Golden State
Water Company
A Subsidiary of American States Water Company

Engineering Design Center

Standard Drawings

Revision 1.4 -November 2019

Golden State Water Company
STANDARD DRAWINGS
Revisions Log

Date	Version No.	Description
1/15/16	1.0	Released Version 1.0
10/20/16	1.1	Released Version 1.1
2/23/17	1.2	Released Version 1.2; modified Dwg. Nos. P-25, P-26, P-27, C-7,W-5A, W-10E, W-10H, W-10I, W-10J,W-11E, W-11I, W-11J, W-11K, W-21A, W-23C, T-1C, T-16A
1/19/18	1.3	Released Version 1.3; modified Dwg. Nos. P-2A, P-2B, P-2C, P-6, P-7, P-8, P-9, P-10, P-11, P-12, P-13, P-14, P-15, P-16, P-23, P-25, P-26, P-27, P-30, P-31, P-32, P-33, P-36, P-37, P-39, P-40, P-41, P-42, C-9, C-17, C-19, C-20A, C-20B, PS-12A, PS-13B, W-5A, W-5B, W-10B, W-11B, W-21A, W-23B, W-23C,W-23D, T-4, T-13
11/18/19	1.4	Released Version 1.4; modified Dwg. No. P-10; added Dwg. Nos. P-4B & P-16B

Golden State Water Company Standard Drawings

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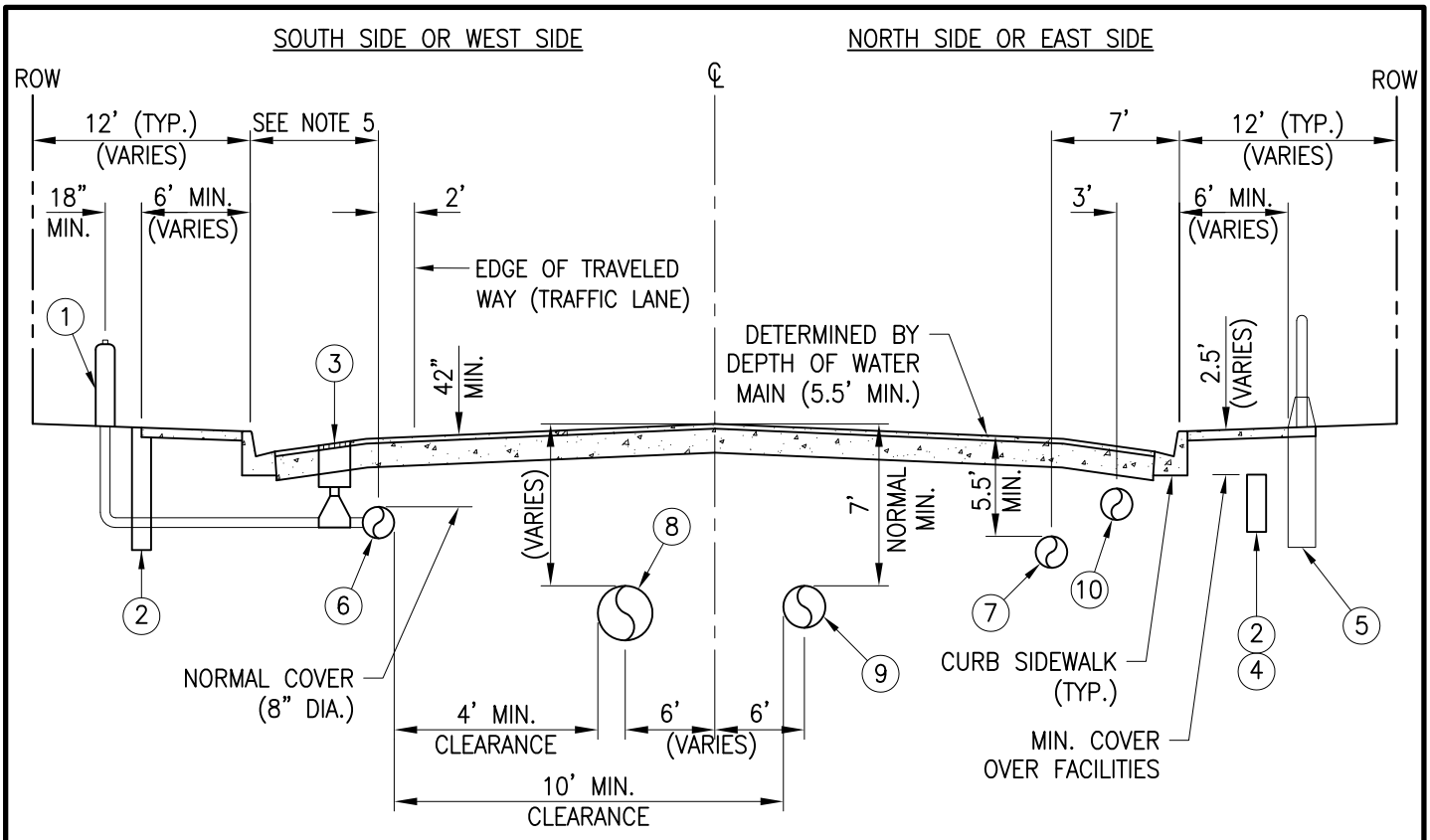
Part A – Standard Drawings

Section 1

Pipeline Construction



ITEM	DESCRIPTION
1	Fire hydrant, locate in accordance with GSWC Std. Dwg. No. C–10
2	Joint utilities trench
3	Valve box
4	Street lighting conduit in trench
5	Street light base
6	Domestic water main
7	Reclaimed water main (where required)
8	Storm drain
9	Sewer main
10	Gas main

NOTES:

1. Location and depth of existing and proposed utilities must be provided by the developer and shown on any plans submitted to the City/County Public Works Department for approval.

2. Changes may be permitted by GSWC in cases of conflicting facilities.

3. For commercial sidewalks, the fire hydrant shall be placed 18" behind sidewalk. Hydrants shall not be located in sidewalks.

4. Materials shall be selected from the accepted materials guideline.

5. Distance from curb face to water main is 4' min for 8" pipe and 5' min for 12" or larger pipe in residential/commercial developments in streets up to 40' curb to curb. Distance can be 7' in major streets greater than 40' wide.

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER

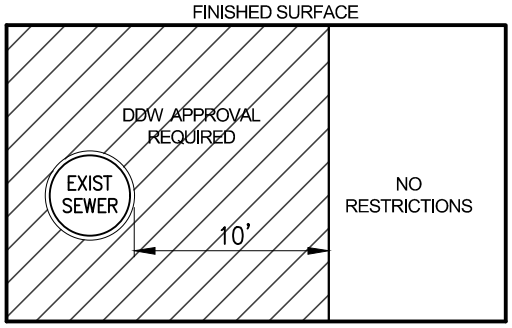
01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
TYPICAL UTILITY LOCATION FOR NEW CONSTRUCTION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P–1**

CASE A



PARALLEL CONSTRUCTION REQUIREMENTS
NEAR SEWERS

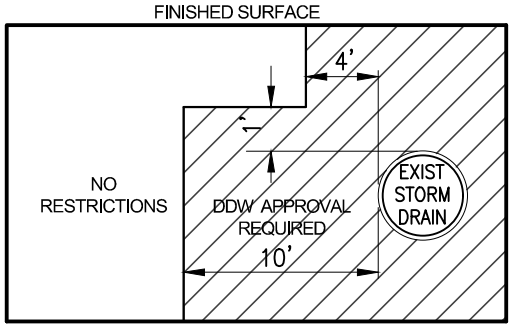
NOTES:

1. New water mains shall not be installed in the same trench and shall be at least 10 feet horizontally from and 1 foot vertically above any parallel pipeline conveying:

   a. untreated sewage
   b. primary or secondary treated sewage
   c. disinfected secondary recycled water
   d. hazardous fluids such as fuels, industrial wastes and wastewater sludge

2. Use professional judgement to propose construction that is protective of public health.

CASE B



PARALLEL CONSTRUCTION REQUIREMENTS
NEAR STORM DRAINS

NOTES:

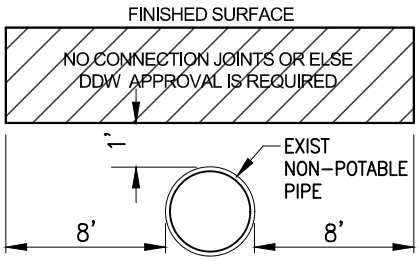
1. New water mains shall not be installed in the same trench and shall be at least 4 feet horizontally from and 1 foot vertically above any parallel pipeline conveying:

   a. storm drainage
   b. disinfected tertiary recycled water

2. Use professional judgement to propose construction that is protective of public health.

3. The vertical separation in Case B is required when the horizontal separation is less than 10 feet.

CASE C



CROSSING CONSTRUCTION REQUIREMENTS
NEAR NON-POTABLE PIPELINES

NOTES:

1. New water mains crossing an existing pipeline carrying non-potable water fluids (as listed in Case A or Case B) shall be constructed no less than 45-degrees to and at least 1 foot above the existing pipeline. A DDW waiver is not required if the angle of the crossing is greater than 45 degress and the water main is at least 1 foot above the pipe being crossed.

2. No connection joints shall be made in the waterline within 8 feet horizontal measured on either side of the non-potable fluid pipeline (wall to wall measurement).

3. Use professional judgement to propose construction that is protective of public health.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **PIPELINE SEPARATION REQUIREMENTS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-2A**

GENERAL NOTES:

1) Application of this standard drawing must comply with Section 64572, Title 22, California Code of Regulations, latest revision.

2) If the condition of the existing sewer cannot be readily determined, the alternative construction requirements for water mains described below shall apply depending on if the crossing is perpendicular or parallel.

3) A "sewer line" is defined as a pipeline conveying non–potable water or hazardous liquids including but not limited to storm drainage, recycled water, sewage and fuels.

4) All exceptions to these minimum separation standards must be reviewed by the Division of Drinking Water (DDW) and a written waiver obtained prior to construction of the crossing.

I. Separation Standards per Division of Drinking Water Requirements (DDW)

a. The Minimum Separation Requirements Between Water Mains And Non–Potable Pipelines As Contained In Section 64572, Title 22, California Code Of Regulations

i. Parallel Construction Requirements:

1. Sewer Lines: Water mains shall be at least 10 feet clear horizontal distance from sewer lines and 1 foot clear vertical distance above sewer lines.

2. Storm Drain Or Recycled Water Pipelines: Water mains shall be at least 4 feet clear horizontal and 1 foot clear vertical distance above storm drain or recycled water pipelines.

ii. Crossing Construction Requirements: When pipelines must cross, potable water mains shall be at least 1 foot clear above non–potable pipelines and at no less than 45–degrees crossing angle.

iii. Separation distances as specified shall be measured from the nearest outside edge of each pipeline; i.e. the clear distance.

iv. Water mains and sewer lines must **not** be installed in the same common trench.

v. New water mains shall not be installed within 100 horizontal feet of the nearest edge of any sanitary landfill, wastewater disposal pond or hazardous waste disposal site or within 25 horizontal feet of the nearest edge of any cesspool, septic tank, sewage leach field, seepage pit, underground hazardous material storage tank or groundwater recharge project site without written approval of the Department of Drinking Water.

b. Exceptions to Basic Separation Standards

i. Local conditions may create a situation where there is no alternative but to install water mains at a distance less than that required by the Basic Separation Standards above. In such cases alternative construction criteria as shown below should be followed.

ii. Sewer mains of 24 inches in diameter or larger may create special hazards because of the large volumes of flow from a pipeline break. Therefore installations of water mains in the vicinity of sewer mains 24 inches in diameter or larger must be reviewed on a case–by–case basis by DDW to determine if the separation and protection measures are adequate.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **PIPELINE SEPARATION REQUIREMENTS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P–2B**

GENERAL NOTES CONTINUED:

II. Construction of Water Lines Parallel to Sewer and Storm Drain Lines

a. See Case A and Case B

b. New water mains in this zone shall be constructed of Special Pipe Materials (see Section VI). Joints shall be restrained.

III. Construction of Water Lines Crossing Sewer and Storm Drain Lines

a. See Case C

b. The new water main in this zone shall have no joints in the area over the existing non–potable pipe unless they are restrained and shall be constructed of Special Pipe Material. Water main inverts under existing sewer or storm drain piped shall be constructed as shown on GSWC Standard Drawings P–39, P–40, P–41 or P–42.

IV. Crossings of a Sewer Force Main

a. In addition to other sewer requirements, when a new water main crosses over an existing sewer force main the water main shall be constructed of pipe materials with a minimum rated working pressure of 200 psi.

b. No water main shall cross **under** a sewer force main.

V. Crossings of Gravity Sewer Laterals

a. Special construction criteria, as defined above, shall apply to sewer laterals that cross above a potable water main but not to sewer laterals that cross below a potable water main.

VI. Definition of Special Pipe Material

a. Ductile iron pipe (Class 350) with bitumastic coating (AWWA C151), or

b. Welded steel pipe, CML & wrapped or CML&C rated at 200 psi or greater, or

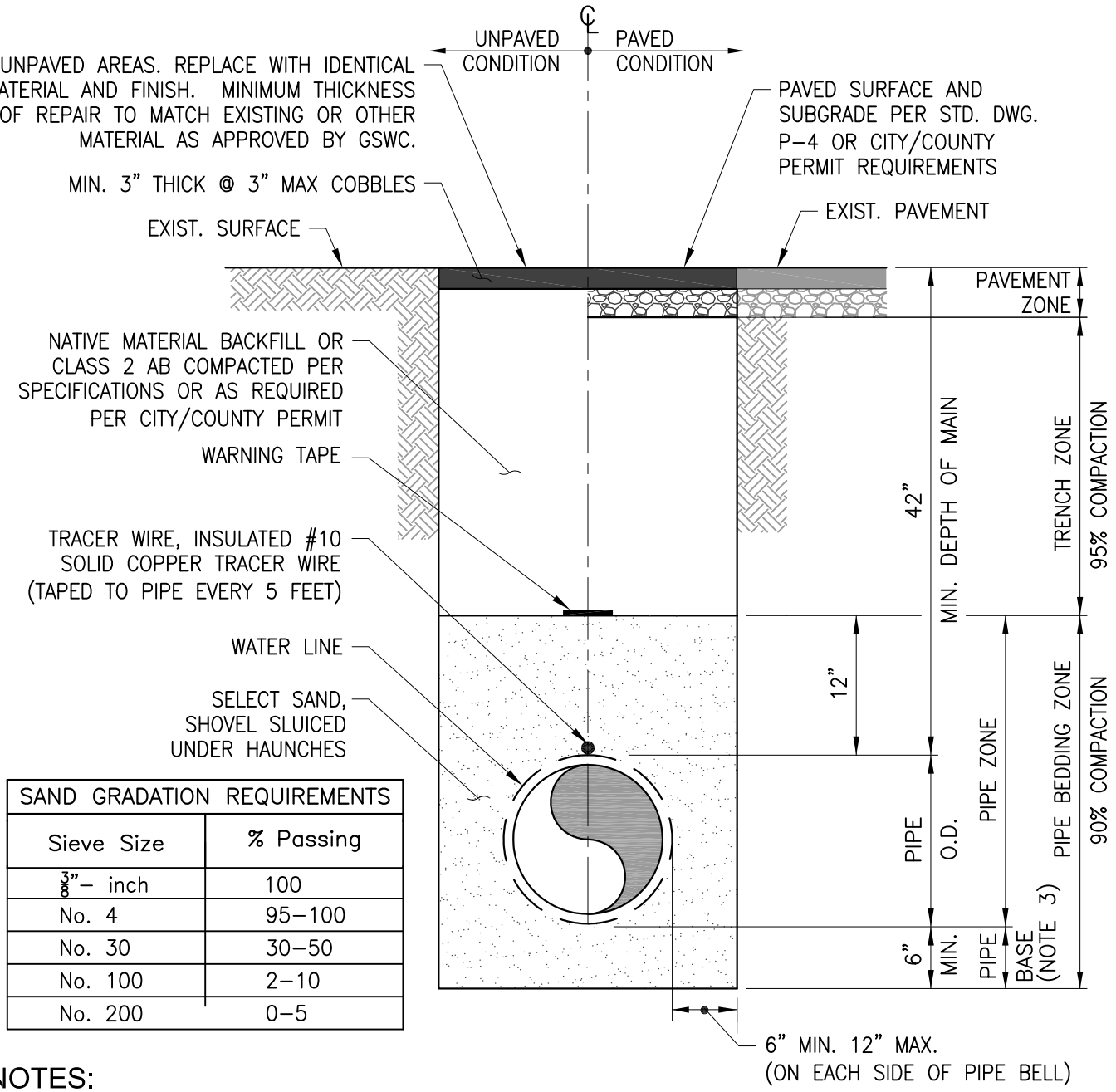
c. PVC water pipe (Class 305 DR14) (AWWA C–900) or equivalent, or

d. Reinforced Concrete Pressure Pipe, Steel Cylinder Pipe, 200 psi minimum, (AWWA C300, C301 or C303, latest revisions), or

e. HDPE pipe with fusion welded joints, (DR–18, 200 psi minimum) (AWWA C906)

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **PIPELINE SEPARATION REQUIREMENTS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P–2C**



SAND GRADATION REQUIREMENTS	
Sieve Size	% Passing
⅜"– inch	100
No. 4	95–100
No. 30	30–50
No. 100	2–10
No. 200	0–5

NOTES:

1. Trench and pavement per City/County permit requirements or as noted on the drawing and Std. Dwg. P–4.
2. Compaction of backfill per specifications.
3. Pipe base shall be 12" thick where native material has rocks larger than 6 inches in trench bottom.
4. Contractor shall hand excavate "bell hole" for each pipe joint so that the weight of the pipe does not rest on the bell. Contractor to refill and hand–tamp each "bell hole" prior to completing the placement of the bedding.
5. For areas where native soil contains cobbles and large stones (such as Rancho Cordova), place geotechnical filter fabric between Pipe Zone and Trench Zone backfill to prevent migration of rocks to the pipe.
6. Encase D.I.P. and fittings in polyethylene encasement per AWWA Standard C–105, latest edition.
7. Table shows gradation requirements for backfill in Pipe Bedding Zone.
8. Tracer wire shall be tested for electrical continuity by the Contractor prior to acceptance of the project.

APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartfuss — EDC MANAGER

10/16 — DATE

Golden State Water Company
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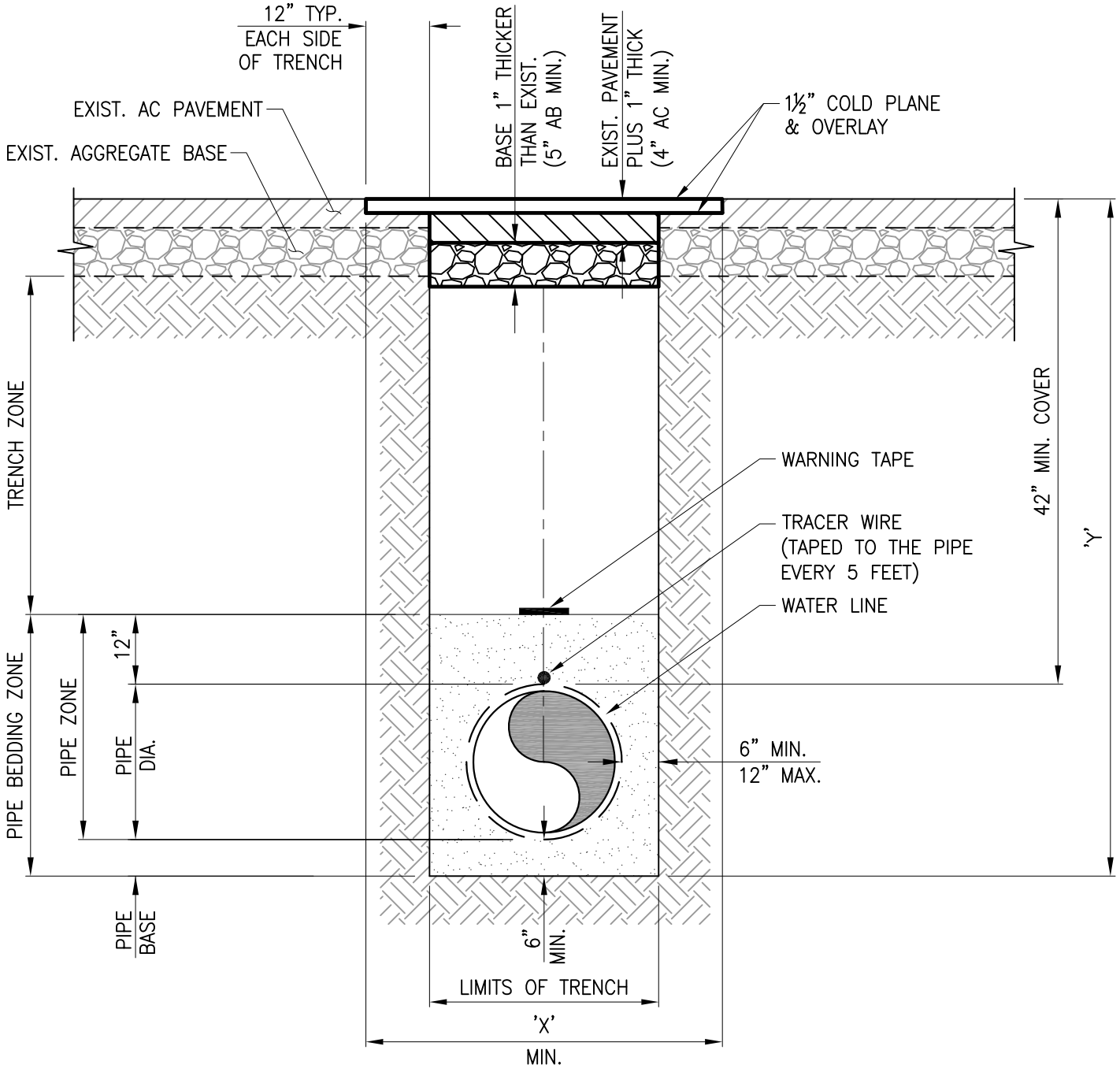
TITLE:
WATER PIPE BEDDING AND TRENCH BACKFILL

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**P–3**



NOTES:

1. For specific repaving requirements see permit from City/County.
2. Contractor to clean surfaces that are adjacent new paving and remove rocks, dirt, old paving and/or old concrete that would prevent pavement compaction equipment from keeping contact with the new paving and prevent proper compaction of the new pavement.
3. Temporary paving shall be min. 2–inches thick and installed over a trench zone section that is level and square.

TRENCH DIMENSIONS		
PIPE DIA. (Inches)	X DISTANCE (Inches)	Y DISTANCE (Inches)
6	42	54
8	44	56
12	48	60
16	52	64
24	60	72
30	66	78

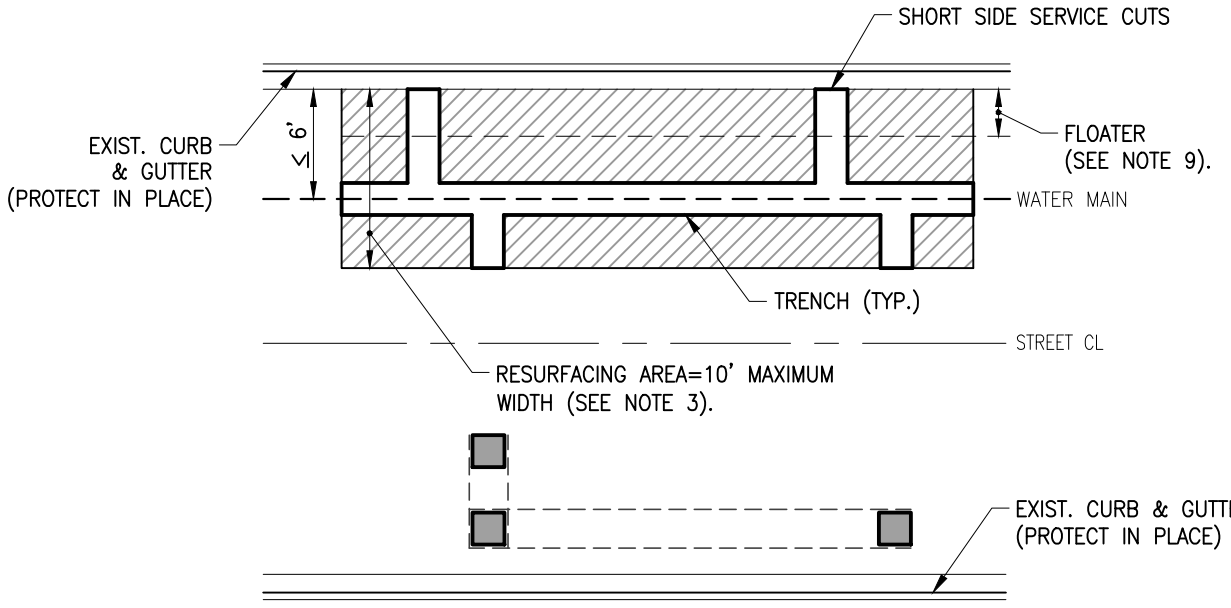
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

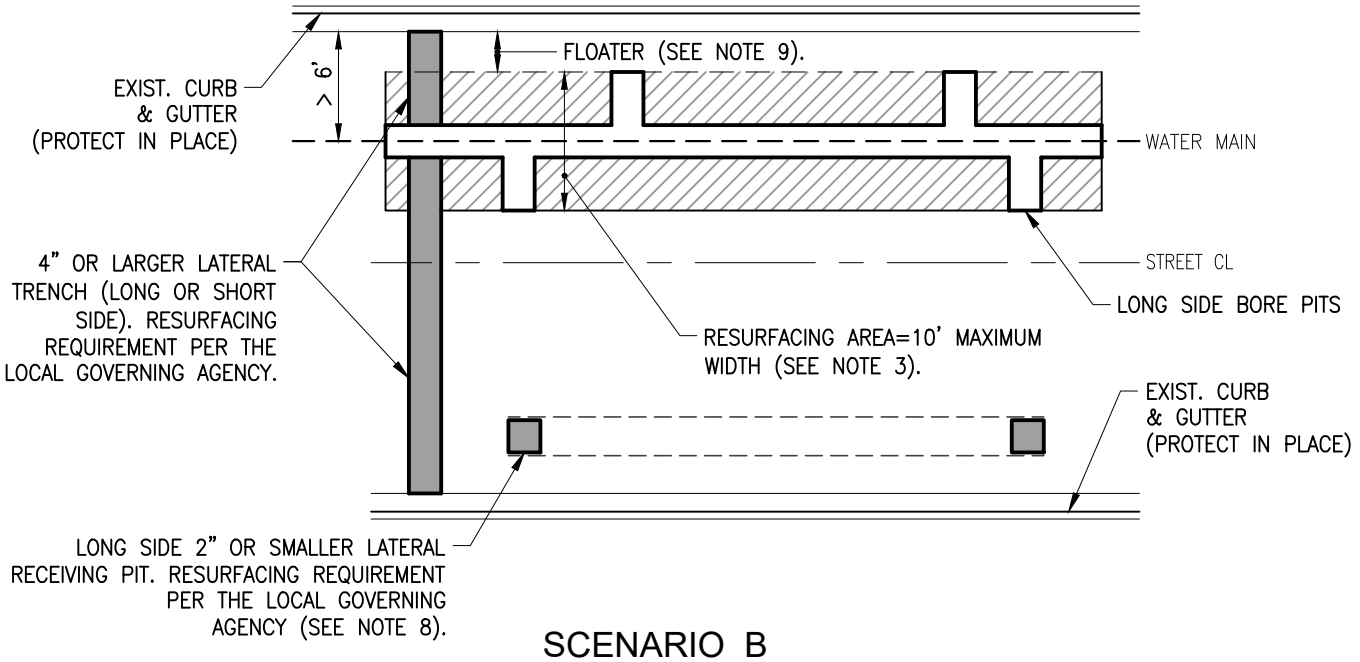
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TRENCH REPAVING**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**P–4**



SCENARIO A



SCENARIO B

NOTES:

1. ▩ TRENCH REPAIRS PER THE LOCAL GOVERNING AGENCY.
2. ▨ 1-1/2" OR 2" GRIND AND CAP PER THE LOCAL GOVERNING AGENCY, SHALL ENCOMPASS THE PIPELINE TRENCH AND DOMESTIC SERVICE CUTS.
3. THE RESURFACING AREA OVER THE TRENCH SHALL MAINTAIN A CONSTANT WIDTH THROUGHOUT THE ENTIRE PROJECT.
4. SCENARIO A – SHORT SIDE 2" OR SMALLER LATERAL SHALL BE INSTALLED BY METHOD OF OPEN CUT OR PNEUMATIC BORE.
5. SCENARIO B – SHORT SIDE 2" OR SMALLER LATERAL SHALL BE INSTALLED BY PNEUMATIC BORE. NO OPEN TRENCH UNLESS AUTHORIZED BY GSWC.
6. SCENARIO A AND B – LONG SIDE 2" OR SMALLER LATERAL SHALL BE INSTALLED BY USE OF PNEUMATIC BORE. NO OPEN TRENCH UNLESS AUTHORIZED BY GSWC.
7. LONG SIDE 2" OR SMALLER LATERAL RECEIVING PIT SHALL BE UNIFORM IN SIZE AND ALIGNMENT.
8. FLOATER (SECTION BETWEEN THE EDGE OF TRENCH TO THE EDGE OF EXISTING PAVEMENT) SHALL BE 2-3 FEET, OR AS REQUIRED BY THE LOCAL GOVERNING AGENCY.

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 11/19

Golden State Water Company
A Subsidiary of American States Water Company

AC RESURFACING

SCALE:	DATE:	REV.	STANDARD DWG NO.
NONE	11/19	1.4	P-4B

TRENCH DETAIL LIST (Std. Plans are at each city website)			
Cities:			
Anaheim			
Apple Valley		5/2012	
Arcadia			
Artesia			
Barstow		10/2011	
Bell			
Bell Gardens		7/2012	
Buena Park			
Calipatria		7/2012	
Carson		7/2012	
Cerritos		12/2013	
Claremont		7/2012	
Clearlake			
Compton		7/2012	
Covina		7/2012	
Cudahy			
Culver City		10/2013	
Cypress		8/2013	
Downey		7/2012	
ElMonte		7/2012	
El Segundo			
Gardena		7/2012	
Garden Grove			
Glendora		7/2012	
Hawaiian Gardens			
Hawthorne		7/2012	
Huntington Park			
Inglewood		7/2013	
Irwindale			
La Mirado			
La Palma			
La Verne		7/2012	
Lakewood			
Lawndale			
Long Beach		7/2012	
Los Alamitos		1/2013	
Los Angeles City		5/2014	
Monrovia			

APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartman — 09/16
EDC MANAGER — DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
LIST OF CITIES/COUNTIES WITH REPAVING REQUIREMENTS

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	09/16	1.1	**P-5A**

TRENCH DETAIL LIST (Continued):			
Cities:		Dated:	
Montclair			
Monterey Park			
Norwalk			
Ojai		8/2012	
Orange			
Paramount			
Pittsburg			
Pomona		7/2012	
Rancho Cordova			
Redondo Beach		7/2012	
Rosemead		7/2012	
San Dimas			
San Gabriel			
San Luis Obispo		7/2012	
Santa Fe Springs			
Santa Maria			
Simi Valley		7/2013	
South Gate		12/2012	
Stanton		7/2012	
Temple City			
Tustin			
Upland			
Walnut			
Yorba Linda			
Counties:			
Contra Costa County		7/2012	
Imperial County			
Lake County			
Los Angeles County			
Orange County			
Sacramento County		7/2012	
Sacramento County Drainage Notes		7/2012	
San Bernardino County		5/2013	
San Luis Obispo County			
Santa Barbara County		8/2012	
Ventura County			

NOTE:

1. GSWC Standard for Trench Repaving Detail shall be used except where City/County repaving requirements are greater or as required by the encroachment permit.

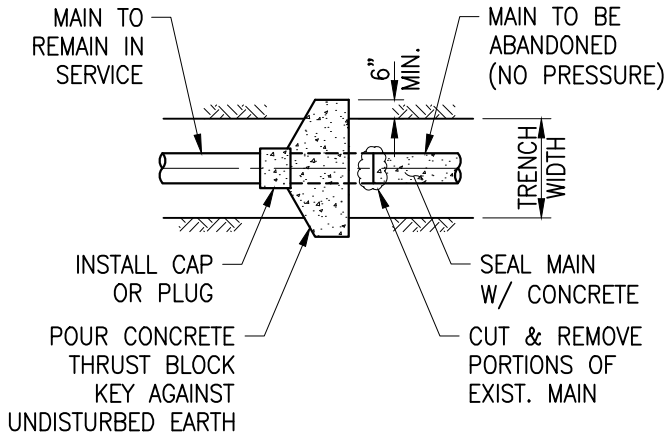
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

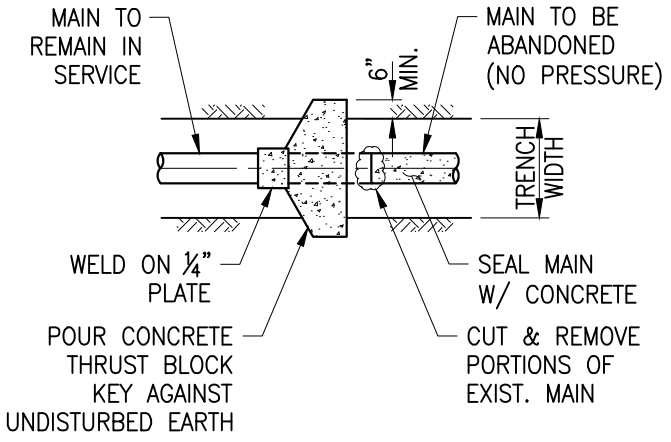
TITLE:
LIST OF CITIES/COUNTIES WITH REPAVING REQUIREMENTS

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**P-5B**



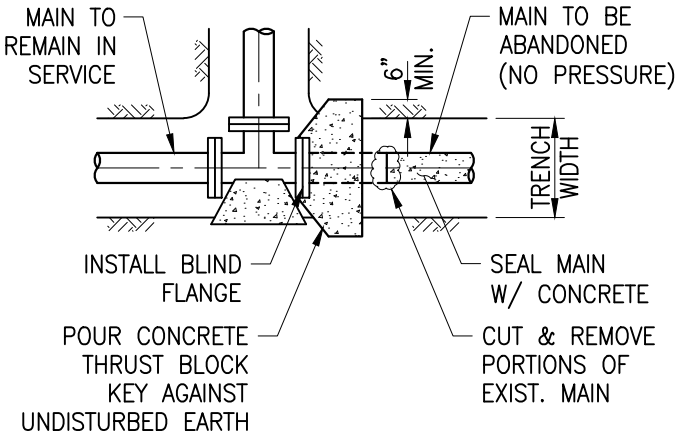
CONDITION "A"

EXIST. AC, PVC, CI OR DIP MAINS



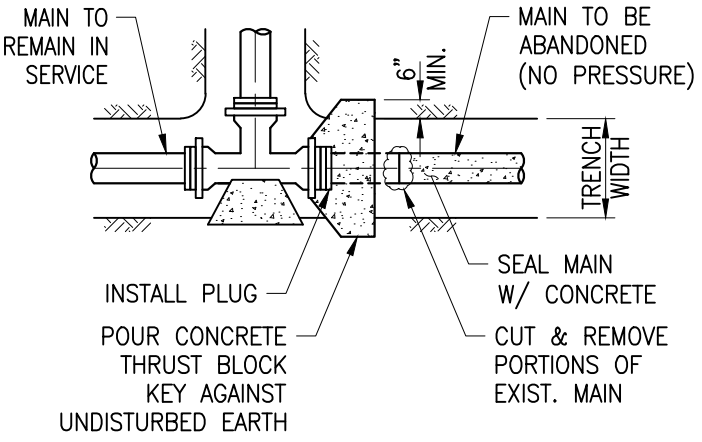
CONDITION "B"

EXIST. STEEL MAINS



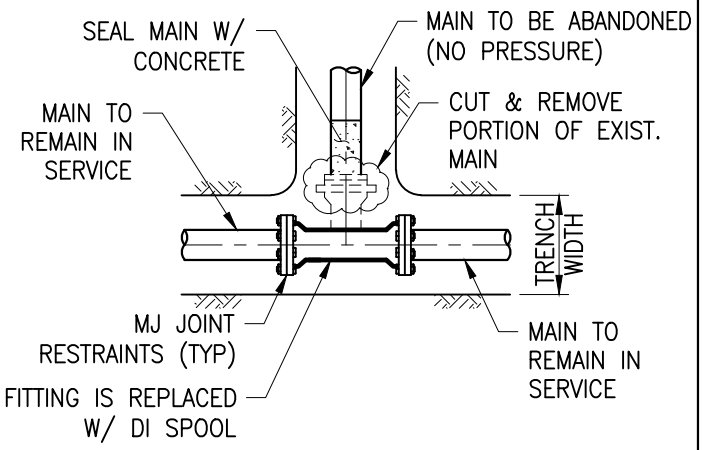
CONDITION "C"

EXIST. FLANGED FITTING OR VALVE



CONDITION "D"

EXIST. HUB END FITTING OR VALVE



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COMMON WHEN ABANDONING MAINS IN ALLEYWAYS & BACKYARD EASEMENTS

NOTES:

1. Bearing area against undisturbed soil shall be the same as for dead ends. See Std. Dwg. P–18 for required thrust block area.
2. When called out on plans, install blow–off.
3. Thrust blocks shall be class 560–C–3250 concrete, unless otherwise specified.
4. All buried bolts shall be coated with "Devwrap 142S".

APPROVED BY:
GSWC STANDARDS COMMITTEE

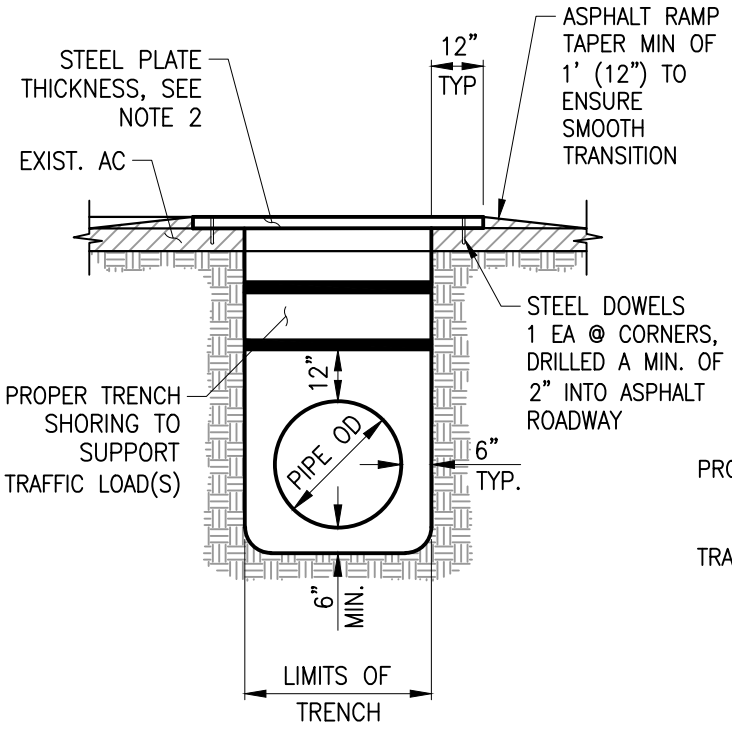
EDC MANAGER

1/18
DATE

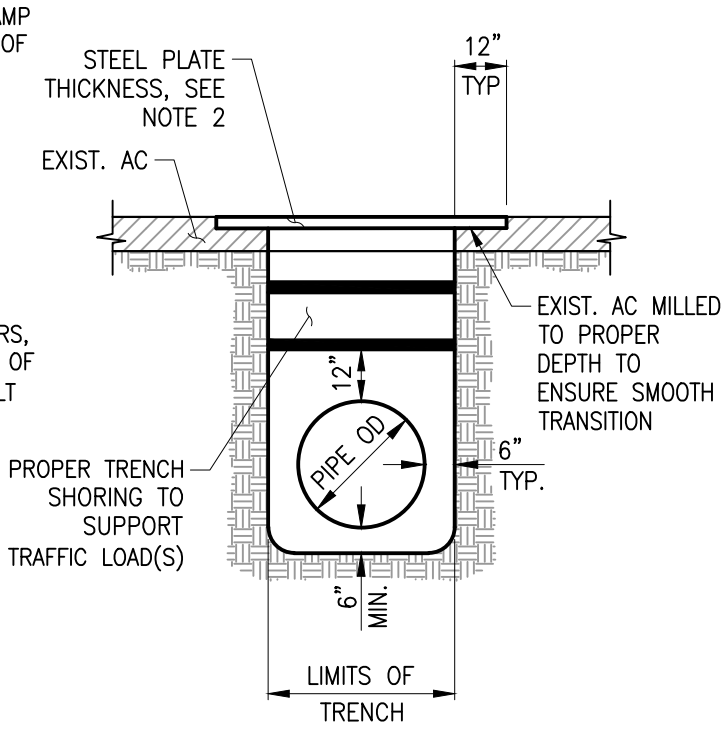
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
CUTTING & PLUGGING WATERMAINS

SCALE:	DATE:	REV.	STANDARD DWG NO.
NONE	01/18	1.3	P–6



TRENCH PLATE STANDARD DRAWING FOR SPEEDS UNDER 45 MPH



TRENCH PLATE STANDARD DRAWING FOR SPEEDS OVER 45 MPH

NOTES:

1. Use of trench plates shall meet the current requirements of the City/County jurisdiction where the work is being done or this drawing, whichever is more stringent.

2. Minimum steel plate thickness based on using A–36 grade steel designed for HS20–44 truck loading per Caltrans Bridge Design Specifications Manual.

Trench Width	Min. Plate Thickness
0"–10"	½"
11"–23"	¾"
23"–31"	⅞"
31"–41"	1"
41"–63"	1¾"

3. For spans greater than 63" a structural design shall be prepared by a California registered civil engineer.

4. All steel plates used in or out of the traveled way shall be without deformation. The GSWC representative shall determine the trueness of the steel plate by using a straight edge and will reject any plate that is permanently deformed.

5. Steel plates used in the traveled portion of the right of way shall have a surface that was manufactured with a nominal Coefficient of Friction (COF) of 0.35. The contractor shall determine what amount of surface wear is acceptable, and independently ascertain when to remove, test, or resurface an individual steel plate.

6. Contractor shall not install any steel plate that is permanently deformed or delivered without the required surfacing.

7. A warning sign meeting Caltrans standards shall be placed in advance of steel plate bridging. This sign shall be used with all other required construction signing.

APPROVED BY:
GSWC STANDARDS COMMITTEE

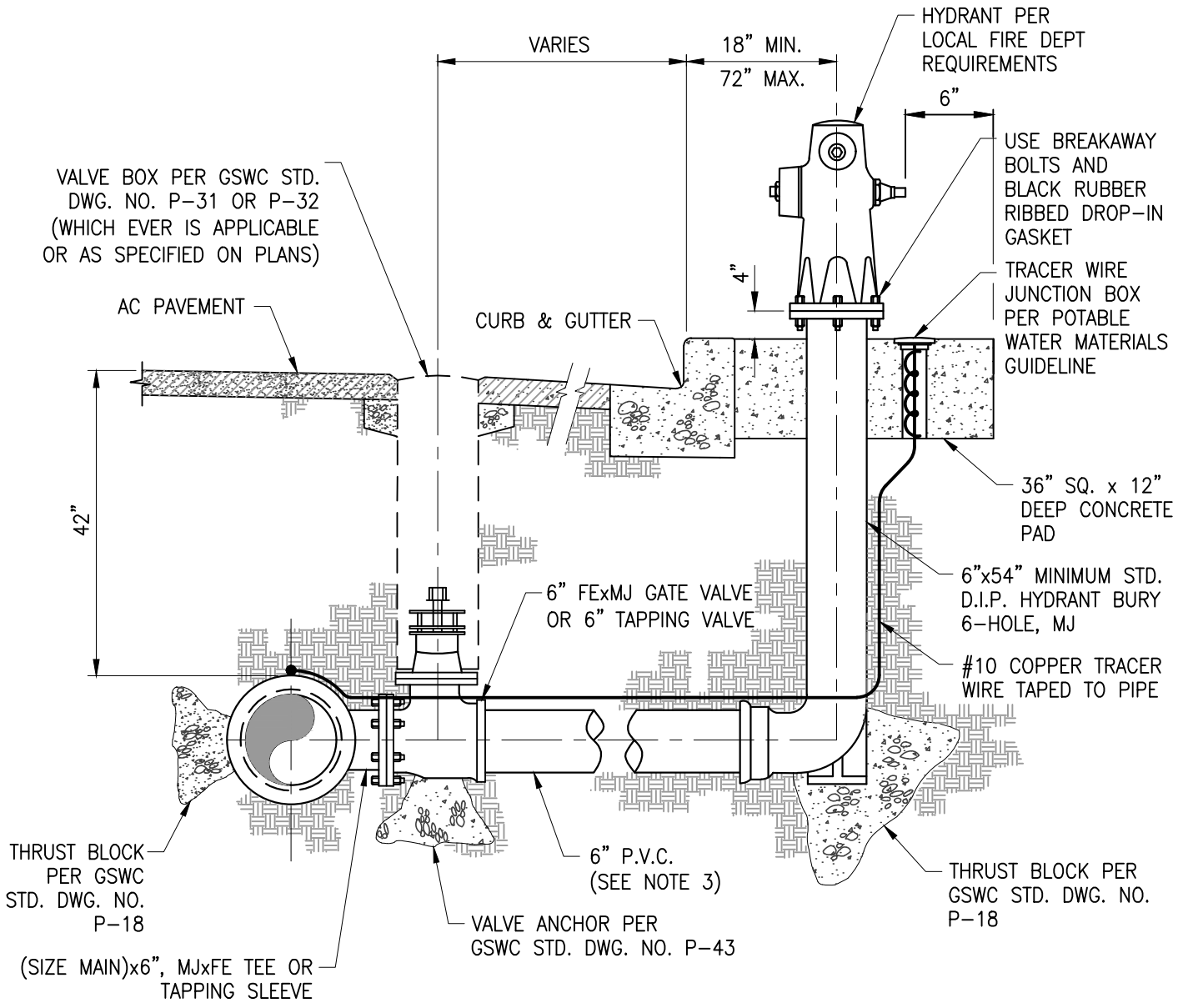
EDC MANAGER

01/18
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TRENCH PLATES**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P–7**

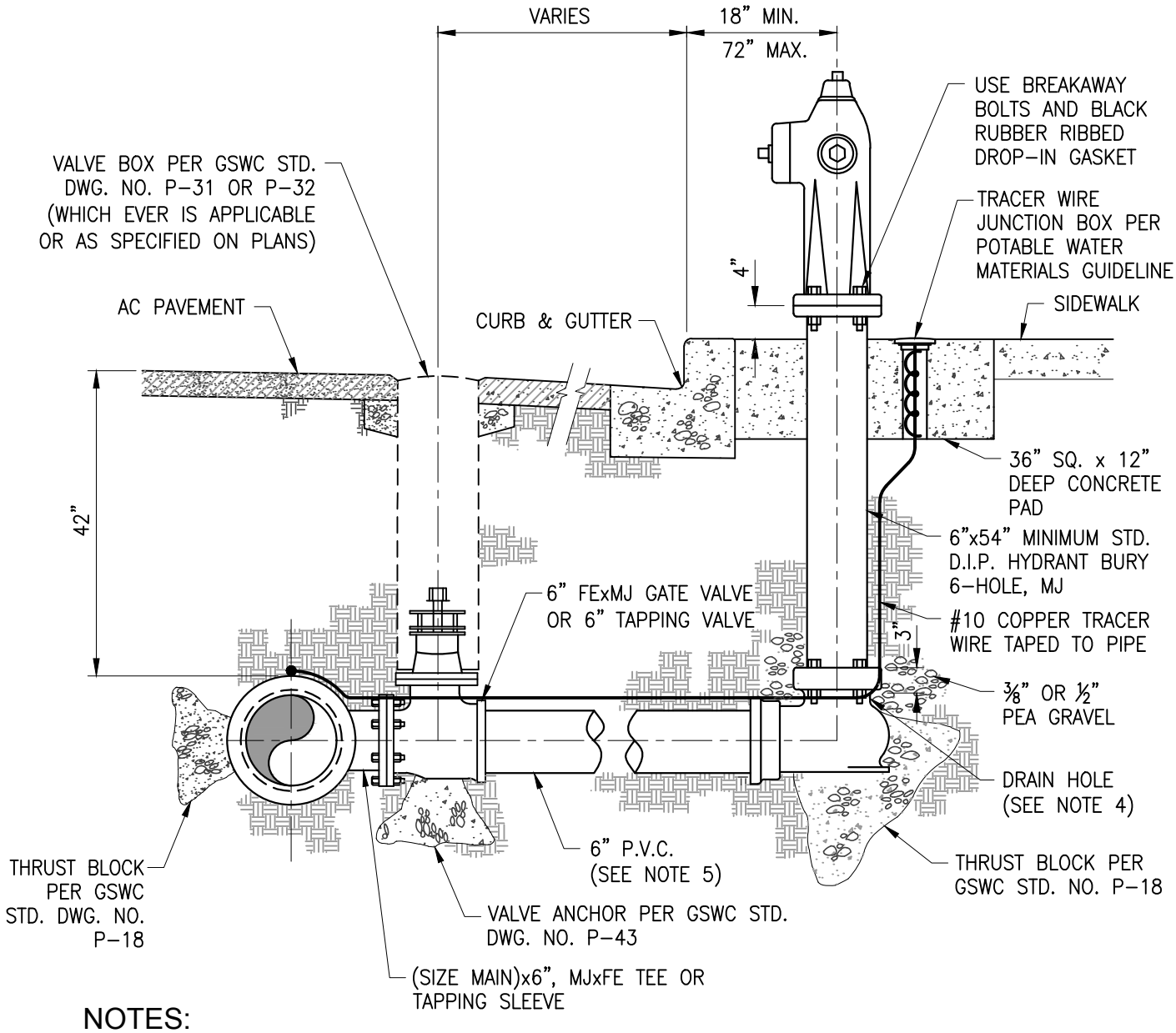


NOTES:

1. On roads without curbs, fire hydrants shall be located within the road right of way, one foot clear from the property line unless otherwise indicated on the plans. The 3' square concrete pad under the hydrant shall be constructed.
2. Hydrants, risers and curbs are to be painted per local fire department requirements.
3. Ductile iron pipe shall be used when the main line is DIP.
4. In LA County, valves shall be 10' – 25' from hydrant. Install 2 valves if distance from main is greater than 25'. Include a 90° bend on 6" lateral pipe.
5. Fire hydrants shall be located per GSWC Std. Dwg. No. C-10.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **6-INCH STANDARD WET BARREL FIRE HYDRANT**

1/18	SCALE:	DATE:	REV	STANDARD DWG NO.
DATE	NONE	1/18	1.3	**P-8**

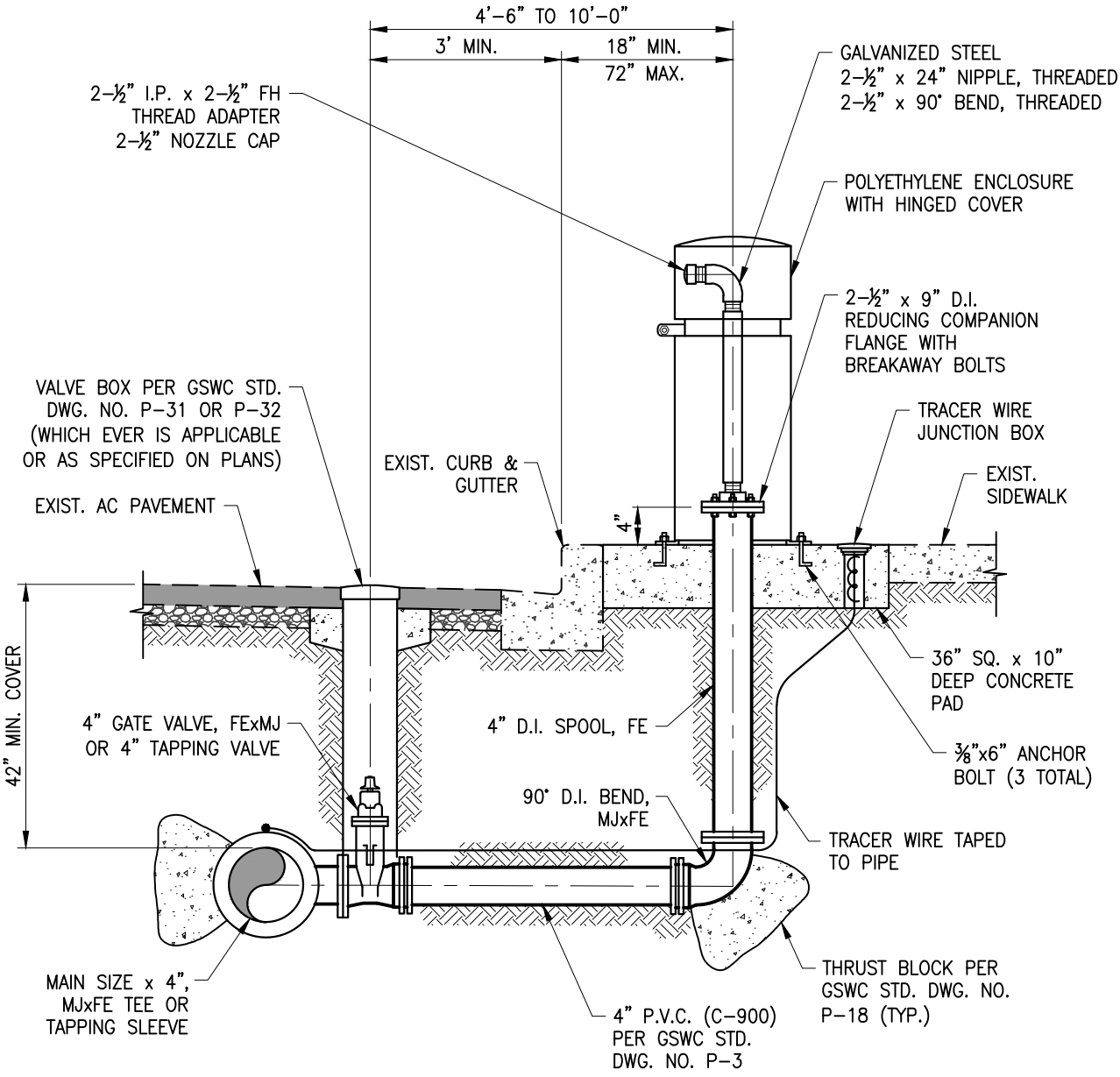


NOTES:

1. On roads without curbs, fire hydrants shall be located within the road right of way, one foot clear from the property line unless otherwise indicated on the plans. The 3' square concrete pad under the hydrant shall be constructed.
2. Hydrants, risers and curbs are to be painted per local fire department requirements.
3. In Wrightwood District, cover over main shall be 42" from top of pavement, use hydrant with minimum 54" bury length.
4. Adequate clearance between thrust block and drain hole shall be provided to assure proper drainage.
5. Ductile iron pipe shall be used when the main line is DIP.
6. In LA County, valves shall be 10' – 25' from hydrant. Install 2 valves if distance from main is greater than 25'. Include a 90° bend on 6" lateral pipe.
7. Fire hydrants shall be located per GSWC Std. Dwg. No. C-10.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **6-INCH STANDARD DRY BARREL FIRE HYDRANT**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-9**



NOTES:

1. GALVANIZED STEEL SHALL BE EPOXY COATED, SCH. 80 AND A53 GRADE B.
2. COATING MATERIALS SHALL BE PER GSWC PAINTING SPECIFICATIONS FOR ABOVE GRADE PIPING.
3. FLUSH OUT SHALL BE LOCATED SIMILAR TO GSWC STD. DWG. NO. C-10 FOR FIRE HYDRANTS.
4. ON ROADS WITHOUT CURBS, THE CONCRETE PAD UNDER THE FLUSH OUT SHALL BE LOCATED WITHIN THE ROAD RIGHT OF WAY, ONE FOOT CLEAR FROM THE PROPERTY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.
5. DUCTILE IRON PIPE SHALL BE CEMENT LINED AND BITUMASTIC COATED AND BE USED WHERE MAIN INSTALLATION IS D.I.P.

APPROVED BY:
GSWC STANDARDS COMMITTEE

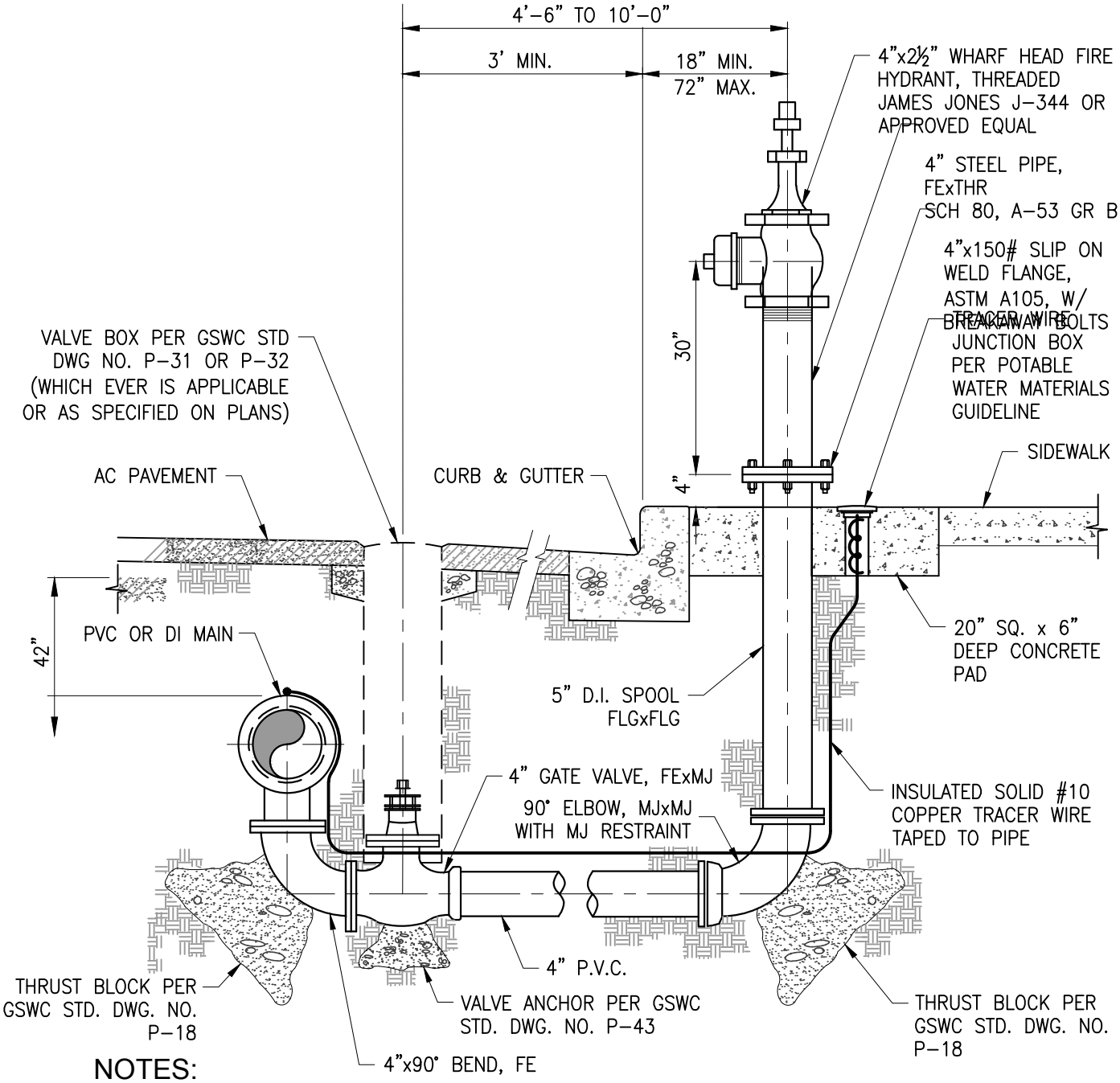
EDC MANAGER

11/19
DATE

Golden State Water Company
A Subsidiary of American States Water Company

4-INCH FLUSH OUT

SCALE:	DATE:	REV.	STANDARD DWG NO.
NONE	11/19	1.4	P-10



NOTES:

1. On mains 12" and larger, install a 12" long flanged spool between 90° bend and gate valve.
2. Ductile iron pipe shall be used when the main line is DIP.
3. Coating materials shall be per GSWC painting specifications for above grade piping.
4. D.I.P. shall be cement lined and bitumastic coated.
5. Fire hydrants shall be located per GSWC Std. Dwg. No. C-10.
6. On roads without curbs, flush out shall be located within the road right-a-way, one foot clear from the property line unless otherwise indicated on the plans. The concrete pad under the flush out shall be constructed.

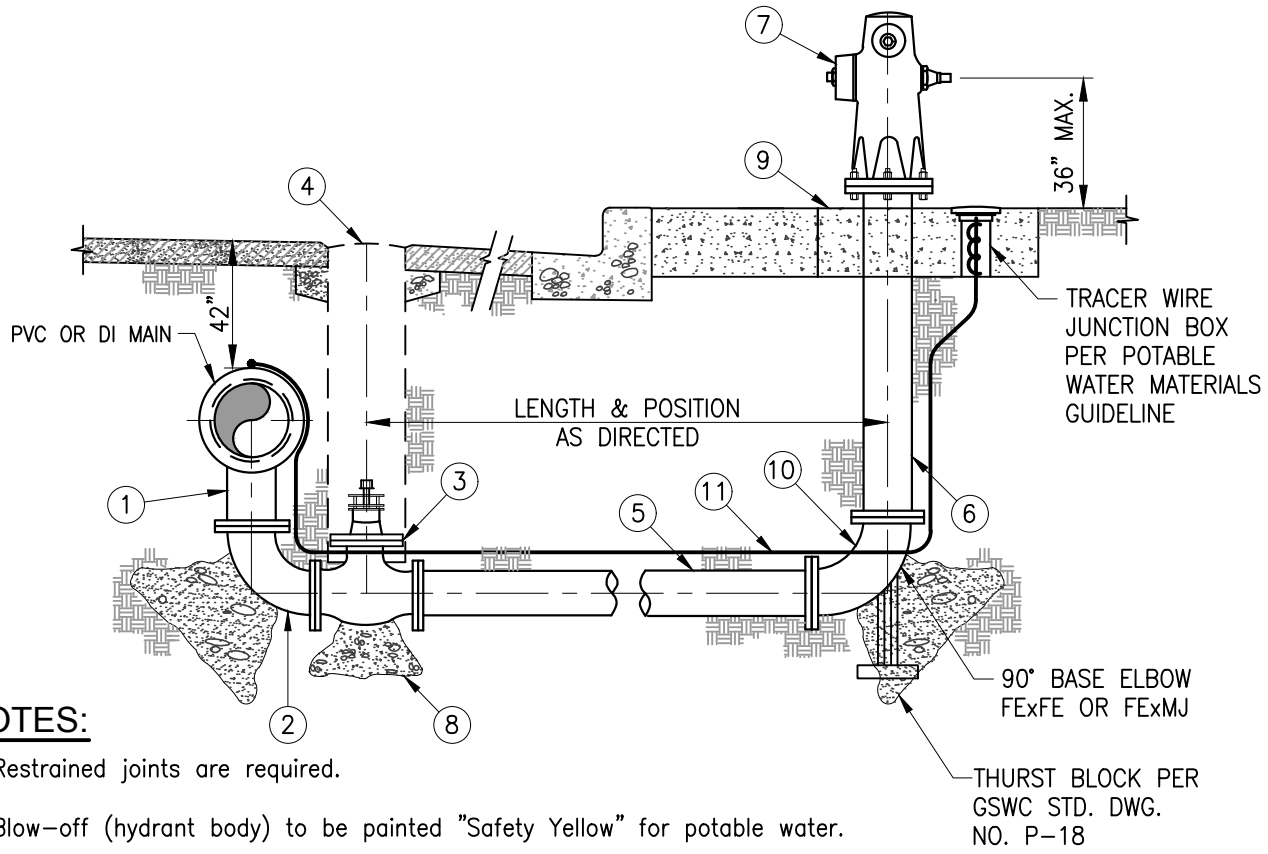
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 1/18

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
4-INCH BLOW-OFF ASSEMBLY

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	P-11



NOTES:

1. Restrained joints are required.
2. Blow-off (hydrant body) to be painted "Safety Yellow" for potable water.
3. Blow-off shall be located similar to GSWC Std. Dwg. No. C-10 for fire hydrants.
4. DIP shall be cement lined and bitumastic coated.
5. On roads without curbs, flush out shall be located in the road right-of-way, one foot clear from the property line unless otherwise indicated on the plans. The concrete pad under the flush out shall be constructed.

ITEM	EACH	DESCRIPTION	DESCRIPTION	REMARKS
(1)	1	Std. 6" tee branch	D.I. flg on 6" branch	Set vertically down
(2)	1	6" 90° L.R. bend	D.I. 6" long radius, FLxFL	With thrust block
(3)	1	6" gate valve		Resilient wedge, FLxFL
(4)	1	8" valve well and cap	P-31 or P-32	
(5)	1	6" pipe blow-off lateral		FExFE or FExPE DIP or PVC
(6)	1	6" std. fire hydrant bury		6 hole FExFE or FExMJ (6"x54" MIN.)
(7)	1	6" residential fire hydrant	Std. Dwg. P-8 or P-9	4"x2½" James Jones JJ-3700, painted
(8)	–	Valve anchor, Per GSWC Std. Dwg. No. P-43		
(9)	1	560 C3250 concrete pad	2'-6"x2'-6"x12" deep	
(10)	1	6" dia. 90° base elbow, S.R.	FExFE or FExMJ	
(11)	1	#10 copper tracer wire taped to pipe		

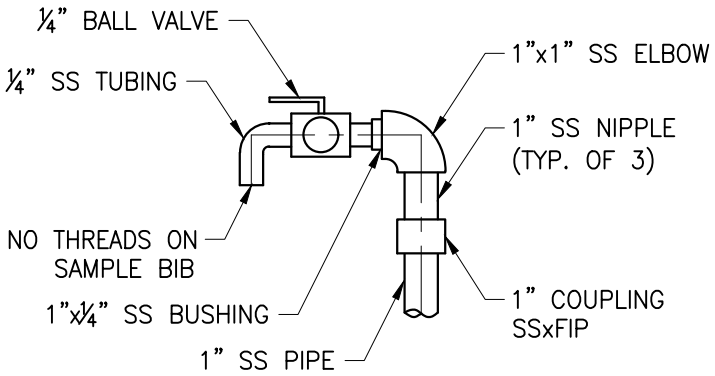
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

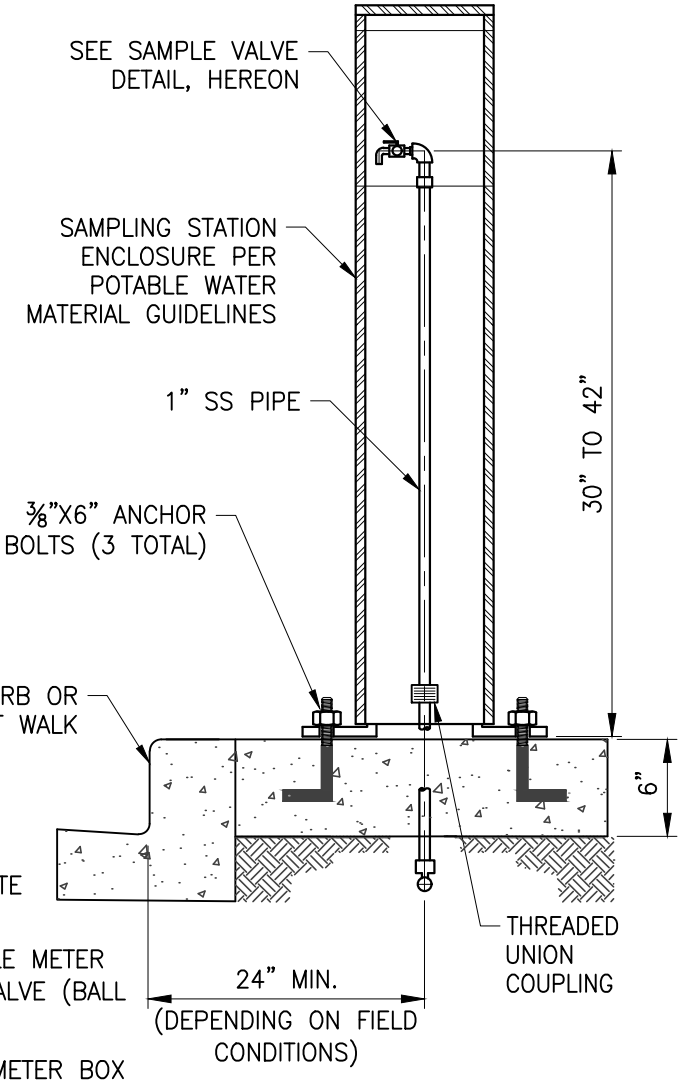
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
6-INCH BLOW-OFF ASSEMBLY

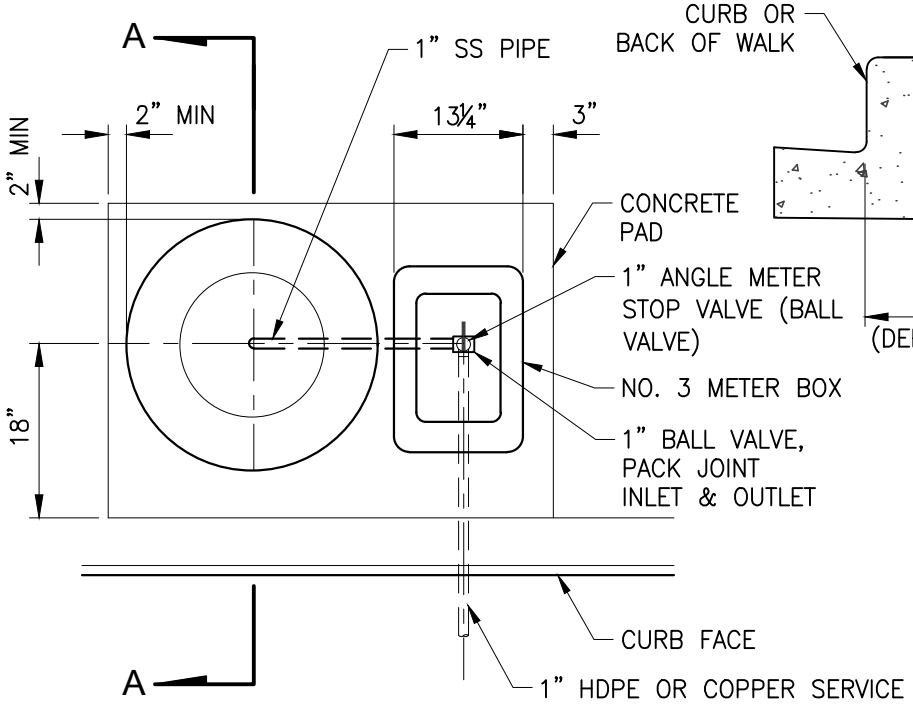
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-12**



SAMPLE VALVE DETAIL
N.T.S.



SECTION A-A
N.T.S.



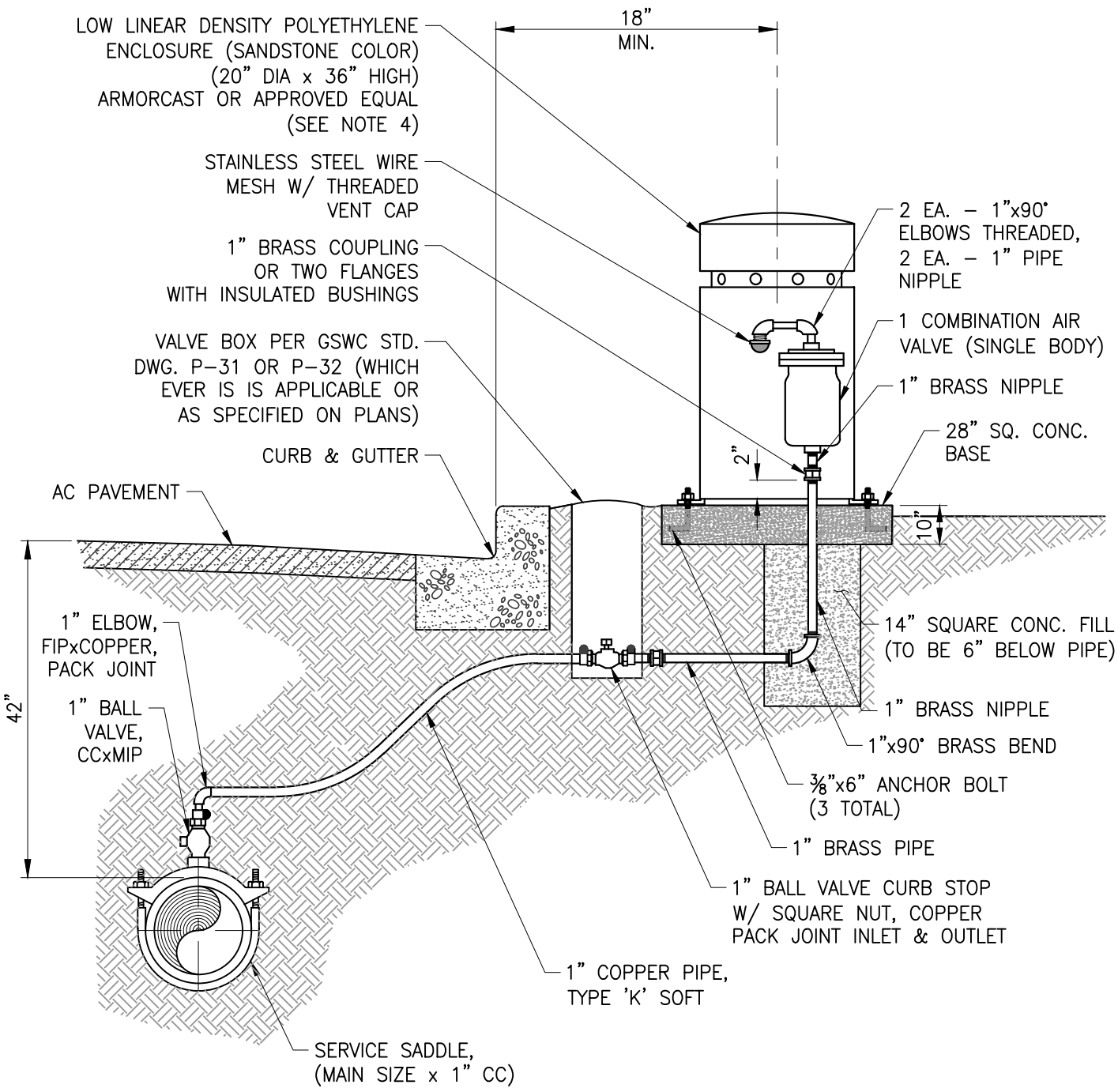
PLAN VIEW
N.T.S.

