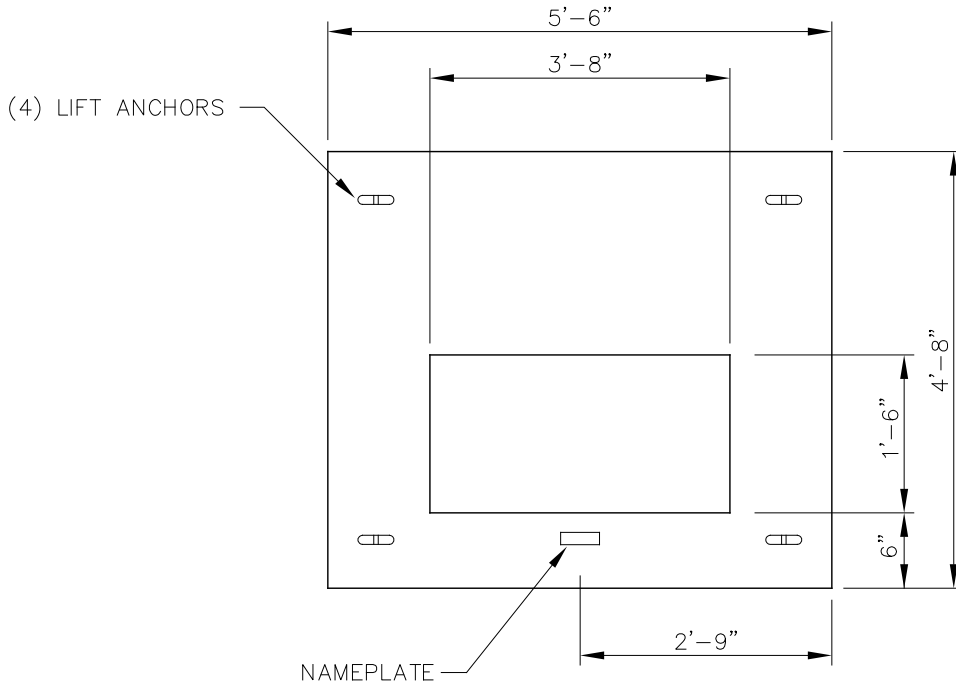
4'-8" X 4'-8" X 6" SOLID CONCRETE LID

NOV 14, 2014

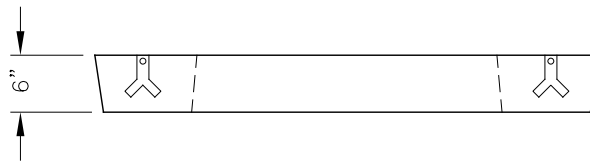
ES5-2.1100.11B

REV

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TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000507

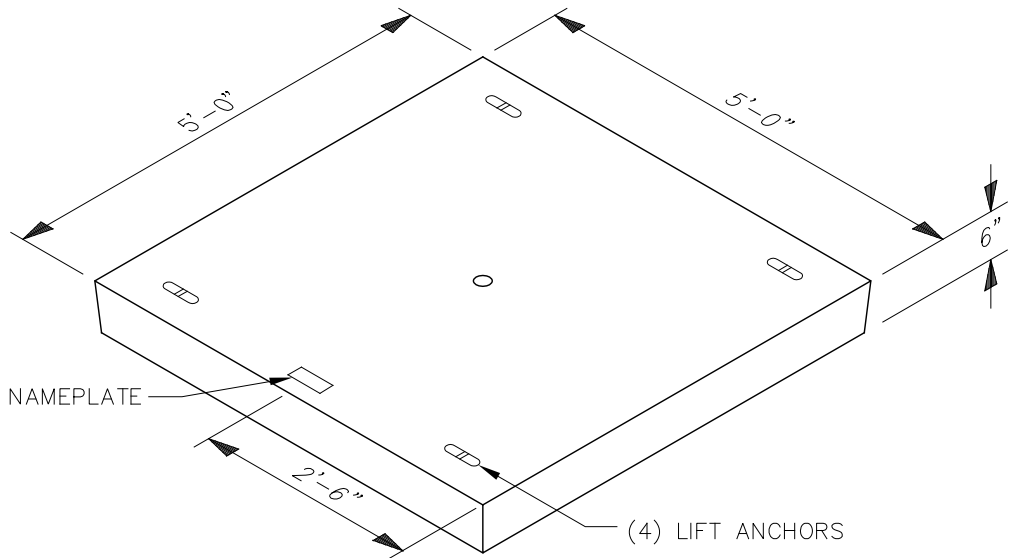
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**4'-8" X 5'-6" X 6" CONCRETE LID
WITH 1'-6" X 3'-8" OPENING**

NOV 14, 2014
ES5-2.1100.12

REV
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NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000508

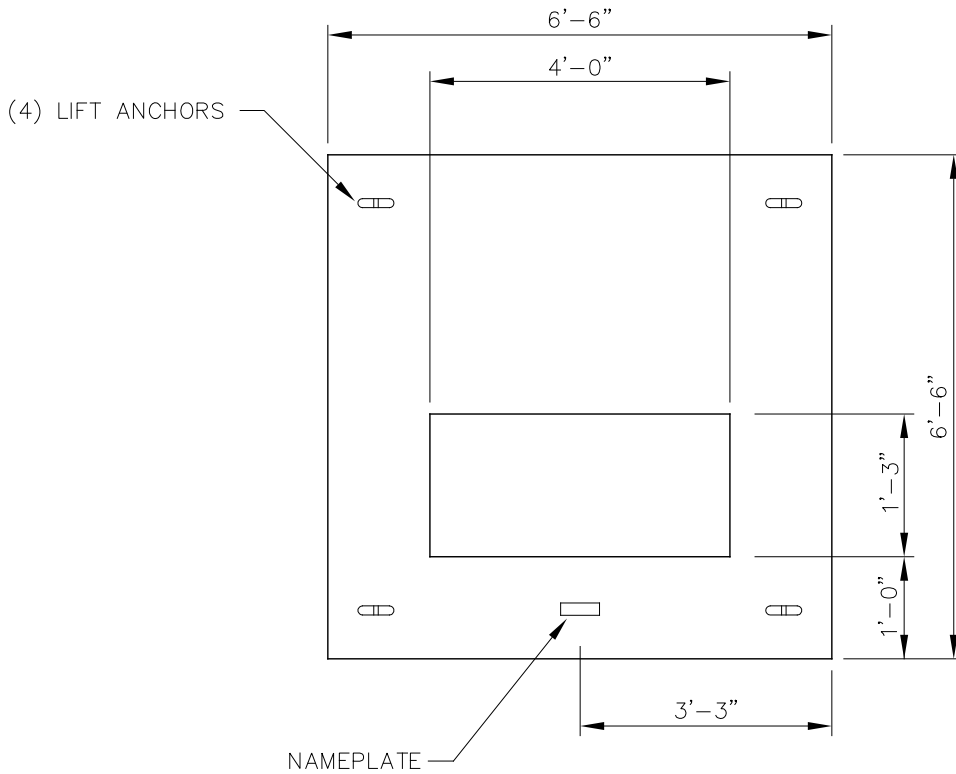
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

