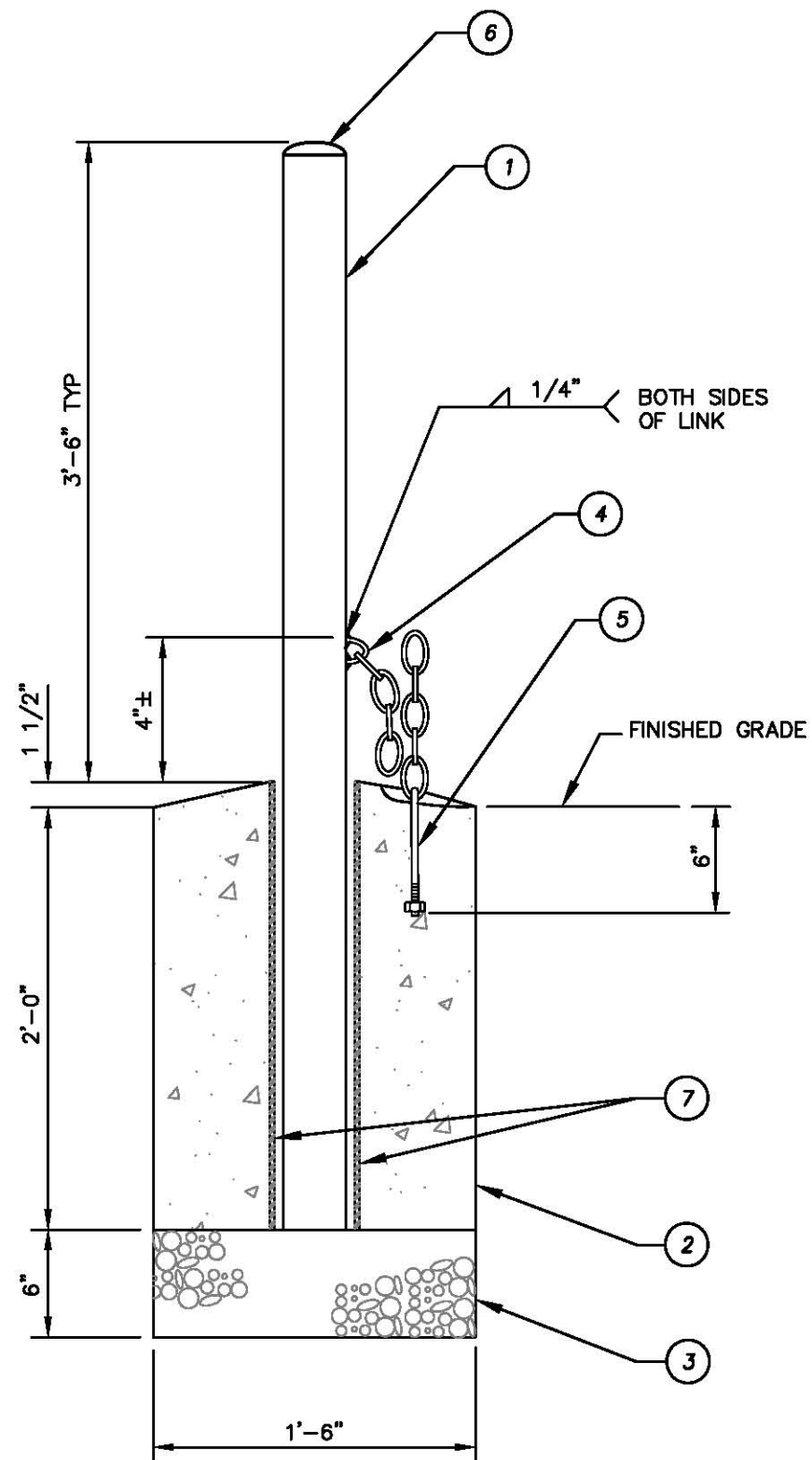
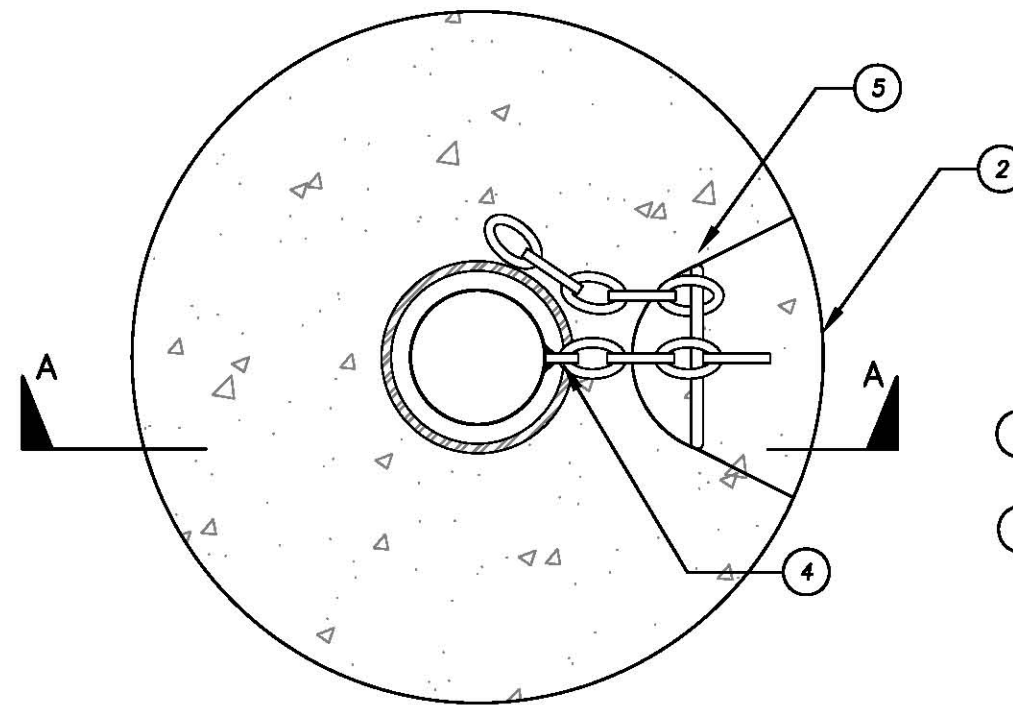


GENERAL STANDARD DRAWINGS TABLE OF CONTENTS

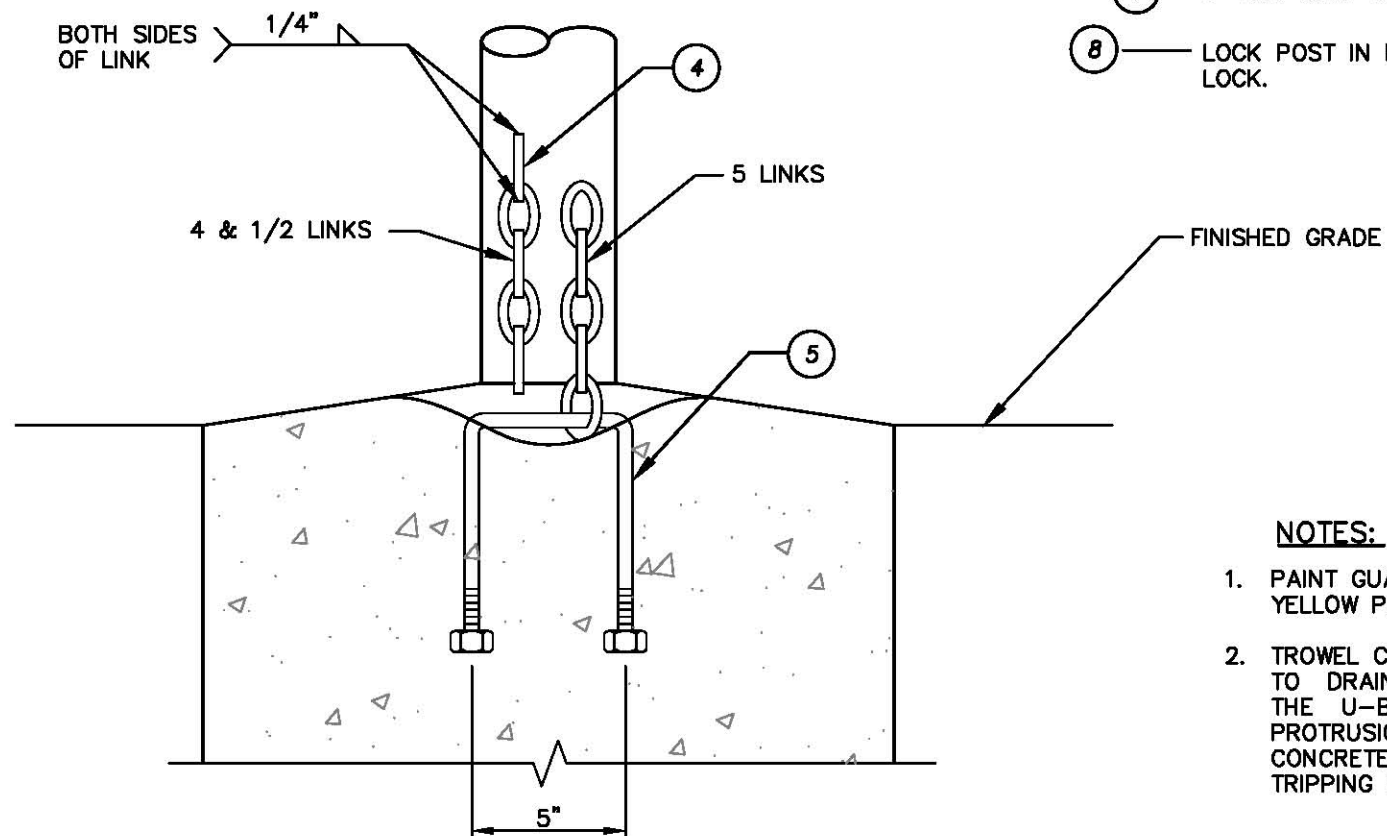
<u>Drawing No.</u>	<u>Description</u>
G-1	Removable Guard Post
G-2	Utility Marker
G-3	Access Gate
G-4	Retaining Wall
G-5	Vault Ladder
G-6	Vault Sumps
G-7	Vault Vent
G-8	Wall Penetration (< 4-Inches)
G-9	Wall Penetration (\geq 4-Inches)



