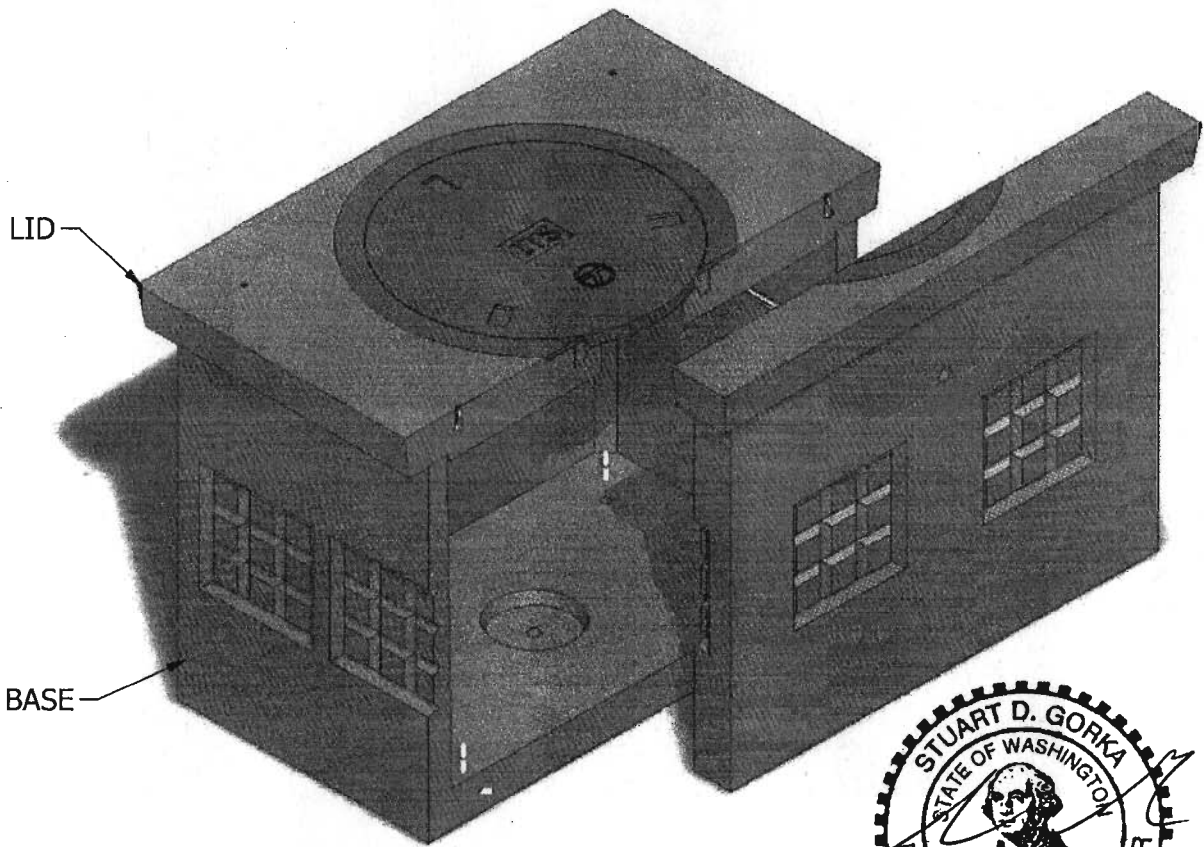


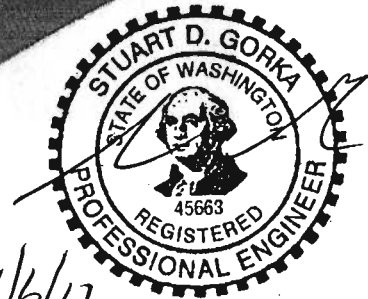
6 x 4 WSDOT HD Electrical Vault



APPROVED

Washington State
Department of Transportation
HQ Traffic Operations Office

DATE April 23, 2012 TAT



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

(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.

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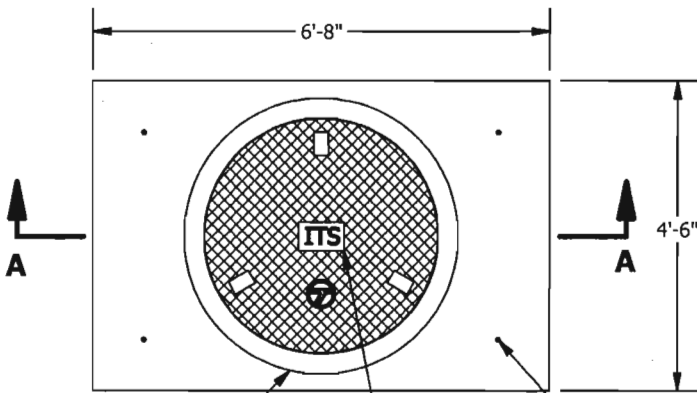
**PRECASTING &
CONCRETE INC.**

4116 BAKERVIEW SPUR • BELLINGHAM, WA. 98226 • (360) 671-2251 • 1-800-808-2251 • FAX: (360) 671-0780

6 x 4 WSDOT HD Electrical Vault

APPROVED AS NOTED

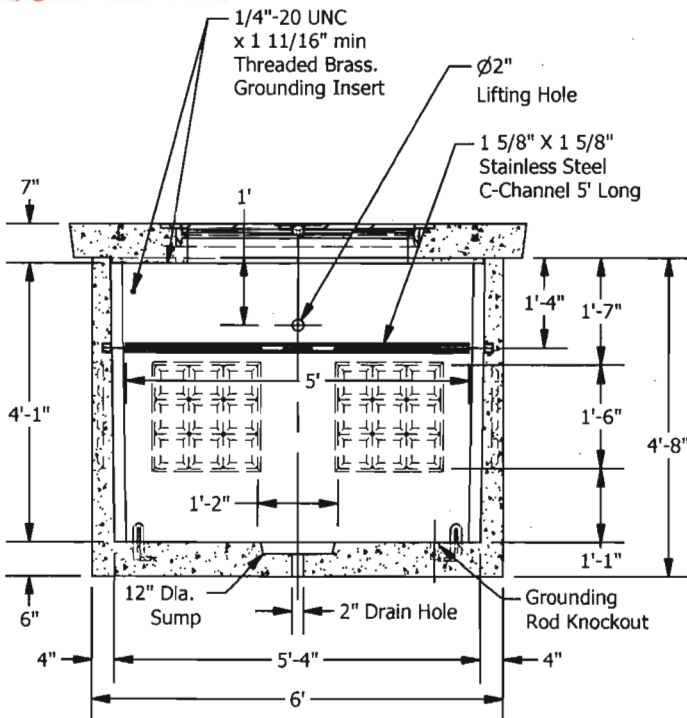
Washington State
Department of Transportation
HQ Traffic Operations Office
DATE April 23, 2012 TAT



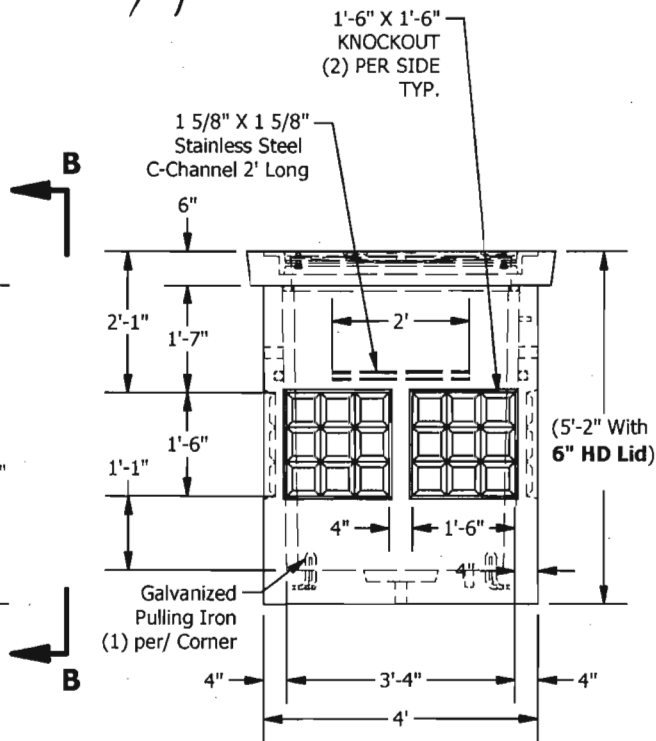
- 38 1/2" Ring & Cover
H-30 Heavy Duty
EAST JORDAN
NPR10-590A
DUCTILE IRON COVER
GRAY IRON FRAME
 - Hatch to be Labeled: "ITS" or
**COMM
TEL
LT
TS**
 - Dayton Superior
Coil Loop Insert
B-16 3/4" x 4"
w/ Conac
Coil Threaded
Plastic Plug
- PLAN**
- catalog number
2688 Z 2 PT
2688 APT DI*



4/6/12



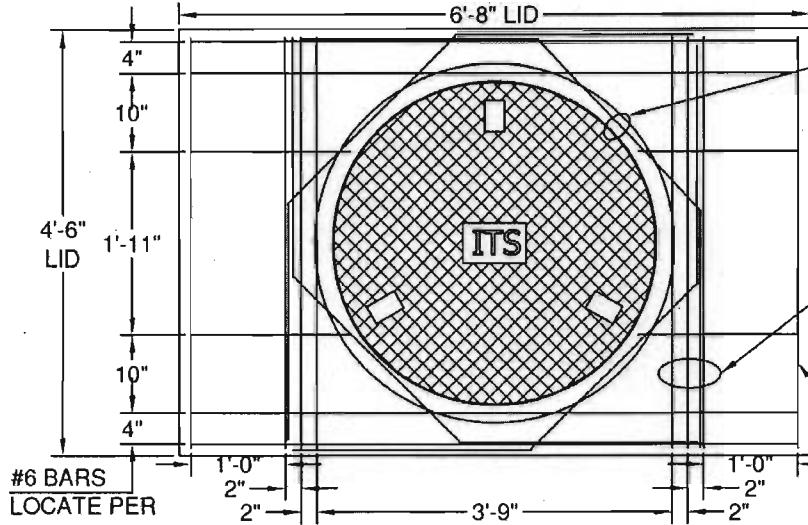
SECTION A-A



VIEW B-B

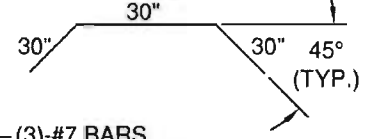
SPECIFICATIONS

- Concrete: $f_c = 7,000$ psi @ 28 days
- Rebar: ASTM A-615 Grade 60
- Design: ASTM C-857 "Minimum Structural Design Loading for Underground Precast Concrete Utility Structures"
- Loads: AASHTO HS-20
- Backfill with granular free draining material (sand or pea gravel) free of stones or cobbles greater than 4" in dia.
- Holes cored to plan specifications.
- Install lid prior to backfill.
- Items shown are subject to change without notice.

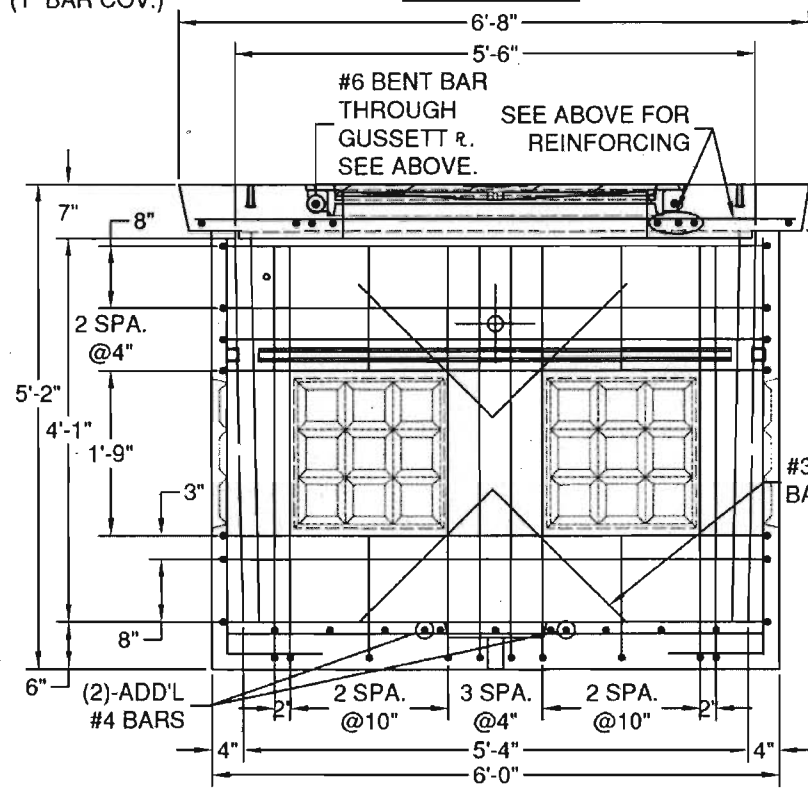


PLAN VIEW

(1)-#6x7'-6" BENT BAR THROUGH EACH CORED HOLE IN FRAME TIE ENDS TO MAIN REINFORCING. (4-TOTAL REQ'D)

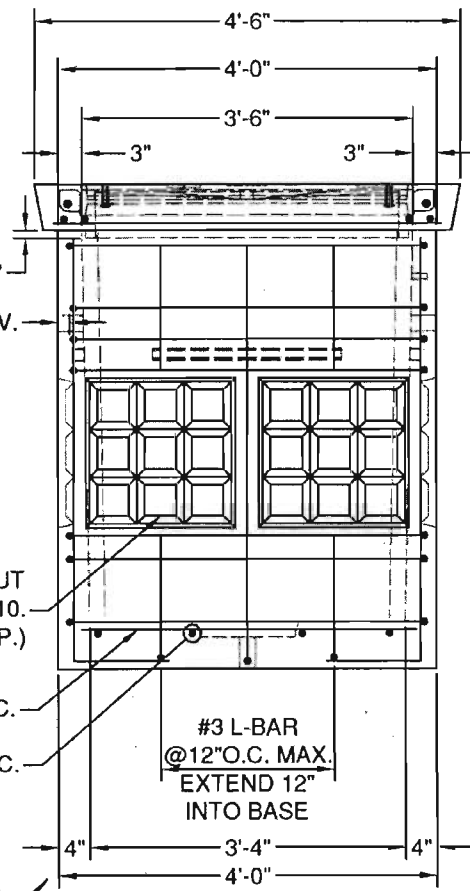


APPROVED
 Washington State
 Department of Transportation
 HQ Traffic Operations Office
 DATE March 1, 2012 TAT



ELEVATION VIEW

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



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 C857 & ACI318.
4. 46,000 LB. 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.