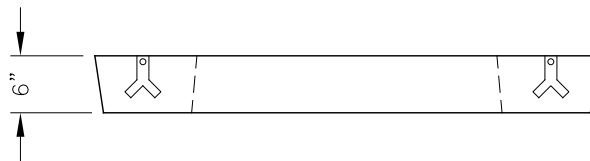
5'-0" X 5'-0" X 6" SOLID CONCRETE LID

NOV 14, 2014
ES5-2.1100.13

REV
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TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000510

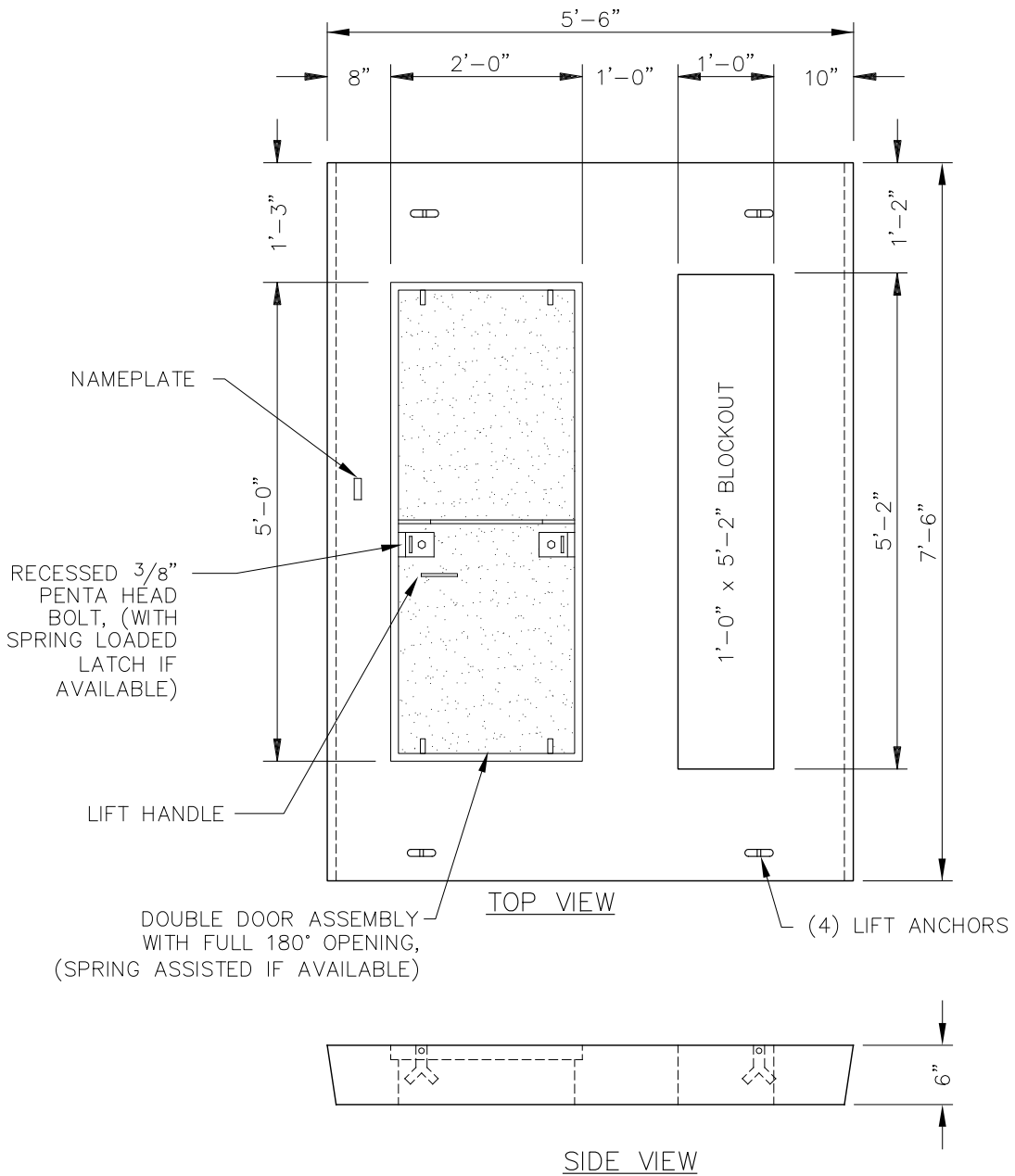
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**6'-6" X 6'-6" X 6" CONCRETE LID
WITH 1'-3" X 4'-0" OPENING**

NOV 14, 2014
ES5-2.1100.14

REV
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NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