SECTION A-A



PLAN VIEW



FRONT VIEW

- | ITEM | MATERIALS |
|------|--|
| 1 | 4" DIA. SCH. 40 BLACK STEEL PIPE. |
| 2 | ANNULAR CONCRETE POST ANCHOR. CAST IN PLACE. |
| 3 | 3/4" CRUSHED ROCK. |
| 4 | LOCKING ASSEMBLY MADE OF 4 & 1/2 LINKS OF 3/8" GRADE 80 STAINLESS CHAIN. WELD THE 1/2 LINK TO POST. |
| 5 | EMBED 3/8" DIA. 5" WIDE STAINLESS STEEL U-BOLT W/NUTS EMBEDDED INTO CONCRETE POST ANCHOR. LOOP 5 LINK STAINLESS CHAIN SEGMENT OF 3/8" GRADE 80 CHAIN ONTO U-BOLT AS SHOWN IN DETAIL. SEE NOTE 2. |
| 6 | 4" DIAMETER SCH. 40, WELDED STEEL END CAP. |
| 7 | 5" DIA. SCH. 40, HOT-DIP GALVANIZED STEEL PIPE SLEEVE. |
| 8 | LOCK POST IN PLACE WITH IRWD APPROVED SOLID BRASS PAD LOCK. |

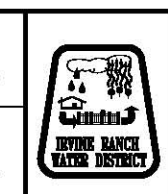
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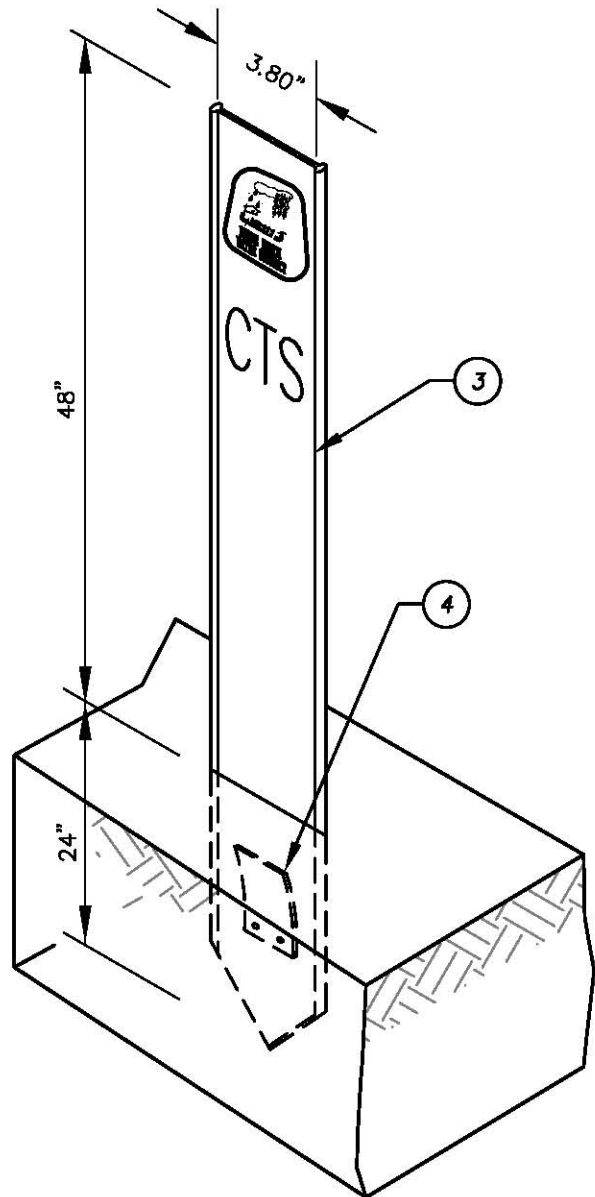
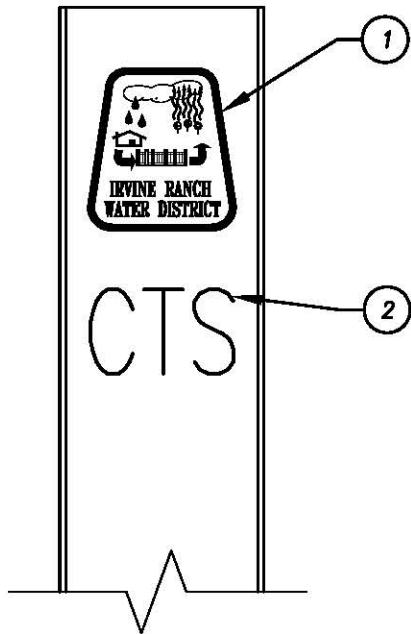
1. PAINT GUARD POST AND CAP OSHA SAFETY YELLOW PER IRWD STD. SPECIFICATIONS.
2. TROWEL CONCRETE POST ANCHOR SURFACE TO DRAIN AWAY FROM STEEL SLEEVE. SHAPE THE U-BOLT SWALE TO MINIMIZE THE PROTRUSION ABOVE THE ADJACENT CONCRETE SURFACE TO ELIMINATE THE TRIPPING HAZARD.

REMOVABLE GUARD POST

REVISION			
NO.	DATE	APPROVED	DATE

STANDARD SPECIFICATIONS COMMITTEE	
M. Cortez	10/09
CHAIR	DATE
ENGINEERING DEPARTMENT	
K. Burton	10/09
DIRECTOR OF ENGINEERING	DATE





ABBREVIATIONS

- ABD ANODE BED / ANODE WELL
- AVR AIR AND VACUUM RELEASE VALVE
- BO BLOW OFF
- CBL DIRECT BURIED CABLE
- CTS CATHODIC PROTECTION TEST STATION
- EPB ELECTRICAL PULL BOX
- FO FLUSH-OUT
- IJ INSULATING JOINT
- MH MANHOLE
- MTR METER
- PRV PRESSURE REGULATING VALVE
- PZ PIEZOMETER
- SBX SHUNT BOX
- SCO SEWER CLEAN OUT
- SWR SEWER MAIN
- TFO TEMPORARY FLUSH-OUT
- TPB TELEMETRY PULL BOX
- TW TEST WELL
- VLV VALVE
- WTR WATER MAIN
- WQS WATER QUALITY SAMPLE STATION

ITEM MATERIALS

- 1 — IRWD LOGO DECAL 3.25" HIGH X 2.75" WIDE.
- 2 — 2 OR 3 CHARACTER FACILITY LABEL. YELLOW LETTERS (1" HIGH) ON A CLEAR SELF ADHESIVE DECAL (USE ABBREVIATIONS HEREON).
- 3 — POST SHALL BE "CARSONITE" MODEL: CIB-380 MATERIAL: COLORED FIBERGLASS COMPOSITE WIDTH: 3.80 INCHES LENGTH: 72 INCHES COLOR: BROWN
- 4 — SPRING-LOADED STEEL BARB ANCHOR, FACTORY ATTACHED WITH RIVETS.