10/27/11

PROJECT: **STANDARD**

STRUCTURE: **4X6 HD EV (WSDOT) 6" TOP**

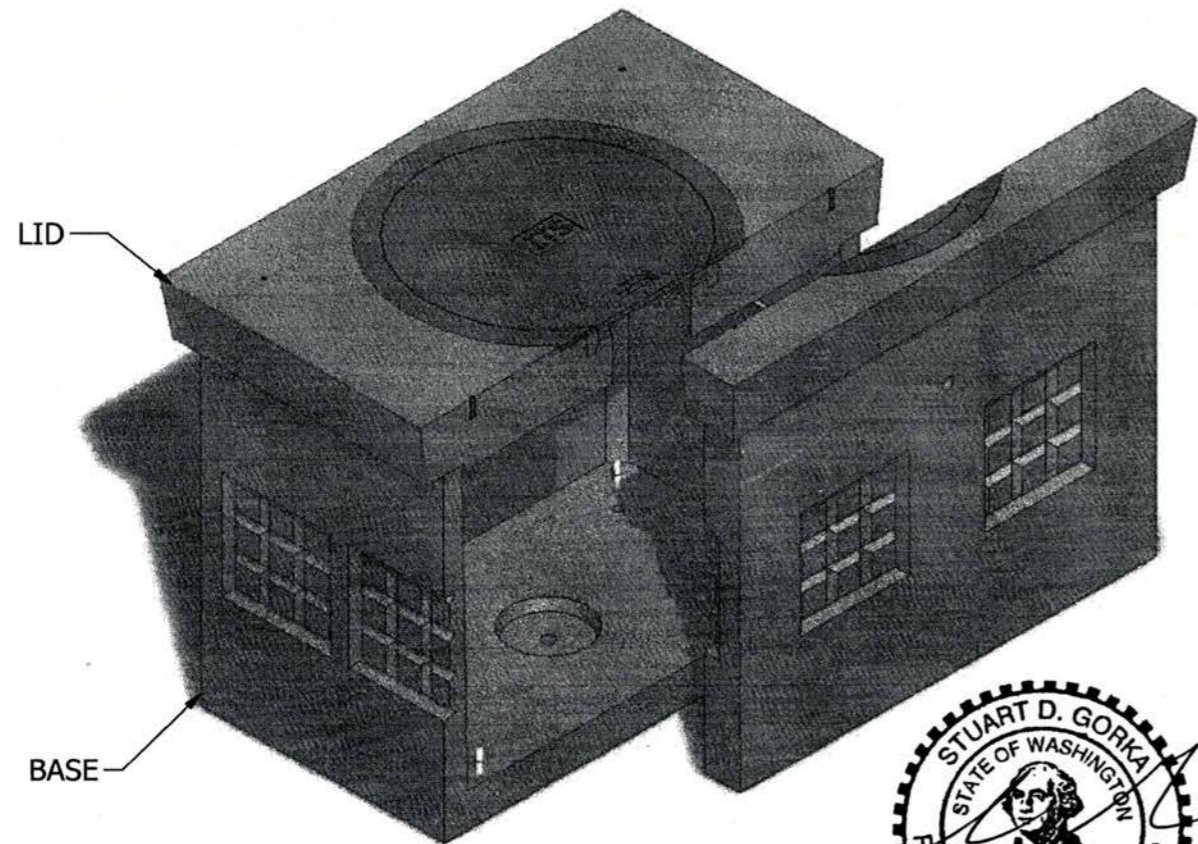
CUSTOMER:

GRANITE PRECASTING & CONCRETE INC.
 4118 BAKERVIEW SPUR, BELLINGHAM, WA. 98226 (360) 871-2251 1-800-808-2251 FAX: (360) 871-0780

DRAWN:	SDG	DATE:	2/4/10	SHEET:	
CHECKED:		DATE:		SCALE:	1/2"=1'-0"
3	10-26-11	SDG	REV. VAULT CONFIGURATION		
2	8-16-11	SDG	REV. VAULT CONFIGURATION		
1	3-15-11	SDG	REV. VAULT GEOMETRY		

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT SHALL NOT BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE EXPRESS WRITTEN PERMISSION OF GRANITE PRECASTING AND CONCRETE.

6 x 4 WSDOT HD Electrical Vault



APPROVED

Washington State
Department of Transportation
HQ Traffic Operations Office
DATE October 9, 2012 TAT



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

(L) 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

(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.

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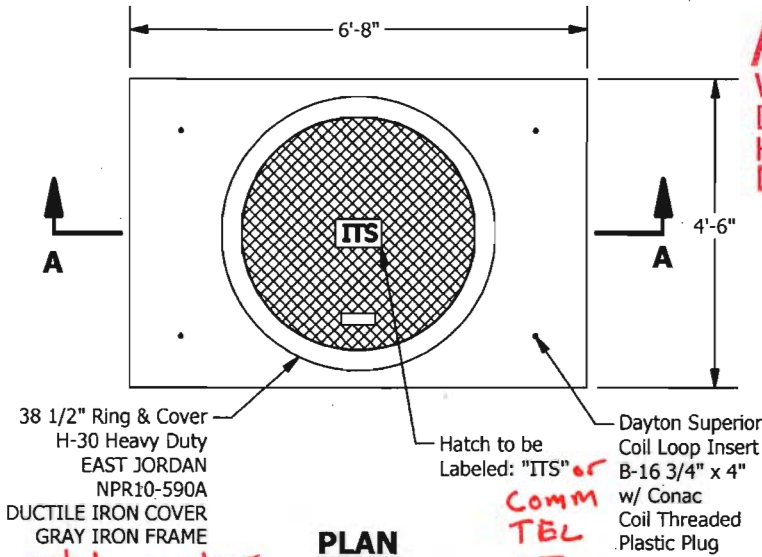
4116 BAKERVIEW SPUR • BELLINGHAM, WA. 98226 • (360) 671-2251 • 1-800-808-2251 • FAX: (360) 671-0780

6 x 4 WSDOT HD Electrical Vault

APPROVED AS NOTED

Washington State
Department of Transportation
HQ Traffic Operations Office

DATE April 23, 2012 TAT



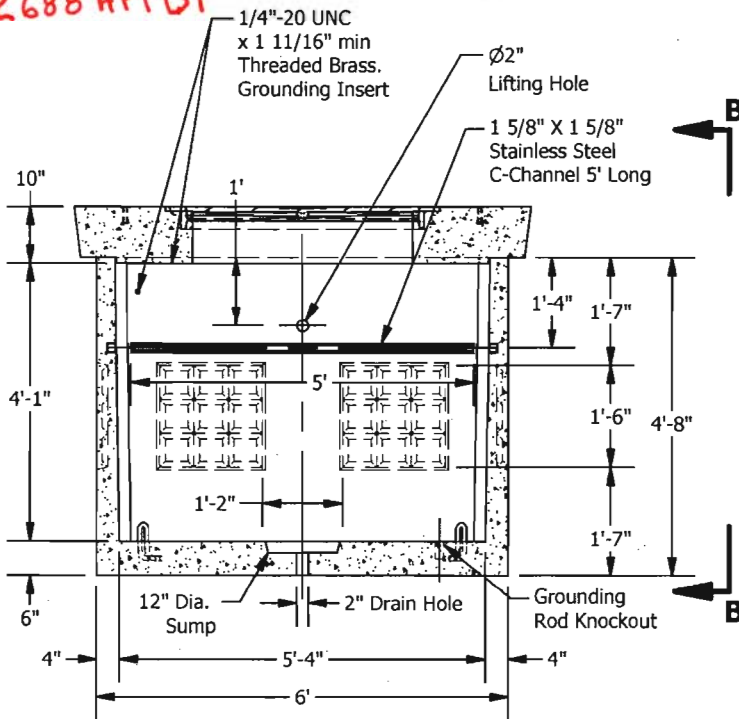
PLAN

catalog number
2688Z2PT
2688APTDI

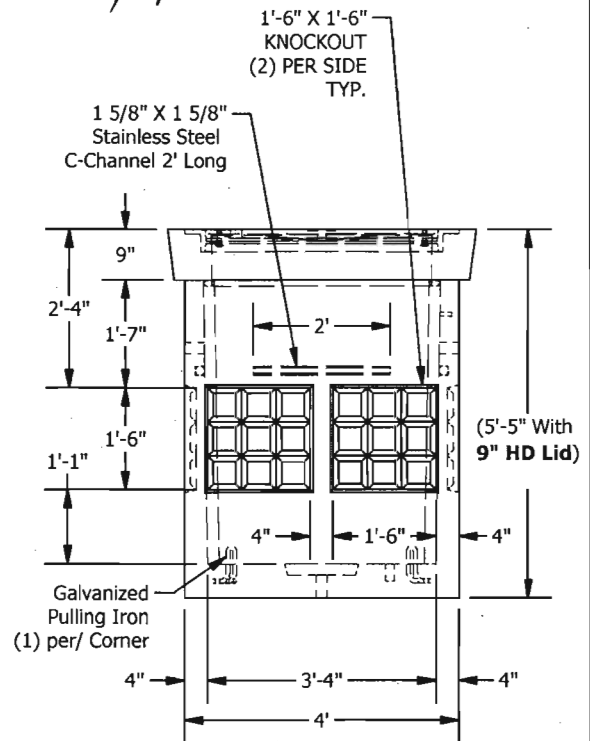
Comm
TEL
LT
TS



4/6/12



SECTION A-A



VIEW B-B

SPECIFICATIONS

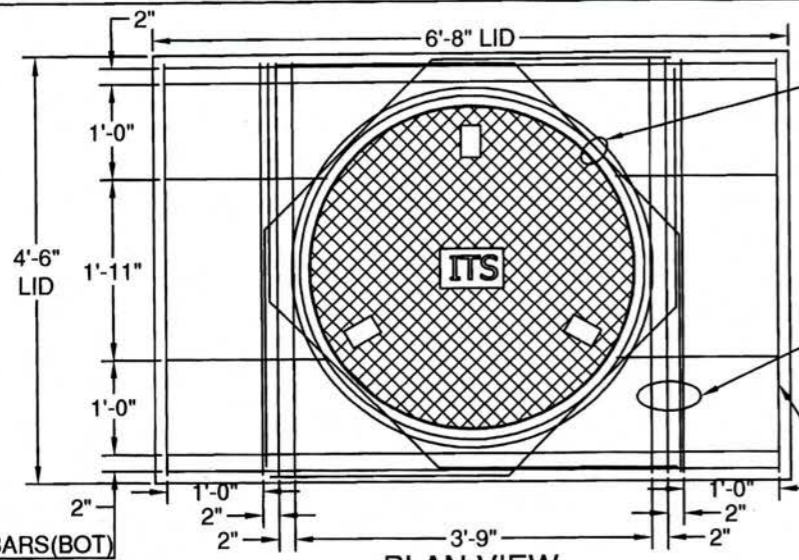
1. Concrete: Fc=7,000 psi @28 days
2. Rebar: ASTM A-615 Grade 60
3. Design: ASTM C-857 "Minimum Structural Design Loading for Underground Precast Concrete Utility Structures"
4. Loads: AASHTO HS-20
5. Backfill with granular free draining material (sand or pea gravel) free of stones or cobbles greater 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.

APPROVED
 Washington State
 Department of Transportation
 HQ Traffic Operations Office
 DATE October 9, 2012 TAT

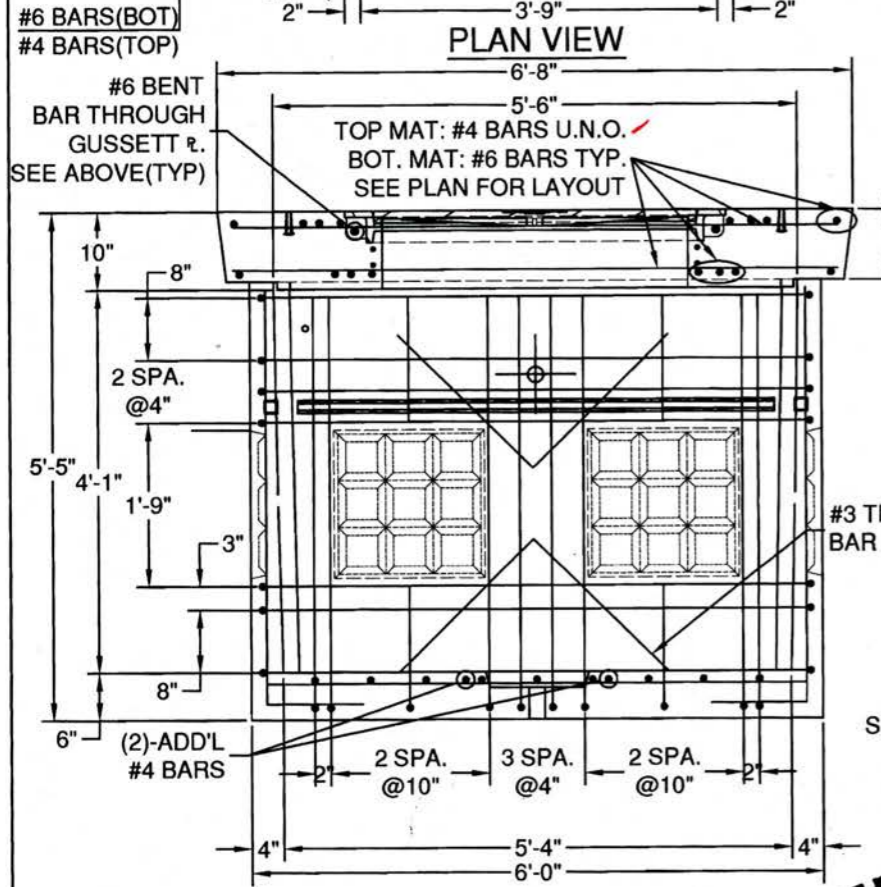
(1)-#6x7'-6" BENT BAR THROUGH EACH CORED HOLE IN FRAME TIE ENDS TO MAIN REINFORCING. (4-TOTAL REQ'D)

(3)-#6 BARS BOT. MAT
 (3)-#4 BARS TOP MAT (BOT. MAT SHOWN)
 NOTE: ADJUST TOP MAT SPACING AS REQ'D DUE TO HATCH FRAME

#6 BAR (BOT. MAT) ✓
 #4 BAR (TOP MAT) ✓
 (TYP. BOTH ENDS)

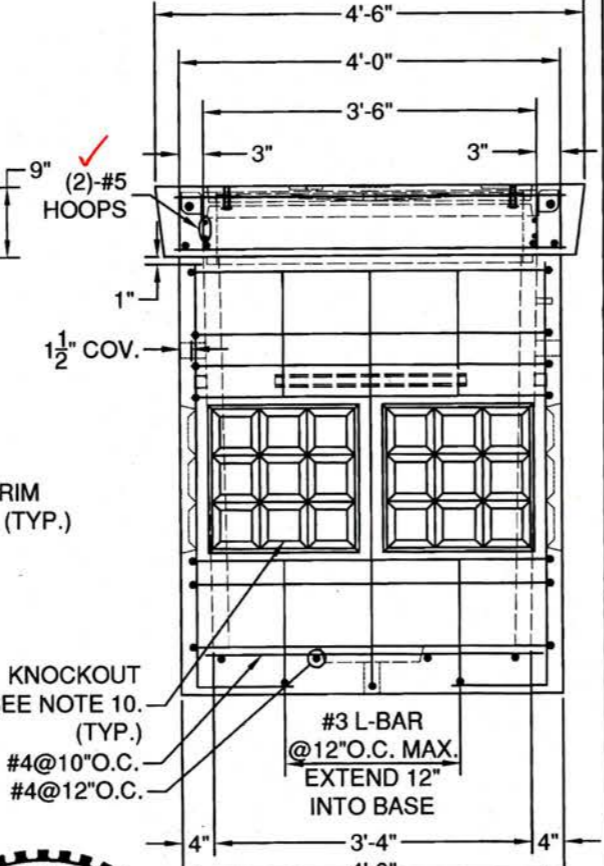


PLAN VIEW



ELEVATION VIEW

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



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 C857 & ACI318.
4. 46,000 LB. 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.



