6 x 4 WSDOT HD Electrical Vault

Approved
Washington State
Department of Transportation
HQ Traffic Operations Office
Date April 23, 2012

L LID (2,100 lbs)
L-1. Dayton Superior Coil Loop Insert B-16 3/4" x 4"
W/ Conac Coil Threaded Plastic Plug
L-2. 38 1/2" Heavy Duty Ring & Cover
East Jordan Ductile Iron

B BASE (5,300 lbs)
B-1. 1'-6" x 1'-6" Knockout
B-2. 2" Dia. Lifting Hole
B-3. Stainless Steel C-Channel
B-4. Galv. Pulling Iron
B-5. 12" Dia. Sump
B-6. 2" Dia. Drain Hole

NOTE: Side panel has been shifted to show internal view and is not removable.
© 2012 Granite Precasting & Concrete, Inc.
6 x 4 WSDOT HD Electrical Vault

APPROVED AS NOTED
Washington State
Department of Transportation
HQ Traffic Operations Office
DATE April 23, 2012

PLAN

38 1/2" Ring & Cover
H-30 Heavy Duty
EAST JORDAN
NPR10-590A
DUCTILE IRON COVER
GRAY IRON FRAME

Hatch to be Labeled: "ITS" or COMM TEL LT TS

1/4"-20 UNC x 1 11/16" min Threaded Brass, Grounding Insert

1 5/8" X 1 5/8" Stainless Steel C-Channel 5' Long

1/2" Lifting Hole

14/"-6" X 14/"-6" KNOCKOUT (2) PER SIDE TYP.

4/"-1"

12" Dia. Sump 2" Drain hole

Grounding Rod Knockout

14/"-2"

4/"

5/"-4"

6"

VIEW B-B

5. Backfill with granular free draining material (sand or pea gravel) free of stones or cobbles greater than 4" in dia.
6. Holes cored to plan specifications.
7. Install lid prior to backfill.
8. Items shown are subject to change without notice.

SPECIFICATIONS
1. Concrete: Fc=7,000 psi @28 days
2. Rebar: ASTM A-615 Grade 60
4. Loads: AASHTO HS-20
5. Backfill with granular free draining material (sand or pea gravel) free of stones or cobbles greater than 4" in dia.
6. Holes cored to plan specifications.
7. Install lid prior to backfill.
8. Items shown are subject to change without notice.
(1) #6x7'-6" BENT BAR THROUGH EACH CORED HOLE IN FRAME TIE ENDS TO MAIN REINFORCING. (4 TOTAL REQ'D)

30°

30° 45° (TYP.)

(2) ADD'L #4 BARS

#6 BARS LOCATE PER DIMS (TYP.) (1" BAR COV.)

PLAN VIEW

#6 BENT BAR THROUGH GUSSETT & REINFORCING SEE ABOVE FOR

#3 TRIM BAR (TYP.)

ELEVATION VIEW

(SIDEWALL W/#3 REINFORCING BAR SHOWN) (LAP HORIZ. BARS 1'-6" AS REQ'D.) (EXTEND VERTICAL BARS INTO BASE SLAB 12")

KNOCKOUT SEE NOTE 10. (TYP.)

#3 L-BAR @12" O.C. MAX.

EXTEND 12" INTO BASE

6" 12" 4'-0"

8" 6" 4'-0"

4'-8" 2'-0"

4'-6" 2'-0"

4'-0" 2'-0"

4" 2'-0"

2'-0" 1'-0"

1'-11"

1" 10"

6'-8" LID

4" 10" 3'-9"

2" 1'-0"

3'-6"

2" 10"

1'-0"

4'-6" LID

DESIGN NOTES:
1. CONCRETE STRENGTH=7,000 PSI
2. REINFORCING:
   BAR: ASTM A615, GRADE 60.
   WWR: ASTM A185, GRADE 65.
3. DESIGN PER ASTM C657 & ACI318.
4. 46,000 LB. SERVICE LIVE LOAD.
5. 80,000 LB. PROOF LOAD.
6. EARTH FILL: AT GRADE
7. 60 PSF LATERAL EARTH PRESSURE WITH 100 PSF LIVE LOAD SURCHARGE.
8. 1" BAR COVER U.N.O.
9. HATCH DESIGN BY OTHERS.
10. PROVIDE 4X4 W2.9/W2.9 (MIN.) WWR CENTERED IN ALL KNOCKOUTS. EXTEND 6" MIN. BEYOND KNOCKOUT, IN ALL DIRECTIONS.
11. SEE SHOP DWG FOR ADD'L VAULT DETAILS.