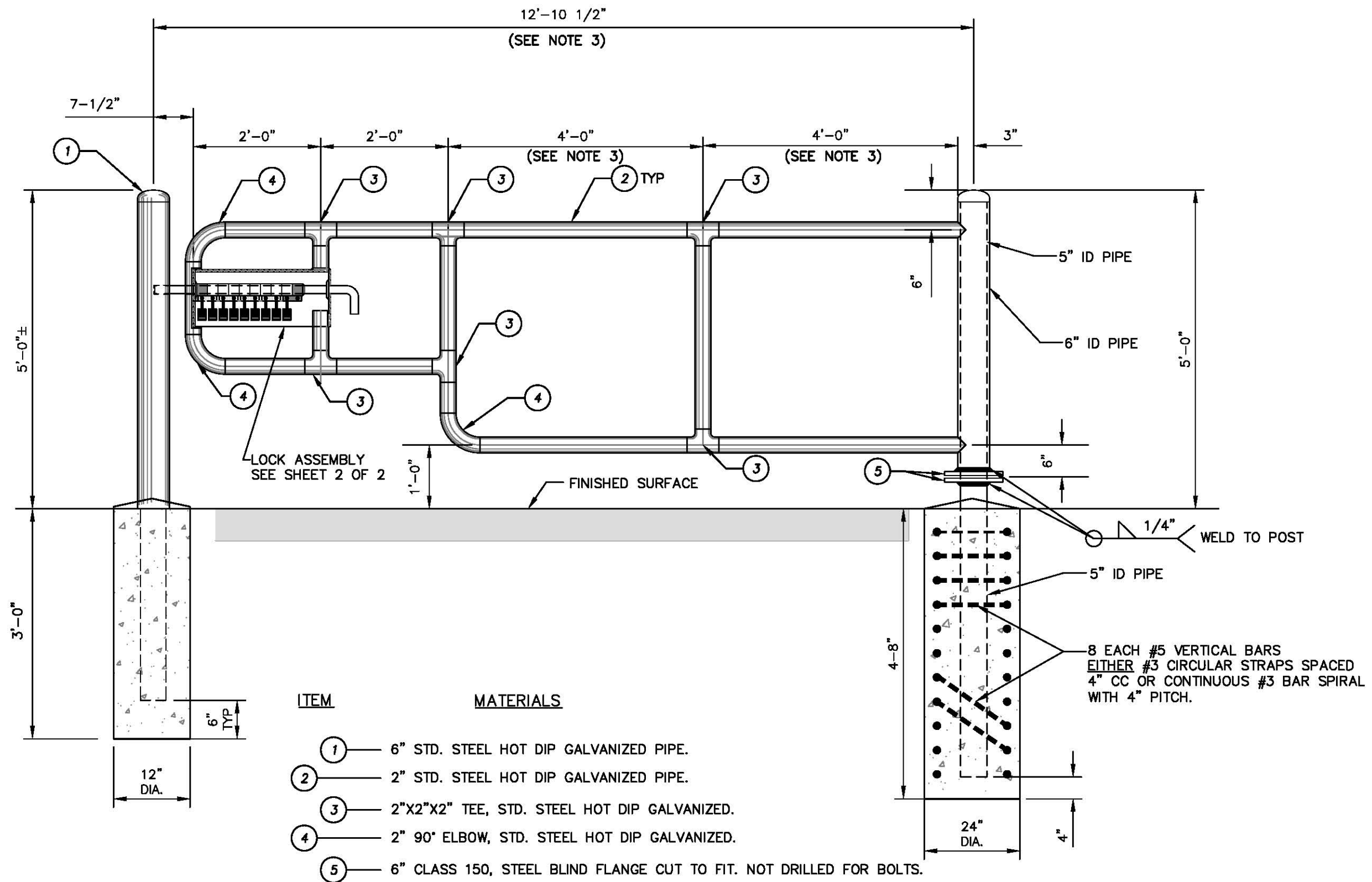
UTILITY MARKER

REVISION			
NO.	DATE	APPROVED	DATE

STANDARD SPECIFICATIONS COMMITTEE	
M. Cortez	10/09
CHAIR	DATE
ENGINEERING DEPARTMENT	
K. Burton	10/09
DIRECTOR OF ENGINEERING	DATE




IRWD
STD.DWG.
G-2
SHEET 1 OF 1



ITEM	MATERIALS
1	6" STD. STEEL HOT DIP GALVANIZED PIPE.
2	2" STD. STEEL HOT DIP GALVANIZED PIPE.
3	2"X2"X2" TEE, STD. STEEL HOT DIP GALVANIZED.
4	2" 90° ELBOW, STD. STEEL HOT DIP GALVANIZED.
5	6" CLASS 150, STEEL BLIND FLANGE CUT TO FIT. NOT DRILLED FOR BOLTS.

- NOTES:**
1. COAT OR HOT DIP GALVANIZE PER IRWD STD. SPECIFICATIONS.
 2. SET GATE TOP BAR LEVEL. SET POST SO THAT ELEVATION OF POST TOPS ARE EQUAL.
 3. INCREASE DIMENSION TO SPAN ROAD WIDTH (UP TO MAXIMUM TOTAL SPAN OF 17 FEET).

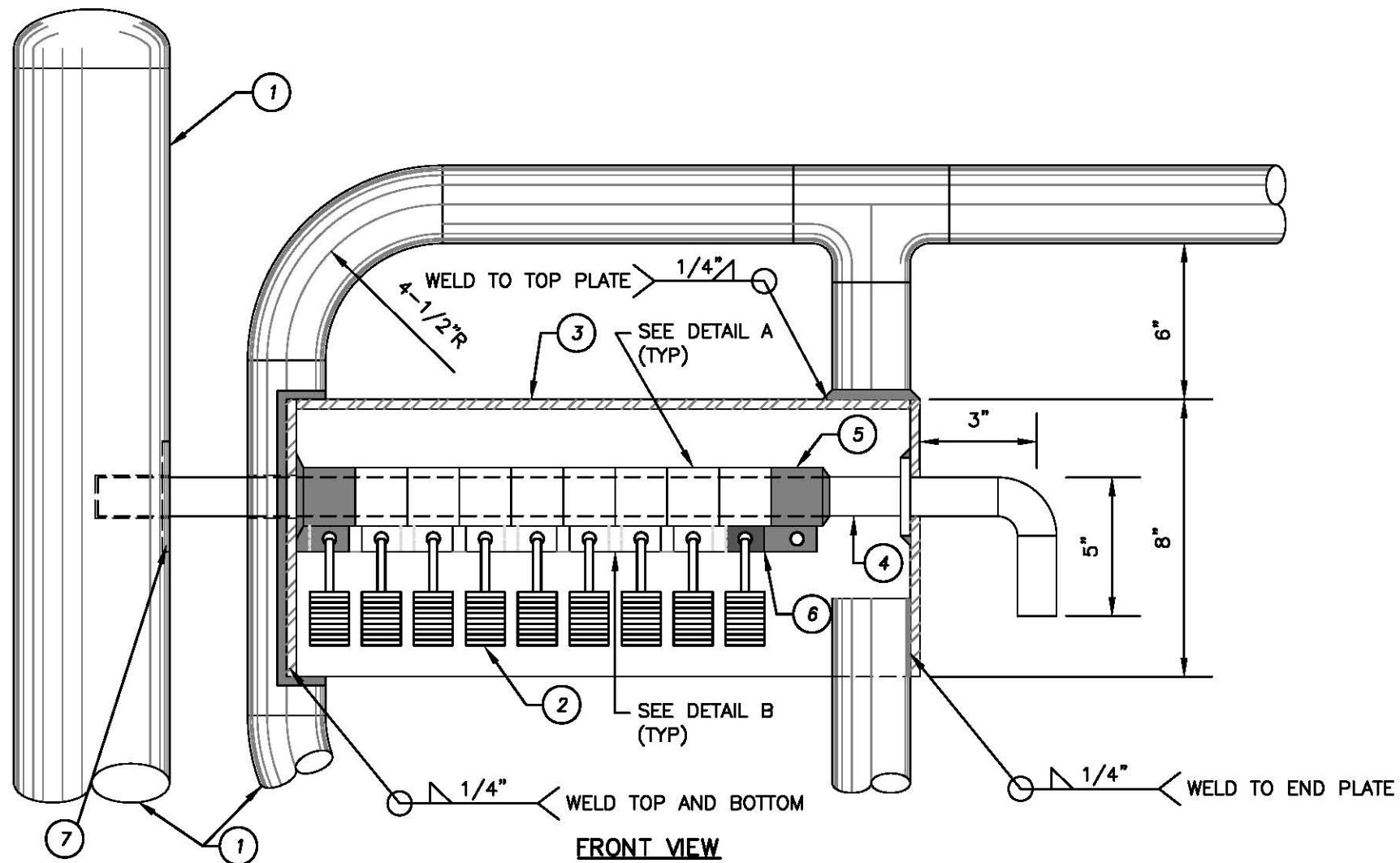
REVISION				ACCESS GATE	
NO.	DATE	APPROVED	DATE	STANDARD SPECIFICATIONS COMMITTEE	
				M. Cortez	10/09
				CHAIR	DATE
				K. Burton	10/09
				DIRECTOR OF ENGINEERING	DATE