NOTES:

1. No sampling stations shall be installed beyond limits of public right of way without easements.
2. Door shall open to side opposite vehicular traffic.
3. Sampling stations shall be located similar to GSWC Std. Dwg. No. C-10 for Fire Hydrants.
4. Stainless steel materials to be electrically insulated from D.I.P. or copper materials.
5. In areas subject to freezing temperatures use sampling stations designed for use in freezing climates. See Potable Water Materials Guidline.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **SAMPLING STATION**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-13**

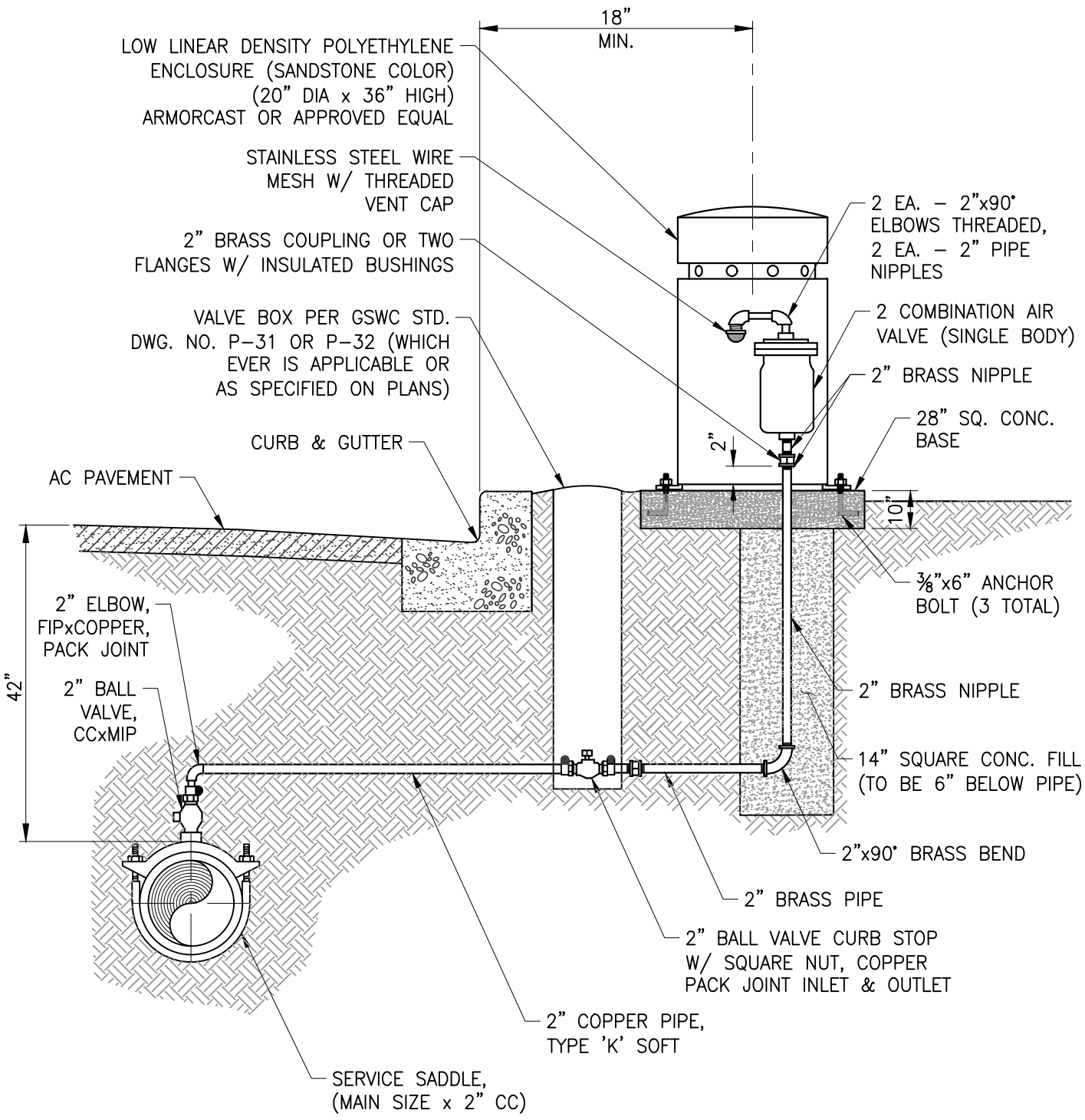


NOTES:

1. Maintain positive slope from main to air release valve.
2. Slip–on or copper fittings with silver solder brazing shall be used in lieu of copper pack joints.
3. Air valve assembly shall be located similar to GSWC Std. Dwg. No. C–10 for fire hydrants.
4. As an alternative the enclosure can be 12" dia. x 24" high.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **1–INCH COMBINATION AIR RELEASE & VACUUM RELIEF VALVE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P–14**

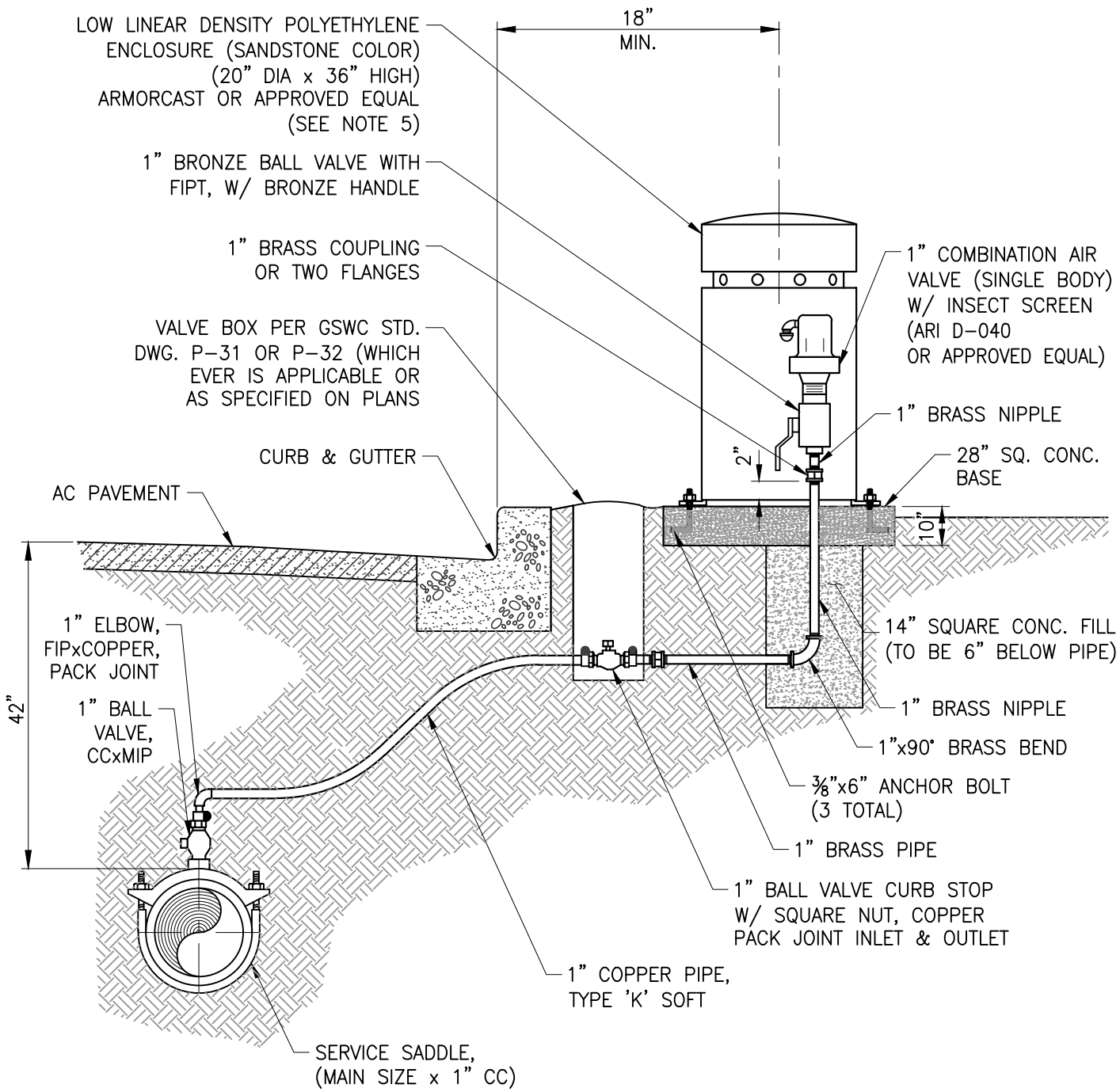


NOTES:

1. Maintain positive slope from main to air release valve.
2. Slip-on or copper fittings with silver solder brazing shall be used in lieu of copper pack joints.
3. Air valve assembly shall be located similar to GSWC Std. Dwg. No. C-10 for fire hydrants.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **2-INCH COMBINATION AIR RELEASE & VACUUM RELIEF VALVE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-15**

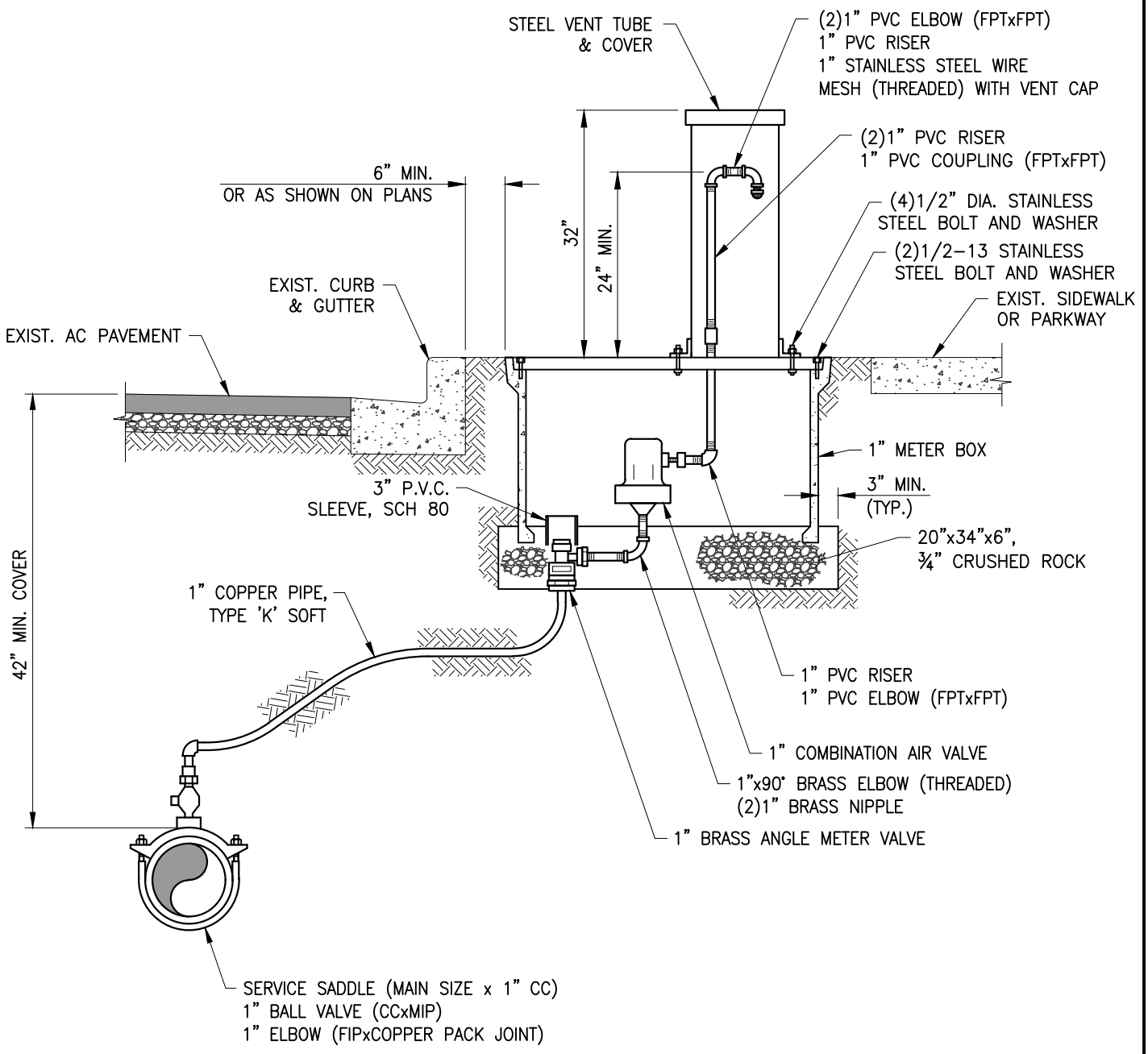


NOTES:

1. Maintain positive slope from main to air release valve.
2. Slip-on or copper fittings with silver solder brazing shall be used in lieu of copper pack joints.
3. Air valve assembly shall be located similar to GSWC Std. Dwg. No. C-10 for fire hydrants.
4. A foam insulator shall be used around A/V valve body, in areas where there are freezing conditions. See potable water materials guideline.
5. As an alternative, the enclosure can be 12" dia. x 24" high.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **1-INCH COMPACT STYLE COMBINATION AIR RELEASE & VACUUM RELIEF VALVE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-16**



NOTES:

1. MAINTAIN POSITIVE SLOPE FROM MAIN TO AIR RELEASE VALVE.
2. SLIP-ON OR COPPER FITTINGS WITH SILVER SOLDER BRAZING SHALL BE USED IN LIEU OF COPPER PACK JOINTS.
3. AIR VALVE ASSEMBLY SHALL BE LOCATED SIMILAR TO GSWC STD. DWG. NO. C-10 FOR FIRE HYDRANTS.
4. A FOAM INSULATOR SHALL BE USED AROUND AIR VALVE BODY. SEE APPROVED MATERIALS LIST.
5. ON ROADS WITHOUT CURBS, THE METER BOX SHALL BE LOCATED WITHIN THE ROAD RIGHT OF WAY, ONE FOOT FROM THE PROPERTY LINE UNLESS OTHERWISE INDICATED ON THE PLANS.

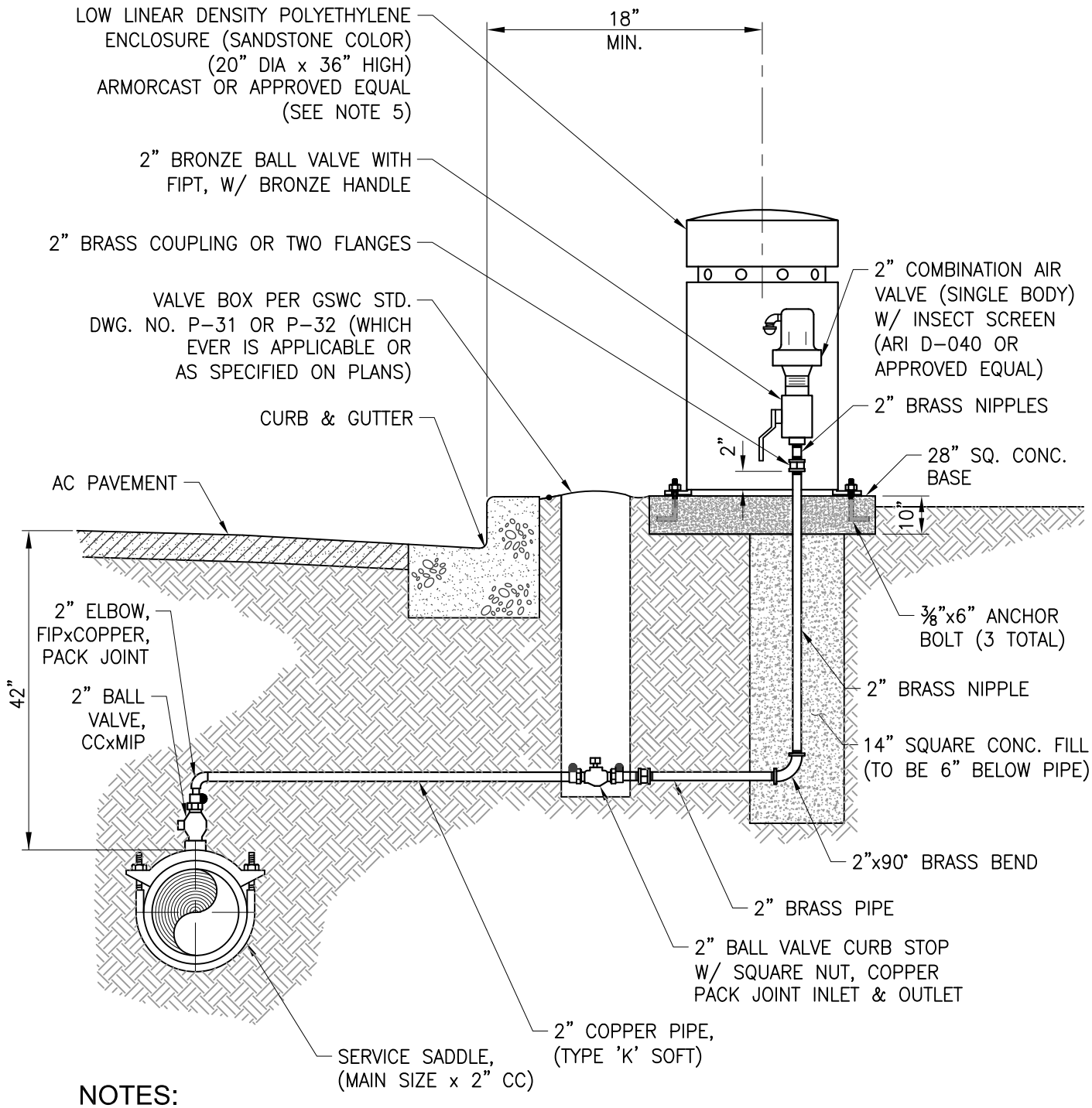
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 11/19

Golden State Water Company
A Subsidiary of American States Water Company

1-INCH COMBINATION AIR RELEASE & VACUUM RELIEF VALVE FOR COLD WEATHER CLIMATE

SCALE:	DATE:	REV.	STANDARD DWG NO.
NONE	11/19	1.4	P-16B

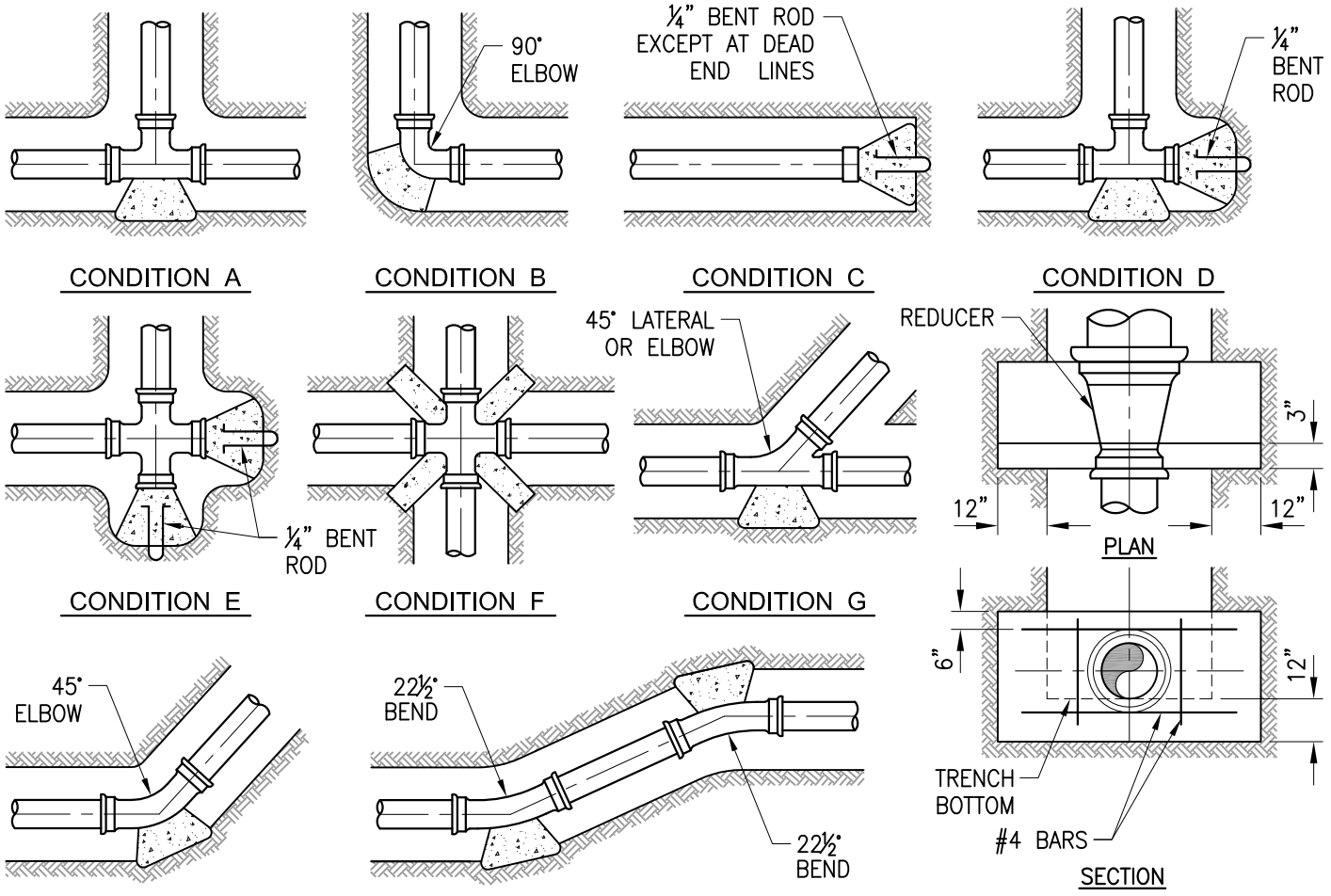


NOTES:

1. Maintain positive slope from main to air release valve.
2. Slip-on or copper fittings with silver solder brazing shall be used in lieu of copper pack joints.
3. Air valve assembly shall be located similar to GSWC Std. Dwg. No. C-10 for fire hydrants.
4. A foam insulator shall be used around A/V valve body, in areas where there are freezing conditions. See potable water materials guideline.
5. As an alternative, the enclosure can be 12" dia. x 24" high.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **2-INCH COMPACT STYLE COMBINATION AIR RELEASE & VACUUM RELIEF VALVE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P-17**



NOTES:

1. All buried bolts shall be coated with "Bitumastic No. 50" or approved equal.
2. Thrust block areas based on 225 PSI pressure and 2,000 PSF allowable soil pressure with 2½ feet of cover minimum. Additional bearing area required for special conditions shall be approved by the district engineer.
3. Thrust block bearing faces shall be placed against undisturbed soil, approved compacted backfill or class 100–E–100 slurry.
4. Thrust blocks shall be 560–C–3250 concrete, unless specified otherwise.
   A. Install ¼" bend rod handles.
   B. Use cardboard separators between blocks, if needed.

THRUST BLOCK BEARING AREA IN SQUARE FEET

PIPE SIZE	DESCRIPTION									
	A	B	C	D	E	F	G	H	I	J
4"	3.1	4.3	3.1	2 @ 3.1	2 @ 3.1	4 @ 1.2	2.3	2.3	2 @ 1.2	8.0
6"	6.3	8.9	6.3	2 @ 6.3	2 @ 6.3	4 @ 2.5	4.8	4.8	2 @ 2.5	9.0
8"	10.9	15.4	10.9	2 @10.9	2 @ 10.9	4 @ 4.2	8.3	8.3	2 @ 4.2	10.1
10"	16.3	28.1	16.3	2 @16.3	2 @ 16.3	4 @ 6.4	12.5	12.5	2 @ 6.4	11.3
12"	23.1	32.7	23.1	2 @ 23.1	2 @ 23.1	4 @ 9.0	17.7	17.7	2 @ 9.0	12.5
14"	31.0	43.9	31.0	2 @ 31.0	2 @ 31.0	4 @ 12.1	23.8	23.8	2 @ 12.1	13.8
16"	40.1	56.7	40.1	2 @ 40.1	2 @ 40.1	4 @ 15.7	30.7	30.7	2 @ 15.7	15.1

APPROVED BY:
GSWC STANDARDS COMMITTEE

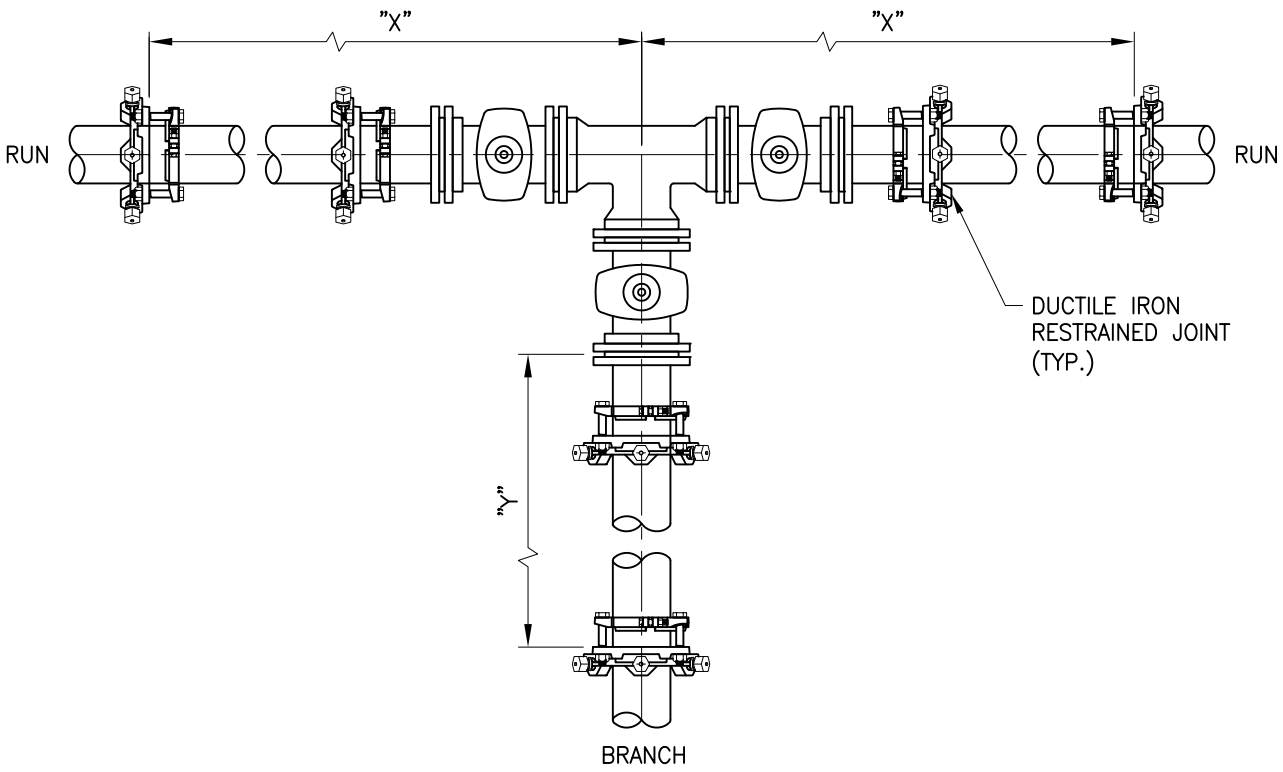
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
STANDARD THRUST BLOCK

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P–18**



"X" PIPE LENGTH

"Y" PIPE LENGTH	4	6	8	12	16	18	20	24
4	100	100	100	120	150	150	150	150
6		120	120	150	150	150	150	150
8			191	169	169	169	169	169
12				240	240	240	240	240
16					309	309	309	309
18						342	342	342
20							374	374
24								438

RESTRAINED LENGTH IN FEET

NOTES:

1. "X" and "Y" shall be determined by length values using the DIPRA design method if conditions differ from assumptions given on Std. Dwg. No. P–21.

2. If actual conditions differ from those listed above or the required restrained length cannot be met, the restrained length shall be determined by the design engineer and concurred with the district engineer.

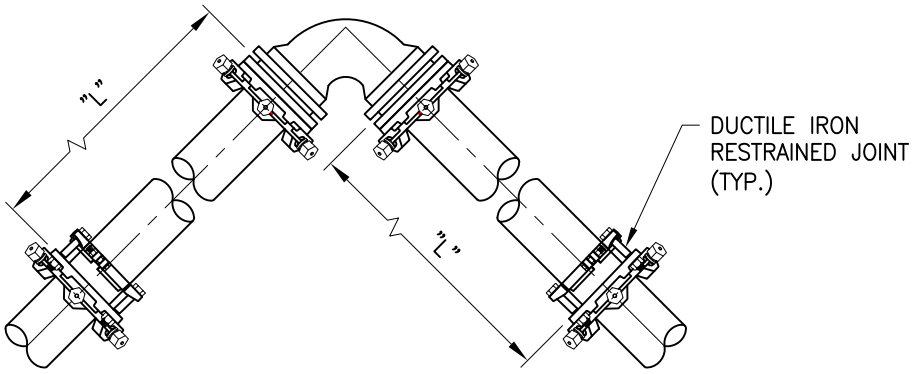
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 01/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
RESTRAINT OF JOINTS FOR DUCTILE IRON & PVC PIPE AT TEE CONNECTION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P–19**

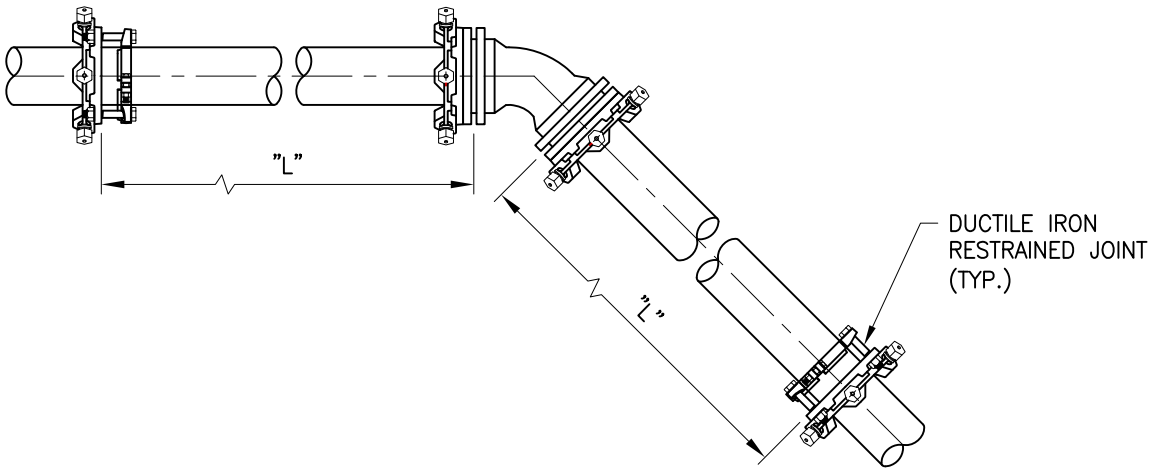


PIPE SIZE

BEND ANGLE	4	6	8	12	16	18	20	24
11.25°	3	5	6	7	9	10	11	13
22.5°	7	9	12	15	19	21	23	26
45°	14	19	25	31	39	49	47	54
90°	33	45	59	74	94	104	113	131

RESTRAINED LENGTH "L" IN FEET

HORIZONTAL BEND



PIPE SIZE

BEND ANGLE	4	6	8	12	16	18	20	24
11.25°	10	15	19	24	30	34	37	43
22.5°	21	29	38	48	61	66	74	87
45°	43	61	79	100	128	142	155	181

RESTRAINED LENGTH "L" IN FEET

VERTICAL BEND

NOTES:

1. If actual conditions differ from those listed above or the required restrained length cannot be met, the restrained length shall be determined by the design engineer and concurred with the district engineer.

APPROVED BY:
GSWC STANDARDS COMMITTEE

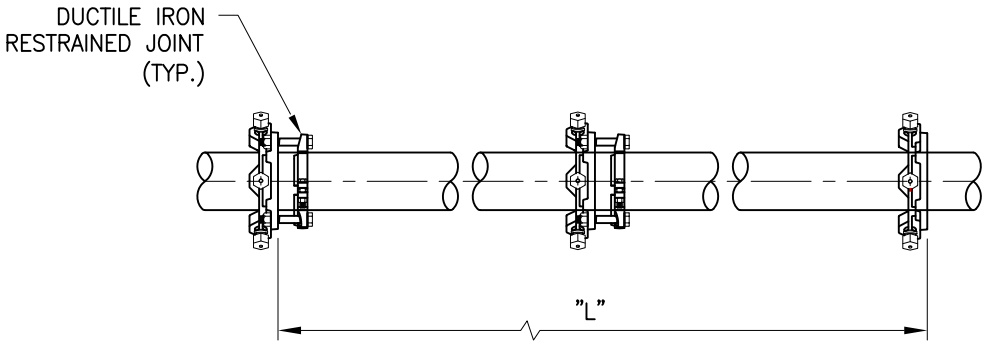
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **RESTRAINT OF JOINTS FOR DUCTILE IRON & PVC PIPE AT 90-DEGREE VERTICAL OR HORIZONTAL BEND**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P-20**



PIPE SIZE IN INCHES	4	6	8	12	16	18	20	24
RESTRAINED LENGTH "L" IN FEET	104	148	191	240	309	342	374	438

DEAD END

NOTES:

(Use for Std. Dwg. NO. P–19, P–20, & P–21)

1. All joint within length "L" shall be restrained.

2. Assumed Depth of cover for 8" pipe or less to be 3.5' min. (42"); 16" pipe or greater to be 4.0' min. (48").

3. Assumptions for determining length shown:

   - Test pressure: 225 psi
   - Type 4 laying conditions
   - A safety factor of 2
   - Sand/silt soil conditions
   - Polyethylene wrap

4. Length calculated using DIPRA restrained joint program.

5. If actual conditions differ from those listed above or the required restrained length cannot be met, the restrained length shall be determined by the design engineer and concurred with the district engineer.

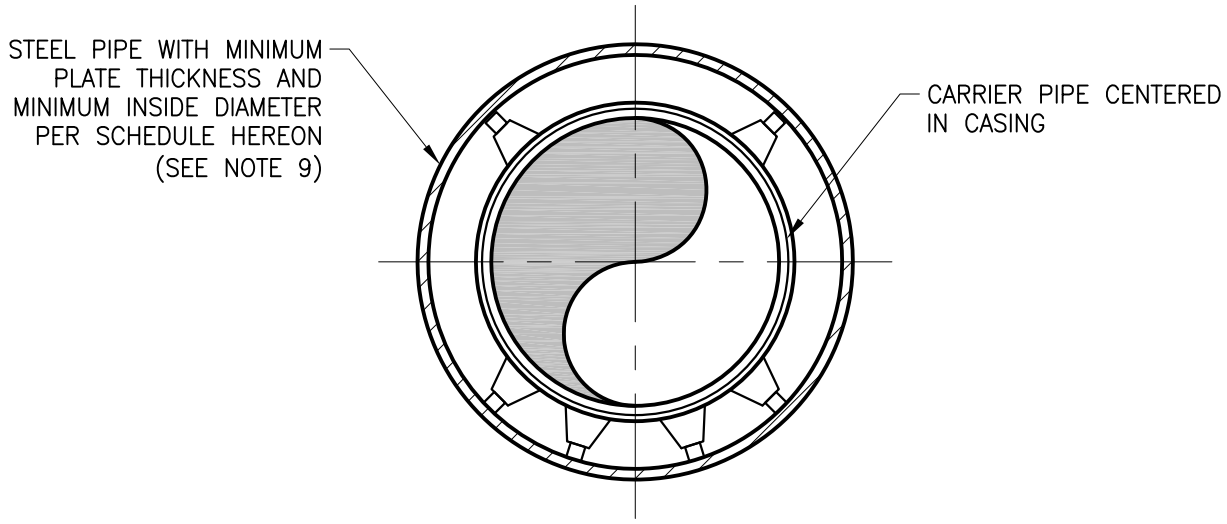
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 01/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **RESTRAINT OF JOINTS FOR DUCTILE IRON AND PVC PIPE AT A DEAD END OR EACH SIDE OF VALVE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P–21**



CASING SCHEDULE			
NOMINAL PIPE SIZE	NOMINAL CASING SIZE	MINIMUM WALL THICKNESS	
		OPEN TRENCH	JACK AND BORE
8"	16" I.D.	1/4"	3/8"
12"	20" I.D.	5/16"	1/2"
16"	30" I.D.	3/8"	1/2"
18"	32" I.D.	3/8"	1/2"
20"	36" I.D.	3/8"	1/2"
24"	42" I.D.	1/2"	1/2"
30"	48" I.D.	1/2"	5/8"
36"	56" I.D.	5/8"	3/4"
42"	60" I.D.	3/4"	7/8"

NOTES:

1. For PVC carrier pipe, use polyethylene casing insulators with polyethylene skids.
2. For ductile iron carrier pipe, use stainless steel band spacers and insulators with glass filled polymer plastic runners.
3. All casing insulators shall be designed by the manufacturer for application given the particular carrier pipe O.D. and casing pipe I.D.
4. All bolts and bands shall be Type 304 stainless steel.
5. Spacing between the basing insulators shall be per the manufacturers recommendations except that there shall be at least 4 casing insulators per pipe section, one 12" from each joint and two centered in between.
6. Both ends of the casing between the casing and carrier pipe must be sealed watertight using an end seal selected from the Potable Water Material Guidelines. Bands shall be Type 304 stainless steel. Casing end seal shall be 1/4–inch thick styrene butadiene rubber.
7. All steel casing pipe joints shall be welded full circumference.
8. Materials shall be selected from the Potable Water Materials Guidelines.
9. HDPE casing may be used if it meets adequate strength for geotechnical conditions and with written approval from GSWC.

APPROVED BY:
GSWC STANDARDS COMMITTEE

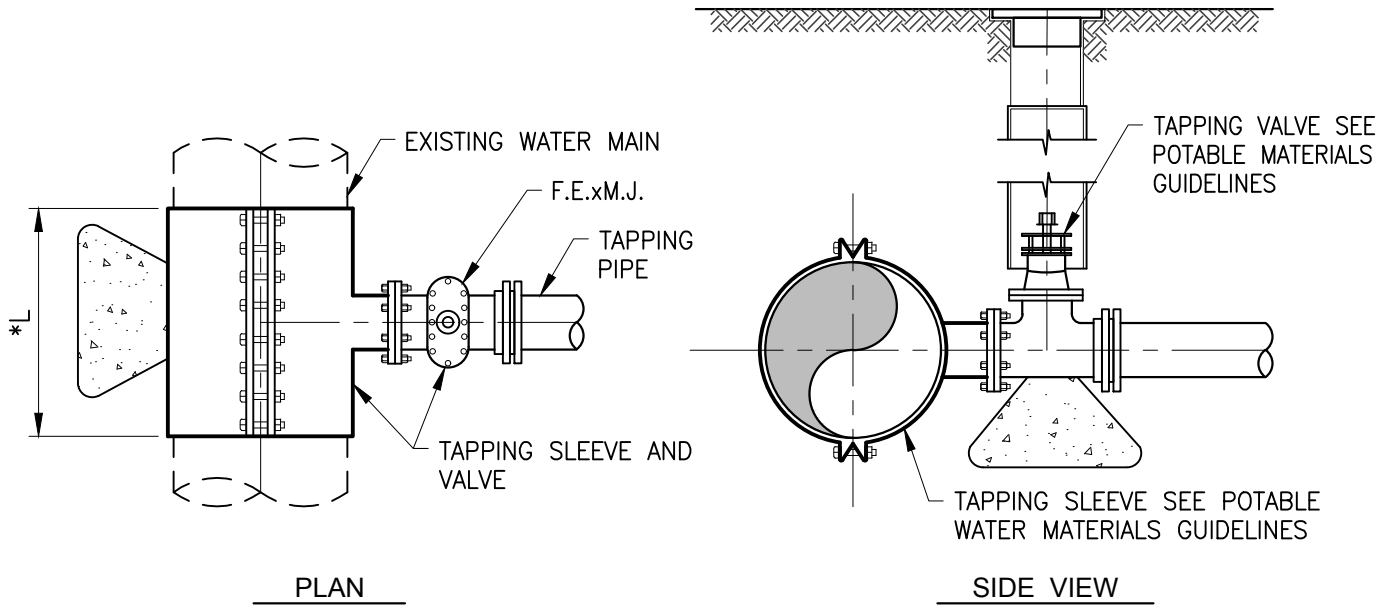
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
CASING FOR WATER MAINS

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P–22**



PLAN

SIDE VIEW

NOTES:

1. Tapping sleeve to be stainless steel per Potable Water Materials Guidelines.
2. Tapping sleeve and valve are to be completely wrapped with 8 mil. polyethylene encasement.
3. After installation and before hot tap is complete, the tapping sleeve shall be tested at system pressure, for a minimum of 15 minutes with no visible leakage.
4. Tapping sleeve shall have a full length and width gasket. O–Ring gaskets are not acceptable.
5. Diameter of the hot tap shall be one pipe size smaller than the main line diameter. Size on size hot taps will require special approval by GSWC.
6. Tapping valve shall have a flange insulation kit between ductile iron valve and stainless steel tapping sleeve.

EXISTING WATER MAIN SIZE (INCHES)	TAPPING PIPE SIZE (INCHES)									
	4	6	8	10	12	14	16	18	20	24
4	X									
6	15	X								
8	15	15	X							
10	15	15	20	X						
12	15	15	20	20	X					
14	15	15	20	20	24	X				
16	16	16	20	20	24	24	X			
18	16	16	20	20	24	24	32	X		
20	16	16	20	20	24	24	32	36	X	
24	16	16	20	20	24	24	32	36	40	
* L = LENGTH OF TAPPING SLEEVE (INCHES)										

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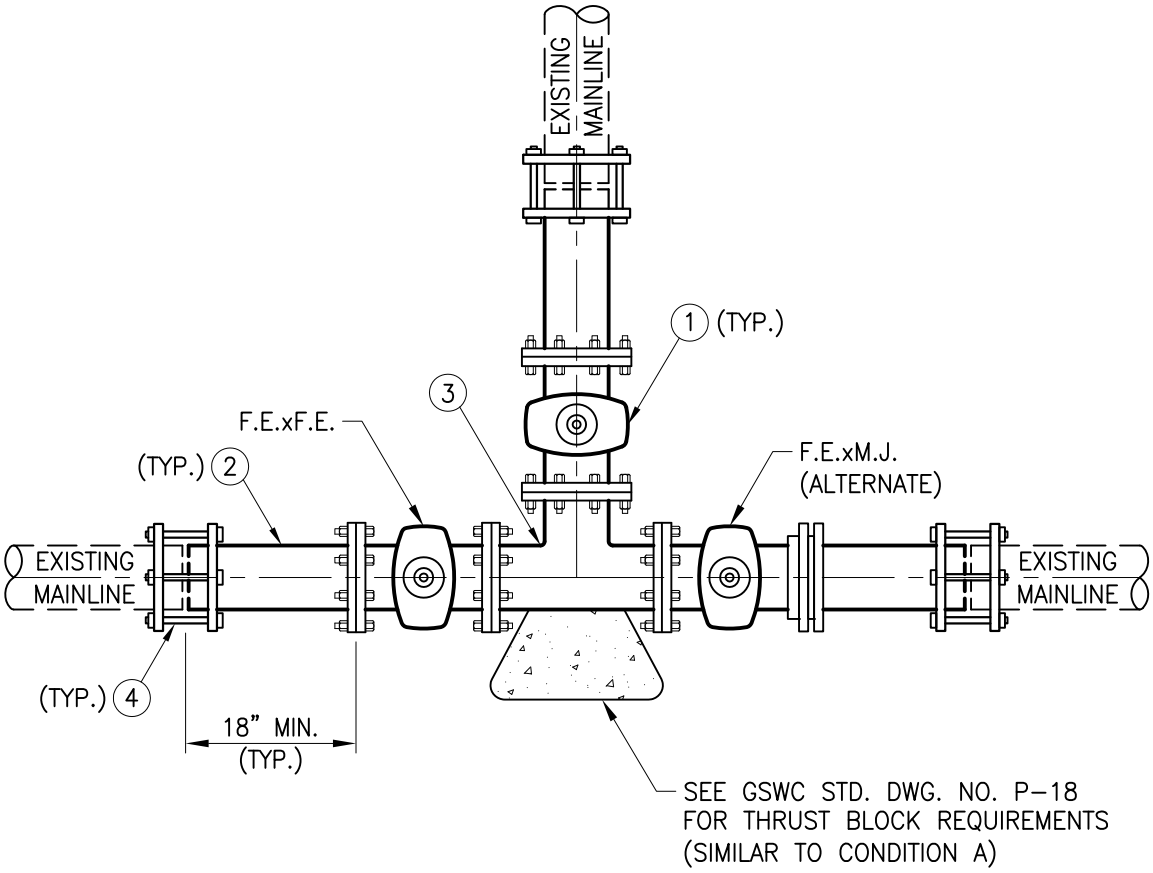
GSWC STANDARDS COMMITTEE

Robert N. Hansford — 01/18
EDC MANAGER — DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TAPPING SLEEVE & VALVE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/18	1.3	**P–23**



NOTES:

1. Cut-in tee may use F.E.xF.E. or F.E.xM.J. as called out on the drawings.
2. Use pipe material similar to existing mainline (PVC pipe shall be 3' min. length).

ITEM	DESCRIPTION
1	F.E.xF.E. (or F.E.xM.J.) gate valve per Potable Water Material Guidelines.
2	D.I.P. F.E.xP.E. per Potable Water Material Guidelines.
3	F.E.xF.E. tee per Potable Water Material Guidelines.
4	Flexible coupling per Potable Water Material Guidelines. For same size O.D. use Ductile Iron M.J. sleeve.

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EDC MANAGER

01/16
DATE

Golden State Water Company
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TITLE:
CUT-IN TEE

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P-24**

NEW SERVICE INSTALLATION NOTES:

1. Meter box placement shall be per GSWC Std. Dwg. No. P–28 and/or as shown on plans. No meters shall be installed beyond limits of public right of way without easements, unless otherwise indicated on plans.

2. 12" minimum spacing between service taps, except on ACP and PVC mains where 24" minimum spacing shall be provided.

3. For HDPE service lines, snake the service line in the trench to provide enough slack to allow at least one foot of thermal contraction per 100 feet of length. Attach tracer wire to HDPE service line.

4. No joints permitted in service lines unless an elbow is used for the 2" water service connection.

5. All new services shall be installed using service saddles.

6. For ⅝"x ¾" meter, use an A24 adapter.

7. For ¾"x ¾" meter, use an A34 adapter.

8. For a 1" angle meter valve, 1" copper pack joint x ¾" meter nut may be utilized when specified on construction plans.

9. Services shall be installed a minimum of 10 feet from all sewer laterals and proposed street tree or street light locations.

10. In areas with corrosive soils use HDPE service lines with tracer wire.

11. Use silver solder (lead free) for all copper service work.

12. Applicant to install backflow prevention assembly per requirements of GSWC's Cross–Connection Control Policy on all services as called for on the plans.

13. Curb marking will be as allowed by the local governing agency.

REPLACEMENT HOUSELINE NOTES:

1. Minimum size shall be no less than 1 inch.

2. If the existing houseline is copper, it will be replaced with type K same size copper. If the existing houseline is standard galvanized or plastic, it will be replaced with HDPE or PVC SCH 80 unless the local building code specifies other material.

3. There is to be no PVC above grade. Above grade pipe shall match customer's existing material. For bidding purposes contractor shall bid copper pipe with dielectric couplings.

4. A gate valve will be installed on new houselines that bypasses an existing valve.

5. Depth of houseline shall meet the requirements of the local plumbing code.

6. Reconnect the houseline no closer than 14 feet to the house. Cap the original houseline at the location of the original meter, unless otherwise noted. Flush original line in both directions until clear before installing cap.

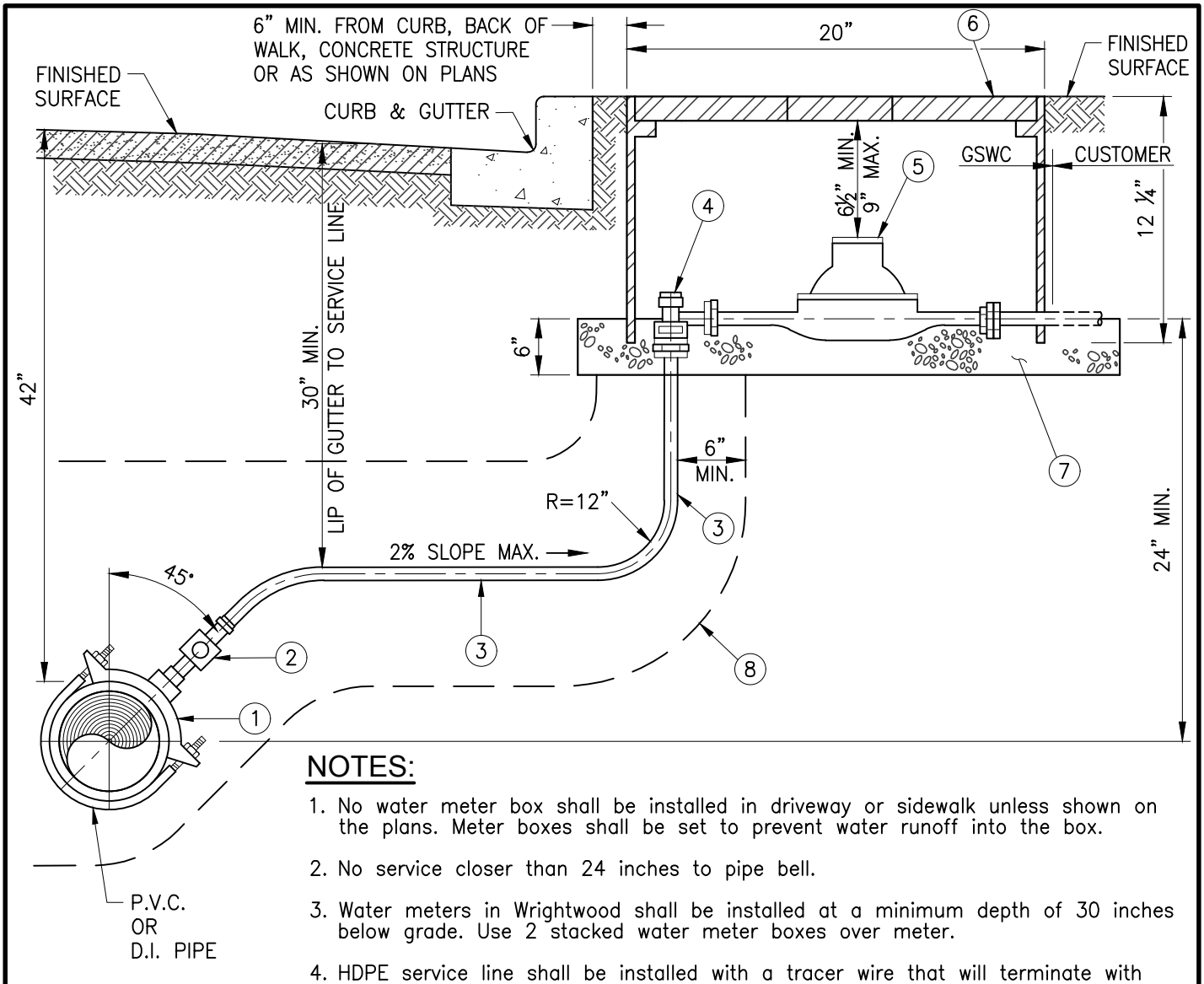
7. Contractor will supply a list of materials used for each houseline and an as–built drawing of houseline installation.

8. Contractor shall restore impacted areas to equal or better than condition prior to performing work.

9. Curb marking will be as allowed by the local governing agency.

APPROVED BY: GSWC STANDARDS COMMITTEE Robert N. Hansford — 1/18 EDC MANAGER — DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **WATER SERVICE CONSTRUCTION NOTES**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P–25**



NOTES:

1. No water meter box shall be installed in driveway or sidewalk unless shown on the plans. Meter boxes shall be set to prevent water runoff into the box.
2. No service closer than 24 inches to pipe bell.
3. Water meters in Wrightwood shall be installed at a minimum depth of 30 inches below grade. Use 2 stacked water meter boxes over meter.
4. HDPE service line shall be installed with a tracer wire that will terminate with a 12" coil in the meter box.
5. GSWC may provide a meter spacer in lieu of a meter.
6. Meter box shall have one 3"x4" opening on one end of the box (customer side).

ITEM	EACH	DESCRIPTION	SPECIFICATION	REMARKS
(1)	1	Service saddle	Strap to be S.S.	See Potable Water Material Guidelines
(2)	1	1" bronze ball valve corp. stop	C.C. x C.T.S. compression	
(3)	1	Copper tubing or HDPE	1" Type K, soft	One piece only, no splices
(4)	1	1" angle meter stop (ball valve)	1" C.T.S. compression x meter lock wing w/ 1/8" thick cloth inserted in gasket	
(5)	1	Water meter	5/8", 3/4" or 1"	Supplied by GSWC; installed by contractor
(6)	1	Water meter box	12"x20" meter box	See Potable Water Material Guidelines
(7)	1	Water meter box pad	14"x24"x6", 3/4" crushed rock	Pad for meter and box
(8)	1	Trench with sand envelope	Imported with SE > 30	12" min. & 24" max. trench width

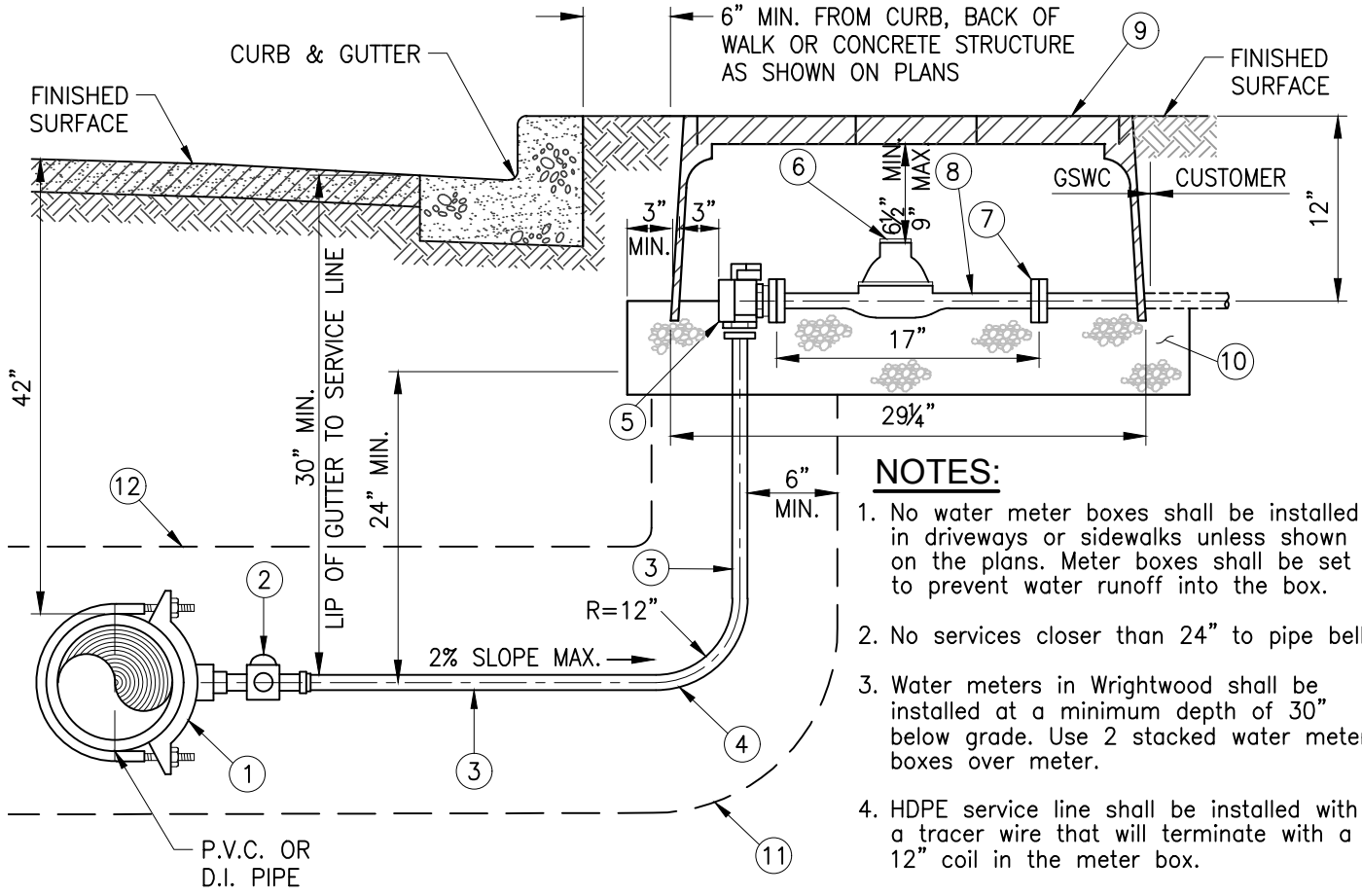
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
1-INCH WATER SERVICE CONNECTION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	P-26



NOTES:

1. No water meter boxes shall be installed in driveways or sidewalks unless shown on the plans. Meter boxes shall be set to prevent water runoff into the box.
2. No services closer than 24" to pipe bell.
3. Water meters in Wrightwood shall be installed at a minimum depth of 30" below grade. Use 2 stacked water meter boxes over meter.
4. HDPE service line shall be installed with a tracer wire that will terminate with a 12" coil in the meter box.
5. Flattening copper pipe to make the radius is not allowed.
6. GSWC may provide a meter spacer in lieu of a meter.

ITEM	EACH	DESCRIPTION	SPECIFICATION	REMARKS
1	1	Service saddle	Strap to be S.S.	See Potable Water Material Guidelines
2	1	2" bronze ball valve corp. stop	2" C.C. x C.T.S. compression	See Potable Water Material Guidelines
3	2	Copper tubing or HDPE	2" Type K, soft	One piece only, no bends, unless elbow is used. Elbow joints to be silver soldered.
4	1	Elbow (optional)	2" C.T.S.	See Potable Water Material Guidelines
5	1	Angle meter stop (ball valve)	2" C.T.S. compression x meter lock wing w/ 1/8" thick cloth inserted in gasket	1/8" thick cloth gasket at both meter flanges.
6	1	Water meter	2" flg meter	Supplied by GSWC; installed by contractor
7	1	Bronze water meter flange	2" F.I.P. threads w/ 1/8" thk cloth insert drop in gasket	
8	1	Brass nipple	2" brass close nipple, M.I.P. x M.I.P.	
9	1	Water meter box	17"x30" meter box	See Potable Water Material Guidelines
10	1	Water meter box pad	20"x34"x6", 3/4" crushed rock	Pad for meter box
11	1	Trench with sand envelope	Imported with SE > 30	12" min. & 24" max. trench width

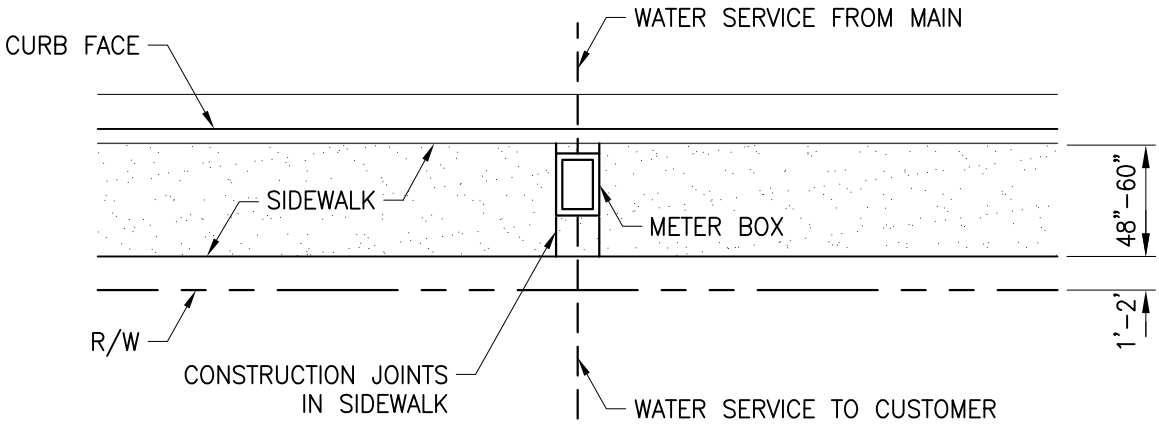
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert R. Hanford — 1/18
EDC MANAGER — DATE

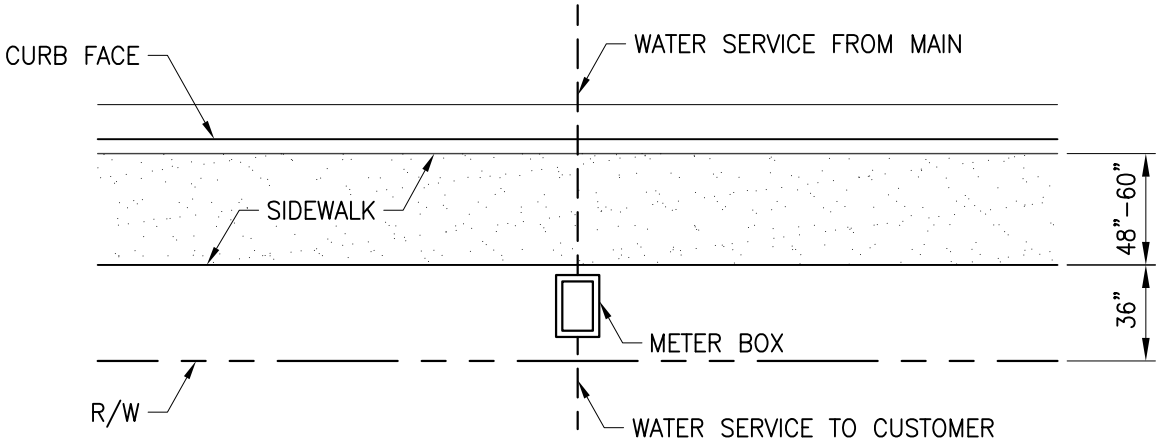
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
2-INCH WATER SERVICE CONNECTION

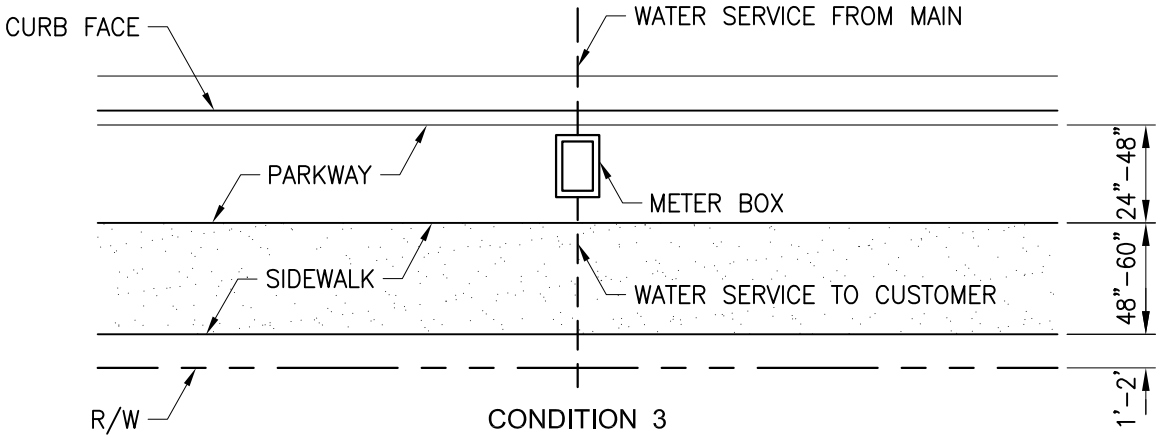
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	P-27



CONDITION 1
IN THE SIDEWALK



CONDITION 2
BEHIND THE SIDEWALK



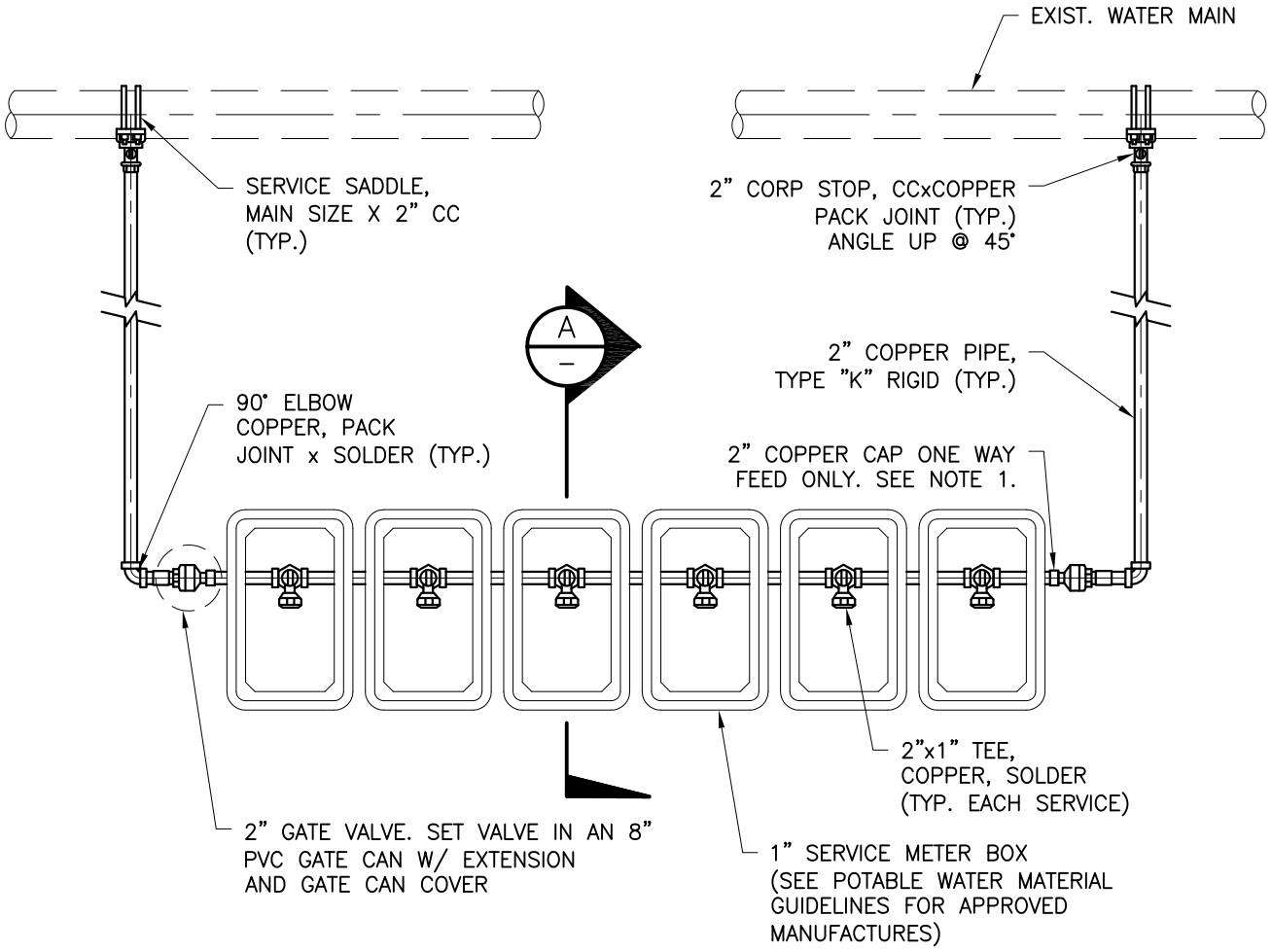
CONDITION 3
IN THE PARKWAY

NOTES:

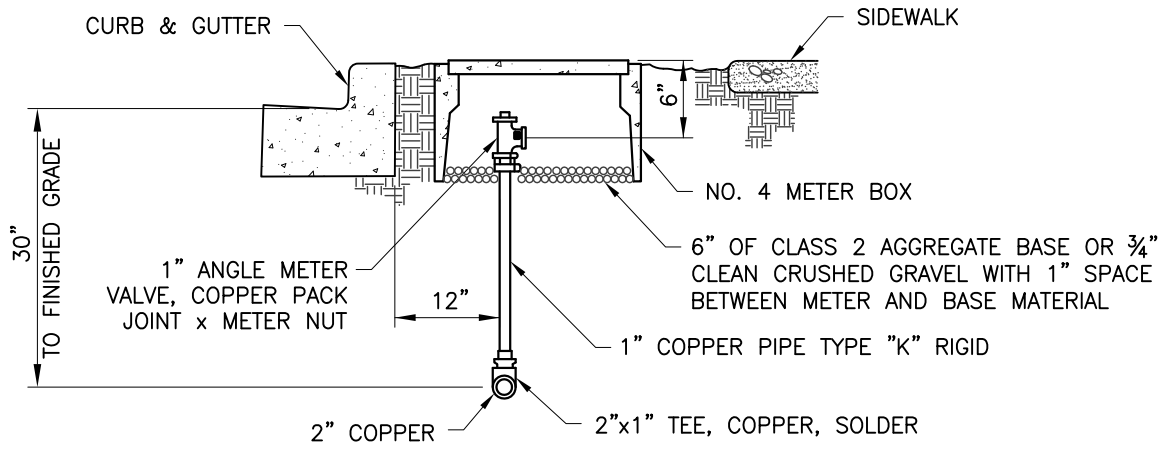
1. Meter box size for 1" service will be 12"x20".
2. Meter box size for 2" service will be 17"x30".
3. For Meter Box Details see GSWC Std. Dwg. No. P–26 and P–27.
4. Location of meter box shall be called out on the plans by referencing this standard drawing.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **TYPICAL METER BOX LOCATION**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P–28**



PLAN



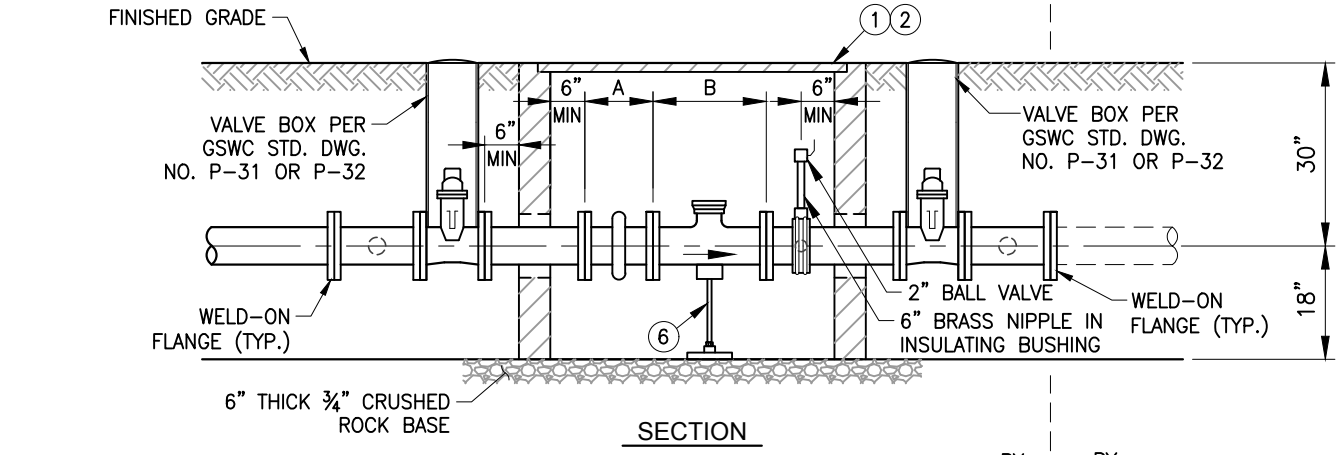
SECTION A

NOTE:

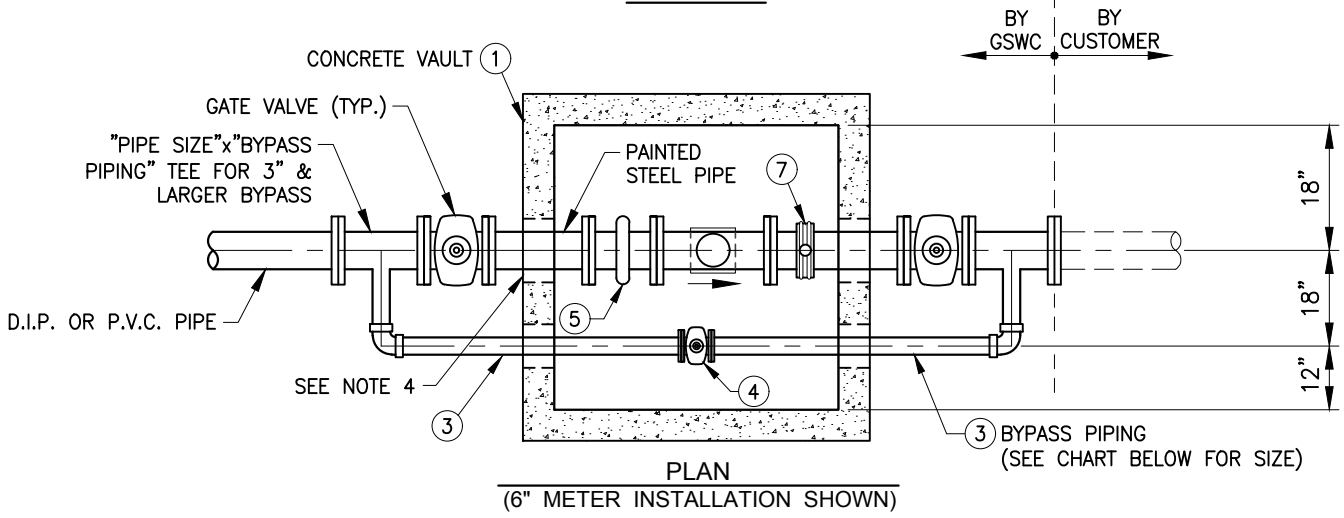
1. Two-way feed shall be provided where six or more services are to be installed. A maximum of fifteen services may be installed on one battery.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **1-INCH GROUPED DOMESTIC SERVICE CONNECTION**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P-29**



SECTION



PLAN
(6" METER INSTALLATION SHOWN)

ITEM	DESCRIPTION
1	Non-traffic bearing 20k rated vault located behind curb and/or parkway, with open bottom. Lid shall be lockable, torsion spring assisted aluminum design for 10K loading. Use 20K rated vault and lid in traffic locations. See Potable Water Materials Guidelines for acceptable manufacturers and GSWC Std. Dwg. No. P-36 for vault details.
2	Alternate hatch cover: 3 piece steel bolt down traffic/parkway cover. See GSWC Std. Dwg. No. P-36.
3	Bypass piping shall be wrapped and epoxy lined Sch. 80 steel for 3" or larger bypass pipe.
4	Bypass shut off valve shall be epoxy lined gate valve for 3" or larger bypass pipe.
5	Victaulic coupling shall be AWWA approved Style 31 for DI pipe or style 77 for steel pipe.
6	Pipe support per GSWC Std. Dwg. No. C-2.
7	Service saddle with ball curb stop for meter testing.
8	All dissimilar metals shall be insulated from each other by insulated flanges or bushings.
9	Install tracer wire from main to inside the vault.

VAULT DESCRIPTION					
PIPE/ METER SIZE	A (UPSTREAM SPOOL)	B (METER)	VAULT SIZE	FLOW RANGE (GPM)	BYPASS PIPE
3"	5"	12"	4'x4'	1-500	3"
4"	7"	14"	4'x4'	1½-1,000	3"
6"	12"	18"	4'x4'	3-1,600	3"
8"	16"	20"	4'x5'	5-2,800	4"
10"	20"	18"	4'x5'	14-5,500	6"

NOTE:

1. Bypass piping not required for irrigation services.
2. Ultra sonic meter shall be of a type approve by N.S.F., F.M. and A.W.W.A.
3. Ultra sonic meter body shall be Type 316 stainless steel or epoxy coated ductile iron.
4. See GSWC Std. Dwg. No. P-37 for sealing of pipe openings.
5. All pipes on both sides of vault shall be fully restrained.

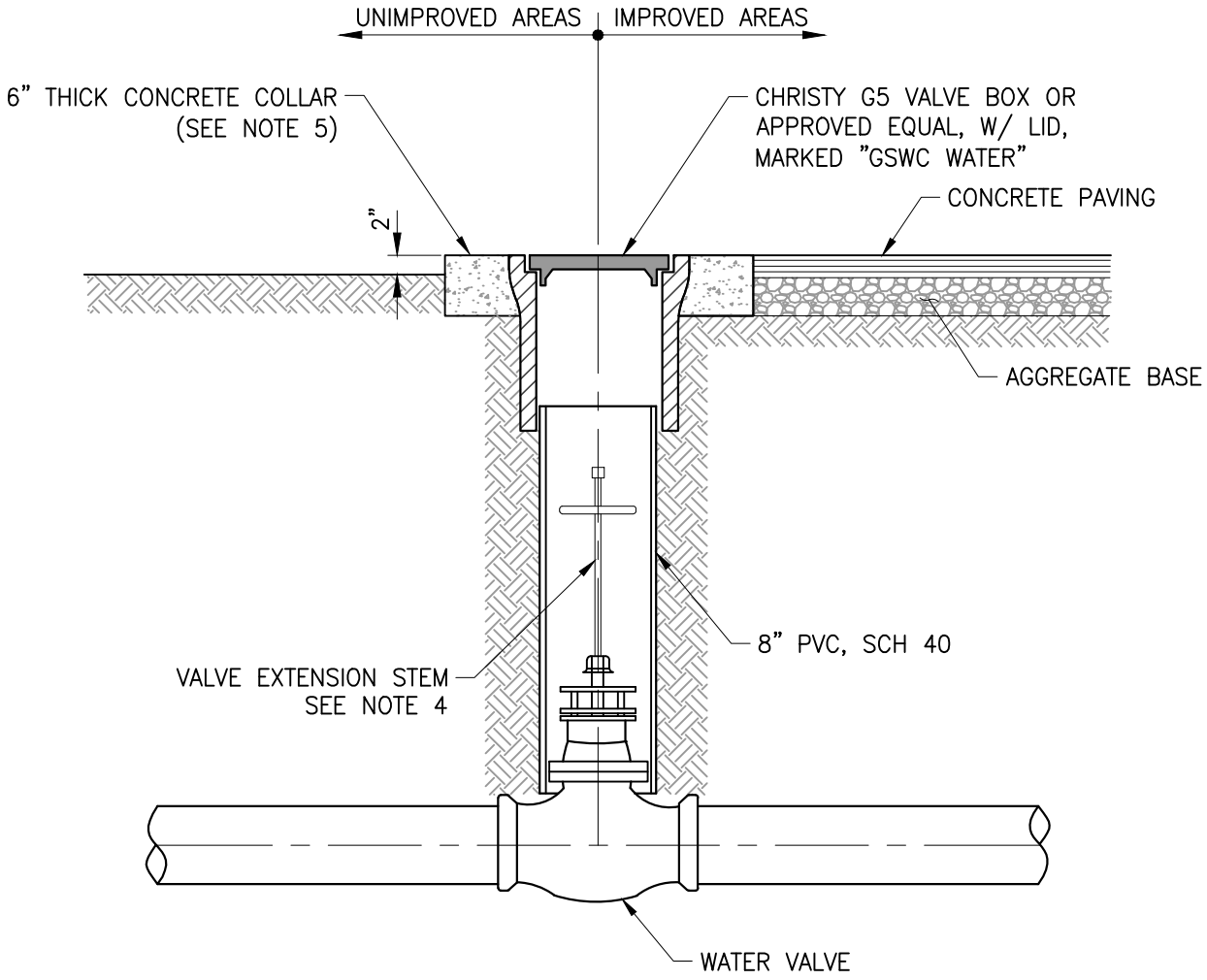
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
LARGE METER WITH BYPASS (3-INCH AND LARGER METER)

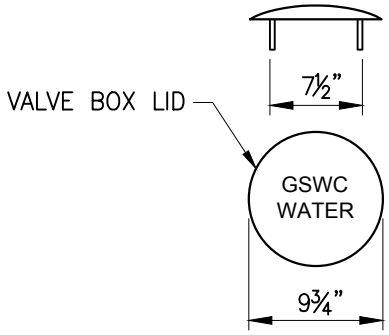
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	P-30



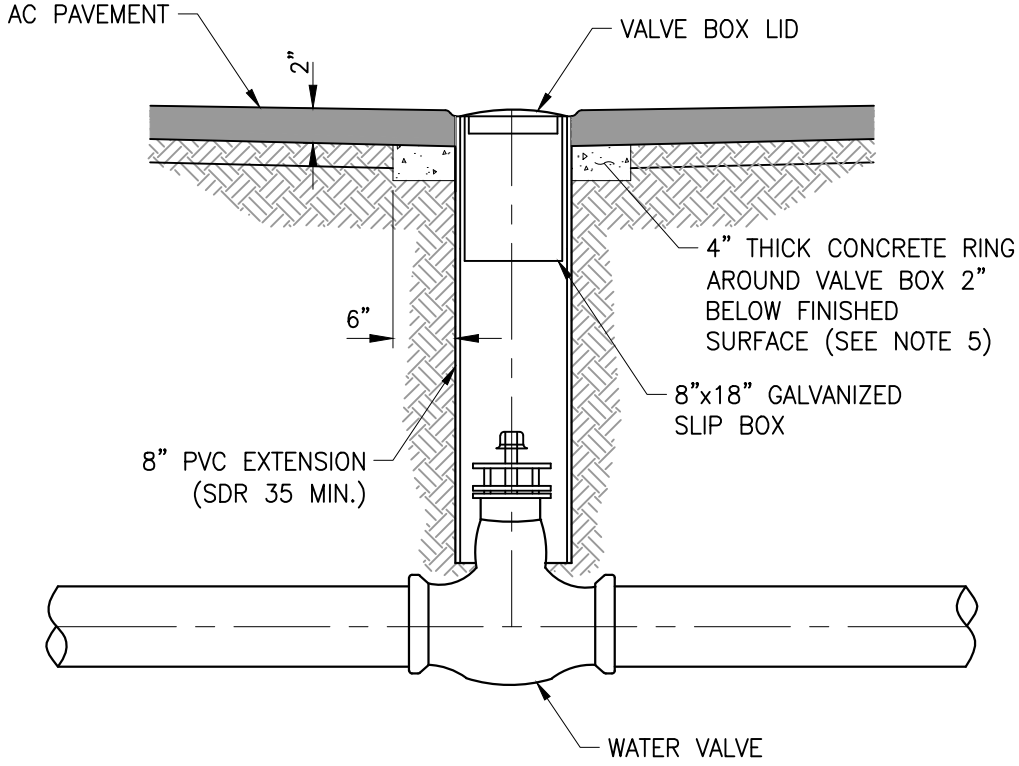
NOTES:

1. The following valve box types shall be used unless otherwise noted:
   Type 1 – Unimproved areas, concrete surfaced streets, concrete pads, or as called out on the plans.
   Type 3 – All other locations as called out on the plans.
2. Final rim elevation to be ⅛" to ¼" below final street grade.
3. More stringent installation requirements may be imposed by the entity having the jurisdiction over the valve box installation location.
4. A valve extension stem shall be provided where the depth to the operating nut exceeds 4 feet.
5. Contractor to form 18 inch diameter concrete collar in unimproved areas with sonotube and remove prior to backfill installation (typ).
6. See Potable Water Materials Guidelines for all approved products.
7. For paving around valves not in the pavement, see GSWC Std. Dwg. No. C–12.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: VALVE BOX TYPE 1			
		SCALE: NONE	DATE: 1/18	REV 1.3	STANDARD DWG NO. P–31



VALVE BOX LID
SEE NOTE 7

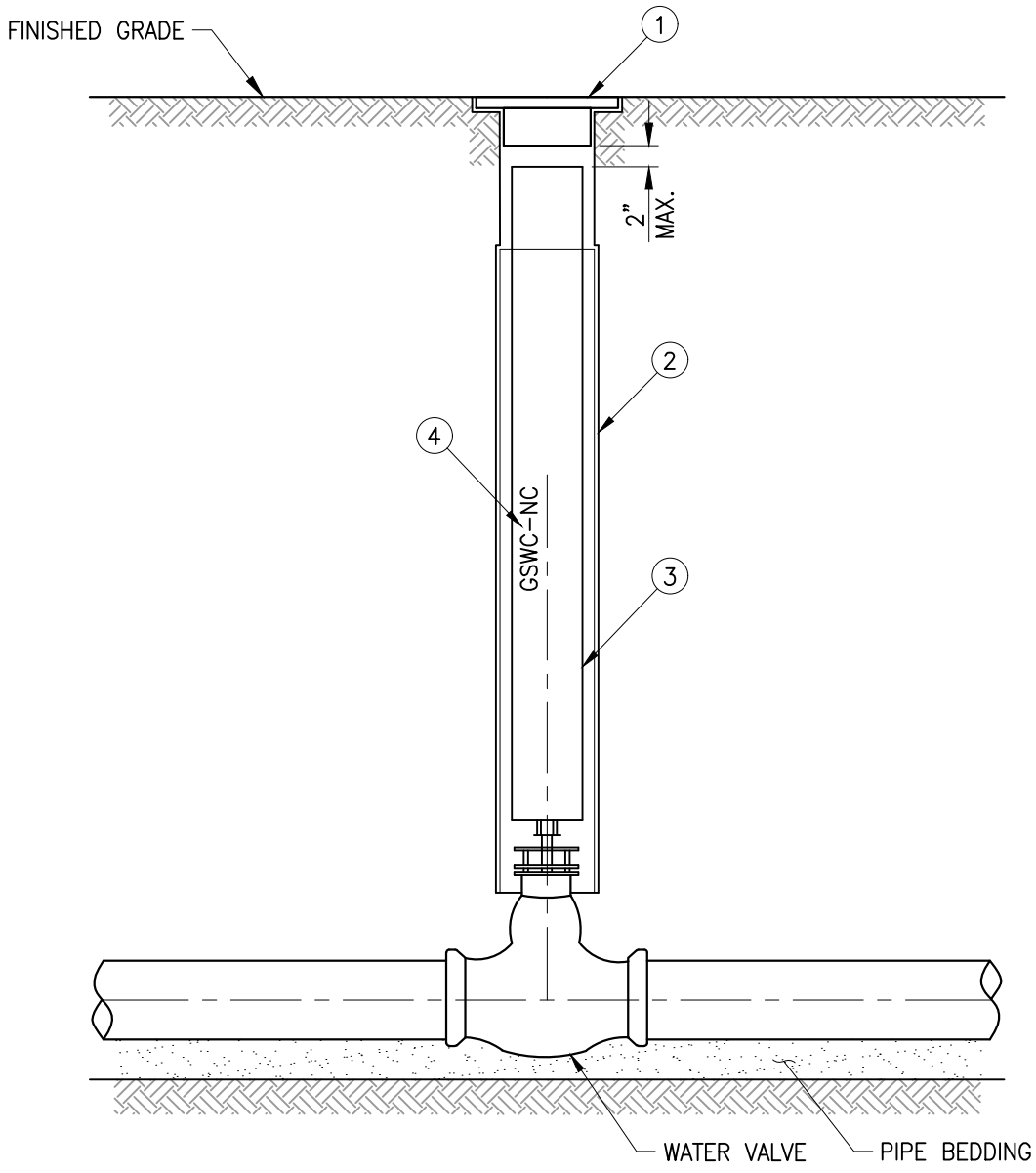


NOTES:

1. The following valve box types shall be used unless otherwise noted:
   Type 1 – Unimproved areas, concrete surfaced streets or pads or as called out on the plans.
   Type 3 – All other locations as called out on the plans.
2. Final rim elevation to be ⅛" to ¼" below final street grade.
3. More stringent installation requirements may be imposed by the entity having the jurisdiction over the valve box installation location.
4. A valve extension stem shall be provided where the depth to the operating nut exceeds 4 feet.
5. Contractor to form 18 inch diameter concrete collar in unimproved areas with sonotube and remove sonotube prior to backfill installation (typ).
6. See Potable Water Materials Guidelines for all approved products.
7. For paving around valves not in the pavement, see GSWC Std. Dwg. No. C–12.