CUSTOMER:

STANDARD

4X6 HD EV (WSDOT) 6" TOP

DRN: SDG DATE: 2/4/10 SHEET:

CHECKED: DATE: SCALE: 1/2"=1'-0"

1 3-15-11 SDG REV. VAULT GEOMETRY
2 1-18-11 SDG REV. VAULT CONFIGURATION
3 10-26-11 SDG REV. VAULT CONFIGURATION

GRANITE PRECASTING & CONCRETE INC.
4118 BAKERVIE SPUR, BELLEAIR, FL 33786 (813) 671-2251 1-800-808-2251 FAX: (813) 671-0760

APPROVED
WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
HQ TRAFFIC OPERATIONS OFFICE
DATE: MARCH 1, 2012 TAT
6 x 4 WSDOT HD Electrical Vault

LID (2,900 lbs)
L-1. DAYTON SUPERIOR COIL LOOP INSERT B-16 3/4" X 4"
W/ CONAC COIL THREADED PLASTIC PLUG
L-2. 38 1/2" HEAVY DUTY RING & COVER
EAST JORDAN DUCTILE IRON

BASE (5,300 lbs)
B-1. 1-1/4" x 1-1/4" KNOCKOUT
B-2. 2" DIA. LIFTING HOLE
B-3. STAINLESS STEEL C-CHANNEL
B-4. GALV. PULLING IRON
B-5. 12" DIA. SUMP
B-6. 2" DIA. DRAIN HOLE

INTERIOR DIMENSIONS:
3'-4"W x 5'-4"L x 4'-1"H

NOTE: Side panel has been shifted to show internal view and is not removable.

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**SPECIFICATIONS**

1. Concrete: Fc=7,000 psi @28 days
2. Rebar: ASTM A-615 Grade 60
4. Loads: AASHTO HS-20

5. Backfill with granular free draining material (sand or pea gravel) free of stones or cobbles greater than 4" in dia.
6. Holes cored to plan specifications.
7. Install lid prior to backfill.
8. Items shown are subject to change without notice.
L ID (2,900 lbs)
L-1. DAYTON SUPERIOR COIL LOOP INSERT B-16 3/4" X 4"
   W/ CONAC COIL THREADED PLASTIC PLUG
L-2. 38 1/2" HEAVY DUTY RING & COVER
   EAST JORDAN DUCTILE IRON

B BASE (3,570 lbs) *
B-1. 1'-6" x 1'-6" KNOCKOUT
B-2. 2" DIA. LIFTING HOLE
B-3. STAINLESS STEEL C-CHANNEL
B-4. GALV. PULLING IRON
B-5. BLOCKOUT (OPEN BOTTOM)
B-6. EXPOSED REBAR

*Weight Varies. To be Verified.

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**SPECIFICATIONS**

1. Concrete: Fc=7,000 psi @28 days
2. Rebar: ASTM A-615 Grade 60
4. Loads: AASHTO H5-20
5. Backfill with granular free draining material (sand or pea gravel) free of stones or cobbles greater than 4" in dia.
6. Holes cored to plan specifications.
7. Install lid prior to backfill.
8. Items shown are subject to change without notice.
OPEN BOTTOM OPTION

ELEVATION VIEW
(ENDWALL W/REINFORCING SHOWN)

DESIGN NOTES:
1. CONCRETE STRENGTH-7,000 PSI
2. REINFORCING:
   BAR: ASTM A615, GRADE 60.
   WWR: ASTM A185, GRADE 65.
3. DESIGN PER ASTM C357 & ACI318.
4. 46,000 LBS. SERVICE LIVE LOAD.
   60,000 LB. PROOF LOAD.
5. EARTH FILL: AT GRADE
6. AT LEAST 2.5' BELOW GRADE
7. 60 Pcf. Lateral Earth Pressure with
   100 PSF. LIVE LOAD SURCHARGE.
8. 1" BAR COVER U.N.O.
9. HATCH DESIGN BY OTHERS.
10. PROVIDE 4X4 W2.9/W2.9 (MIN.) WWR
    CENTERED IN ALL KNOCKOUTS. EXTEND
    6" MIN. BEYOND KNOCKOUT, IN ALL DIRECTIONS.
11. SEE SHOP DWG FOR ADD'L VAULT DETAILS.