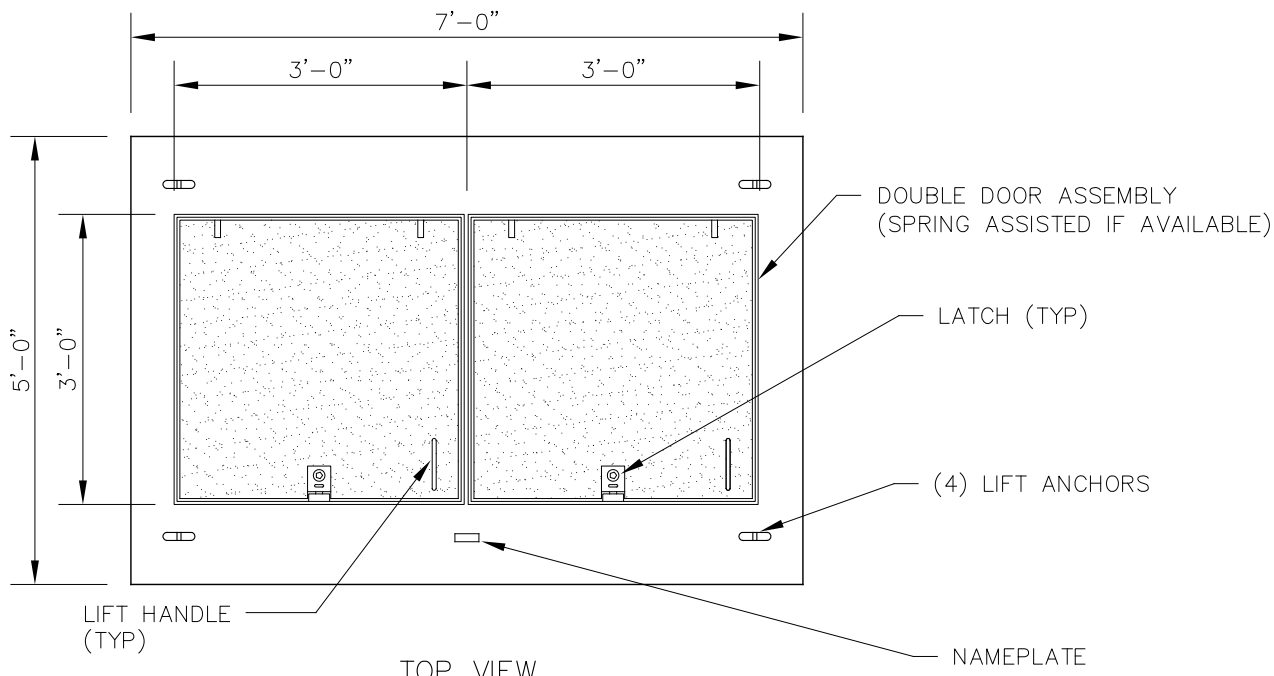
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STANDARD DETAIL