APPROVED BY: GSWC STANDARDS COMMITTEE Robert N. Hansford EDC MANAGER	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **VALVE BOX TYPE 3** 1/18 DATE

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P–32**



ITEM	DESCRIPTION
1	Box and lid assembly per GSWC Std. Dwg. No. P–31 or P–32
2	Valve box
3	4"x4" redwood post
4	Route initials "GSWC–NC" for (normally closed) on all sides in 1½" high letters, ½" deep, clearly legible or security attach 1½" high brass label on all four sides engraved with "GSWC–NC"

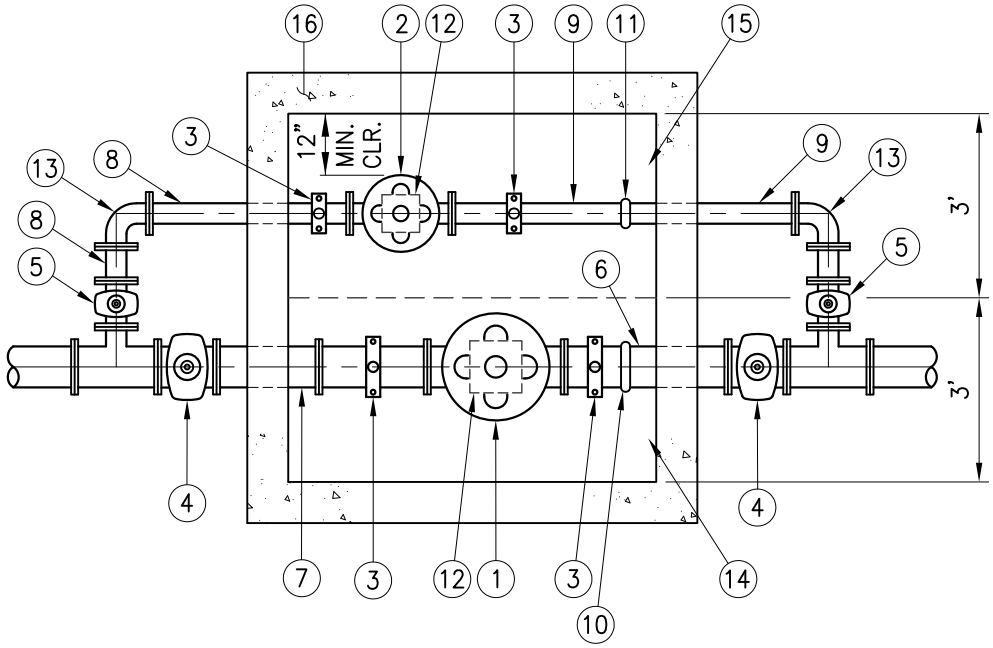
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
NORMALLY CLOSED VALVE BOX

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P–33**



PLAN

SELECTION TABLE				
VALVE SIZE (INCHES)	MIN. FLOW RATE (GPM)	MAX. FLOW RATE (GPM)	DIA. BONNETT (INCHES)	REQUIRED CLEAR SPACE (INCHES)
1	1	55	5.6	18
1½	1	125	5.6	18
2	1	210	6.6	18
2½	2	300	8.0	20
3	2	460	9.1	22
4	4	800	11.5	24
6	10	1,800	15.8	40
8	15	3,100	20.0	44
10	35	4,900	23.6	48
12	50	7,000	28.0	52
14	70	8,400	32.8	*58
16	95	11,000	35.5	*60

* Pressure reducer valves larger than 12" may required a larger vault. Verify dimensions needed.

ITEM	DESCRIPTION
1	(D1) Pressure reducer valve, FE
2	(D2) Pressure reducer valve, FE
3	Service saddle with 1" ball valve for pressure gauges (4 reg'd)
4	(D1) Gate valve, resilient wedge type (2 required)
5	(D2) Gate valve, resilient wedge type (2 required)
6	(D1) FE x grooved D.I. spool (length as required)
7	(D1) D.I. spool, FE
8	D.I. spool, FE (length as required)
9	D.I. spool, FExPE (length as required)
10	(D1) Victaulic coupling, grooved
11	(D2) Victaulic coupling, grooved
12	Pipe support (2 required)
13	90° elbow (2 required)
14	Required clear space for D1 valve
15	Required clear space for D2 valve
16	6'x6' concrete vault (shown) with H-20 rated spring assisted hinged lid (See GSWC Std. Dwg. No. P-36). Vault size to be determined based on valve size.

NOTES:

1. Contractor shall clearly and permanently label the pressure zones on the inlet and outlet pipes, using 2" min. high numerals and letters.
2. Materials shall be selected from the Potable Water Materials Guidelines.
3. Finished surface (FS) elevations shall be shown on the plans.
4. Piping shall be painted "Desert Sand" for potable water.
5. (D1) = Large Diameter. (D2) = Small Diameter.

APPROVED BY:
GSWC STANDARDS COMMITTEE

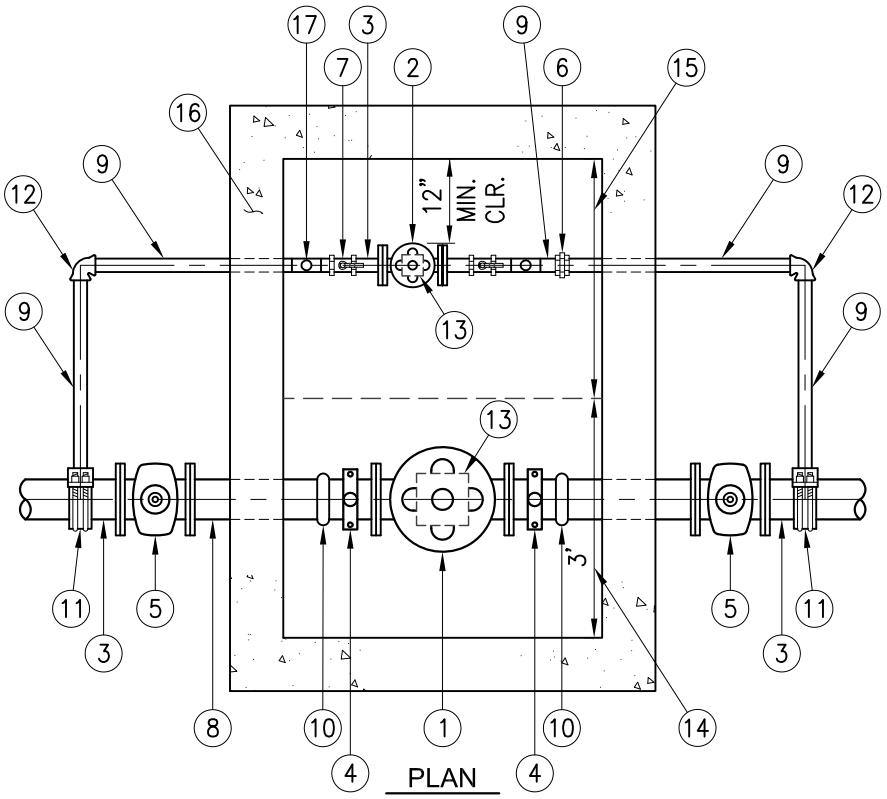
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
PRESSURE REGULATING STATION (WITH LOW FLOW PRESSURE CONTROL VALVE LARGER THAN 3-INCHES)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P-34A**



SELECTION TABLE				
VALVE SIZE (INCHES)	MIN. FLOW RATE (GPM)	MAX. FLOW RATE (GPM)	DIA. BONNETT (INCHES)	REQUIRED CLEAR SPACE (INCHES)
2	1	210	6.6	18
2½	2	300	8.0	20
3	2	460	9.1	22
4	4	800	11.5	24
6	10	1,800	15.8	40
8	15	3,100	20.0	44
10	35	4,900	23.6	48
12	50	7,000	28.0	52
14	70	8,400	32.8	58
16	95	11,000	35.5	60

* Pressure reducer valves larger than 12" may required a larger vault. Verify dimensions needed.

ITEM	DESCRIPTION
1	(D1) Pressure reducer valve, FE
2	(D2) Pressure reducer valve, FE
3	FE x PE spool (length as required)
4	Service saddle with 1" ball valve for pressure gauges (2 req'd)
5	Gate valve resilient wedge type
6	Threaded copper union
7	Bronze ball valve (2 required)
8	FE x PE spool (length as required)
9	Copper pipe (Type K) with threaded ends
10	Victaulic coupling, grooved (2 required)
11	Service saddle, threaded
12	90° copper elbow
13	Pipe support (2 required)
14	Required clear space for D1 valve
15	Required clear space for D2 valve
16	4'x6'-6" concrete vault with H-20 rated spring assisted hinged lid (See GSWC Std. Dwg. No. P-36)
17	Copper tee with 1" ball valve for pressure gauges (2 req'd)

NOTES:

1. Contractor shall clearly and permanently label the pressure zones on the inlet and outlet pipes. Use 2" min. high numerals and letters.
2. Materials shall be selected from the Potable Water Materials Guidelines.
3. Finished surface (FS) elevations shall be shown on the plans.
4. Piping shall be painted "Desert Sand" for potable water.
5. (D1) = Large Diameter. (D2) = Small Diameter.

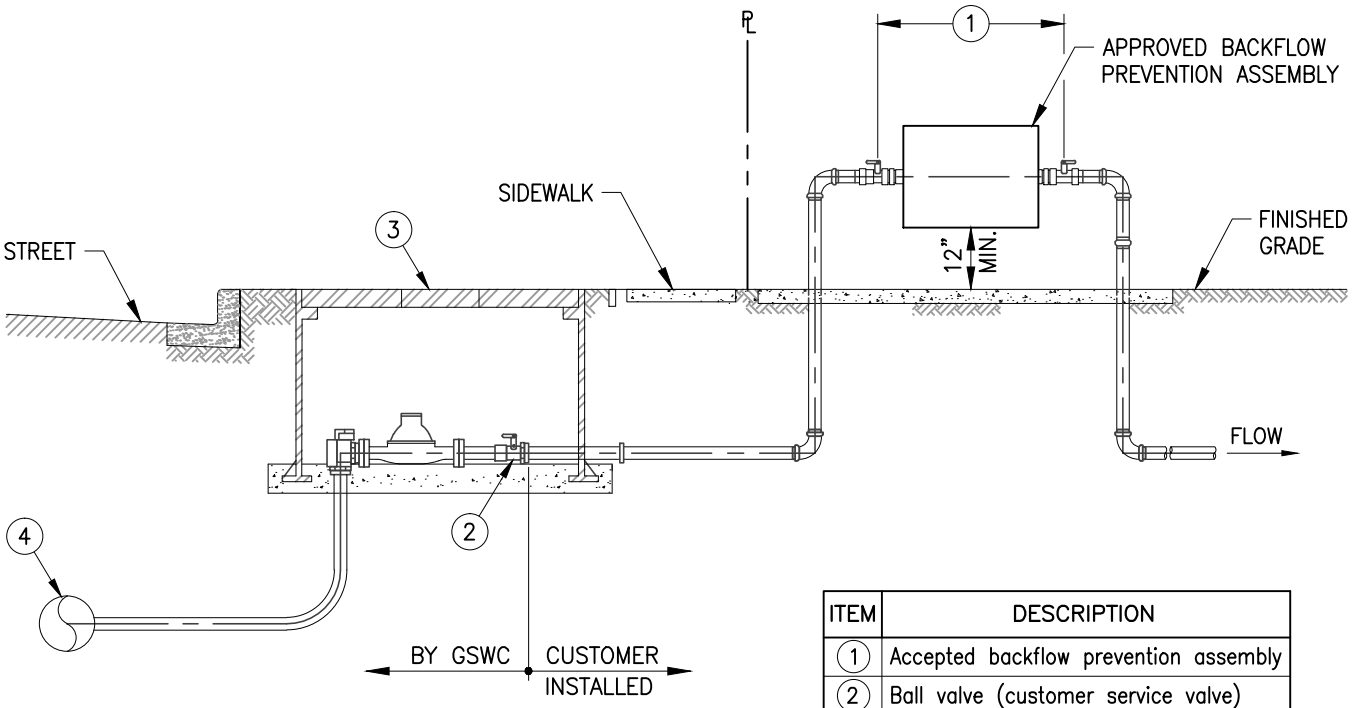
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 01/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
PRESSURE REGULATING STATION (WITH LOW FLOW PRESSURE CONTROL VALVE 2-INCH OR SMALLER)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P-34B**



ITEM	DESCRIPTION
1	Accepted backflow prevention assembly
2	Ball valve (customer service valve)
3	Service meter and meter box
4	Water main

NOTES:

1. The backflow preventer assembly shall consist of an approved Reduced Pressure or Double Check Valve in accordance with the GSWC Water Quality Department requirements. The assemblies shall be suitable for supply pressures.
2. A backflow preventer assembly for a fire service shall consist of an approved Reduced Pressure Principle Detector Assembly (RPDA) or Double Check Valve Detector Assembly (DCDA) in accordance with the GSWC water quality department requirements. The assemblies shall be suitable for supply pressure.
3. It is recommended that an angle style pressure reducing valve be installed on the upstream line of the backflow preventer when pressure in excess of 80 P.S.I. or more is supplied per section 608.2 of the Uniform Plumbing Code.
4. It is recommended that wye strainers be installed on the upstream side of the backflow preventer body. If required, a pressure regulator with a serviceable screen can be substituted for the wye strainer.
5. Location and installation shall be per plan as submitted to and accepted by GSWC.
6. It is recommended that all assemblies 2–1/2" and larger to be installed shall be equipped with resilient wedge gate valves.
7. Locate the assembly within 5 feet of customer service valve as possible. Other locations must be approved prior to installation.
8. Assemblies shall not be located in areas subject to flooding.
9. Only security enclosures providing adequate clearances and full view of assemblies are permitted.
10. Landscape or construction around assembly shall permit an unobstructed view of the assembly from the street.
11. Final inspection and acceptance test shall be provided to GSWC by the customer using a certified backflow tester.
12. No connections or tees are permitted between meter and backflow preventer.
13. It is recommended that sizes 3" and larger have additional pipe support.
14. It is recommended that the backflow assembly be the same size or one size larger than the meter.
15. Materials may be selected from the GSWC Potable Water Materials Guidelines.

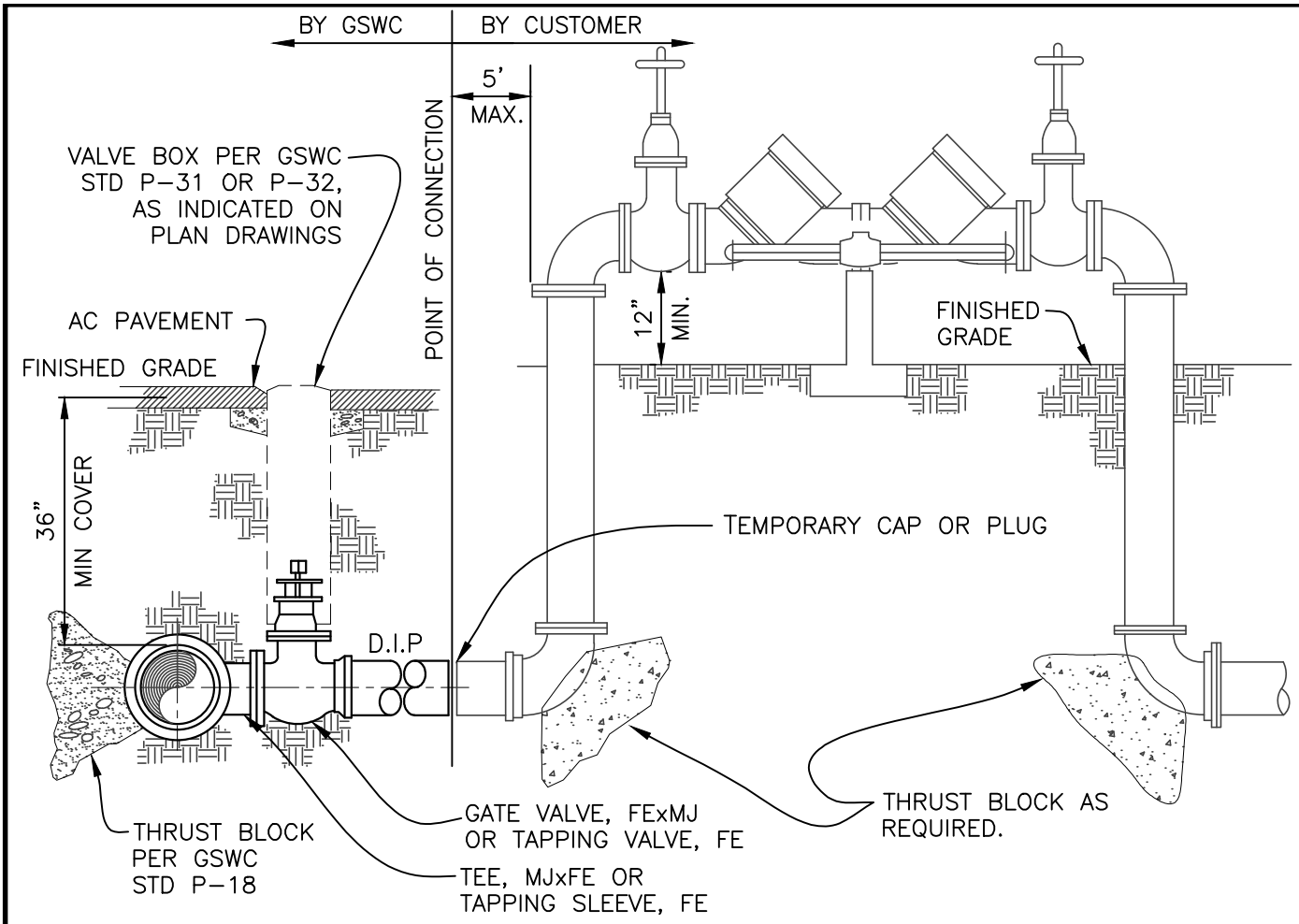
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
BACKFLOW PREVENTION ASSEMBLY OVERVIEW FOR ABOVE GROUND INSTALLATION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	P–35A



NOTES:

1. Developer shall install a GSWC acceptable backflow preventer. Installation shall comply with all applicable rules, regulations, and ordinances. Depending on the application, a Reduced Pressure Principle Detector Assembly (RPDA) or Double Check Valve Detector Assembly (DCDA) may be required.

2. The assembly must be accessible for testing and maintenance. The assembly shall be installed above ground and a minimum of 12" above finished grade with a maximum of 36" and a minimum clearance of 12" or as needed if installed close to a building or structure.

3. All newly installed Backflow Prevention Assemblies must be tested in accordance with applicable regulations prior to being put in service and yearly thereafter. Copies of test results shall be submitted to GSWC prior to activation.

4. The Backflow Assembly shall be installed within five feet of the point of connection to the utility. There may be no connections or tees between the meter or point of connection and the Backflow Assembly.

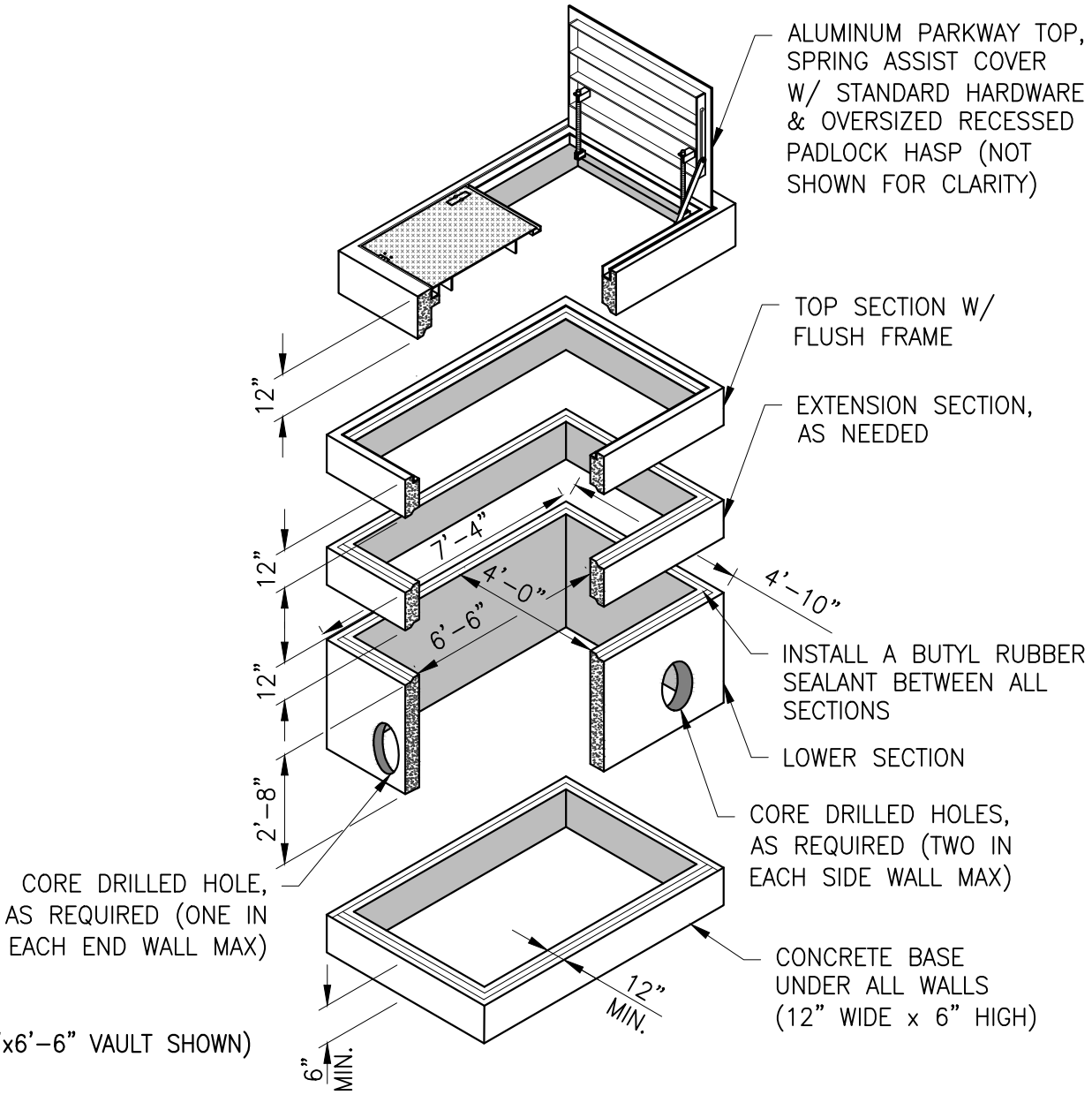
5. Assemblies shall be horizontal and level unless approved for other orientations.

6. Backflow Assemblies are to be used within their rated operating conditions.

7. All installations of Backflow Assemblies must be in compliance with state and local plumbing and building codes. Contact local administrative authority for detailed requirements.

APPROVED BY: GSWC STANDARDS COMMITTEE CHAIRPERSON — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE **BACKFLOW ASSEMBLY FOR FIRE SERVICES**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**P-35B**



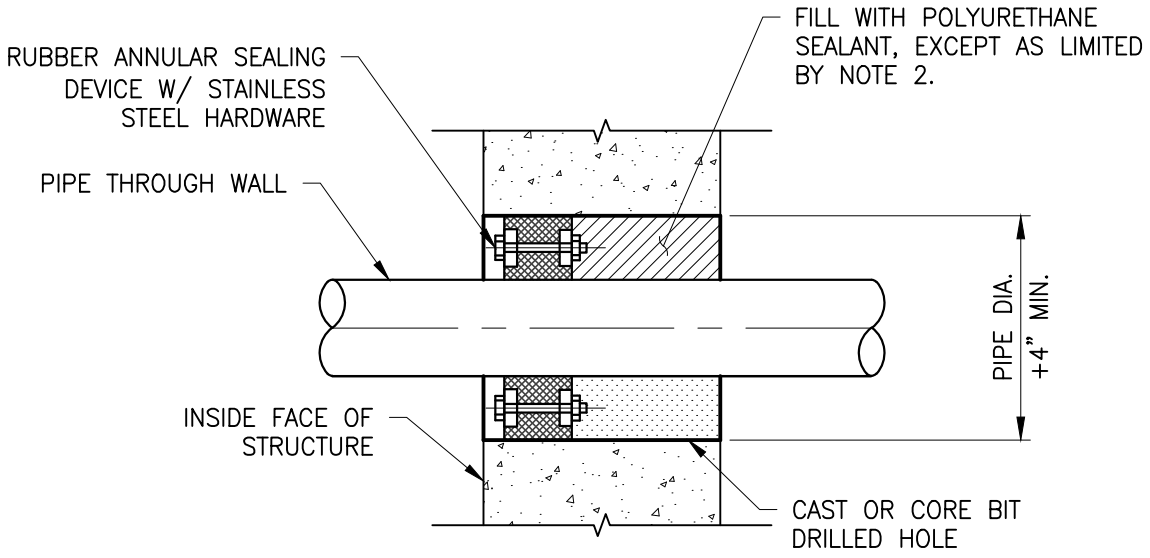
* (4'x6'–6" VAULT SHOWN)

NOTES:

1. Vaults shall be designed for AASHTO 20K loads with open bottom and lockable torsion spring assisted aluminum lids.
2. When total depth is greater than 5 feet an attached aluminum ladder shall be provided with a Ladder–up Safety Pole.
3. Vaults for meter installation shall be equipped with a meter reading lid centered over the meter if called for on the plans.
4. Joints between vault sections shall have a butyl rubber sealant installed.
5. Install 6" high x12" wide concrete base under all vault walls.
6. Bottom of vault shall be filled with 8" thick minimum layer of compacted ¾" crushed rock compacted or Class 2 AB.
7. Core wall for pipe spool. Core diameter shall be pipe O.D. +4" min. See Std. Dwg. No. P–37 for details.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **UTILITY VAULT INSTALLATION**

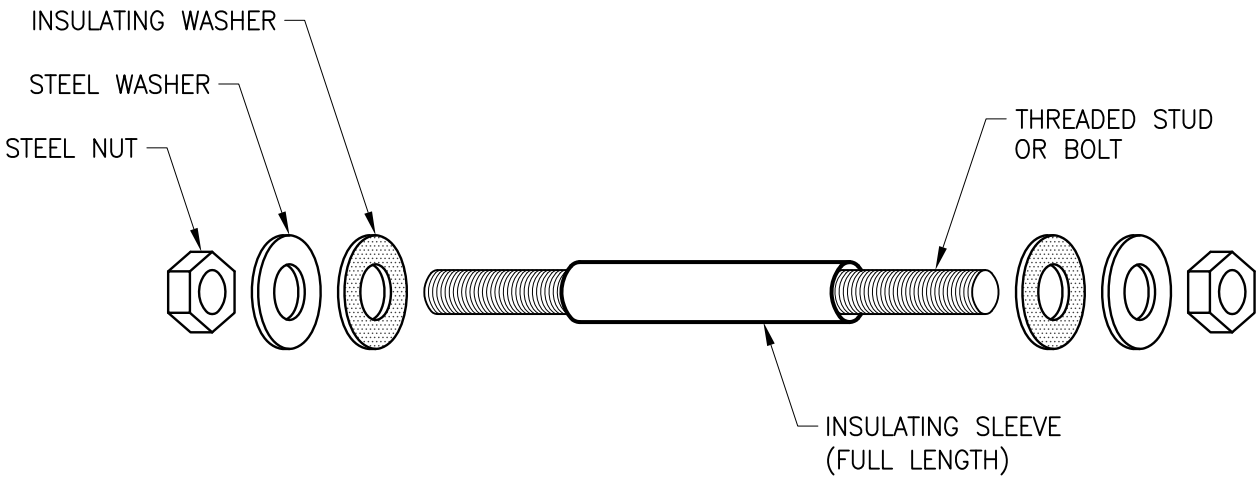
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P–36**

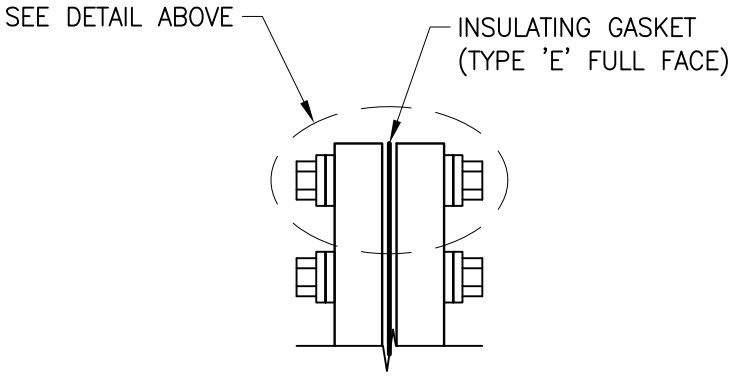


NOTES:

1. Opening thru vault wall shall be sized to accommodate pipe and rubber sealing device.
2. Buried application is shown. Where outside face of structure is above grade, fill the outside 2" of the sleeve with non-shrink grout.
3. See Potable Water Materials Guidelines for approved list of manufacturers.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **SEALING PIPE OPENING THRU VAULT**	
		SCALE: NONE	DATE: 1/18
		REV 1.3	STANDARD DWG NO. **P-37**

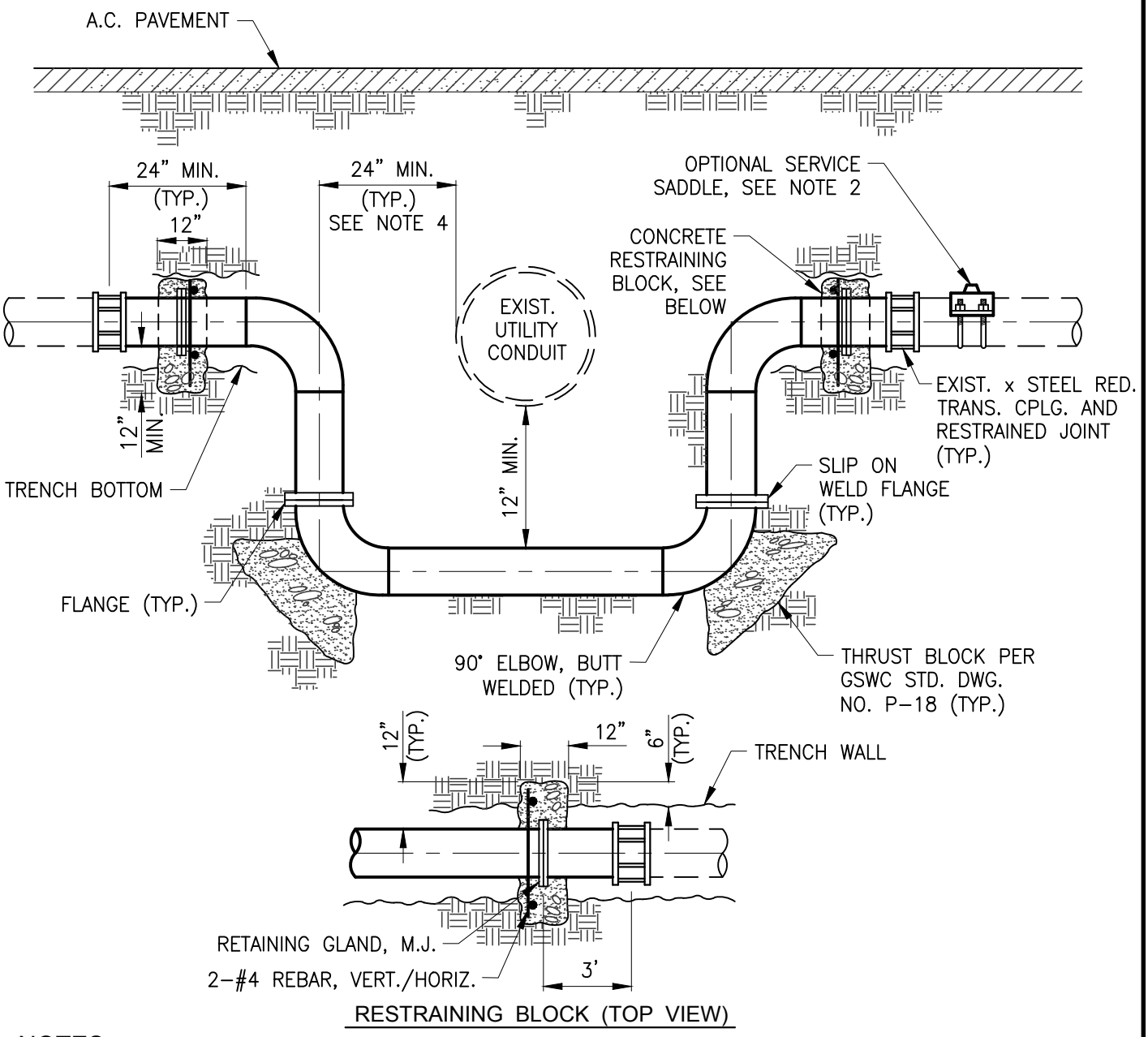




NOTES:

1. Gasket shall be Type 'E' full face phenolic with O-Ring.
2. Sleeve shall be G10 Class.
3. Washers shall be G10 Class.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **INSULATING FLANGE KIT MATERIALS**	
		SCALE: NONE	DATE: 01/16
		REV 1.0	STANDARD DWG NO. **P-38**



RESTRAINING BLOCK (TOP VIEW)

NOTES:

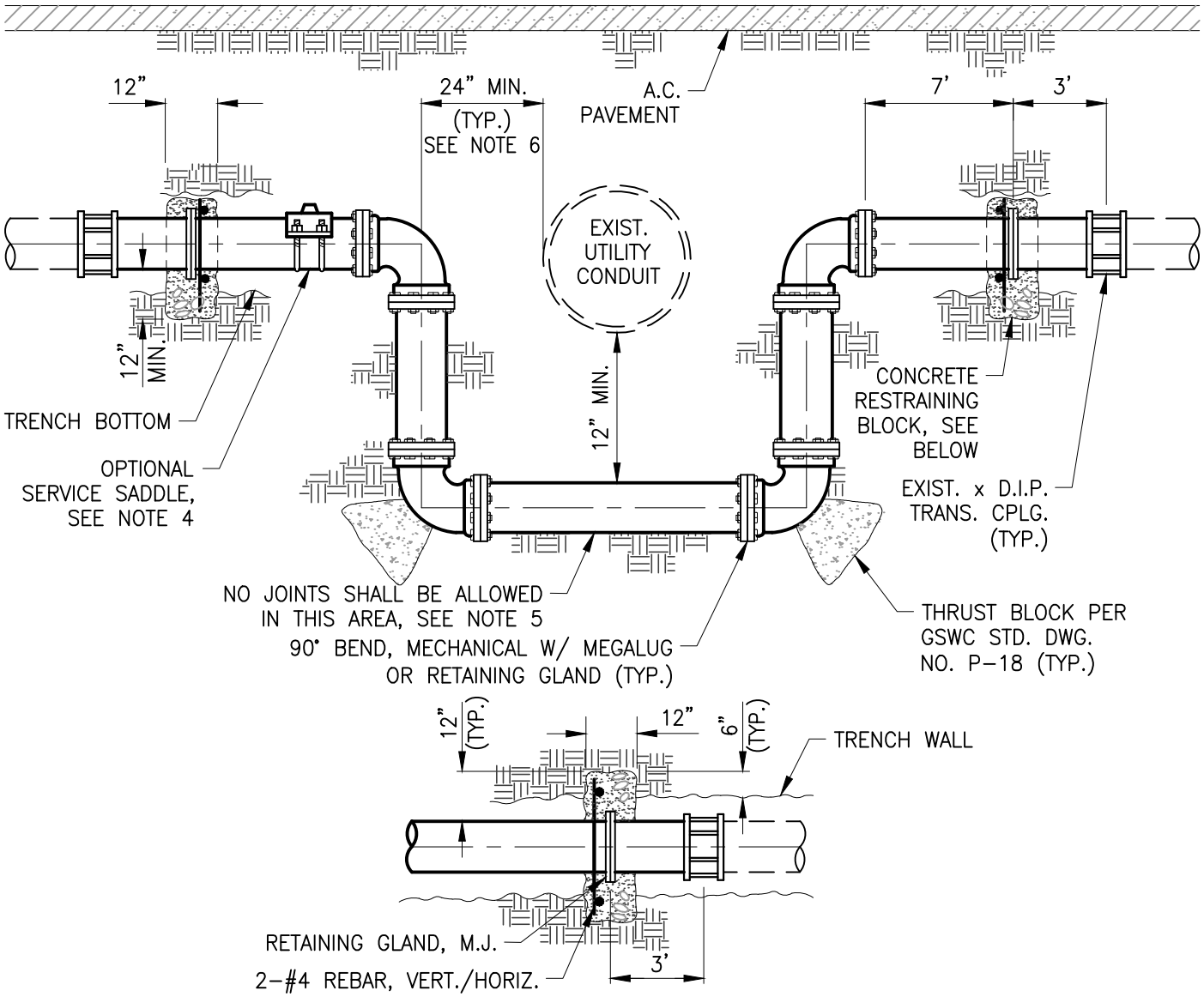
1. Pipe and fittings shall be standard weight steel, fusion bonded epoxy lined and coated per AWWA C550. All inverts shall be shop fabricated with exception of field installation of weld-on-flanges. Units shall provide 12" extra vertical length.

2. Service saddle shall be installed on the high points of the offset for the installation of combination air release vacuum relief valve, as shown on the plan. Service saddle shall be 1" on 8" and smaller mains, and 2" on larger existing mains.

3. If utility conduit is non-potable, minimum distance shall comply with DDW Waterworks Standards and Std. Dwg. No. P-2.

4. Trench backfill and bedding shall be as shown on Standard Drawing No. P-3 or as required by the local agency.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **90-DEGREE WELDED STEEL UTILITY INVERT**	
		SCALE: NONE	DATE: 1/18
		REV 1.3	STANDARD DWG NO. **P-39**



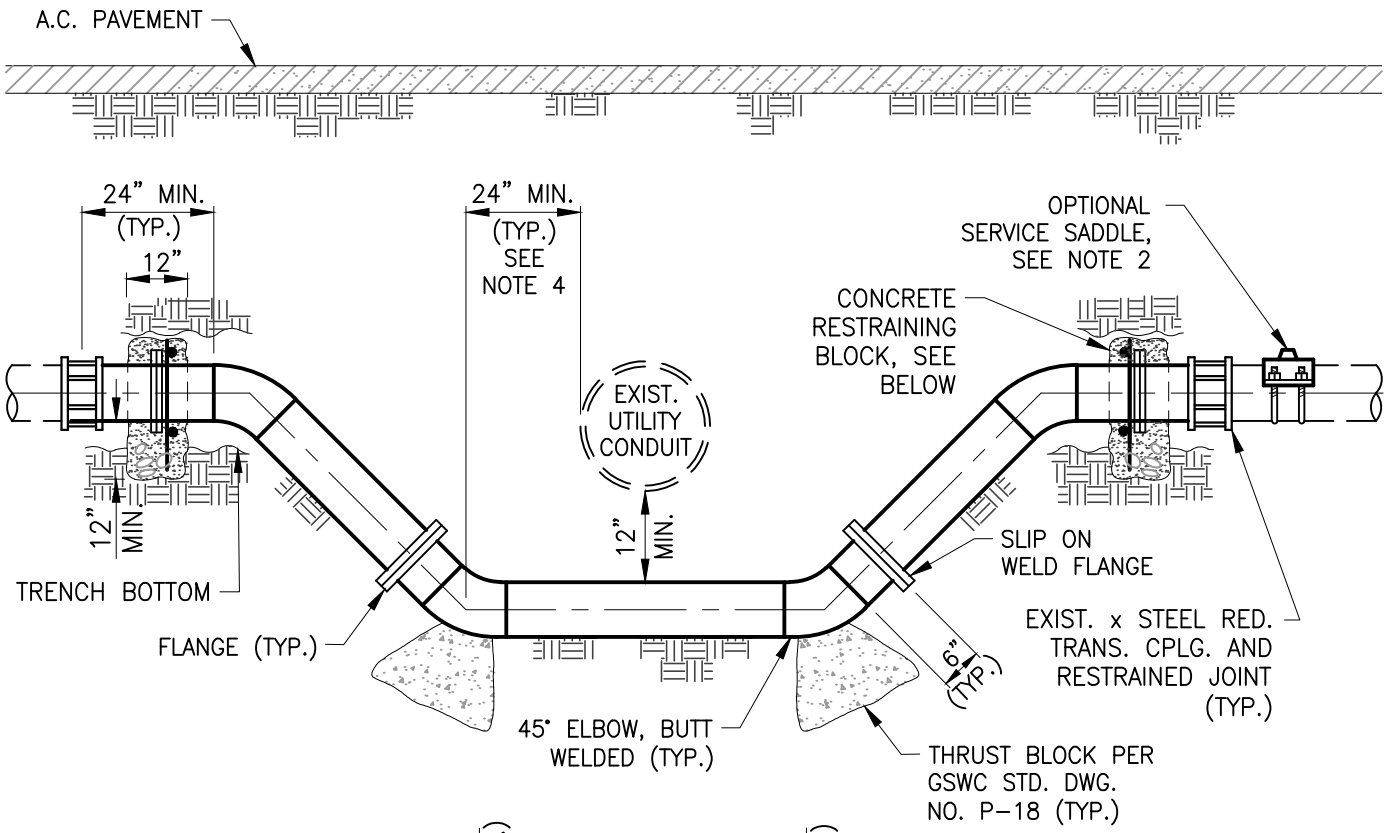
RESTRAINING BLOCK (TOP VIEW)

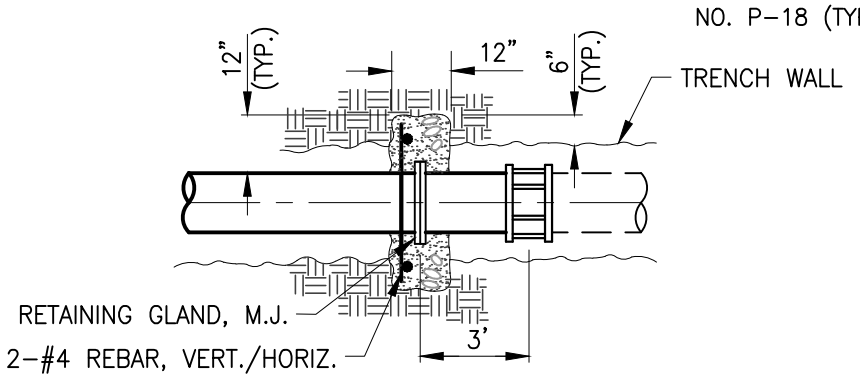
NOTES:

1. The concrete restraining blocks shall be a minimum of 24" high and 12" thick. The top of the block shall be no more than 6" above top of pipe.
2. All pipe joints at 90° bends shall be mechanical joint with Megalug or retaining gland. Flanged joints may be used where conditions warrant.
3. Installation shall be encased in a polyethylene wrapper per AWWA Standard C105.
4. Service saddle and combination air release vacuum relief valve shall be installed on the high points of the offset as shown or the plans. Service saddle shall be 1" on 8" and smaller existing mains and 2" on larger existing mains.
5. If bottom spool piece exceeds 18 feet, connect pipe sections with GSWC approved joint restraints.
6. If utility conduit is non-potable, minimum dimension shall comply with DDW Waterworks Standards and Std. Dwg. P-2.
7. Trench backfill and bedding shall be as shown on Standard Drawing No. P-3 or as required by the local agency.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **90-DEGREE MECHANICAL JOINT D.I.P. UTILITY INVERT**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-40**





RESTRAINING BLOCK (TOP VIEW)

NOTES:

1. Pipe and fittings shall be standard weight steel, fusion bonded epoxy lined and coated per AWWA C550. All inverts shall be shop fabricated with exception of field installation of weld-on-flanges. Units shall provide 12" extra vertical length.

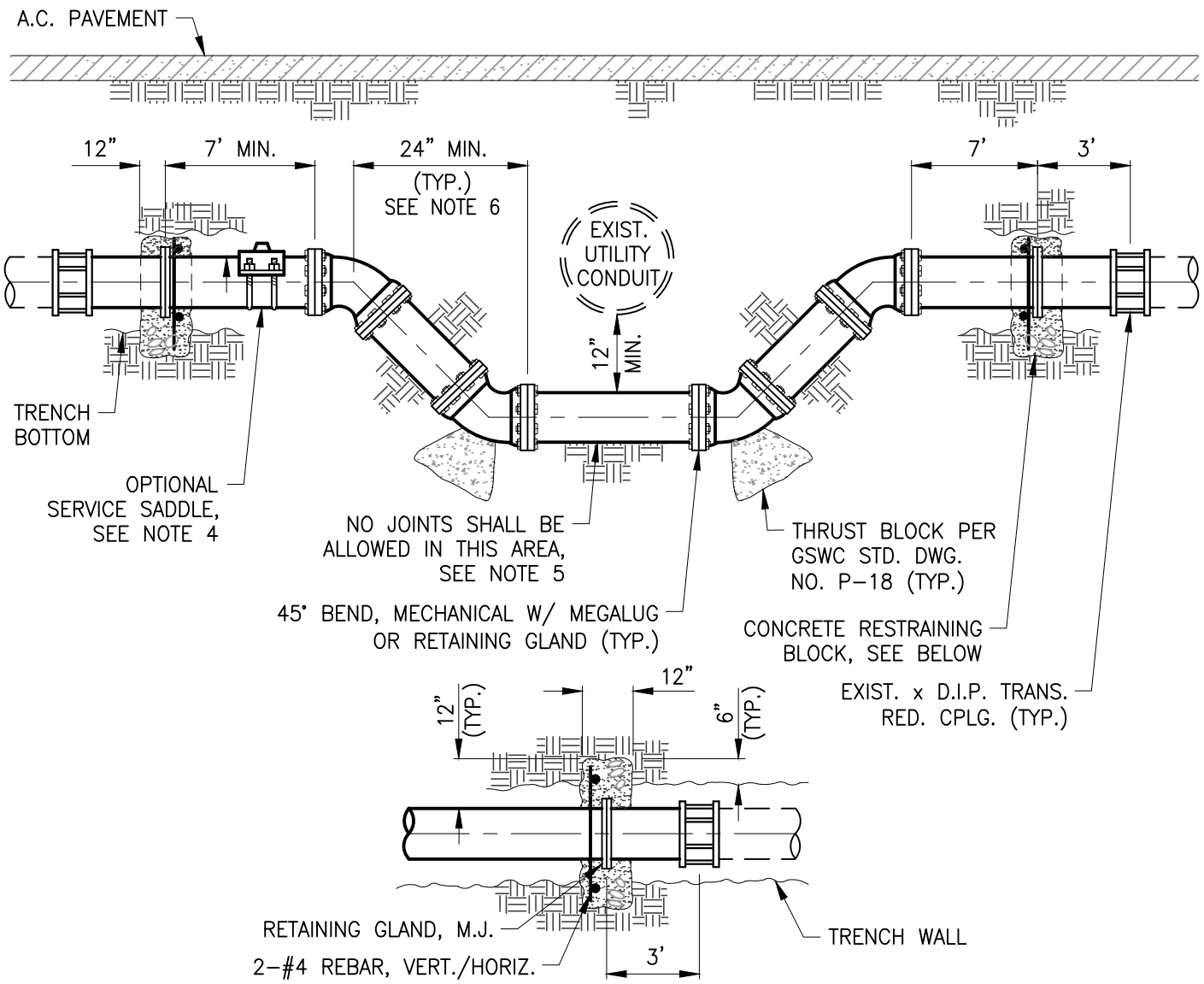
2. Service saddle shall be installed on the high points of the offset for the installation of combination air release vacuum relief valve, as shown on the plan. Service saddle shall be 1" on 8" and smaller mains and 2" on larger existing mains.

3. If utility conduit is non-potable, minimum distance shall comply with DDW Waterworks Standards and Std. Dwg. No. P-2.

4. Trench backfill and bedding shall be as shown on Std. Dwg. No. P-3 or as required by the local agency.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **45-DEGREE WELDED STEEL UTILITY INVERT**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-41**



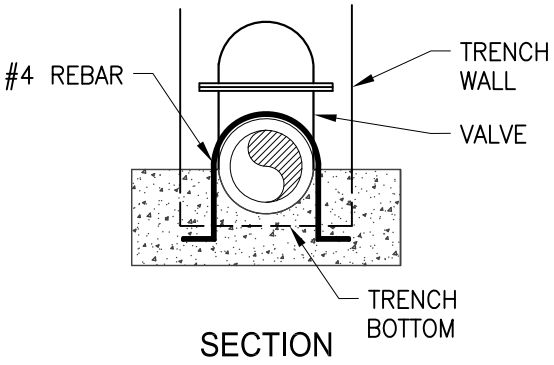
RESTRAINING BLOCK (TOP VIEW)

NOTES:

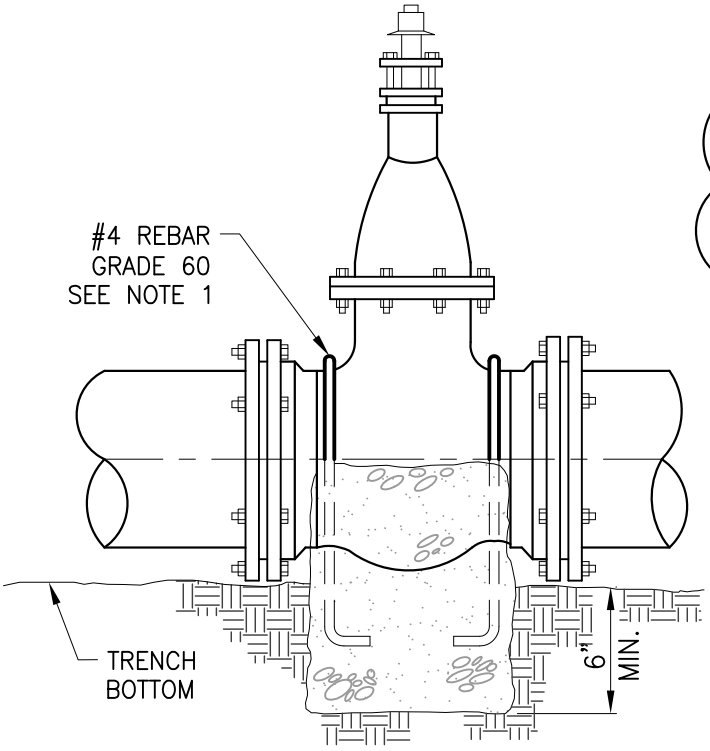
1. The concrete restraining blocks shall be a minimum of 24" high and 12" thick. The top of the block shall be no more than 6" above top of pipe.
2. All pipe joints at 90° bends shall be mechanical joint with Megalug or retaining gland. Flanged joints may be used where conditions warrant.
3. Installation shall be encased in a polyethylene wrapper per AWWA Standard C105.
4. Service saddle and combination air release vacuum relief valve shall be installed on the high points of the offset as shown on the plans. Service saddle shall be 1" on 8" and smaller existing mains and 2" on larger existing mains.
5. If bottom spool piece exceeds 18 feet, connect pipe sections with GSWC approved joint restraints.
6. If utility conduit is non-potable, minimum dimension shall comply with DDW Waterworks Standards and Std. Dwg. P-2.
7. Trench backfill and bedding shall be as shown on Std. Dwg. No. P-3 or as required by the local agency.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **45-DEGREE MECHANICAL JOINT D.I.P. UTILITY INVERT**

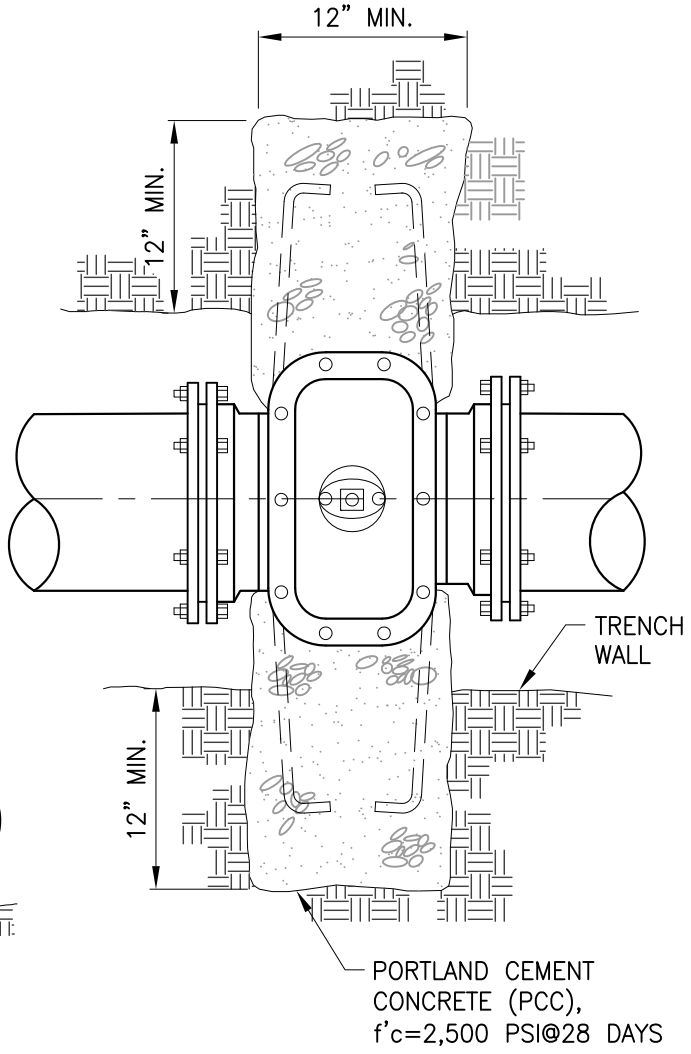
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**P-42**



SECTION



SIDE VIEW



PLAN VIEW

NOTES:

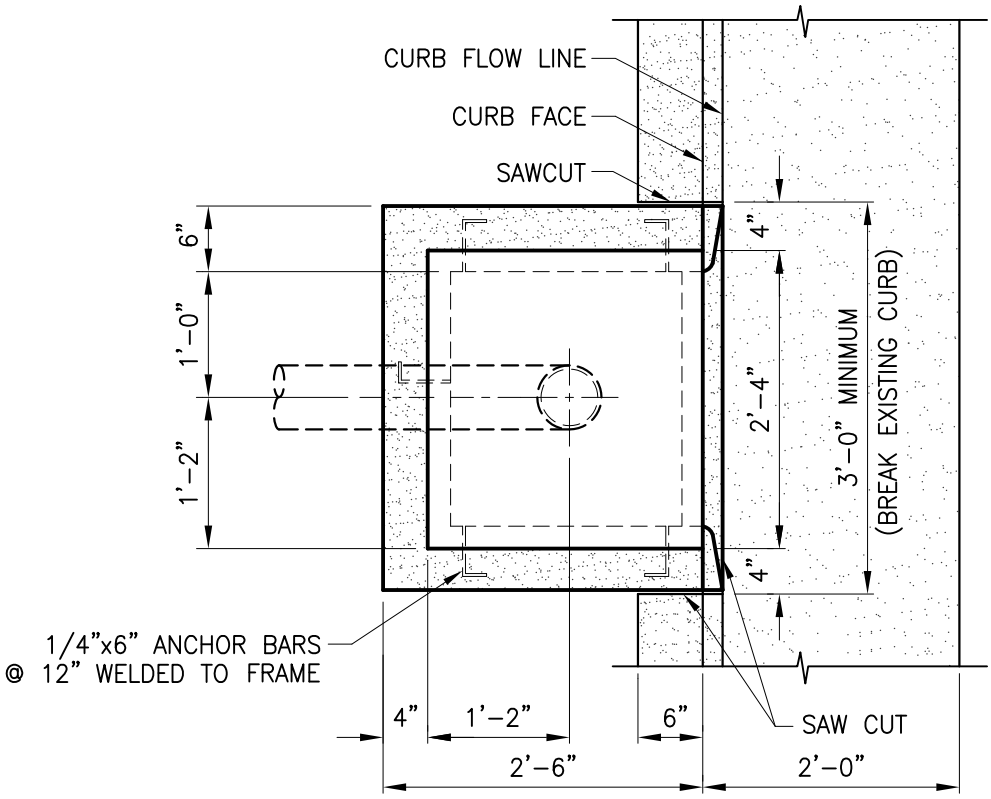
1. All anchor rods are to be covered with 80 mils of bitumastic compound.
2. The anchor block shall be keyed no less than 12 inches into undisturbed soil of the trench wall and no less than 6 inches into the trench bottom.
3. Anchor block required only when valve is not flanged to a tee or cross.
4. Concrete shall be 2500 psi minimum with 3–inches minimum cover rebar. No concrete shall be poured on valve or joint.
5. Wrap exterior of valve, actuator and rebar with 8 mil polyethylene sheeting and tape.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **VALVE ANCHOR**

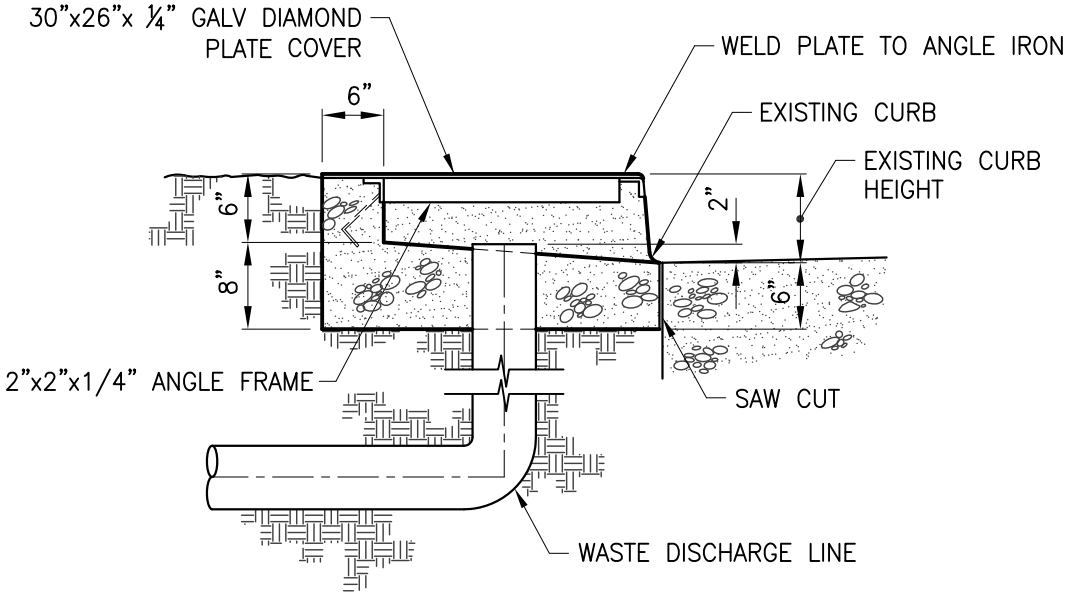
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**P–43**

Section 2

Civil and Site Work



PLAN



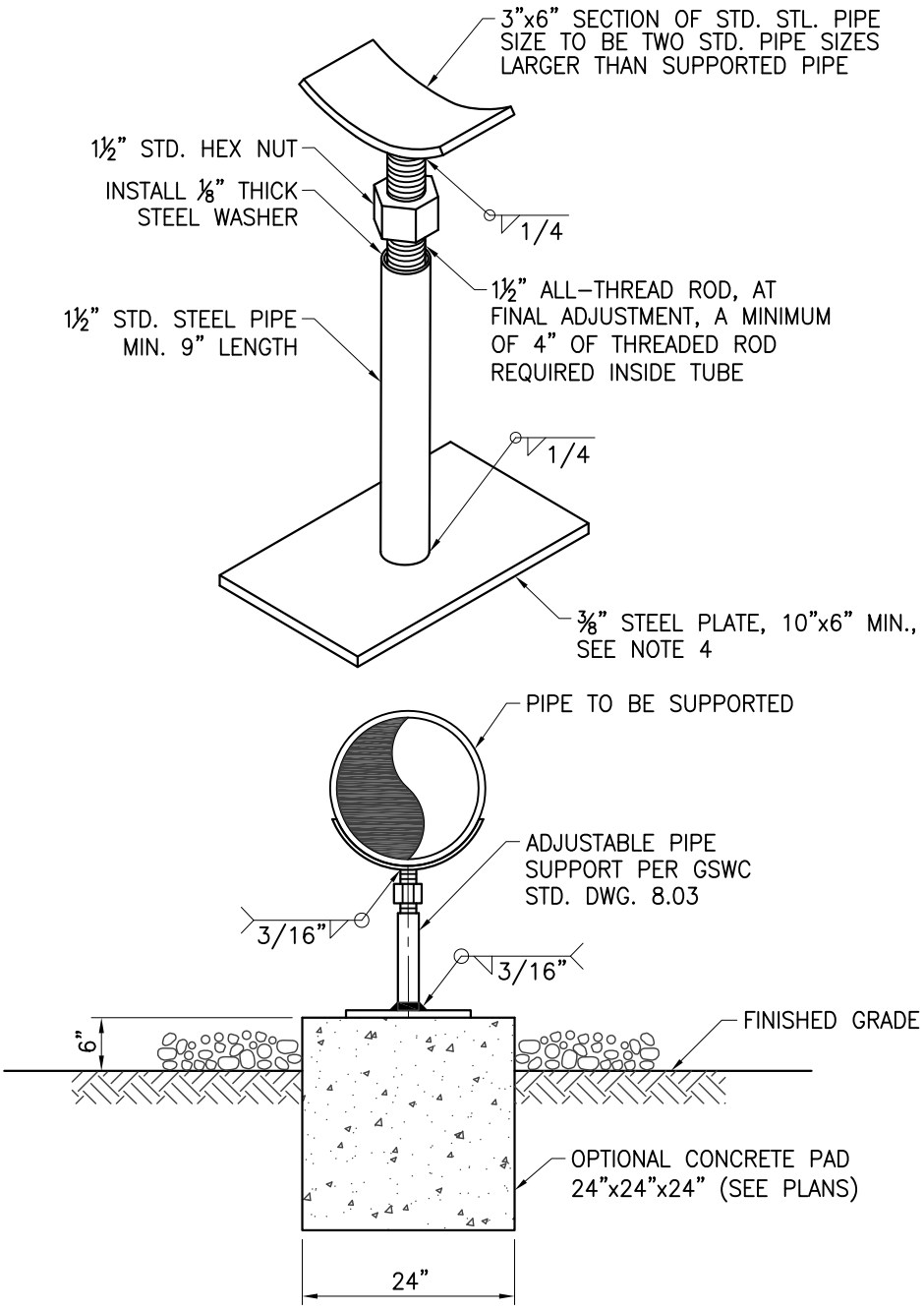
SECTION

NOTES:

1. This is to be used only where a storm drain connection cannot be made.
2. If existing curb is cracked or has an expansion joint within 3 feet of the proposed saw cut, extend limits of cut to that point.
3. An approved backflow prevention method shall be installed upstream to curb drain box.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **CURB DRAIN BOX**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**C-1**



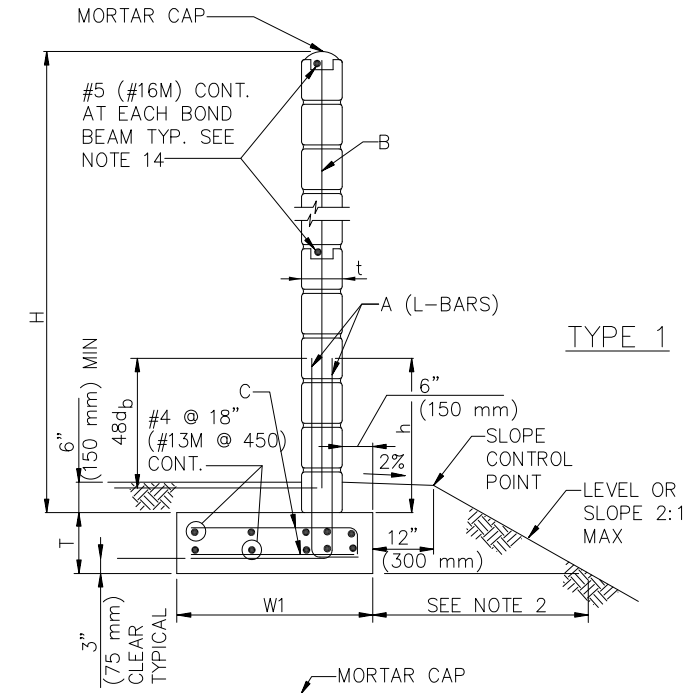
PIPE SUPPORT DETAIL

NOTES:

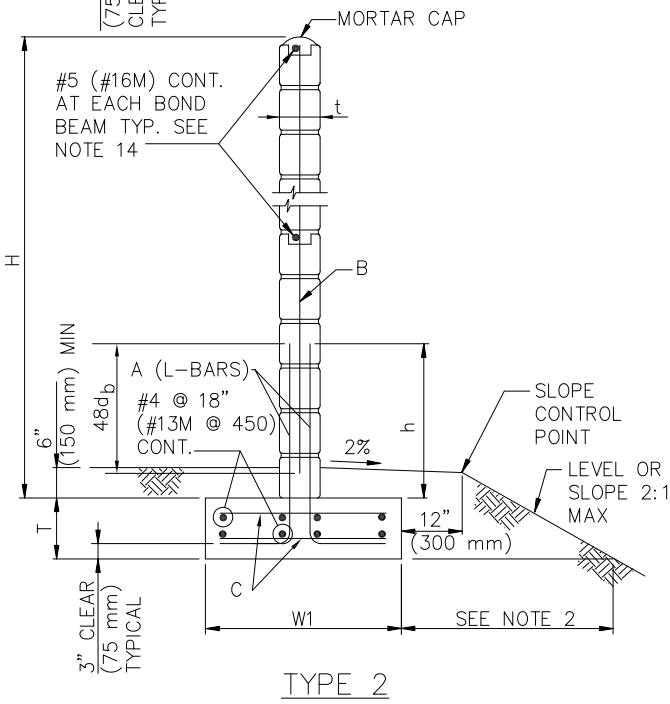
1. Pipe supports shall be painted and coated in accordance with the GSWC standard paint specifications. Color to match piping.
2. All threaded areas shall be coated with "never-seize" or other equivalent anti-rust lubricant.
3. Support to be installed under all valves and at 10 foot maximum spacing.
4. Steel plate can be attached to a concrete pad if necessary using wedge type anchor bolts designed for use in concrete. Anchor bolts shall be be installed at least 2" into concrete and be ½" diameter x 3" long to allow for a washer and nut on the end. Bolt, washer and nut shall be galvanized for corrosion protection.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **ADJUSTABLE PIPE SUPPORT**

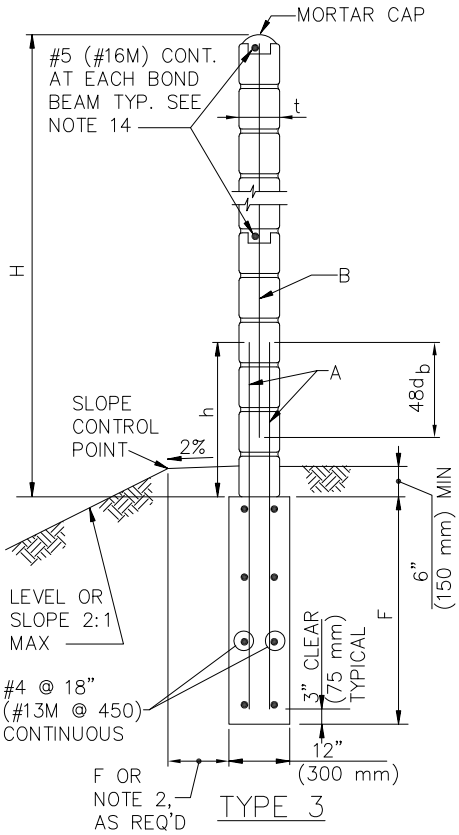
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**C-2**



TYPE 1



TYPE 2



TYPE 3

DETAILS FOR DOUBLE REINFORCEMENT
SEE REINFORCING SCHEDULES FOR REQD USE

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1993 REV. 1996, 2005, 2009

REINFORCED CONCRETE BLOCK WALL

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN 601-3

SHEET 1 OF 6

APPROVED BY:
GSWC STANDARDS COMMITTEE

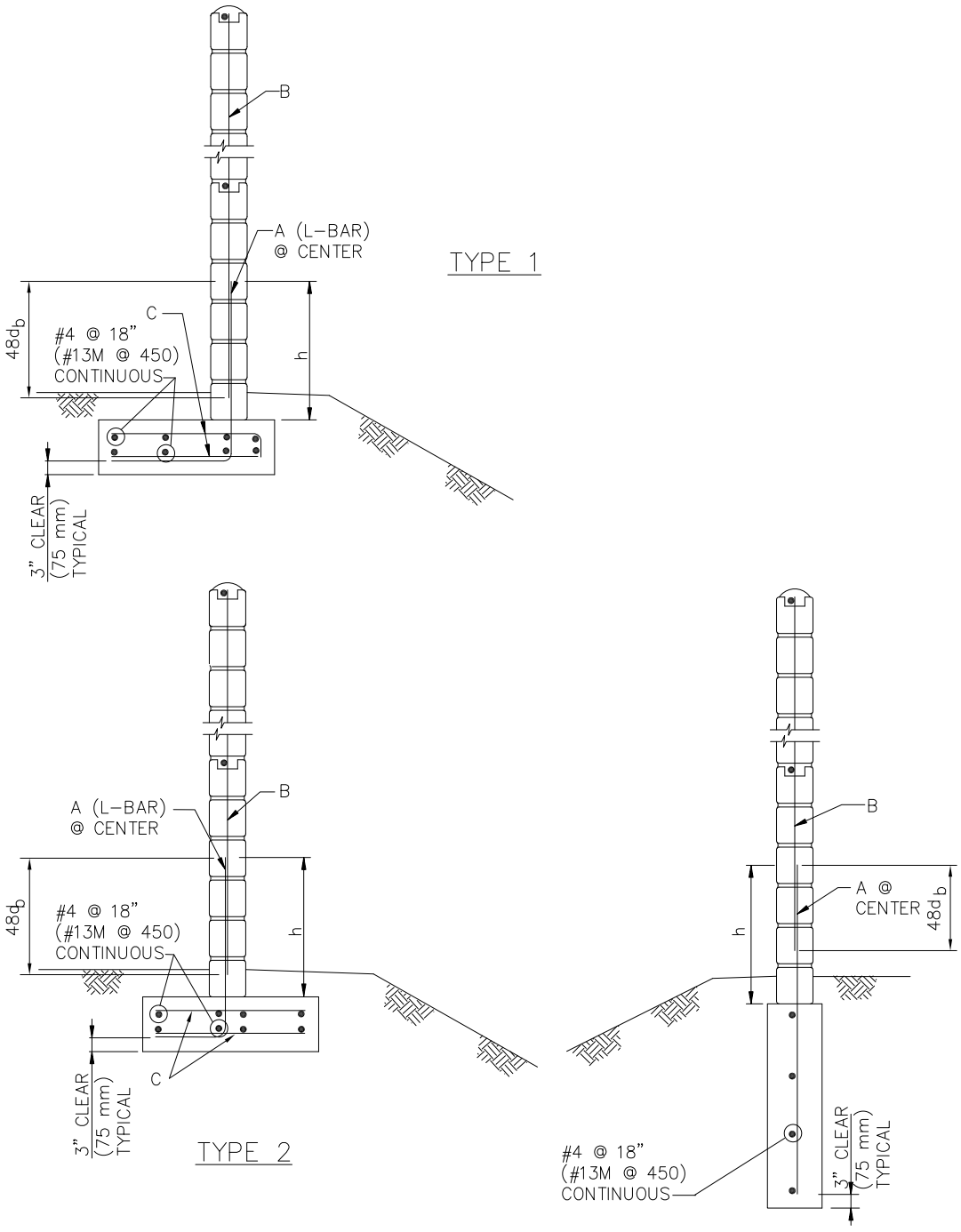
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: REINFORCED CONCRETE BLOCK WALL

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C-3A



DETAILS FOR SINGLE REINFORCEMENT
SEE REINFORCING SCHEDULES FOR ALLOWED USE
SEE SHEET 1 FOR OTHER DIMENSIONS AND DETAILS

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

REINFORCED CONCRETE BLOCK WALL

STANDARD PLAN
601-3
SHEET 2 OF 6

APPROVED BY:
GSWC STANDARDS COMMITTEE

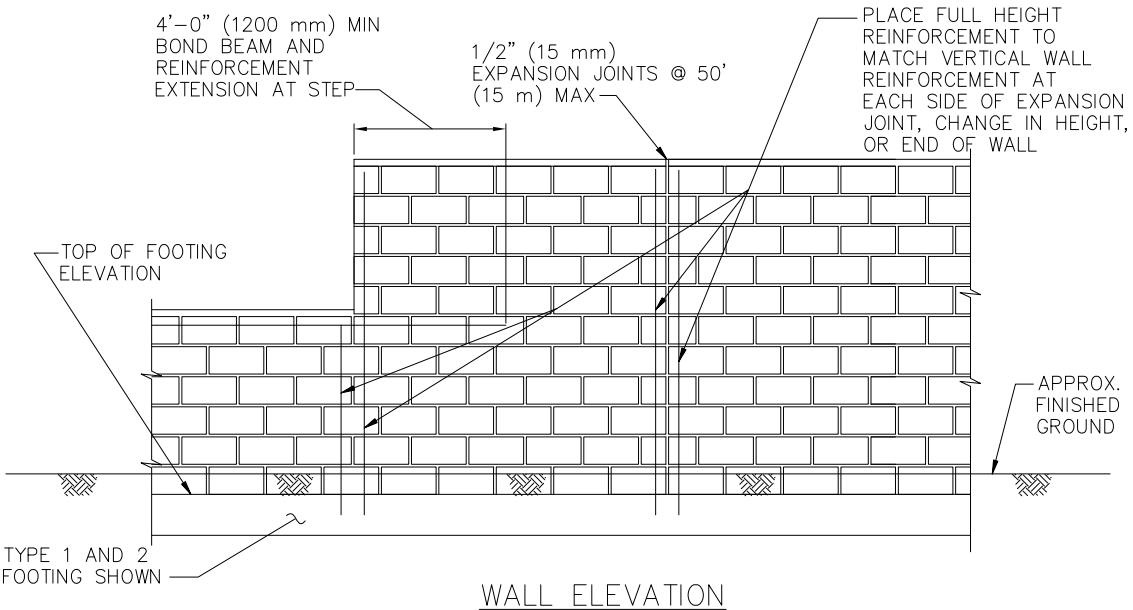
EDC MANAGER

01/16
DATE

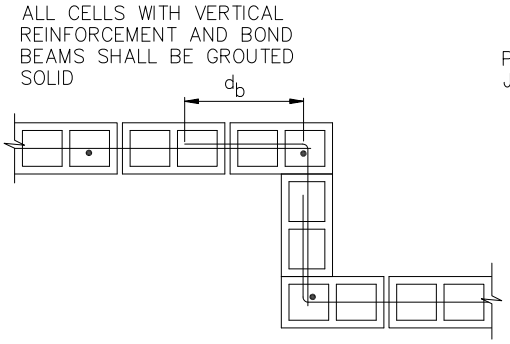
Golden State Water Company
A Subsidiary of American States Water Company

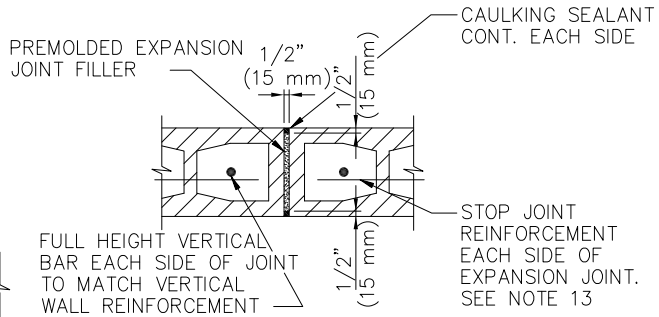
TITLE:
REINFORCED CONCRETE BLOCK WALL

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C-3B



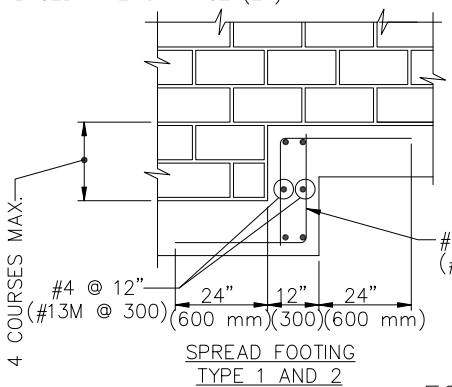
WALL ELEVATION





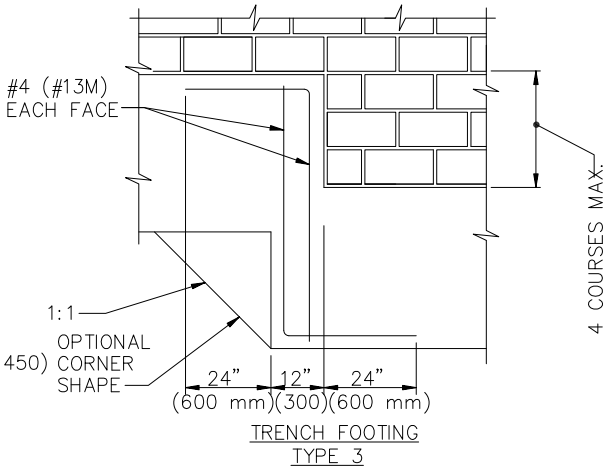
CORNER DETAIL

NOTE:
SINGLE VERTICAL REINFORCING BARS SHALL BE CENTERED IN CELLS. DOUBLE ROWS OF VERTICAL REINFORCING BARS SHALL HAVE THE REINFORCEMENT PLACED IN EACH FACE (EF).