STUART D. GORKA
STATE OF WASHINGTON
REGISTERED PROFESSIONAL ENGINEER

10/27/11
6 x 4 WSDOT Electrical Vault

LID (1,220 lbs)
L-1. DAYTON SUPERIOR COIL LOOP INSERT B-16 3/4" X 4"
   W/ CONAC COIL THREADED PLASTIC PLUG
L-2. 33 1/2" x 66 11/16" INWESCO GALV. HATCH
L-3. SLIPNOT HATCHES TO BE USED IN ALL SIDEWALK APPLICATIONS

BASE (5,300 lbs)
B-1. 1'-6" x 1'-6" KNOCKOUT
B-2. 2" DIA. LIFTING HOLE
B-3. STAINLESS STEEL C-CHANNEL
B-4. GALV. PULLING IRON
B-5. 12" DIA. SUMP
B-6. 2" DIA. DRAIN HOLE

NOTE: Side panel has been shifted to show internal view and is not removable.
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**SPECIFICATIONS**

1. Concrete: Fc=7,000 psi @ 28 days
2. Rebar: ASTM A-615 Grade 60
4. Loads: AASHTO HS-20

5. Backfill with granular free draining material (sand or pea gravel) free of stones or cobbles greater than 4" in dia.
6. Holes cored to plan specifications.
7. Install lid prior to backfill.
8. Items shown are subject to change without notice.
**Design Criteria:**
2. Design in accordance with ASHTO H-20 (18,000 lb wheel load) loading criteria.
3. Use 16.0 kip wheel load with a 4/25 impact factor (22,500 lb).
4. F = 0.66Bf (f = 380 ksi) F = 20 kip.
5. F = 0.5Bf (340 ksi) F = 16 kip.
6. Load distribution area @ 10'-10".
7. Refer to ASTM C-857 as last revised where applicable.
8. Use ANSI/UL-360 fire and smoke-rated C.04.6.6 steel.

**Notes:**
This frame and cover assembly has been designed in accordance with the loading criteria set-forth by the American Association of State Highway & Transportation Officials (AASHTO), American Society for Testing Materials (ASTM C-857) as last revised where applicable.

This frame and cover assembly has been designed for use in traffic application, or in areas subjected to H-20-44 traffic conditions.

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**Bill of Materials & Mill Certs Documents**

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>3SA57-D</td>
<td>33&quot; x 36&quot; door, diamond plate type</td>
<td>See Drawing</td>
</tr>
<tr>
<td>3SA57-F</td>
<td>33&quot;-1/2&quot; x 66-1/16 clr cpn frame</td>
<td>See Drawing</td>
</tr>
<tr>
<td>SP-613</td>
<td>Lift handle, diamond plate</td>
<td>A786</td>
</tr>
<tr>
<td>85A35</td>
<td>3/8-16 x 2 large head penta bolt</td>
<td>A193-10A</td>
</tr>
<tr>
<td>PIN18-3A</td>
<td>1/8&quot; x 6' x A36 steel for self-cleaning, 180-deg frames</td>
<td>420 S.S.</td>
</tr>
<tr>
<td>IN-110</td>
<td>5/8&quot; SO latch, A36 steel, zinc plated</td>
<td>A36</td>
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<tr>
<td>82860-2</td>
<td>Compression spring for IN-110</td>
<td>302 S.S.</td>
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<tr>
<td>IN-113</td>
<td>1/2&quot; B hinge pin for 180-deg spring assist</td>
<td>A36</td>
</tr>
<tr>
<td>TSP-31GUS-RL</td>
<td>Spring #35 right short, 180-deg</td>
<td>A401-10</td>
</tr>
<tr>
<td>TSP-31GUS-LS</td>
<td>Spring #35 left short, 180-deg</td>
<td>A401-10</td>
</tr>
<tr>
<td>TSP-31GUS-LL</td>
<td>Spring #35 left long, 180-deg</td>
<td>A401-10</td>
</tr>
<tr>
<td>IN-177</td>
<td>Horseshoe for 180-deg spring ass't</td>
<td>A36</td>
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<tr>
<td>50001-11</td>
<td>1/2&quot; E style retaining ring</td>
<td>A693-06</td>
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<tr>
<td>ID231-WS-ITS</td>
<td>3/16 x 3-1/16 x 5-9/16 id plate, WS-DOT</td>
<td>A36</td>
</tr>
<tr>
<td>ID231-WS-BLANK-DO</td>
<td>3/16 x 3-1/16 x 5-9/16 id plate, blank</td>
<td>A36</td>
</tr>
</tbody>
</table>
NOTES:
1. FRAME TO BE SQUARED AND RE-SQUARED

PLAN VIEW OF FRAME

END VIEW OF FRAME

DETAIL-A

DETAIL-B

DETAIL-C

NOTCH DETAIL
NOTCH ONE END
(1 LEFT, 1 RIGHT REQ'D)