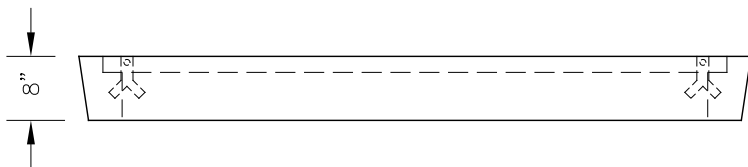
EUGENE WATER & ELECTRIC BOARD

**5'-6" X 7'-6" X 6" CONCRETE SECTIONALIZING LID
WITH 1'-0" X 5'-2" OPENING
AND TWO 2'-6" X 2'-0" HINGED STEEL DOORS**

NOV 14, 2014 **REV**
ES5-2.1100.15A **0**



TOP VIEW



SIDE VIEW

NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

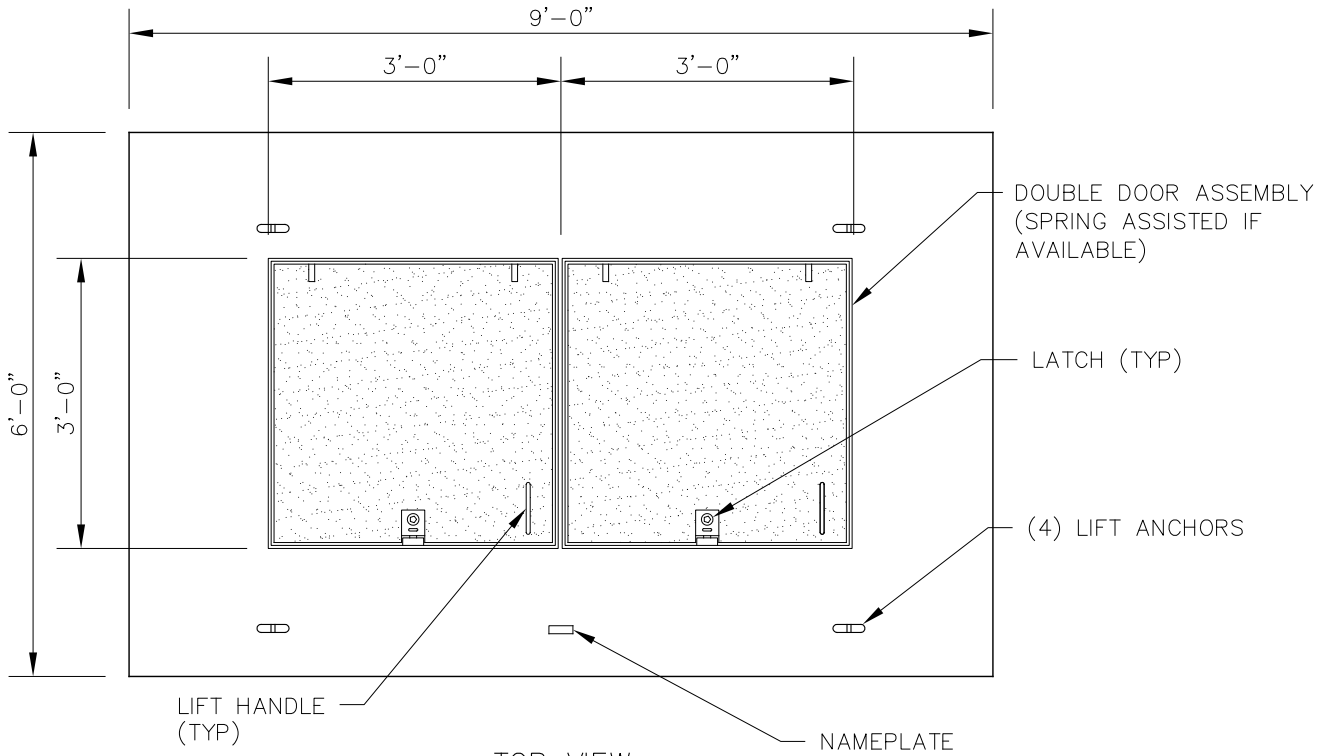
EWEB STOCK CODE 348-0000512

STANDARD DETAIL

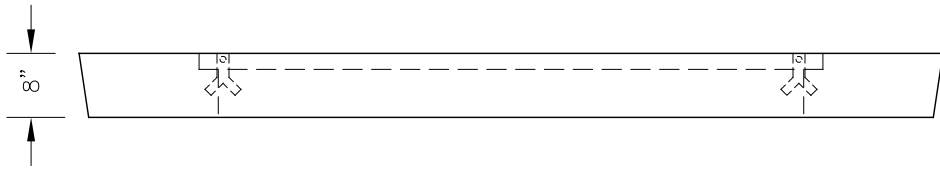
EUGENE WATER & ELECTRIC BOARD

**5'-0" X 7'-0" X 8" CONCRETE LID
WITH TWO 3'-0" X 3'-0" HINGED STEEL DOORS**

NOV 14, 2014 **REV**
ES5-2.1100.15B **0**



TOP VIEW

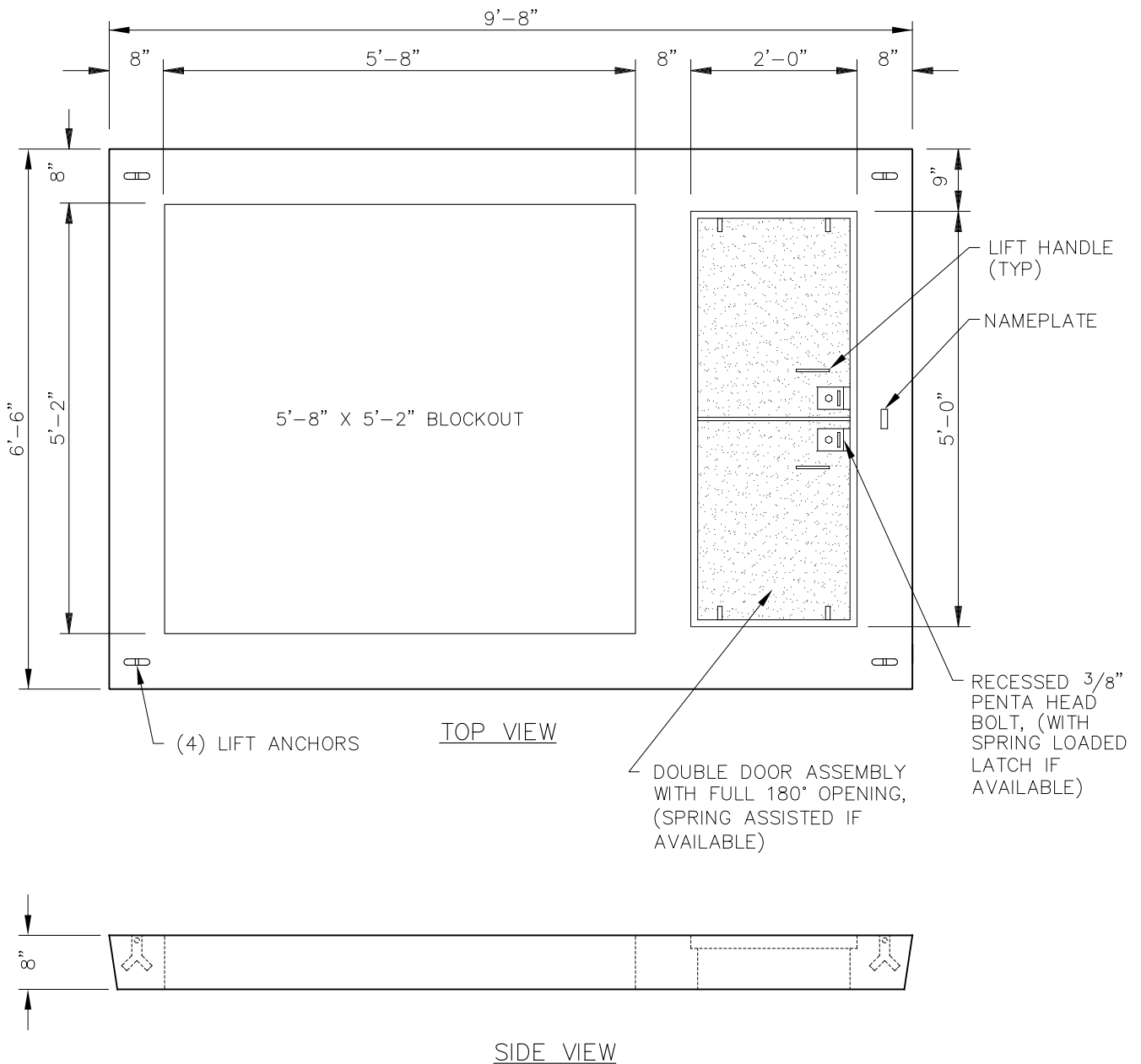


SIDE VIEW

- NOTES:
1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
 2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000513

STANDARD DETAIL		
EUGENE WATER & ELECTRIC BOARD		
6'-0" X 9'-0" X 8" CONCRETE LID WITH TWO 3'-0" X 3'-0" HINGED STEEL DOORS	NOV 14, 2014 ES5-2.1100.16	REV 0



NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000516

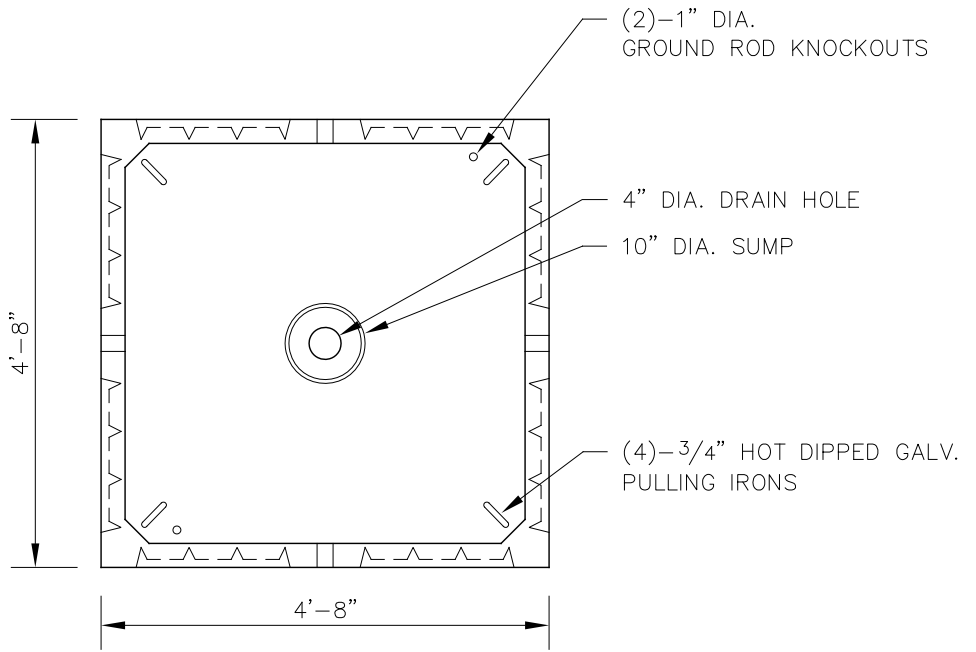
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