9/5/12

PROJECT: STANDARD STRUCTURE: 4X6 HD EV (WSDOT) 9" TOP

4	9-5-12	SDG	OPENING HOOPS ADDED
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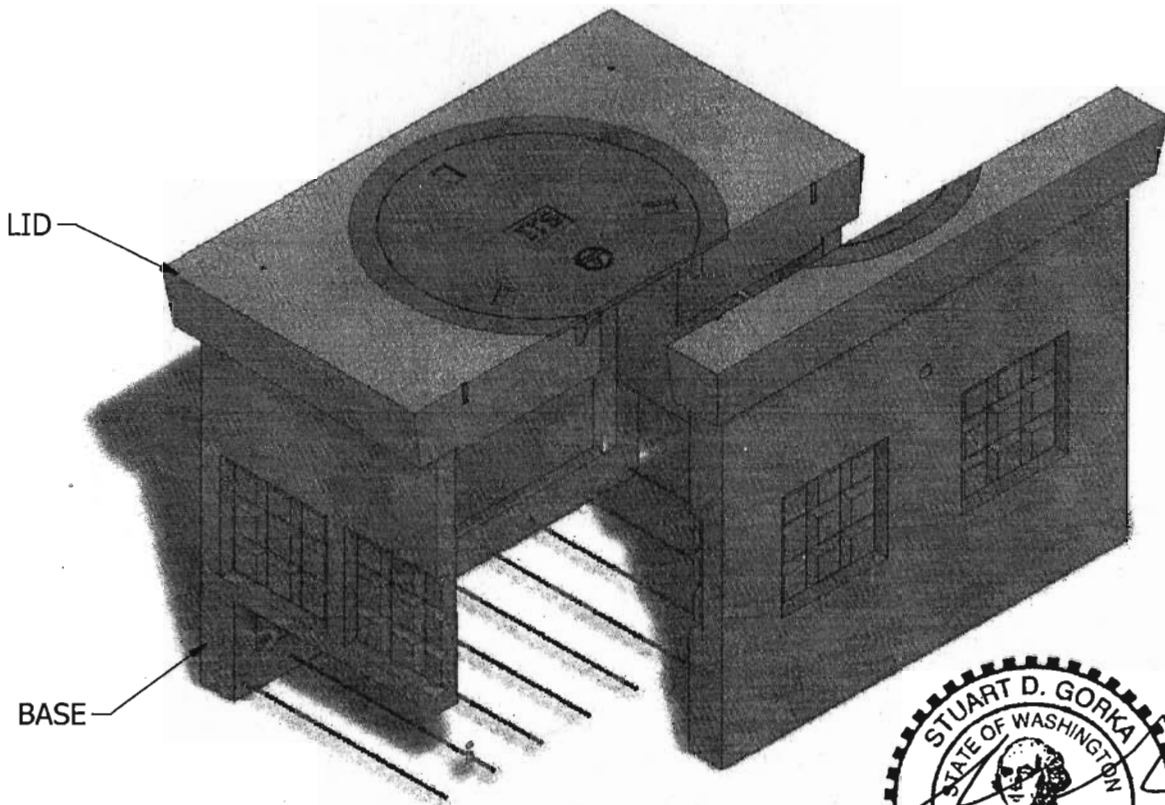
CUSTOMER:

DRAWN:	SDG	DATE:	2/4/10	SHEET:
CHECKED:		DATE:		SCALE: 1/2"=1'-0"
3	10-26-11	SDG	REV. VAULT CONFIGURATION	
2	8-16-11	SDG	REV. VAULT CONFIGURATION	
1	3-15-11	SDG	REV. VAULT GEOMETRY	

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GRANITE & CONCRETE INC.
 4116 BAKERVIEW SPUR, BELLINGHAM, WA. 98226 (360) 671-2251 1-800-808-2251 FAX: (360) 671-0780

6 x 4 WSDOT HD Open Bot. EV



APPROVED

Washington State
Department of Transportation
HQ Traffic Operations Office
DATE April 23, 2012 TAT



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

(L) 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

(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.

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

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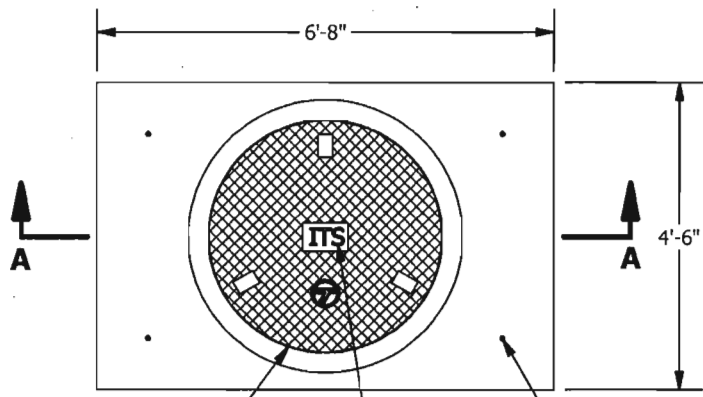


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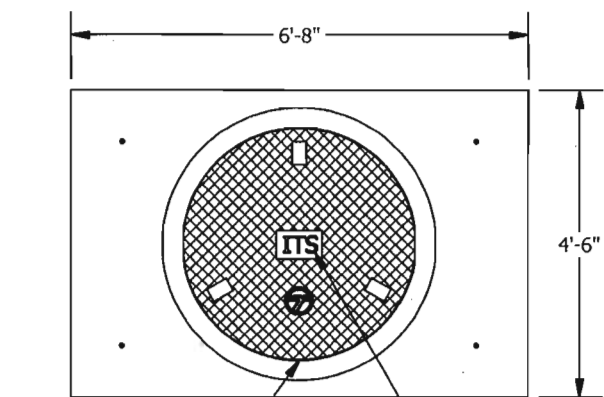
6 x 4 WSDOT HD Open Bot. EV



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*

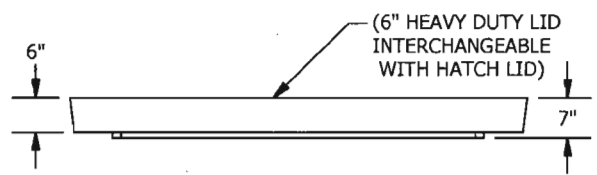
Dayton Superior
Coil Loop Insert
B-16 3/4" x 4"
w/ Conac
Coil Threaded
Plastic Plug



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

Hatch to be Labeled: "ITS"

PLAN

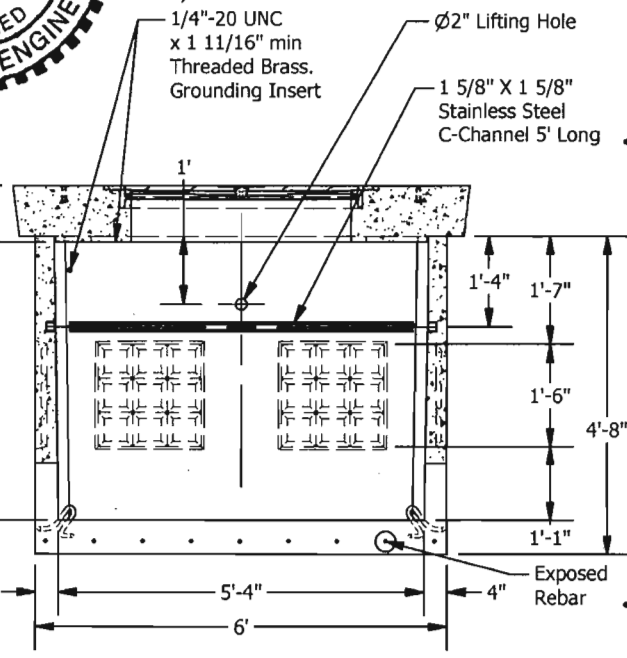


LID OPTION

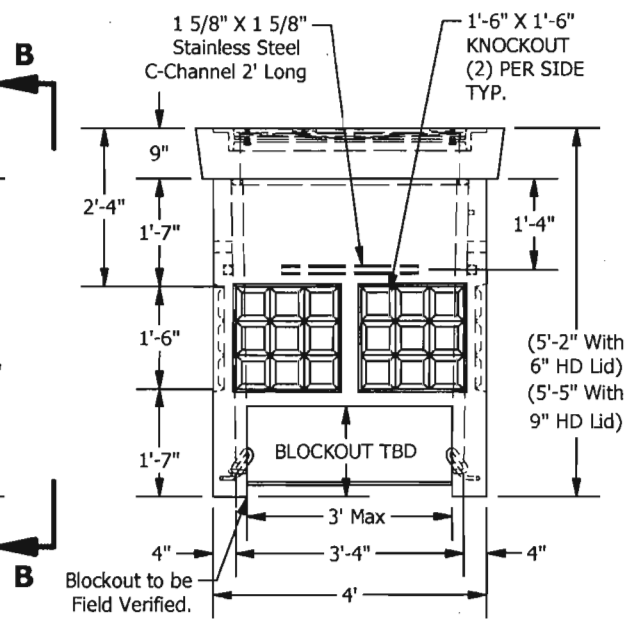


catalog number **PLAN**
2688 22 PT
2688 APT D1

4/6/12



SECTION A-A

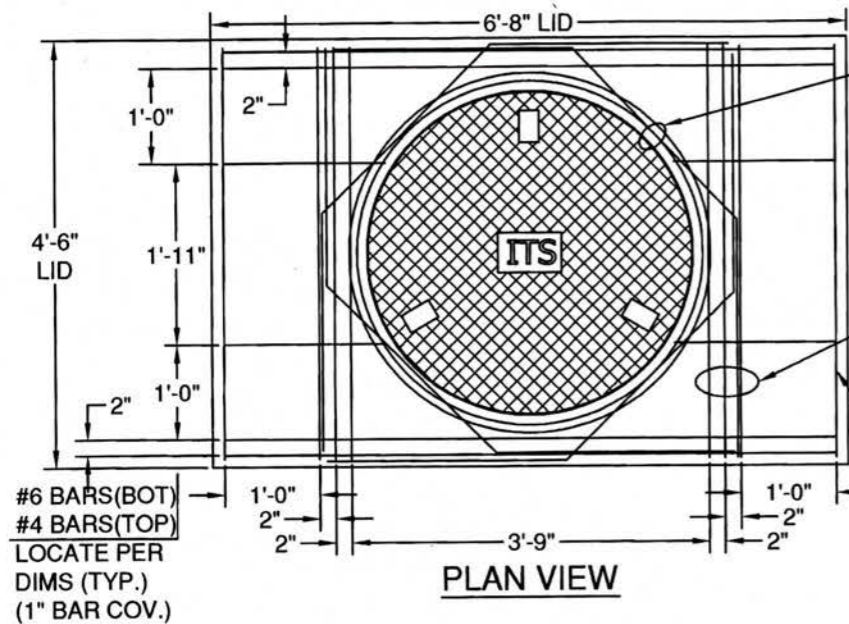


VIEW B-B

SPECIFICATIONS

1. Concrete: $F_c=7,000$ psi @28 days
2. Rebar: ASTM A-615 Grade 60
3. Design: ASTM C-857 "Minimum Structural Design Loading for Underground Precast Concrete Utility Structures"
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.

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



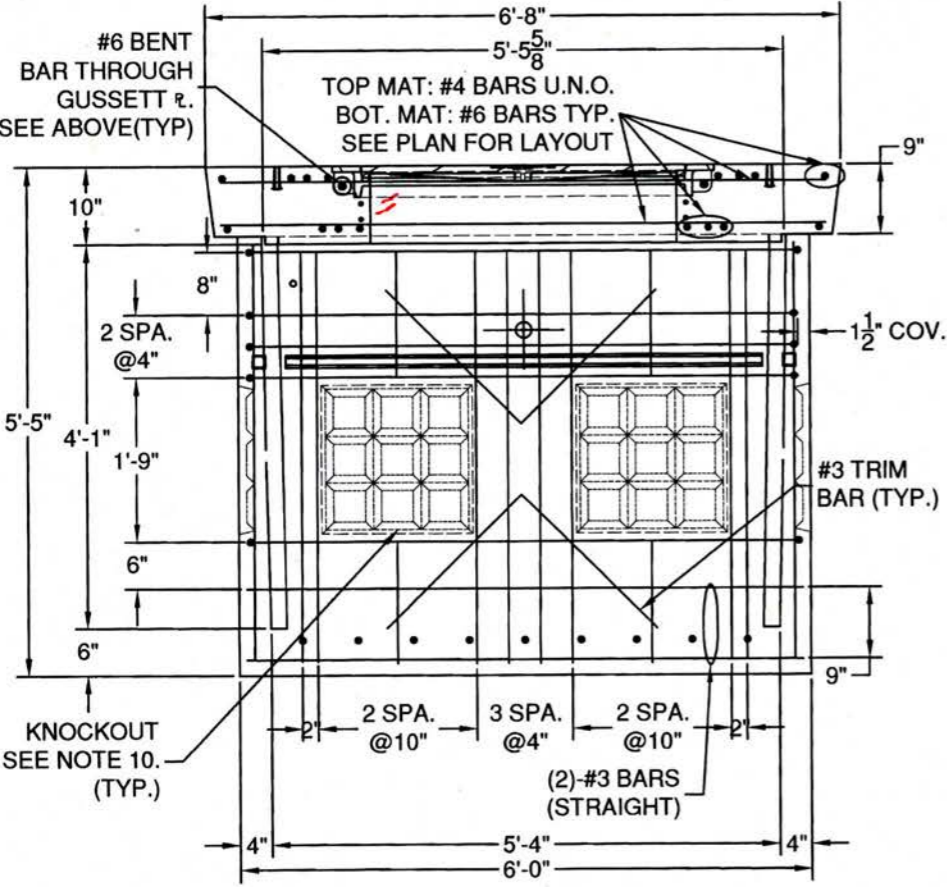
(1)-#6x7'-6" BENT BAR THROUGH EACH CORED HOLE IN FRAME TIE ENDS TO MAIN REINFORCING. (4-TOTAL REQ'D)

30" 30" 30" 45° (TYP.)

(3)-#6 BARS BOT. MAT (3)-#4 BARS TOP MAT (BOT. MAT SHOWN)
NOTE: ADJUST TOP MAT SPACING AS REQ'D DUE TO HATCH FRAME

#6 BAR (BOT. MAT)
#4 BAR (TOP MAT) (TYP. BOTH ENDS)

PLAN VIEW



ELEVATION VIEW

(SIDEWALL W/#3 REINFORCING BAR SHOWN)
(LAP HORIZ. BARS 1'-6" AS REQ'D.)

APPROVED
Washington State
Department of Transportation
HQ Traffic Operations Office
DATE October 9, 2012 TAT



9/5/12

DESIGN NOTES:

1. CONCRETE STRENGTH=7,000 PSI
2. REINFORCING:
BAR: ASTM A615, GRADE 60.
WWR: ASTM A185, GRADE 65.
3. DESIGN PER ASTM C857 & ACI318.
4. 46,000 LB. 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.