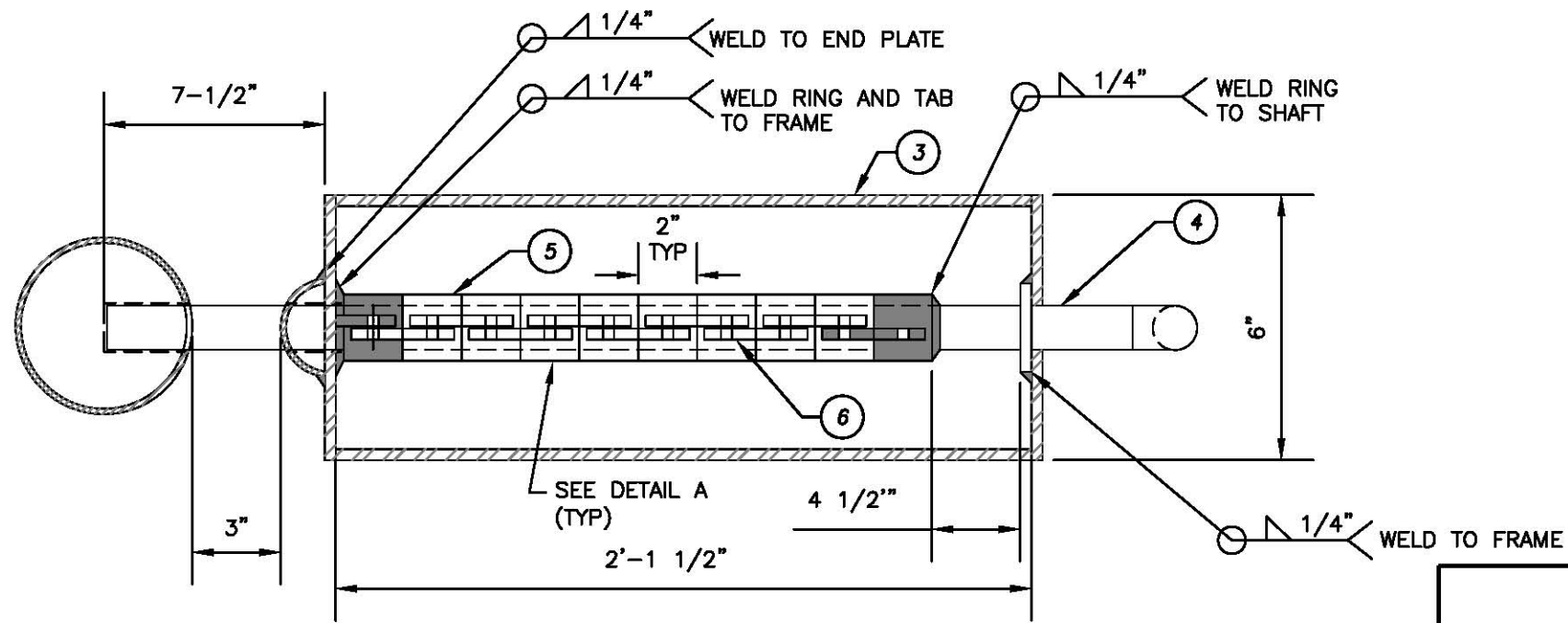
IRVING RANCH
WATER DISTRICT

**IRWD
STD.DWG.
G-3**

SHEET 1 OF 2



FRONT VIEW

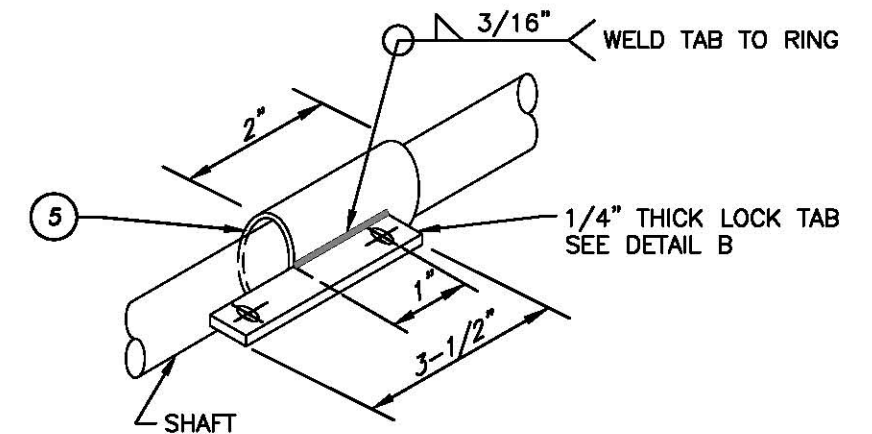


BOTTOM VIEW

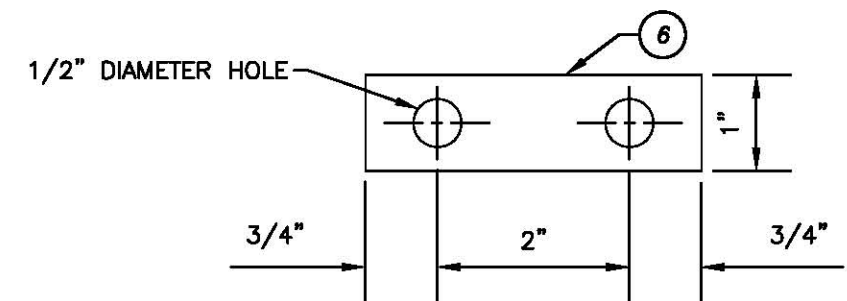
NOTE:

COAT OR HOT DIP GALVANIZE PER IRWD STD. SPECIFICATIONS.

- | ITEM | MATERIALS |
|------|---|
| ① | GATE FRAME. SEE SHEET 1 OF 2. |
| ② | No. 5 SOLID BRASS PADLOCKS AS APPROVED BY IRWD. |
| ③ | 1/4" THICK PLATE METAL BOX COVERING LOCKS. ACCESS TO LOCKS FROM BOTTOM ONLY. |
| ④ | 1-1/2" DIAMETER STANDARD STEEL PIPE. LOCK ASSEMBLY SHAFT. |
| ⑤ | 2" STD. STEEL PIPE COUPLING. 2-INCHES LONG AS SHAFT RING COUPLING. WELD THE TWO RINGS AT THE END TO THE PIPE SHAFT AND THE METAL BOX, RESPECTIVELY, AS SHOWN. |
| ⑥ | 1/4" STEEL PLATE, 3-1/2" LONG BY 1" WIDE AS A LOCK TAB. WELD TO SHAFT RINGS AS SHOWN. |
| ⑦ | 4" VERTICAL SLOT. |



DETAIL A



DETAIL B

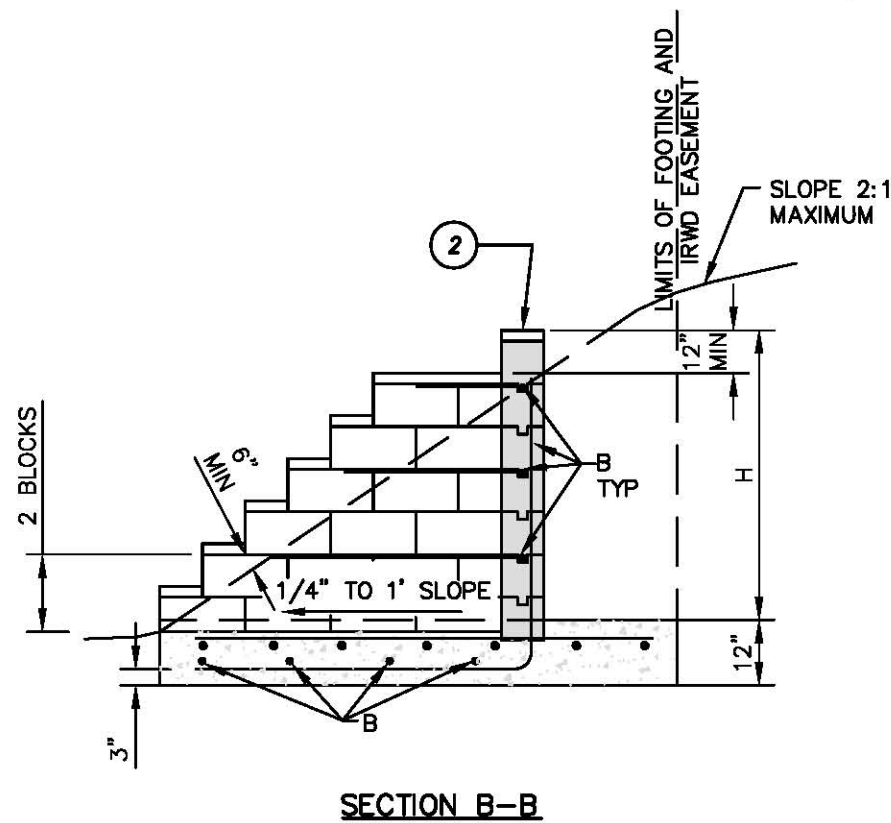
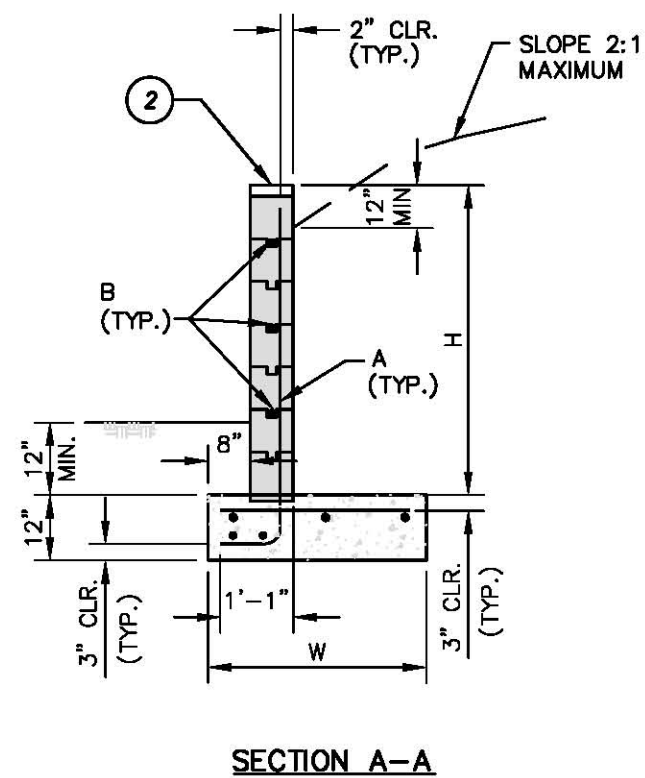
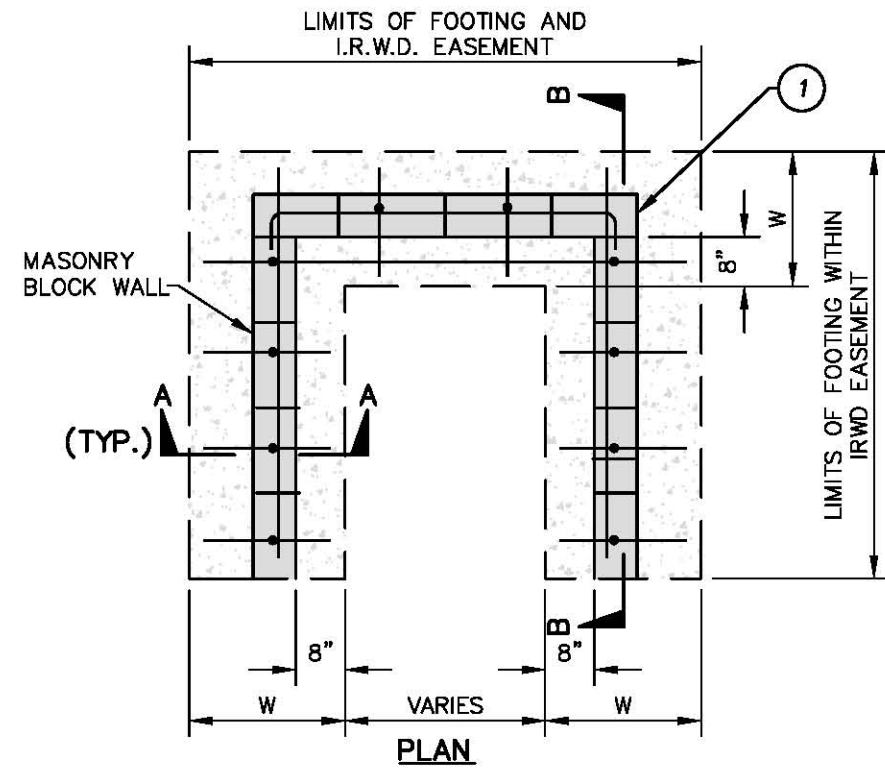
MULTI LOCK GATE ASSEMBLY

REVISION			
NO.	DATE	APPROVED	DATE

STANDARD SPECIFICATIONS COMMITTEE	
M. Cortez	10/09
CHAIR	DATE
ENGINEERING DEPARTMENT	
K. Burton	10/09
DIRECTOR OF ENGINEERING	DATE



IRWD
STD.DWG.
G-3
SHEET 2 OF 2



ITEM MATERIALS

- ① — MASONRY BLOCK. SEE NOTE 2.
- ② — BLOCK CAP. MATCH BLOCK STYLE AND COLOR.