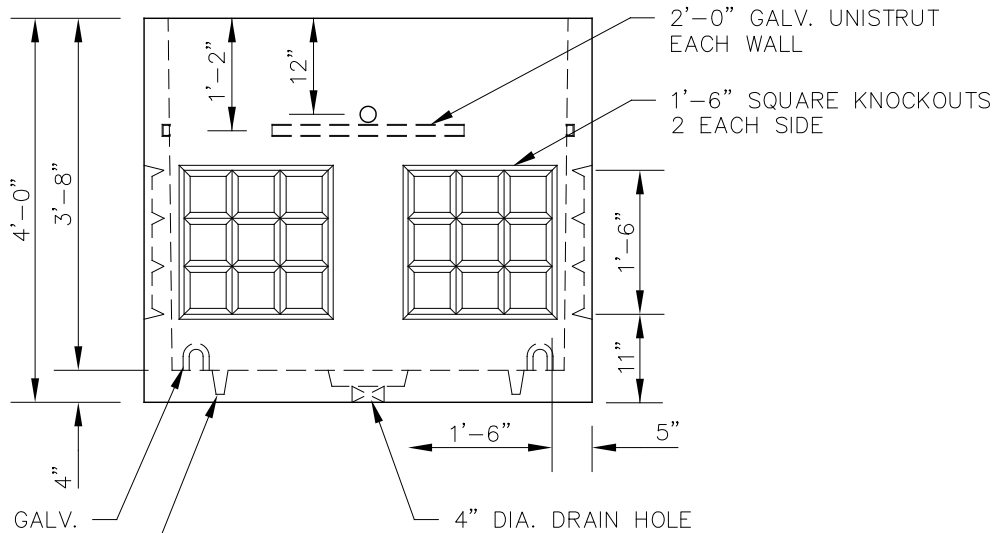
**6'-6" X 9'-8" X 8" CONCRETE SWITCH VAULT LID
WITH 5'-2" X 5'-8" OPENING AND
TWO 2'-6" X 2'-0" HINGED STEEL DOORS**