OPEN BOTTOM OPTION

PROJECT: STANDARD STRUCTURE: 4X6 HD EV (WSDOT) 9" TOP

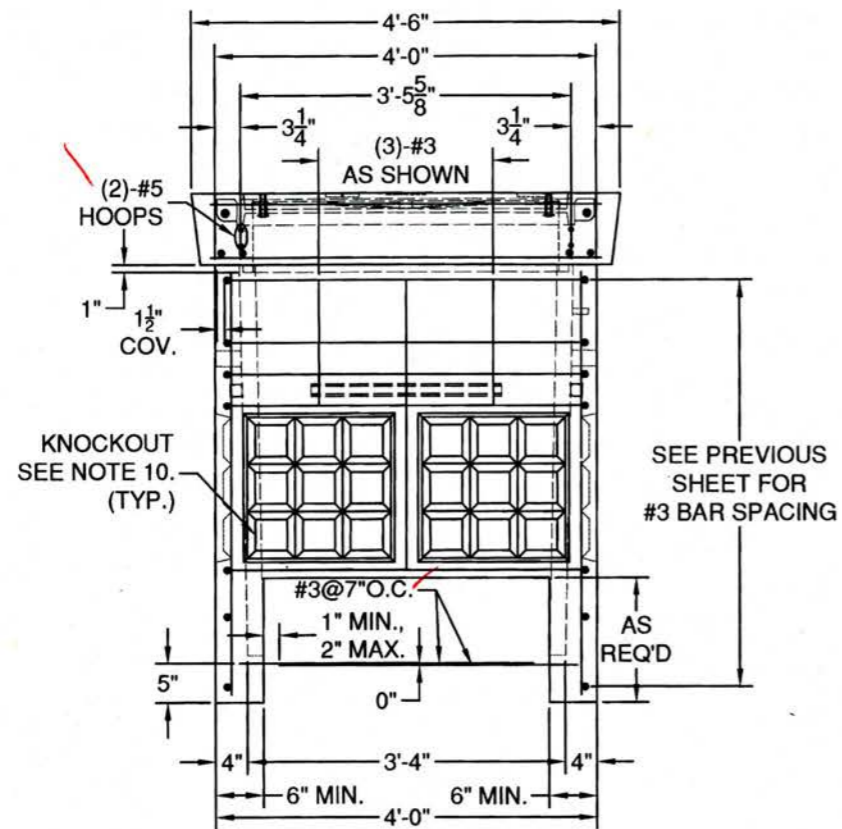
GRANITE & CONCRETE INC.
4116 BAKERVIEW SPUR, BELLINGHAM, WA. 98226 (360) 671-2251 1-800-808-2251 FAX: (360) 671-0780

4	9-5-12	SDG	OPENING HOOPS ADDED
CUSTOMER:			
DRAWN:	SDG	DATE:	2/4/10
CHECKED:		DATE:	
3	10-26-11	SDG	REV. VAULT CONFIGURATION
2	8-16-11	SDG	REV. VAULT CONFIGURATION
1	7/20/11	SDG	REV. CONFIGURATION

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 Department of Transportation
 HQ Traffic Operations Office
 DATE October 9, 2012 TAT



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 C857 & ACI318.
4. 46,000 LB. 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.

OPEN BOTTOM OPTION

4	9-5-12	SDG	OPENING HOOPS ADDED
---	--------	-----	---------------------

CUSTOMER:

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

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

3	10-26-11	SDG	REV. VAULT CONFIGURATION
---	----------	-----	--------------------------

2	8-16-11	SDG	REV. VAULT CONFIGURATION
---	---------	-----	--------------------------

1	7/20/11	SDG	REV. CONFIGURATION
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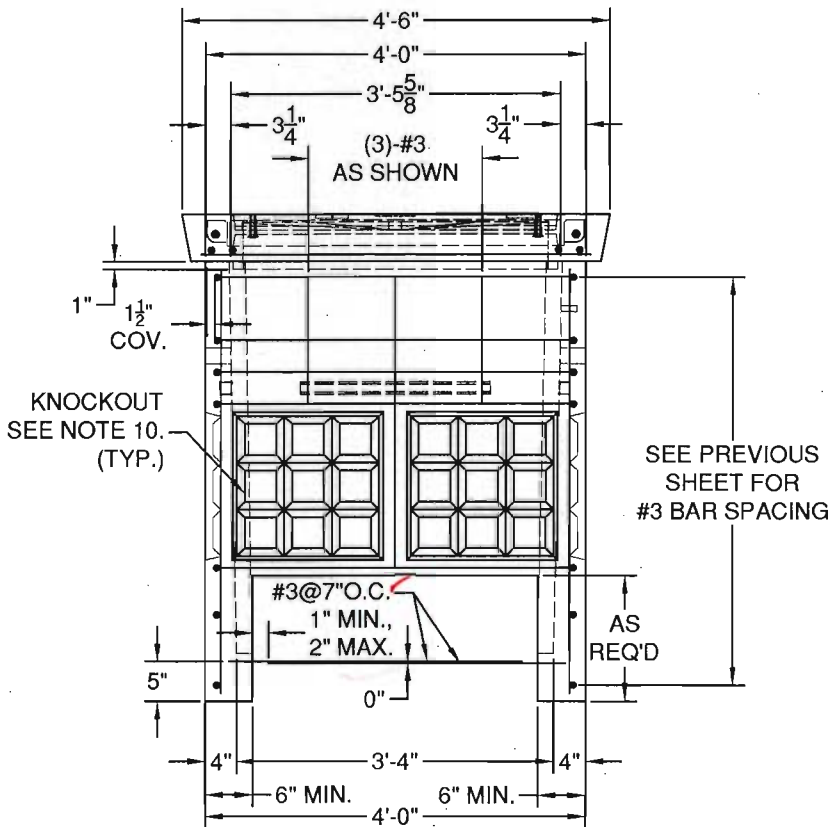
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PROJECT: STANDARD STRUCTURE: 4X6 HD EV (WSDOT) 9" TOP

GRANITE PRECASTING & CONCRETE INC.
 4116 BAKERVIEW SPUR, BELLINGHAM, WA. 98226 (360) 671-2251 1-800-808-2251 FAX: (360) 671-0780

APPROVED

Washington State
 Department of Transportation
 HQ Traffic Operations Office
 DATE December 7, 2011 TAT



ELEVATION VIEW
 (ENDWALL W/REINFORCING SHOWN)



10/27/11

DESIGN NOTES:

1. CONCRETE STRENGTH=7,000 PSI
2. REINFORCING:
 BAR: ASTM A615, GRADE 60.
 WWR: ASTM A185, GRADE 65.
3. DESIGN PER ASTM C857 & ACI318.
4. 46,000 LB. 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.

OPEN BOTTOM OPTION

PROJECT: STANDARD	STRUCTURE: 4X6 HD EV (WSDOT) 6" TOP	CUSTOMER:
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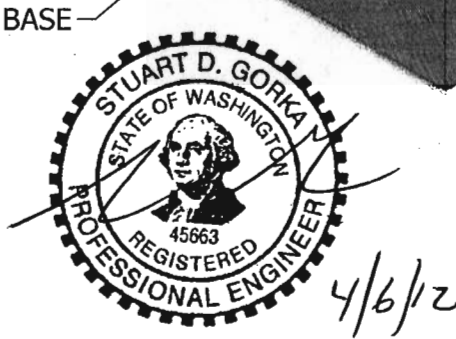
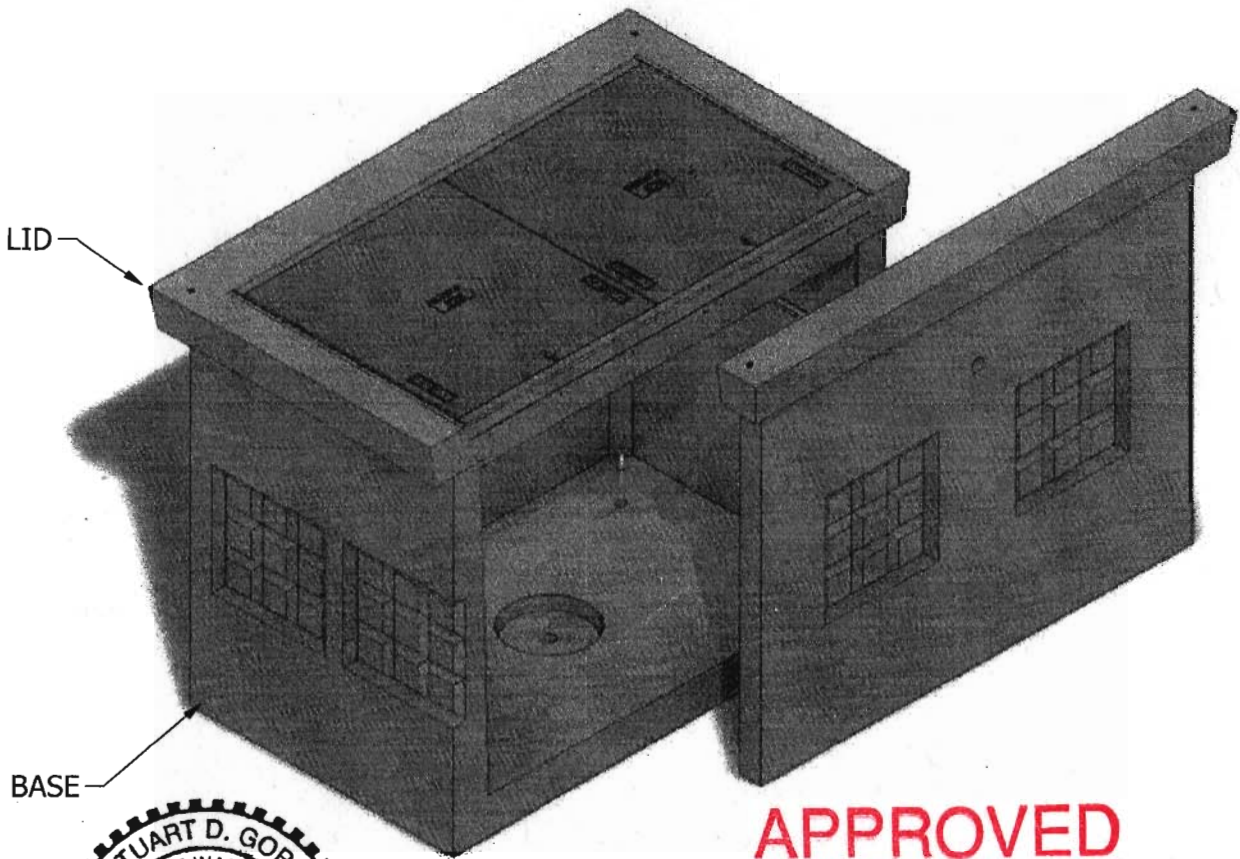
GRANITE PRECASTING & CONCRETE INC.

4116 BAKERVIEW SPUR, BELLINGHAM, WA. 98226 (360) 671-2251 1-800-808-2251 FAX: (360) 671-0780

DRAWN: SDG	DATE: 2/4/10	SHEET:
CHECKED:	DATE:	SCALE: 1/2"=1'-0"
3 10-26-11 SDG	REV. VAULT CONFIGURATION	
2 8-16-11 SDG	REV. VAULT CONFIGURATION	
1 7/20/11 SDG	REV. CONFIGURATION	

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT SHALL NOT BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE EXPRESS WRITTEN PERMISSION OF GRANITE PRECASTING AND CONCRETE.

6 x 4 WSDOT Electrical Vault



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

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

(L) 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

(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.



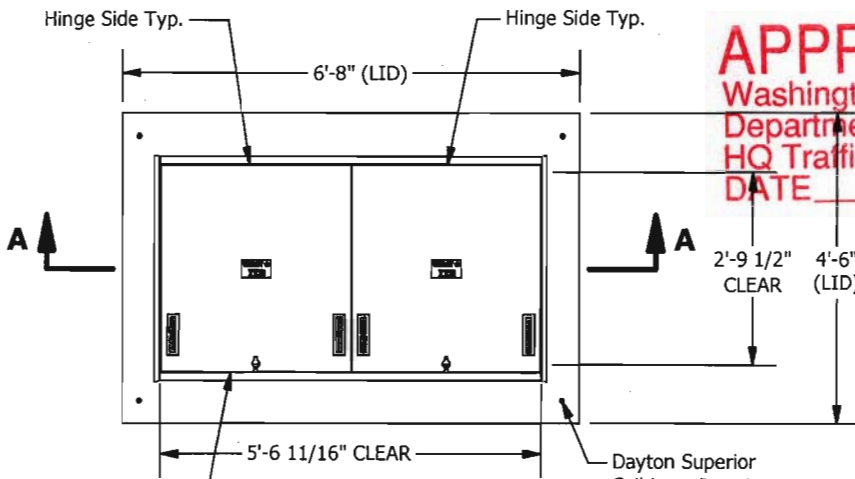
GRANITE™

**PRECASTING &
CONCRETE INC.**

4116 BAKERVIEW SPUR • BELLINGHAM, WA. 98226 • (360) 671-2251 • 1-800-808-2251 • FAX: (360) 671-0780

6 x 4 WSDOT Electrical Vault

APPROVED AS NOTED
 Washington State
 Department of Transportation
 HQ Traffic Operations Office
 DATE April 26, 2012 TAT



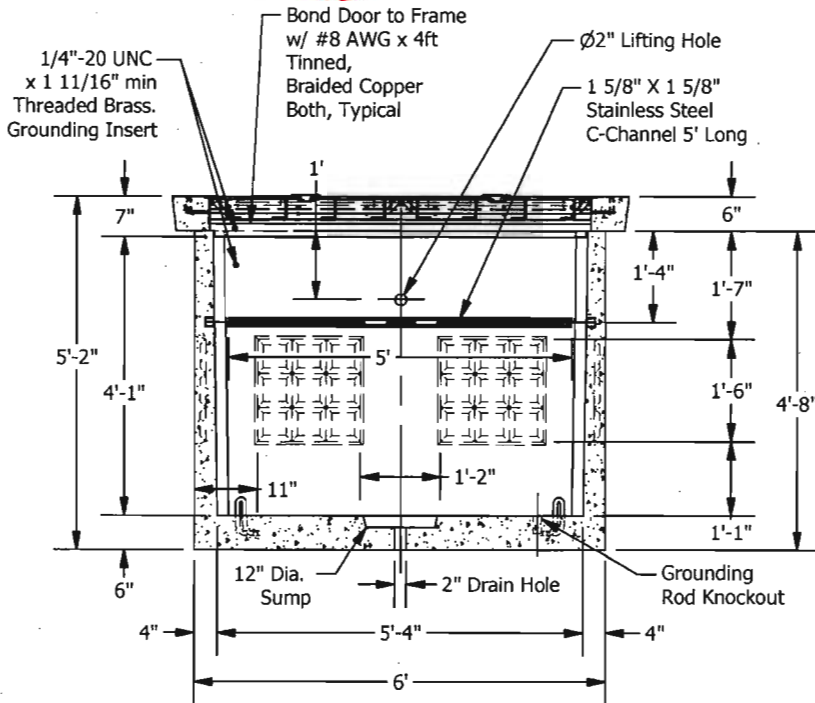
PLAN

33 1/2" X 66 11/16"
 INWESCO Galv. H-20
 Double Door Hatch
 Labeled: "ITS"
 SlipNOT hatches to be
 used in all sidewalk
 applications.