NOTES:

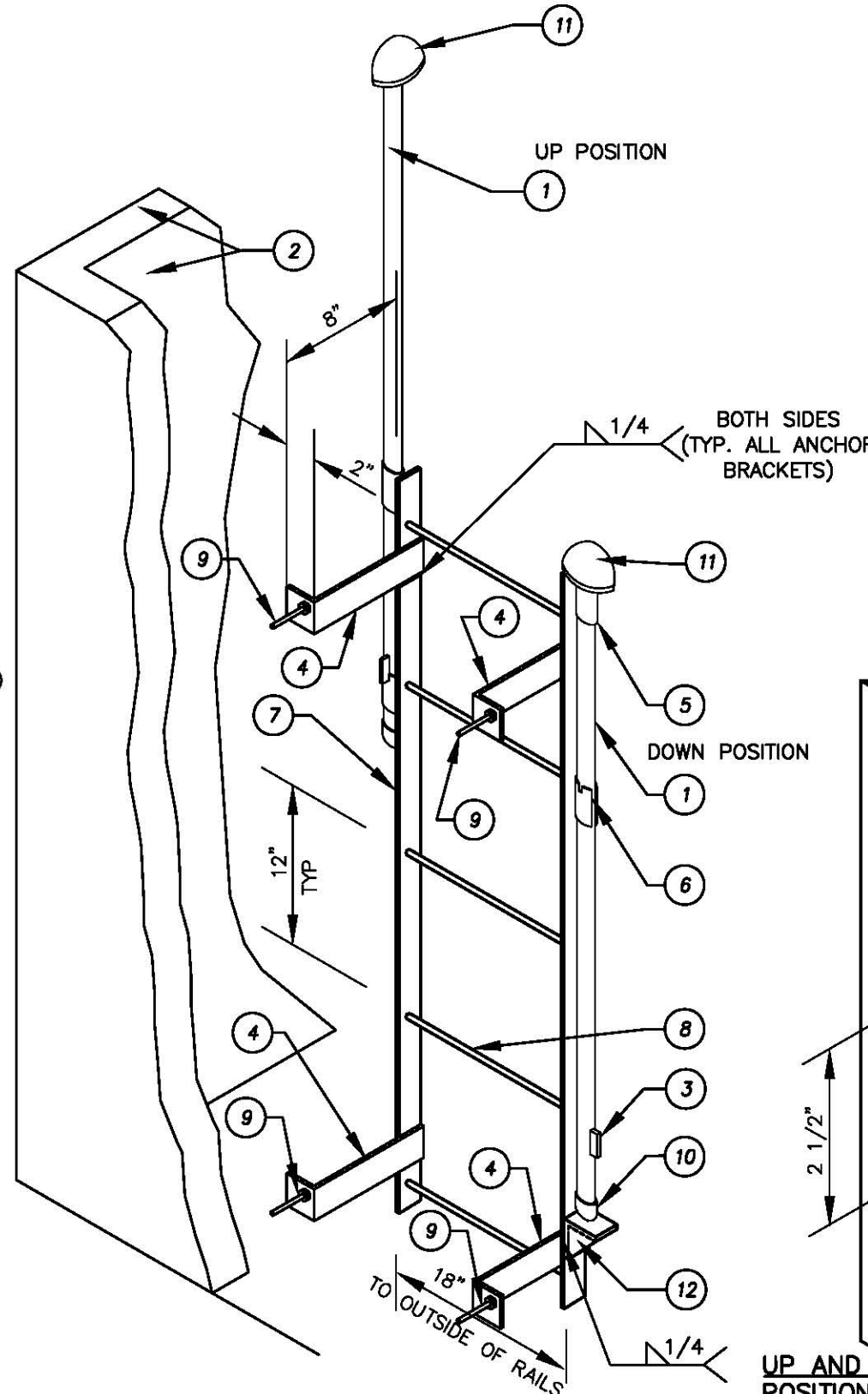
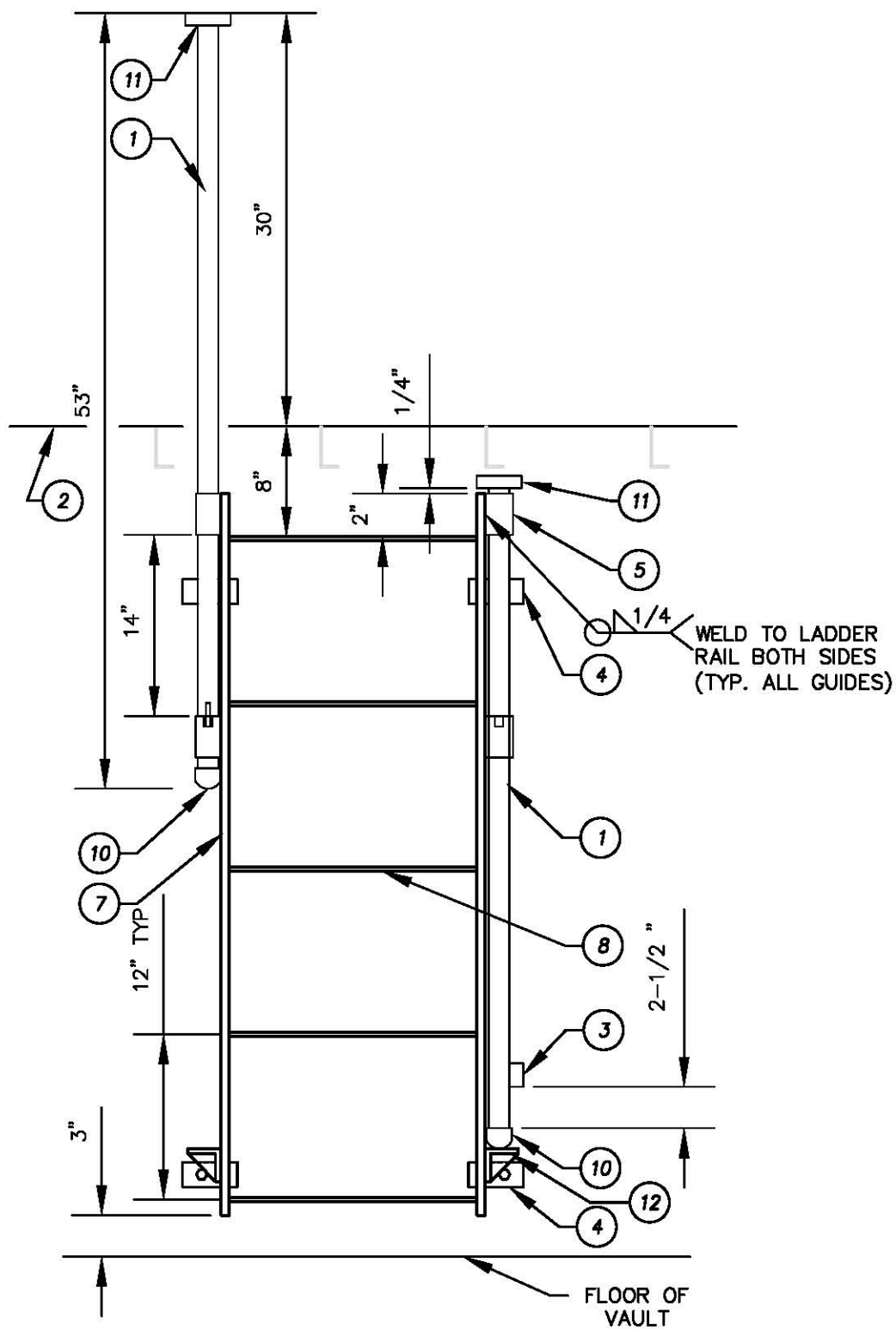
1. RETAINING WALL TO BE CONSTRUCTED WITH ALL IRWD APPURTENANCES WHEN A SLOPE EXISTS AT THE LOCATION OF THE APPURTENANCES. EXAMPLES INCLUDE CLEAN-OUTS, BACKFLOW DEVICES, FIRE HYDRANTS, AIR/VACS, FLUSH-OUTS, METERS, PRV STATIONS, TEST STATIONS, MANHOLES, VAULTS, VALVES AND WHEREVER REQUIRED BY THE DISTRICT REPRESENTATIVE.
 - A. CLEARANCE BETWEEN INSIDE WALL FACE AND IRWD APPURTENANCE SHALL BE 36-INCH MINIMUM.
 - B. FOR POWERED APPURTENANCES, SUCH AS TRANSFORMERS, REFER TO THE SCE MINIMUM CLEARANCE REQUIREMENTS.
 - C. SEWER MANHOLES REQUIRED ADDITIONAL WALL LENGTH TO PROVIDE EQUIPMENT ACCESS. MINIMUM LENGTH FOR MANHOLES (INSIDE, FROM WALL FACE TO WALL FACE IS 13 FEET).
2. MASONRY BLOCK SHALL BE 8" X 8" X 16" UNITS CONFORMING TO ASTM C-90 CLASS "S" AND CONCRETE MASONRY ASSOCIATION STANDARDS. BLOCK SHALL BE "SPLIT FACE" BEIGE COLOR FINISH ON ALL EXPOSED FACES TO MATCH EXISTING. FILL ALL CELLS WITH GROUT.
3. MORTAR AND GROUT SHALL MATCH BLOCKWORK AND BE IN CONFORMANCE WITH IRWD STD. SPECIFICATIONS AND SECTION 202-2 OF THE STD. SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
4. OMIT MORTAR FROM THE FIRST VERTICAL JOINT OF THE BLOCK COURSE ABOVE FINISH GRADE TO PROVIDE WEEP HOLES FOR SUB-DRAINAGE PURPOSES.
5. CONCRETE SHALL BE CLASS 560-C-3250.
6. WALL CONSTRUCTION SHALL MEET IRWD STD. SPECIFICATIONS.
7. PROVIDE RAILING ON TOP OF WALL WHEN REQUIRED BY CODE.