NOV 14, 2014
ES5-2.1100.18

REV
0



TOP VIEW



SIDE VIEW

(4)-3/4" HOT DIPPED GALV. PULLING IRONS

(2)-1" DIA. GROUND ROD KNOCKOUTS

EWEB STOCK CODE 348-0000535

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

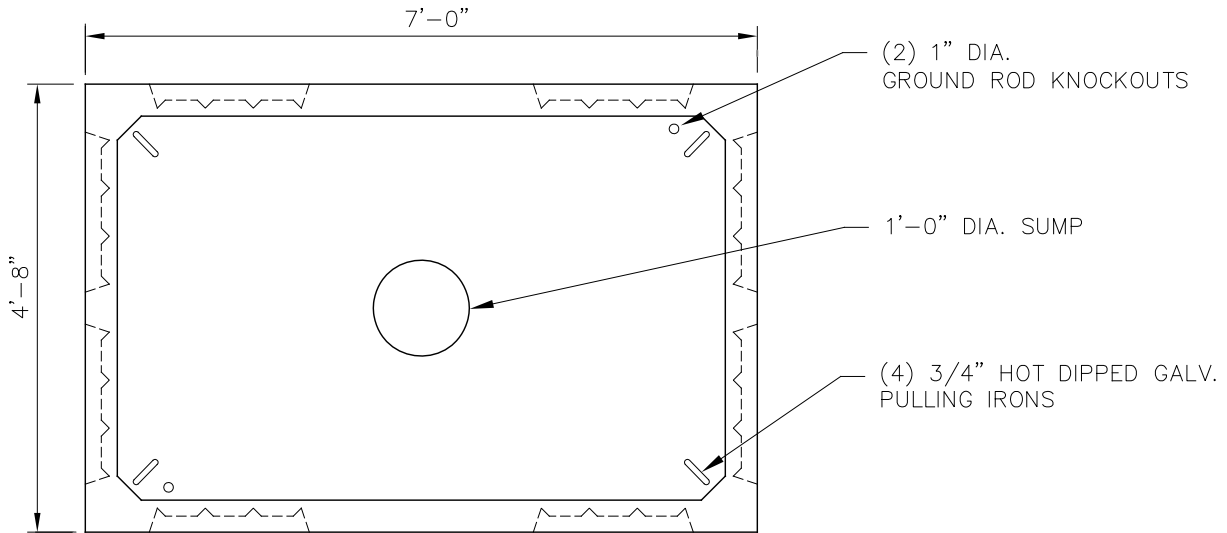
4'-8" X 4'-8" X 4'-0" CONCRETE VAULT

NOV 14, 2014

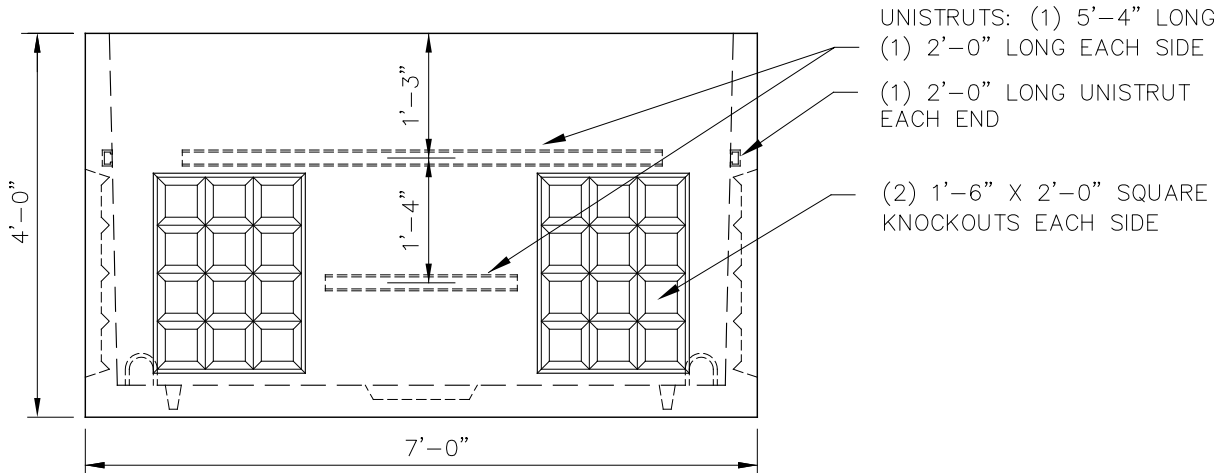
ES5-2.1100.20

REV

0



TOP VIEW



SIDE VIEW

EWEB STOCK CODE 348-0000537

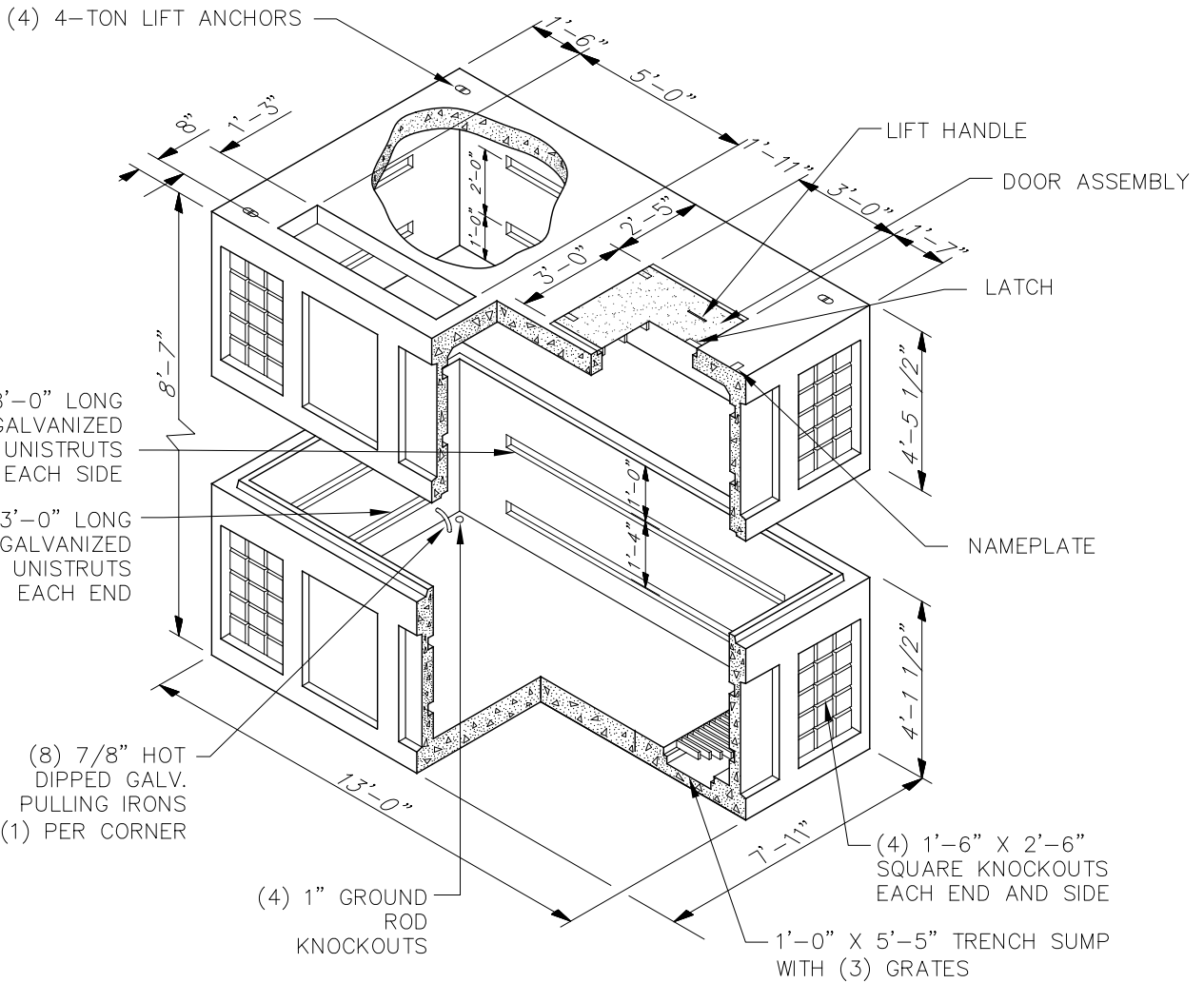
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

4'-8" X 7'-0" X 4'-0" CONCRETE VAULT

NOV 14, 2014
ES5-2.1100.21

REV
0



EWB STOCK CODE 348-0000538

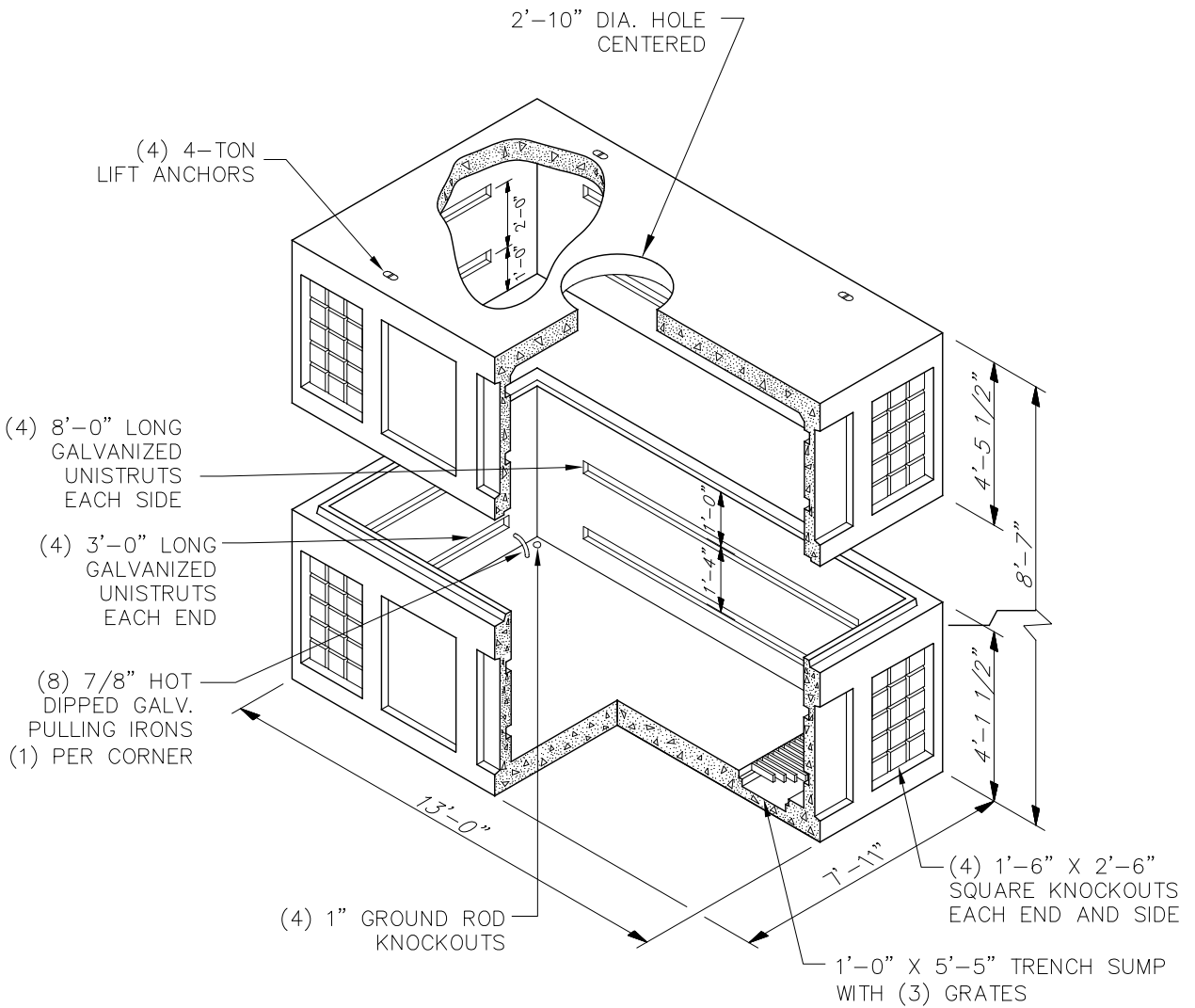
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**7'-11" x 13'-0" x 8'-7" CONCRETE VAULT
WITH 3'-0" x 3'-0" HINGED STEEL DOOR
FOR LARGE PADMOUNT TRANSFORMER**