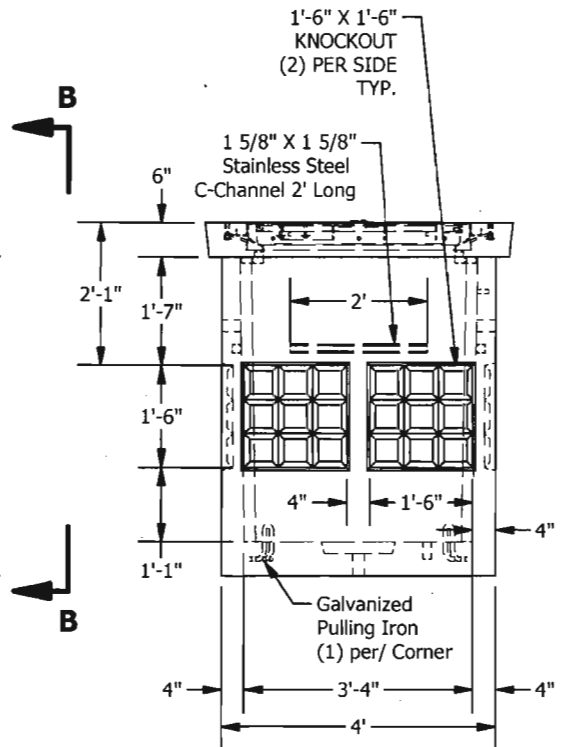
OR COMM
 TEL
 LT
 TS



4/6/12



SECTION A-A



VIEW B-B

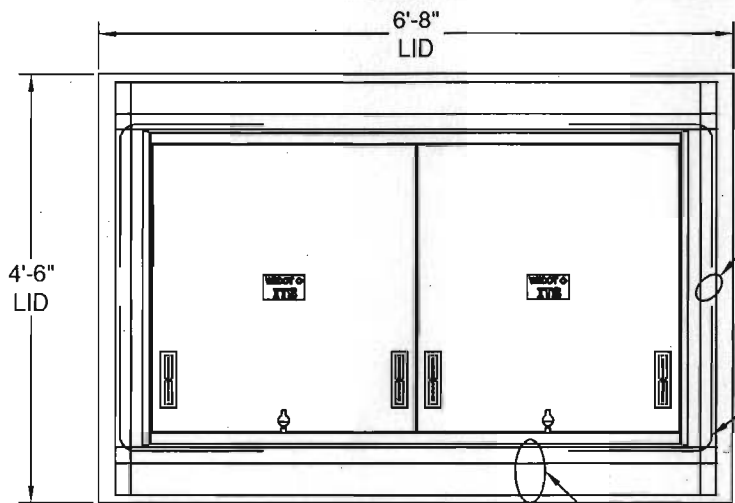
SPECIFICATIONS

1. Concrete: Fc=7,000 psi @28 days
2. Rebar: ASTM A-615 Grade 60
3. Design: ASTM C-857 "Minimum Structural Design Loading for Underground Precast Concrete Utility Structures"
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.

APPROVED

Washington State
Department of Transportation
HQ Traffic Operations Office

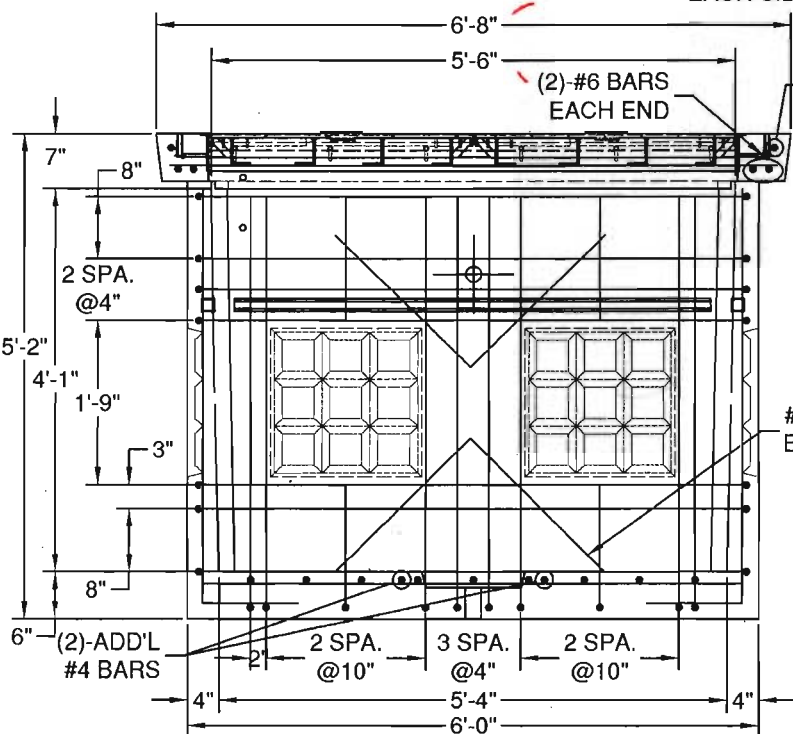
DATE: January 25, 2012 TAT



PLAN VIEW

(3)-#6 BARS EACH SIDE

#5 L-BAR TYP. EACH CORNER 18"



ELEVATION VIEW

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

#5 L-BAR IN CORNERS 18"

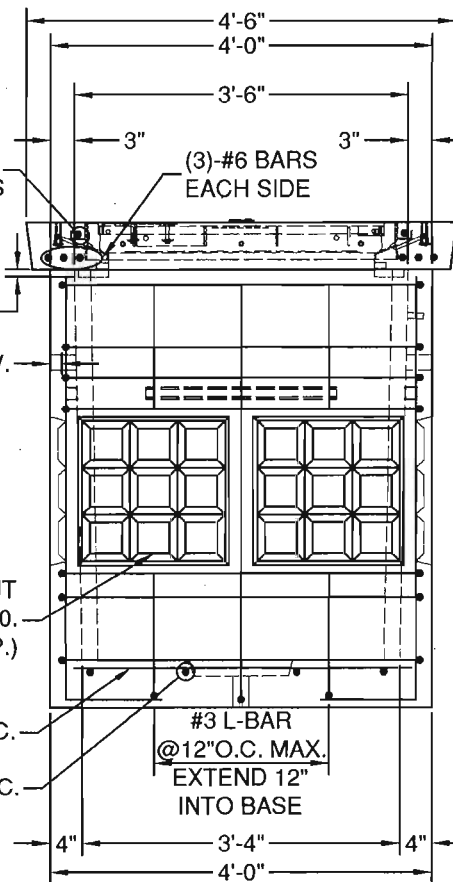
1 1/2" COV.

#3 TRIM BAR (TYP.)

KNOCKOUT SEE NOTE 10. (TYP.)

#4@10"O.C.

#4@12"O.C.



ELEVATION VIEW

(ENDWALL W/REINFORCING SHOWN)

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

DESIGN NOTES:

1. CONCRETE STRENGTH=7,000 PSI
2. REINFORCING:
BAR: ASTM A615, GRADE 60.
WWR: ASTM A185, GRADE 65.
3. DESIGN PER ASTM C857 & ACI318.
4. 22,500 LB. LIVE 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.



1/5/12

PROJECT:

STANDARD

STRUCTURE:

4X6 EV (WSDOT)

CUSTOMER:

DRAWN:	DATE:	SHEET:
CHECKED: SDG	DATE: 2/12/10	SCALE: 1/2"=1'-0"
4 1-4-12 SDG	REV. HATCH	
3 10-26-11 SDG	REV. VAULT CONFIGURATION	
2 8-16-11 SDG	REV. VAULT CONFIGURATION	
1 3-14-11 SDG	REV. GEOMETRY	

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION THAT SHALL NOT BE COPIED OR DISCLOSED TO OTHERS WITHOUT THE EXPRESS WRITTEN PERMISSION OF GRANITE PRECASTING AND CONCRETE.



GRANITE PRECASTING & CONCRETE INC.

4116 BAKERMEW SPUR, BELLINGHAM, WA. 98226 (360) 671-2251 1-800-808-2251 FAX: (360) 671-0780

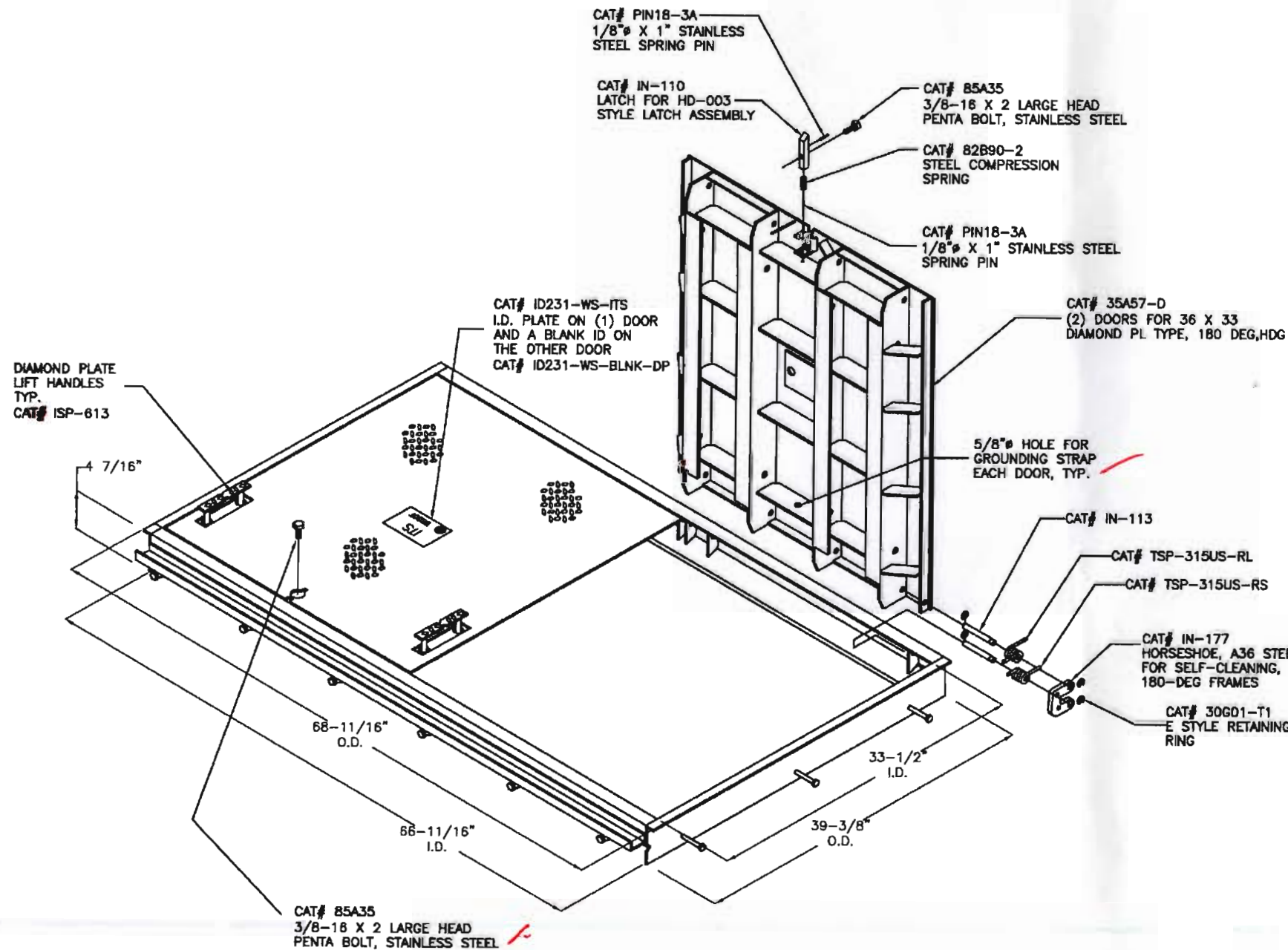
DESIGN CRITERIA

1. ASSUME ASTM A-36 STEEL PLATE & STRUCTURAL SHAPES.
2. DESIGN IN AASHTO H-20 (16.0 KIP WHEEL LOAD) LOADING CRITERIA.
3. USE 16.0 KIP WHEEL LOAD WITH A 40% IMPACT FACTOR (22,500 lbs.).
4. $F_b = 0.66F_y$ ($F_y = 36.0$ ksi) $F_b = 24.00$ ksi.
5. $F_v = 0.40F_y$ (14.40 ksi).
6. LOAD DISTRIBUTION AREA @ $10" \times 10"$.
7. REFER TO ASTM C-857 AS LAST REVISED WHERE APPLICABLE.
8. USE AWS ER70-6 CO_2 GAS SHIELDED WELDING WIRE

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 DESIGN FOR USE IN TRAFFIC APPLICATION, OR IN AREAS SUBJECTED TO H-20-44 TRAFFIC CONDITIONS.