SPREAD FOOTING
TYPE 1 AND 2

EXPANSION JOINT DETAIL



TRENCH FOOTING
TYPE 3

FOOTING STEP DETAILS

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

REINFORCED CONCRETE BLOCK WALL

STANDARD PLAN
601–3
SHEET 3 OF 6

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
REINFORCED CONCRETE BLOCK WALL

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C–3C

LATERAL LOAD = 15 PSF (720 Pa)									
STEM		FOOTING				REINFORCING BARS			
						CUTOFF	SPACING, O.C.		
H	t	T	W1 (TYPE 1)	W2 (TYPE 2)	F (TYPE 3)	h	A	B	C
6'–0" (1.8 m)	6" (150 mm)	12" (300 mm)	2'–3" (675 mm)	2'–3" (675 mm)	2'–9" (825 mm)	30" (750 mm)	#4 @ 48"* (#13M@1200*)	#4 @ 48" (#13M@1200)	#4 @ 48"* (#13M@1200*)
8'–0" (2.4 m)	8" (200 mm)	12" (300 mm)	2'–9" (825 mm)	2'–6" (750 mm)	3'–3" (975 mm)	30" (750 mm)	#4 @ 32"* (#13M@800*)	#4 @ 32" (#13M@800)	#4 @ 32"* (#13M@800*)
10'–0" (3.0 m)	8" (200 mm)	12" (300 mm)	3'–9" (1125 mm)	3'–0" (900 mm)	3'–9" (1125 mm)	30" (750 mm)	#4 @ 32"EF (#13M@800EF)	#4 @ 32" (#13M@800)	#4 @ 32" (#13M@800)

LATERAL LOAD = 20 PSF (960 Pa)									
STEM		FOOTING				REINFORCING BARS			
						CUTOFF	SPACING, O.C.		
H	t	T	W1 (TYPE 1)	W2 (TYPE 2)	F (TYPE 3)	h	A	B	C
6'–0" (1.8 m)	6" (150 mm)	12" 300 mm	2'–9" (825 mm)	2'–6" (750 mm)	3'–3" (975 mm)	30" (750 mm)	#5 @ 32"* (#16M@800*)	#4 @ 32" (#13M@800)	#4 @ 32"* (#13M@800*)
8'–0" (2.4 m)	8" (200 mm)	12" 300 mm	3'–3" (975 mm)	3'–0" (900 mm)	3'–9" (1125 mm)	30" (750 mm)	#4 @ 32"EF (#13M@800EF)	#4 @ 32" (#13M@800)	#4 @ 32" (#13M@800)
10'–0" (3.0 m)	8" (200 mm)	12" 300 mm	4'–3" (1275 mm)	3'–6" (1050 mm)	4'–3" (1275 mm)	42" (1050 mm)	#5 @ 32"EF (#16M@800EF)	#4 @ 32" (#13M@800)	#5 @ 32" (#16M@800)

LATERAL LOAD = 25 PSF (1200 Pa)									
STEM		FOOTING				REINFORCING BARS			
						CUTOFF	SPACING, O.C.		
H	t	T	W1 (TYPE 1)	W2 (TYPE 2)	F (TYPE 3)	h	A	B	C
6'–0" (1.8 m)	6" (150 mm)	12" (300 mm)	3'–0" (900 mm)	2'–9" (825 mm)	3'–6" (1050 mm)	30" (750 mm)	#5 @ 16"* (#16M@400*)	#4 @ 32" (#13M@800)	#4 @ 32" (#13M@800)
8'–0" (2.4 m)	8" (200 mm)	12" (300 mm)	3'–9" (1125 mm)	3'–3" (975 mm)	4'–0" (1200 mm)	30" (750 mm)	#4 @ 16"EF (#13M@400EF)	#4 @ 32" (#13M@800)	#4 @ 32" (#13M@800)
10'–0" (3.0 m)	8" (200 mm)	12" (300 mm)	4'–9" (1425 mm)	4'–0" (1200 mm)	4'–9" (1425 mm)	50" (1250 mm)	#5 @ 16"EF (#16M@400EF)	#4 @ 32" (#13M@800)	#5 @ 32" (#16M@800)

NOTE

SINGLE VERTICAL REINFORCING BARS SHALL BE CENTERED IN CELL.
* FOR SINGLE A–BARS IN FOUNDATION, SEE SHEET 2.
DOUBLE ROWS OF VERTICAL REINFORCING WHERE INDICATED SHALL BE PLACED AT EACH FACE (EF).

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

REINFORCED CONCRETE BLOCK WALL

STANDARD PLAN
601–3
SHEET 4 OF 6

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 01/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: REINFORCED CONCRETE BLOCK WALL

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C–3D

DESIGN CRITERIA:

MATERIALS DESIGN DATA:

REINFORCING STEEL ..... fy = 60 KSI (400 MPa)

CONCRETE 28TH-DAY STRENGTH:
FOOTING ..... f 'c = 2,500 PSI (17 MPa)

CONCRETE MASONRY:
PARTIALLY GROUTED ..... f 'm = 1,500 PSI (10 MPa)

DESIGN CODE:..... GOVERNING BUILDING CODE

DESIGN METHOD:

CONCRETE ..... ULTIMATE STRENGTH METHOD
CONCRETE MASONRY ..... WORKING STRESS METHOD

FOUNDATION:

ALLOWABLE SOIL BEARING PRESSURE ..... 1,000 PSF (48 kPa)
ALLOWABLE LATERAL SOIL BEARING PRESSURE ..... 100 PSF / FT OF DEPTH
(157 kPa / m OF DEPTH)
LATERAL SLIDING RESISTANCE AT CONTACT AREA..... 130 PSF (6.2 kPa)
BUT NOT TO EXCEED 0.40 X DL
SOIL DENSITY ..... 110 PCF (1760 kg/m^3)
FACTORS OF SAFETY FOR SPREAD FOOTING (BASED ON SERVICE LOAD CONDITIONS):
OVERTURNING ..... 1.75 MINIMUM
SLIDING ..... 1.5 MINIMUM

1/3 INCREASE IS ALLOWED FOR SHORT TERM LOADS.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

REINFORCED CONCRETE BLOCK WALL

STANDARD PLAN
601-3
SHEET 5 OF 6

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 01/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: REINFORCED CONCRETE BLOCK WALL

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C-3E

GENERAL NOTES:

1. CONSULT WITH LOCAL GOVERNING AGENCY FOR DETERMINATION OF LATERAL LOAD AND WALL TYPE LISTED IN TABLES, FOR PROJECT-SPECIFIC USE.

2. DISTANCE OF THE FOOTING FROM DESCENDING SLOPE SHALL BE PER LATEST GOVERNING BUILDING CODE OR PER AGENCY REQUIREMENTS.

3. SPECIAL INSPECTION IS NOT REQUIRED FOR WALLS.

4. GROUND LINE TO BE AT THE SAME ELEVATION ON BOTH SIDES OF THE WALL. WALL SHALL NOT BE USED TO RETAIN EARTH.

5. USE TABULAR INFORMATION FOR THE NEXT HIGHER H FOR INTERMEDIATE WALL HEIGHTS THAT ARE BETWEEN THE H'S GIVEN.

6. CONCRETE SHALL BE 500-C-2500 (295-C-17) PER SSPWC 201-1.1.2.

7. REINFORCING SHALL BE LAPPED A MINIMUM 48 BAR DIA. GRADE 60 UNLESS NOTED OTHERWISE PER SSPWC SECTION 201-2, 303-4.1.3, JOINT REINFORCING WIRE: ASTM A82.

8. ALL REINFORCED CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH SSPWC 303.

9. FOR TYPE OF BLOCKS, BOND PATTERN AND JOINT FINISH, SEE PROJECT PLANS.

10. ALL MASONRY CONSTRUCTION TO BE IN ACCORDANCE WITH SSPWC 303-4.

11. HOLLOW MASONRY UNITS...ASTM C-90. TYPE I. NORMAL WEIGHT UNITS.

    MORTAR ...1:1/2:3, PORTLAND CEMENT - LIME - SAND RATIO, 1800 PSI (13 MPa) PER SSPWC 202-2.2.1.

    GROUT .....1:3:2 PORTLAND CEMENT - SAND - PEA GRAVEL RATIO, 2,000 PSI (14 MPa) PER SSPWC 202-2.2.2.

12. PROVIDE FULL MORTAR BED AT THE BOTTOM OF THE FIRST COURSE AND OMIT MORTAR BETWEEN VERTICAL JOINTS OF LOWEST EXPOSED COURSE.

13. WHEN BLOCKS ARE LAID IN STACKED BOND, CONTINUOUS HORIZONTAL JOINT REINFORCEMENT SPACED AT 4'-0" (1200 mm) OC SHALL BE PROVIDED IN ADDITION TO THE BOND BEAM REINFORCEMENT PER SSPWC 303-4.1.2, LOCATE REINFORCEMENT IN JOINTS THAT ARE APPROXIMATE MIDPOINT BETWEEN BOND BEAMS.

14. BOND BEAMS SHALL BE PLACED AT TOP OF WALL AND SUBSEQUENTLY SPACED NOT TO EXCEED 4'-0" (1200 mm) O.C. BELOW.

15. ONLY CELLS WITH REINFORCING BARS SHALL BE GROUTED PER SSPWC 303-4.1.3.

16. HORIZONTAL JOINTS SHALL BE TOOLED CONCAVE OR WEATHERED. VERTICAL JOINTS SHALL BE TOOLED CONCAVE OR RAKED. WEATHERED AND RAKED JOINTS ARE NOT PERMITTED FOR SLUMPED BLOCKS.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

REINFORCED CONCRETE BLOCK WALL

STANDARD PLAN
601-3
SHEET 6 OF 6

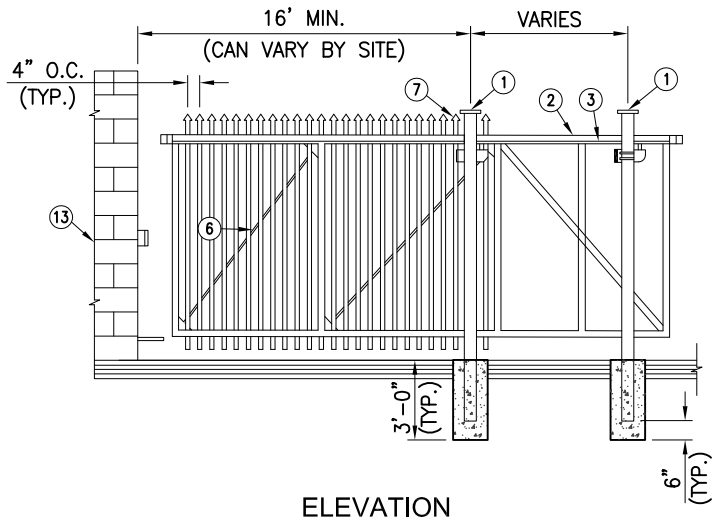
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert R. Hanford — 01/16
EDC MANAGER — DATE

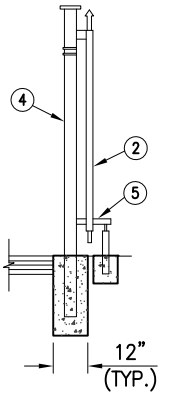
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **REINFORCED CONCRETE BLOCK WALL**

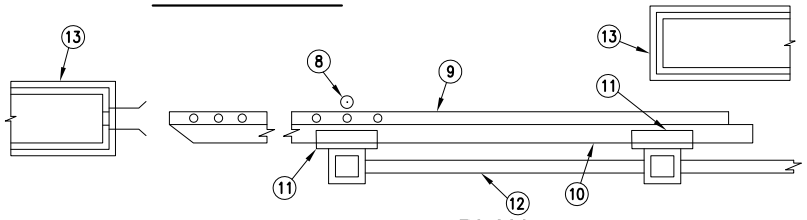
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C-3F



ELEVATION



SECTION

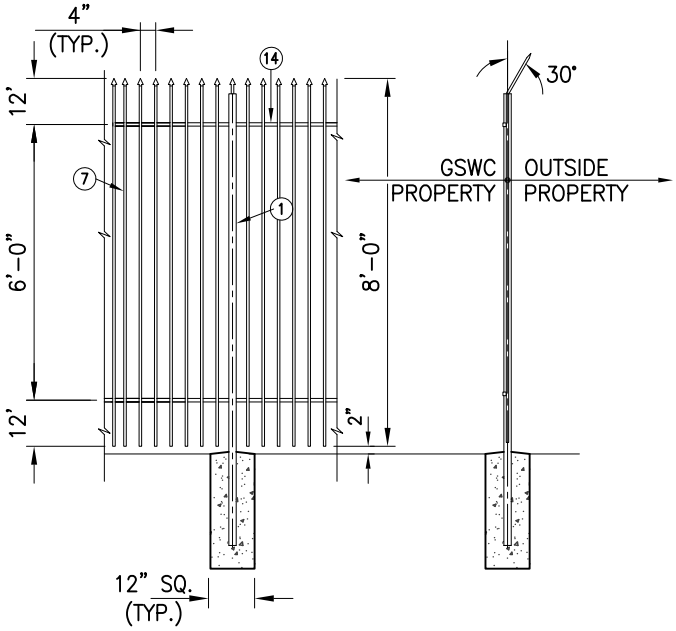


PLAN

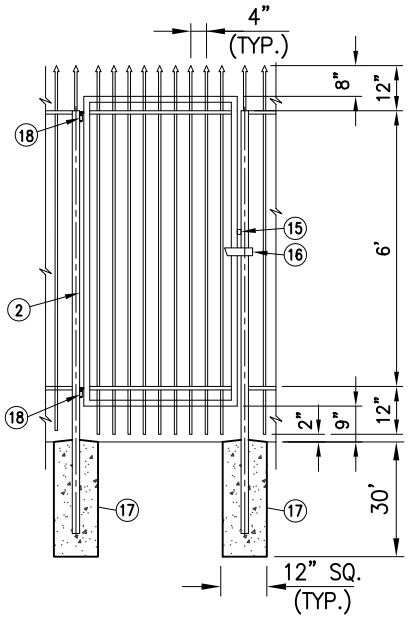
ROLLING CANTILEVER VEHICLE GATE

NOTES:

1. Specific fence and gate design and detail shall be submitted as a shop drawing.
2. Curved tines can be used if shown on the shop drawings.



TYPICAL FENCE SECTION



MAIN GATE

ITEM	DESCRIPTION	ITEM	DESCRIPTION
①	Fence posts, 4" square, 3/16" wall (6' o.c. max.)	⑩	Track
②	Gate frame, 2" square, 14 GA.	⑪	Trolley
③	Track	⑫	Fence line
④	Carriage post, 4" square, 3/16" wall	⑬	Perimeter fence/wall
⑤	Guide Rollers	⑭	Steel tube horizontal bar, 1 ½" sq., 16 GA
⑥	1/4"x3/4" truss rod	⑮	Padlock hasps
⑦	1-1/8" square, 16 GA. picket	⑯	Drop latch
⑧	Rollers	⑰	Concrete footing
⑨	Gate, width will vary depending on site	⑱	Hinge

APPROVED BY:
GSWC STANDARDS COMMITTEE

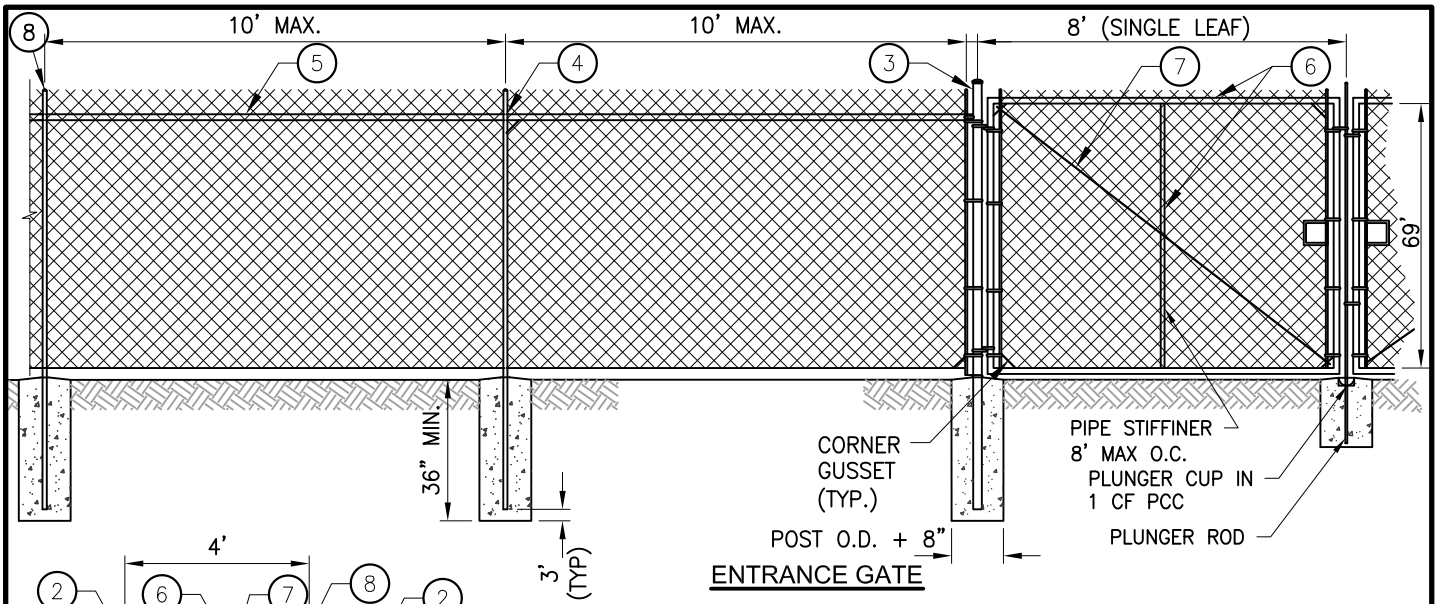
EDC MANAGER

10/16
DATE

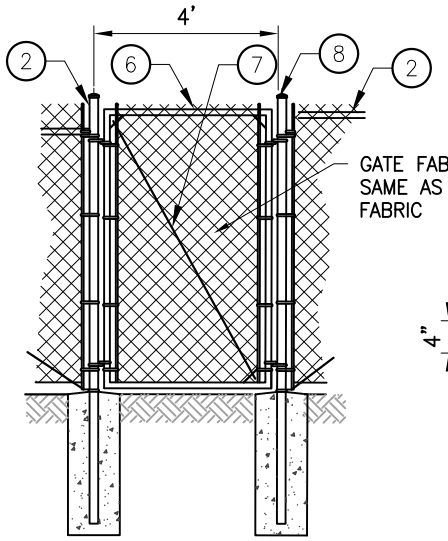
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
STEEL TUBE FENCE AND GATE

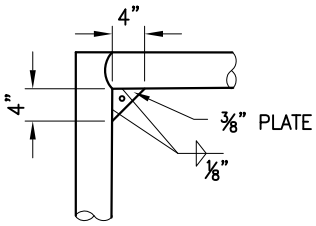
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**C-4A**



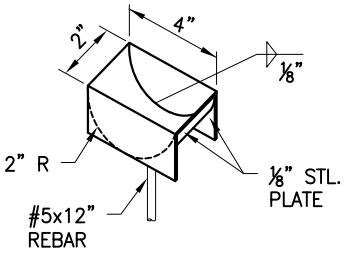
ENTRANCE GATE



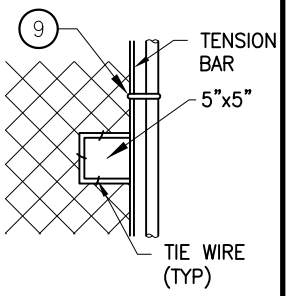
WALK GATE



GUSSET CORNER PLATE



PLUNGER CUP ISOMETRIC



CHAIN AND LOCK CUT-OUT

CHAIN LINK FENCE AND GATE

NOTES:

1. Specific fence and gate design and detail shall be submitted as a shop drawings.
2. Chain link fence and gates shall have 2" vinyl slats, colored.
3. All posts and hardware shall be galvanized.
4. All chain link fencing to be provided with top rails.

ITEM	DESCRIPTION
①	Corner and End Posts (10' o.c. max) 2 ½" NPS (2.875")
②	Walk Gate Posts 3" NPS (3.5")
③	Entrance Swing Gate Posts 6 ½" NPS (o.625")
④	Line Posts (Intermediate) 2" NPS (2.375")
⑤	Top Rails and Braces 1 ¼" NPS (1.660")
⑥	Frames for Gates 1 ½" NPS (1.900")
⑦	Tension Rod and Tightener for gates ⅜" threaded rod with tightener
⑧	Fence post cap (galvanized) drive fit and screw retained
⑨	Steel bonds (galvanized) at tension bars (⅛"x1", 16" o.c.)

APPROVED BY:
GSWC STANDARDS COMMITTEE

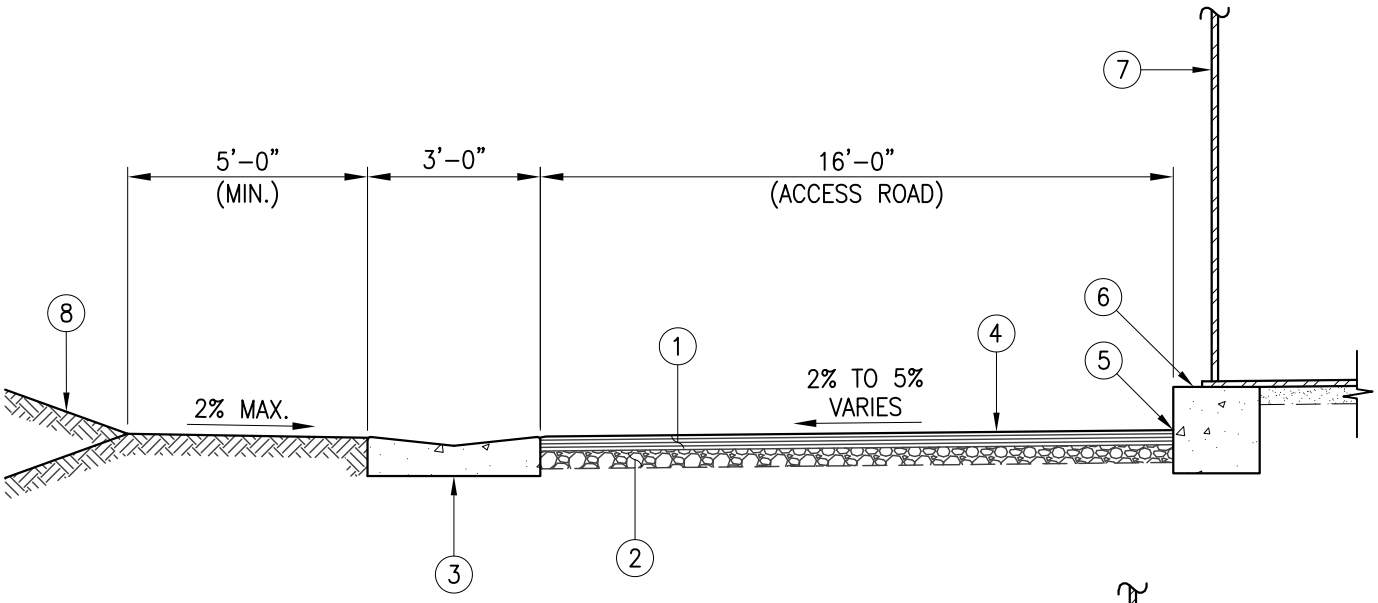
EDC MANAGER

10/16
DATE

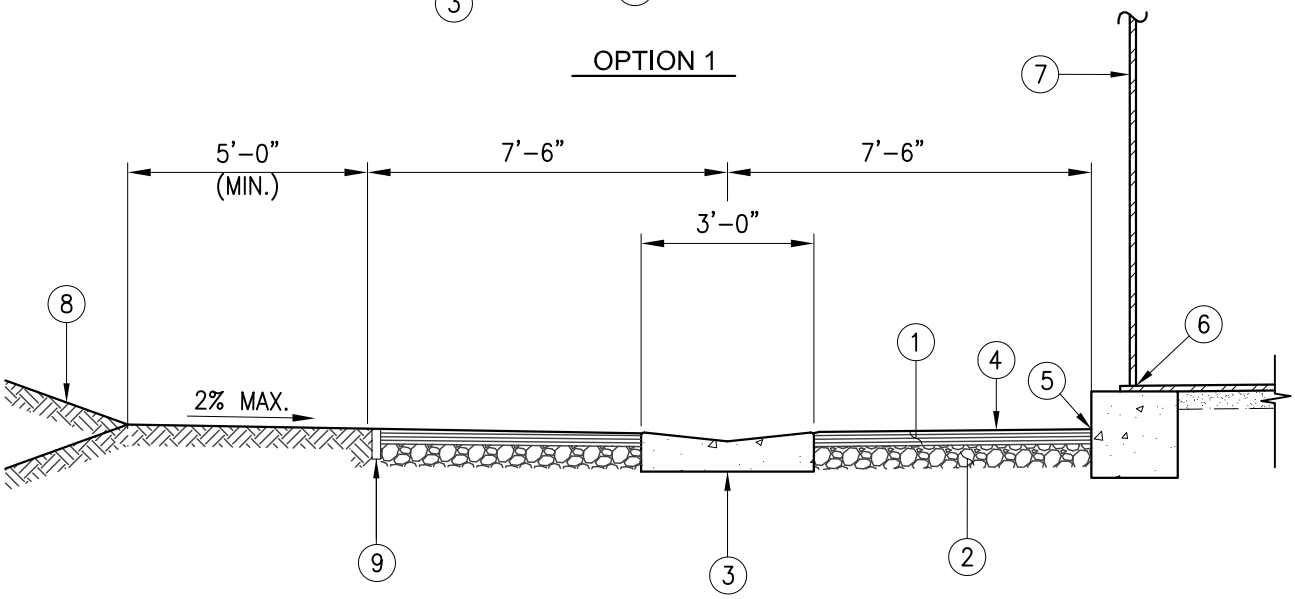
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
CHAIN LINK FENCE AND GATE

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	C-4B



OPTION 1



OPTION 2

ITEM	DESCRIPTION
1	3" A.C. min. thickness
2	6" Class 2 A.B. min. thickness
3	Concrete Alley Gutter per GSWC Std. Dwg. No. C–6
4	Finished surface
5	Finished surface elevation (varies) as shown on the plans
6	Top of ringwall or building foundation per plans
7	Tank shell or building wall
8	Cut slope or fill slope per geotech recommendations. Soil compacted to 90% relative density.
9	2"x6" redwood header

APPROVED BY:
GSWC STANDARDS COMMITTEE

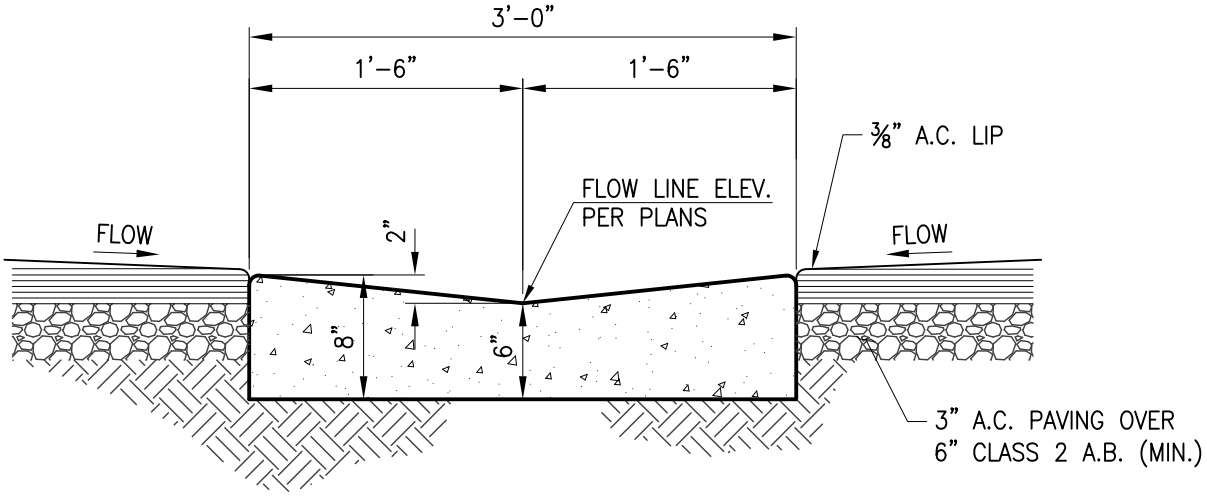
EDC MANAGER

10/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
TYPICAL SITE PAVING

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**C–5**

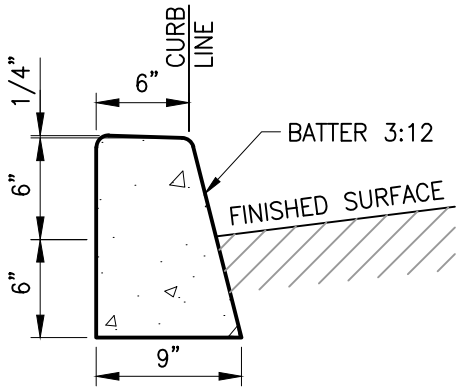


NOTES:

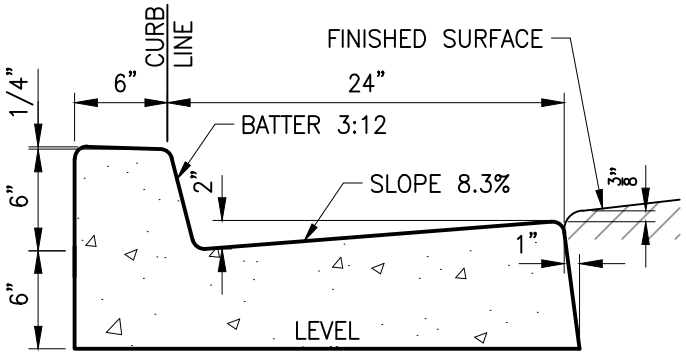
1. Total vertical distance from top of A.C. to flow line of Alley Gutter is 0.20' which includes the 2" depression of the Alley Gutter plus 3/8" A.C. lip.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **CONCRETE ALLEY GUTTER**

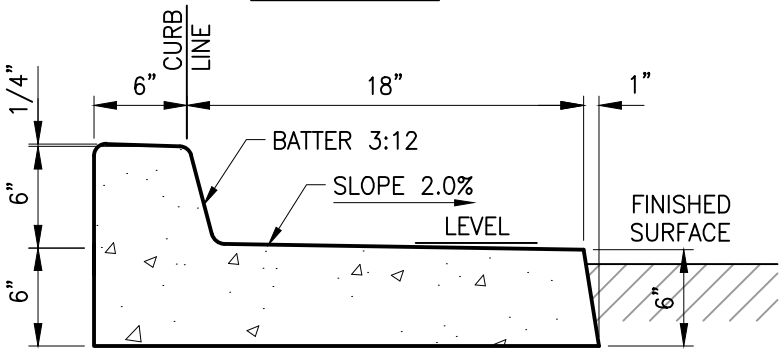
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**C-6**



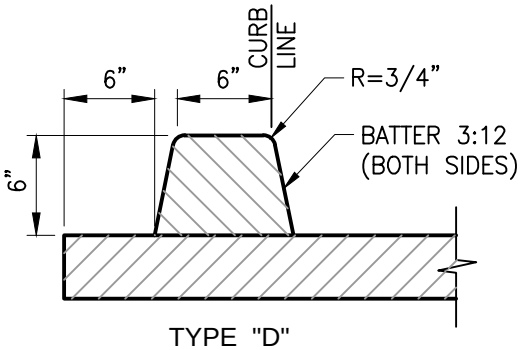
TYPE "A"



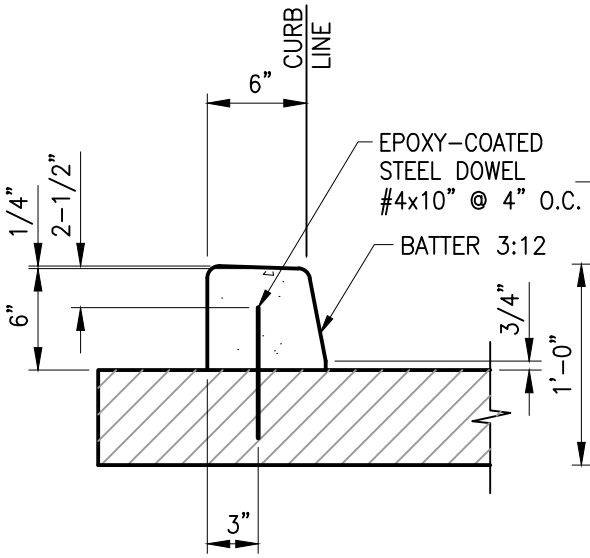
TYPE "B"



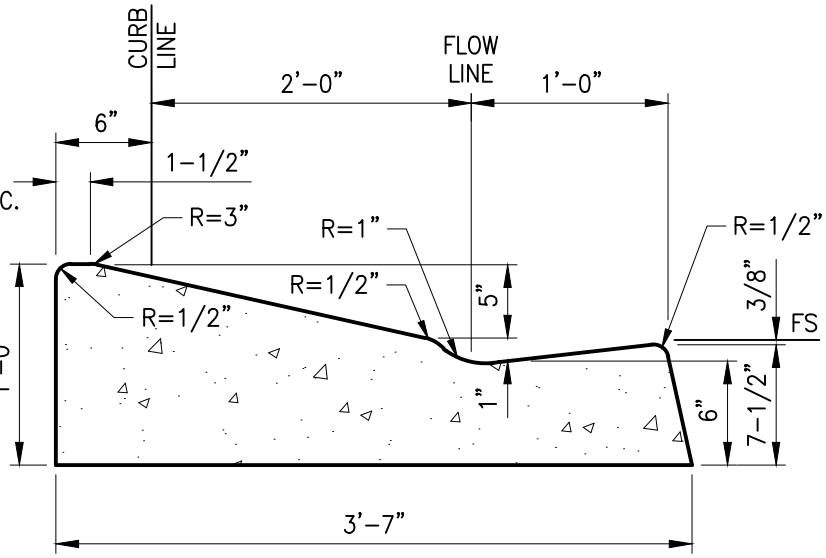
TYPE "C"
(FORWARD SLOPING)



TYPE "D"
(A.C. CONSTRUCTION)



TYPE "E"
(P.C.C. CONSTRUCTION)



TYPE "F"
(ROLLED CURB & GUTTER)

NOTES:

1. Type B and F curb and gutter shall have AC pavement ⅜" above lip for proper drainage.
2. Type C curb and gutter shall have AC pavement ⅜" below lip for proper drainage.

APPROVED BY:
GSWC STANDARDS COMMITTEE

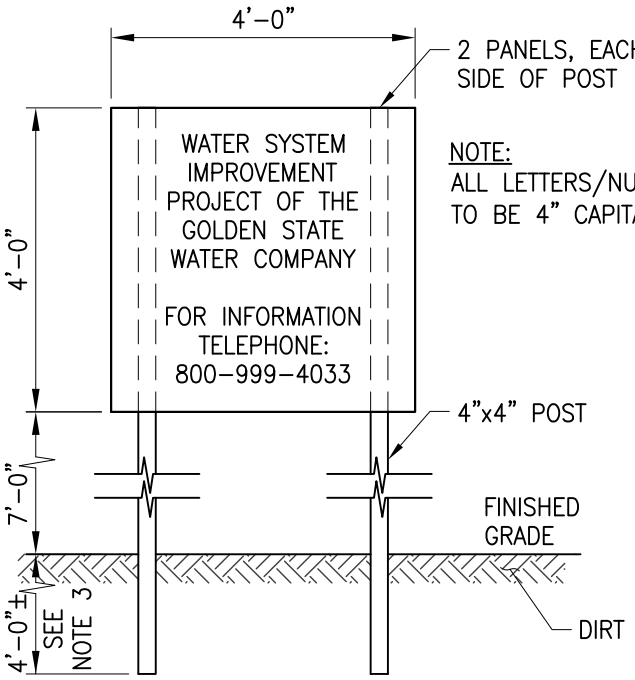
Robert N. Hartford
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
CONCRETE CURB AND CURB & GUTTER

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.1	C-7

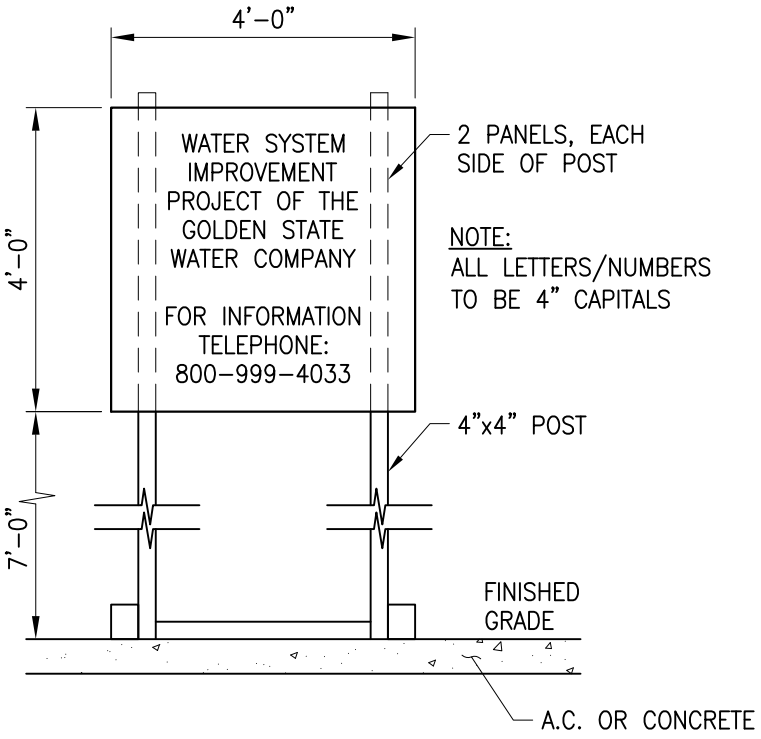


ALTERNATIVE "A"

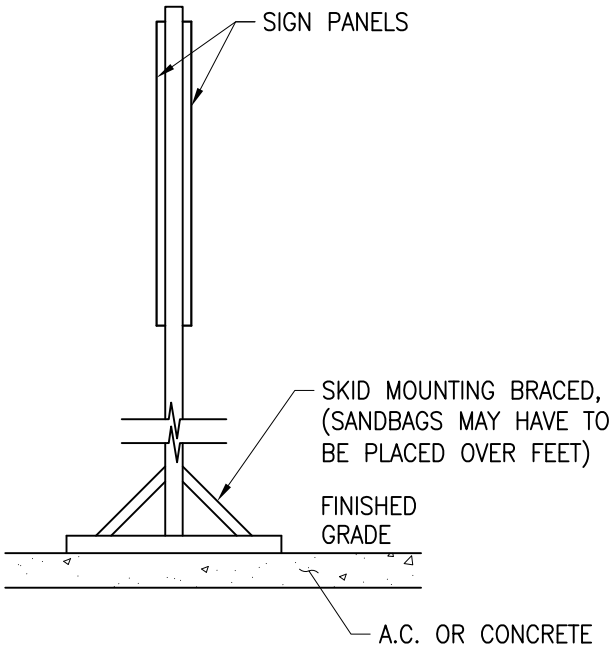
SIGN (2 PANELS) MOUNTED ON 2 POSTS EMBEDDED IN THE GROUND

NOTES:

1. Sign panels shall be of sheet aluminum material 0.08–inch thick. Thickness, finish and structural integrity to conform to City, County and State standards and requirements.
2. Posts and skids shall be of treated/painted wood material. Dimensions, finish and structural integrity to conform to City, County and State standards and requirements.
3. Posts shall be either embedded into the ground with any needed support or anchoring or mounted on skids to meet City, County or State standards.
4. Signs shall be located within public right of way, and not interfere with the pedestrian or traffic flow.
5. Sign details – White background with reflective surface
   – Permanent lettering to be bold, block letters in GSWC dark blue



FRONT VIEW



SIDE VIEW

ALTERNATIVE "B"

SIGN (2 PANELS) MOUNTED ON 2 POSTS AFFIXED WITH BOLTS TO SKID TYPE FEET

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER

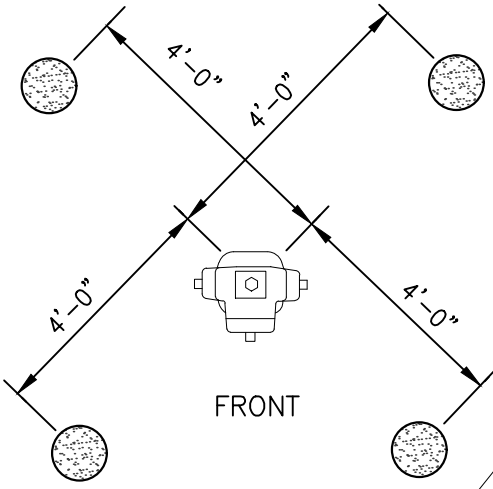
01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

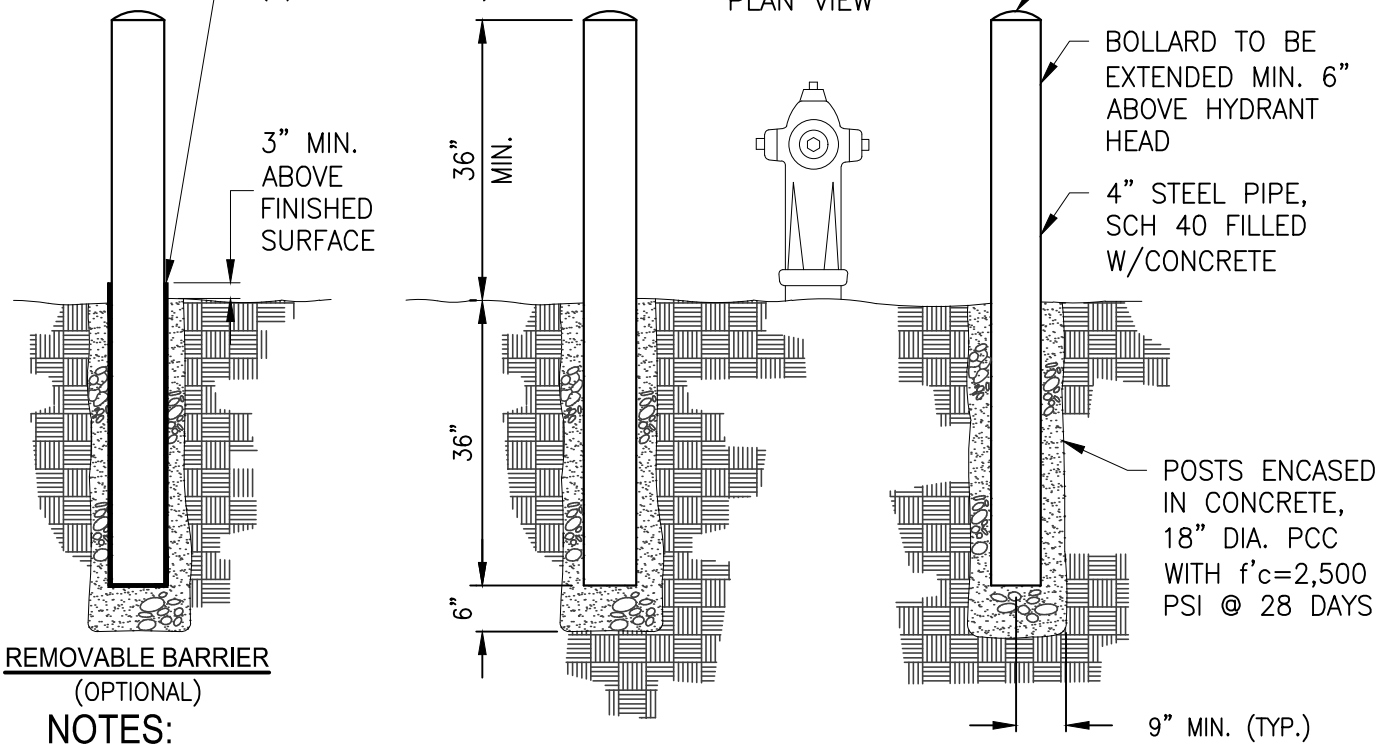
TITLE:
PROJECT INFORMATION SIGN

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**C–8**

NOTE:
LUBRICATE IN-GROUND PORTION OF THE PIPE TO PREVENT ADHESION TO THE SLEEVE



PLAN VIEW



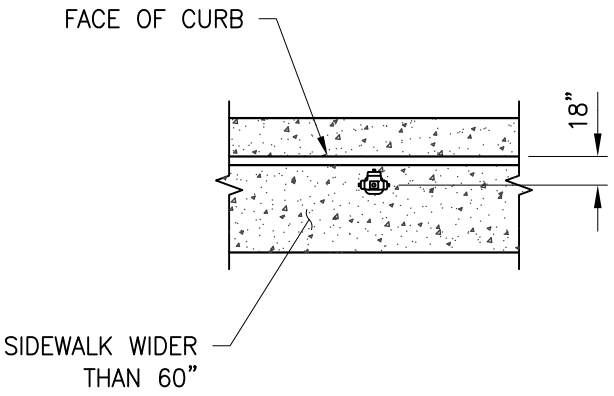
REMOVABLE BARRIER
(OPTIONAL)

NOTES:

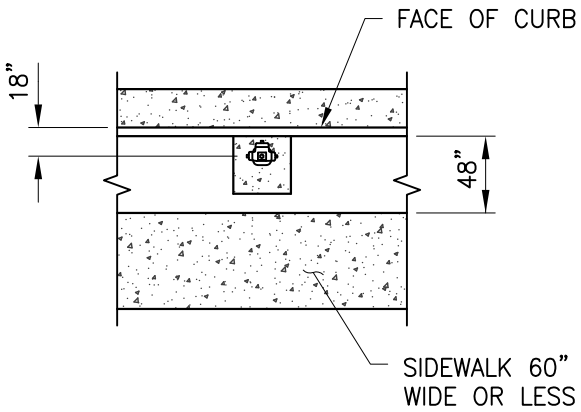
1. Orientation of barricade may be changed according to field conditions.
2. Bollard coating color per local fire department requirements.
   A. in lieu of painting a protective polyethylene sleeve may be put over steel post colored to meet local fire department requirements.
3. Coating material shall be per GSWD painting specifications for above grade steel piping.
   A. A polyethylene encased steel post (Sch.40 pipe) may be used instead of a painted post.
4. See Potable Water Material Guidelines for acceptable manufacturers.
5. Wrightwood CSA shall have 5' tall barricades.

APPROVED BY: GSWC STANDARDS COMMITTEE Robert N. Hansford — EDC MANAGER 1/18 — DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **VEHICLE BARRICADE**

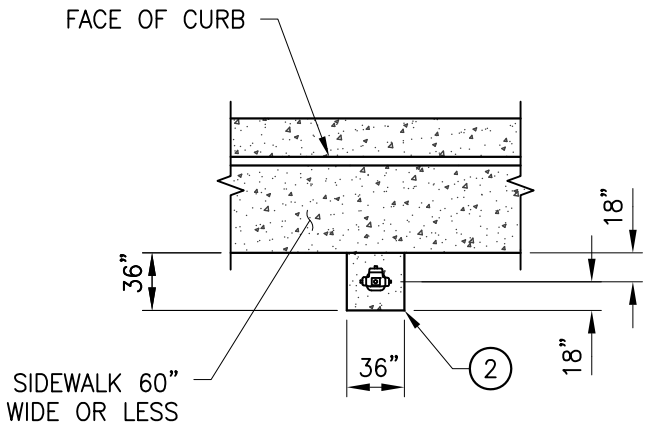
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**C-9**



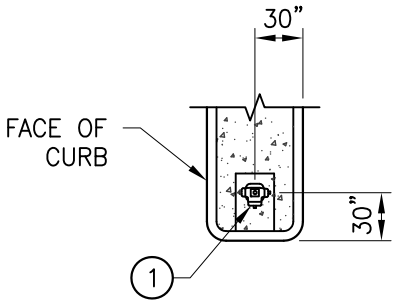
CONDITION 1
(IN THE SIDEWALK)



CONDITION 3
(IN THE PARKWAY)



CONDITION 2
(BEHIND THE SIDEWALK)



CONDITION 3
(IN THE PARKING LOT)

MATERIALS:

1. Residential hydrant with (1) 4" and (1) 2 ½" fire hose outlets. Non–residential hydrant with (2) 4" and (1) 2 ½" fire hose outlets.
2. Construct 48"x36"x6" thick or 36"x36"x6" thick concrete pad reinforced with W.W.M. 1.6x1.6.
3. See Std. Dwg. No. P–8 and P–9 for fire hydrant details.

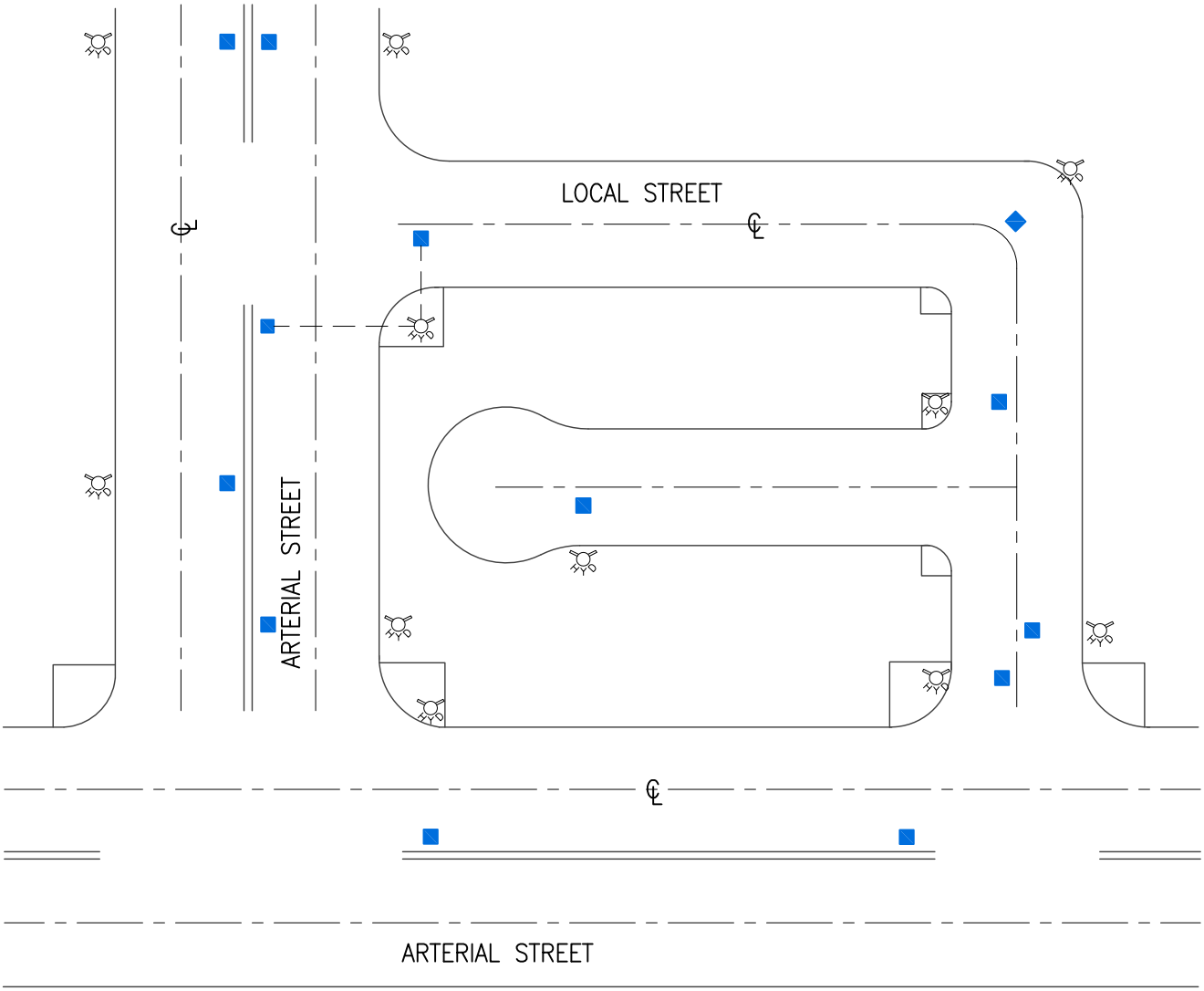
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 01/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TYPICAL FIRE HYDRANT LOCATION**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C–10



■ = BLUE PAVEMENT MARKER

= FIRE HYDRANT

NOTES:

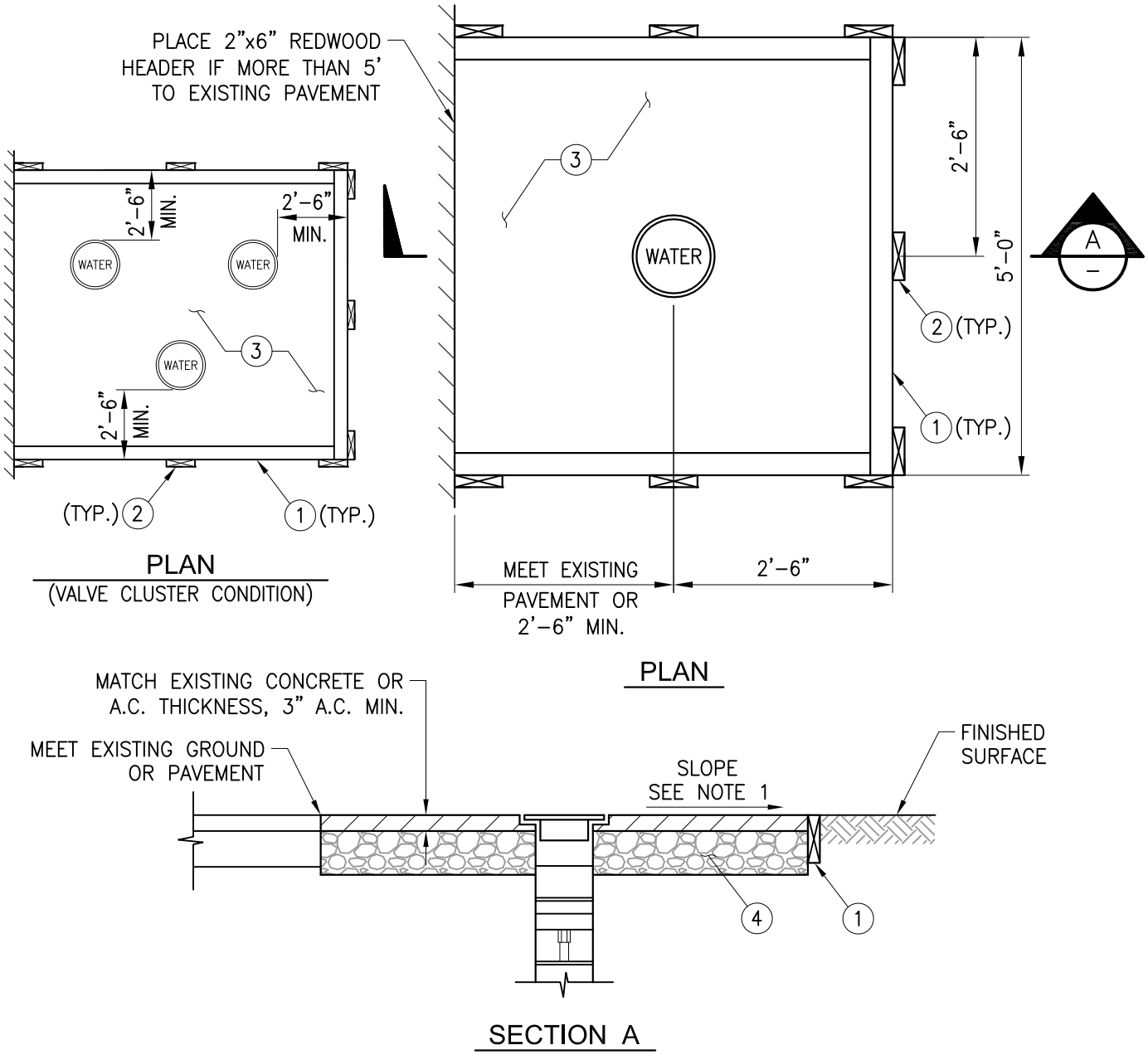
1. Each marker shall be placed as follows:
   a. Arterial streets, install marker one foot outside of centerline strip or median curb or left turn pocket line toward the side where fire hydrant is located.
   b. Local streets, install marker one foot outside of centerline (stripped or unmarked) toward the side where fire hydrant is located.

2. One marker to be placed on adjacent street when hydrant is on corner of an arterial/arterial intersection or a local/local intersection.

3. Two markers to be placed one on each street when hydrant is on corner of an arterial/local intersection.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **BLUE PAVEMENT MARKERS FOR FIRE HYDRANTS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**C–11**



NOTE:

1. Slope will conform to governing agency road improvement standards and specifications, or meet existing conditions as directed by engineer. Pad shall be sloped away from valve lid.
2. Valves located in landscaped areas shall have a 2'x2' concrete pad installed around each valve.
3. AC or concrete pad.

ITEM	DESCRIPTION
1	2"x6" redwood headers
2	2"x4"x18" stakes (3 per side) at 30" O.C.
3	Area to be paved
4	6" of ¾" Class 2 A.B.

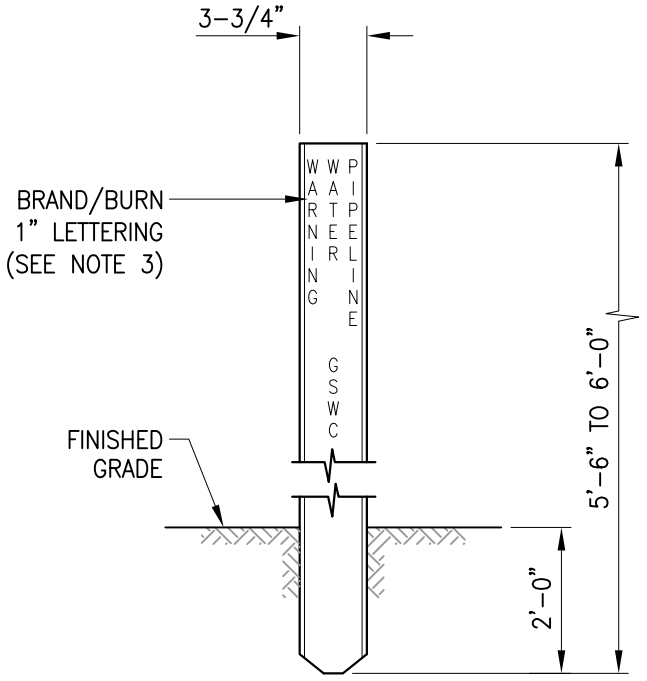
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 01/16 DATE

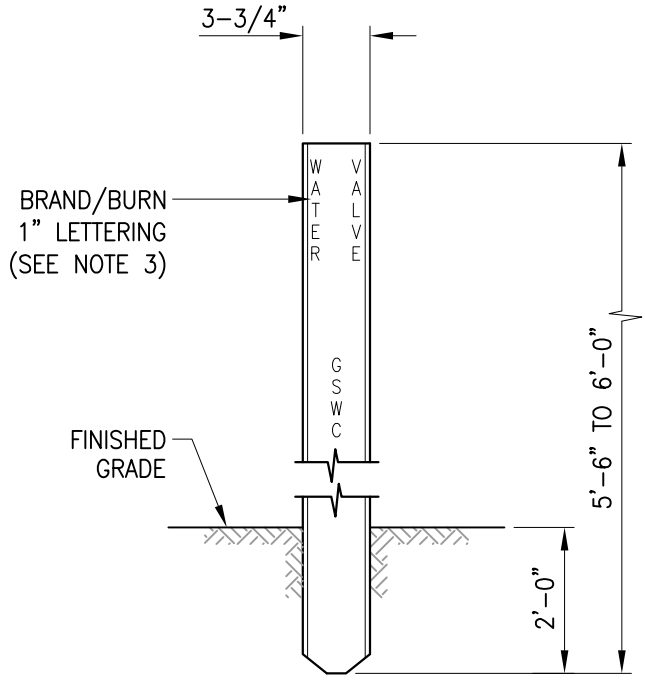
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
PAVING AROUND VALVES (NOT IN THE PAVEMENT)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C-12



MARKER POST
PIPELINE MARKER



MARKER POST
VALVE MARKER

NOTES:

1. Waterline marker post shall be installed where called for on the plans or as directed by the engineer. Spacing shall be approximately 200' between markers, curved alignments less than 800' in length shall have a minimum of four markers to define the curve.
2. Waterline marker post shall be installed 12" to the south and west of the utility.
3. Marker shall incorporate 1" high lettering branded/burned into paddle. Lettering shall include GSWC along with the utility identified. The color of the paddle shall be blue.
4. Lettering shall be white.
5. On back of marker write: "Call GSWC at (800) 999-4033" and "Before digging in this area call 811".

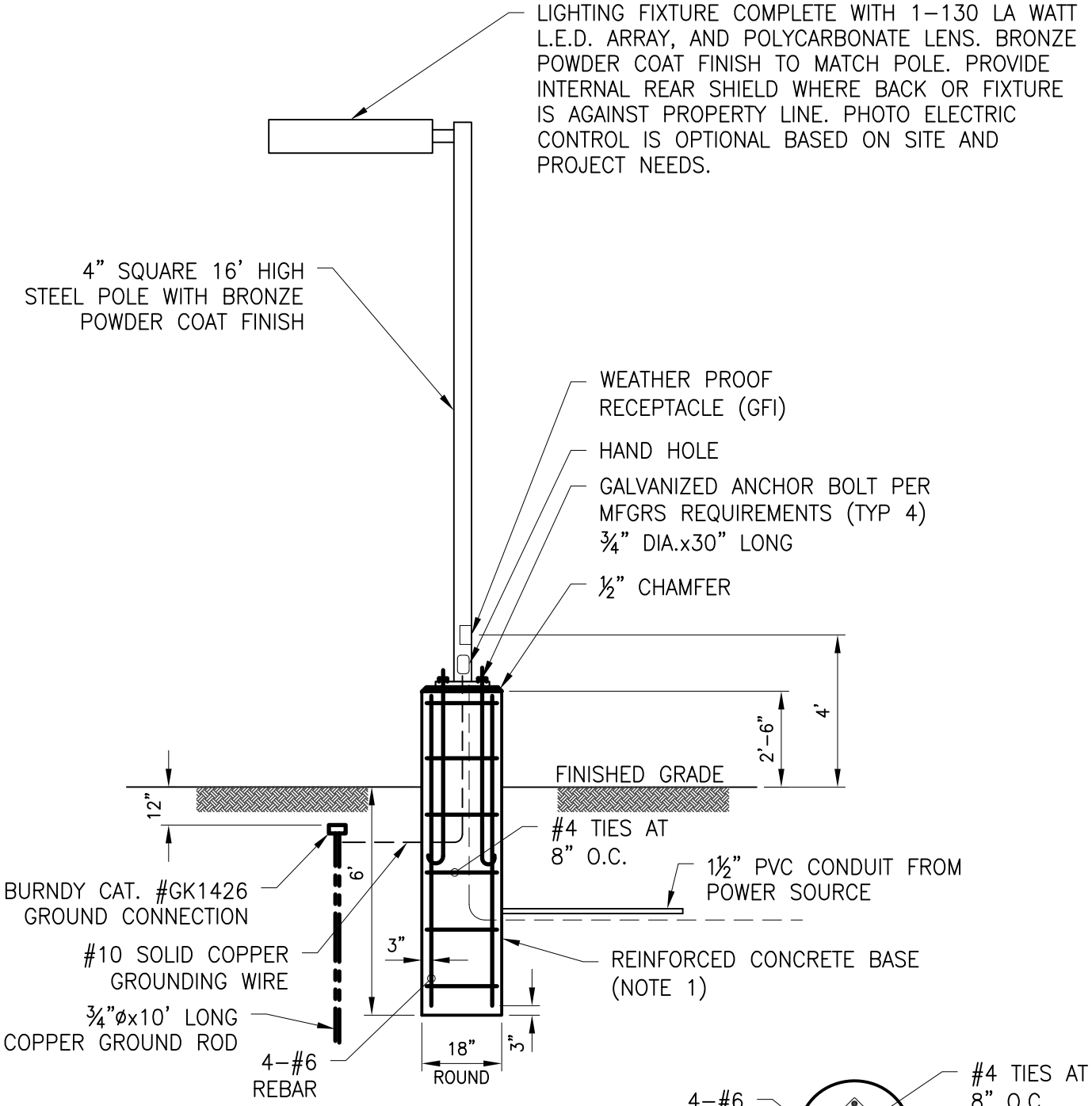
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 01/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
PIPELINE MARKER POST INSTALLATION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C-13

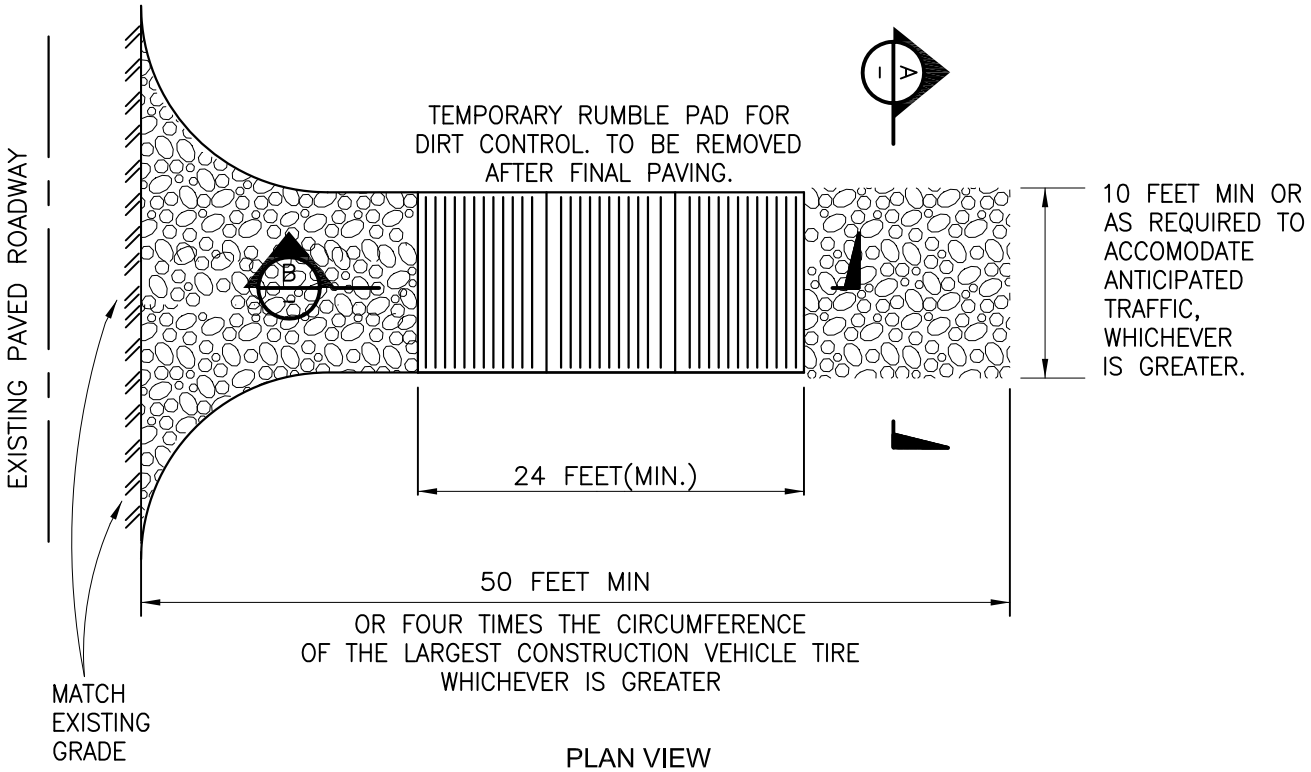


NOTES:

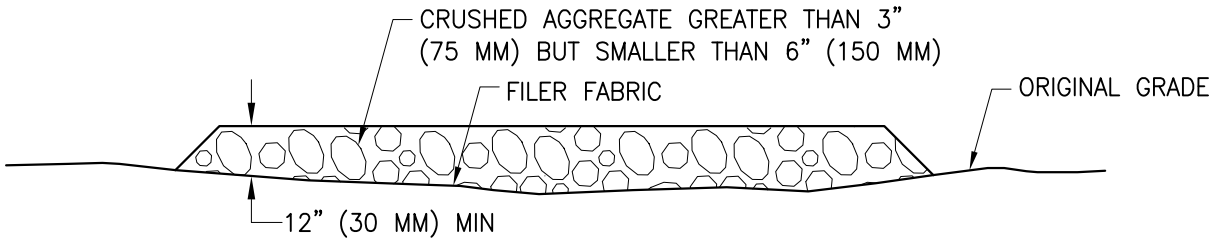
1. Refer to civil/structural drawings for reinforcement detail.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: POLE MOUNTED LIGHT

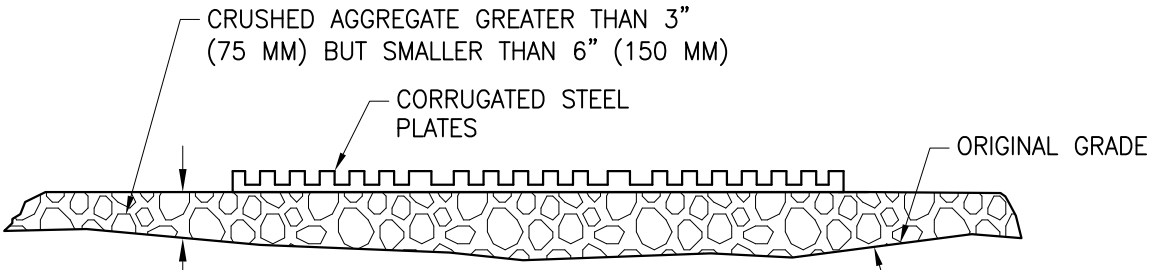
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C–14



PLAN VIEW
N.T.S.



SECTION A (A)
N.T.S.



SECTION B (B)
N.T.S.

APPROVED BY:
GSWC STANDARDS COMMITTEE

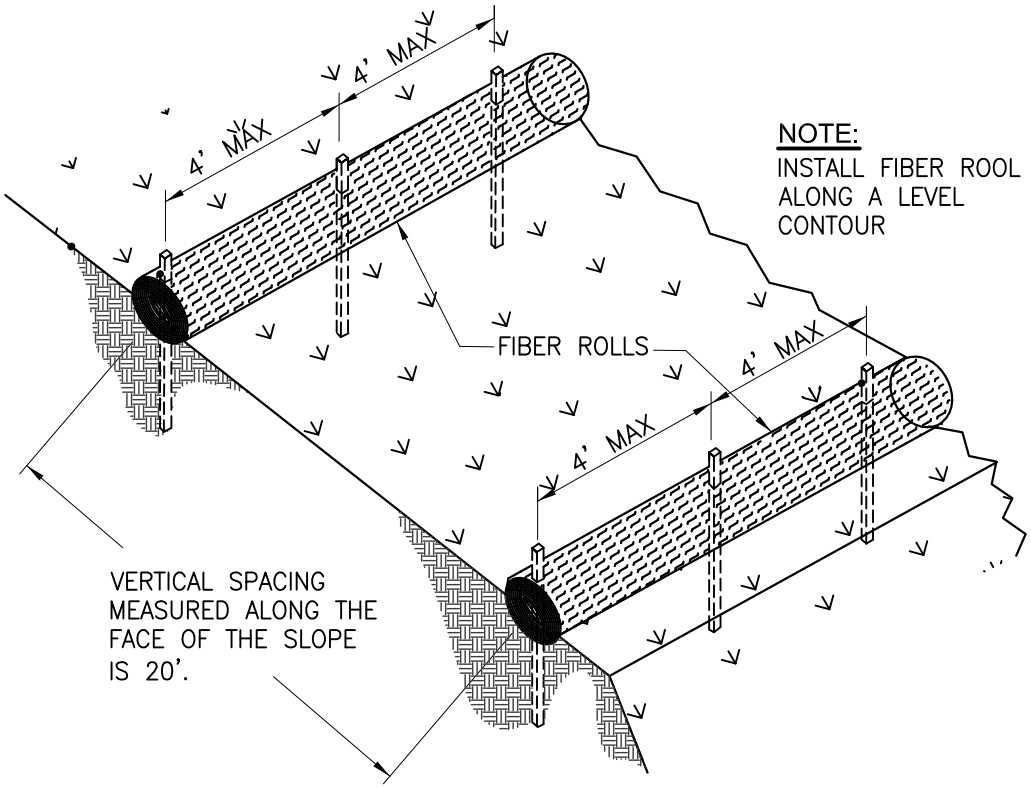
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

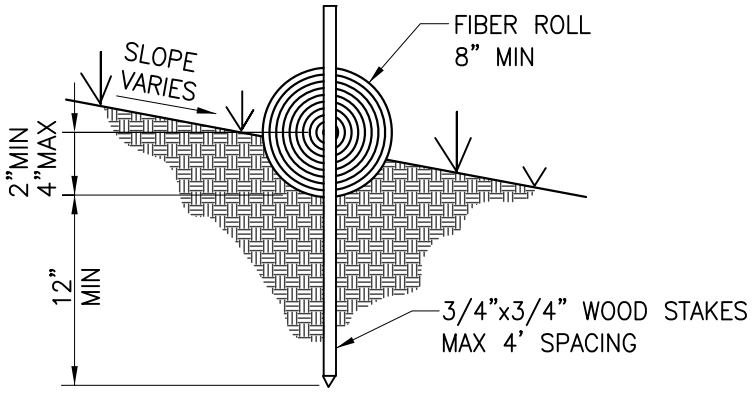
TITLE:
RUMBLE PAD CONSTRUCTION ENTRANCE–EXIT (TC–1B)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C–15



TYPICAL FIBER ROLL INSTALLATION

N.T.S.



ENTRENCHMENT DETAIL

N.T.S.

APPROVED BY:
GSWC STANDARDS COMMITTEE

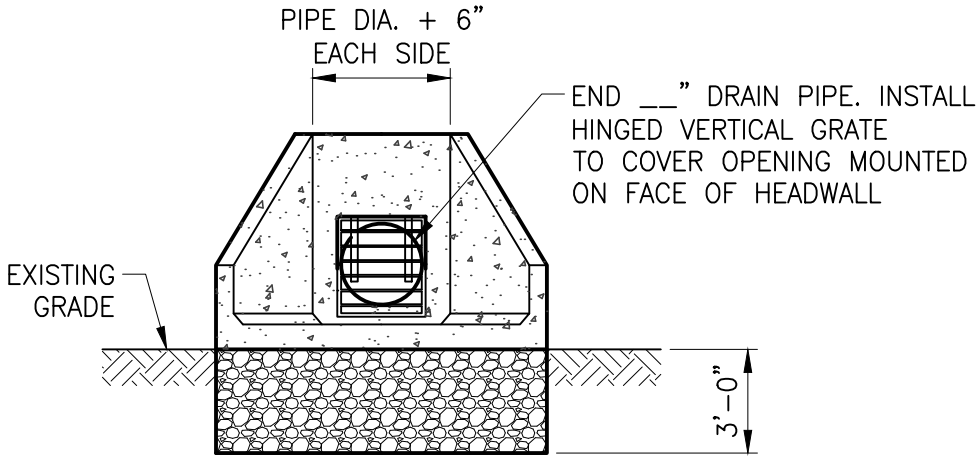
EDC MANAGER

01/16
DATE

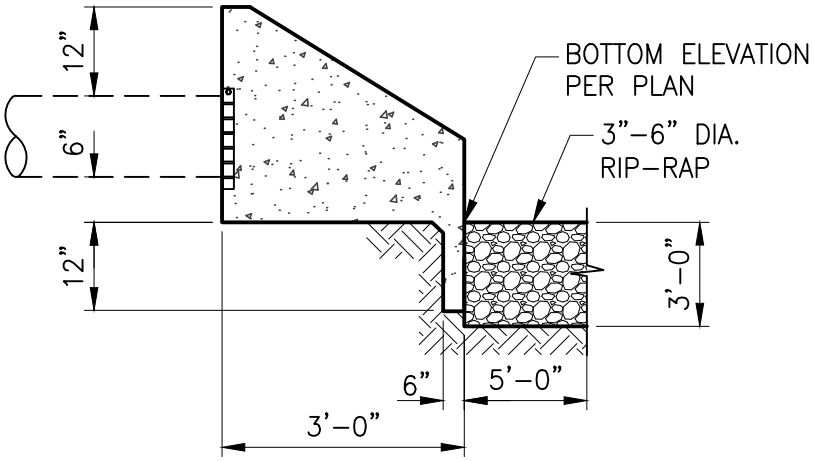
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
EROSION CONTROL FIBER ROLL INSTALLATION (SC-5)

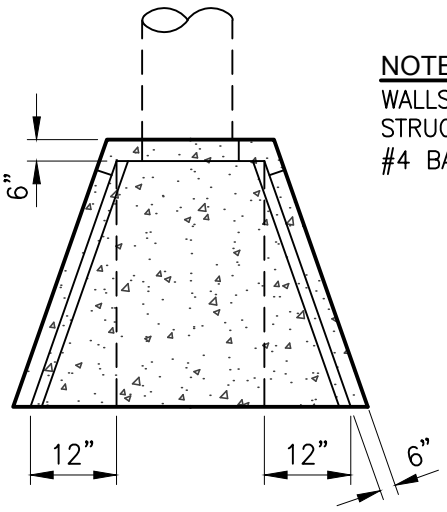
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**C-16**



FRONT ELEVATION



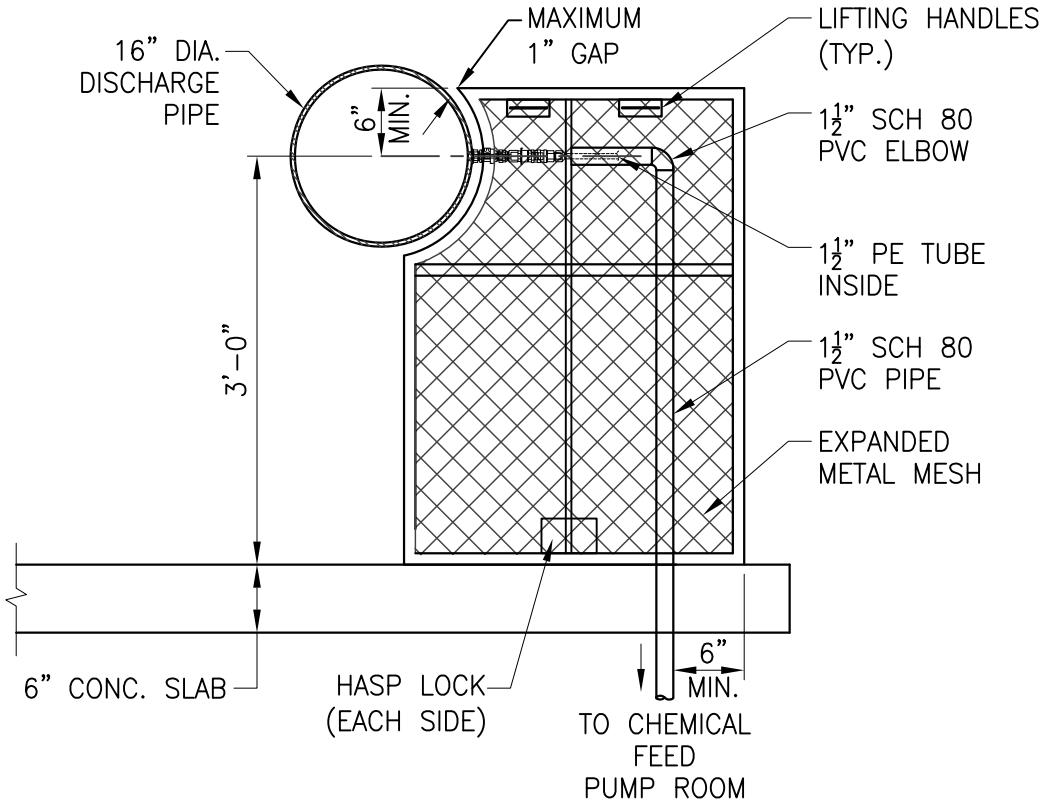
SIDE ELEVATION

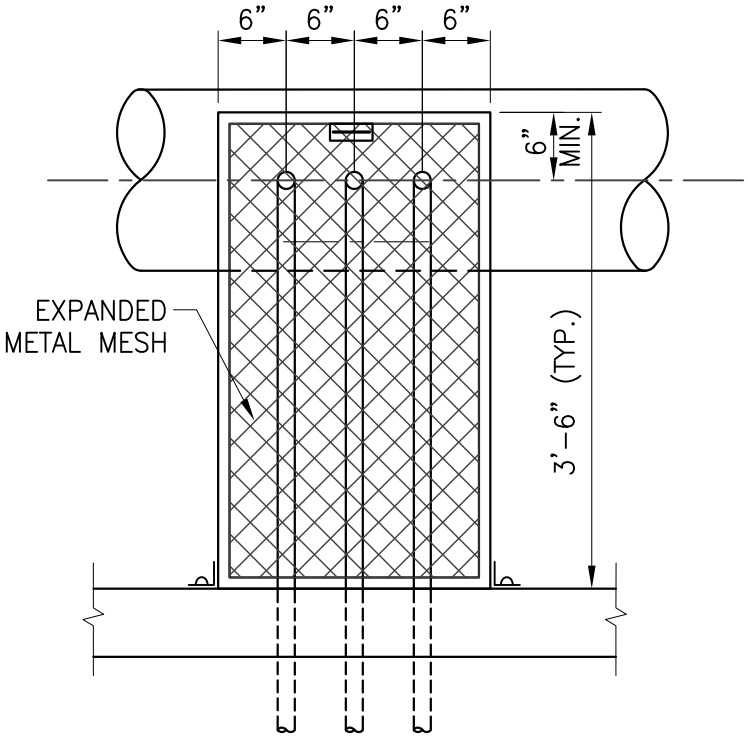


PLAN VIEW

NOTE:
WALLS, FLOOR AND BACK OF HEADWALL STRUCTURE SHALL BE REINFORCED WITH #4 BARS @ 12" EACH WAY.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **CONCRETE HEADWALL**	
		SCALE: NONE	DATE: 1/18
		REV 1.3	STANDARD DWG NO. **C-17**





NOTES:

1. Protective cage to be constructed of formed steel angle frame and expanded metal mesh welded together.
2. Protect steel from corrosion with a high grade powder coated finish similar in color to adjacent pipe.
3. Provide lifting handles and hasp–type lock system.
4. Cage configuration to be modified to match structure or pipe where it will be constructed.