NOV 14, 2014
ES5-2.1100.24

REV
0



EWEB STOCK CODE 348-0000541

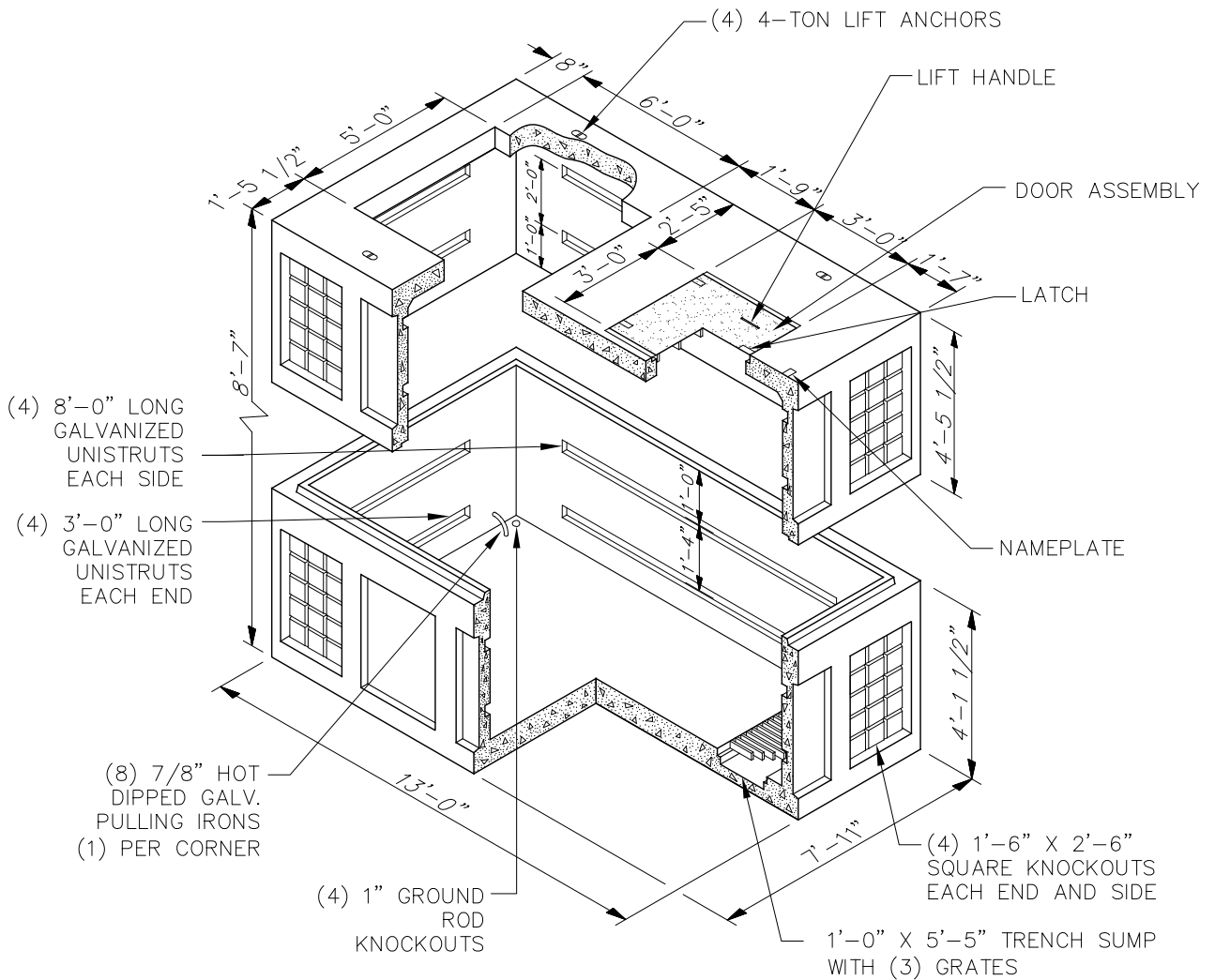
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**7'-11" x 13'-0" x 8'-7" CONCRETE VAULT
WITH 2'-10" OPENING**