BILL OF MATERIALS & MILL CERTS DOCUMENTS

ITEM NUMBER	ITEM DESCRIPTION	MATERIAL
35A57-D	33" X 36" DOOR, DIAMOND PL TYPE	See Drawing
35A57-F	33-1/2" X 66-11/16 CLR OPNG FRAME	See Drawing
ISP-613	LIFT HANDLE, DIAMOND PLATE	A786
85A35	3/8-16 X 2 LARGE HEAD PENTA BOLT	A193-10A
PIN18-3A	1/8" X 1" A36 STEEL	420 S.S.
IN-110	5/8" SQ LATCH, A36 STEEL, ZINC PLATED	A36
82B90-2	COMPRESSION SPRING FOR IN-110	302 S.S.
IN-113	1/2" HINGE PIN FOR 180-DEG SPRING ASSIST	A36
TSP-315US-RS	SPRING #02 RIGHT SHORT, 180-DEG	A401-10
TSP-315US-RL	SPRING #03 RIGHT LONG, 180-DEG	A401-10
TSP-315US-LS	SPRING #02 LEFT SHORT, 180-DEG	A401-10
TSP-315US-LL	SPRING #03 LEFT LONG, 180-DEG	A401-10
IN-177	HORSESHOE FOR 180-DEG SPRING ASSIST	A36
30G01-T1	1/2" E STYLE RETAINING RING	A693-06
ID231-WS-ITS	3/16 X 3-1/16 X 5-5/16 ID PLATE, WS-DOT	A36
ID231-WS-BLNK-DP	3/16 X 3-1/16 X 5-5/16 ID PLATE, BLANK	A36

REV	DESCRIPTION OF MODIFICATION	DATE	BY
A	CHANGE LIFT HANDLE TO DIAMOND PLATE / REVISE CHANNEL TO SHOW FULL LENGTH	11/22/11	SJ

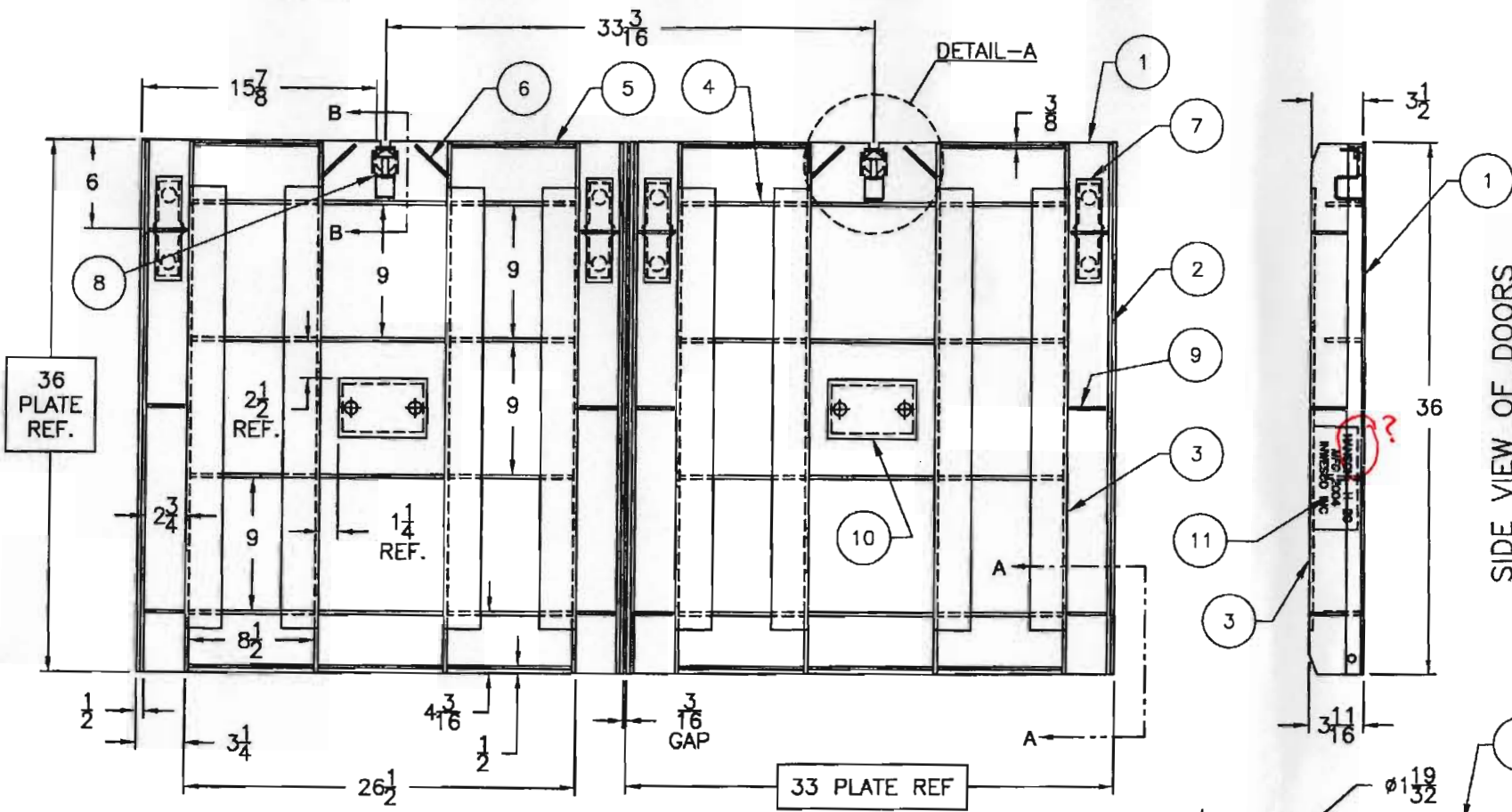
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INWESCO INCORPORATED		TITLE COVER AND FRAME FOR SELF-CLEANING INLINE DOUBLE 180-DEG, FLOOR PLATE, HDG	
746 NORTH CONEY AVENUE AZUSA, CALIFORNIA 91702 PH: (626) 334-9304 FAX: (626) 888-3404	SIZE	MATL	DATE 08/28/06
	SCALE	DWN BY LJN	CAT/DWG# 35A57
		SHEET 1 OF 1	WEIGHT REV A

APPROVED
Washington State
Department of Transportation
HQ Traffic Operations Office
DATE January 25, 2012 TAT

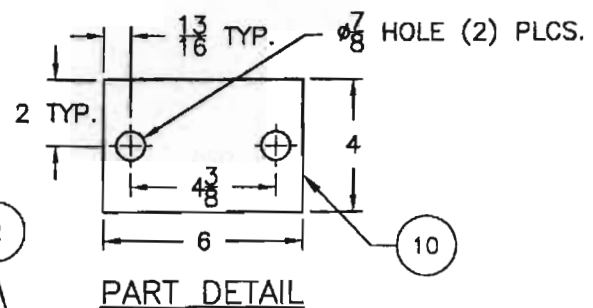
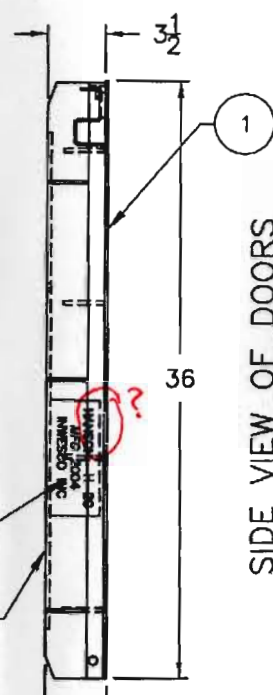




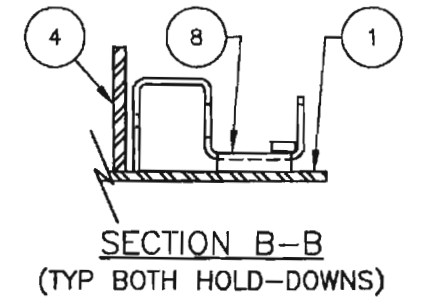
BOTTOM VIEW OF DOORS

BILL OF MATERIALS			
Item	Qty	Name	Material
1	1	CAT# 35A57-P (SET OF 2)	A36 STEEL
2	4	FLAT BAR 1/4 X 1 X 35-7/8	A36 STEEL
3	8	CAT# IN-130-H20, SGL/TPL ANGLE STRINGER 35-7/8 LG	A36 STEEL
4	24	CAT# IN-124, CRIPPLE 1/4 X 2-1/2 X 8-3/8	A36 STEEL
5	8	CAT# IN-125, CRIPPLE 3/16 X 1 X 8-3/8	A36 STEEL
6	4	STRIP 3/16 X 1 X 3	A36 STEEL
7	4	CAT# 35A23, LIFT HANDLE BACK-UP PLATE	A36 STEEL
8	2	CAT# IN-100-M2, LATCH HOUSING	A36 STEEL
9	12	CAT# IN-101, STD. GUSSET 3/16 X 1 X 3-1/2	A36 STEEL
10	2	CAT# ISP-200-WS, 3/16 BACK-UP PLATE	A36 STEEL
11	1	CAT# IDHP-20DP	A653-09A STEEL

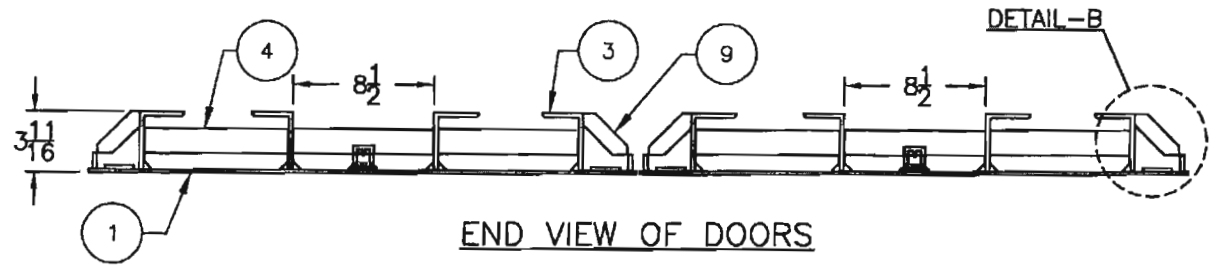
SIDE VIEW OF DOORS



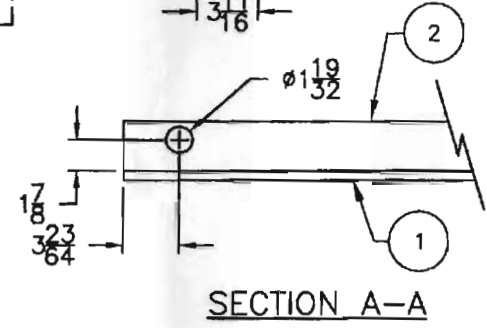
PART DETAIL



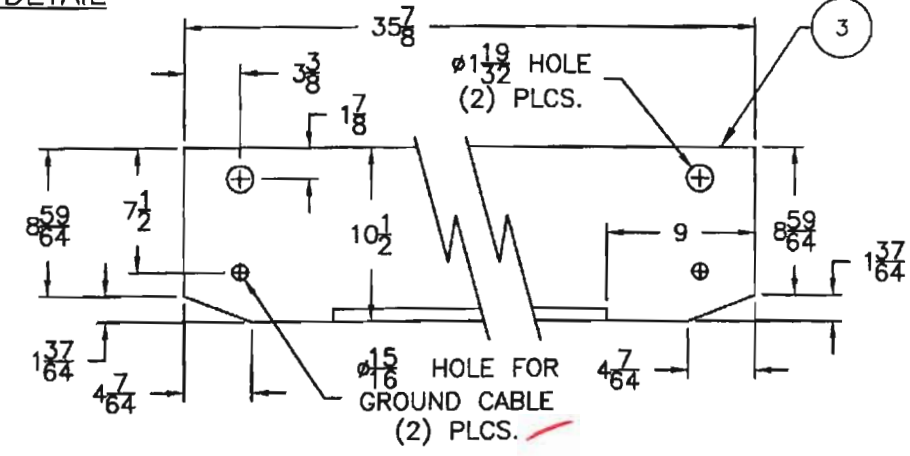
SECTION B-B
(TYP BOTH HOLD-DOWNS)



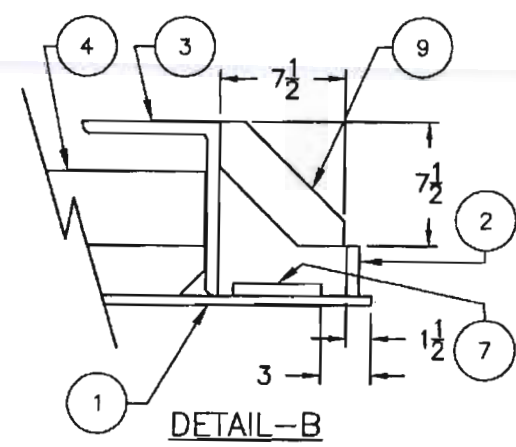
END VIEW OF DOORS



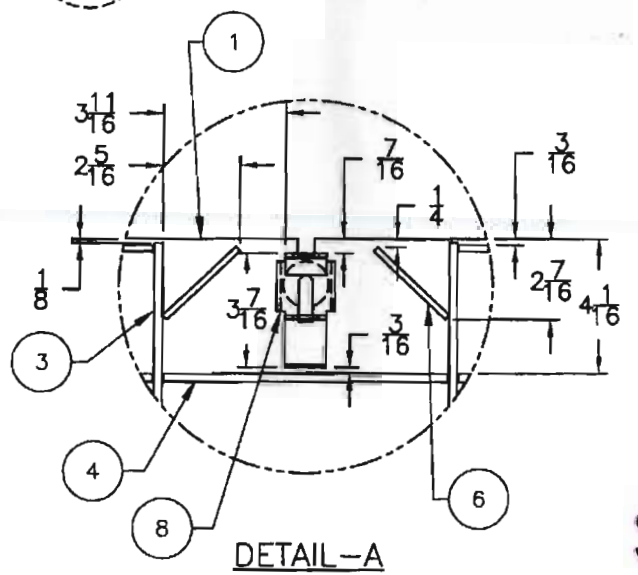
SECTION A-A



NOTCH DETAIL
IN-130-H20 (REF)



DETAIL-B



DETAIL-A

APPROVED
Washington State
Department of Transportation
HQ Traffic Operations Office
DATE January 25, 2012 TAT



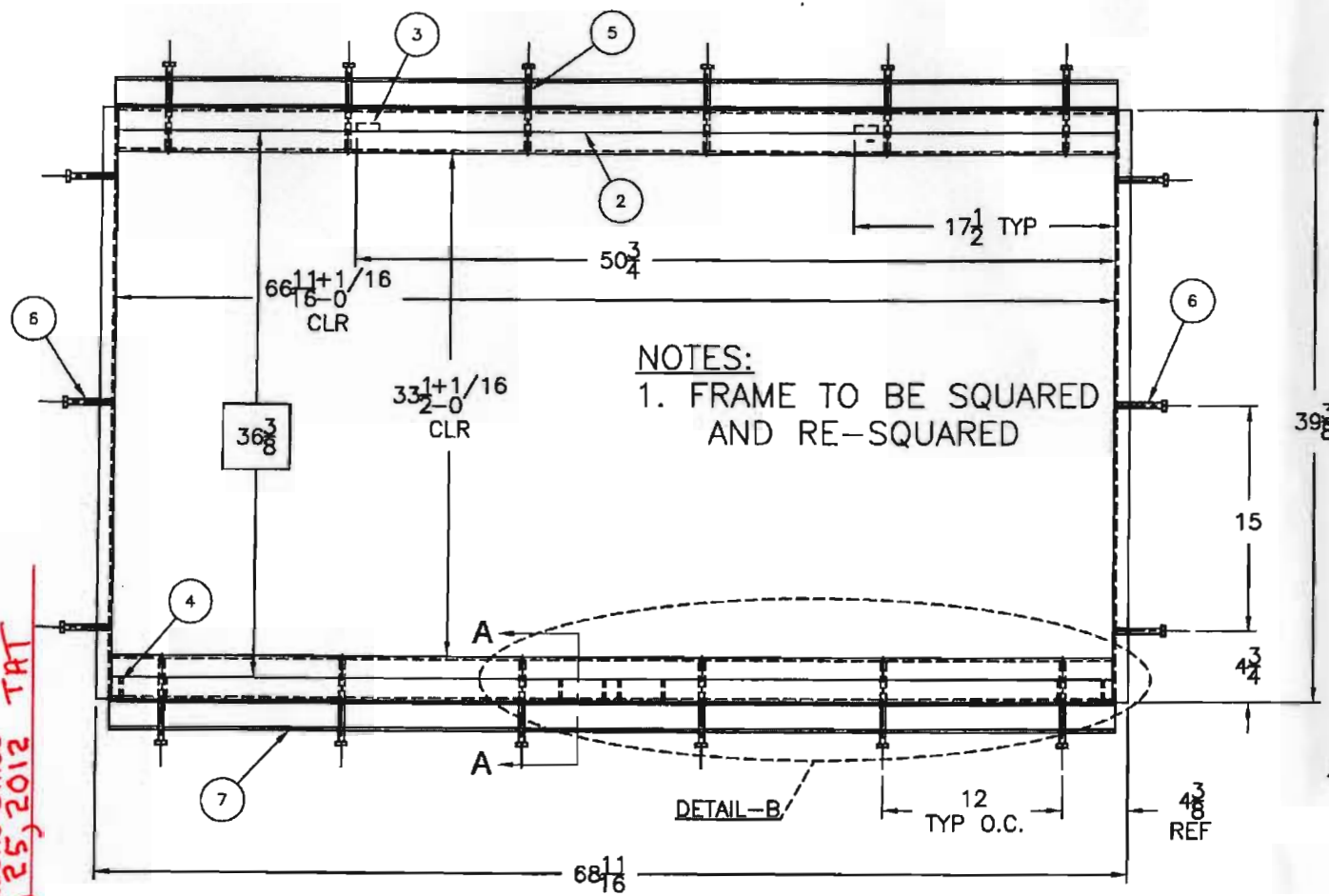
B	REVISED PART# TO FROM 36 TO 35-7/8	06/02/10	SJ
A	CHGD. I-8, IN-100 W/ IN-100-M2. REPLACED I-8 W/ STRIP 3/16 X 1/2 X 1-1/4. INCREASED QTY. OF I-4 FR. 22 TO 24.	10/04/07	LJN
REV	DESCRIPTION OF MODIFICATION	DATE	BY
PROPRIETARY INFORMATION			
<small>THIS DRAWING EXHIBITS PROPRIETARY AND CONFIDENTIAL INFORMATION AND IS LOANED BY INVECO WITH THE UNDERSTANDING THAT IT WILL NOT BE DISCLOSED IN PART OR WHOLE, AND/OR USED FOR ANY OTHER PURPOSE OTHER THAN MAINTENANCE OR INSTALLATION, UNLESS EXPRESSLY AUTHORIZED IN WRITING BY INVECO INCORPORATED.</small>			
INVECO		TITLE DOOR FOR SELF CLEANING DOUBLE 180 DEG, 3/16 DIAMOND PLATE, HDG	
746 N. Conroy Avenue Azusa, California 91702 826.334.8304	DATE 06/15/07	CAT # 35A57-D	WEIGHT REVISION B