REINFORCEMENT TABLE					
DESIGN H	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"
DESIGN W	2'-8"	3'-0"	3'-4"	3'-8"	4'-0"
A VERT. REINF.	#4@16"	#4@16"	#5@16"	#6@16"	#6@16"
B VERT. REINF.	#4@16"	#4@16"	#5@16"	#6@16"	#6@16"

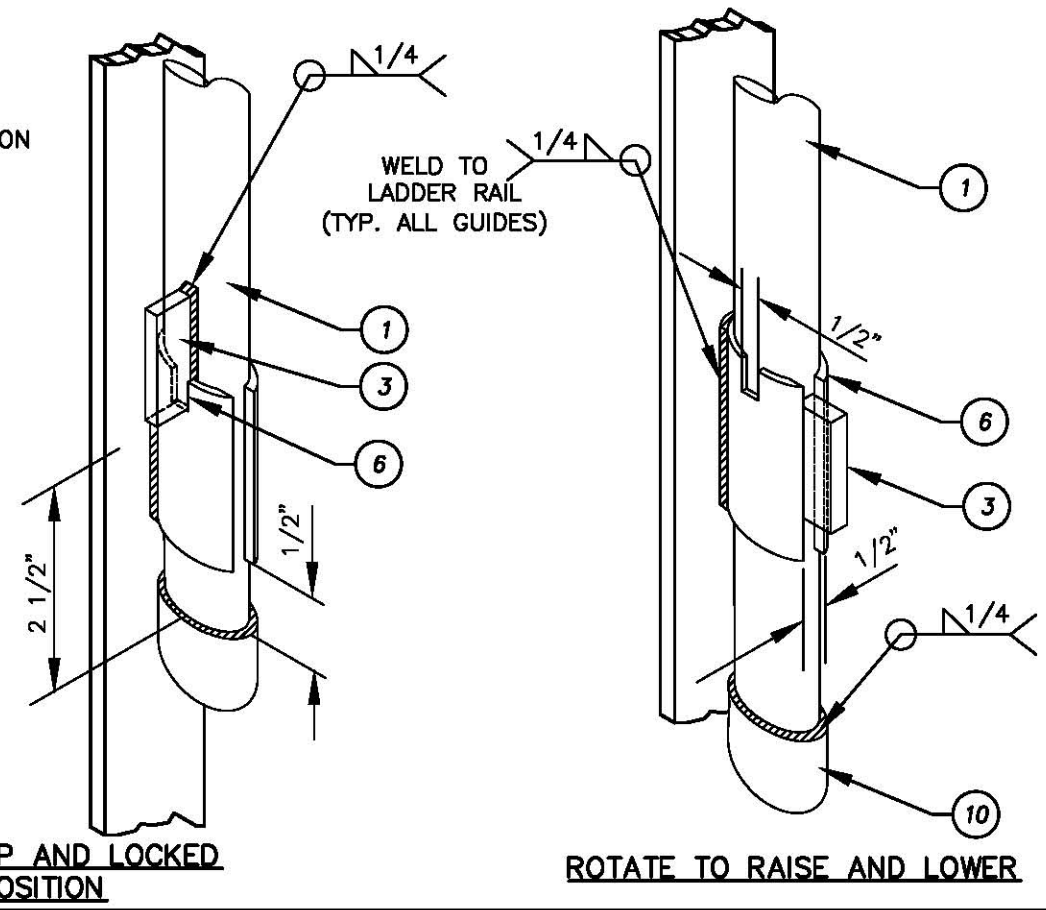
DESIGN CRITERIA:

1. EQUIVALENT FLUID PRESSURE = 35 pcf (TOE AND HEEL)
2. ALLOWABLE BEARING CAPACITY = 1500 psf

REVISION				STANDARD SPECIFICATIONS COMMITTEE		 IRWD STD.DWG. G-4	IRWD STD.DWG. G-4 <small>SHEET 1 OF 1</small>
NO.	DATE	APPROVED	DATE	M. Cortez 10/09 <small>CHAIR</small> DATE			
				K. Burton 10/09 <small>DIRECTOR OF ENGINEERING</small> DATE		 IRWD STD.DWG. G-4	IRWD STD.DWG. G-4 <small>SHEET 1 OF 1</small>



- | ITEM | MATERIALS |
|------|---|
| 1 | 1-1/2" DIA. STD. STEEL PIPE AS A SIDE RAIL EXTENSION. |
| 2 | VAULT WALL |
| 3 | 1/4" PLATE 2" HIGH X 1" WIDE WELD TO SIDE RAIL EXTENSION. |
| 4 | 1/4" PLATE WALL ANCHOR BRACKET, 2" WIDE X 8" LONG. |
| 5 | 2" LONG, 2" DIA. STD. STEEL PIPE SECTION. WELD TO SIDE OF LADDER AS A GUIDE COUPLING. |
| 6 | NOTCH TOP OF PIPE GUIDE 1/2" DEEP X 1/2" WIDE (AS SHOWN BELOW) AND SLOT SIDE TO ACCOMMODATE 1/4" LOCKING TAB. |
| 7 | 1/4" PLATE STEEL, FLAT BARSTOCK, 2" WIDE. |
| 8 | 1" DIA. ROUND STEEL BAR, AS A LADDER RUNG. |
| 9 | 5/16" STAINLESS STEEL ANCHOR BOLT. |
| 10 | 1-1/2" DIA. PIPE CAP. WELD TO BOTTOM OF SIDE RAIL EXTENSION. |
| 11 | 2-1/2" DIA X 1/4" THICK PLATE WELDED TO TOP OF SIDE RAIL EXTENSION TEARDROP SHAPE. TIP ON SAME SIDE AS TAB. |
| 12 | PLATE BRACKET. 2" X 2" X 1/4" ANGLE, 2" WIDE. WELD TO SIDE OF LADDER AS EXTENSION PIPE STOP. WELD TRIANGULAR PIECE OF 1/4" PLATE TO BOTH BRACKETS TO STIFFEN. |



NOTES:

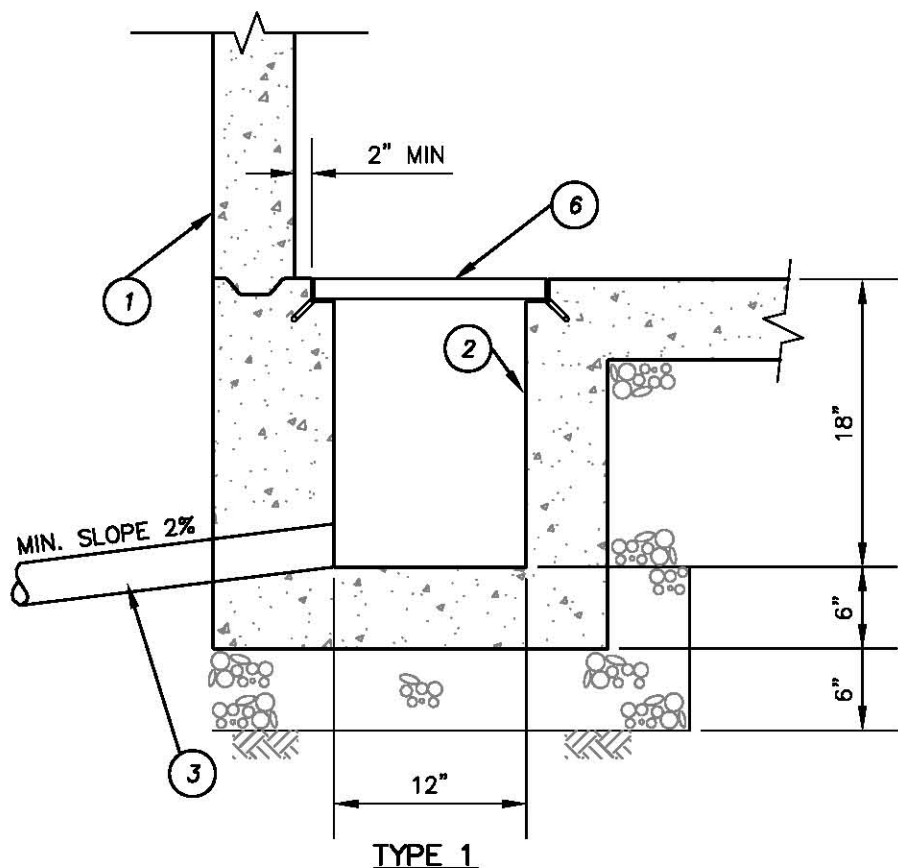
1. ALL SURFACES AND WELDS SHALL BE GROUND SMOOTH AND CLEANED AFTER FABRICATION.
2. ALL JOINTS SHALL BE WELDED PER AMERICAN WELDING SOCIETY STANDARDS, LATEST REVISION.
3. HOT DIP GALVANIZE AFTER FABRICATION.
4. ALL CONNECTING AND MOUNTING HARDWARE SHALL BE TYPE 316 STAINLESS STEEL.