APPROVED BY:
GSWC STANDARDS COMMITTEE

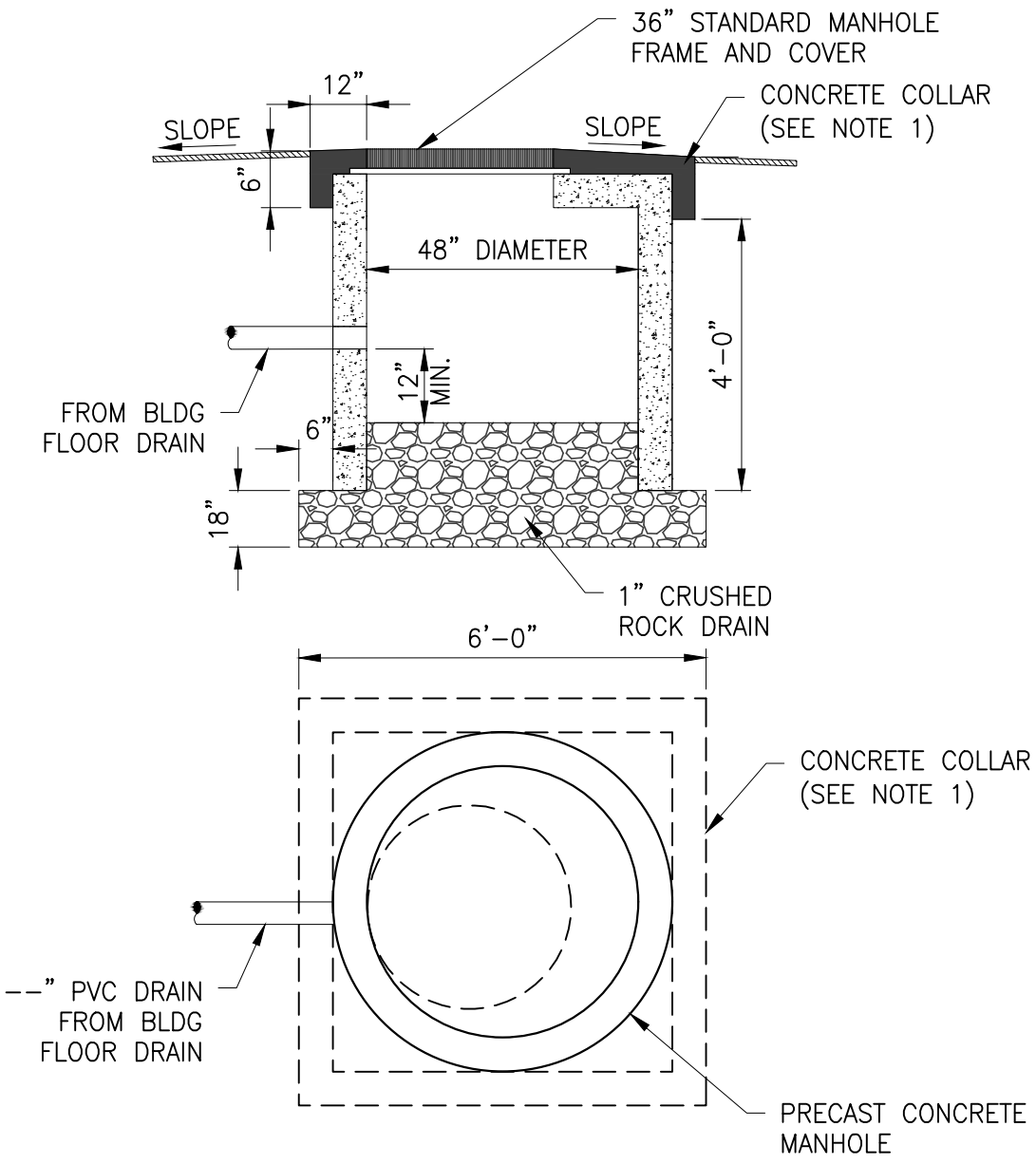
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
INJECTION POINT/SAMPLE PORT PROTECTIVE CAGE

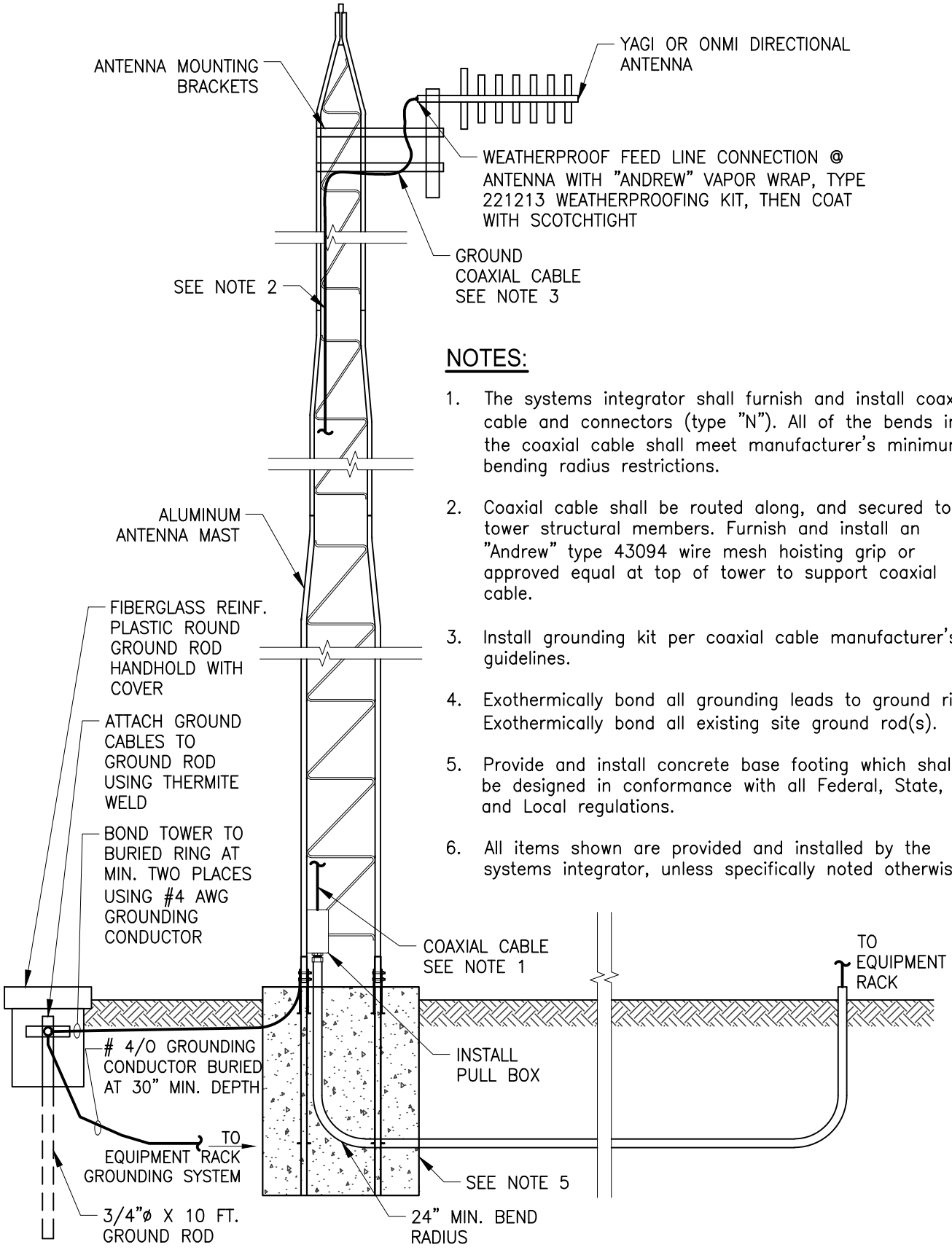
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	C–18



NOTES:

1. In unpaved traffic areas, install a 6-ft square concrete pad (6-in thick) as shown in plan view.
2. In paved areas, manhole frame and cover shall be flush with finished surface.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	1/18 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **LOCAL DRAINAGE STRUCTURE**		
			SCALE: NONE	DATE: 1/18	REV 1.3	STANDARD DWG NO. **C-19**



NOTES:

1. The systems integrator shall furnish and install coaxial cable and connectors (type "N"). All of the bends in the coaxial cable shall meet manufacturer's minimum bending radius restrictions.
2. Coaxial cable shall be routed along, and secured to tower structural members. Furnish and install an "Andrew" type 43094 wire mesh hoisting grip or approved equal at top of tower to support coaxial cable.
3. Install grounding kit per coaxial cable manufacturer's guidelines.
4. Exothermically bond all grounding leads to ground ring. Exothermically bond all existing site ground rod(s).
5. Provide and install concrete base footing which shall be designed in conformance with all Federal, State, and Local regulations.
6. All items shown are provided and installed by the systems integrator, unless specifically noted otherwise.

APPROVED BY:
GSWC STANDARDS COMMITTEE

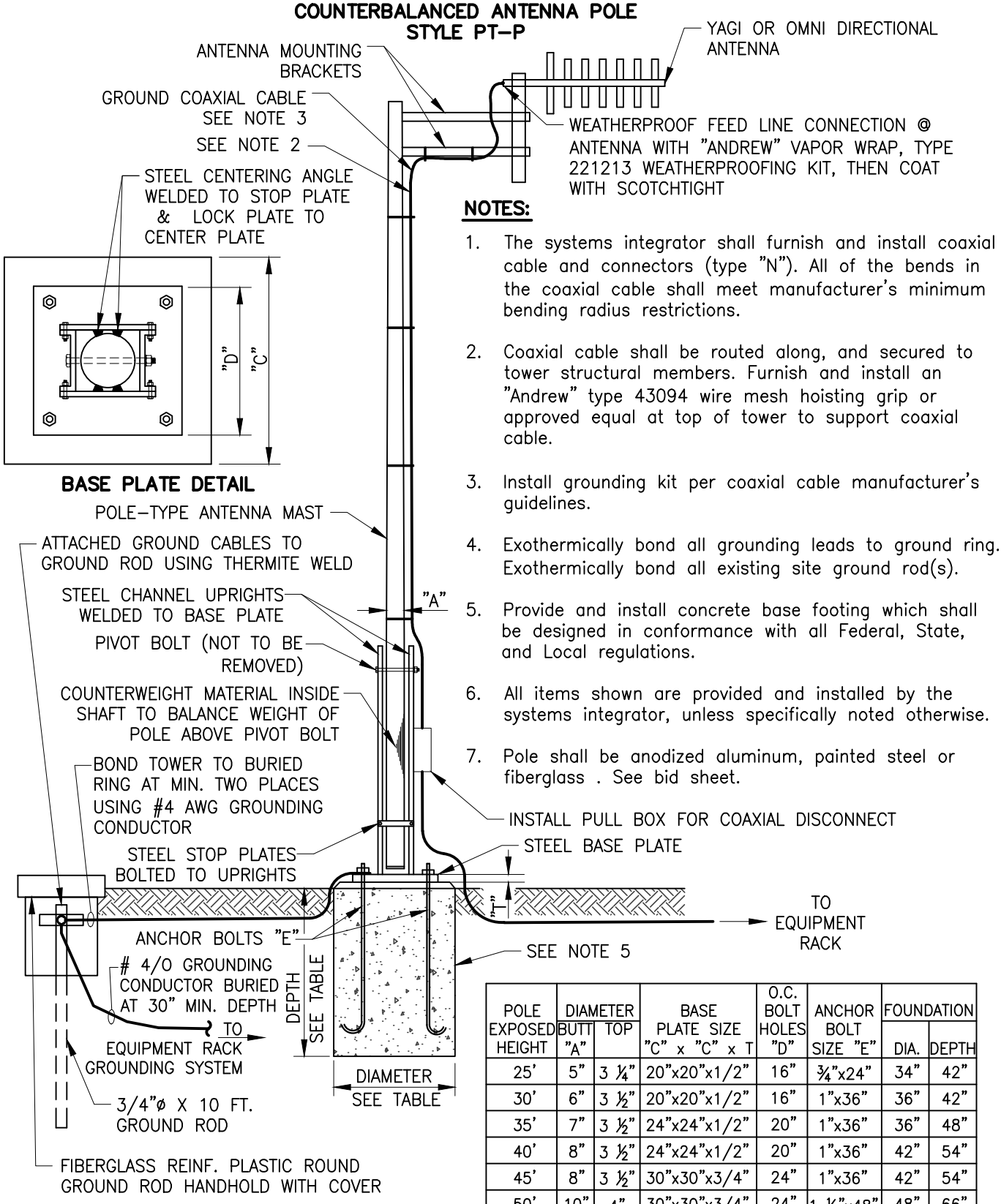
EDC MANAGER — DATE: 1/18

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
ALUMINUM TOWER ANTENNA AND GROUNDING

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	C–20A

COUNTERBALANCED ANTENNA POLE
STYLE PT–P



NOTES:

1. The systems integrator shall furnish and install coaxial cable and connectors (type "N"). All of the bends in the coaxial cable shall meet manufacturer's minimum bending radius restrictions.
2. Coaxial cable shall be routed along, and secured to tower structural members. Furnish and install an "Andrew" type 43094 wire mesh hoisting grip or approved equal at top of tower to support coaxial cable.
3. Install grounding kit per coaxial cable manufacturer's guidelines.
4. Exothermically bond all grounding leads to ground ring. Exothermically bond all existing site ground rod(s).
5. Provide and install concrete base footing which shall be designed in conformance with all Federal, State, and Local regulations.
6. All items shown are provided and installed by the systems integrator, unless specifically noted otherwise.
7. Pole shall be anodized aluminum, painted steel or fiberglass . See bid sheet.

POLE EXPOSED HEIGHT	DIAMETER BUTT "A"	DIAMETER TOP	BASE PLATE SIZE "C" x "C" x T	O.C. BOLT HOLES "D"	ANCHOR BOLT SIZE "E"	FOUNDATION DIA.	FOUNDATION DEPTH
25'	5"	3 ¼"	20"x20"x1/2"	16"	¾"x24"	34"	42"
30'	6"	3 ½"	20"x20"x1/2"	16"	1"x36"	36"	42"
35'	7"	3 ½"	24"x24"x1/2"	20"	1"x36"	36"	48"
40'	8"	3 ½"	24"x24"x1/2"	20"	1"x36"	42"	54"
45'	8"	3 ½"	30"x30"x3/4"	24"	1"x36"	42"	54"
50'	10"	4"	30"x30"x3/4"	24"	1 ¼"x48"	48"	66"
60'	10"	4"	36"x36"x1"	30"	1 ¼"x48"	48"	78"

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 1/18

Golden State Water Company
A Subsidiary of American States Water Company

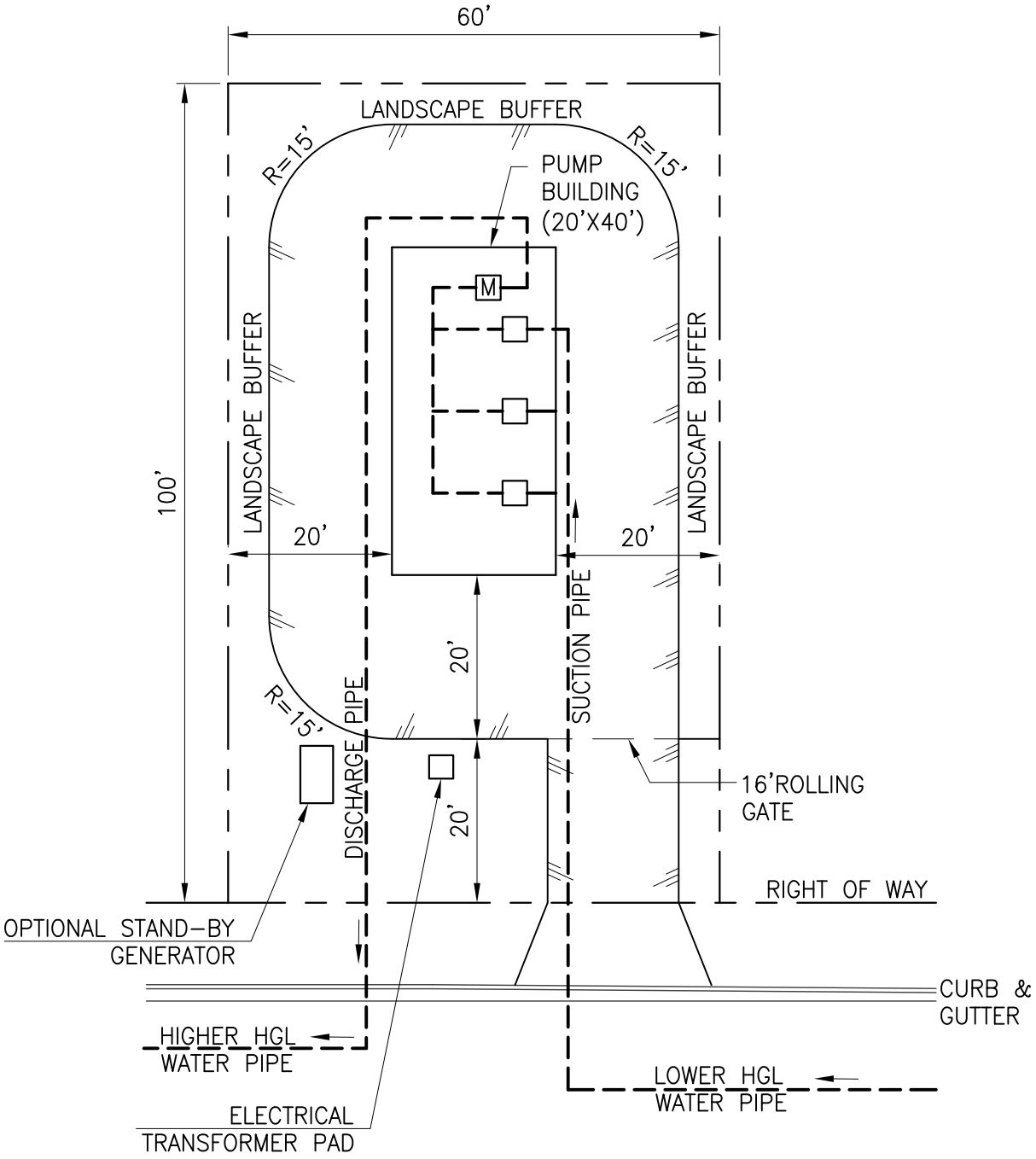
TITLE: **SCADA ANTENNA POLE AND GROUNDING**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	C–20 B

Part B – Facility Design Drawings

Section 3

Pump Stations



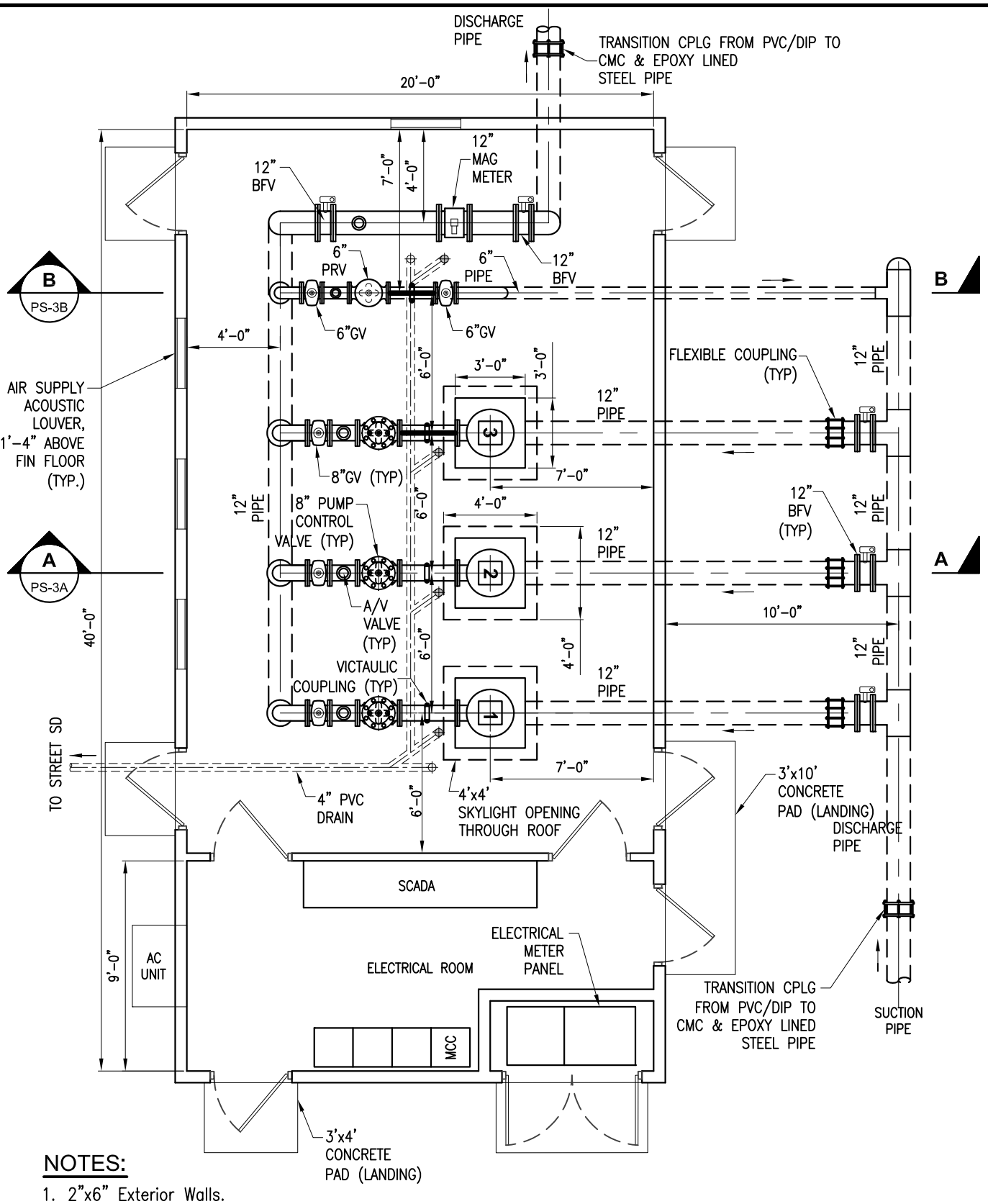
NOTES:

1. Dimensions, locations, and drainage shall be modified for each specific project.

2. Lot should drain to the street. Adjust lot elevations as needed.

BOOSTER PUMP STATION

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **TYPICAL BOOSTER PUMP STATION SITE PLAN AND DIMENSIONS**			
		SCALE: NONE	DATE: 01/16	REV 1.0	STANDARD DWG NO. **PS-1**



NOTES:

1. 2"x6" Exterior Walls.
2. 2"x4" Interior Walls.
3. All pipe is epoxy lined, cement mortar coated welded steel pipe underground, epoxy lined and painted welded steel pipe aboveground.
4. Flange insulation gaskets to be used between all dissimilar metals.

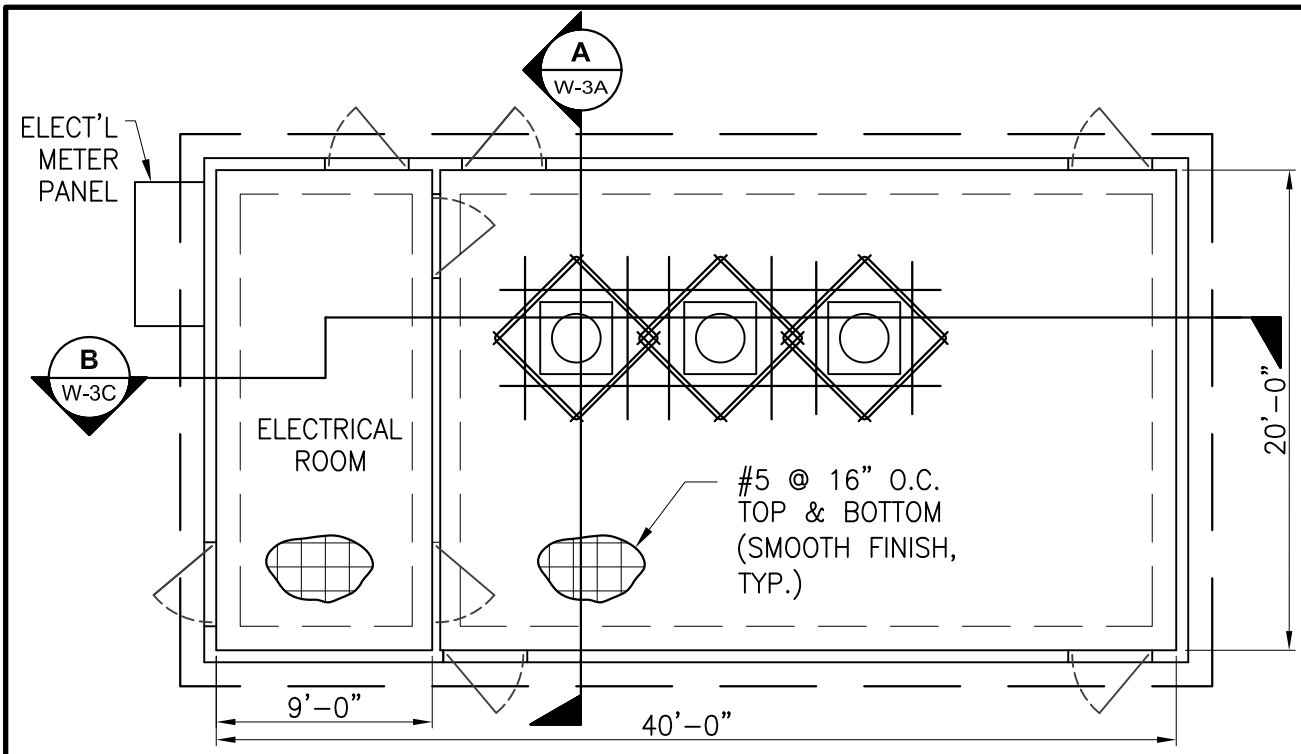
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

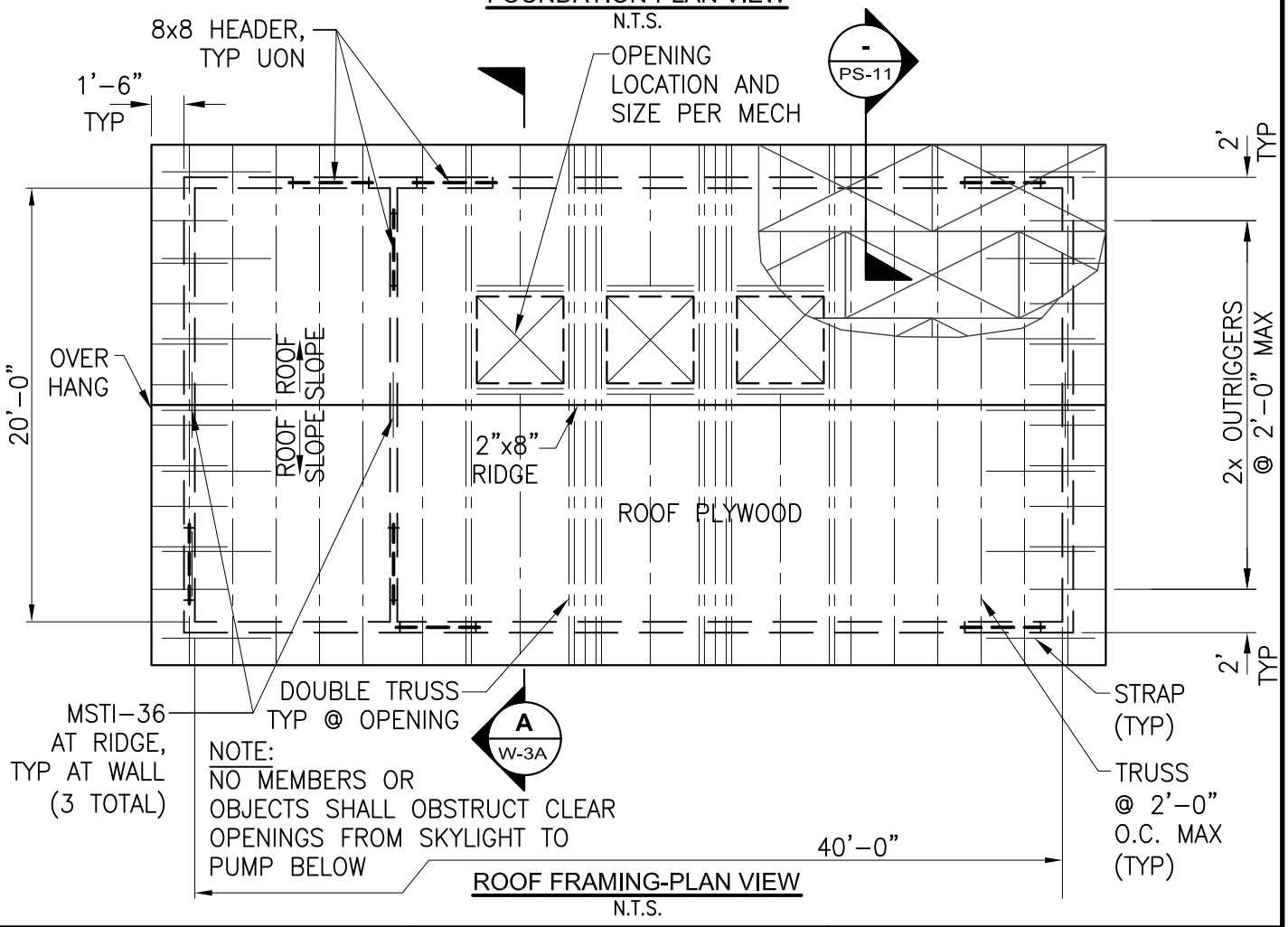
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **STANDARD PUMP STATION FLOOR PLAN AND PIPING PLAN**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-2A**



FOUNDATION-PLAN VIEW
N.T.S.



ROOF FRAMING-PLAN VIEW
N.T.S.

APPROVED BY:
GSWC STANDARDS COMMITTEE

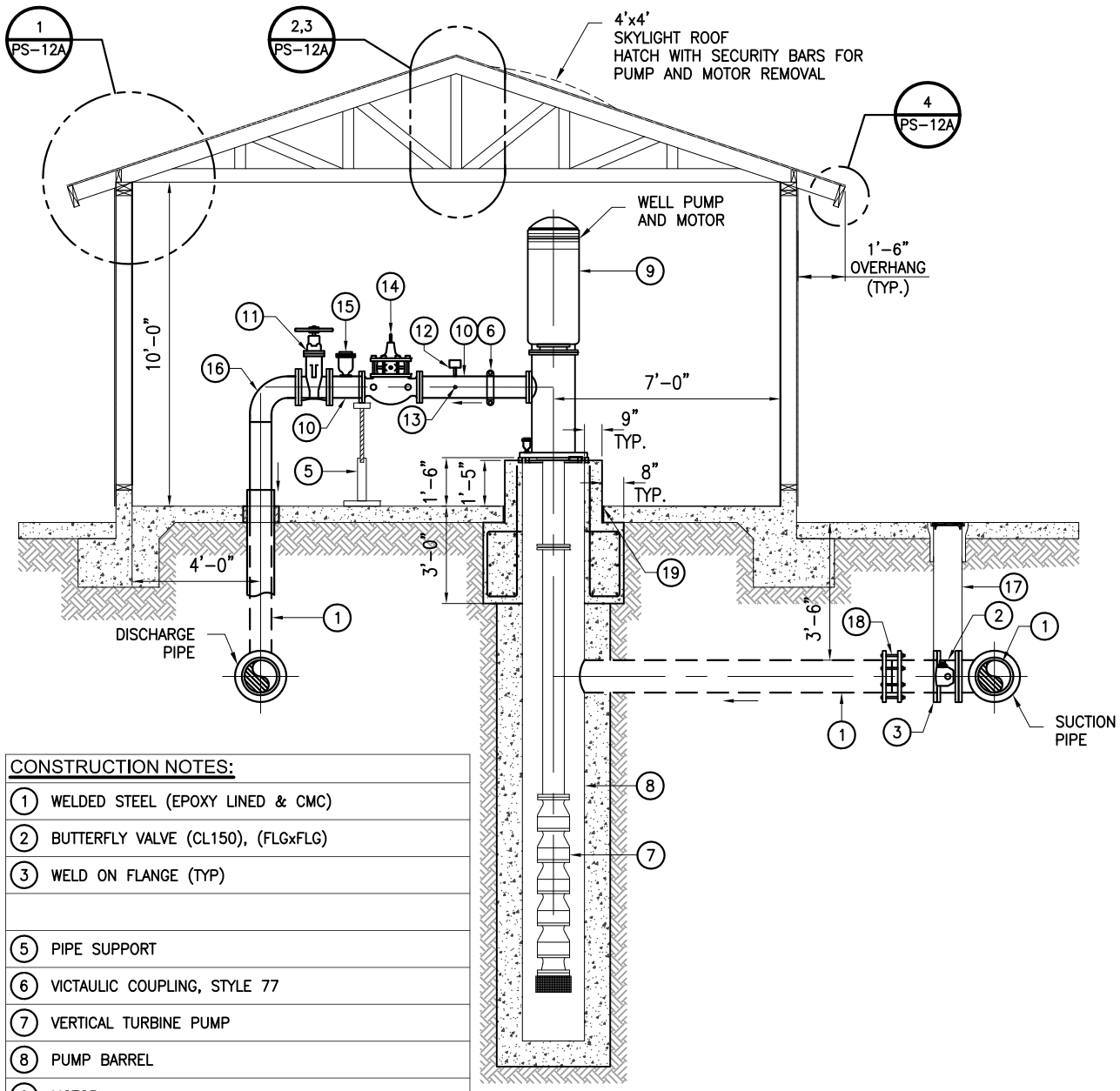
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
STANDARD PUMP STATION FOUNDATION AND ROOF FRAMING

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**PS-2B**



CONSTRUCTION NOTES:	
1	WELDED STEEL (EPOXY LINED & CMC)
2	BUTTERFLY VALVE (CL150), (FLGxFLG)
3	WELD ON FLANGE (TYP)
5	PIPE SUPPORT
6	VICTAULIC COUPLING, STYLE 77
7	VERTICAL TURBINE PUMP
8	PUMP BARREL
9	MOTOR
10	WELDED STEEL PIPE, EPOXY LINED AND PAINTED
11	FLANGED RW GATE VALVE (CL150)
12	PRESSURE SWITCH WITH READOUT GAUGE
13	1" CORP STOP AND 1" SERVICE SADDLE ORIENTATED AT 3 O'CLOCK POSITION
14	FLANGED PUMP CONTROL VALVE. CLA-VAL MODEL 60-11
15	AIR RELEASE AND VACUUM VALVE ASSEMBLY
16	WELDED STEEL 90° LONG RADIUS (EPOXY LINED)
17	VALVE BOX PER GSWC STD. DWG. P-44 OR P-45
18	FLEXIBLE COUPLING
19	RTV SILICONE SEALANT

SECTION A
NTS

APPROVED BY:
GSWC STANDARDS COMMITTEE

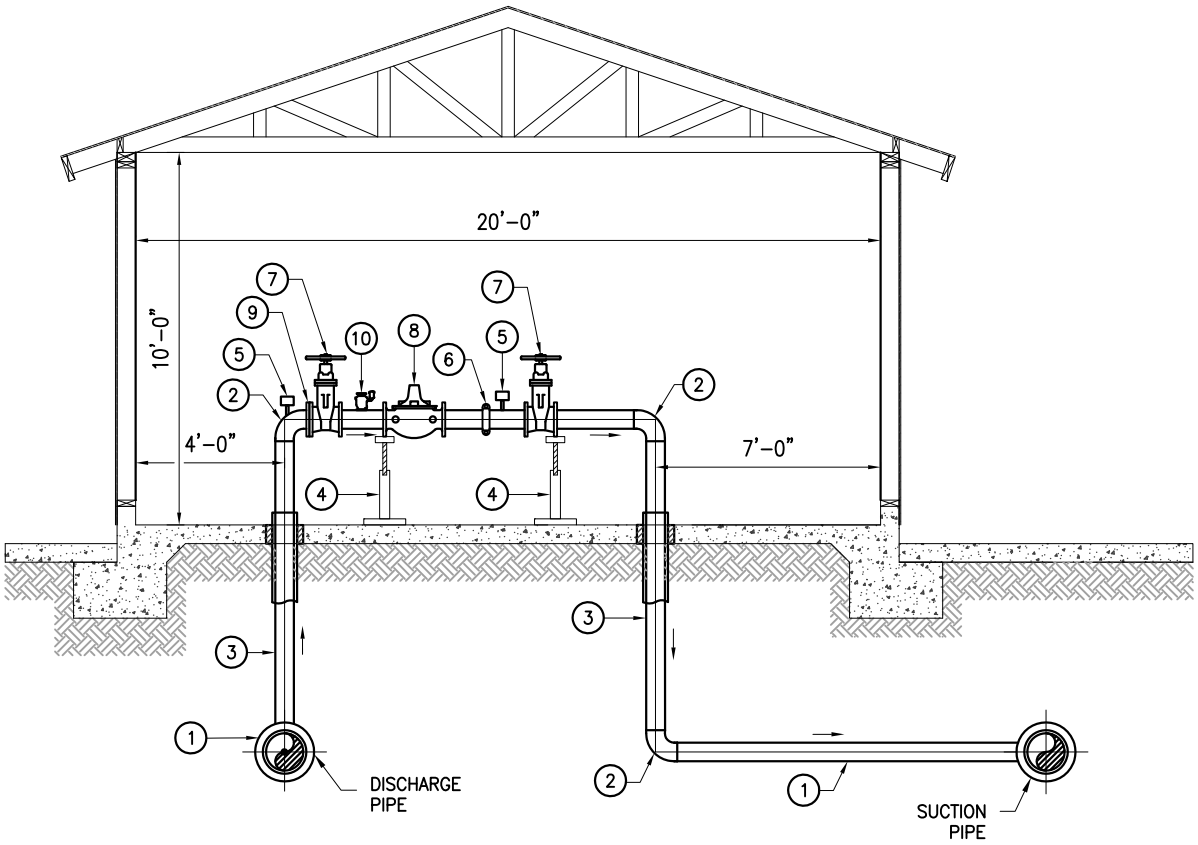
EDC MANAGER

10/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
TYPICAL PUMP STATION BUILDING AND PIPING SECTION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-3A**



CONSTRUCTION NOTES:	
1	WELDED STEEL TEE (EPOXY LINED & CMC)
2	WELDED STEEL 90° ELBOW (EPOXY LINED)
3	WELDED STEEL (EPOXY LINED & CMC BELOW GRADE)
4	PIPE SUPPORT
5	PRESSURE GAUGE AND TRANSDUCER
6	VICTAULIC COUPLING, STYLE 77
7	FLANGED RESILIENT WEDGE GATE VALVE
8	FLANGED PRESSURE RELIEF VALVE, CLA-VAL MODEL 50-01
9	WELD-ON FLANGE
10	AIR RELEASE AND VACUUM VALVE ASSEMBLY

SECTION B
NTS

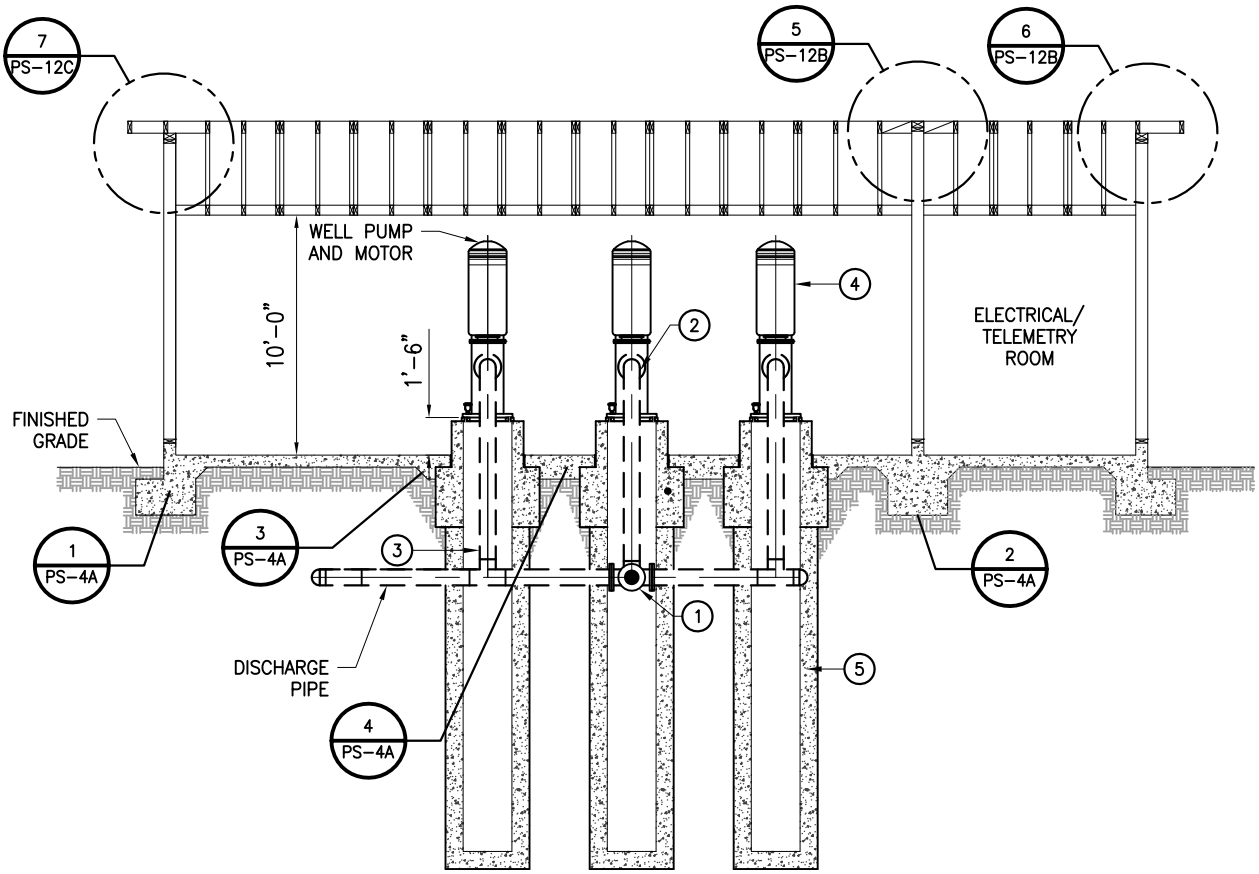
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
TYPICAL PUMP STATION BUILDING AND PIPING SECTION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-3B**



CONSTRUCTION NOTES:
(1) WELDED STEEL TEE (EPOXY LINED & CMC)
(2) WELDED STEEL 90° ELBOW (EPOXY LINED & CMC)
(3) WELDED STEEL (EPOXY LINED & CMC BELOW GRADE)
(4) MOTOR
(5) STEEL PUMP BARREL–1/4" WALL THICKNESS

SECTION B
NTS

APPROVED BY:
GSWC STANDARDS COMMITTEE

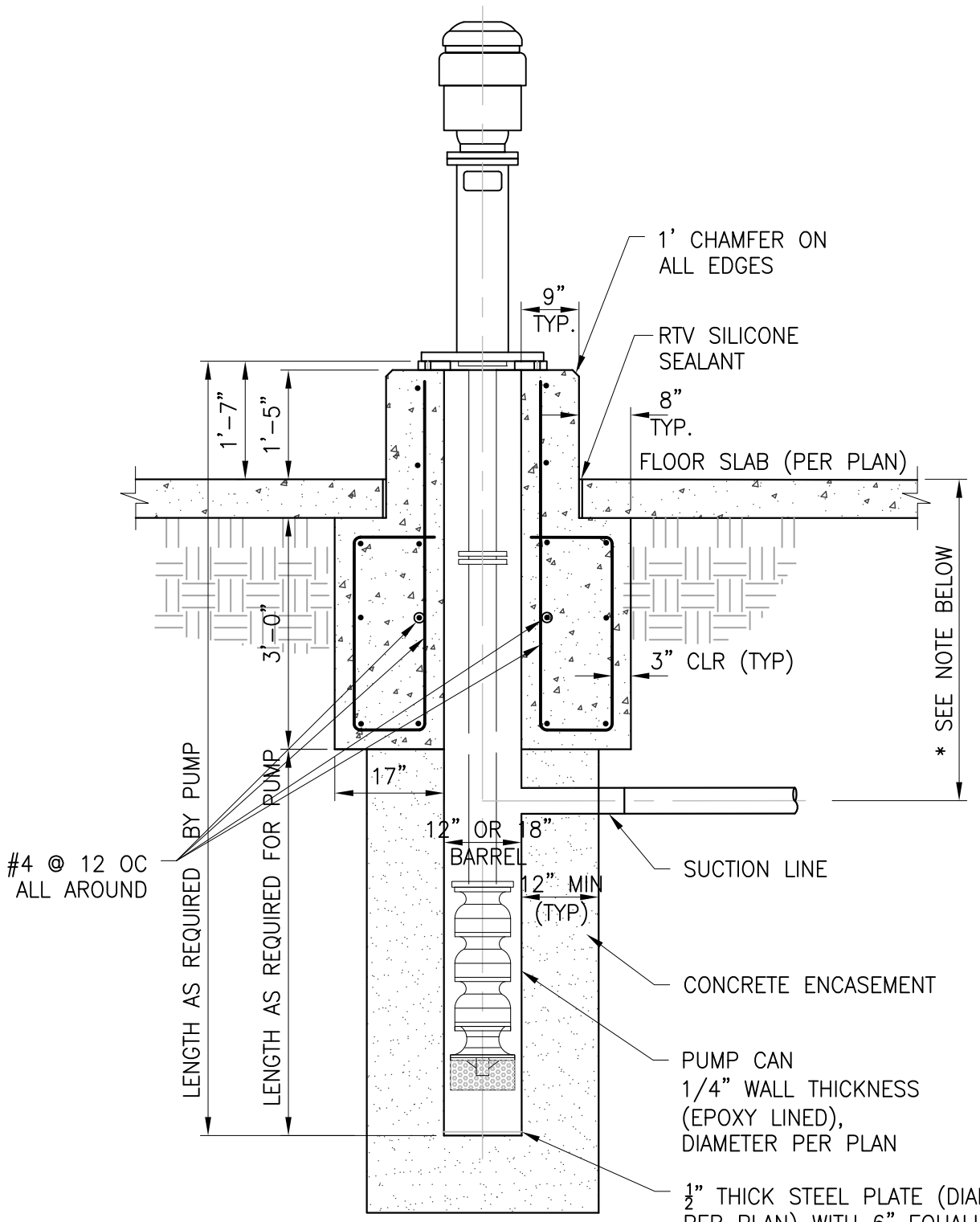
EDC MANAGER

10/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
TYPICAL PUMP STATION BUILDING AND PIPING SECTION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS–3C**



TYPICAL REINFORCED CONCRETE PUMP CAN
(OPTION 1)

*NOTE:

4'-0" COVER FOR 4" PIPE

4'-6' COVER FOR 12" PIPE

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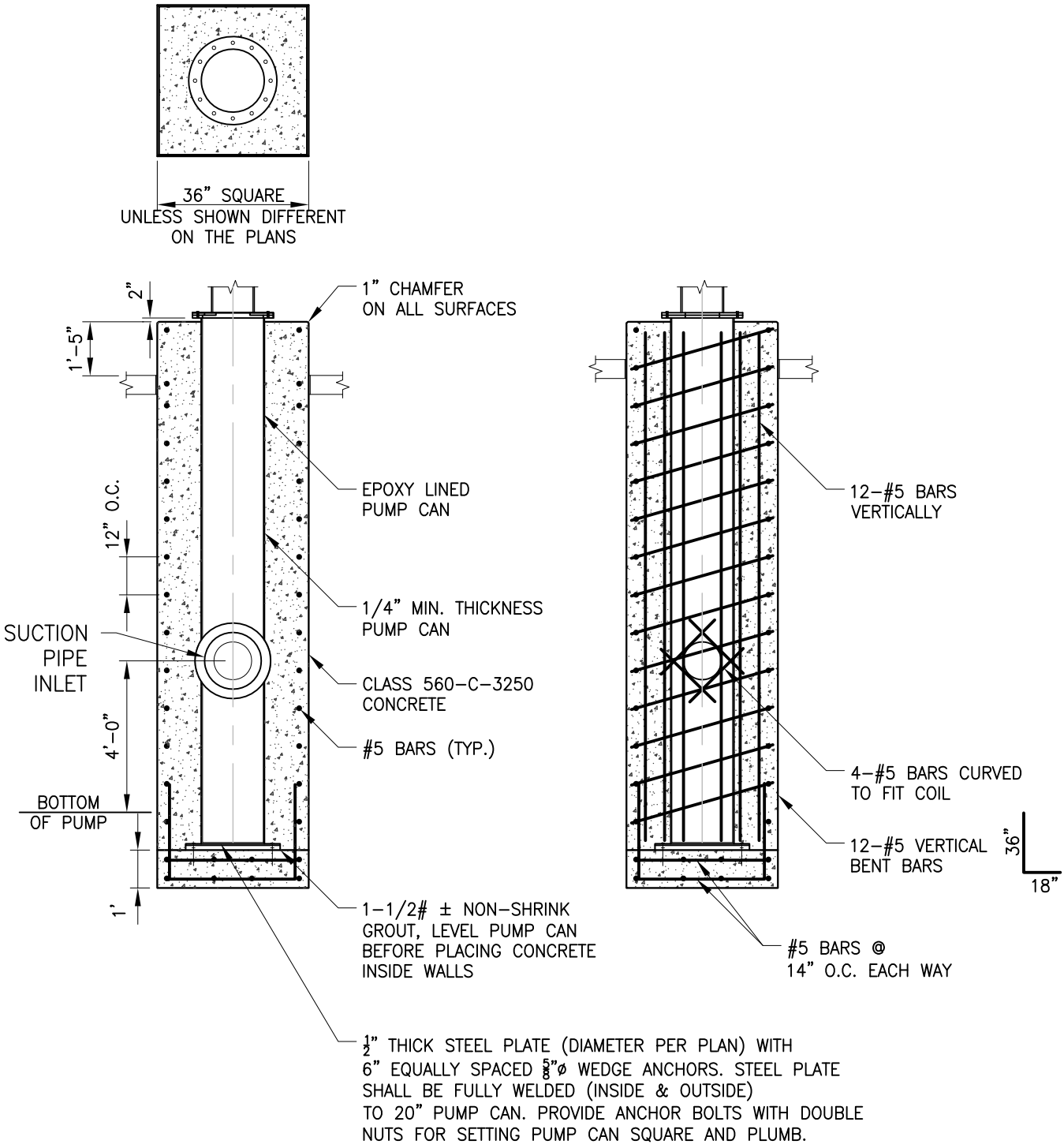
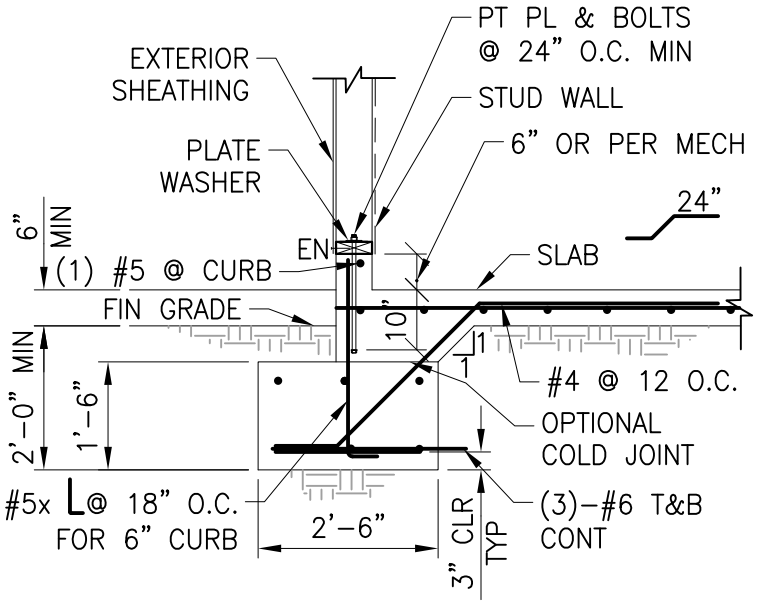
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-3D**



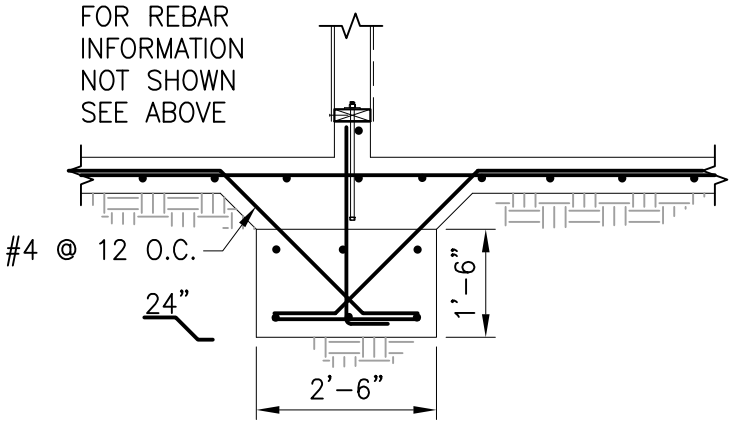
TYPICAL REINFORCED CONCRETE PUMP CAN
(OPTION 2)

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **TYPICAL PUMP STATION BUILDING AND PIPING SECTION**	

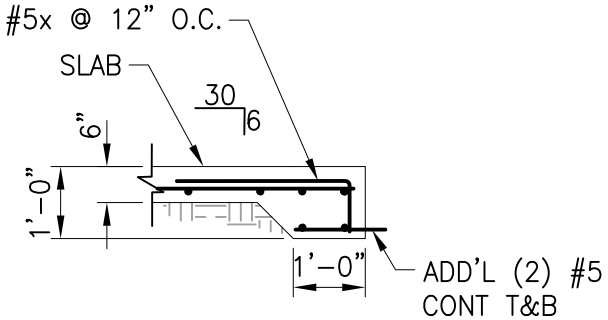
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-3E**



FOOTING 1 PS-3C
N.T.S.



FOOTING 2 PS-3C
N.T.S.



FOOTING 3 PS-3C
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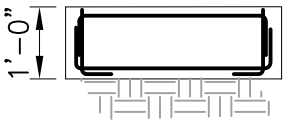

FOOTING 4 PS-3C
N.T.S.

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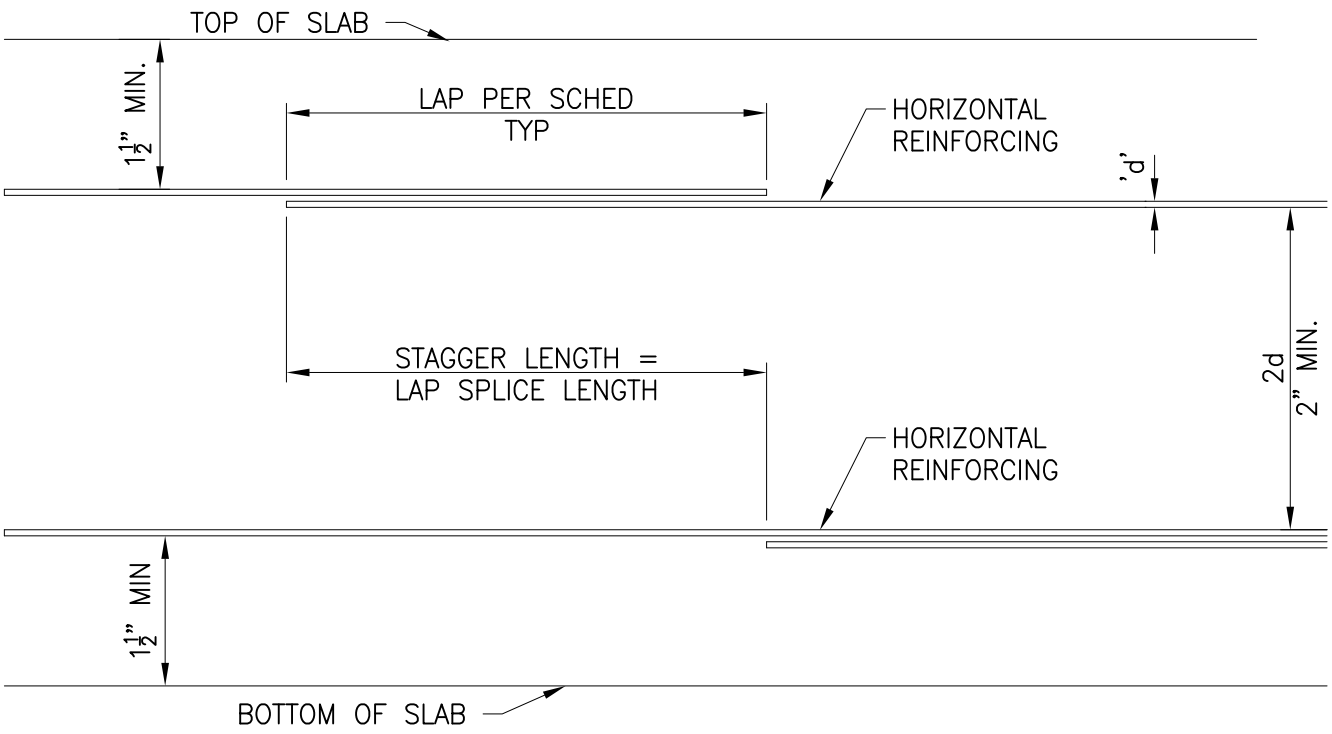
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
FOOTING AND FOUNDATION DETAILS

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**PS-4A**



TYP. HORIZ. LAP SPLICE REINF. (1)

N.T.S.

BAR SIZE	TENSION LAP 'Lt' (IN.)					
	F'c=3,000 PSI		F'c=4,000 PSI		F'c=5,000 PSI	
	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS	TOP BARS	OTHER BARS
#3	29	23	25	20	22	17
#4	38	30	33	26	29	23
#5	47	37	41	32	36	28
#6	56	44	49	38	44	34
#7	82	64	71	55	63	49
#8	94	73	81	63	72	56

Concrete=Class 560-C-3250
F'y=60,000 PSI

NOTES:

1. Splice length shall be determined from the size of the smaller bar spliced.
2. Minimum cover 1.5", minimum bar clear spacing 2 bar diameter.
3. Top bars are defined as bars with 12" or more of fresh concrete placed below them.
4. Lt values in schedule shall be multiplied by 1.3 for light weight concrete.

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EDC MANAGER — DATE: 10/16

Golden State Water Company
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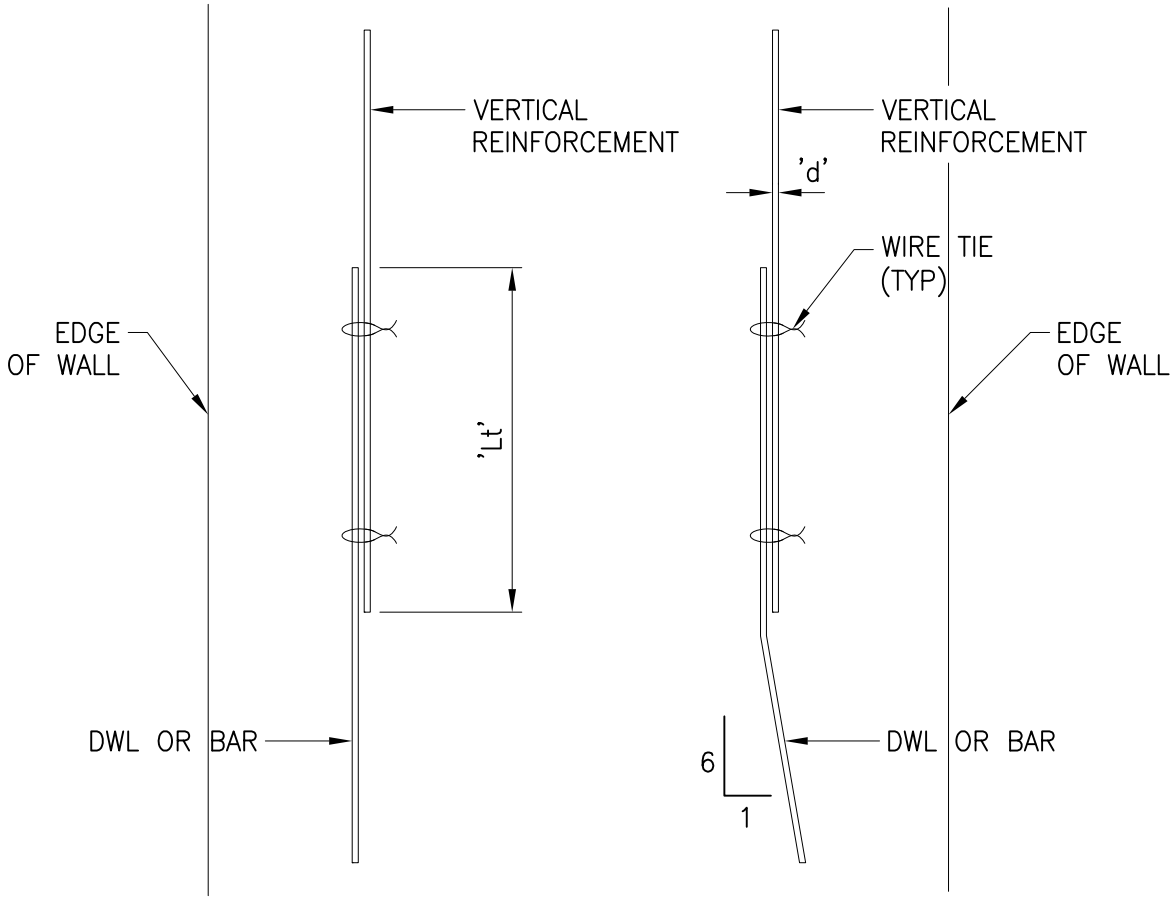
TITLE: **TYPICAL HORIZONTAL LAP SPLICE REINFORCEMENT**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-4B**



TYP. VERT. LAP SPLICE REINF. (1)

N.T.S.

BAR SIZE	TENSION LAP 'Lt' (IN.)			HOOK EMBED (IN.)
	F'c=3,000 PSI	F'c=4,000 PSI	F'c=5,000 PSI	
#3	22	19	17	8
#4	29	25	23	11
#5	36	31	28	14
#6	43	37	34	16
#7	63	54	49	19
#8	72	62	56	22

F'y=60 KSI
CONCRETE=CLASS 560-C-3250

NOTES:

1. All vertical reinforcing for column, piers and walls shall be doweled.
2. Minimum clear spacing 2d, minimum cover 1.5".
3. Dowels shall be the same grade, size, quantity and/or spacing as vertical reinforcing.

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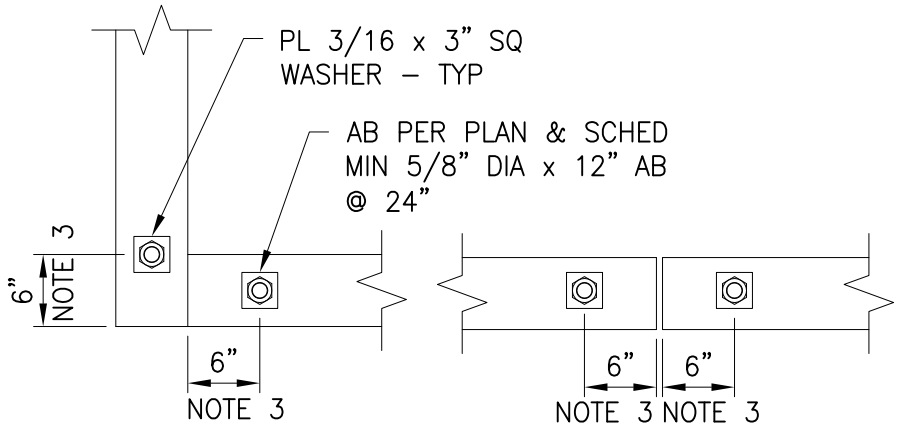
EDC MANAGER — 10/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TYPICAL VERTICAL LAP SPLICE REINFORCEMENT**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-4C**

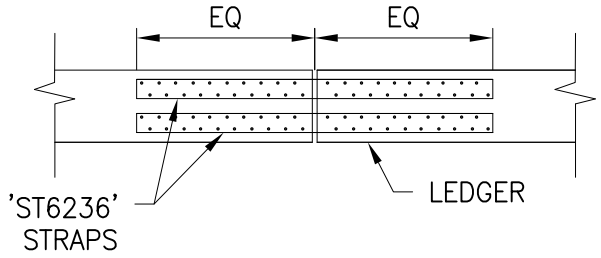


NOTES:

1. WHERE STUD AND ANCHOR BOLT INTERFERENCE OCCURS PROVIDE SCAB PER STD. DWG. PS–9
2. MINIMUM (2) AB PER PL.
3. 4" MINIMUM AMD 12" MAXIMUM TO END OF SILL

TYPICAL SILL BOLT LAYOUT

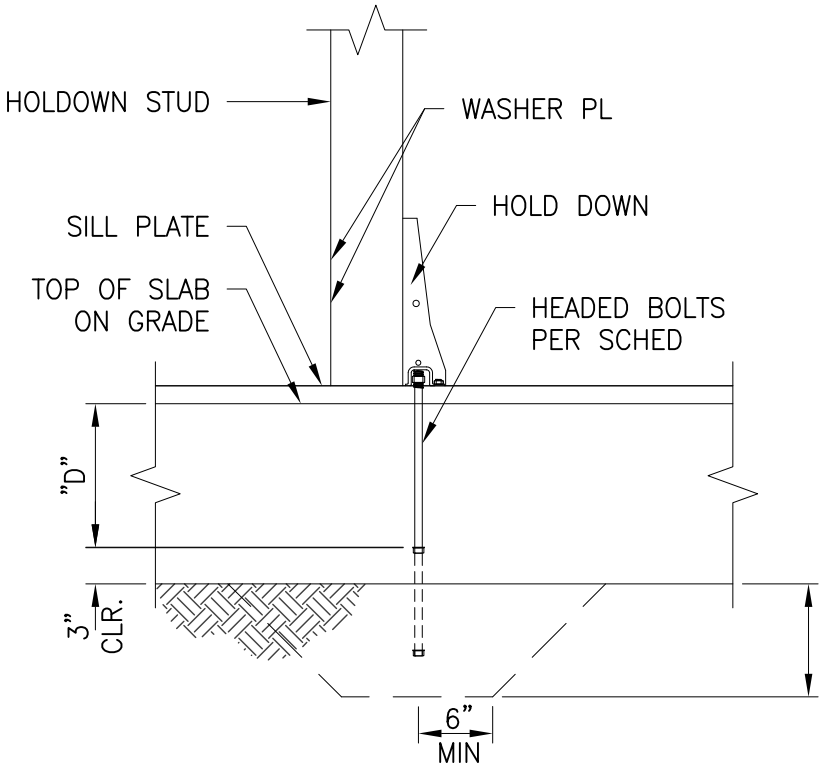
N.T.S.



NOTE:
FILL ALL HOLES WITH NAILS

TYPICAL LEDGER SPLICE

N.T.S.



NOTES:

1. HOLD DOWN SHALL BE 'SIMPSON STRONG–TIE' OR EQUAL.
2. HEADED ANCHOR BOLTS (AB) MUST BE TIED IN PLACE PRIOR TO POURING CONCRETE.

HOLD DOWN	HOLD DOWN STUD	STUD CONNECTION	ANCHOR BOLT	EMBEDMENT 'D'	ALLOWABLE LOAD (#)
HDU2	4x	(6) SDS 1/4"x2 1/2"	5/8"	12"	3075
HDU4	4x	(10) SDS 1/4"x2 1/2"	5/8"	14"	4565

TYPICAL HOLDOWN ANCHOR

N.T.S.

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EDC MANAGER

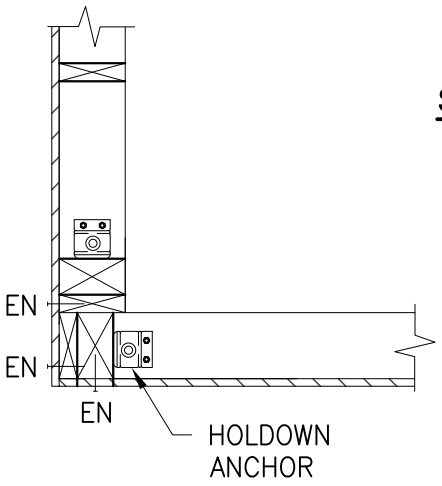
01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

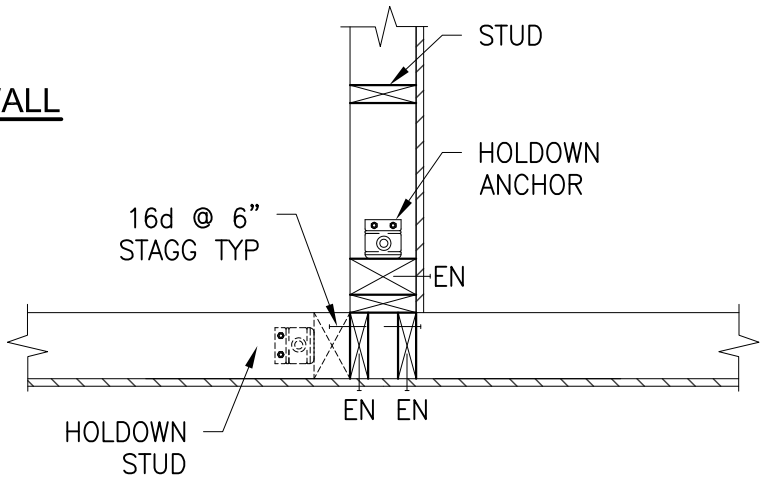
TITLE:
SILL BOLT, HOLD DOWN ANCHOR AND LEDGER SPLICE DETAILS

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**PS–5**

SHEAR WALL

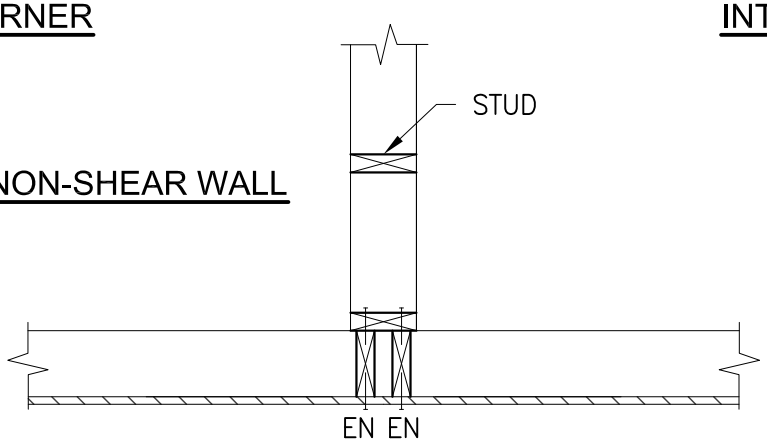


CORNER



INTERIOR

NON-SHEAR WALL



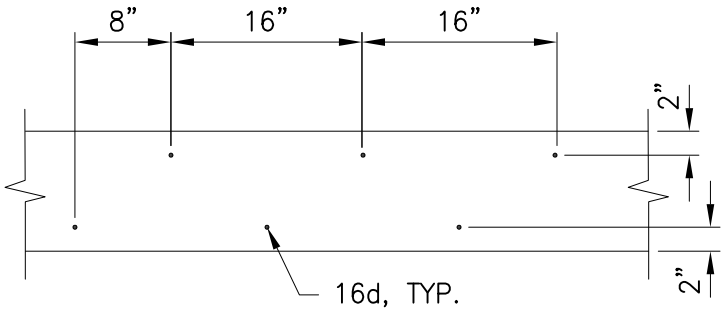
INTERIOR

NOTE:

EN–END NAIL

TYP WALL INTERSECTION - PLAN VIEW

N.T.S.

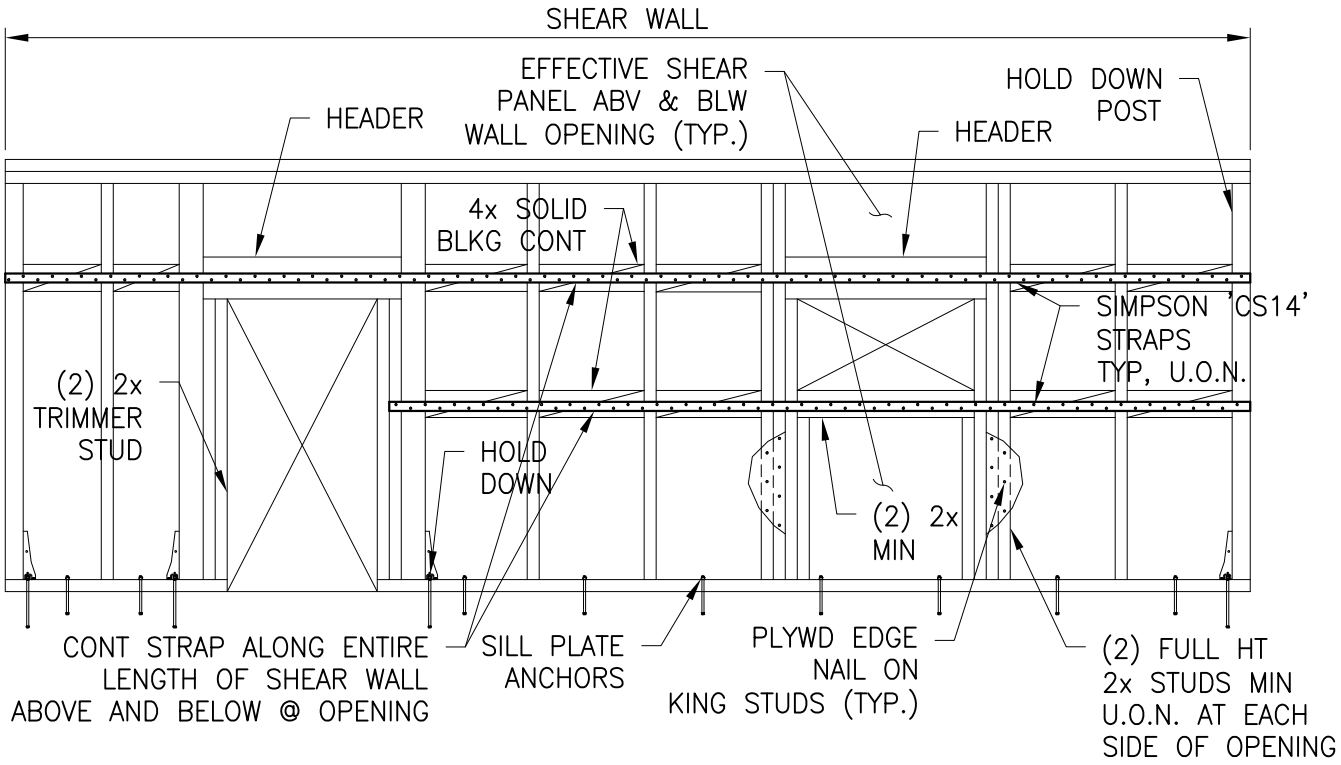


TYPICAL DBL JOIST NAILING

N.T.S.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **WALL INTERSECTION AND DOUBLE JOIST NAILING**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**PS–6**

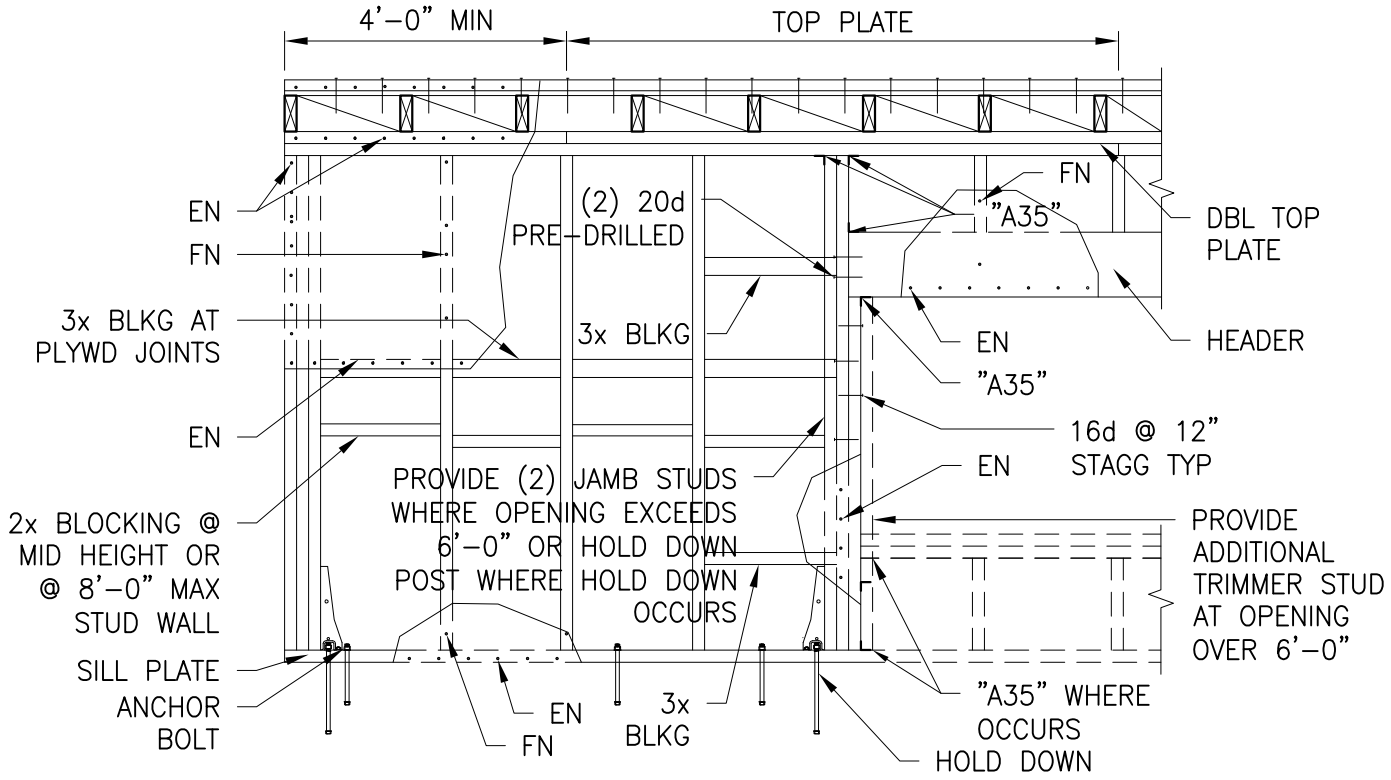


NOTES:

1. Shear wall nailing, shall be applied along entire length including above & below all openings.

2. Interior of walls shall have 4" fiberglass insulation covered by 1/2" plywood from sill plate to rafter and painted "off–white".