APPROVED AS NOTED

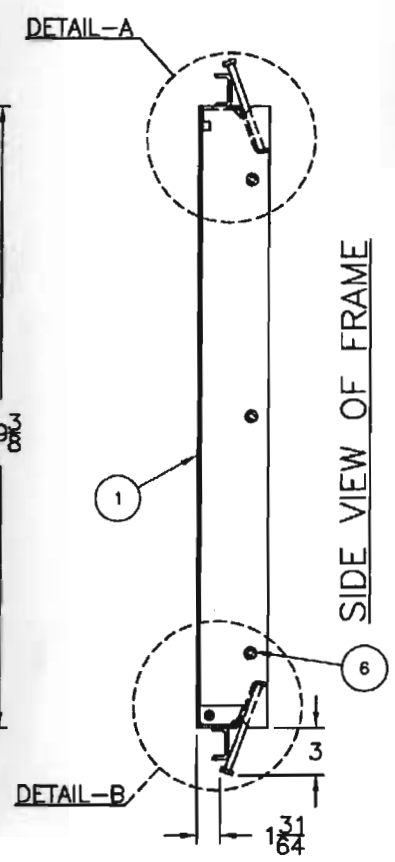
Washington State
 Department of Transportation
 HQ Traffic Operations Office
 DATE: January 25, 2012 TRT

BILL OF MATERIALS

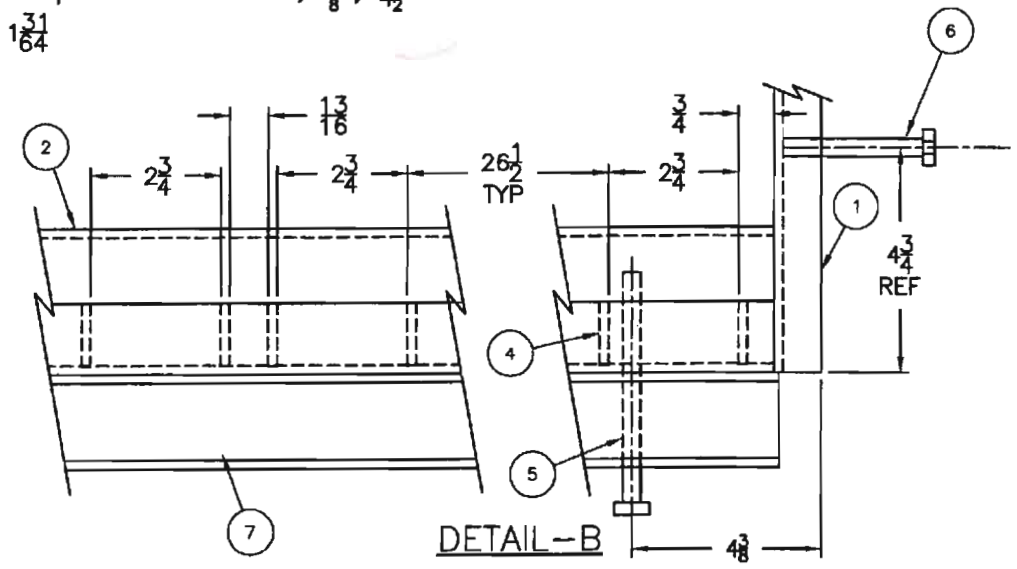
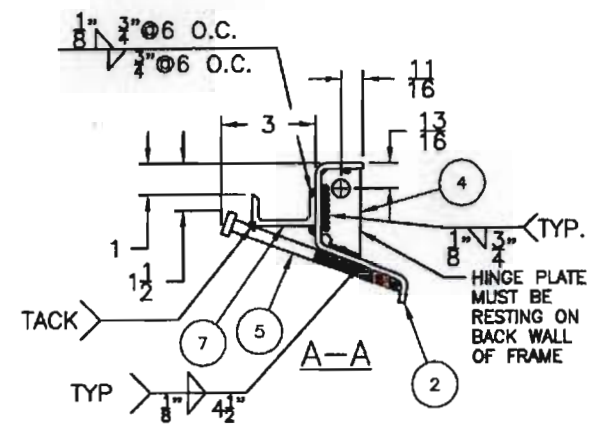
Item	Qty	Name	Material
1	2	CAT# 35A57-F-1, 39-3/8 LONG	A36 STEEL
2	2	CAT# 35A57-F-2, 66-11/16 LONG	A36 STEEL
3	2	SQ 1/2 X 1-1/2	A36 STEEL
4	8	CAT# IN-103	A36 STEEL
5	12	CAT# HW-STUD38-625	C1015 STEEL
6	6	CAT# HW-STUD38-300	C1015 STEEL
7	2	C 2 X 1 X 3/16 X 67	A36 STEEL



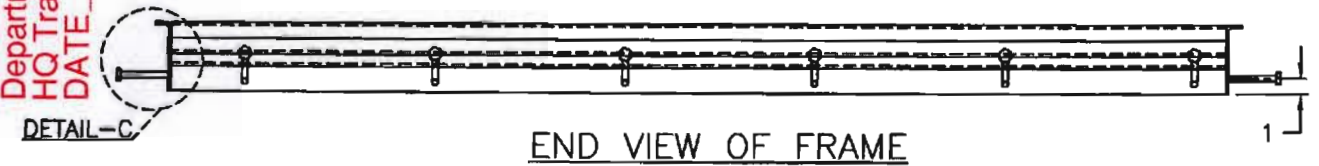
PLAN VIEW OF FRAME



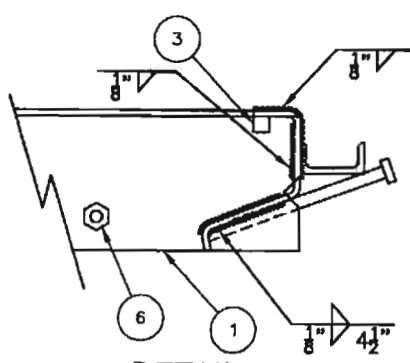
SIDE VIEW OF FRAME



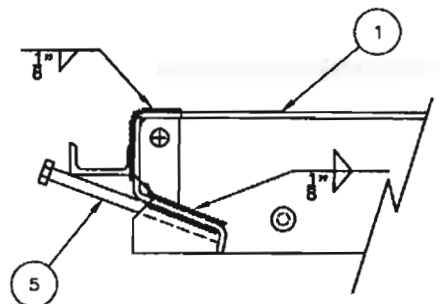
DETAIL-B



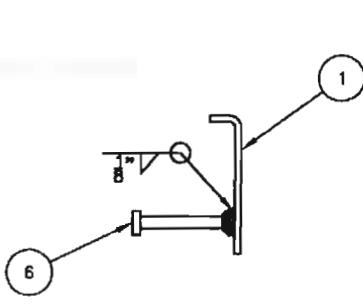
END VIEW OF FRAME



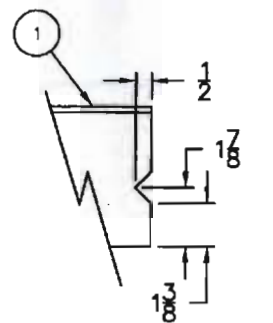
DETAIL-A



DETAIL-B



DETAIL-C



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

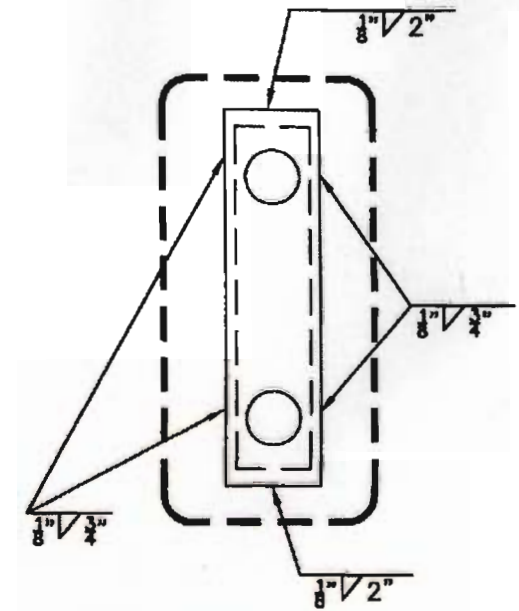
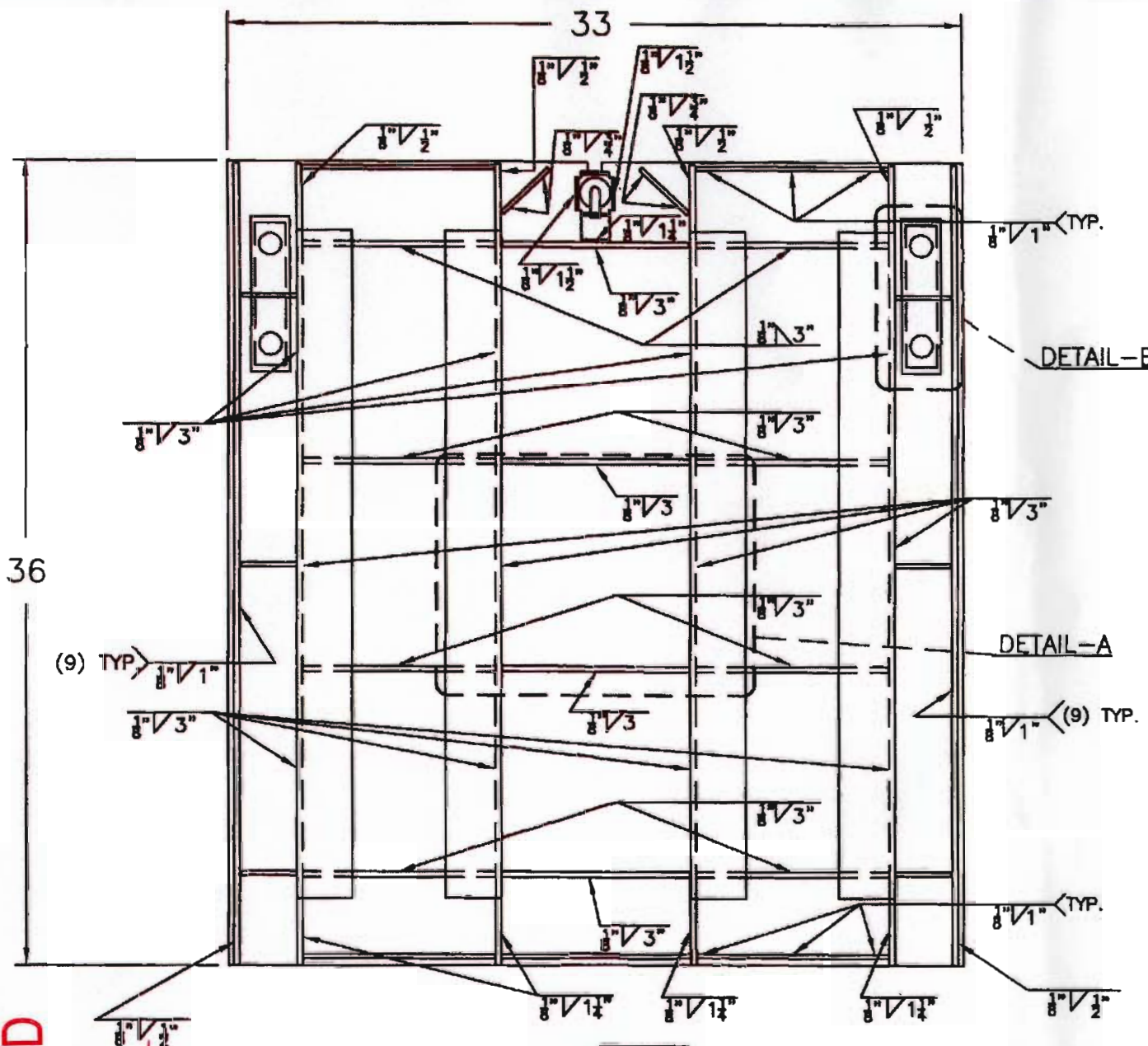


REV	DESCRIPTION OF MODIFICATION	DATE	BY
D	ADDED CHANNEL TO OUTSIDE OF FRAME PER PRODUCTION	11/08/10	SJ
C	REVISED ANCHOR BOLTS TO NELSON STUDS	07/02/10	SJ

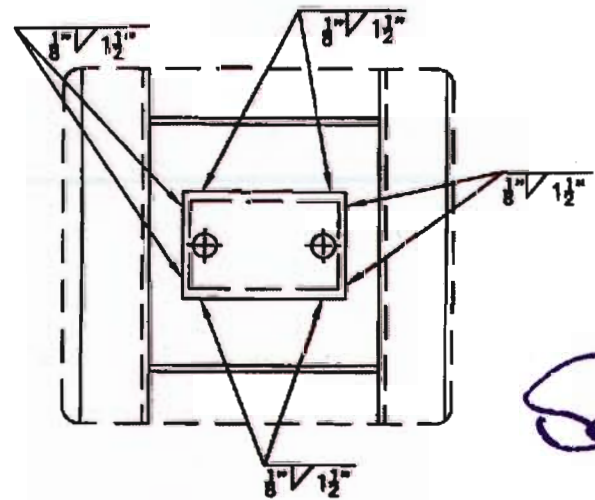
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TITLE FRAME FOR SELF CLEANING DOUBLE, 180-DEG 33-1/2" X 66-11/16" CLEAR OPEN, HDG	
DATE 01/05/06	CAT # 35A57-F
DRAWN BY RS	WEIGHT REVISION D