VAULT LADDER

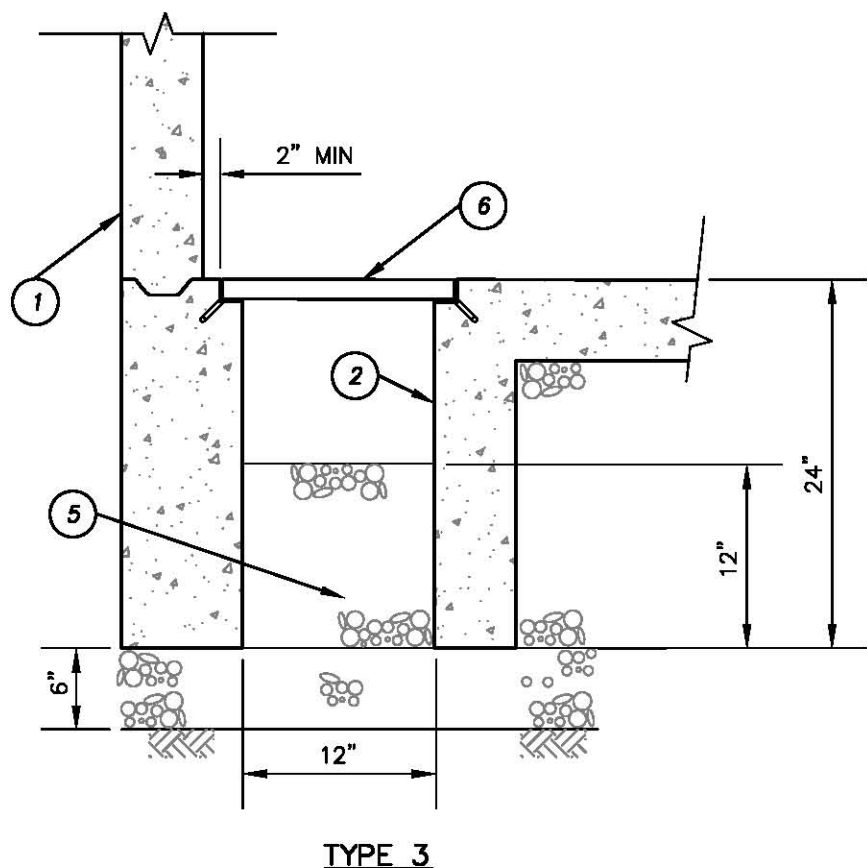
REVISION			
NO.	DATE	APPROVED	DATE

STANDARD SPECIFICATIONS COMMITTEE	
M. Cortez	10/09
CHAIR	DATE
ENGINEERING DEPARTMENT	
K. Burton	10/09
DIRECTOR OF ENGINEERING	DATE

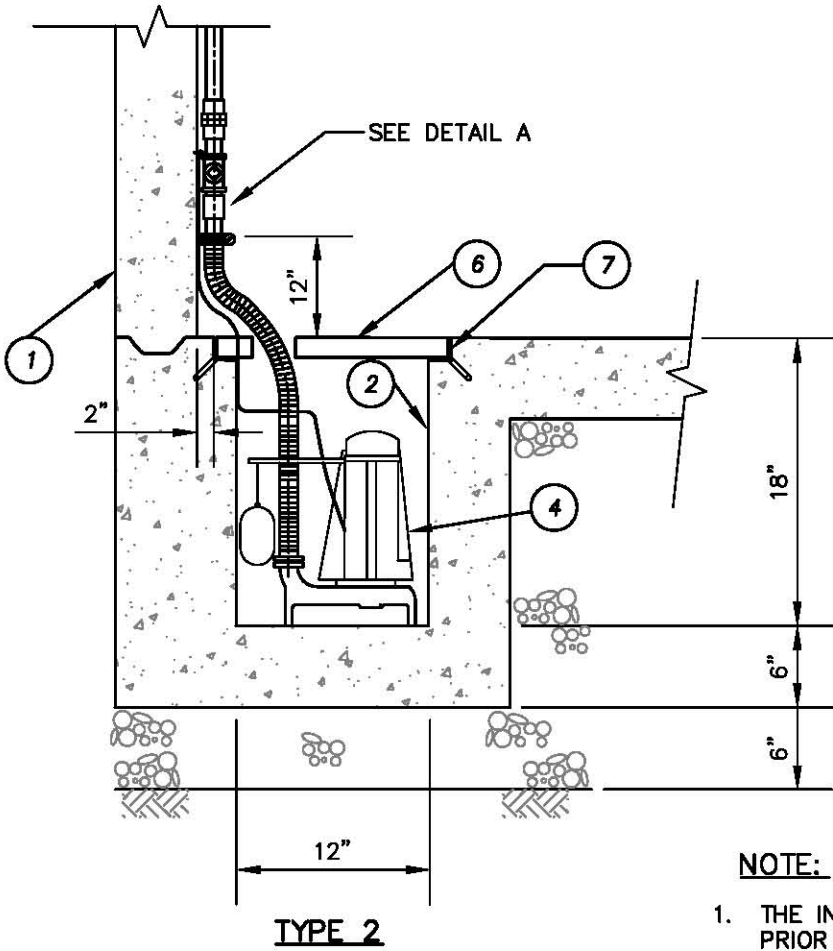




TYPE 1



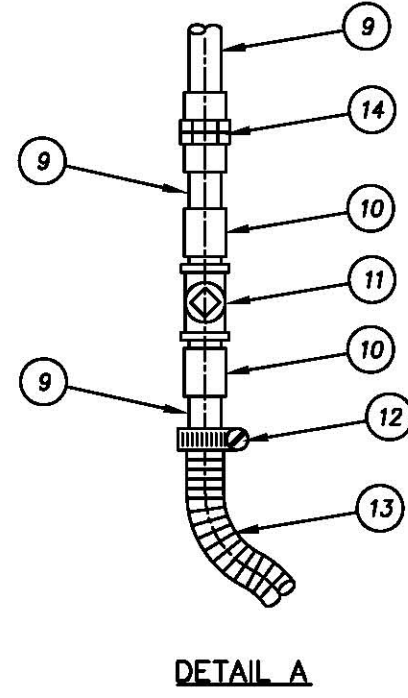
TYPE 3



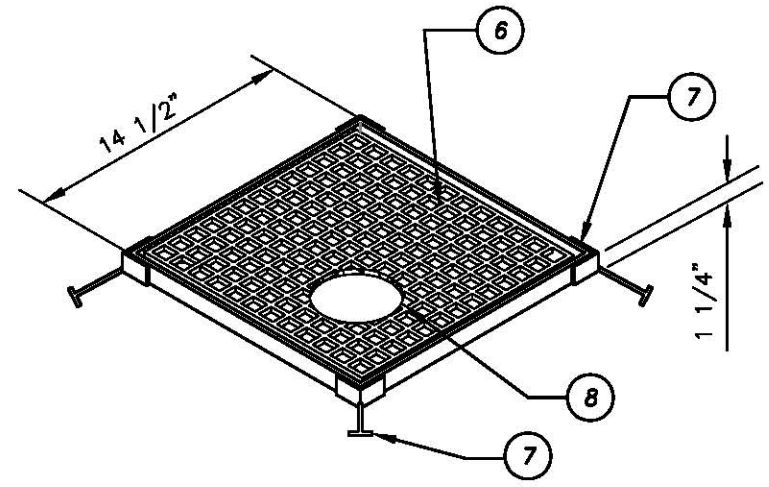
TYPE 2

NOTE:
1. THE INSTALLATION OF TYPE 3 SUMP REQUIRES PRIOR WRITTEN DISTRICT APPROVAL.


- | ITEM | MATERIALS |
|------|--|
| 1 | PRECAST REINFORCED CONCRETE VAULT. |
| 2 | 12" x 12" x 24" DEEP RECESSED REINFORCED CONCRETE SUMP. MINIMUM WALL THICKNESS = 6". |
| 3 | 4" SCHEDULE 80 PVC DRAIN PIPE. CONNECT TO DRAINAGE SYSTEM ACCEPTABLE TO IRWD. |
| 4 | SUMP PUMP PER IRWD STD. SPEC. WHEN DRAIN PIPE OPTION IS NOT AVAILABLE. CONNECT TO DRAINAGE SYSTEM ACCEPTABLE TO IRWD. |
| 5 | PLACE 12" OF 3/4" CRUSHED ROCK IN BOTTOM OF RECESSED SUMP. |
| 6 | 14" x 14" x 1" THICK FIBER GRATE INLET - SEE DETAIL B. |
| 7 | 1-1/2" x 1-1/2" x 1/4" FIBER REINFORCED PLASTIC ANGLE FRAME WITH EMBEDMENT ANCHOR AT EACH CORNER. SERIES 1625 OR APPROVED EQUAL. |
| 8 | PROVIDE 4" HOLE IN GRATE USING 4" HOLE SAW TO ACCOMMODATE 2" PIPE. |
| 9 | 2" SCH. 80 PVC PIPE. SECURED TO VAULT WALL WITH STAINLESS STEEL PIPE CLAMPS, ONE CLAMP EACH 3' OF PIPE. |
| 10 | 2" SCH. 80 PVC ADAPTER, SLIP x M.I.P.T. |
| 11 | 2" BRONZE SWING CHECK VALVE, F.I.P.T. BOTH ENDS. |
| 12 | STAINLESS STEEL HOSE CLAMP. |
| 13 | 2" STAINLESS STEEL REINFORCED PVC HOSE. |
| 14 | 2" SCH. 80 PVC UNION, SLIP x SLIP. |