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **FORCE TRANSFER AROUND WALL OPENING**	
		SCALE: NONE	DATE: 10/16
		REV 1.1	STANDARD DWG NO. **PS–7**



PLYWOOD (SEE NOTES: 2,5,7,8,9)	NAILING	EDGE NAILING (EN)	FIELD NAILING (FN)	STUDS AT ADJ PANELS	SILL PLATE AT FOUNDATION
3/8" STRUCT I	8d	6" O.C.	12" O.C.	2x	3x
3/8" STRUCT I	8d	4" O.C.	12" O.C.	3x	3x

ANCHOR BOLT (SEE NOTES: 6,13)	DOUBLE TOP PLATE	RIM JST/BLKG CONN TO DBL TOP PLATE	WALL (LB./FT.)
5/8"øx10" EMBED. @24" O.C.	3x OVER 2x	A35 @16" O.C.	280
5/8"øx10" EMBED. @24" O.C.	3x OVER 2x	A35 @12" O.C.	430

NOTES:

1. All nails shall be common wire nails.
2. Plywood shall conform to product standard PS 1–07 and shall be bonded with exterior glue.
3. Provide 3x studs & blocking at walls where nailing is less than 3" O.C.
4. Nails for plywood panels & sill plates shall be common or galvanized box (U.O.N.).
5. Plywood panels may be applied either vertically or horizontally, but all edges shall be nailed to studs, plates or blocking.
6. Anchor bolts shall be equally spaced & located within 12" of any end of sill plate.
7. Holes in panels are not permitted unless detailed by the engineer.
8. Minimum width of plywood shall be 2'–0" although 4'–0"x8'–0" shall be used where possible.
9. Where plywood is applied to both faces, panel joints shall be offset to fall on different framing members.
10. Stagger nails at all 3x members.
11. Use 3x blkg or rim joinst above double top plate connection for single sided shearwall and solid blkg for double sided shearwalls.
12. Predrill holes for all 20d nails and lag screws.
13. Anchor bolts shall include steel plate washers. A minimum of 0.229"x3"x3" between sill plate and nut.
14. Studs shall be nailed to 3x sill plate with (2) 20d end nails or (4) 8d toe nails min.
15. HGA10 uses (4) SDS 1/4"x1 1/2" to rim joist or blkg and (4) SDS 1/4"x3" to double top plate.
16. Screws shall be 1/4" Simpson SDS installed per ESR 2236.
17. Sill bolt and sill plate requirements for structural walls shall meet the minimum requirements of the shear wall schedule, U.O.N.

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EDC MANAGER — DATE: 01/16

Golden State Water Company
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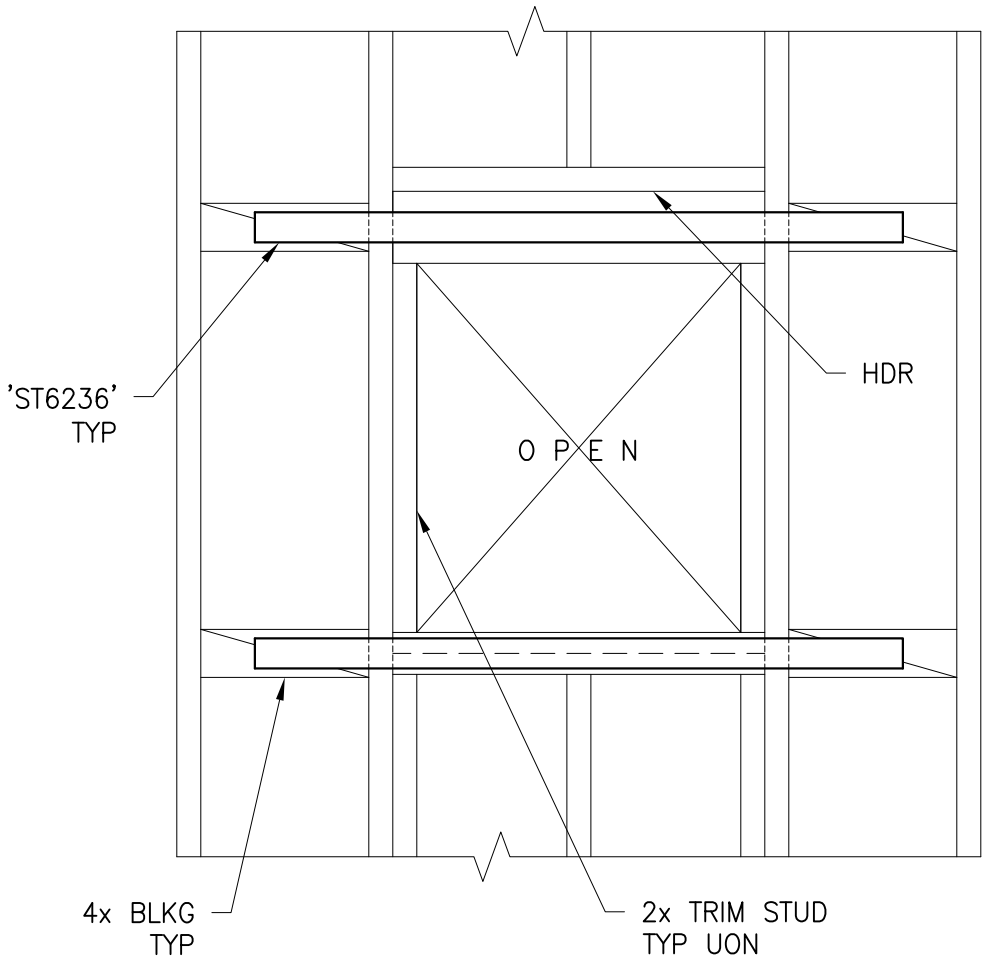
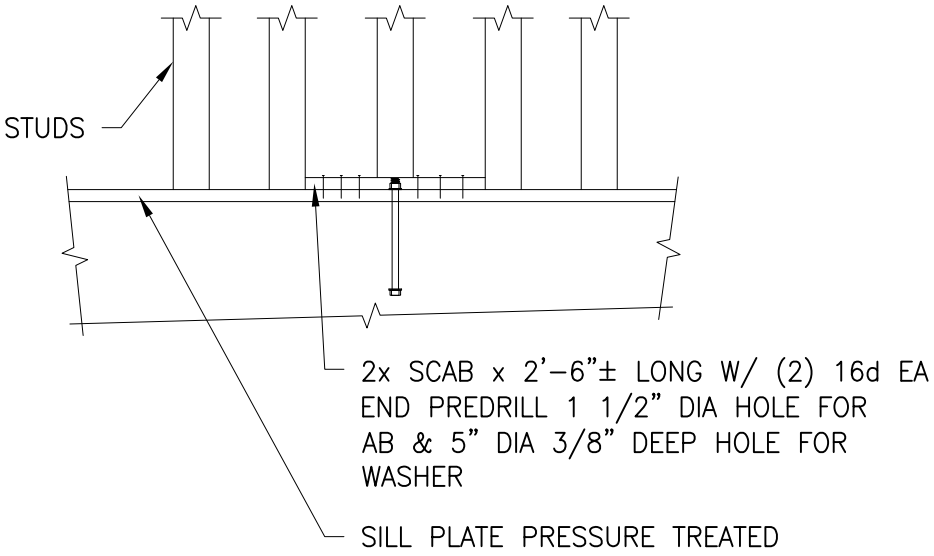
TITLE: **PLYWOOD SHEAR WALL CONSTRUCTION**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**PS–8**



TYPICAL STRAP ACROSS OPNG

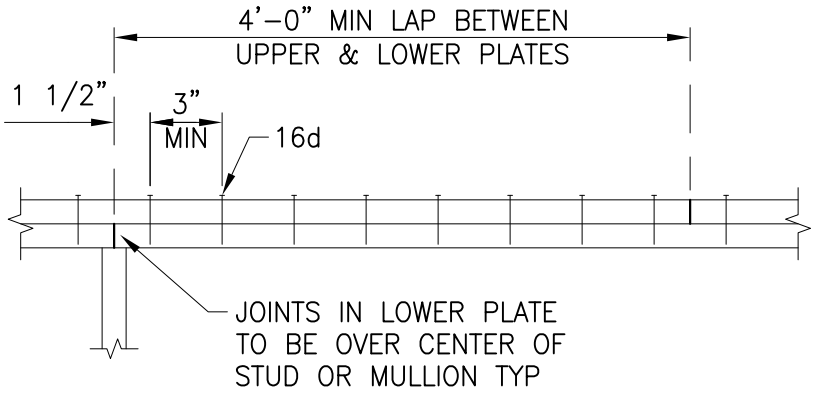
N.T.S.



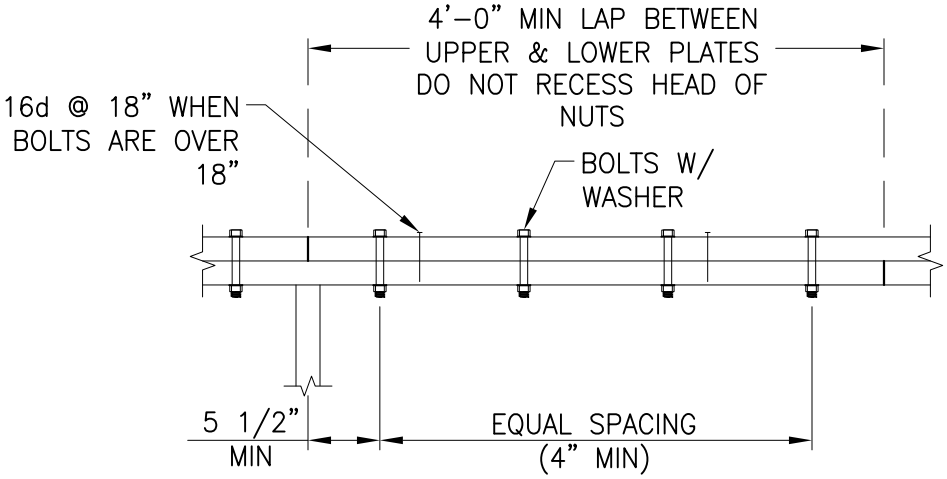
TYP SCAB AT STUD OVER BOLT

N.T.S.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **STRAP ACROSS OPENING AND SCAB STUB OVER BOLT**	
		SCALE: NONE	DATE: 01/16
		REV 1.0	STANDARD DWG NO. **PS-9**



NAILED SPLICE
N.T.S.



BOLTED SPLICE
N.T.S.

SPLICE	FASTENER	LOAD (LBS)
A	8–16d	1138
B	10–16d	1423
C	12–16d	1707

NOTES:

1. Number of nails or bolts listed shall be used each side of upper & lower plante joint.
2. Minimum splice nailing: (2) rows of 16d @ 12".
3. When 2x & 3x top plate occurs, nailing shall apply thru 2x.
4. If double top plate is intermitted for any reason, splice w/ Simpson 'MSTA36'.

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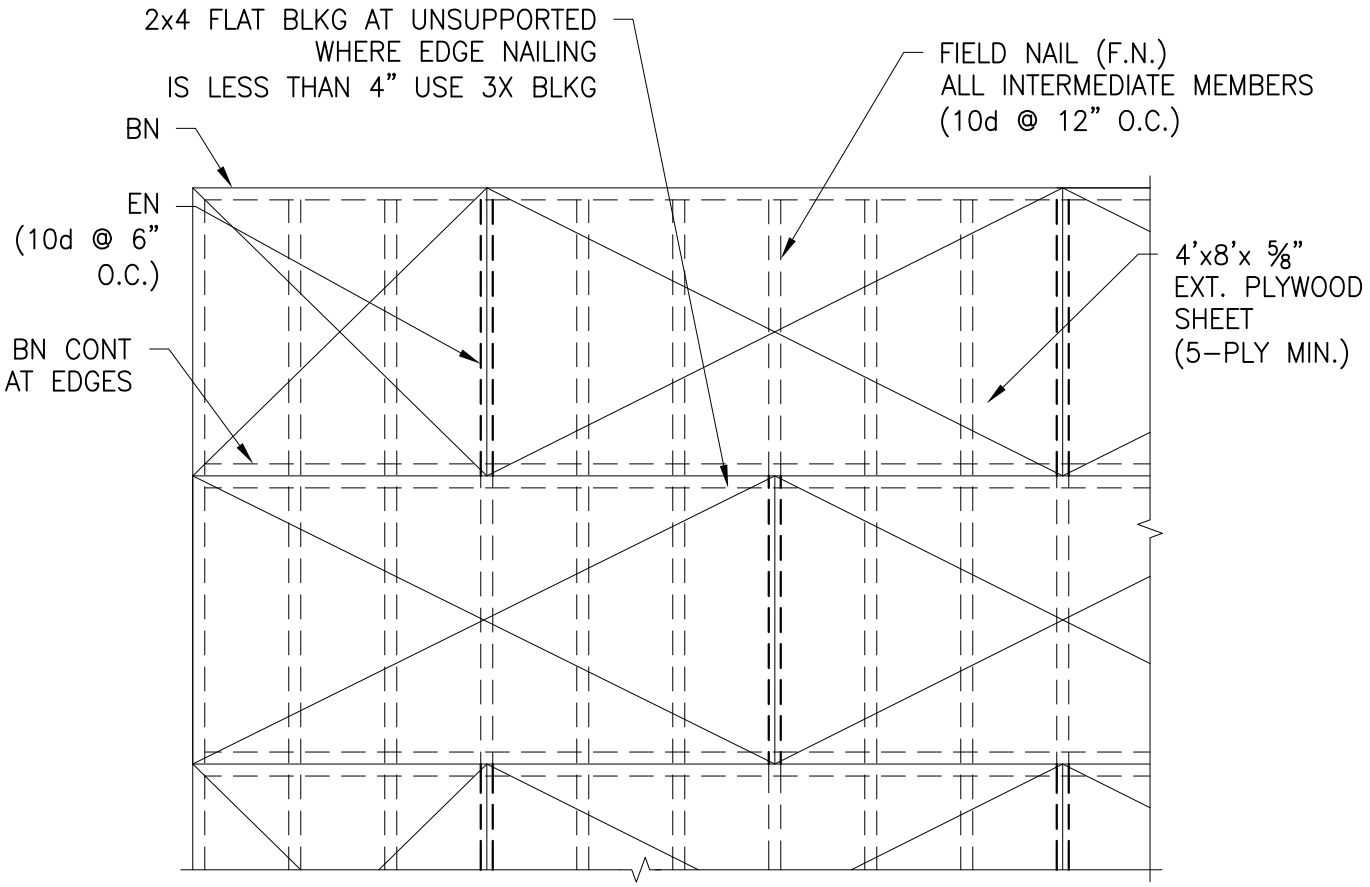
EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TOP PLATE SPLICE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**PS–10**



ROOF DIAPHRAGM NAILING

N.T.S.

NOTES:

1. Minimum plywood sheet size shall be 2'–0 x 4'–0". Long dimension of plywood shall span across joists or rafters.
2. Minimum 3/8" nailing edge distance.
3. Boundary nail (B.N.) over all beams and around all openings (10d @ 6" O.C.).
4. Plywood sheathing shall be laid perpendicular to framing with 4'–0" staggered joints.
5. All floor sheathing should be glued to framing member with A.P.A. approved adhesive.
6. Diaphragm sheathing nails or other approved sheathing connector shall be driven so that their head or crown is flush w/ the surface of the sheathing.
7. Block all unsupported edges with 2x4 flat (typ), with face grain perpendicular to framing.

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EDC MANAGER — DATE: 10/16

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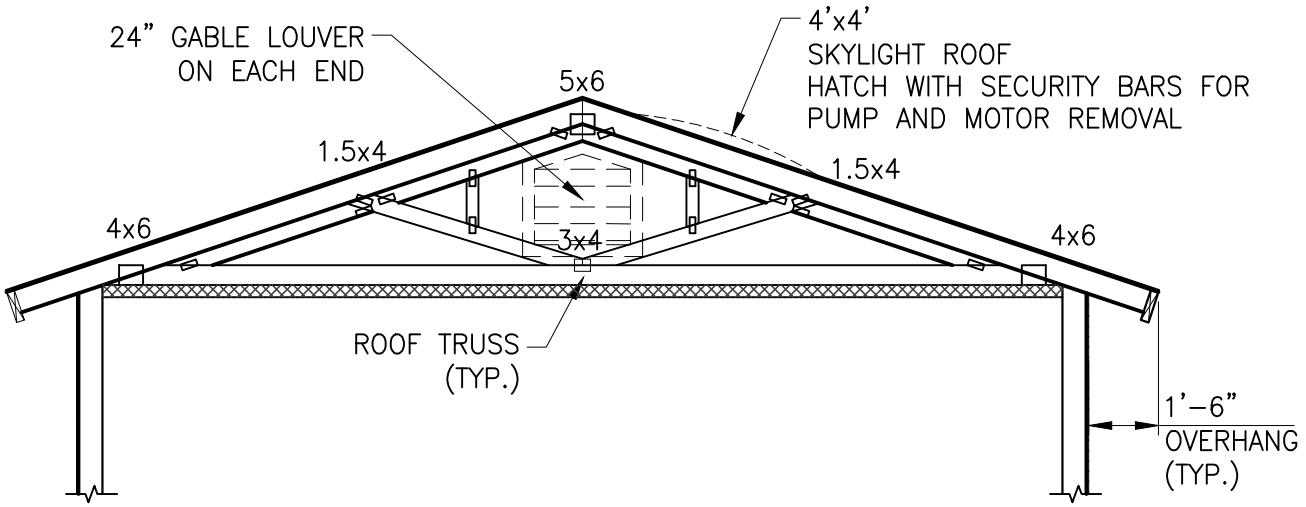
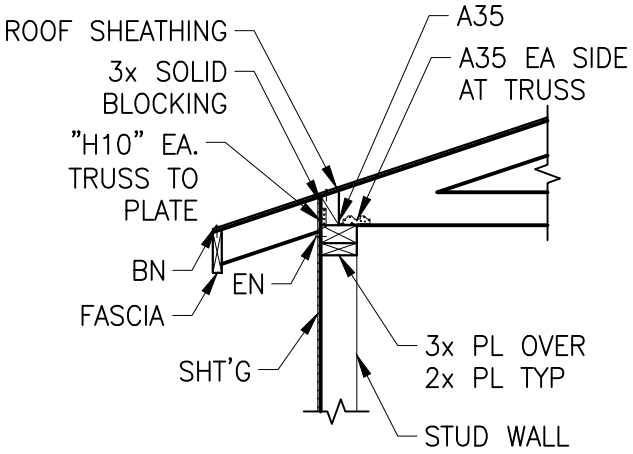
TITLE: **HORIZONTAL ROOF DIAPHRAGM NAILING**

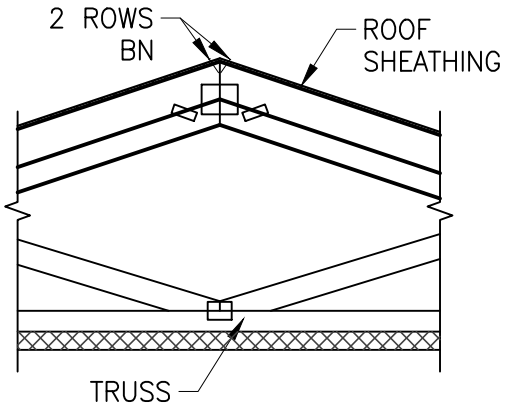
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS–11**



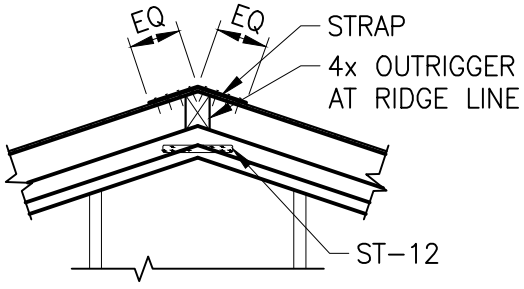
ROOF
N.T.S.



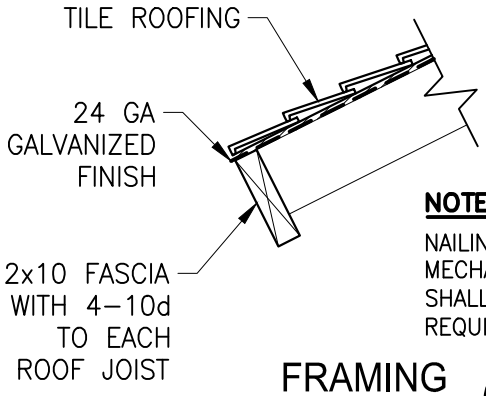
FRAMING
N.T.S. — 1 / PS-3A



FRAMING
N.T.S. — 3 / PS-3A



FRAMING
N.T.S. — 2 / PS-3A



NOTE:
NAILING AND FASTENING OF MECHANICAL CONNECTORS SHALL BE PER MANUFACTURER'S REQUIREMENTS.

FRAMING
N.T.S. — 4 / PS-3A

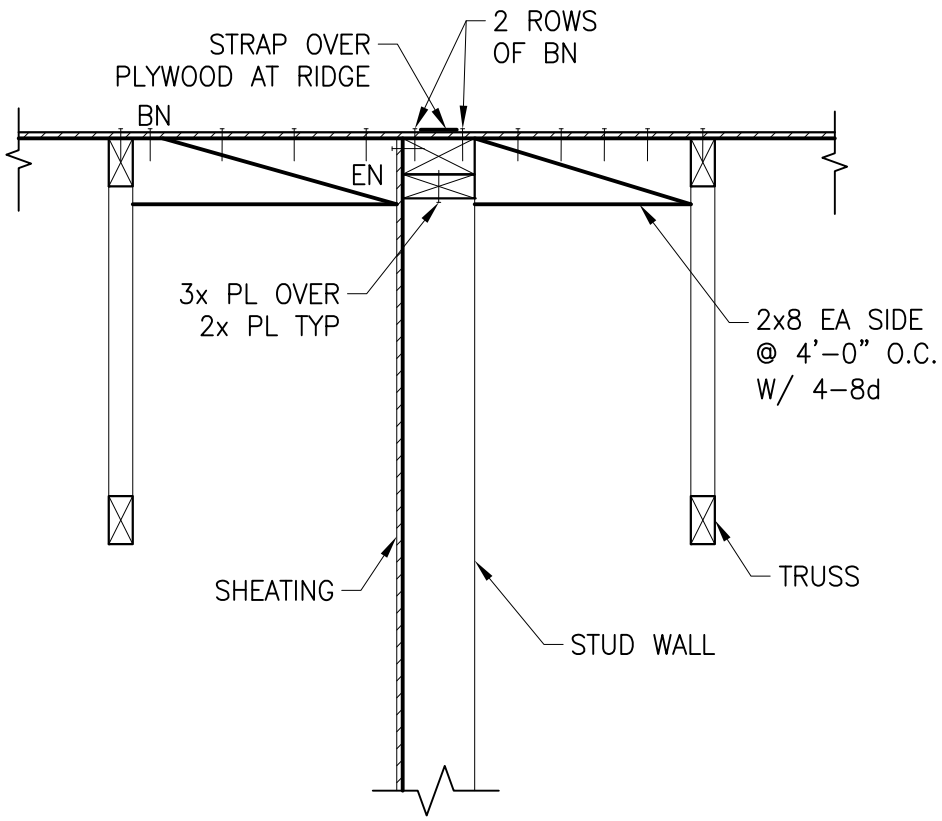
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

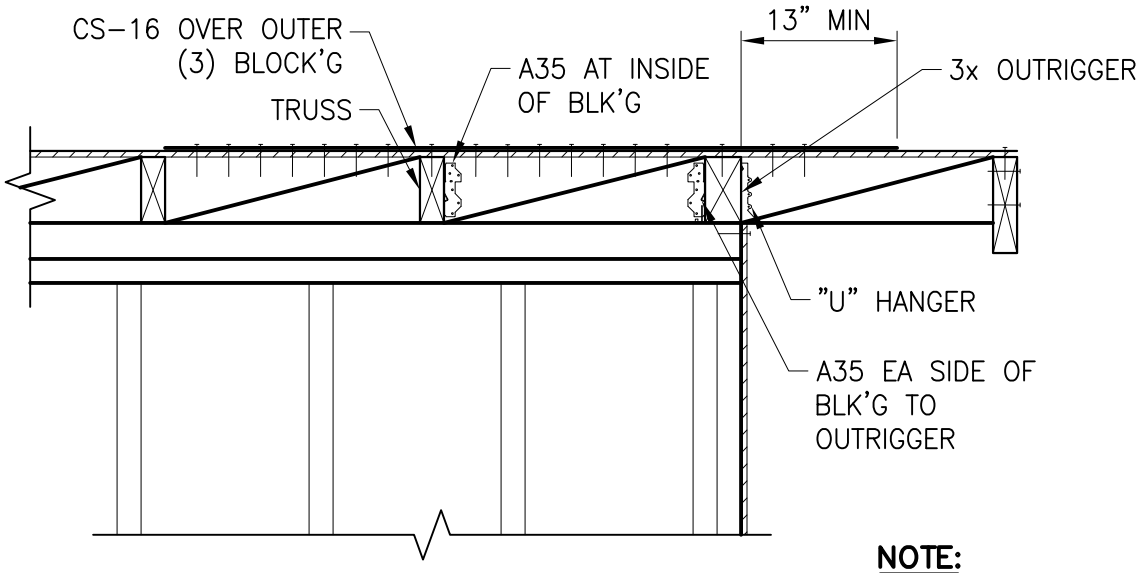
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **ROOF FRAMING DETAILS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**PS-12A**



FRAMING 5 PS-3C
N.T.S.



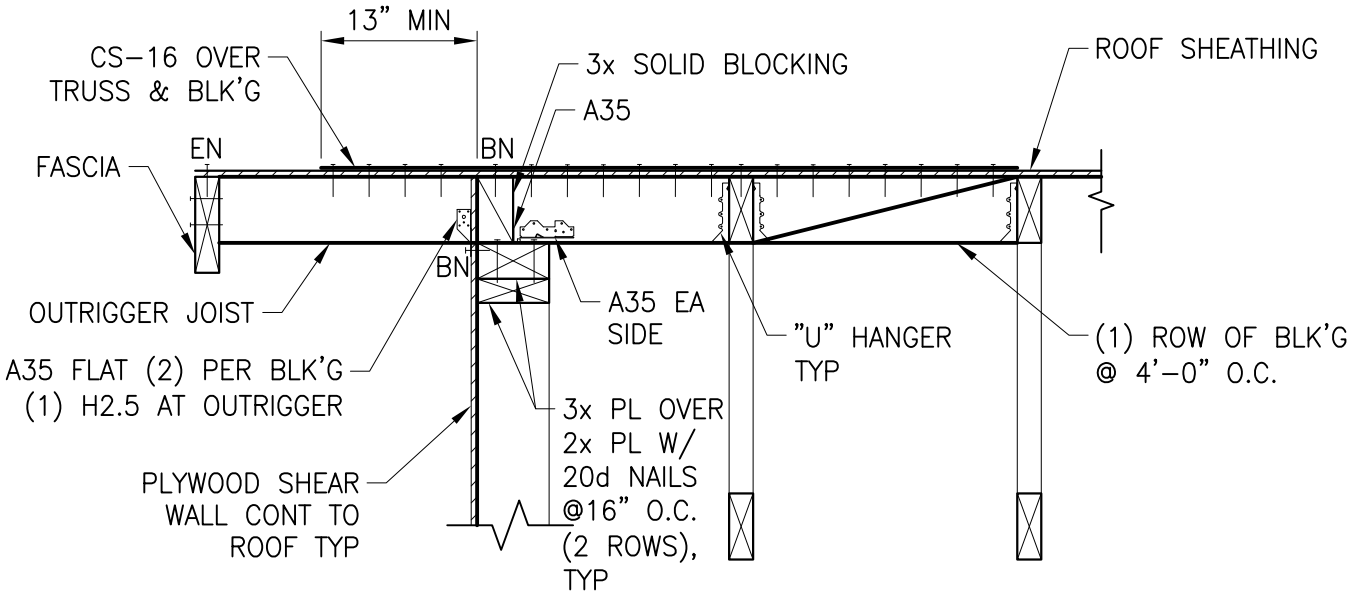
FRAMING 6 PS-3C
N.T.S.

NOTE:

NAILING AND FASTENING OF MECHANICAL CONNECTORS SHALL BE PER MANUFACTURER'S REQUIREMENTS.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **ROOF FRAMING DETAILS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-12B**



FRAMING 7 PS–3C

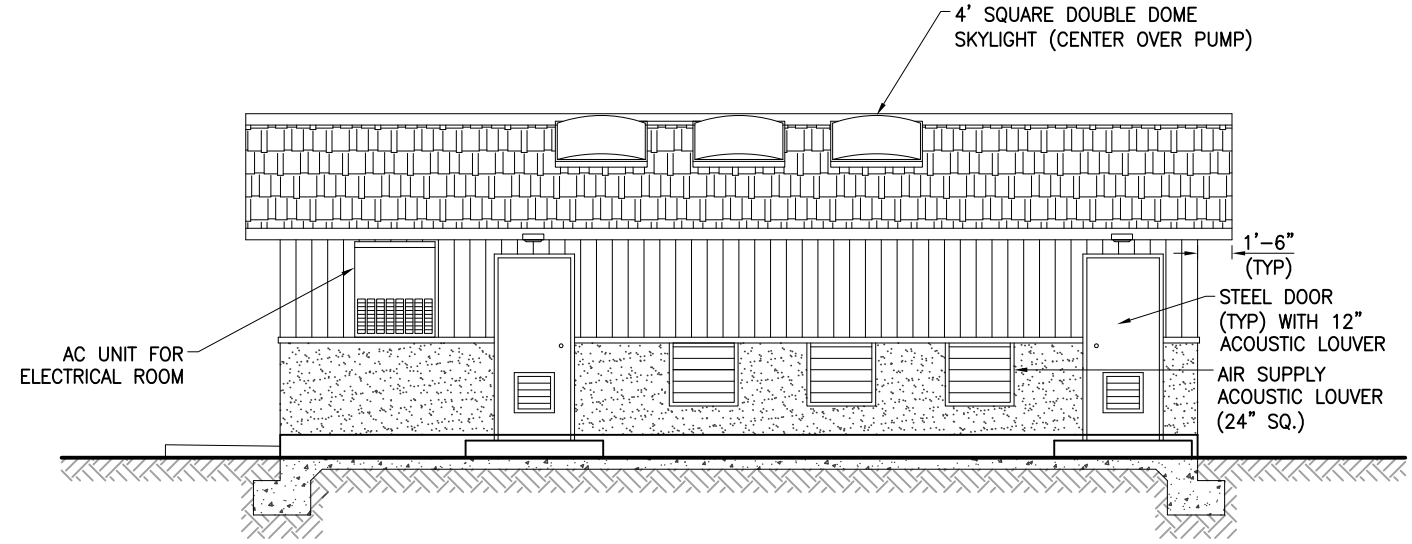
N.T.S.

NOTE:

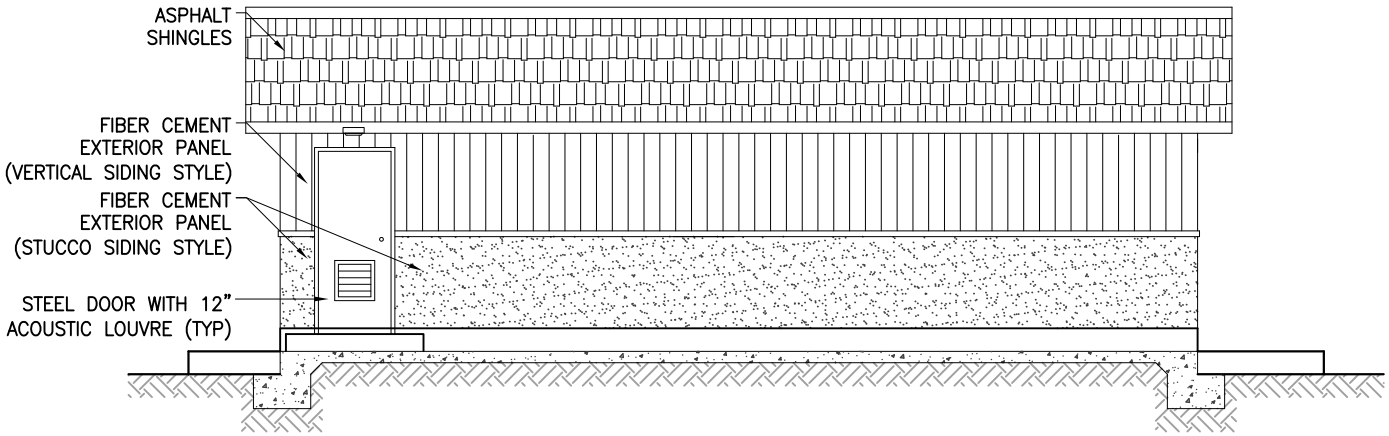
NAILING AND FASTENING OF MECHANICAL CONNECTORS SHALL BE PER MANUFACTURER'S REQUIREMENTS.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **ROOF FRAMING DETAILS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS–12C**



WEST ELEVATION
N.T.S.



EAST ELEVATION
N.T.S.

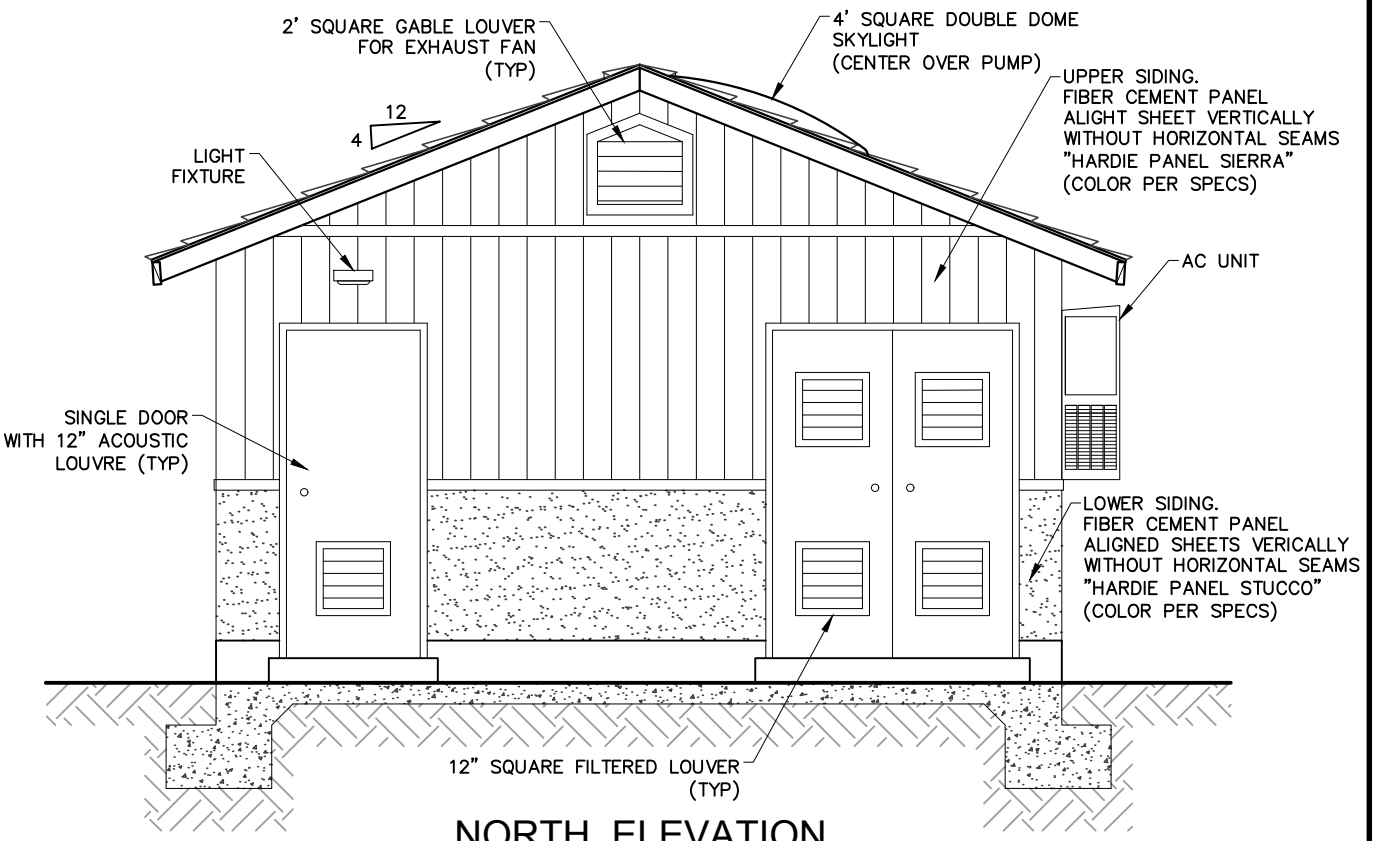
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

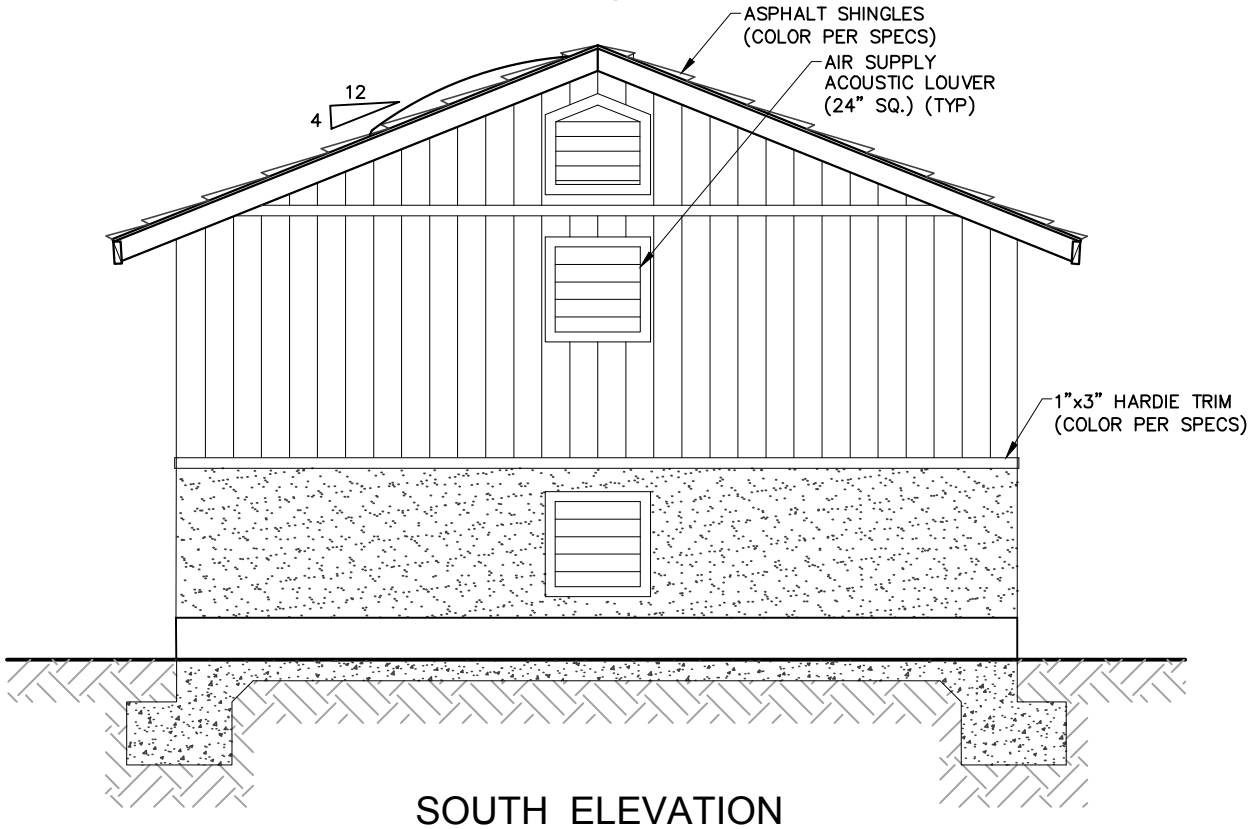
TITLE:
ARCHITECTURAL VIEWS OF PUMP BUILDING

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-13A**



NORTH ELEVATION

N.T.S.



SOUTH ELEVATION

N.T.S.

APPROVED BY:
GSWC STANDARDS COMMITTEE

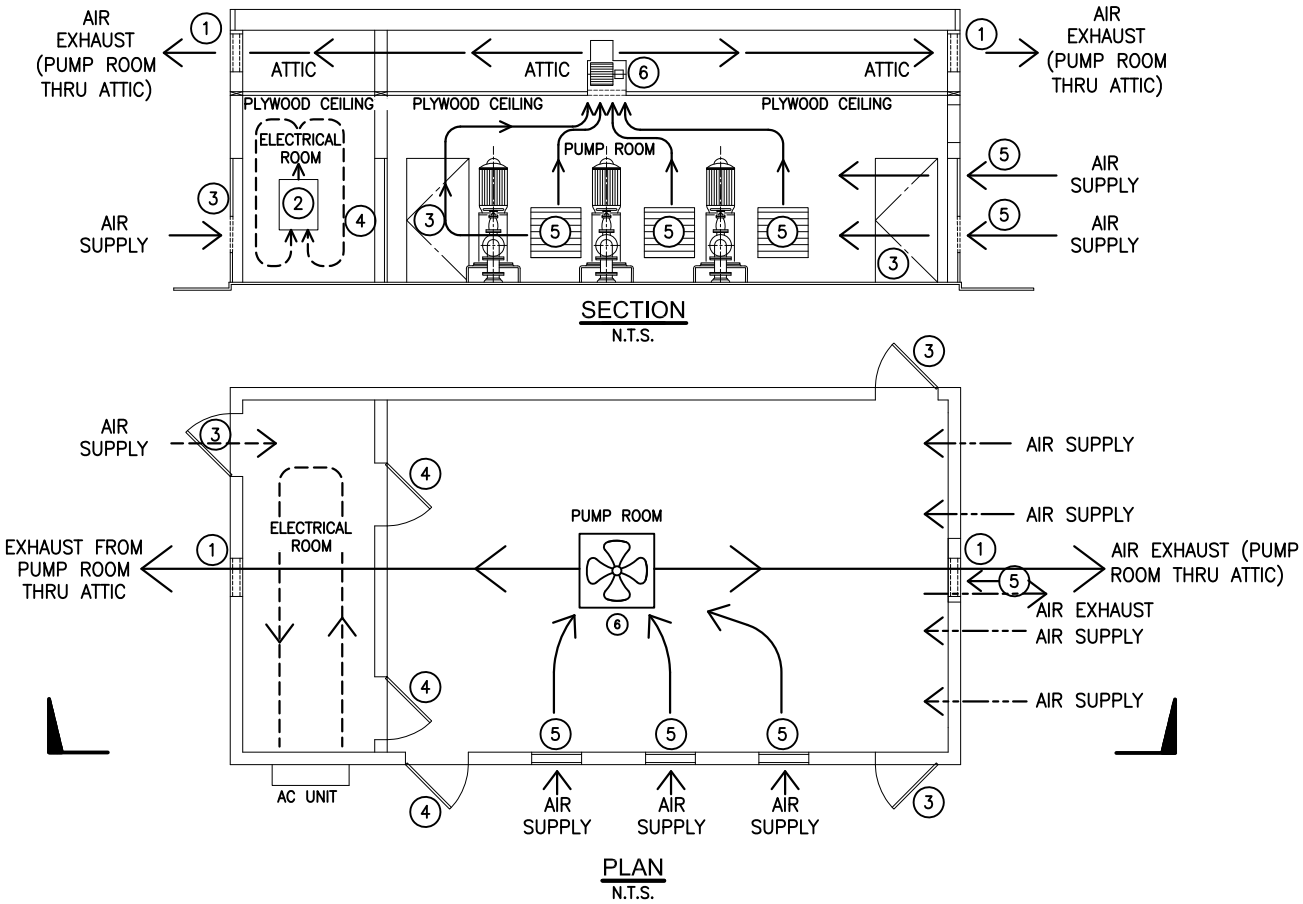
Robert N. Hansford — EDC MANAGER

1/18 — DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
ARCHITECTURAL VIEWS OF PUMP BUILDING

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**PS–13B**



AIR FLOW SCHEMATIC

SCHEDULE

1. LOUVERED GATE VENT IN ATTIC.
2. AC CONTROLLED ELECTRICAL ROOM.
3. LOUVERED DOOR.
4. NON LOUVERED DOOR.
5. ACOUSTICAL LOUVERED VENT IN WALL.
6. VENT THRU CEILING TO ATTIC W/ ATTIC FAN (RATED 700 CFM).

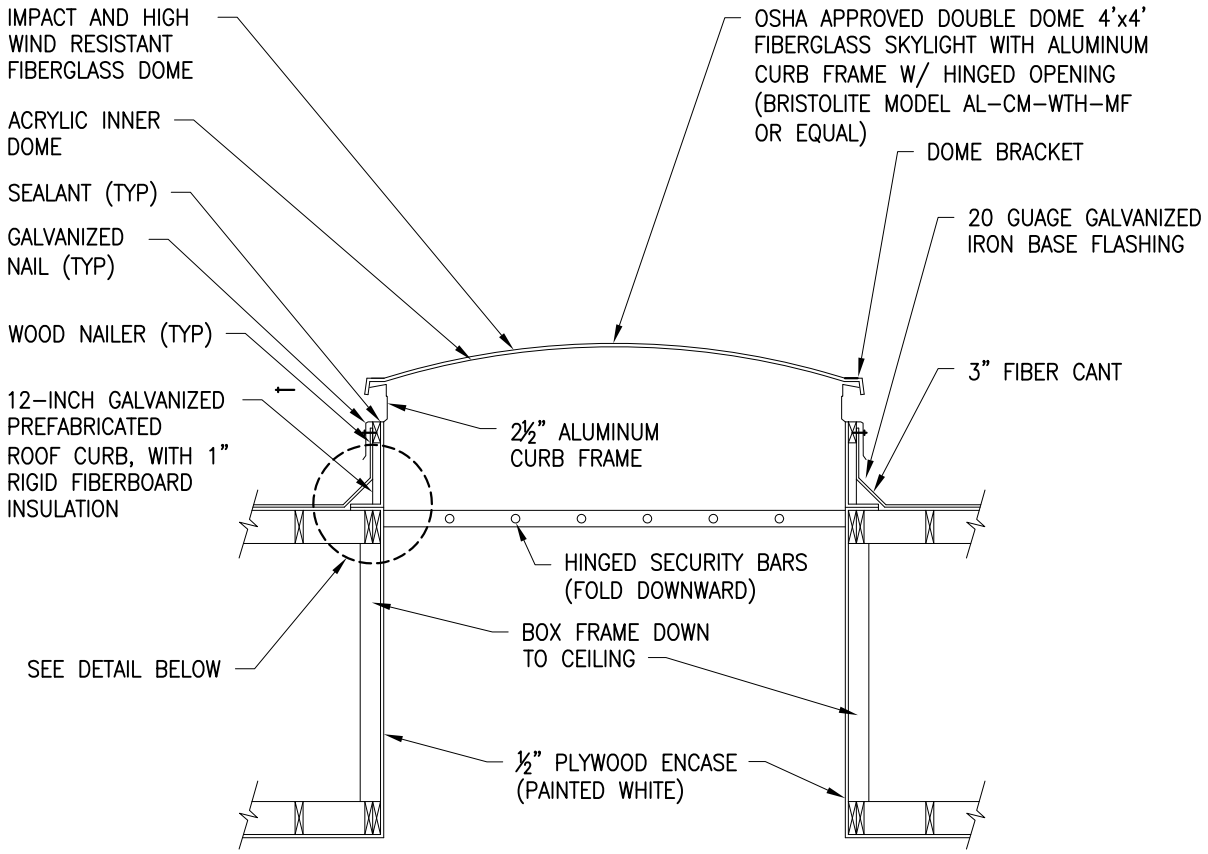
NOTE:

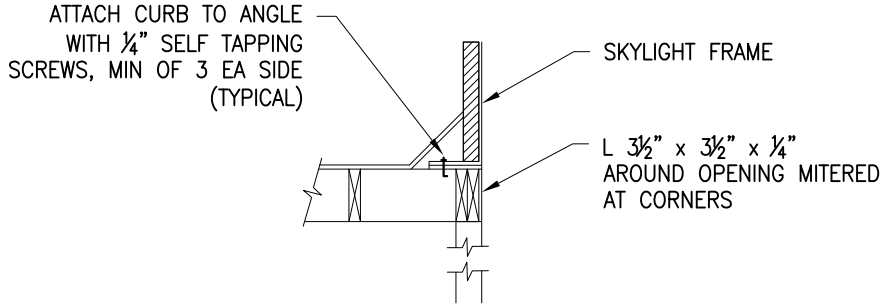
Two isolated air systems shown in schematic.

------ System 1 Electrical Room

——— System 2 Pump Room

APPROVED BY: GSWC STANDARDS COMMITTEE	Golden State Water Company, A Subsidiary of American States Water Company	TITLE: PUMP STATION AIR FLOW SCHEMATIC	
Robert N. Hanfman — EDC MANAGER; 01/16 — DATE		SCALE: NONE; DATE: 01/16; REV: 1.0; STANDARD DWG NO.: PS–14	





DETAIL
N.T.S.

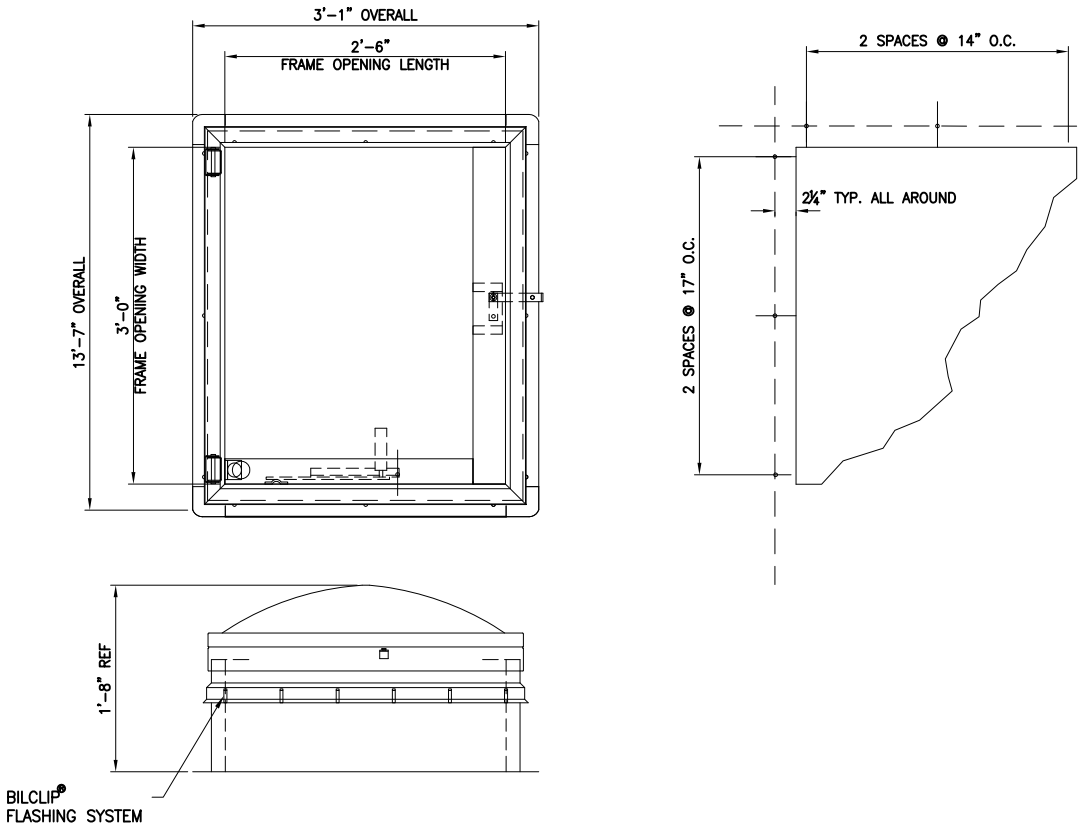
SKYLIGHT AND ENCLOSURE
N.T.S.

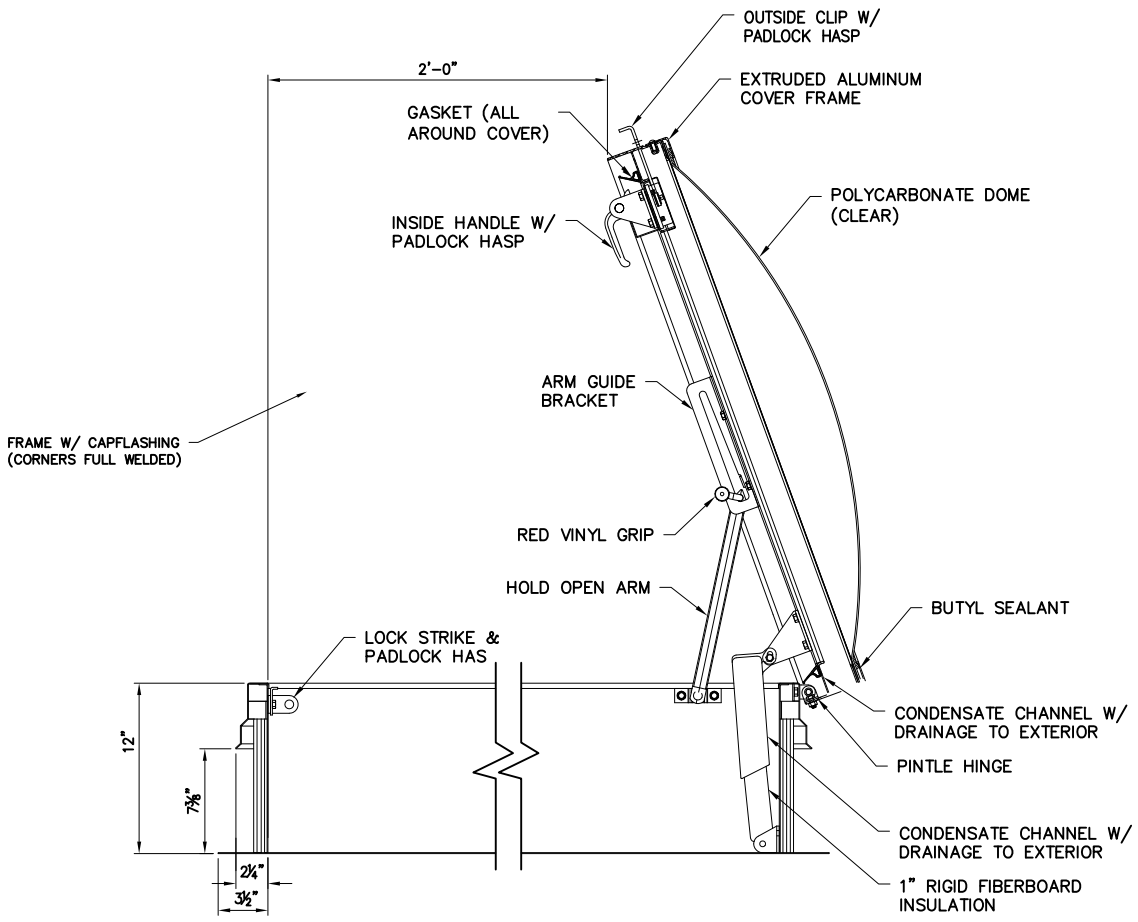
NOTES:

1. Installation of skylight to be per manufacturer's requirements.
2. Coordinate with roofing contractor to ensure a weatherproof installation.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **4' SQUARE SKYLIGHT AND ENCLOSURE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**PS-15A**





2'-6"x3'-0" OPENING SKYLIGHT AND ENCLOSURE

N.T.S.

APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartman — EDC MANAGER

09/16 — DATE

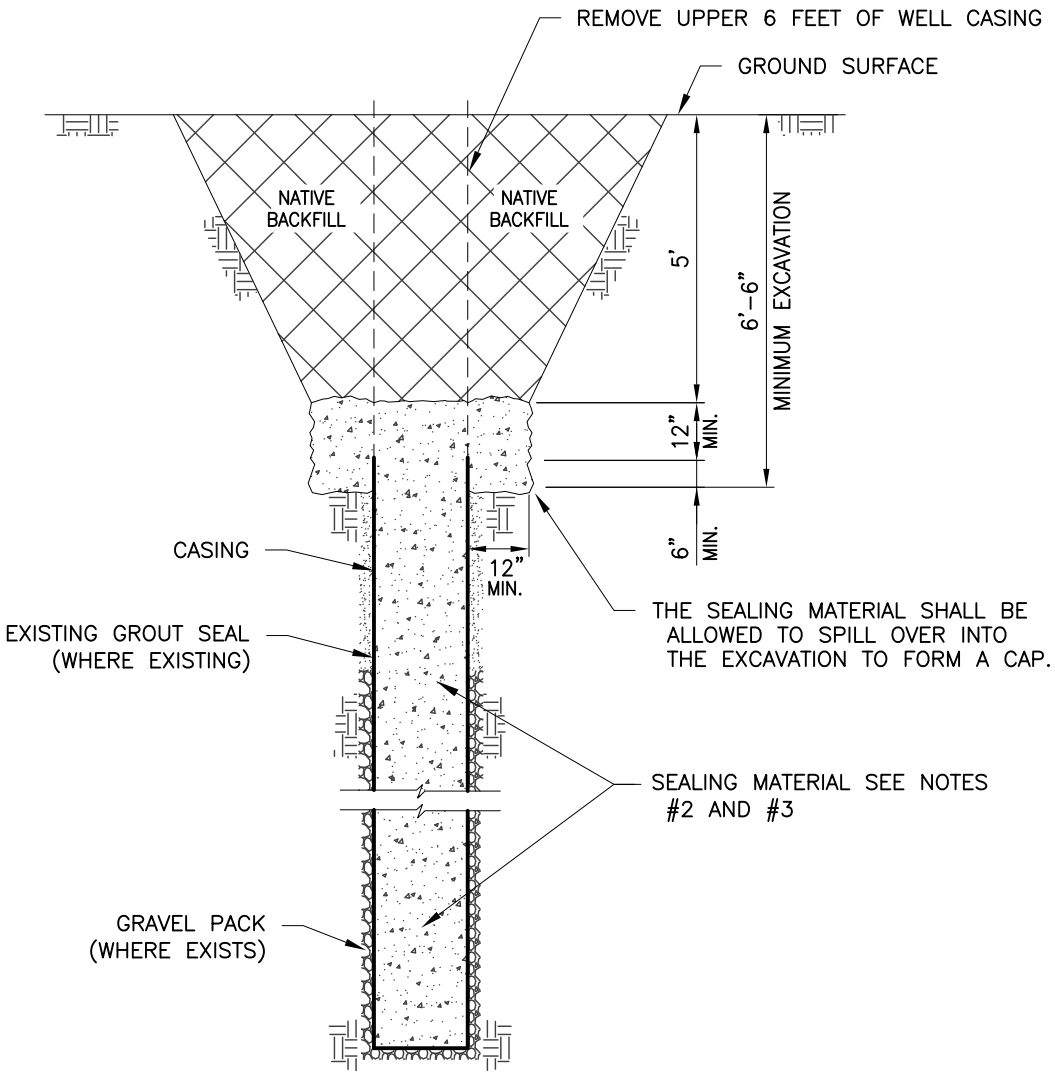
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
2'-6"x3'-0" OPENING SKYLIGHT AND ENCLOSURE

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	09/16	1.1	**PS-15B**

Section 4

Wells



NOTES:

1. The well shall be cleaned, as needed, so that all undesirable materials, including obstructions to filling and sealing, sediment, debris, oil from oil–lubricated pumps, or pollutants and contaminants that could interfere with well destruction are removed for disposal.

2. Conditions may require that the casing be perforated using a millsknife or explosive charges prior to placement of sealing material.

3. Unless specifically described in the specifications, the sealing material shall be mixed at a ratio of not more than 188 pounds of sand to one 94 pound sack of portland cement (2 parts sand to 1 part cement, by weight) and about 7 gallons of clean water, where type I or type II portland cement is used. This is equivalent to a "10.3 sack mix". Less water shall be used if less sand than 2 parts sand per 1 part cement by weight is used. Additional water may be required when special additives, such as bentonite, or "accelerators" or "retardants" are used.

4. Sealing material shall be poured utilizing a tremie.

5. Backfill and compact the excavation only after sufficient time has been allowed for sealing material to set.

6. Each well destruction project is unique and requires specific approval and permits from the local jurisdictional agency.

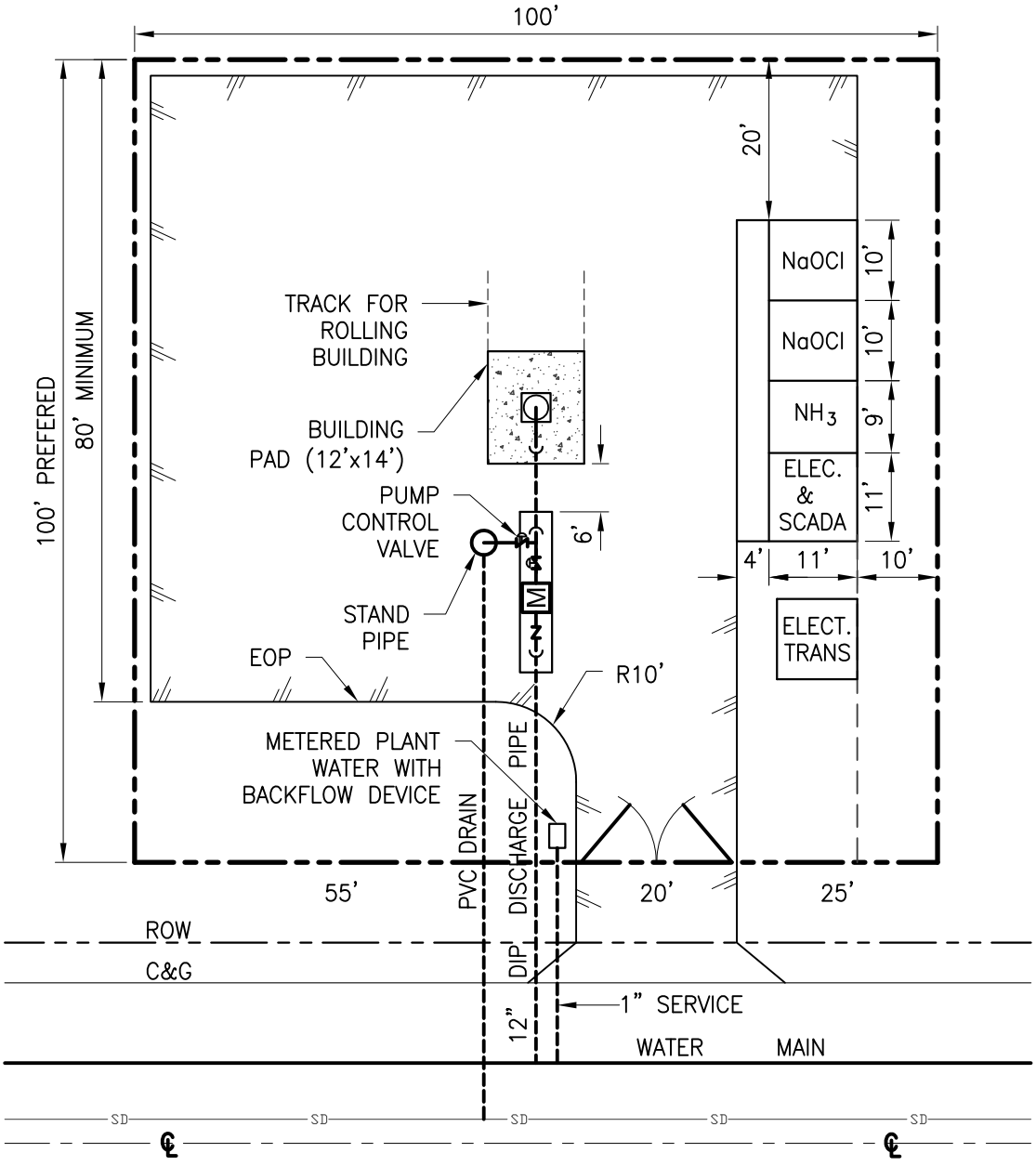
7. Coordinate all well destruction work with the Water Resources group for current plans and specifications.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **WATER WELL DESTRUCTION**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W–1**

NOTES:

1. Minimum lot size is 80'x100'(100'x100' is preferred).
2. Property is fenced on property line. Vehicle gate location will depend on lot line set back from curb and gutter to allow 20' drive–in from curb to fence.
3. A man–gate should be installed near vehicle gate.
4. Paving as shown. Alternative paving at least to chemical building.
5. Lot should drain to street. Adjust lot elevations as needed.
6. 50' clearance to property lines required for sanitary control.
7. Dimensions, locations and drainage shall be modified for each specific project.



APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

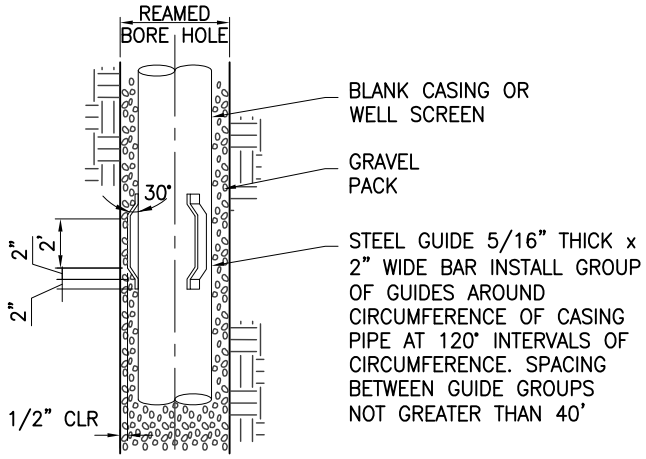
TITLE: **TYPICAL WELL SITE PLAN AND DIMENSIONS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	W–2

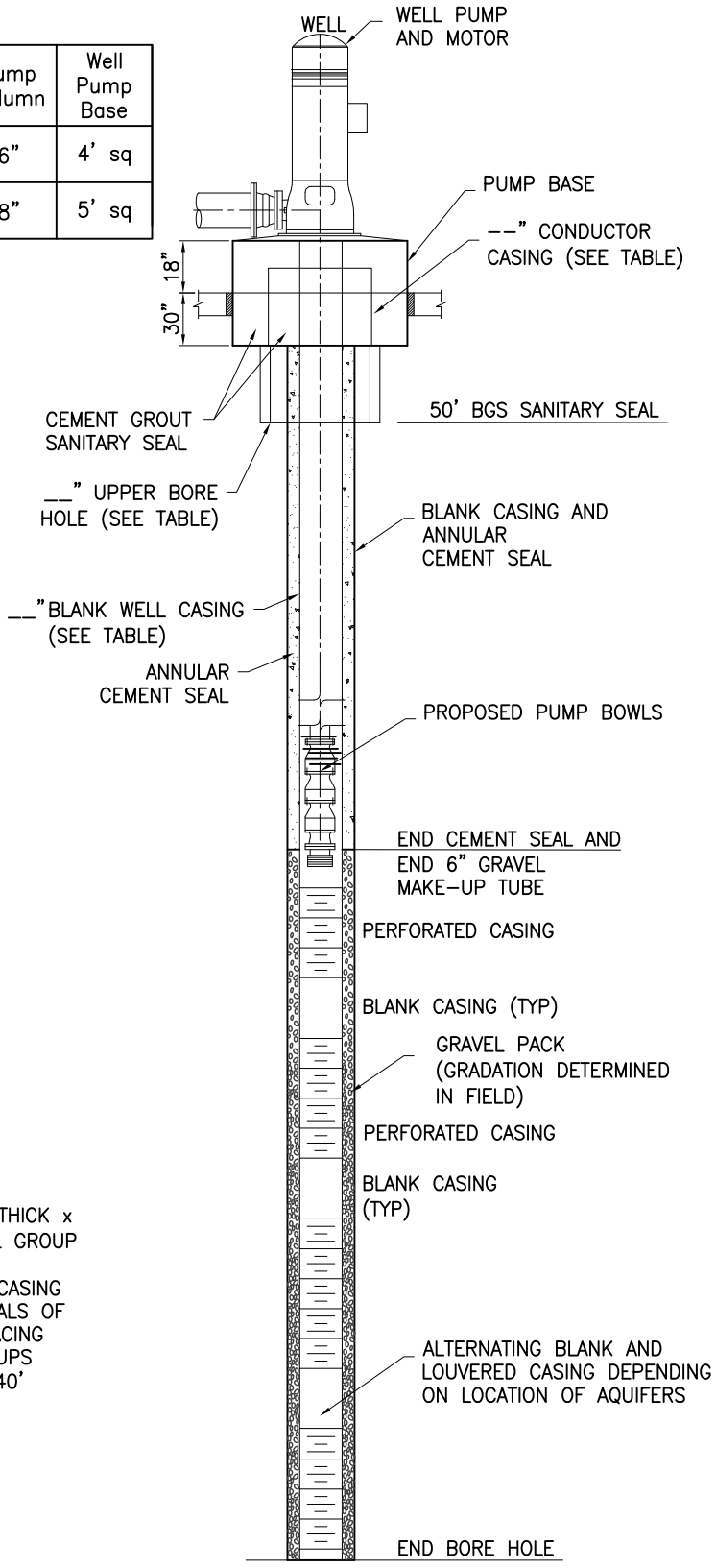
Anticipated Well Capacity	Upper Borehole Dia	Conductor Casing Dia	Well Borehole Dia	Well Casing Dia	Pump Column	Well Pump Base
Up to 1,000 gpm	42"	36"	28"	14"	6"	4' sq
1,000 to 3,000 gpm	48"	42"	32"	18"	8"	5' sq

NOTE:

1. Depths of louvered and blank casing will be determined for each well drilling project based on hydrogeologic conditions.
2. Each well destruction project is unique and requires specific approval and permits from the local jurisdictional agency.



TYPICAL WELD-ON TYPE CASING CENTRALIZER
N.T.S.



TYPICAL WELL CROSS SECTION
N.T.S.

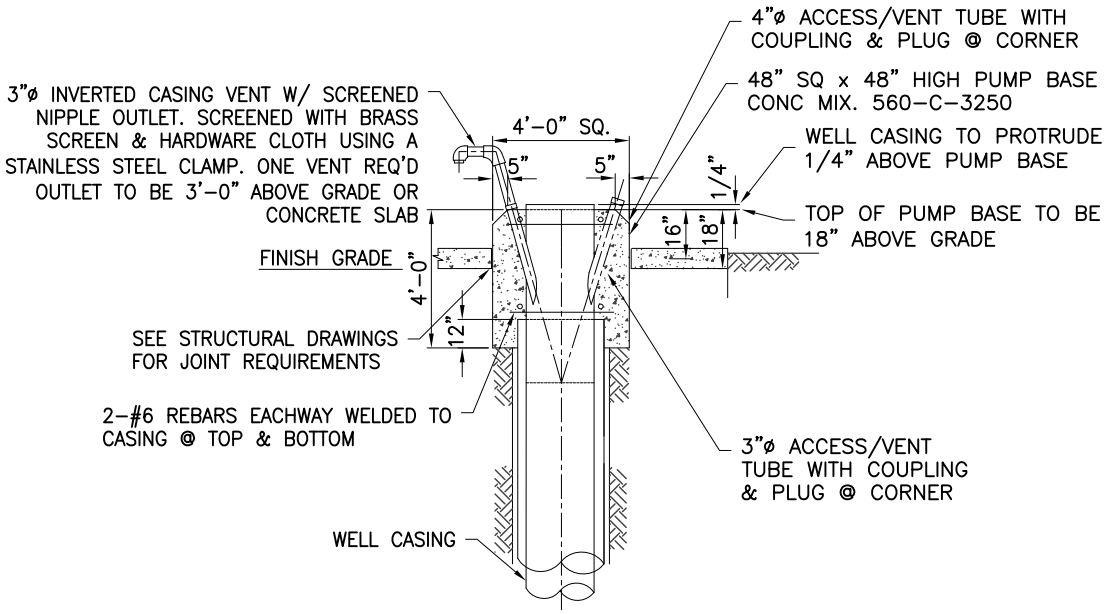
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

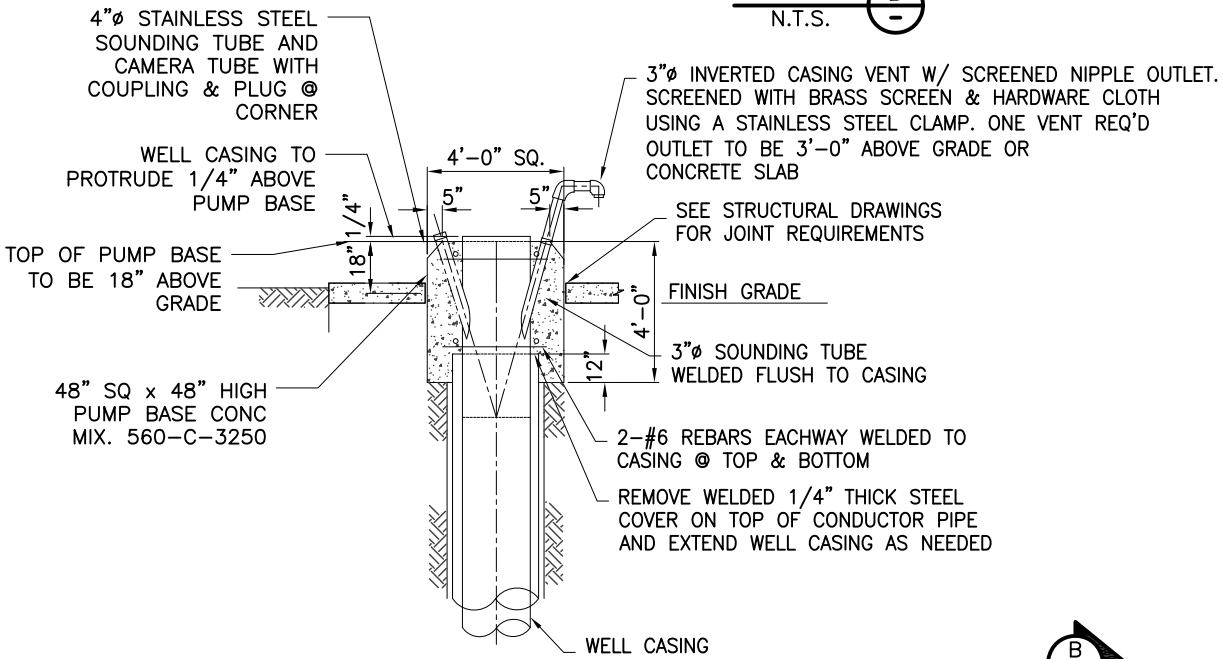
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TYPICAL WELL CONSTRUCTION CROSS SECTION**

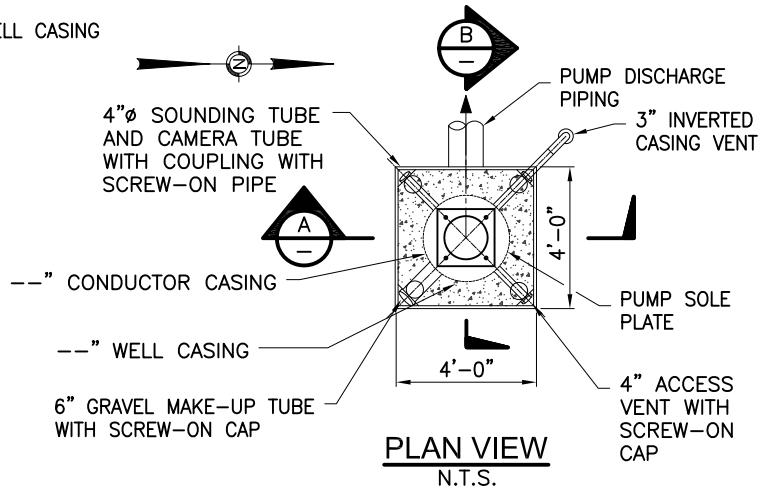
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-3**



SECTION B
N.T.S.



SECTION A
N.T.S.



PLAN VIEW
N.T.S.

NOTES:

1. Wellhead mating flange (sole plate) threaded flange bolt holes. Weld flange to well casing. Recess the bolt area in concrete underside of the flange to accomodate bolt run through.

2. Camera tube, sounding tube, gravel tube and access vent to be located as close to vertical as possible through the top of the base and still avoid pump sole plate.

3. 1"chamfer on all edges.

APPROVED BY:
GSWC STANDARDS COMMITTEE

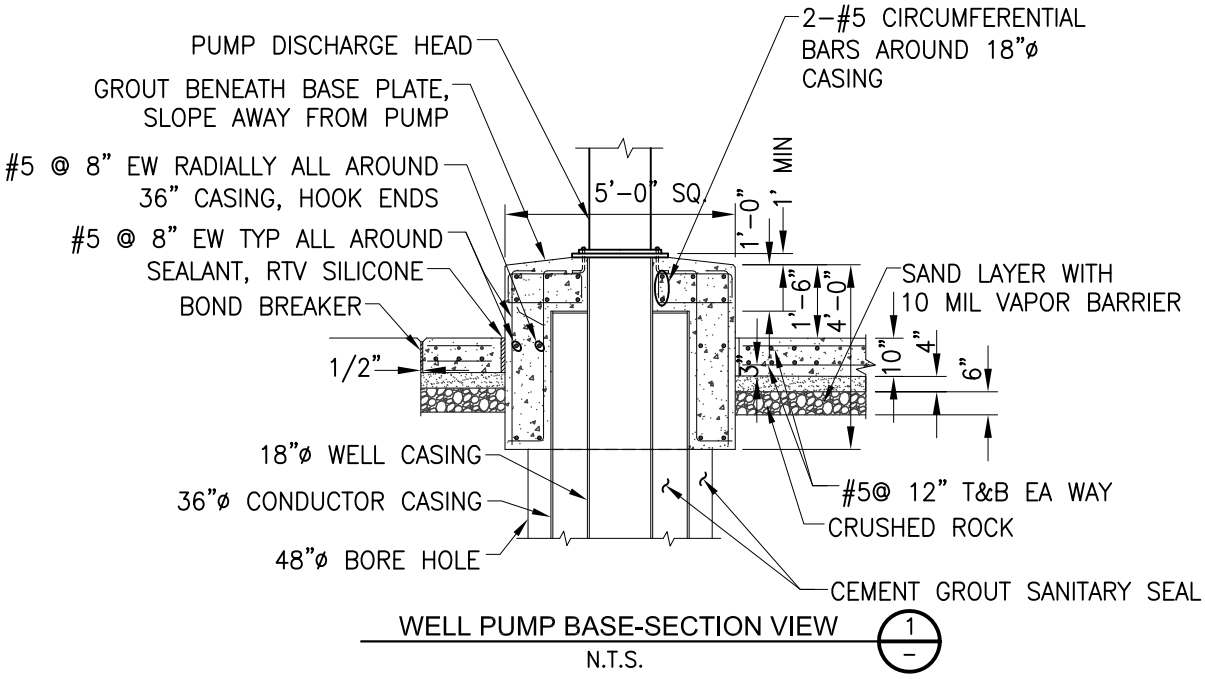
EDC MANAGER

10/16
DATE

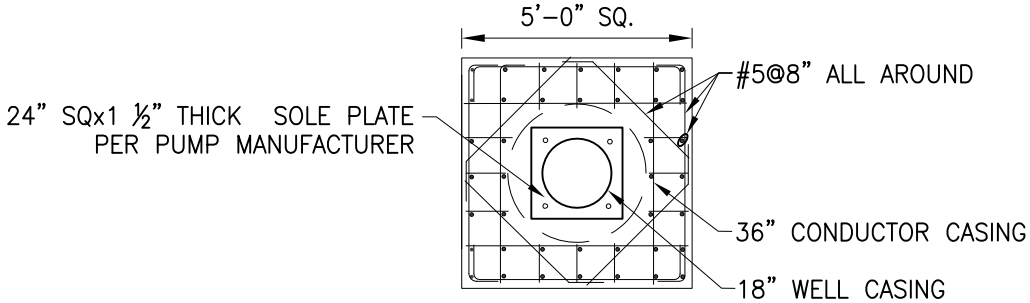
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
WELL PUMP BASE (UP TO 1,000 GPM)

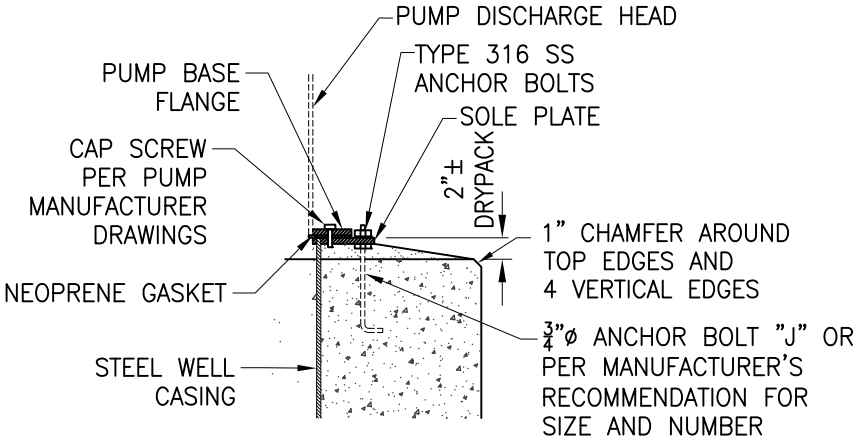
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-4A**



WELL PUMP BASE-SECTION VIEW (1) –
N.T.S.