NOV 14, 2014
ES5-2.1100.25

REV
0



EWB STOCK CODE 348-0000542

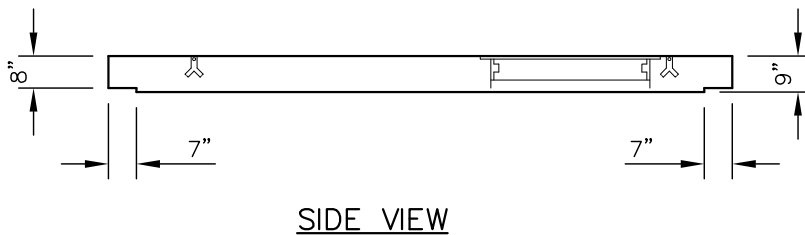
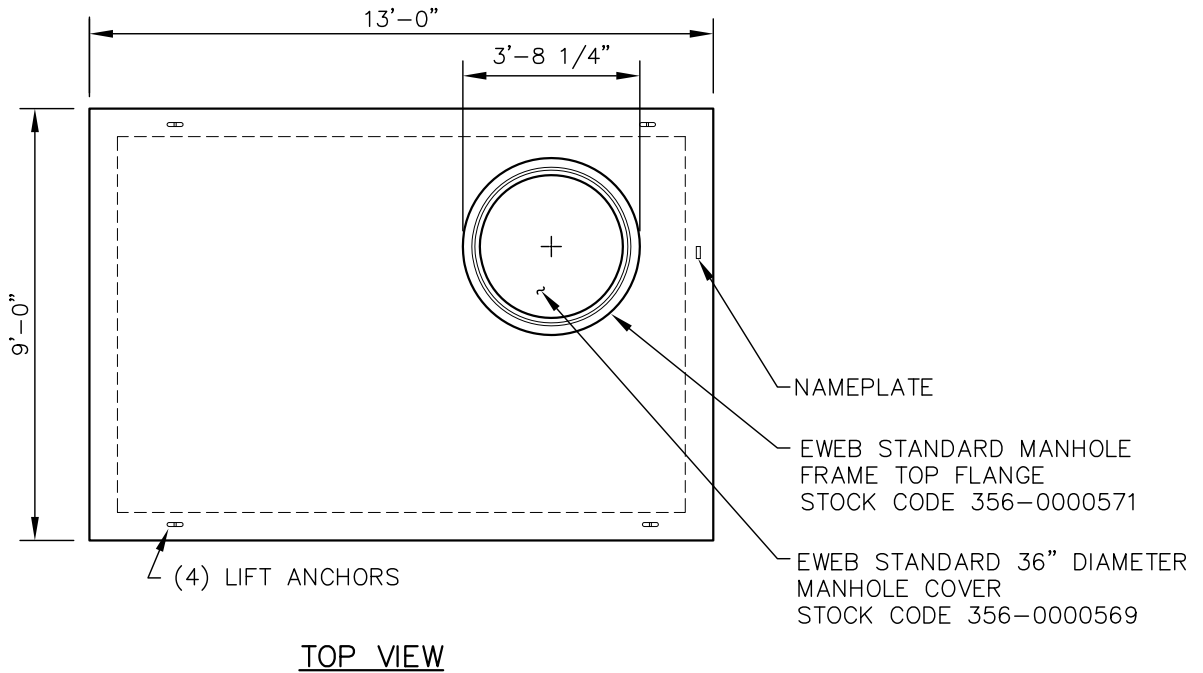
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**7'-11" x 13'-0" x 8'-7" CONCRETE VAULT
WITH 3'-0" x 3'-0" HINGED STEEL DOOR
FOR PADMOUNT SWITCH**

NOV 14, 2014
ES5-2.1100.26

REV
0



NOTES:

1. TRAFFIC RATING: HIGH DENSITY H-20-44 WITH 30% IMPACT FACTOR.
2. EWEB TO FURNISH MANHOLE FRAME PRIOR TO CASTING.
3. LOCATION OF MANHOLE FRAME TO BE DETERMINED AT TIME OF ORDER.

EWEB STOCK CODE 348-0000493

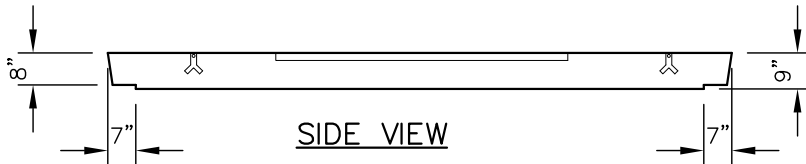
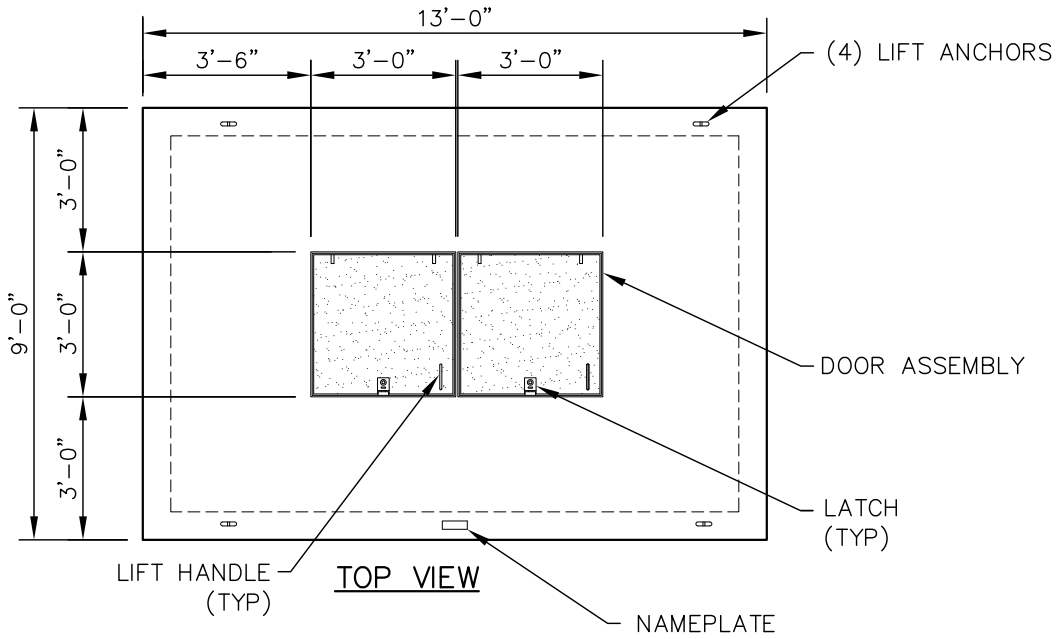
STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**9'-0" x 13'-0" x 9" CONCRETE LID
WITH MANHOLE OPENING**

NOV 14, 2014
ES5-2.1100.27

REV
0



NOTES:

1. LID SHALL HAVE SIDES THAT TAPER INWARD FROM TOP TO BOTTOM.
2. ANGLE OF TAPER TO BE DETERMINED BY MANUFACTURER.

EWEB STOCK CODE 348-0000494

STANDARD DETAIL

EUGENE WATER & ELECTRIC BOARD

**9'-0" x 13'-0" x 9" CONCRETE LID
WITH TWO 3'-0" x 3'-0" HINGED STEEL DOORS**

NOV 14, 2014
ES5-2.1100.28
 REV 0