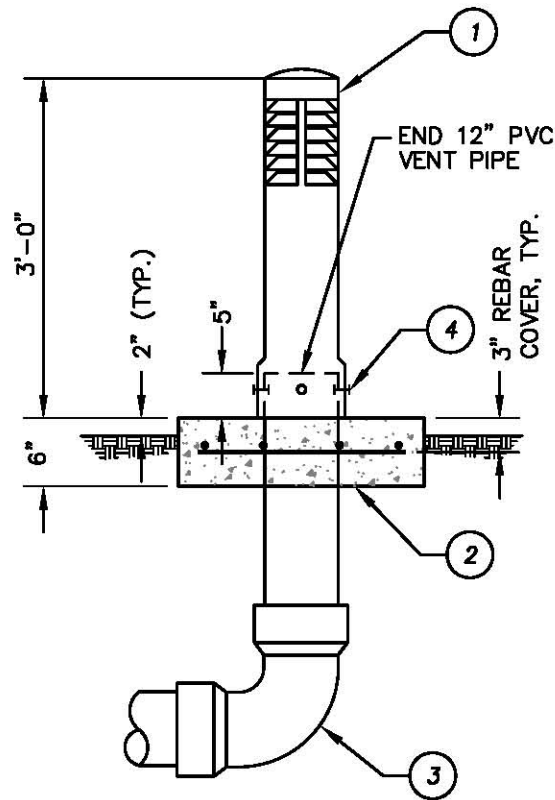


DETAIL A



DETAIL B

REVISION				STANDARD SPECIFICATIONS COMMITTEE			IRWD STD.DWG. G-6
NO.	DATE	APPROVED	DATE		DATE		
				M. Cortez	10/09		
				CHAIR	DATE		
				K. Burton	10/09		
				DIRECTOR OF ENGINEERING	DATE		



ITEM MATERIALS

- ① — 12" DIAMETER LLDPE PIPE VENT PER IRWD STANDARDS. (ARMORCAST PRODUCTS CO.)
- ② — CONSTRUCT 36" SQ. CONCRETE SLAB (TYP.) WITH 4 EACH-#4'S EACH WAY, AS SHOWN. PROVIDE 3" REBAR COVER IN 560 C 3250 CONCRETE MIX.
- ③ — INSTALL 12" DIAMETER SCH. 80 PVC VENT PIPE WITH BENDS AND CONNECTIONS BELOW GRADE AS REQUIRED.
- ④ — CONNECT VENT AT 4 PLACES WITH 3/8" DIAMETER STAINLESS STEEL TOGGLE BOLTS. DRILL THRU PVC DUCT AND VENT STACK BELL.

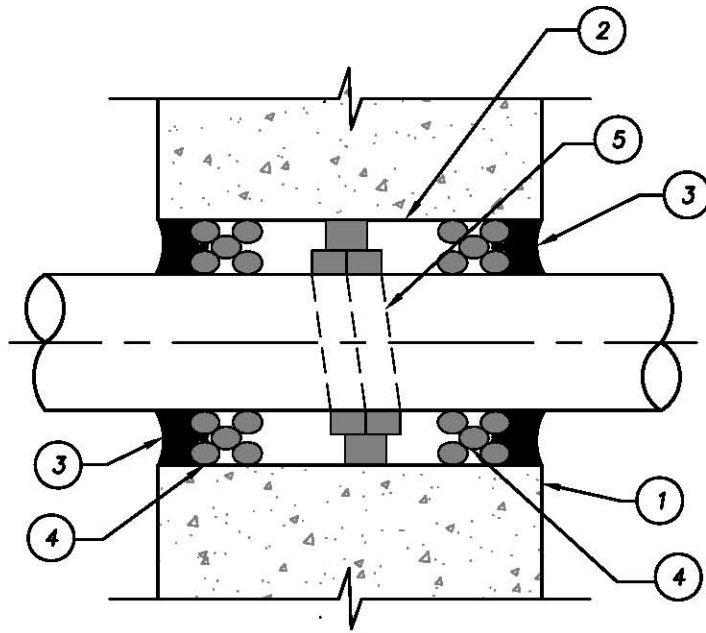
VAULT VENT

REVISION			
NO.	DATE	APPROVED	DATE

STANDARD SPECIFICATIONS COMMITTEE	
M. Cortez	10/09
CHAIR	DATE
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K. Burton	10/09
DIRECTOR OF ENGINEERING	DATE



IRWD
STD.DWG.
G-7
SHEET 1 OF 1




ITEM MATERIALS

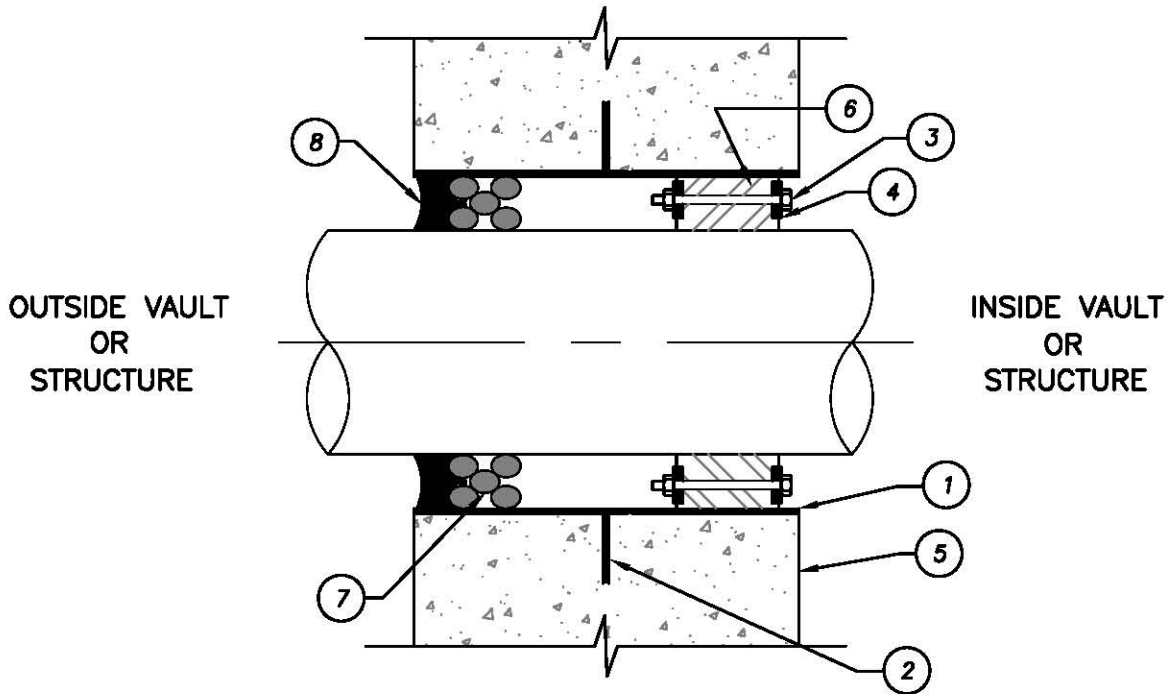
- ① — VAULT WALL OR STRUCTURAL MEMBER.
- ② — ANNULAR SPACE 1" MIN. ALL AROUND.
- ③ — SIKAFLEX ELASTOMERIC SEALANT PER IRWD SPECIFICATIONS. APPLY A MINIMUM OF 3/4-INCH OF SEALANT OUTSIDE BACKER ROD. SEE NOTE 2.
- ④ — "CLOSED CELL" POLYETHYLENE FOAM BACKER ROD PER IRWD SPECIFICATIONS.
- ⑤ — INSTALL GREENSTREAK HYDROPHILIC WATERSTOP MATERIAL "SWELL-STOP". MINIMUM 3 COIL WRAPS AROUND OUTSIDE OF CONDUIT OR PIPE AS REQUIRED FOR A SNUG INITIAL FILL OF THE ANNULAR SPACE.

NOTES:

1. BACKER ROD AND SEALANT TO BE INSTALLED ON BOTH SIDES OF "SWELL STOP" MATERIAL.
2. CEMENTITIOUS OR OTHER RIGID GROUT MATERIAL SHALL NOT BE ALLOWED FOR SEALING OR COVERING THE ANNULAR OPENING ON EITHER.

WALL PENETRATION (< 4-INCHES)

REVISION				STANDARD SPECIFICATIONS COMMITTEE			IRWD STD.DWG. G-8
NO.	DATE	APPROVED	DATE				
				<u>M. Cortez</u> CHAIR	<u>10/09</u> DATE		
				ENGINEERING DEPARTMENT <u>K. Burton</u> DIRECTOR OF ENGINEERING	<u>10/09</u> DATE		




ITEM MATERIALS

- ① — STEEL WALL SLEEVE. SEE NOTE 1.
- ② — ANCHOR COLLAR/2" WATER STOP CONTINUOUSLY WELDED ON BOTH SIDES.
- ③ — S.S. HEX BOLT, NUT AND WASHER, TYP.
- ④ — PRESSURE PLATE.
- ⑤ — VAULT WALL OR STRUCTURAL MEMBER.
- ⑥ — EPDM ELASTOMERIC COMPRESSION SEAL ELEMENT.
- ⑦ — "CLOSED CELL" POLYETHYLENE FOAM BACKER ROD PER IRWD SPECIFICATIONS.
- ⑧ — SIKAFLEX ELASTOMERIC SEALANT PER IRWD SPECIFICATIONS. APPLY A MINIMUM OF 3/4-INCH OF SEALANT OUTSIDE BACKER ROD. SEE NOTE 2.

NOTES:

1. WALL SLEEVE MAY BE HDPE ONE-PIECE PRE-MOLDED SLEEVE, PROVIDED THAT IT HAS AN INTEGRAL WATER-STOP RING AND IS CAST INTO THE WALL OR STRUCTURAL ELEMENT.
2. BACKER ROD AND SEALANT TO BE INSTALLED ON "OUTSIDE" OF STRUCTURE.
3. CEMENTITIOUS OR OTHER RIGID GROUT MATERIAL SHALL NOT BE ALLOWED FOR SEALING OR COVERING THE ANNULAR OPENING ON EITHER SIDE.

WALL PENETRATION (> 4-INCHES)

REVISION				STANDARD SPECIFICATIONS COMMITTEE			IRWD STD.DWG. G-9
NO.	DATE	APPROVED	DATE				
				M. Cortez CHAIR 10/09 DATE			
				K. Burton DIRECTOR OF ENGINEERING 10/09 DATE		SHEET 1 OF 1	