WELL PUMP BASE-PLAN VIEW (2) –
N.T.S.



PUMP ANCHOR (3) –
N.T.S.

NOTES:

1. Camera tube, sounding tube, gravel tube and access vent to be located as close to vertical as possible through the top of the base and still avoid pump sole plate.

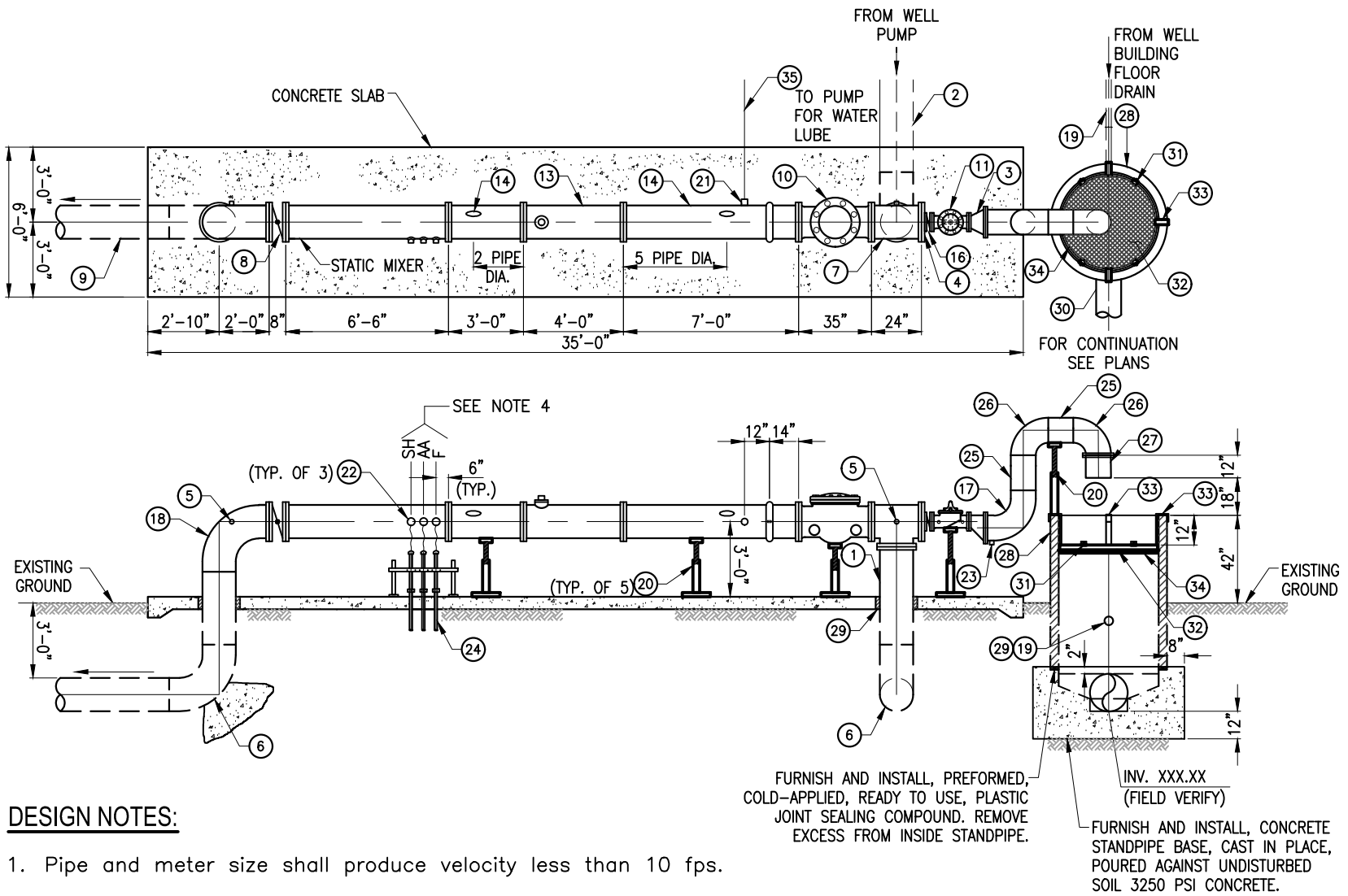
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **WELL PUMP BASE AND PUMP CONNECTION (GREATER THAN 1,000 GPM)**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-4B**



DESIGN NOTES:

1. Pipe and meter size shall produce velocity less than 10 fps.
2. Testing ports shall be 5 pipe diameters upstream and 2 pipe diameters downstream of the meter with no bends or pipe breaks that could cause turbulence.
3. All steel pipe shall be epoxy lined & painted after fabrication.
4. Pipe sizes shown are for 16-inch diameter pipe. Adjust dimensions as needed for different pipe sizes.

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
WELL DISCHARGE PIPE AND FLUSH PIPE

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	W-5A

CONSTRUCTION NOTES FOR WELL DISCHARGE PIPE

1. INSTALL 12" STANDARD WEIGHT STEEL SPOOL, FExGE.
2. INSTALL 12" STANDARD WEIGHT STEEL PIPE, P.E.
3. INSTALL 4"X8" STANDARD WEIGHT STEEL ECCENTRIC REDUCER, FE.
4. INSTALL 12" BLIND FLANGE WITH 4" TAP.
5. INSTALL WATER QUALITY SAMPLE
6. INSTALL 12"x90° LR STANDARD WEIGHT STEEL WELD ELBOW WITH THRUST BLOCK.
7. INSTALL 12" STANDARD WEIGHT STEEL TEE, FE.
8. INSTALL 12" BUTTERFLY VALVE, FE.
9. INSTALL 12" STANDARD WEIGHT STEEL SPOOL.
10. INSTALL 12" FE CLA-VAL SWING CHECK VALVE.
11. INSTALL 4" CLA-VAL PUMP CONTROL VALVE, FE, MODEL 61-02
12. NOT USED
13. INSTALL 12" FLOW METER, PER SPECIFICATIONS FExFE, (METER SPECIFIED DEPENDS ON REGION INSTALLED).
14. INSTALL 12" STANDARD WEIGHT STEEL SPOOL, FE, WITH 1" THREAD-O-LET, 1" CORPORATION STOP, 1" BRASS PLUG FOR METER TEST 45° ANGLE FROM TOP.
15. INSTALL 12" STANDARD WEIGHT STEEL SPOOL, FE, TAPPED FOR 3 OPENINGS FOR THE INSTALLATION OF CHEMICAL INJECTION QUILLS.
16. INSTALL 4" GATE VALVE, FE.
17. INSTALL 8"x90° LR STANDARD WEIGHT STEEL ELBOW, FExPE.
18. INSTALL 12"x90° LR STANDARD WEIGHT STEEL WELD ELBOW, FExPE.
19. INSTALL 4" PVC DRAIN.
20. INSTALL ADJUSTABLE PIPE SUPPORT.
21. INSTALL 2" THREAD-O-LET, 2" CORPORATION STOP AND 2" COPPER TUBING, SOLENOID VALVE AND CONNECT TO PUMP FOR STARTUP PRE-LUBRICATION.
22. INSTALL CHEMICAL INJECTION QUILL ASSEMBLY, THREE LOCATIONS.
23. INSTALL 1" THREAD-O-LET, A 1" X ½" BUSHING AND A RAINBIRD DRAIN VALVE (PART NO. 16AFDVC1) TO DRAIN RISER.
24. INSTALL CHEMICAL CONVEYANCE TUBING AND CONTAINMENT PIPE.
25. INSTALL 8" STANDARD WEIGHT STEEL SPOOL.
26. INSTALL 8"x90° SR STANDARD WEIGHT STEEL WELD ELBOW.
27. STAINLESS STEEL SCREEN PER GSWC STD. DWG. T-4, DETAIL 1.
28. INSTALL 4' DIAMETER RCP STANDPIPE.
29. INSTALL SEAL WITH NON-SHRINK GROUT, 2" AROUND PIPE OD. PENETRATE RCP STAND PIPE ABOVE CONCRETE BASE FOR 4" DRAIN LINE CONNECTION.
30. INSTALL 12" PVC DRAIN.
31. INSTALL 2½"x2½"x2" WIDE x ⅜" GALVANIZED ANGLE FLAT IRON BAR. ANCHOR TO WALL W/ SS ¼" DIA. x 2" LONG THREADED ANGHOR BOLT, SS WASHER & NUT. DRILL & EPOXY ANCHOR TO RCP WALL ABOVE RING BAR (TAMPER PROOF TAB).
32. INSTALL 1½" GALVANIZED FLAT STOCK WELDED GRATE. TACK WELD TO STEEL RING BAR W/ DISSIMILAR WELD ROD.
33. INSTALL 2"x⅜" GALVANIZED FLAT BAR HANGER, WELD TO RING BAR.
34. INSTALL 1"x⅜" FLAT STEEL BAR COATED WITH POLYURETHANE SPRAY PAINT.
35. INSTALL 2" COPPER TUBING.

APPROVED BY:
GSWC STANDARDS COMMITTEE

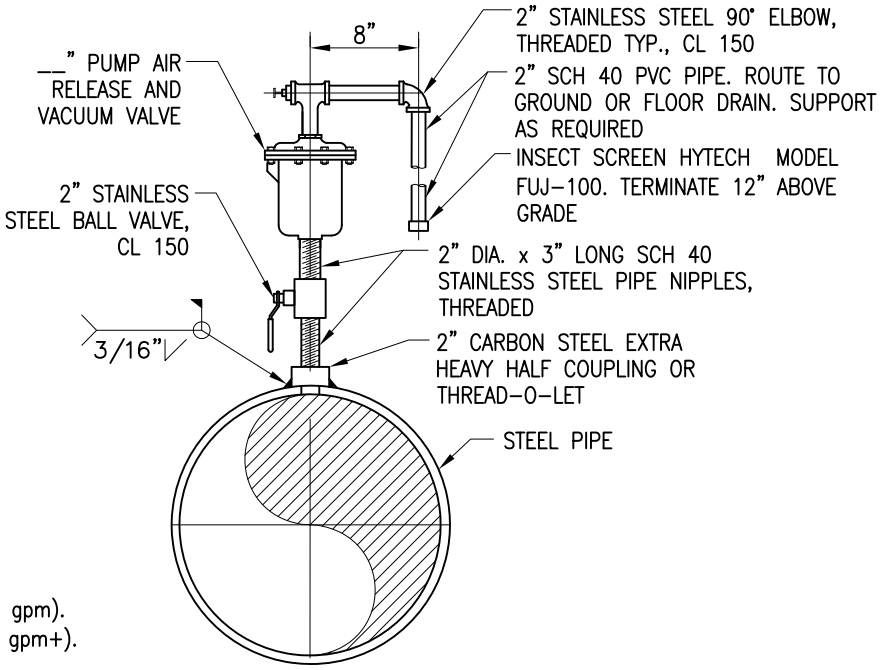
Robert N. Hansford — EDC MANAGER

1/18 — DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
WELL DISCHARGE PIPE AND FLUSH PIPE

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**W-5B**

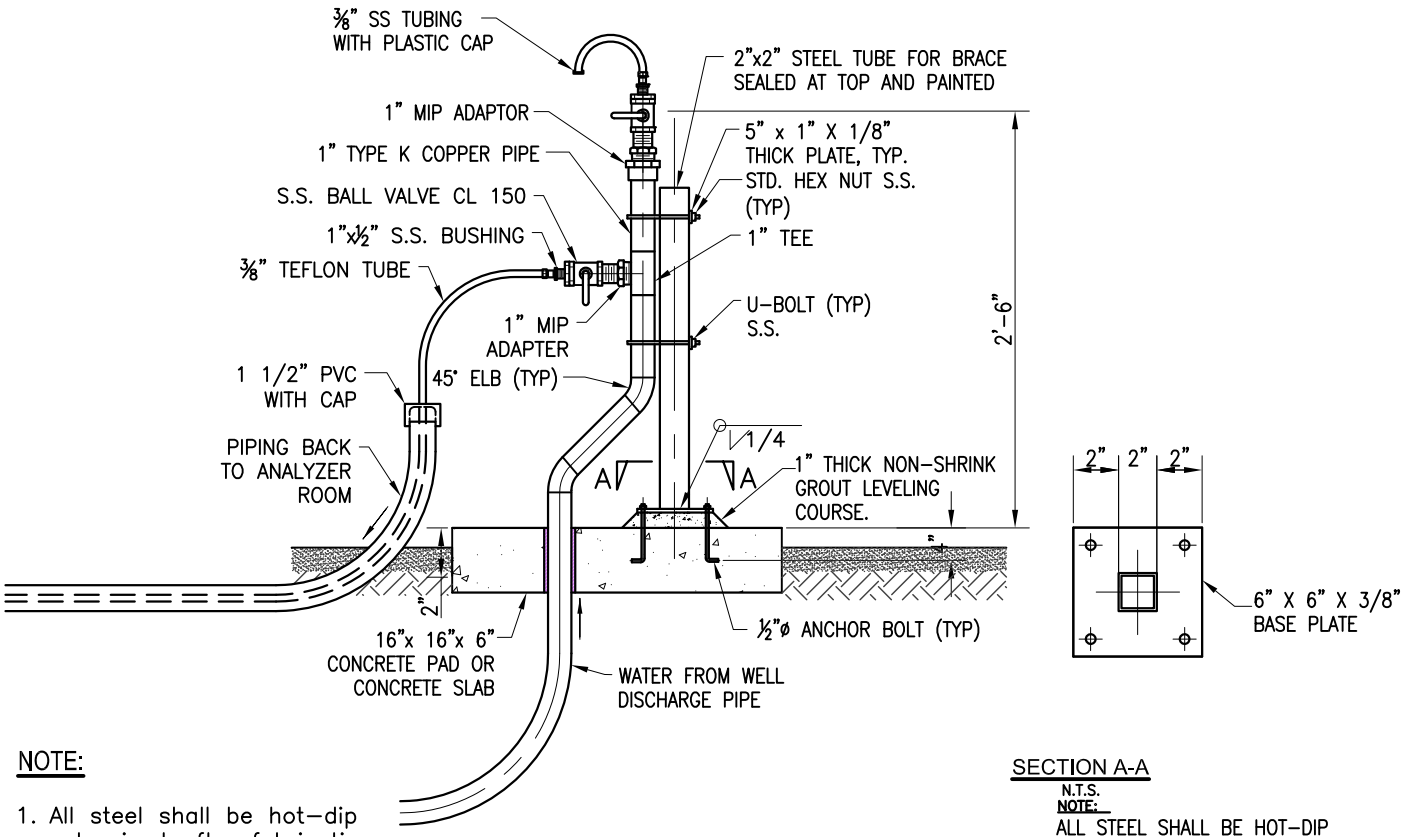


NOTE:

2" A/V for small well installation (1,000 gpm).
4" A/V for large well installation (1,500 gpm+).

PUMP AIR RELEASE/VACUUM VALVE DETAIL

N.T.S.



NOTE:

1. All steel shall be hot-dip galvanized after fabrication.
2. See Std. Dwg. P-13 for sampling enclosure.

SECTION A-A
N.T.S.
NOTE:
ALL STEEL SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

ABOVE GROUND WATER QUALITY SAMPLING DETAIL

N.T.S.

APPROVED BY:
GSWC STANDARDS COMMITTEE

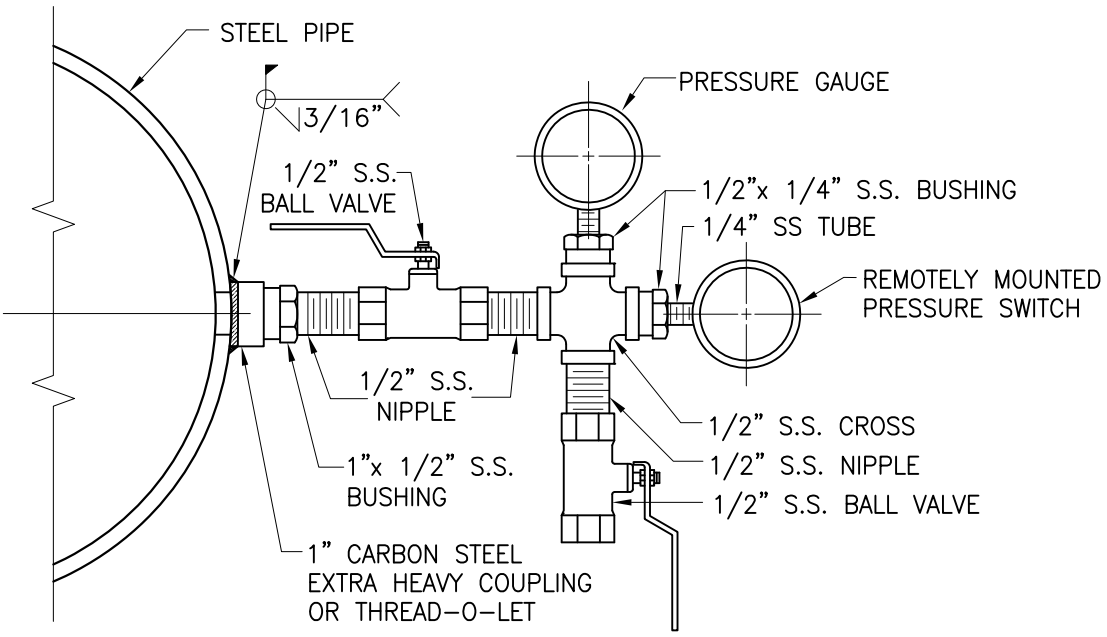
Robert N. Hansen — EDC MANAGER

10/16 — DATE

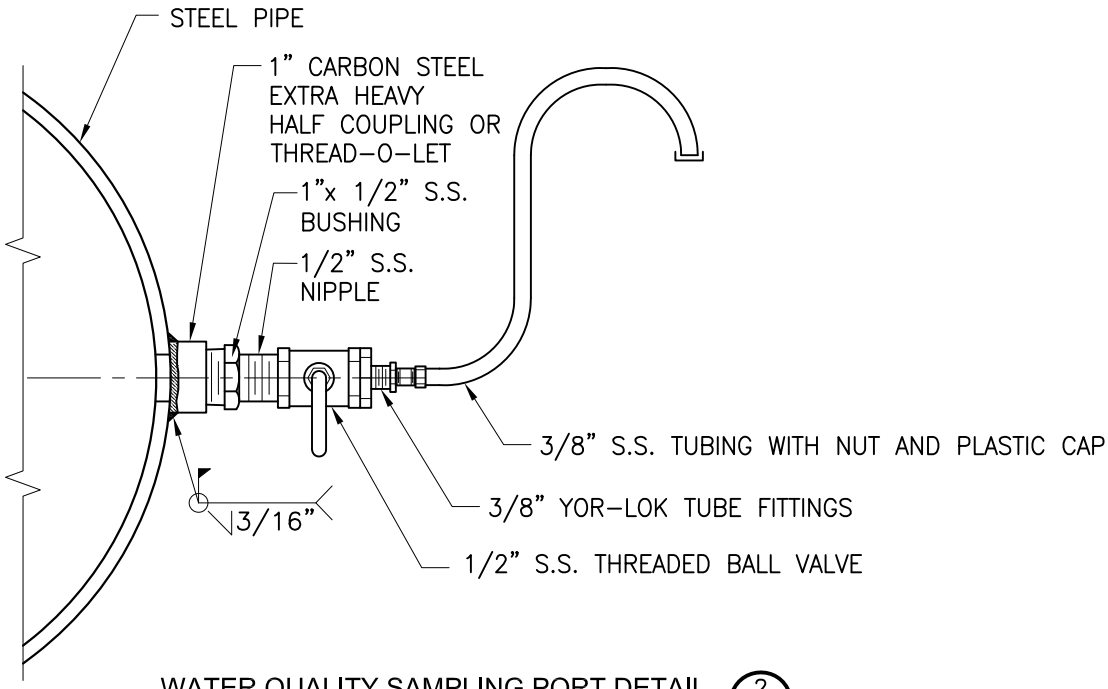
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **WATER QUALITY SAMPLING AND AIR RELEASE & VACUUM VALVE ASSEMBLY**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-6**

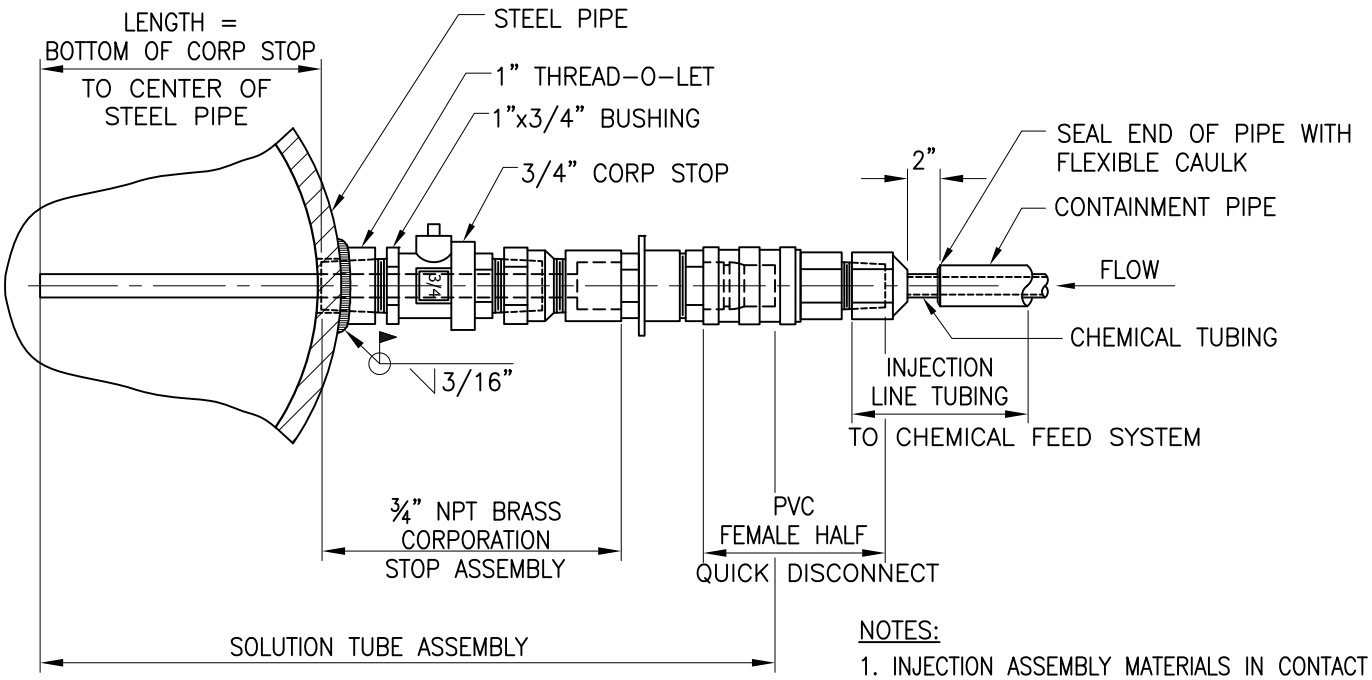


PRESSURE GAGE AND
PRESSURE TRANSMITTAL DETAIL 1
N.T.S.



WATER QUALITY SAMPLING PORT DETAIL 2
N.T.S.

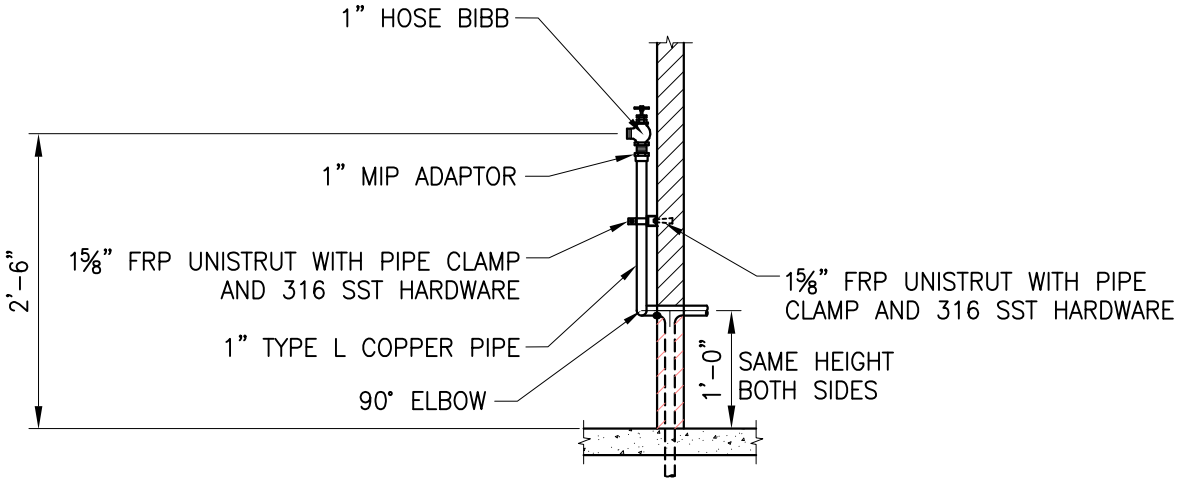
APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: PRESSURE GAGE AND WATER QUALITY SAMPLING PORT	
		SCALE: NONE	DATE: 10/16
		REV 1.1	STANDARD DWG NO. W-7



NOTES:

1. INJECTION ASSEMBLY MATERIALS IN CONTACT WITH CHEMICAL SHALL BE COMPATIBLE WITH CHEMICAL BEING CONVEYED.

CHEMICAL INJECTION QUILL DETAIL 1
N.T.S.



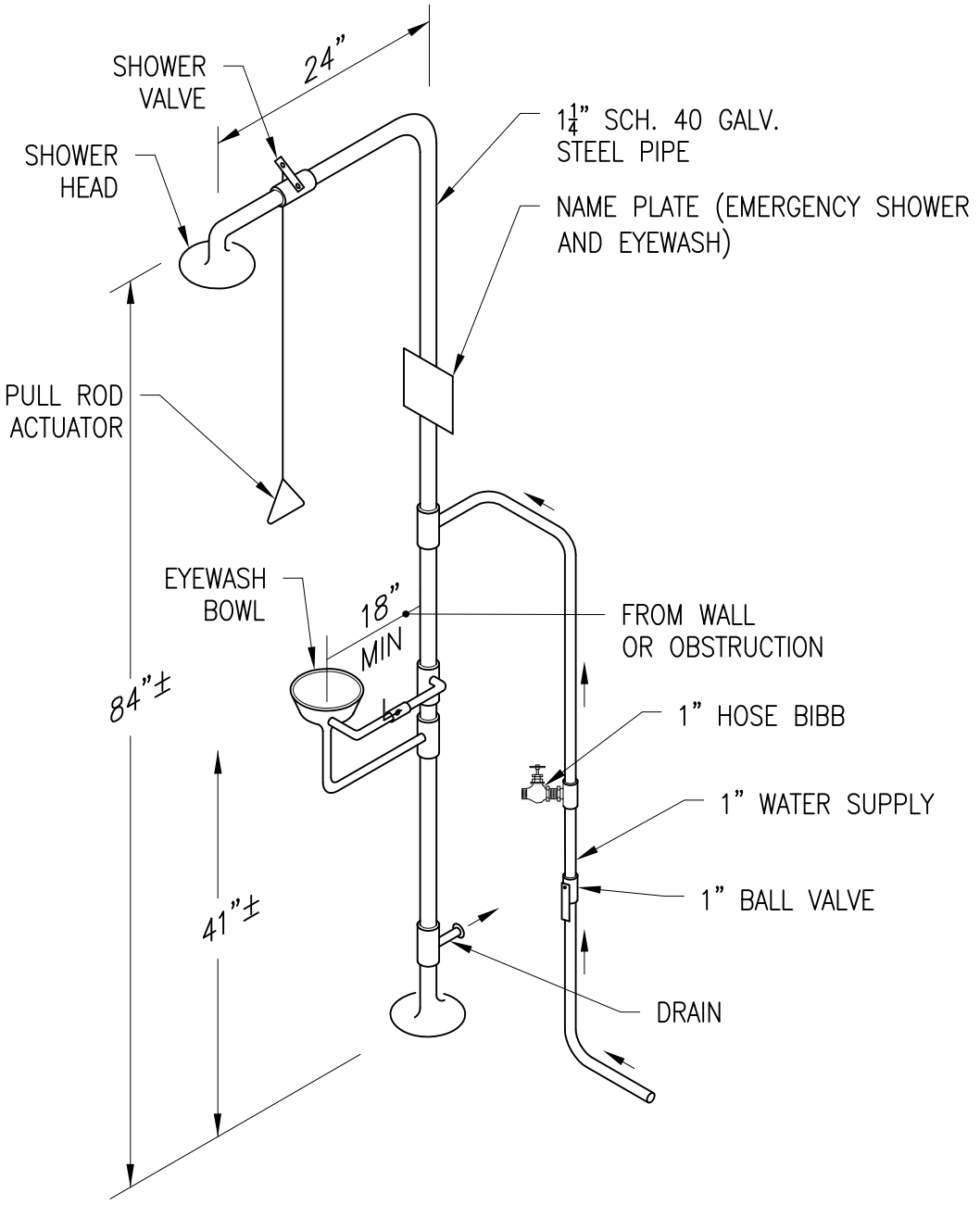
NOTE:

1. Install a vacuum breaker on each hose bib.

HOSE BIBB DETAIL 2
N.T.S.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **CHEMICAL INJECTION QUILL AND HOSE BIB**

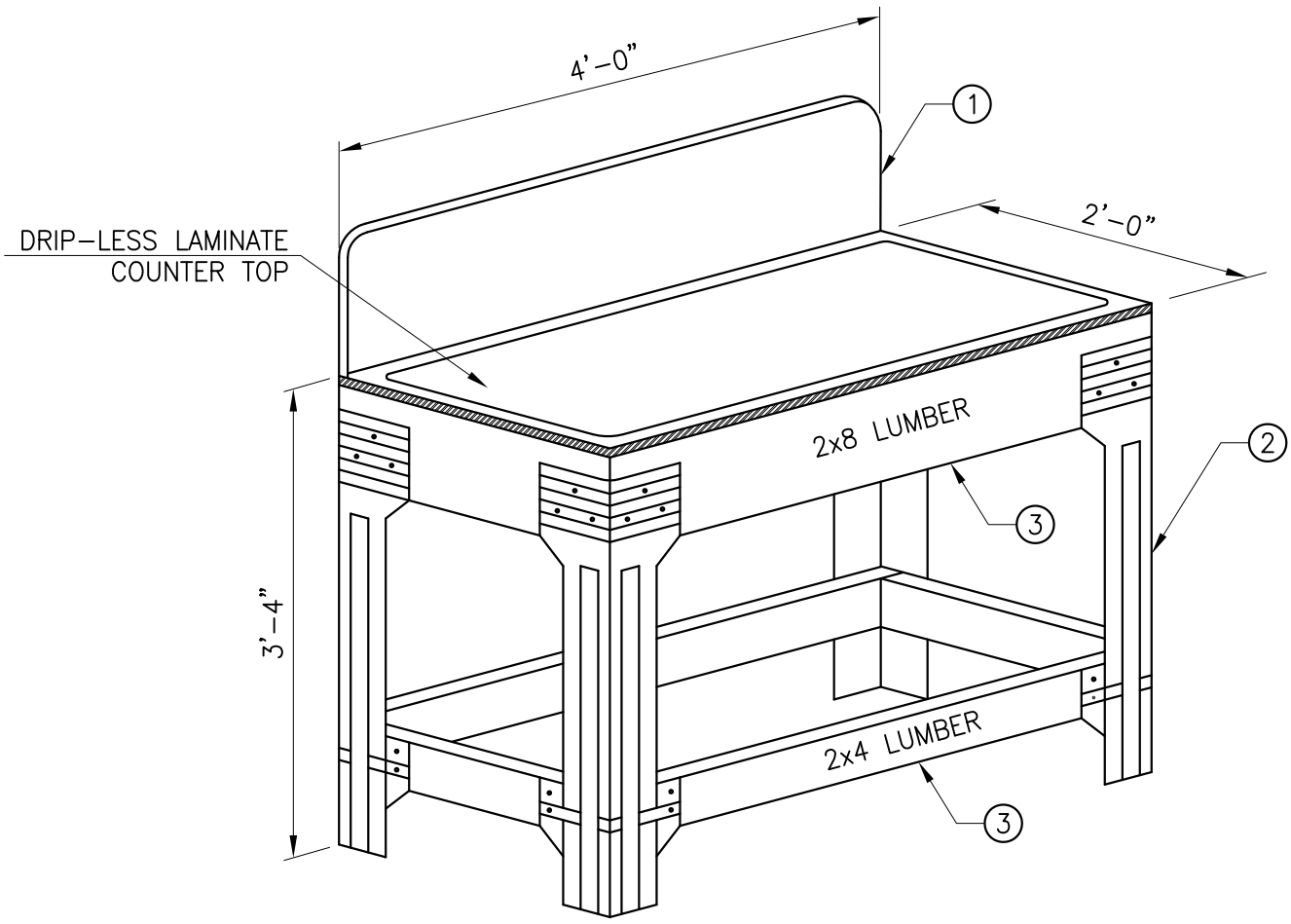
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**W-8**



NOTE:

1. Vacuum breakers to be installed on all hose bibs.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: EMERGENCY EYE WASH & SHOWER			
		SCALE: NONE	DATE: 01/16	REV 1.0	STANDARD DWG NO. W-9A

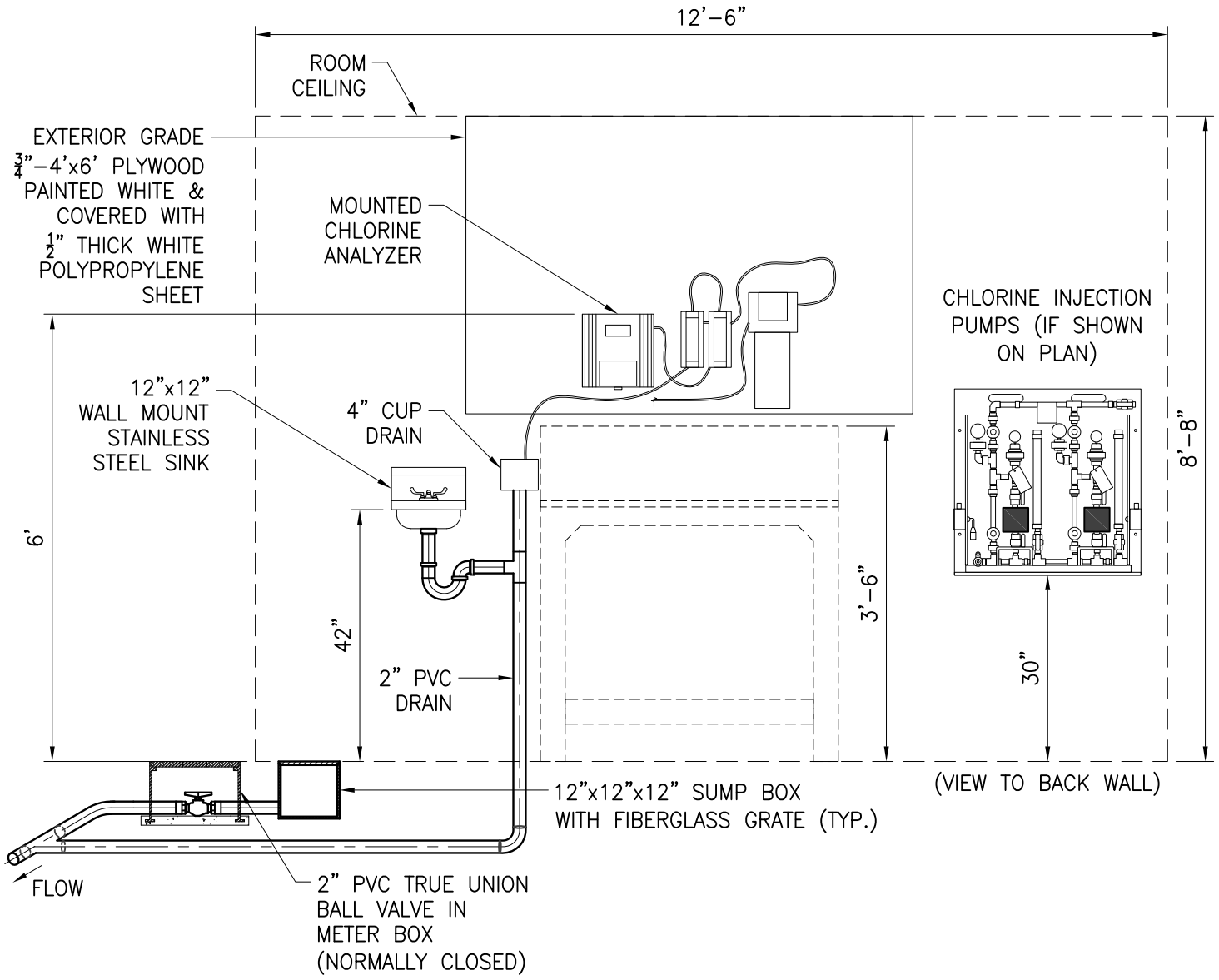


CONSTRUCTION NOTES:

1. Laminate countertop with 12" high backsplash.
2. Plastic resin workbench legs, 36" high–rocker hardware item no. 48509.
3. Plastic lumber
4. All exposed wood surfaces on bottom and back of countertop shall be painted with 3 coats of latex exterior paint for protection.
5. All screws and fasteners will be stainless steel.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **CHEMICAL BUILDING WORK TABLE**	

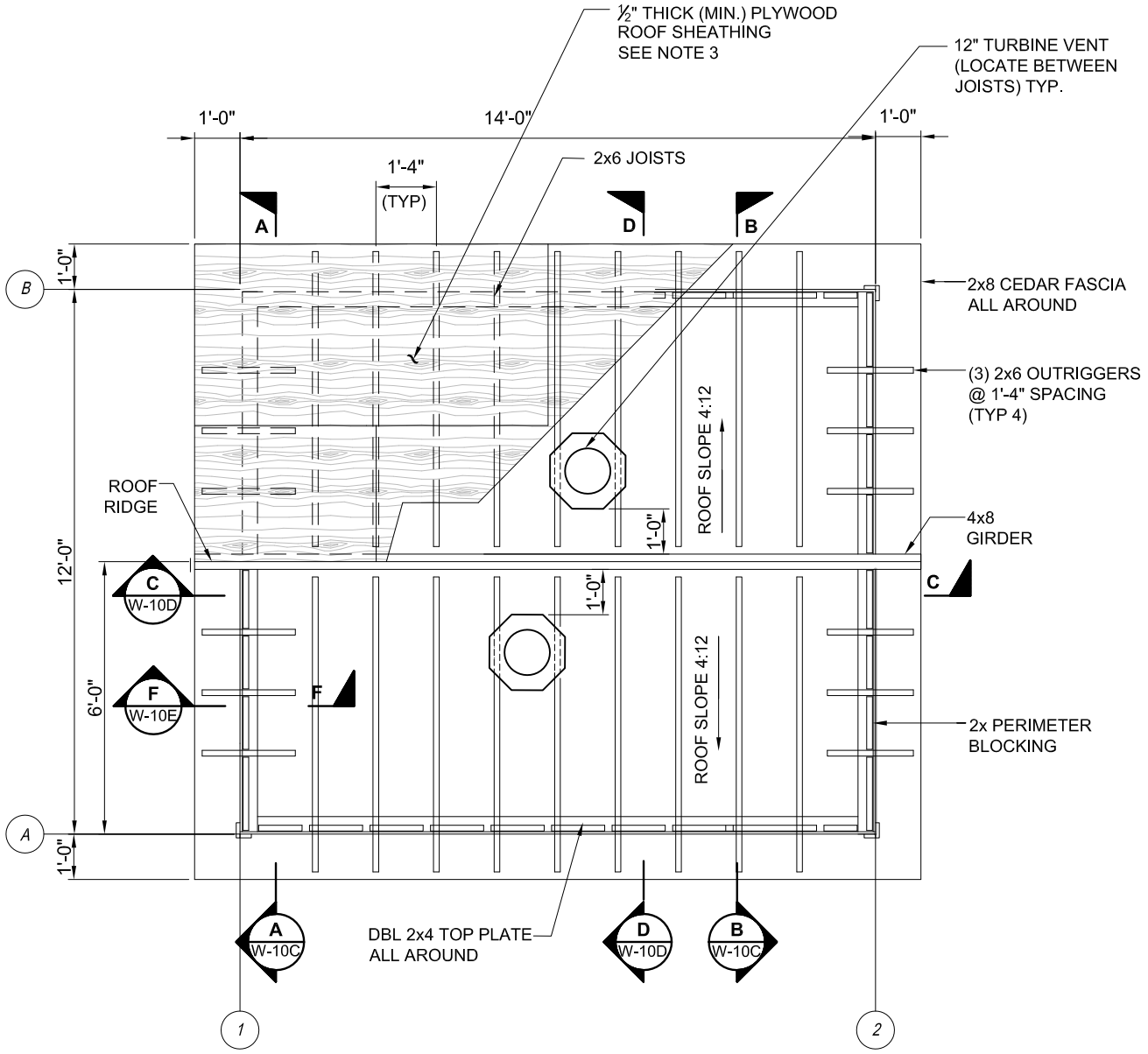
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-9B**



VIEW FROM DOOR
N.T.S.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **CHLORINE ANALYZER**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W–9C**



ROOF PLAN
N.T.S

NOTES:

1. Building foundation to be constructed of Type C concrete. Building slab to receive a trowel finish. Place control joints @ center of slab, each direction.

2. 5/8" plywood T1–11 sheathing for exterior walls. 2x blocking at panel edges w/ 10d @ 6" nails at panel edges and interior supports. Furnish interior walls w/ 1/2" exterior grade plywood, painted per the specifications.

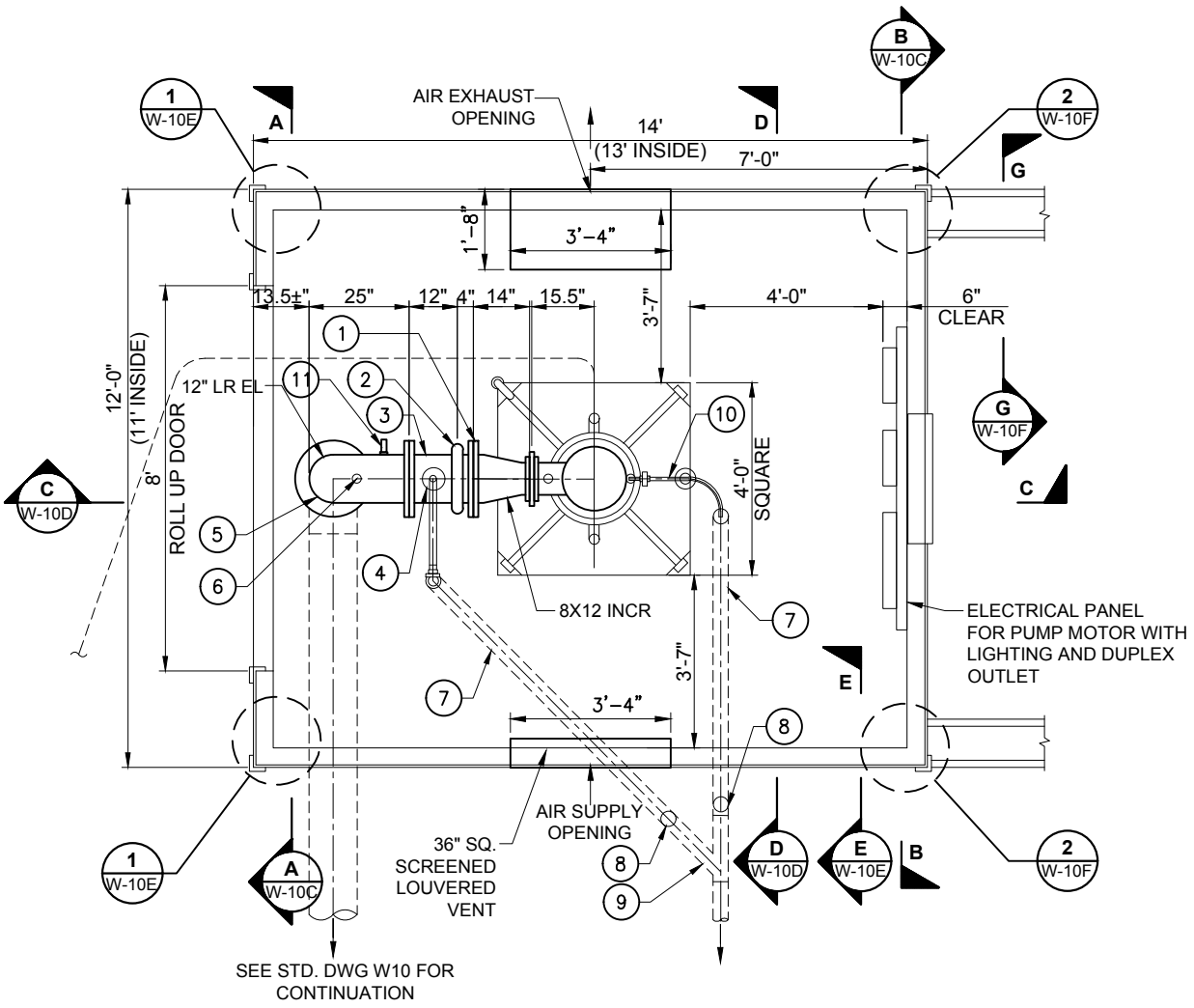
3. 1/2" plywood roof sheathing. 2x blocking at panel edges w/ 10d @ 6" nails at panel edges and 10d @ 12" at interior supports. Stagger panels edges as shown on this drawing.

4. This design shows an 8" pump discharge and 12" discharge pipe.

5. Roof exhaust fan shall provide 6000CFM air flow. Use Dayton 12" Turbine Vent Model CX12EBALMILUPS or approved equal. Use sloped roof curb to keep ventilator parallel to ground.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **MOVABLE WELL BUILDING (UP TO 200HP MOTOR)**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W–10A**



FLOOR PLAN
N.T.S

CONSTRUCTION NOTES:

1. INSTALL 12" STANDARD WEIGHT STEEL SPOOL, FExGE.
2. INSTALL 12" VICTAULIC COUPLING, STYLE 77.
3. INSTALL 12" STANDARD WEIGHT STEEL SPOOL, FExGE, THREADED FOR THE INSTALLATIONOF AIR/VACCUM VALVE ASSEMBLY.
4. INSTALL 2" APCO VERTICAL TURBINE AIR/VACUUM VALVE WITH 2" WELDOLET, 2" BALL VALVE AND 2" BUSHINGS PER STD. DGW. W-6
5. INSTALL 12"x90° SR STANDARD WEIGHT STEEL WELD ELBOW, FE.
6. INSTALL PRESSURE SWITCH AND GAUGE. PER STD. DWG. W-17.
7. INSTALL 4" PVC DRAIN
8. INSTALL 4" CLEANOUT
9. INSTALL 4" DIP WYE
10. INSTALL 1" THREAD-O-LET, $\frac{3}{8}$" BUSHING AND $\frac{3}{8}$" COMPRESSION FITTING AND $\frac{3}{8}$" COPPER TUBING TO DRAIN.
11. WATER QUALITY SAMPLING PORT ON SIDE OF PIPE PER STD. DWG. W-17.

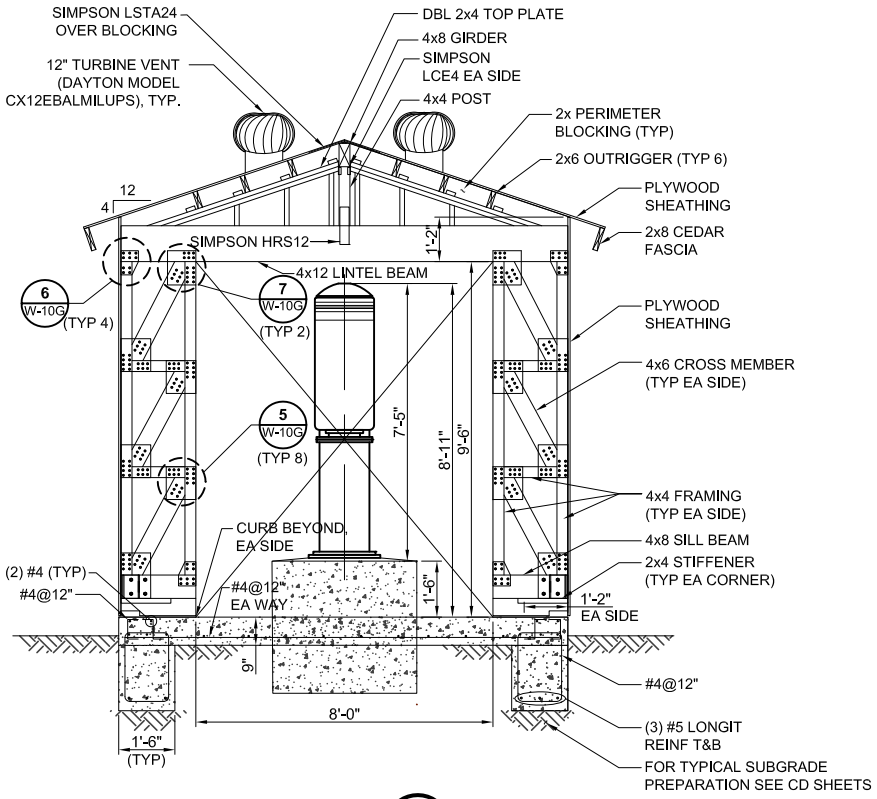
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hansford — 1/18
EDC MANAGER — DATE

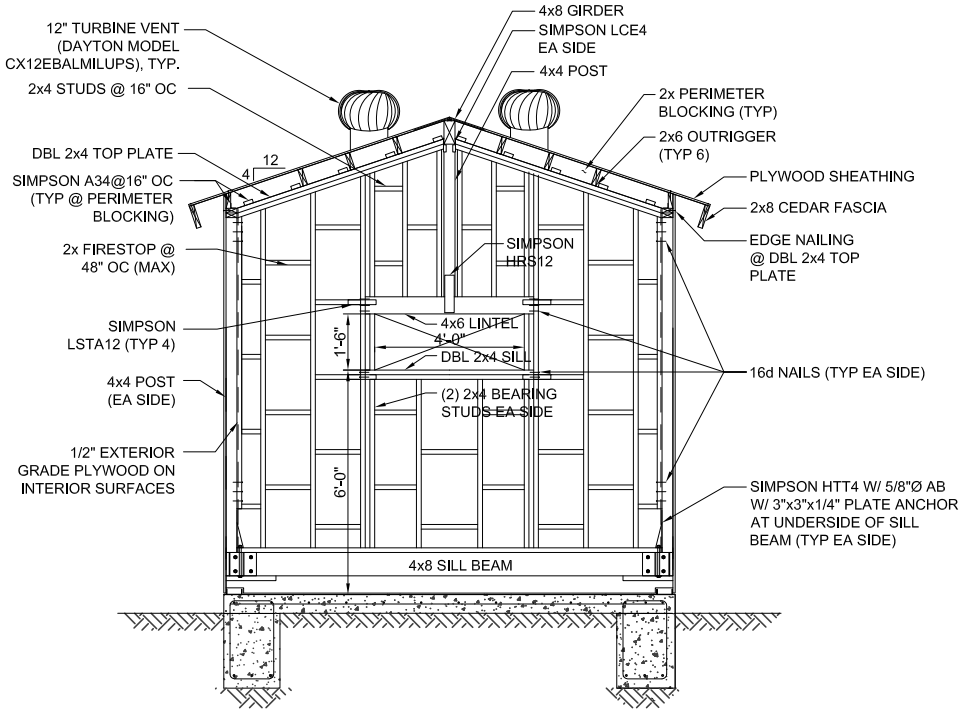
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (UP TO 200HP MOTOR)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**W-10B**



SECTION A (W-10A,B) N.T.S.



SECTION B (W-10A,B) N.T.S.

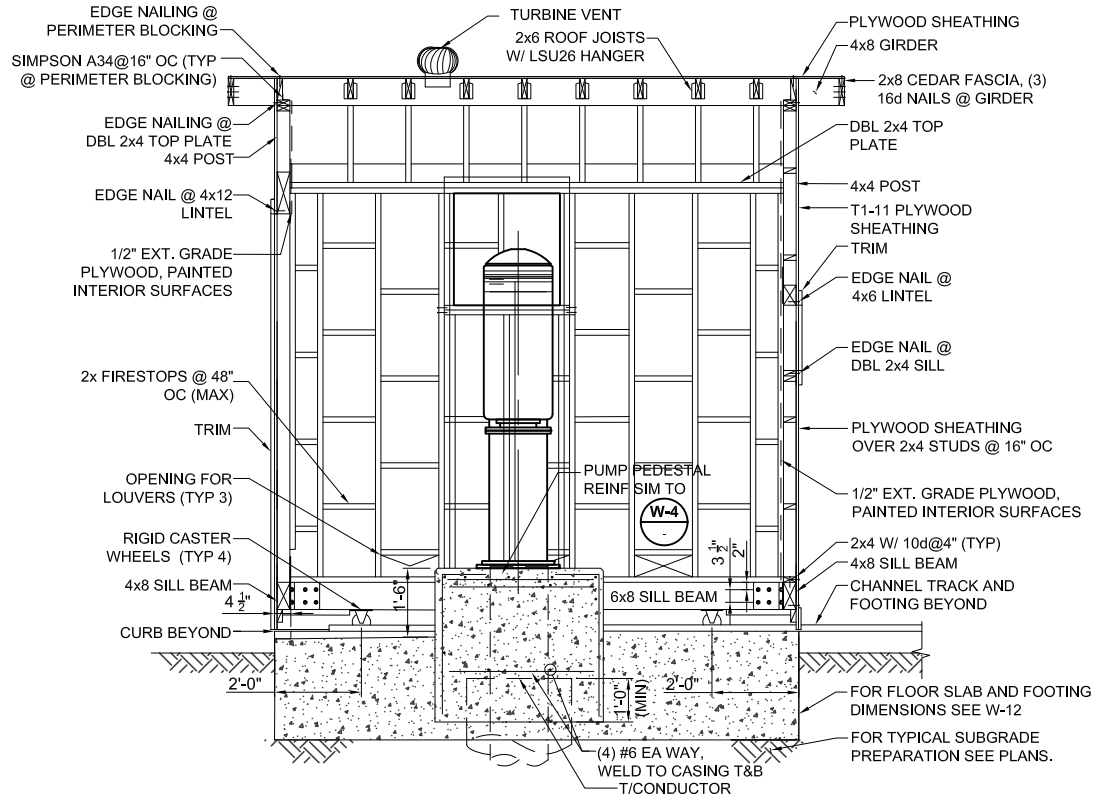
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (UP TO 200HP MOTOR)

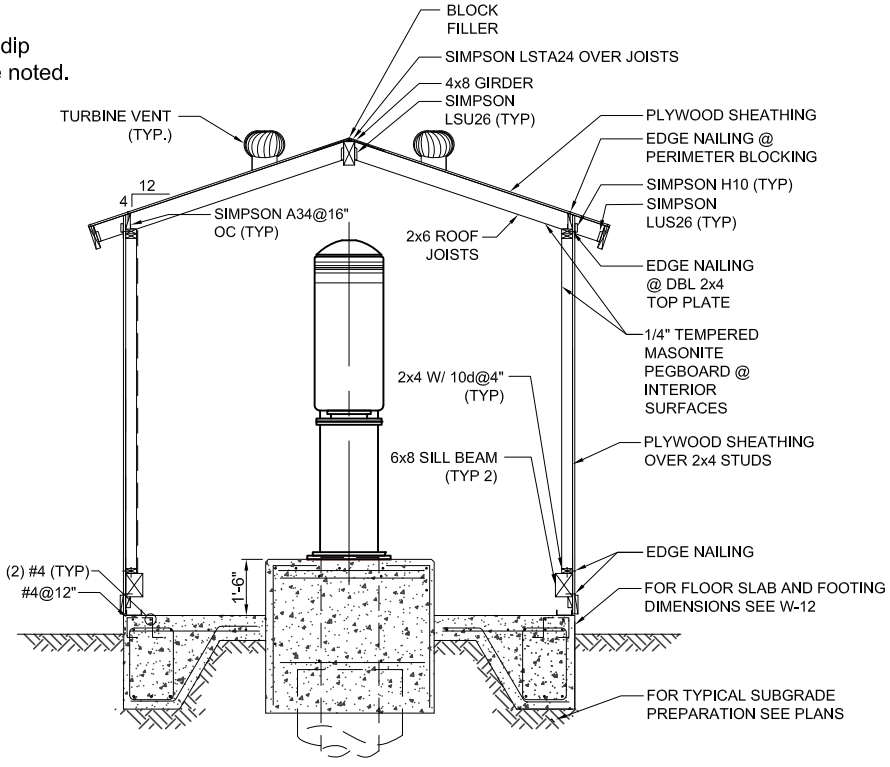
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	W-10C



SECTION C (W-10A,B)
N.T.S.

NOTES:

1. Side wall construction similar to each other.
2. Steel hardware shall be hot-dip galvanized unless otherwise noted.



SECTION D (W-10A,B)
N.T.S.

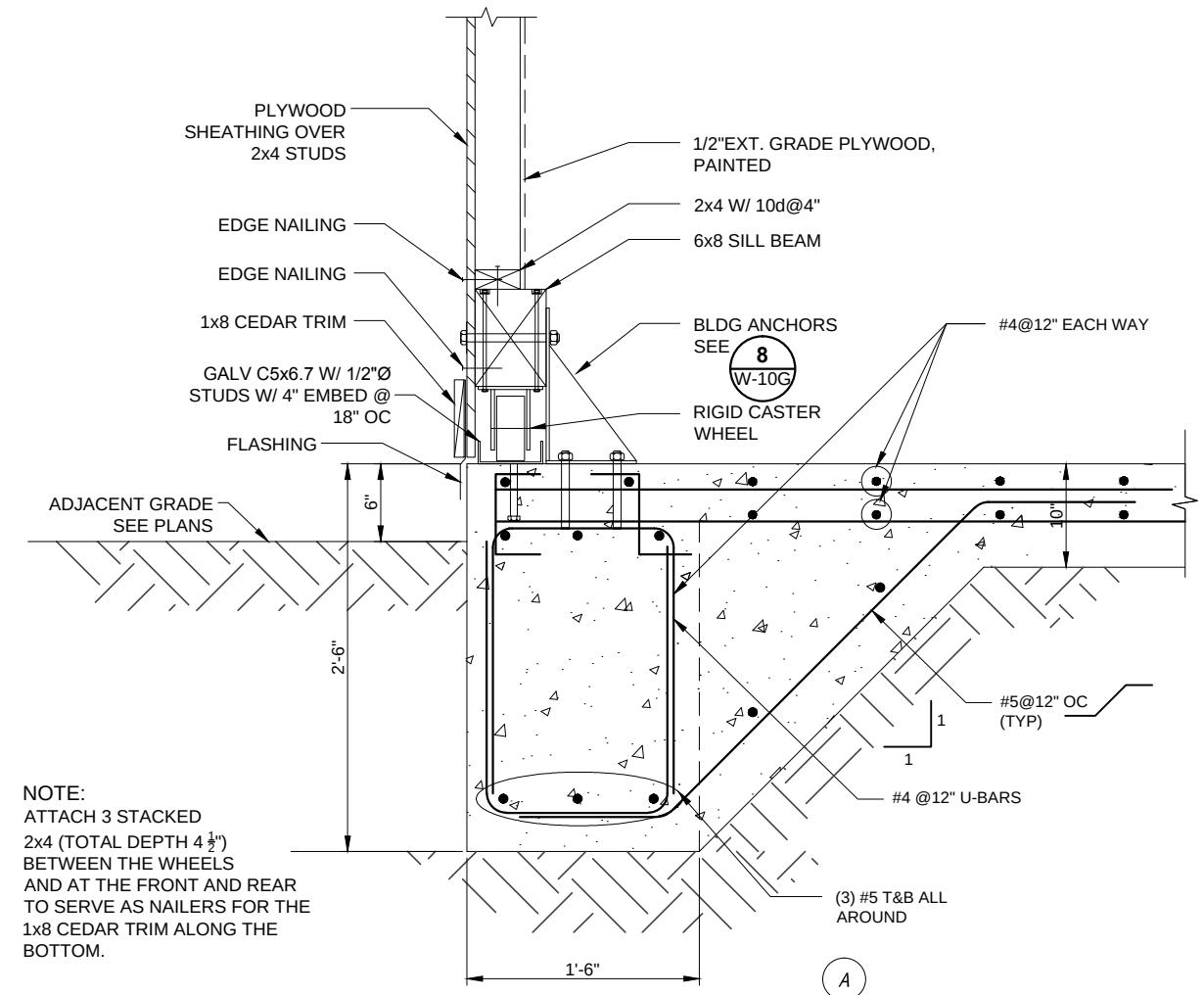
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

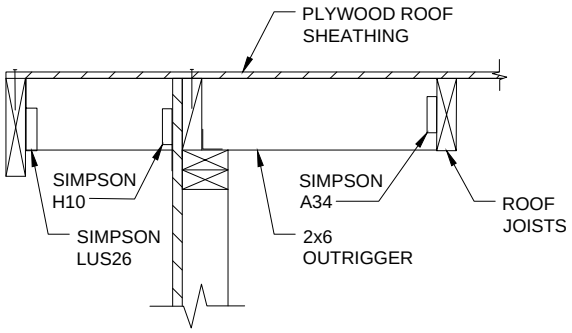
TITLE:
MOVABLE WELL BUILDING (UP TO 200HP MOTOR)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	W-10D

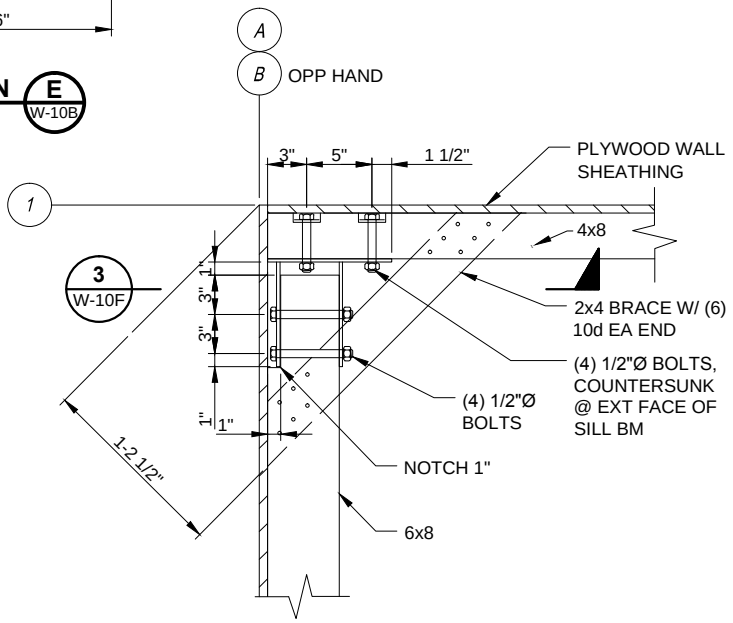


NOTE:
ATTACH 3 STACKED 2x4 (TOTAL DEPTH 4 ½") BETWEEN THE WHEELS AND AT THE FRONT AND REAR TO SERVE AS NAILERS FOR THE 1x8 CEDAR TRIM ALONG THE BOTTOM.

SECTION E N.T.S. (W-10B)



SECTION F N.T.S. (W-10A)



DETAIL 1 N.T.S. (W-10B)

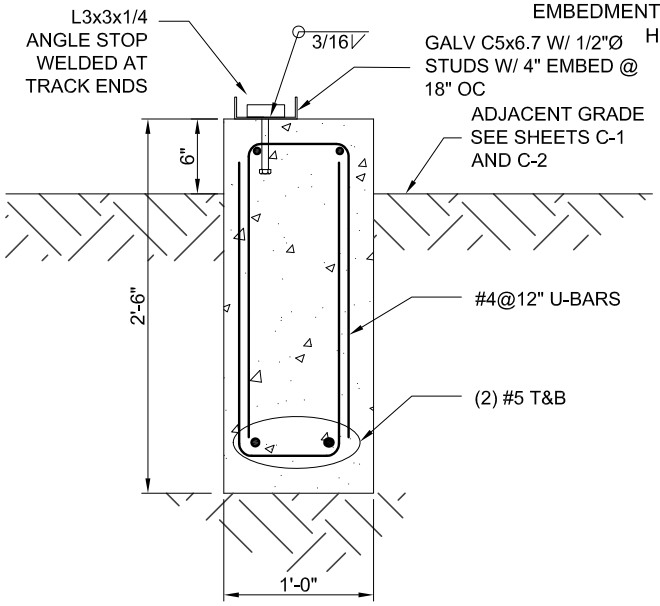
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartford — 01/16
EDC MANAGER — DATE

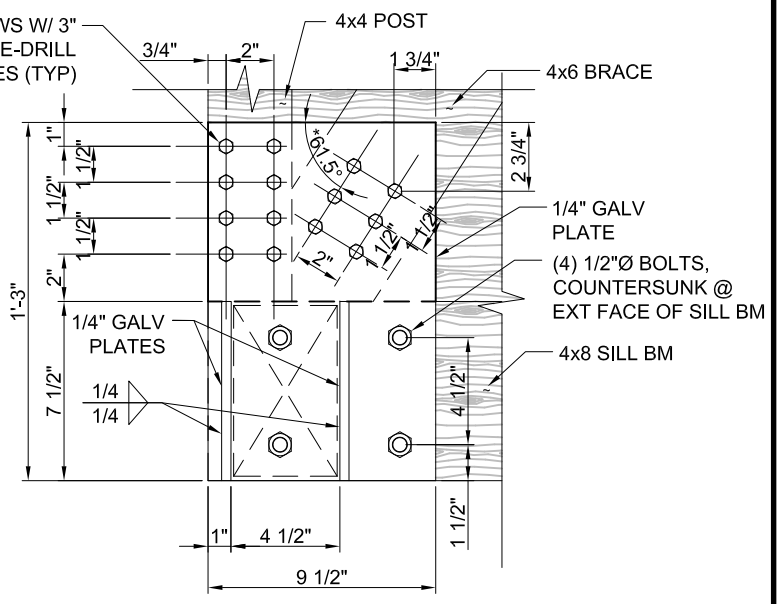
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (UP TO 200HP MOTOR)

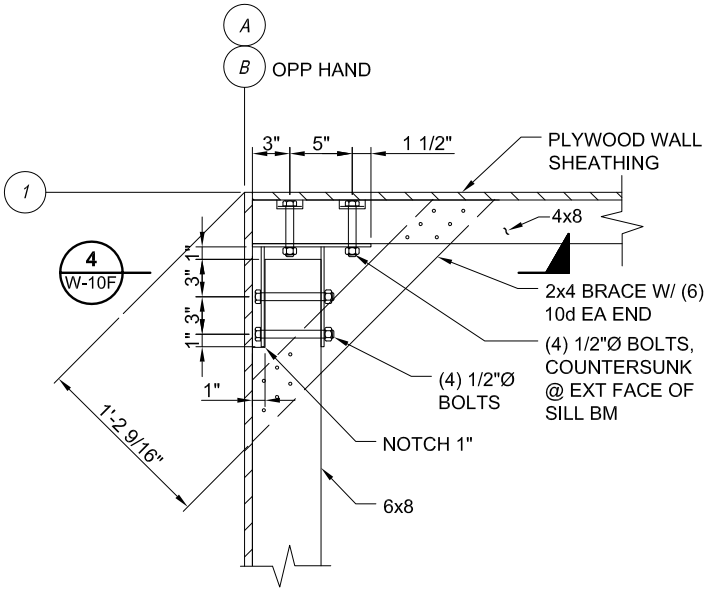
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.1	W-10E



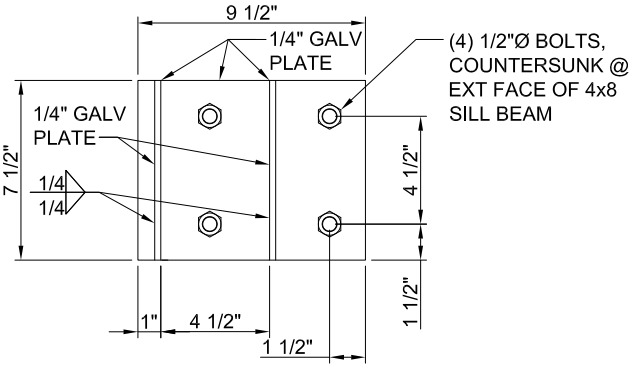
SECTION G N.T.S. W-10B



DETAIL 3 N.T.S. W-10E



DETAIL 2 N.T.S. W-10B



DETAIL 4 N.T.S. W-10F

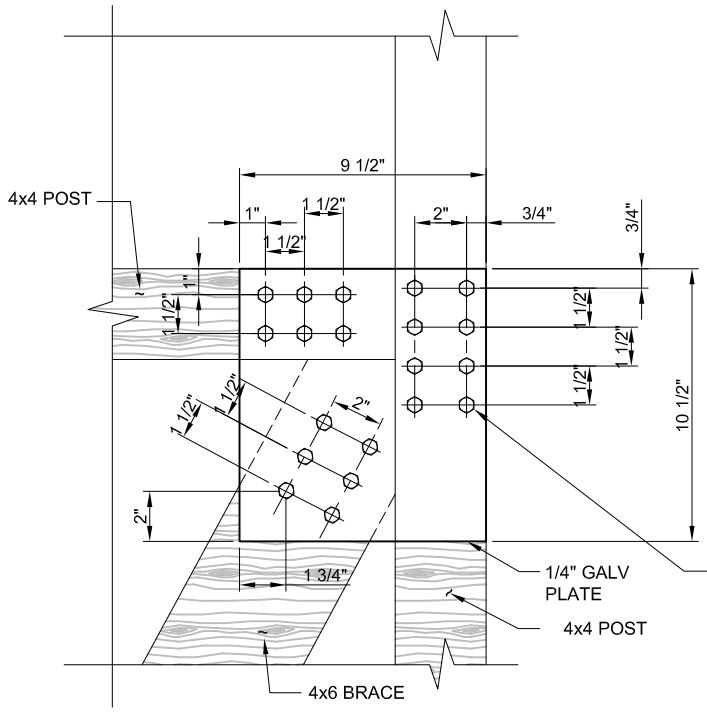
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert A. Hanford — 10/16
EDC MANAGER — DATE

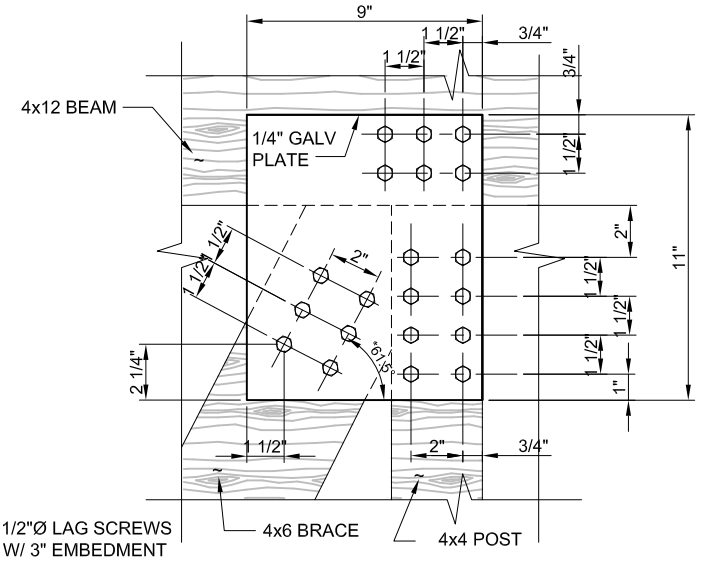
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (UP TO 200HP MOTOR)

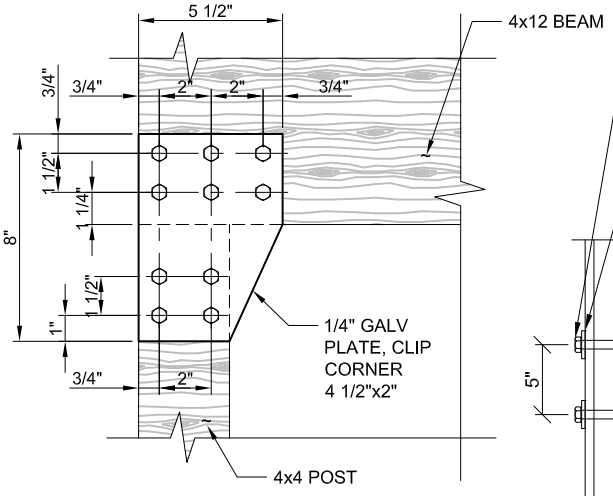
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	W-10F



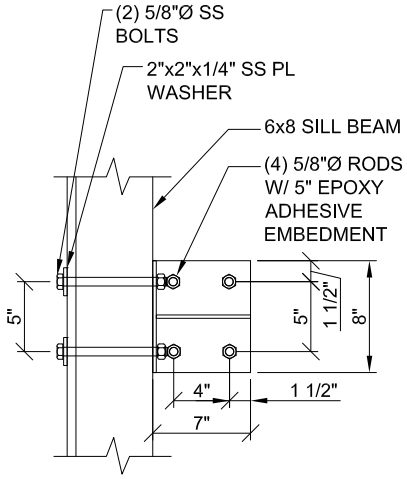
DETAIL 5 N.T.S. W-10C



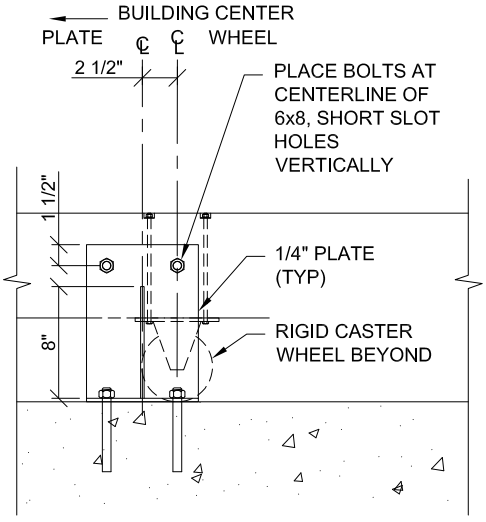
DETAIL 7 N.T.S. W-10C



DETAIL 6 N.T.S. W-10C



PLAN



ELEVATION

DETAIL 8 N.T.S. W-10E

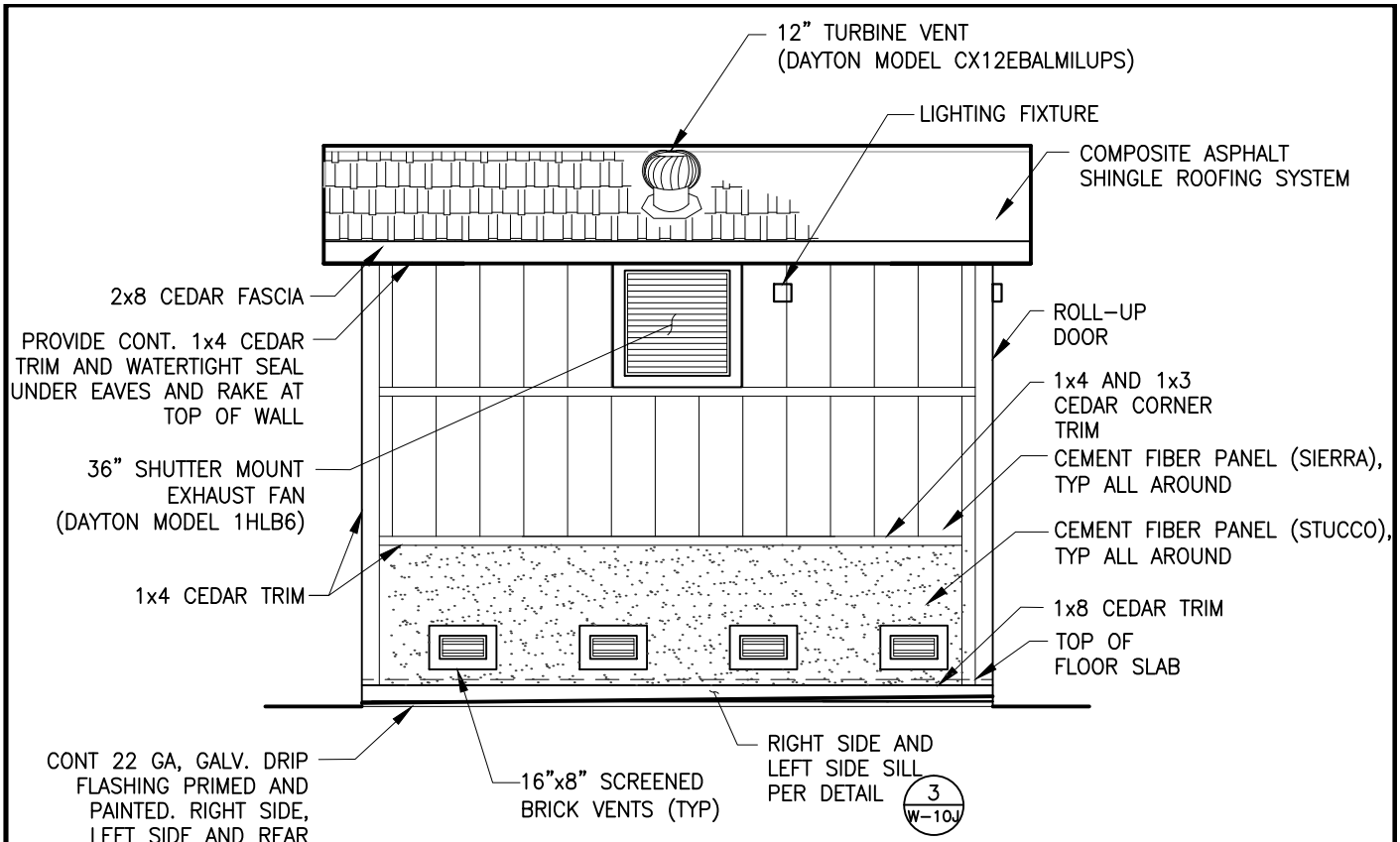
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartman — 01/16
EDC MANAGER — DATE

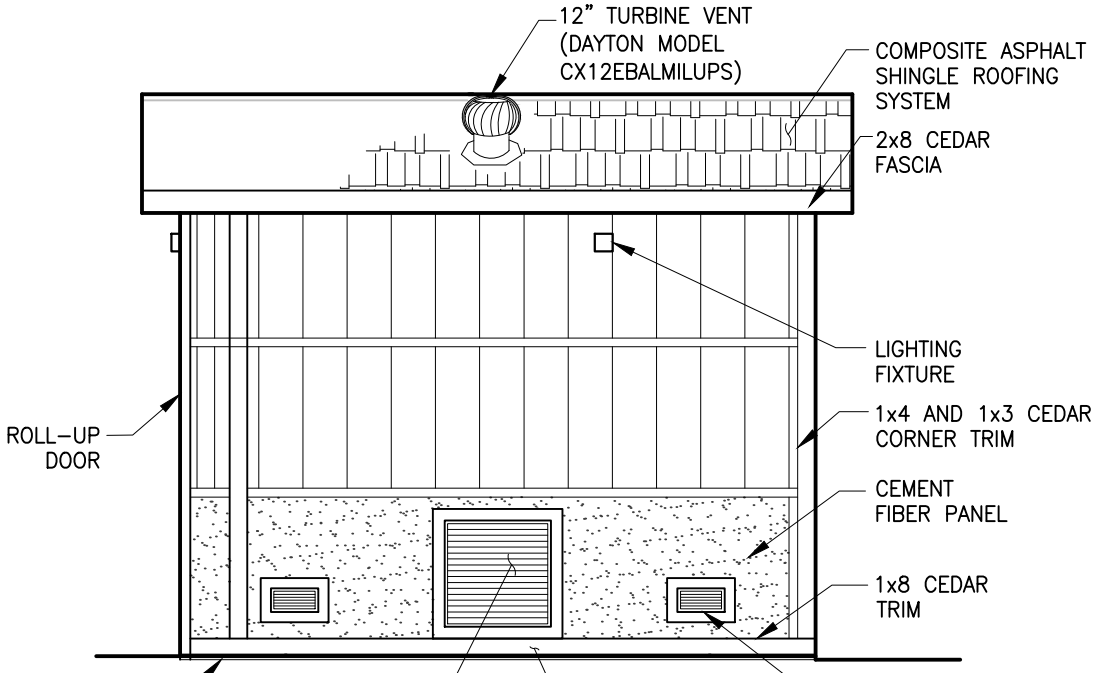
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (UP TO 200HP MOTOR)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	W-10G



RIGHT SIDE ELEVATION
N.T.S.