748 N. Coney Avenue
 Azusa, California 91702
 626.334.9304



DETAIL-B
(TYP. OF BOTH HANDLES)



DETAIL-A
FOR ID TAG HOLDER

APPROVED AS NOTED
 Washington State
 Department of Transportation
 HQ Traffic Operations Office
 DATE January 25, 2012 TAT

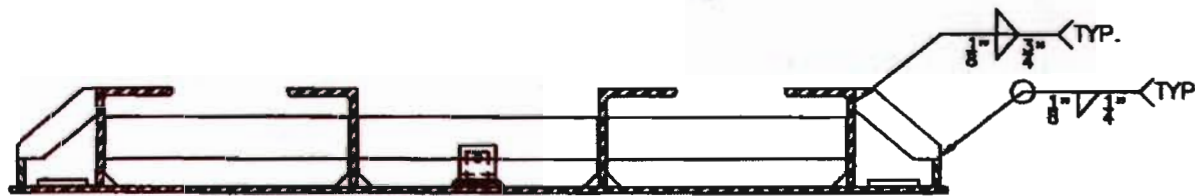
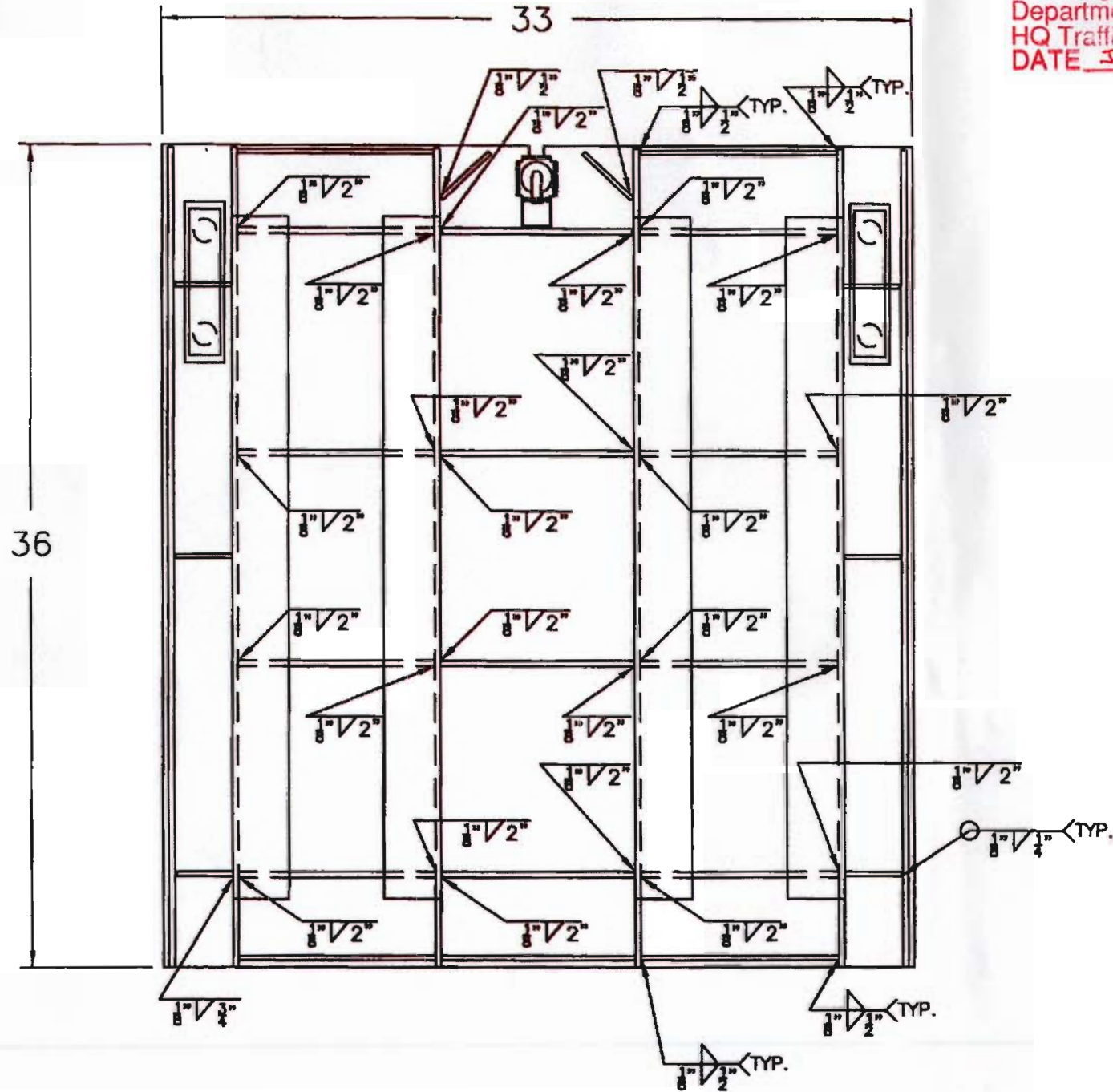


HORIZONTAL WELDS

D	REVISE WELD SYMBOLS	03/29/10	DHL
C	REVISE WELD SYMBOLS	03/17/10	SJ
REV	DESCRIPTION OF MODIFICATION	DATE	BY
INWESCO STANDARD DETAIL THE PARTS SHOWN IN THIS BORDER MAKE UP A SUB-ASSEMBLY TO BE USED IN EVERY SIMILAR TOP ASSEMBLY. THE BILL OF MATERIALS CONTAINED IN THIS BORDER SHALL NOT BE DUPLICATED IN THE ASSEMBLY BILL OF MATERIALS. THEREFORE THIS SUB-ASSEMBLY IS REFERRED TO AS AN INWESCO STANDARD DETAIL.			
INWESCO 746 N. Coney Avenue Azusa, California 91702 626.334.9304		TITLE WELDING STANDARDS FOR SUBSTRUCTURE	
DATE	CAT #	WEIGHT	
11-23-04	35A57-DWS-1		
DRAWN BY		REVISION	
RS		D	

APPROVED

Washington State
 Department of Transportation
 HQ Traffic Operations Office
 DATE January 25, 2012 TAT

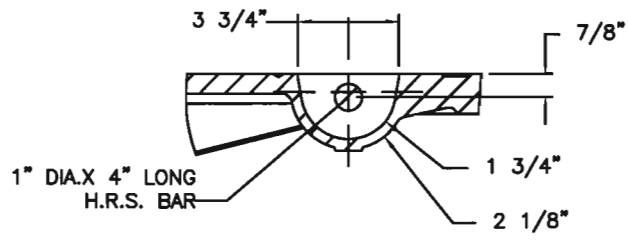
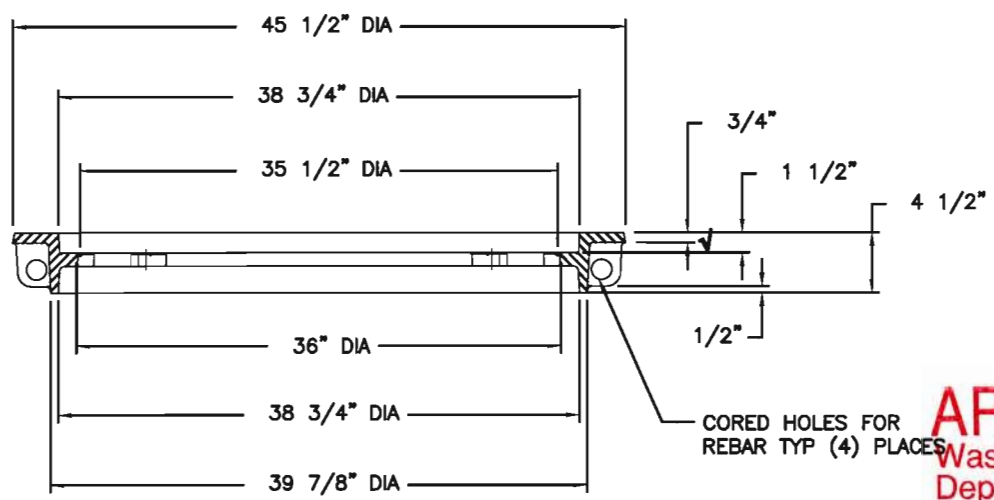
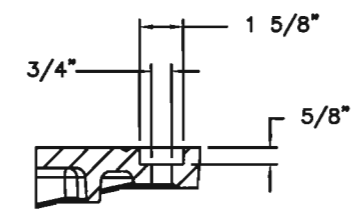
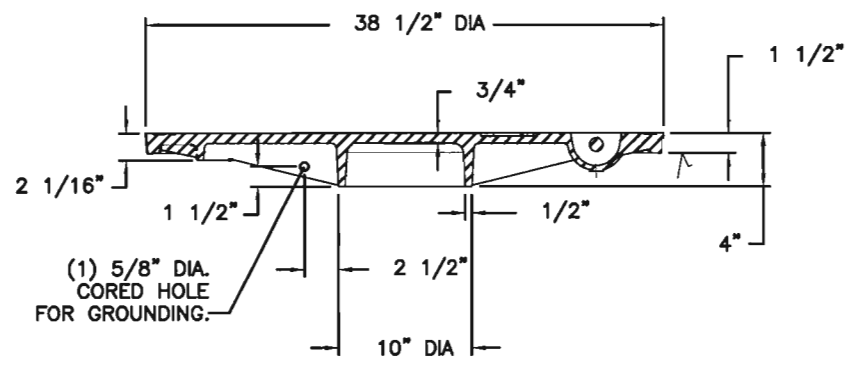
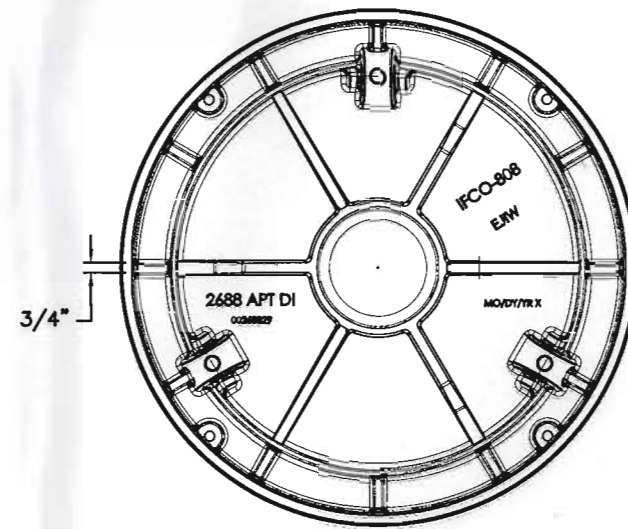
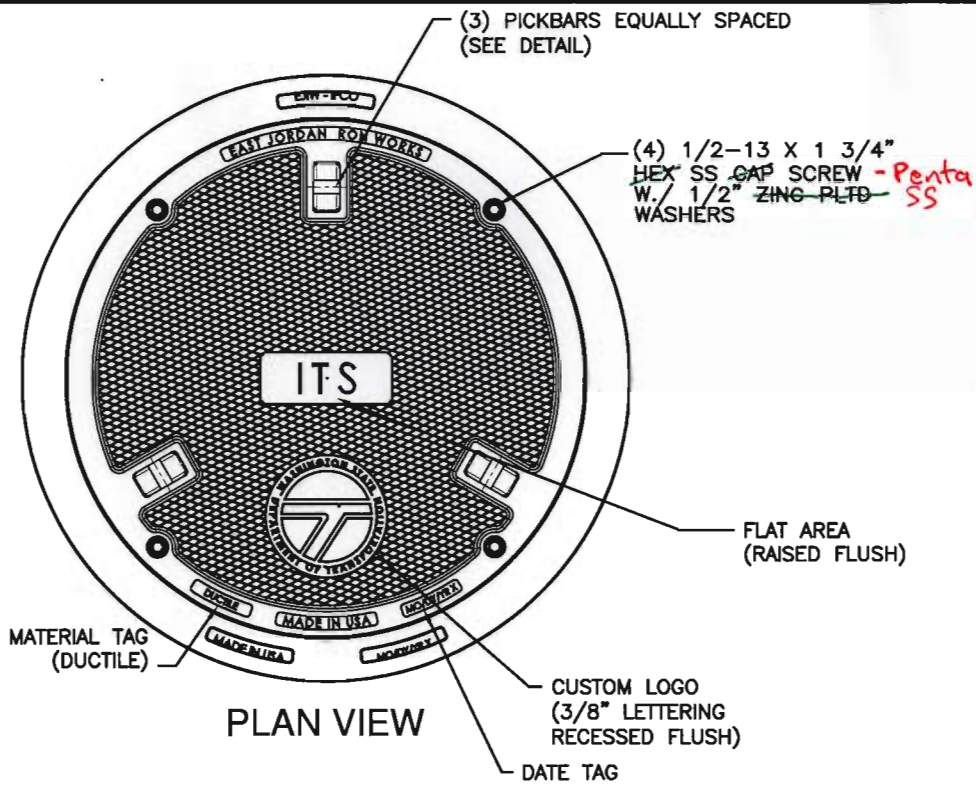


SECTION VIEW



VERTICAL WELDS

B	REVISE WELD SYMBOLS	03/29/10	DHIL
A	REVISE WELD SYMBOLS	03/17/10	SJ
REV	DESCRIPTION OF MODIFICATION	DATE	BY
INWESCO STANDARD DETAIL			
THE PARTS SHOWN IN THIS BORDER MAKE UP A SUB-ASSEMBLY TO BE USED IN EVERY SIMILAR TOP ASSEMBLY. THE BILL OF MATERIALS CONTAINED IN THIS BORDER SHALL NOT BE DUPLICATED IN THE ASSEMBLY BILL OF MATERIALS. THEREFORE THIS SUB-ASSEMBLY IS REFERRED TO AS AN INWESCO STANDARD DETAIL .			
INWESCO 746 N. Conroy Avenue Azusa, California 91702 626.334.9304		TITLE WELDING STANDARDS FOR SUBSTRUCTURE	
		DATE 03/25/10	CAT # 35A57-DWS-2
DRAWN BY SJ		REVISION B	



COVER SECTION

BOLTHOLE DETAIL

FRAME SECTION

COVER BOTTOM

PICKBAR DETAIL

APPROVED AS NOTED
 Washington State
 Department of Transportation
 HQ Traffic Operations Office
 DATE December 7, 2011 TAT

√ MACHINED SURFACE

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EJIW EAST JORDAN
 IRON WORKS EST. 1883

800-626-4653
 www.ejiw.com
 MADE IN USA

PRODUCT NUMBER
00268801

CATALOG NUMBER
2688Z2PT
2688 APT DI

MANHOLE ASSEMBLY

LOAD RATING
HEAVY DUTY

COATING
UNDIPPED

ESTIMATED WEIGHT
 COVER: 311 LBS
 FRAME: 225 LBS
 UNIT: 532 LBS

MATERIAL SPECIFICATION
 COVER - DUCTILE IRON
 ASTM A536
 FRAME - GRAY IRON
 ASTM A48 CL35B

OPEN AREA
 N/A

√ DESIGNATES MACHINED SURFACE

DRAWN DEW	DATE 05/18/06
--------------	------------------

LAST REVISED JJD	DATE 05/22/08
---------------------	------------------

REFERENCE INFORMATION

00XXXXXX