LEFT SIDE ELEVATION
N.T.S.

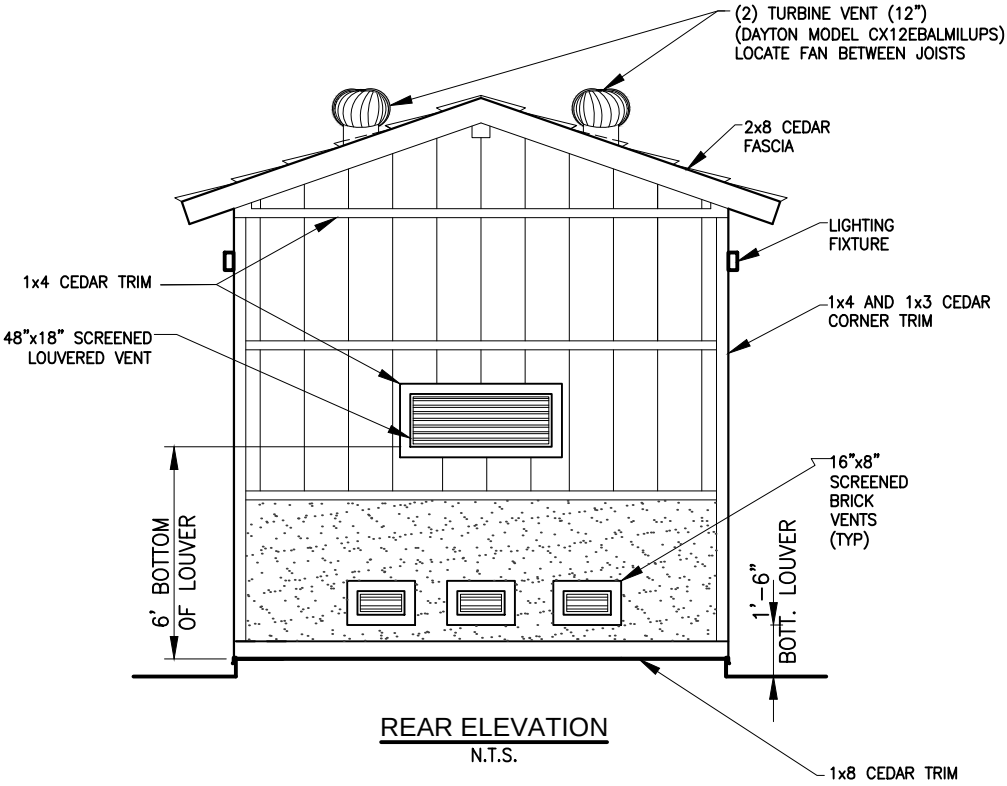
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartford — 10/16
EDC MANAGER — DATE

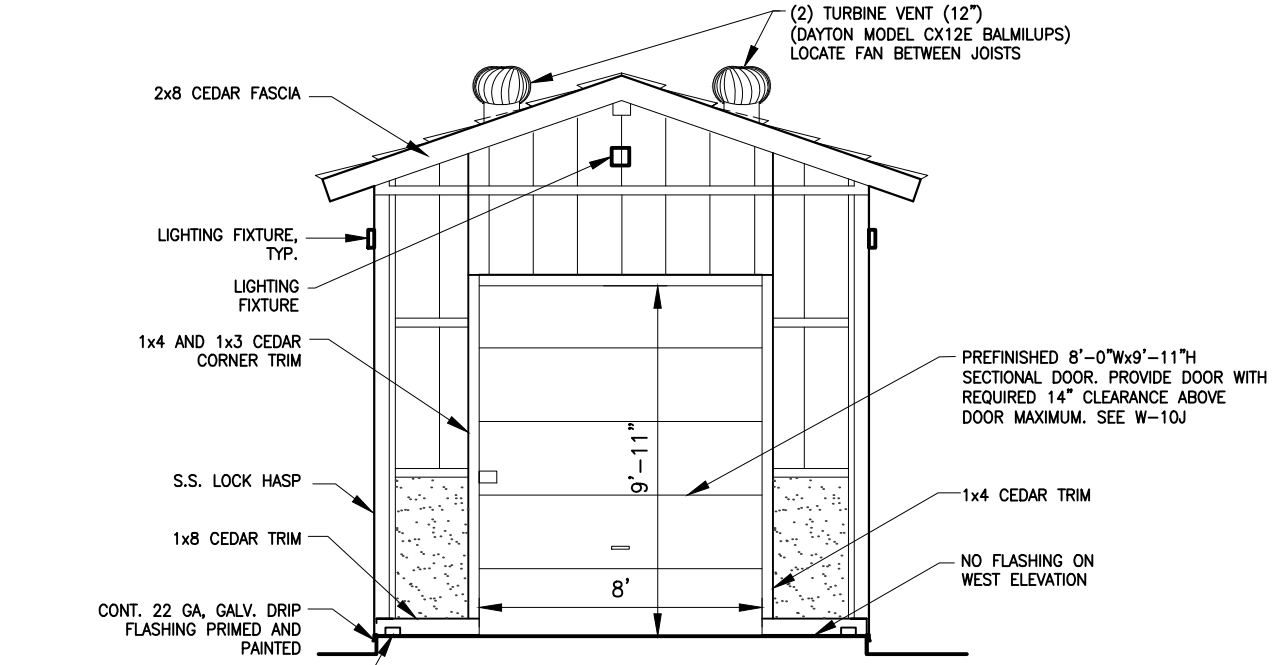
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **MOVABLE WELL BUILDING (UP TO 200HP MOTOR) BUILDING ELEVATIONS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.2	**W-10H**



REAR ELEVATION
N.T.S.



FRONT ELEVATION
N.T.S.

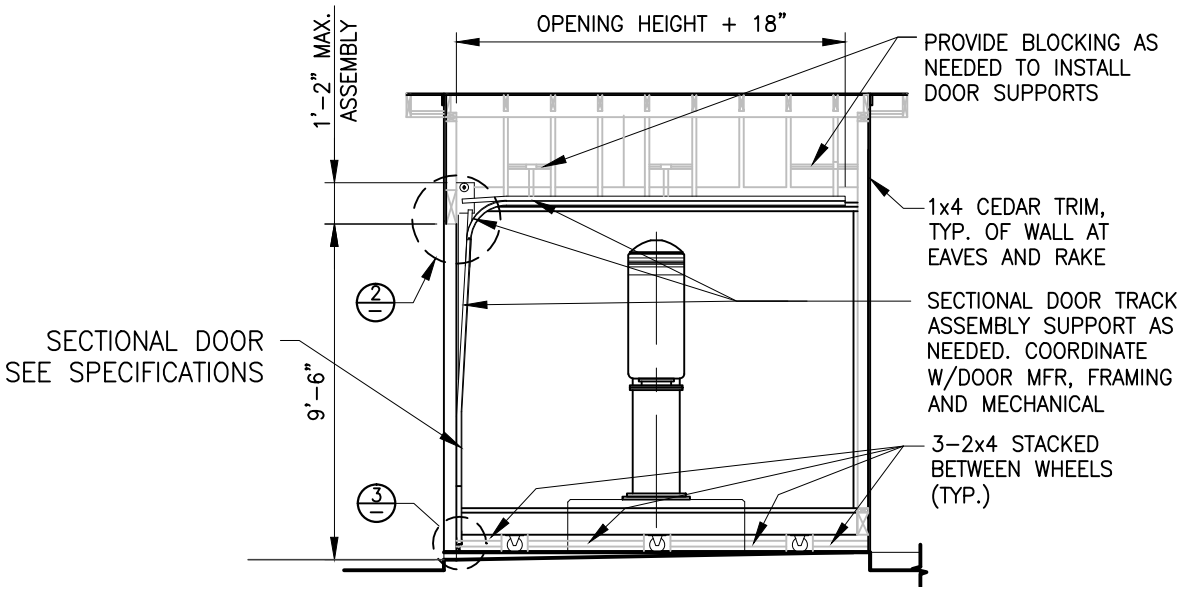
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartford — 10/16
EDC MANAGER — DATE

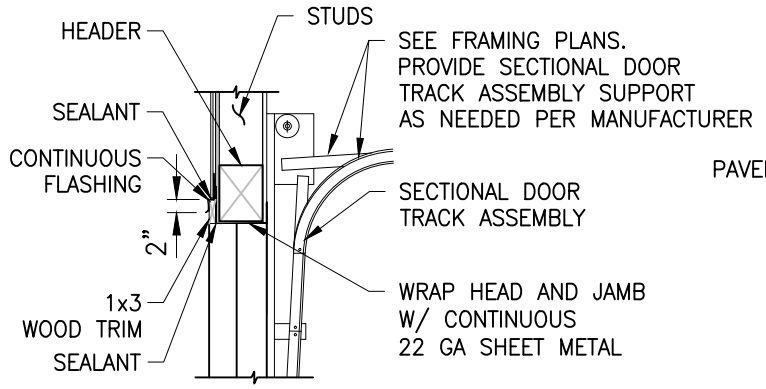
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **MOVABLE WELL BUILDING (UP TO 200HP MOTOR) BUILDING ELEVATIONS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.2	**W-101**

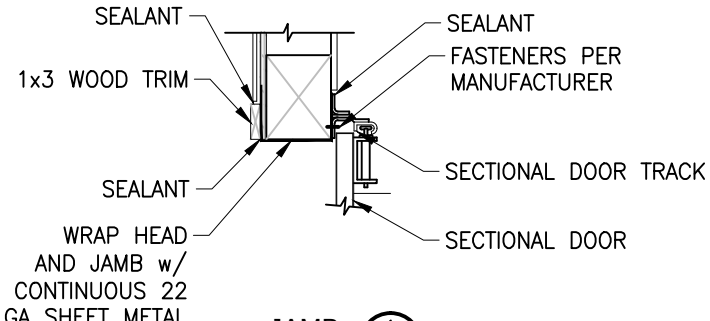


SECTIONAL DOOR SECTION 1 — N.T.S.

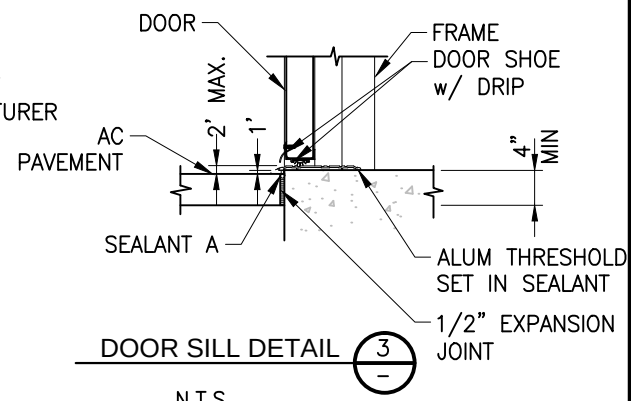


NOTE: DOOR NOT SHOWN FOR CLARITY

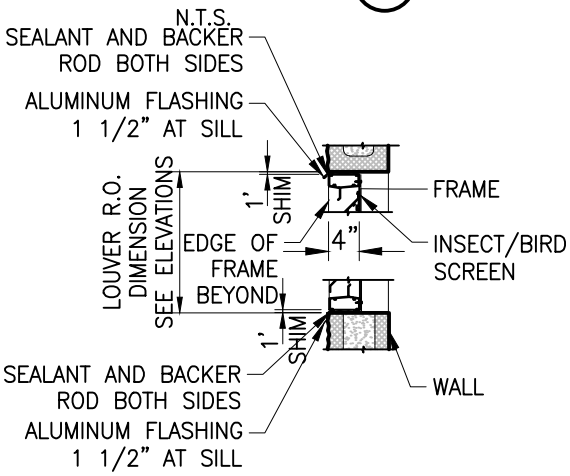
HEAD 2 — N.T.S.



JAMB 1 — N.T.S.

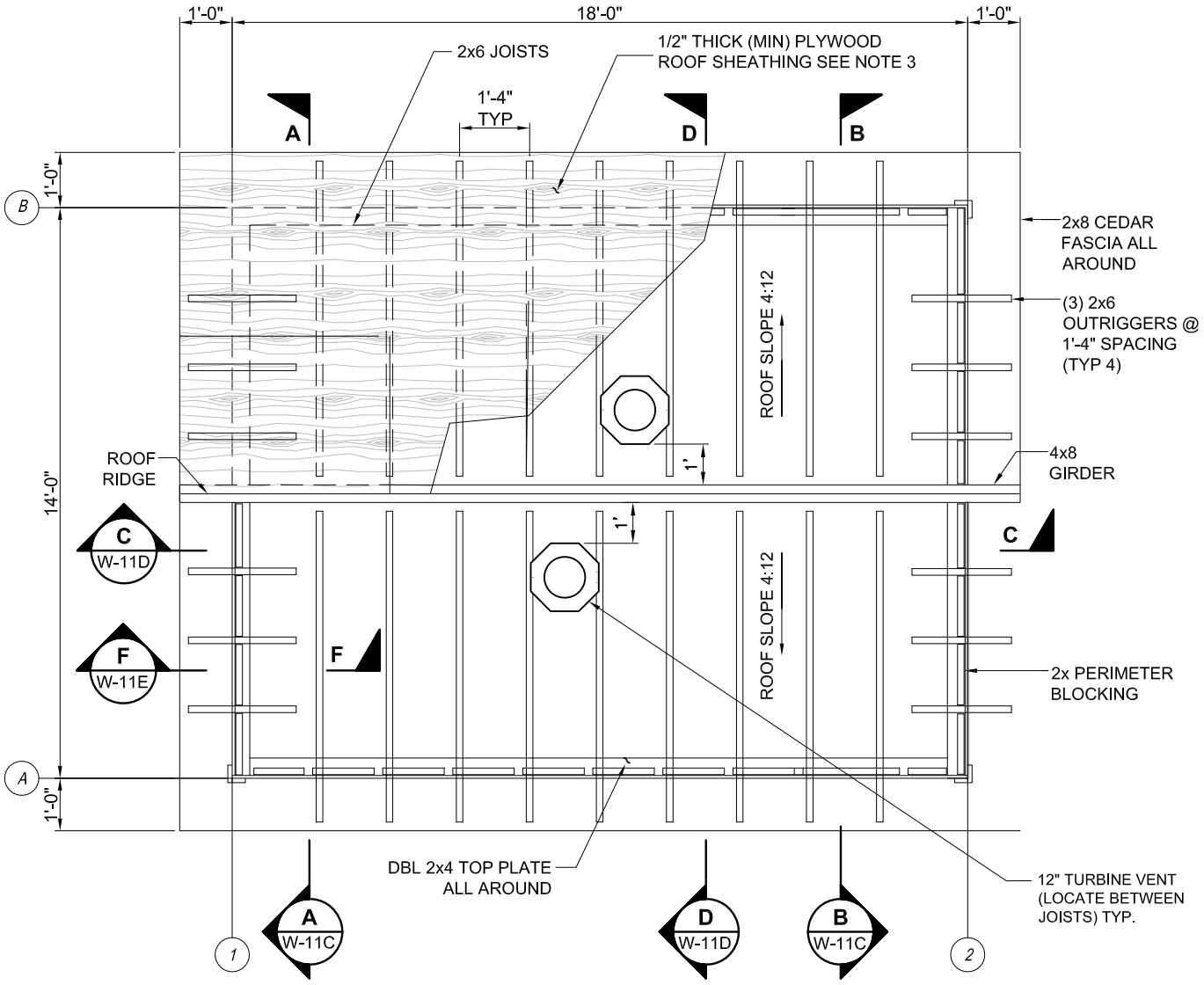


DOOR SILL DETAIL 3



LOUVER DETAIL 4 — N.T.S. — W-10J

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **MOVABLE WELL BUILDING (UP TO 200HP MOTOR) ROLL-UP DOOR AND DETALS**	
		SCALE: NONE	DATE: 02/17
		REV 1.2	STANDARD DWG NO. **W-10J**



ROOF PLAN
N.T.S

NOTES:

1. Building foundation to be constructed of Type C concrete. Building slab to receive a trowel finish. Place control joints @ center of slab, each direction.

2. 5/8" plywood T1–11 sheathing for exterior walls. 2x blocking at panel edges w/ 10d @ 6" nails at panel edges and interior supports. Furnish interior walls w/ 1/2" exterior grade plywood, painted per the specifications.

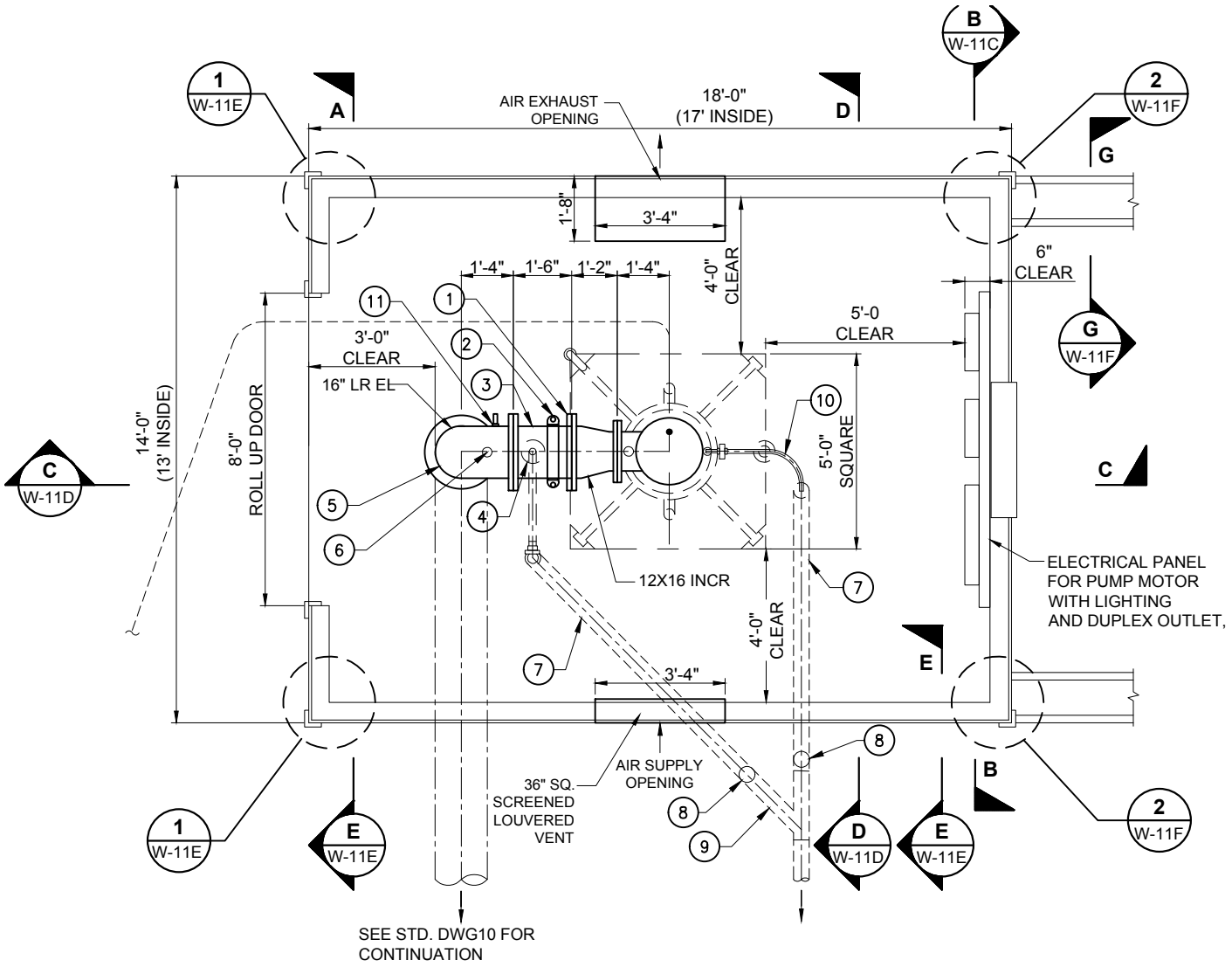
3. 1/2" plywood roof sheathing. 2x blocking at panel edges w/ 10d @ 6" nails at panel edges and 10d @ 12" at interior supports. Stagger panels edges as shown on this drawing.

4. This design shows an 12" pump discharge and 16" discharge pipe.

5. Roof exhaust fan shall provide 6000CFM air flow. Use Dayton 12" Turbine Vent Model CX12EBALMILUPS or approved equal. Use sloped roof curb to keep ventilator parallel to ground.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **MOVABLE WELL BUILDING (250HP MOTOR AND LARGER)**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W–11A**



FLOOR PLAN

N.T.S

CONSTRUCTION NOTES:

1. INSTALL 16" STANDARD WEIGHT STEEL SPOOL, FExGE.
2. INSTALL 16" VICTAULIC COUPLING, STYLE 77.
3. INSTALL 16" STANDARD WEIGHT STEEL SPOOL, FExGE, THREADED FOR THE INSTALLATION OF AIR/VACCUM VALVE ASSEMBLY.
4. INSTALL 2" APCO VERTICAL TURBINE AIR/VACUUM VALVE WITH 2" WELDOLET, 2" BALL VALVE AND 2" BUSHINGS PER STD. DGW. W-6
5. INSTALL 16"x90° SR STANDARD WEIGHT STEEL WELD ELBOW, FE.
6. INSTALL PRESSURE SWITCH AND GAUGE. PER STD. DWG. W-17.
7. INSTALL 4" PVC DRAIN
8. INSTALL 4" CLEANOUT
9. INSTALL 4" DIP WYE
10. INSTALL 1" THREAD-O-LET, $\frac{3}{8}$" BUSHING AND $\frac{3}{8}$" COMPRESSION FITTING AND $\frac{3}{8}$" COPPER TUBING TO DRAIN.
11. WATER QUALITY SAMPLING PORT ON SIDE OF PIPE. PER STD. DWG. W-17.

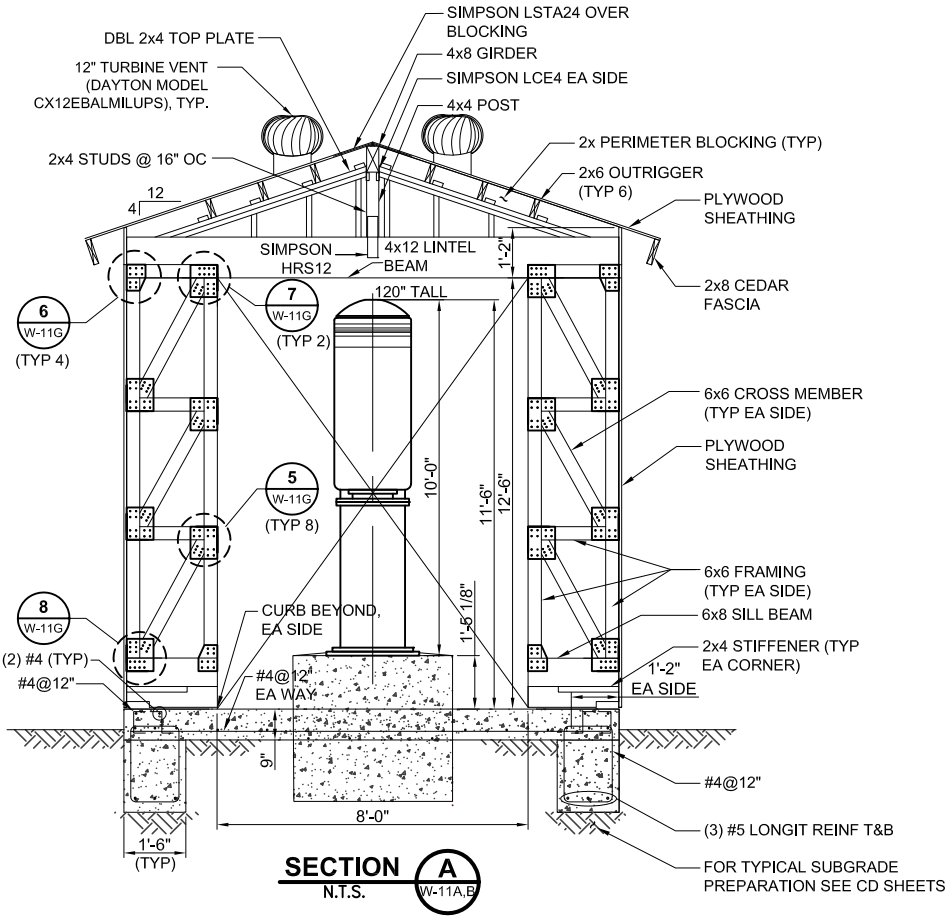
APPROVED BY:
GSWC STANDARDS COMMITTEE

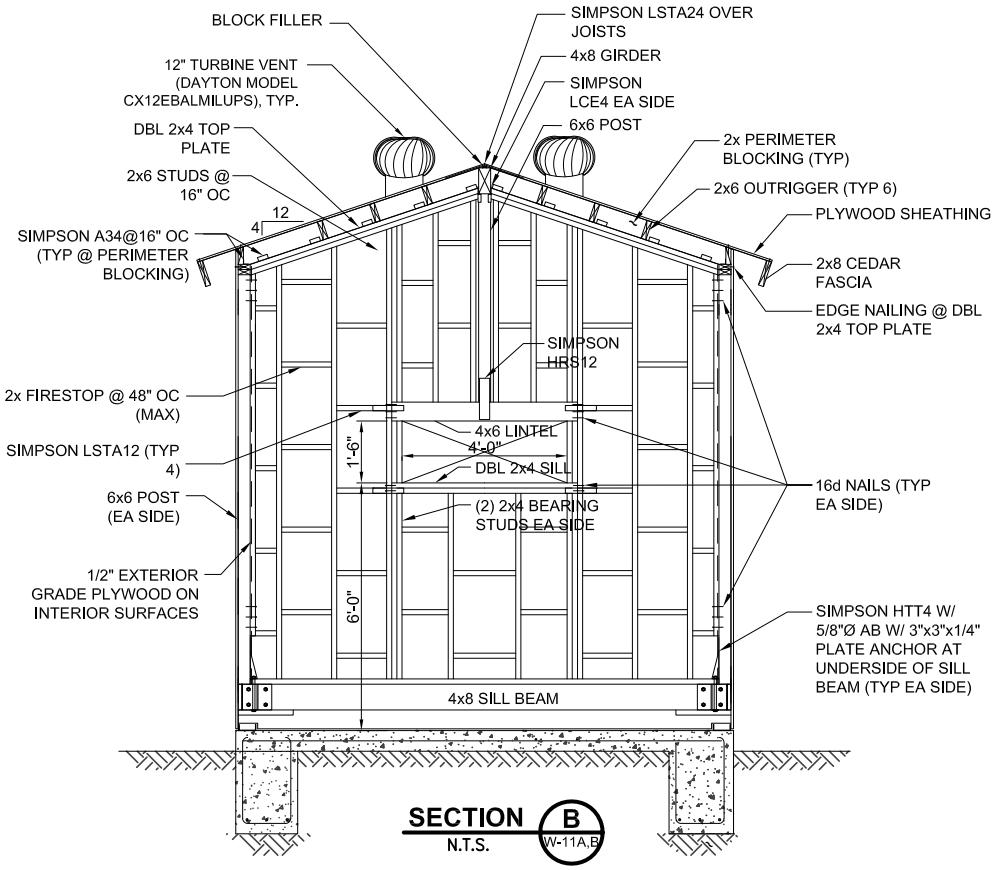
Robert N. Hansford — 1/18
EDC MANAGER — DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (250HP MOTOR AND LARGER)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**W-11B**





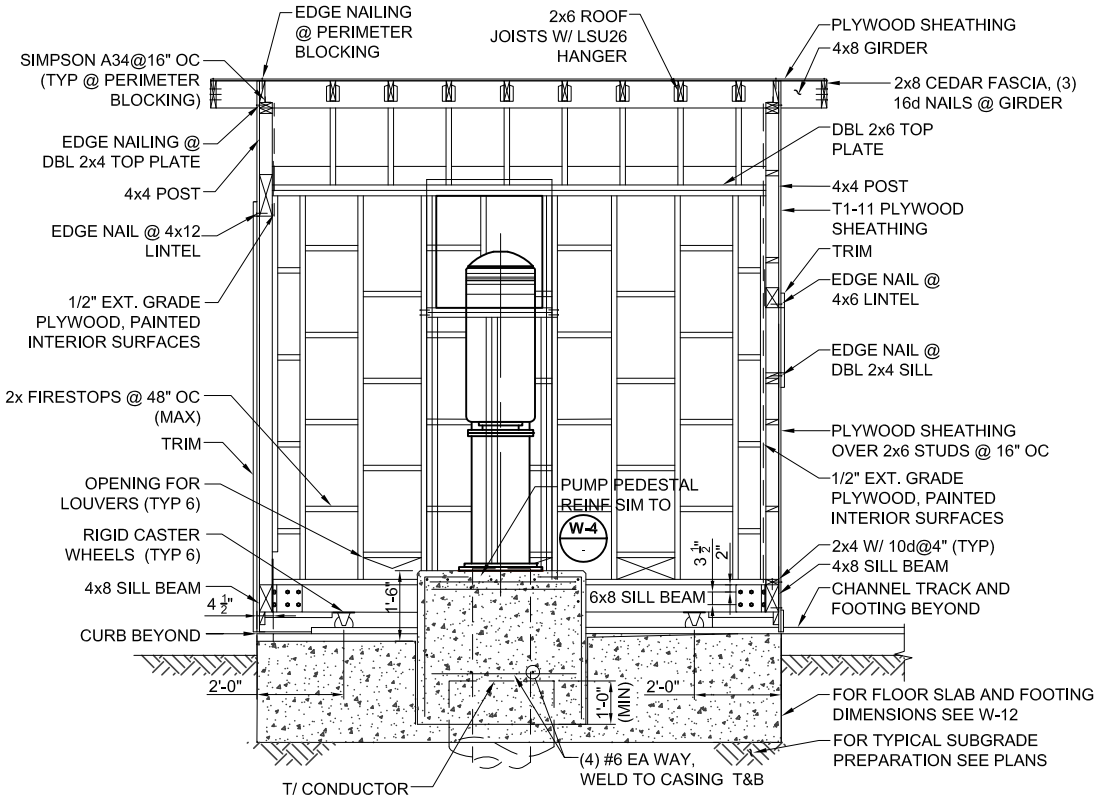
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (250HP MOTOR AND LARGER)

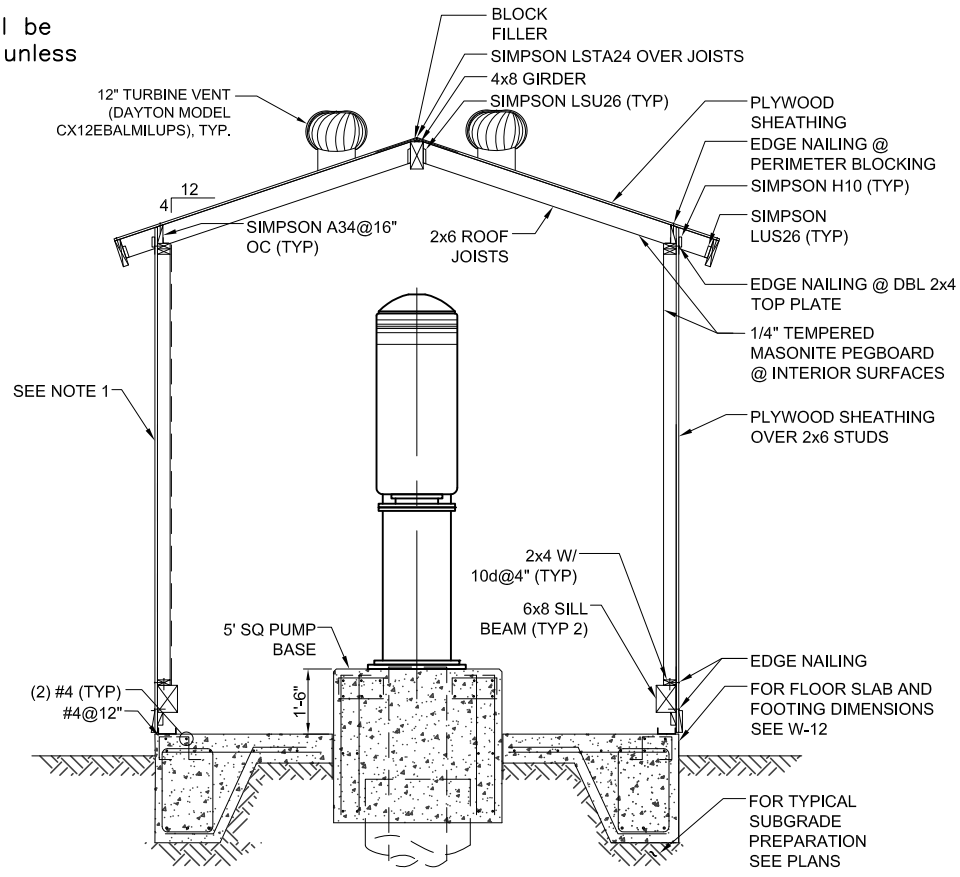
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	W-11C



SECTION C (W-11A,B) N.T.S.

NOTES:

1. Side wall construction similar to each other.
2. Steel hardware shall be hot–dip galvanized unless otherwise noted.



SECTION D (W-11A,B) N.T.S.

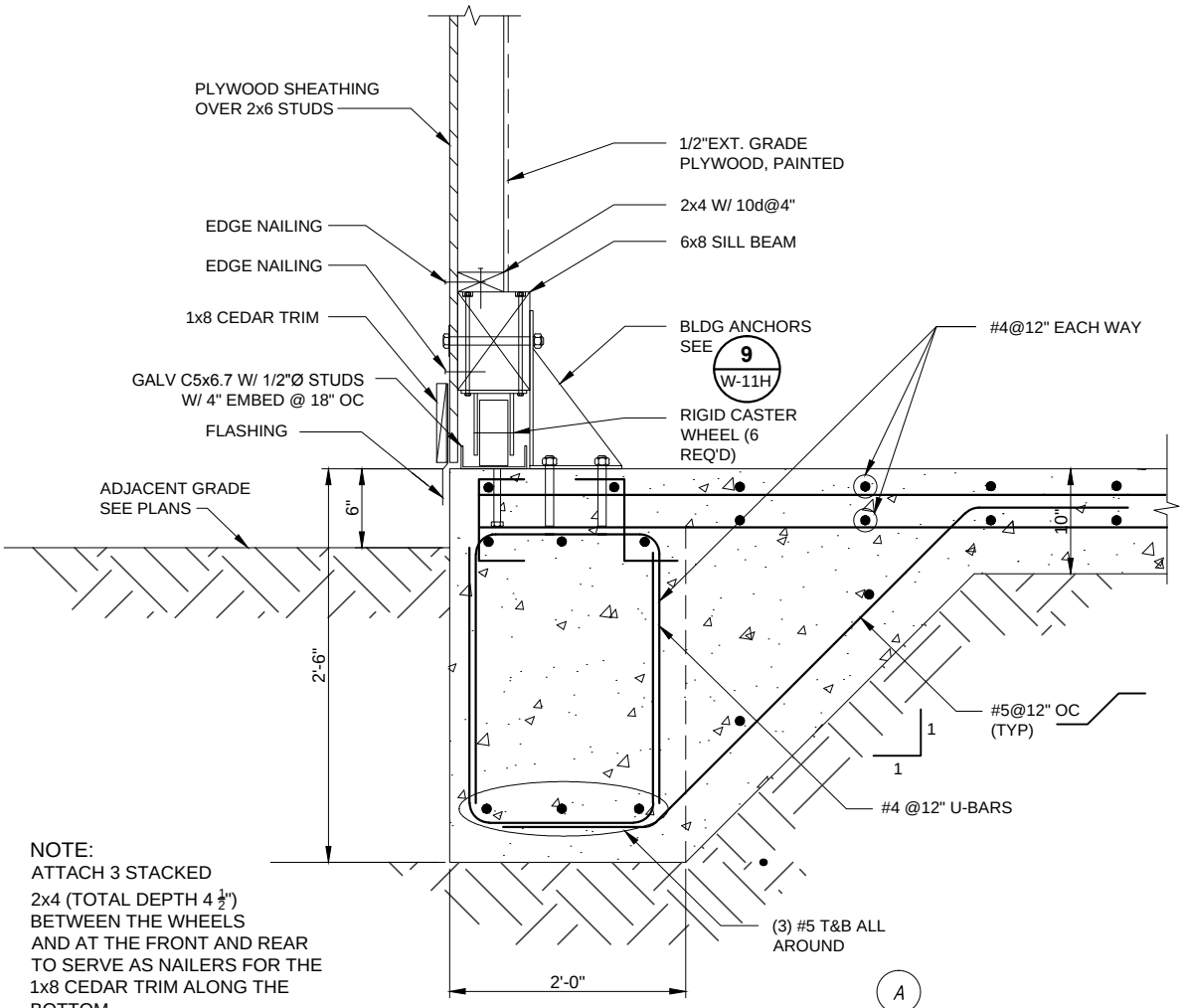
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

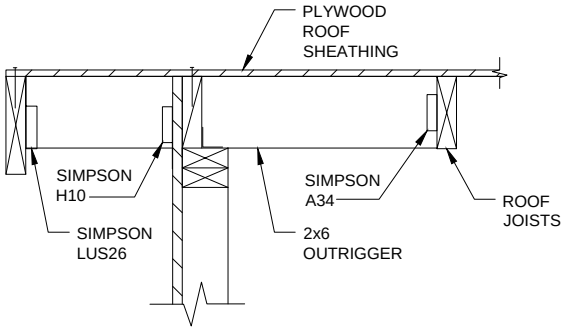
TITLE:
MOVABLE WELL BUILDING (250HP MOTOR AND LARGER)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	W–11D

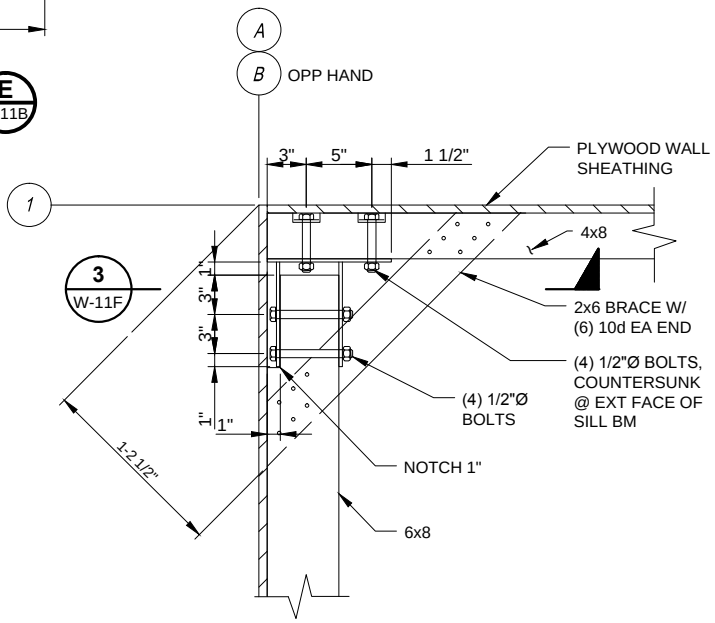


NOTE:
ATTACH 3 STACKED 2x4 (TOTAL DEPTH 4 ½") BETWEEN THE WHEELS AND AT THE FRONT AND REAR TO SERVE AS NAILERS FOR THE 1x8 CEDAR TRIM ALONG THE BOTTOM.

SECTION E N.T.S. W-11B



SECTION F N.T.S. W-11A



DETAIL 1 N.T.S. W-11B

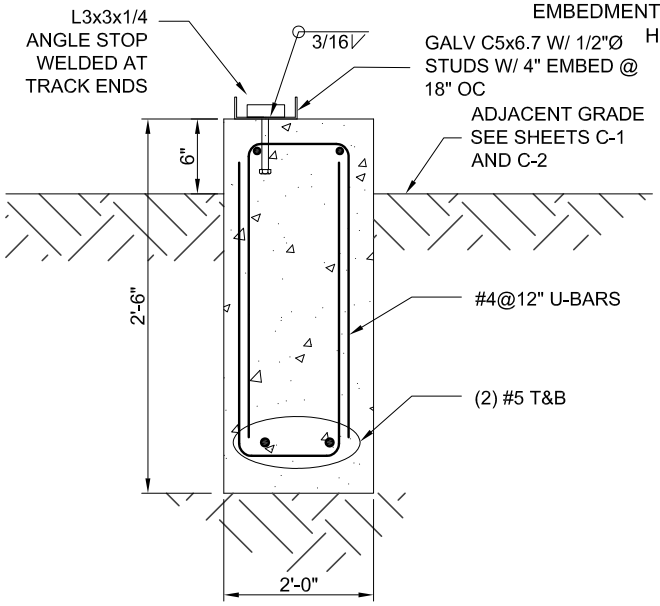
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartford — 10/16
EDC MANAGER — DATE

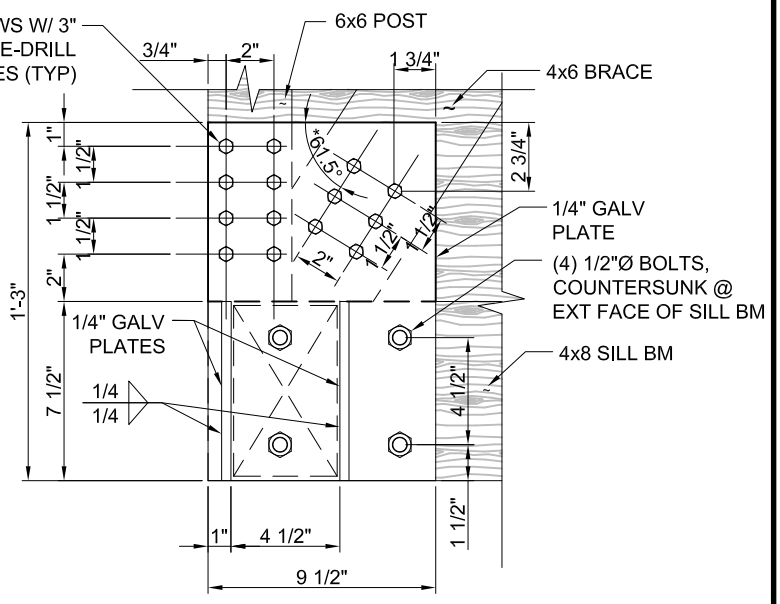
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (250HP MOTOR AND LARGER)

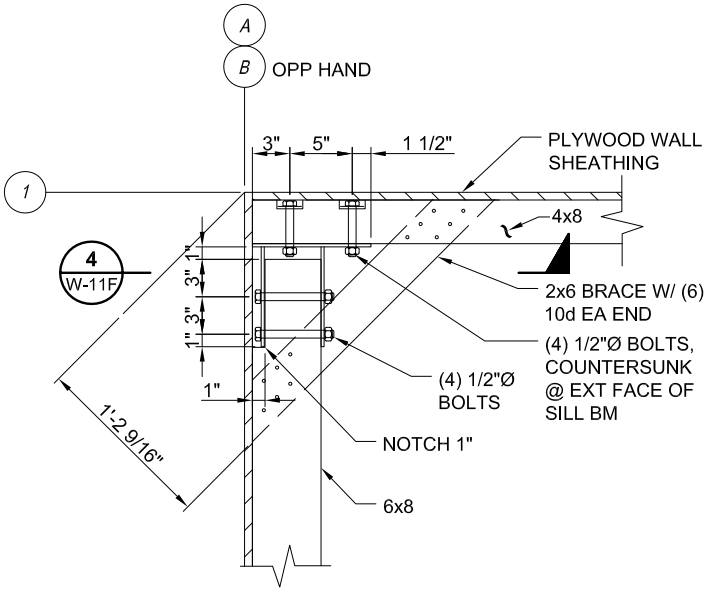
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.2	W-11E



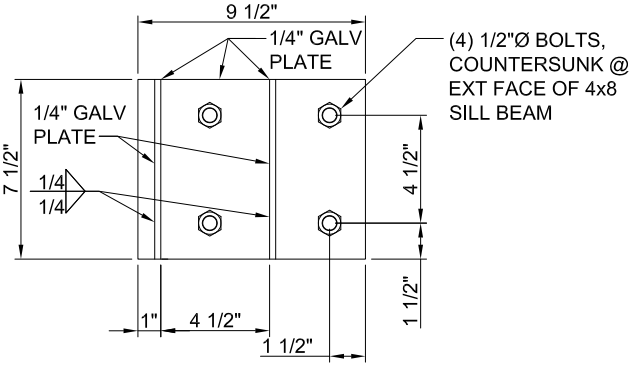
SECTION G N.T.S. W-11B



DETAIL 3 N.T.S. W-11E



DETAIL 2 N.T.S. W-11B



DETAIL 4 N.T.S. W-11F

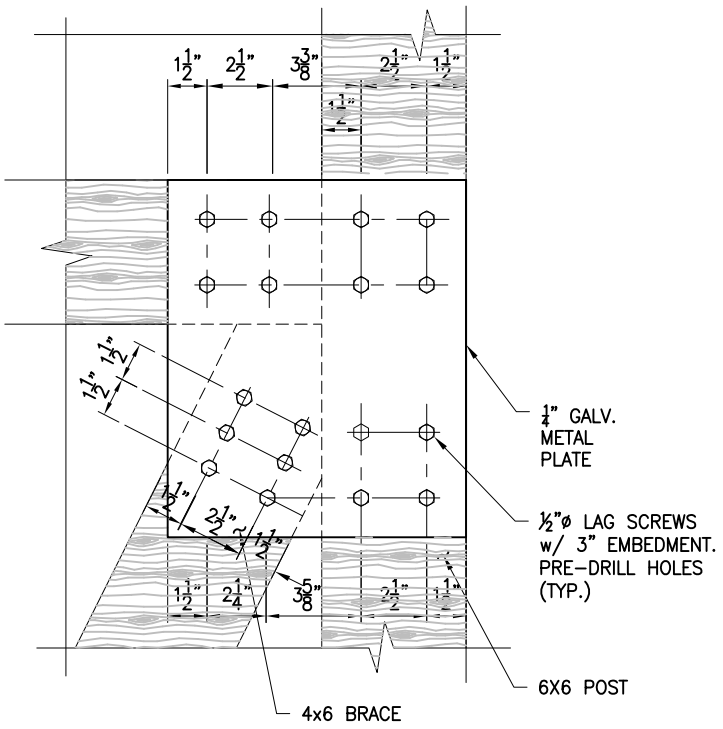
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert A. Hanford — 01/16
EDC MANAGER — DATE

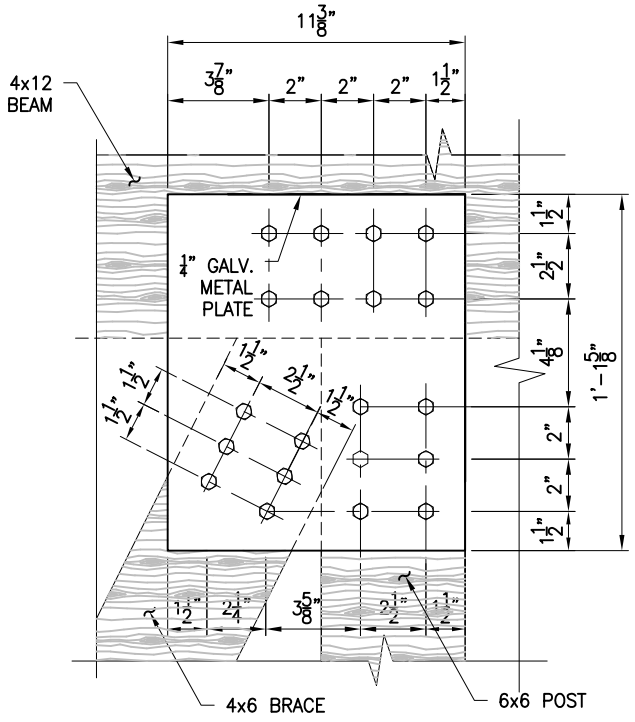
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
MOVABLE WELL BUILDING (250HP MOTOR AND LARGER)

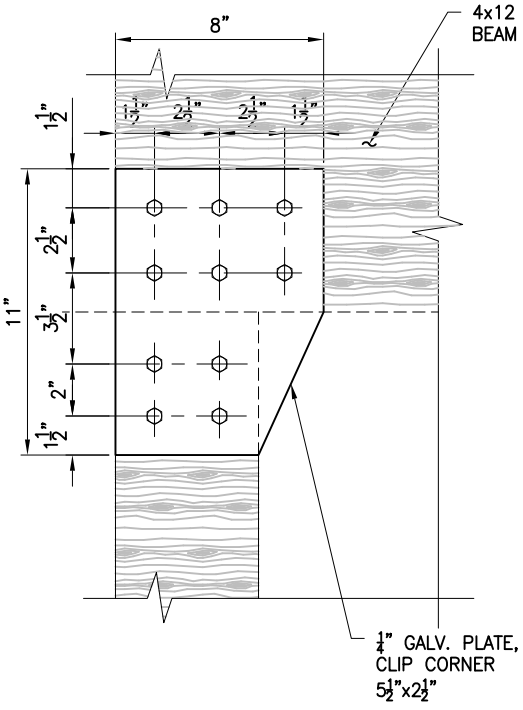
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	W–11F



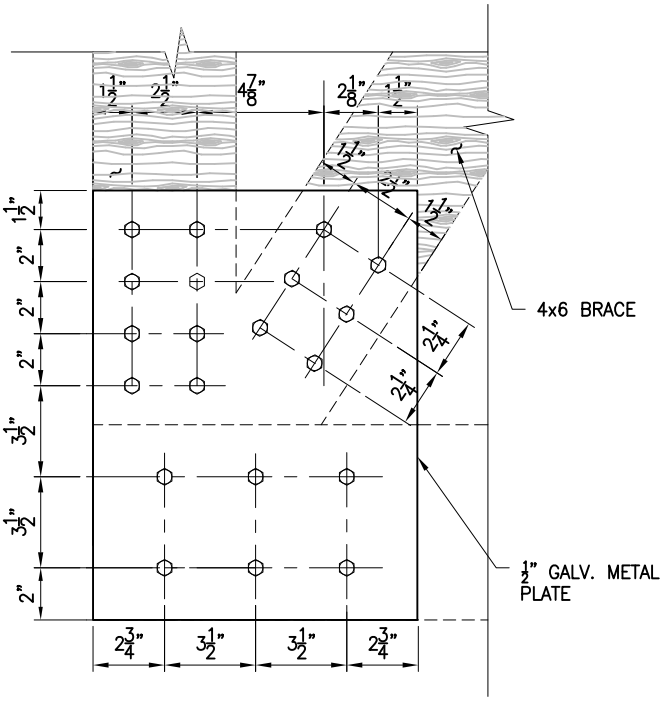
DETAIL 5 N.T.S. W-11C



DETAIL 7 N.T.S. W-11C



DETAIL 6 N.T.S. W-11C



DETAIL 8 N.T.S. W-11C

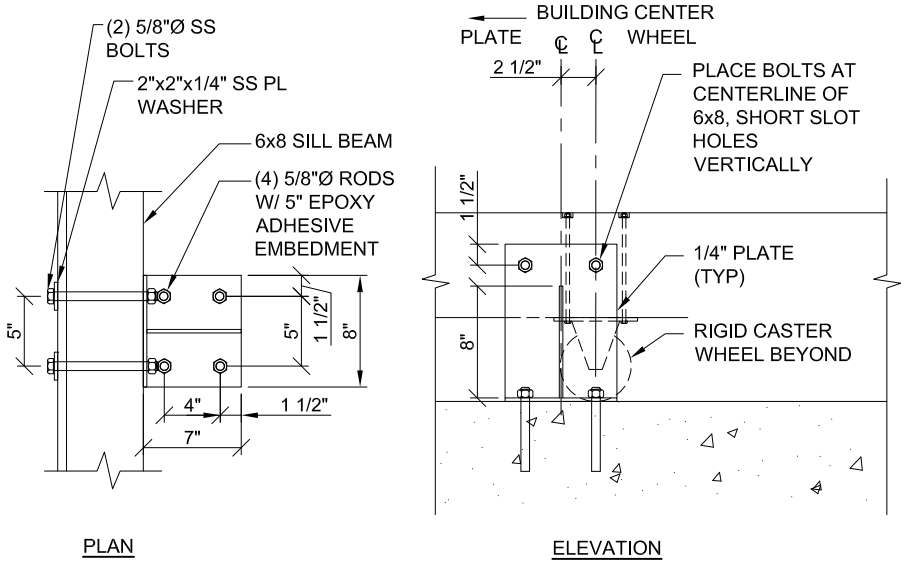
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartman — 10/16
EDC MANAGER — DATE

Golden State Water Company
A Subsidiary of American States Water Company

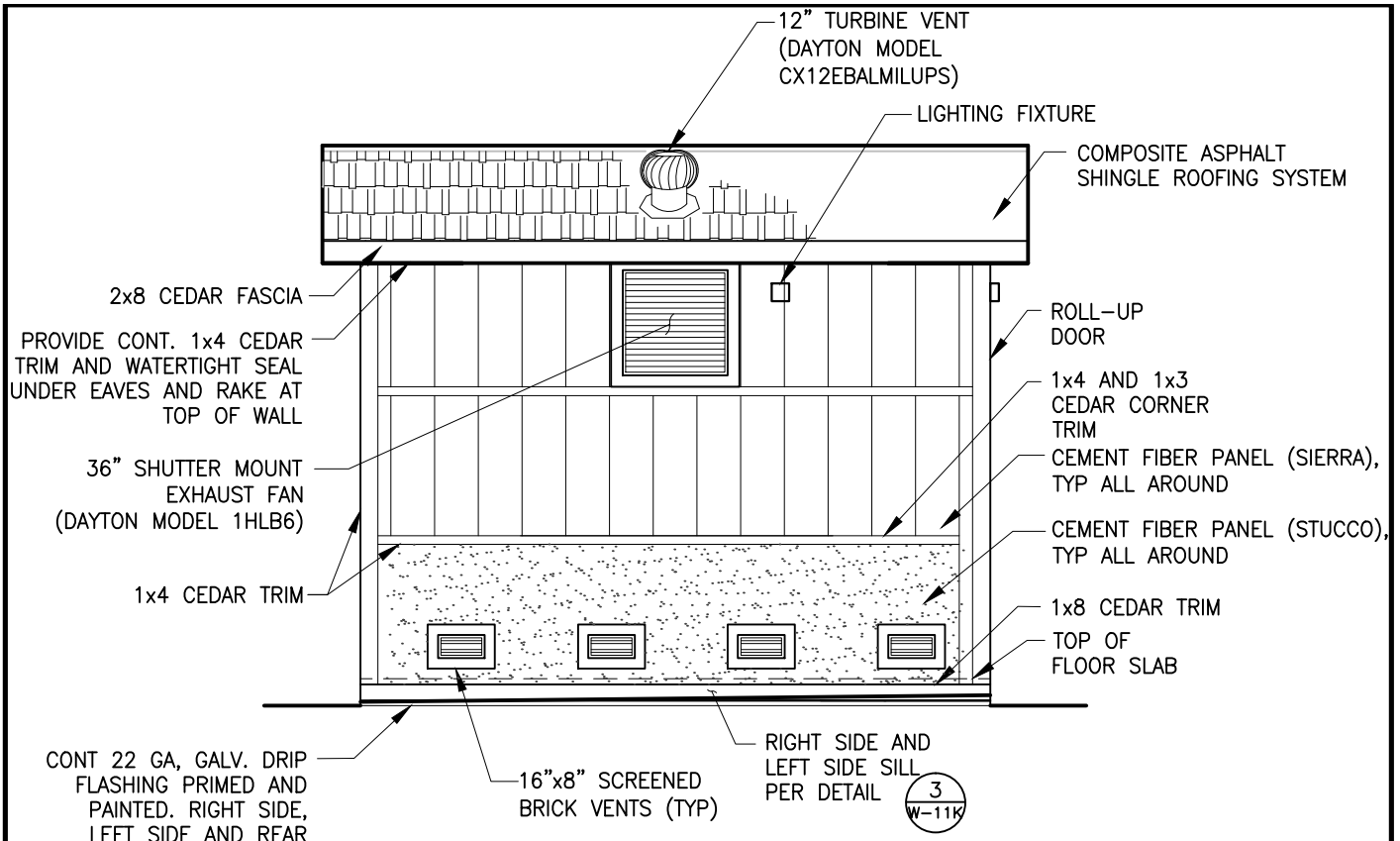
TITLE:
MOVABLE WELL BUILDING (250HP MOTOR AND LARGER)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	W-11G



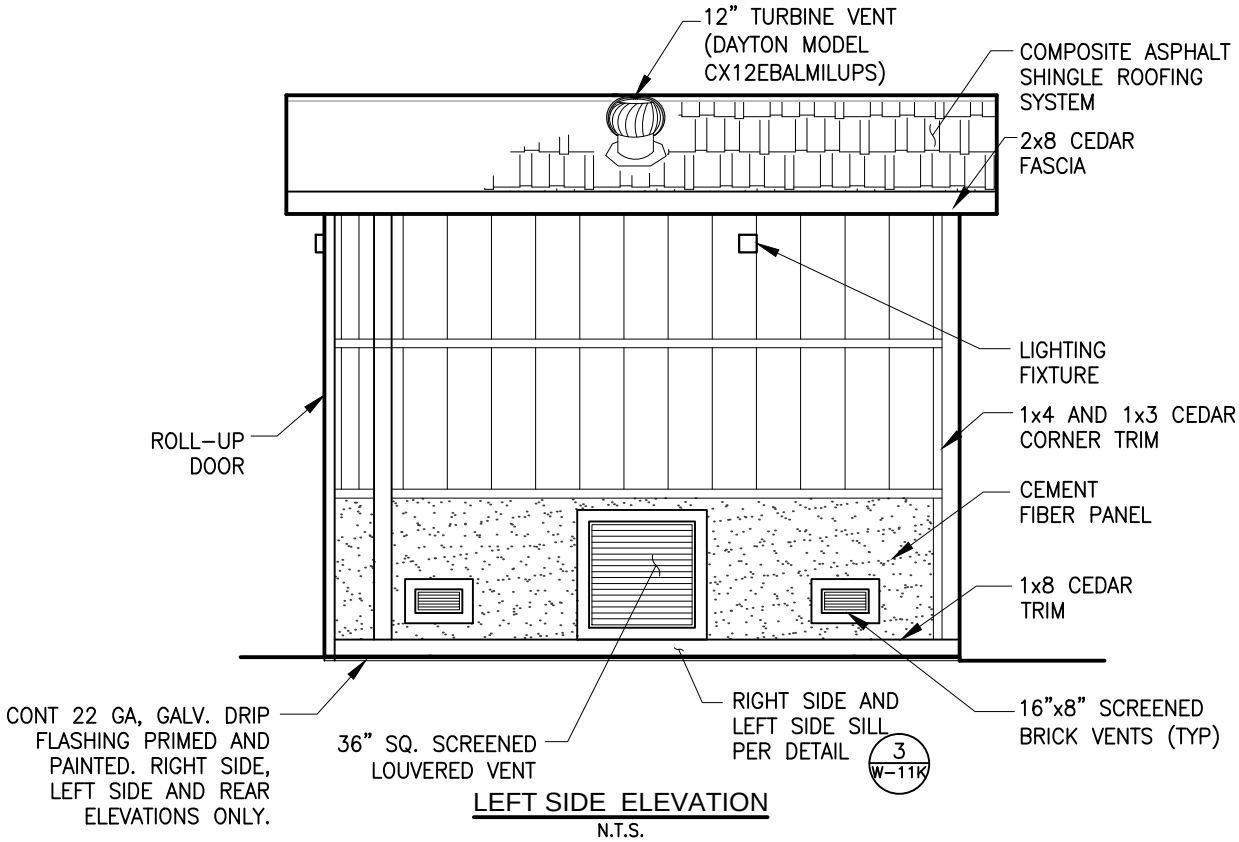
DETAIL 9 (W-11E)
N.T.S.

APPROVED BY: GSWC STANDARDS COMMITTEE	Golden State Water Company, A Subsidiary of American States Water Company	TITLE: MOVABLE WELL BUILDING (250HP MOTOR AND LARGER) MISCELLANEOUS DETAILS	
EDC MANAGER — 09/16 DATE		SCALE: NONE / DATE: 09/16 / REV: 1.1	STANDARD DWG NO. W-11H



RIGHT SIDE ELEVATION

N.T.S.



LEFT SIDE ELEVATION

N.T.S.

APPROVED BY:
GSWC STANDARDS COMMITTEE

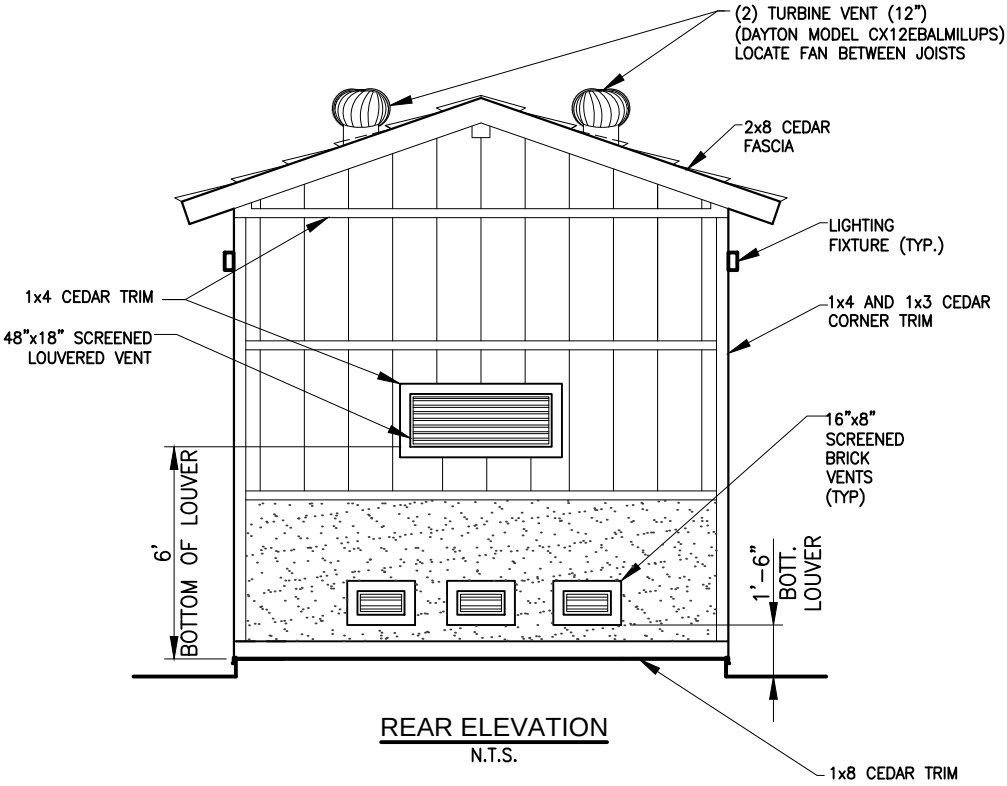
Robert N. Hartford — 10/16

EDC MANAGER — DATE

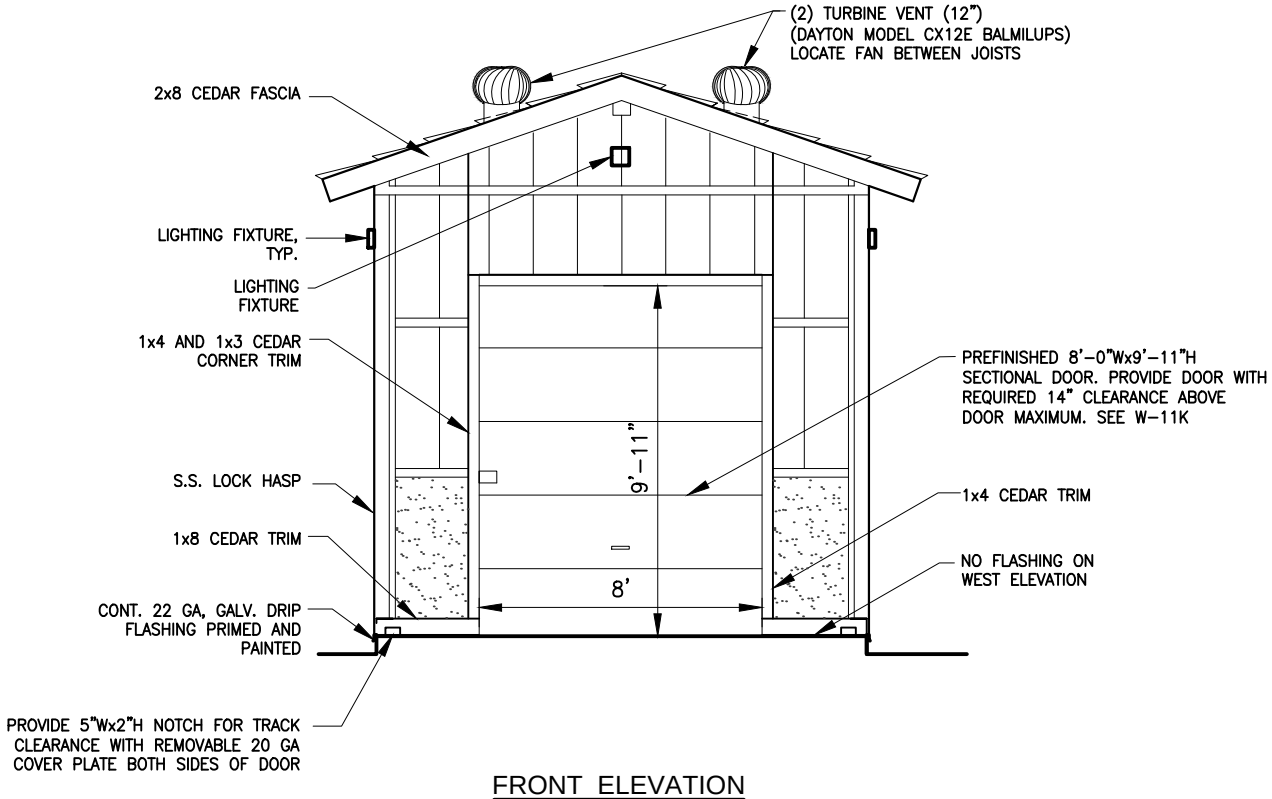
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **MOVABLE WELL BUILDING (250HP MOTOR AND LARGER) BUILDING ELEVATIONS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.2	**W-11I**



REAR ELEVATION
N.T.S.



FRONT ELEVATION
N.T.S.

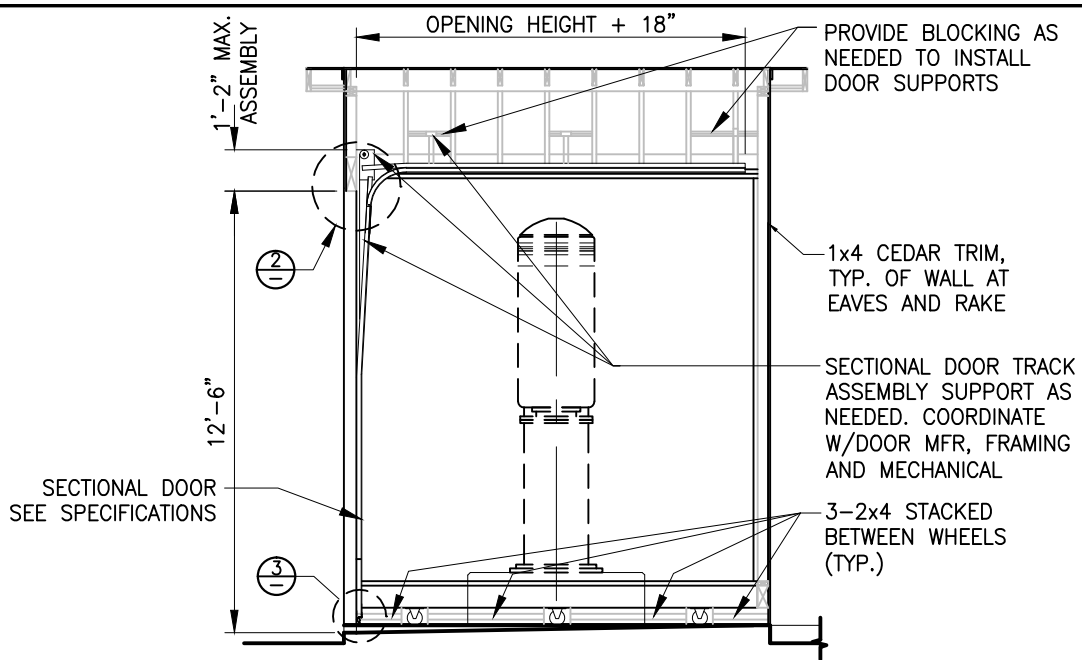
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartford — 10/16
EDC MANAGER — DATE

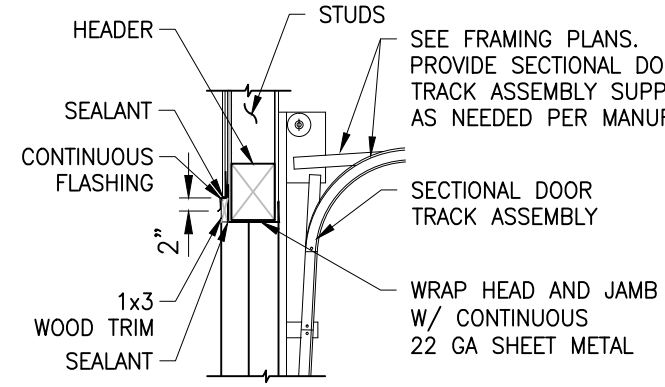
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **MOVABLE WELL BUILDING (250HP MOTOR AND LARGER) BUILDING ELEVATIONS**

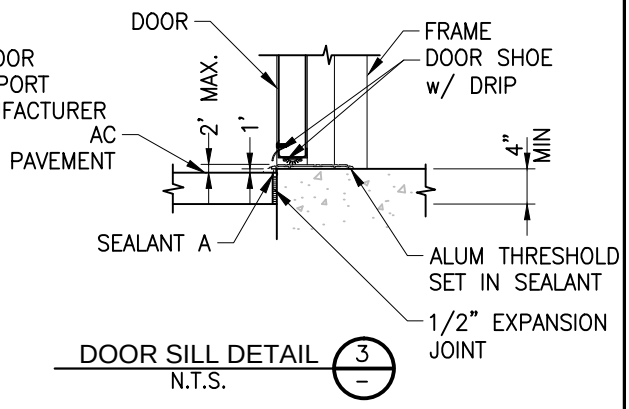
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.2	**W-11J**



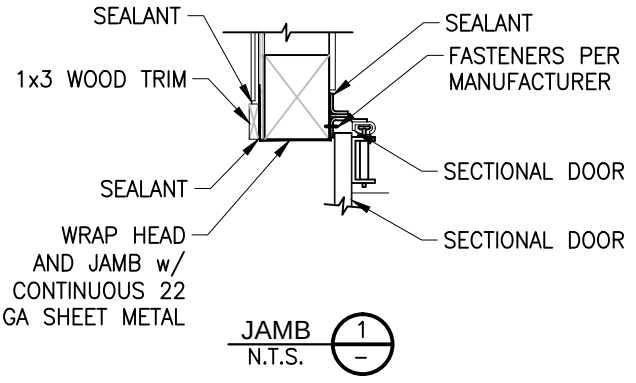
REAR ELEVATION
N.T.S.



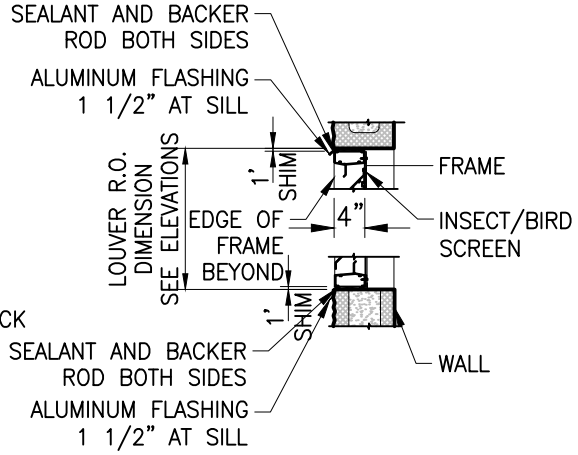
HEAD 2
N.T.S.



DOOR SILL DETAIL 3
N.T.S.



JAMB 1
N.T.S.



LOUVER DETAIL 4
N.T.S. W-11J

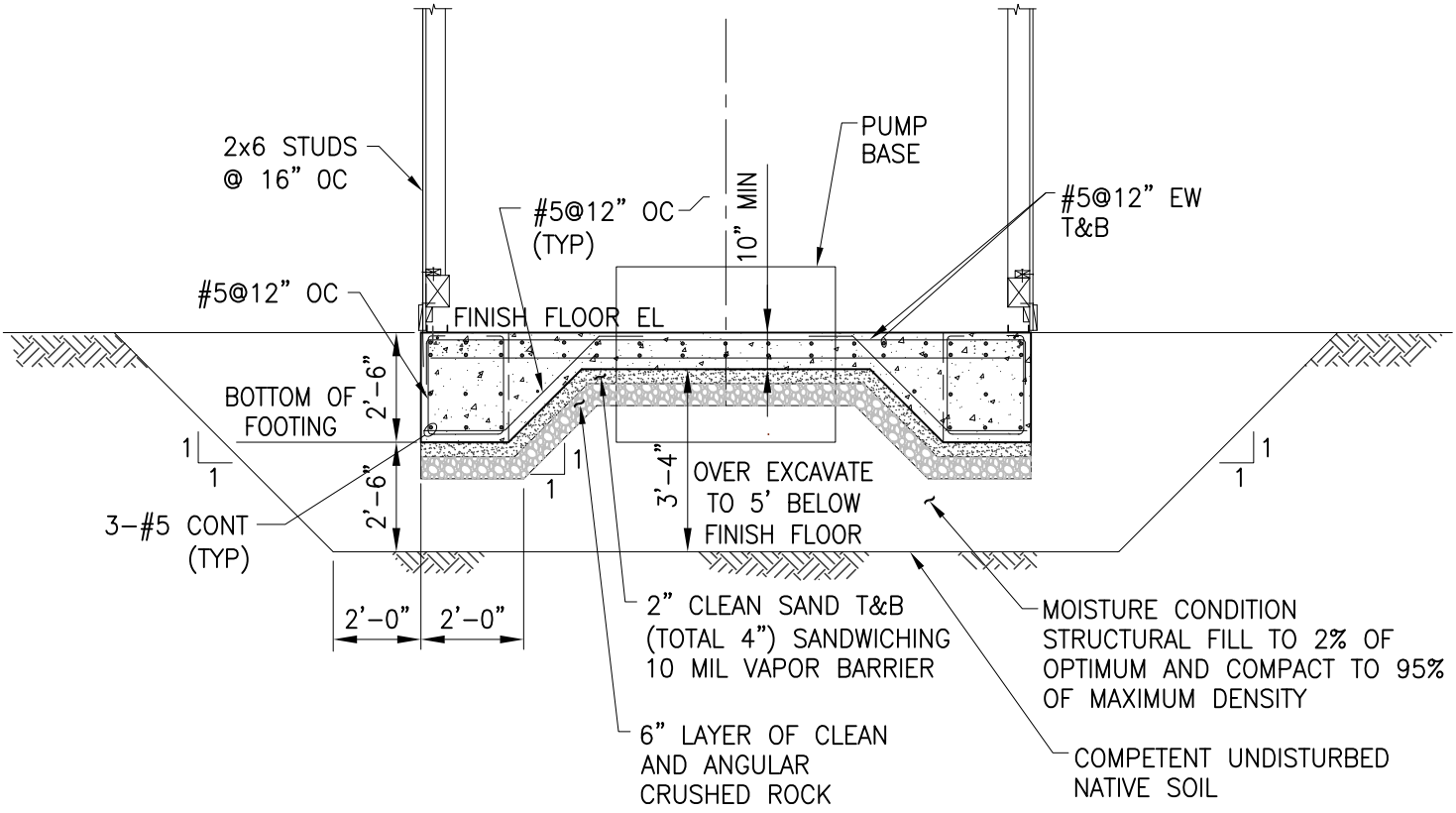
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **MOVABLE WELL BUILDING (250HP MOTOR AND LARGER) ROLL-UP DOOR AND DETALS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.2	**W-11K**



WELL BUILDING
SITE GRADING AND PAVING SECTION 1/–
N.T.S.

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 01/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
SUBBASE AND SOILS PREPARATION

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**W-12**

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE 01/16

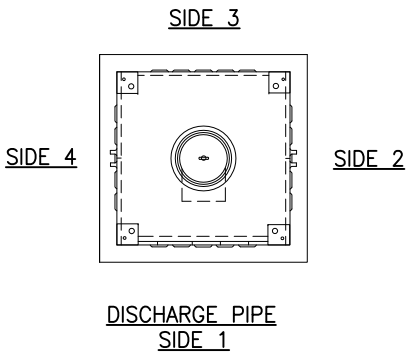
Golden State Water Company
A Subsidiary of American States Water Company

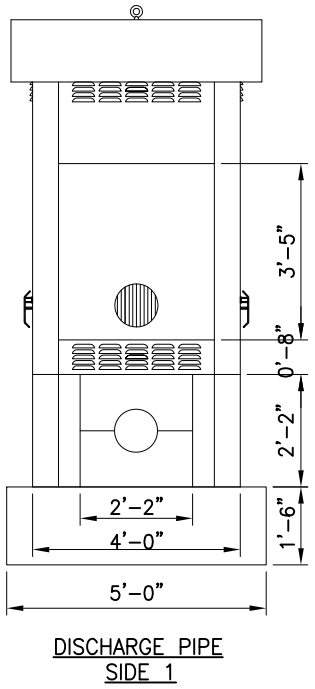
TITLE:
ACOUSTIC WELL PUMP ENCLOSURE (200 HP AND SMALLER)

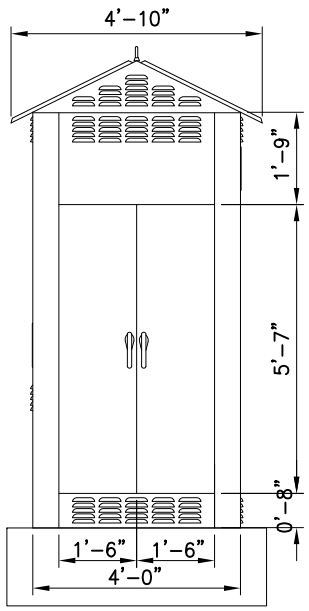
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**W-13A**

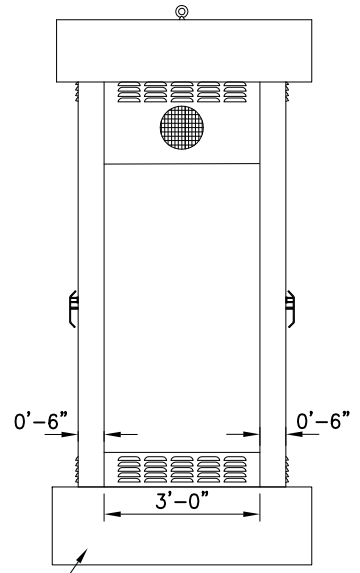
NOTES:

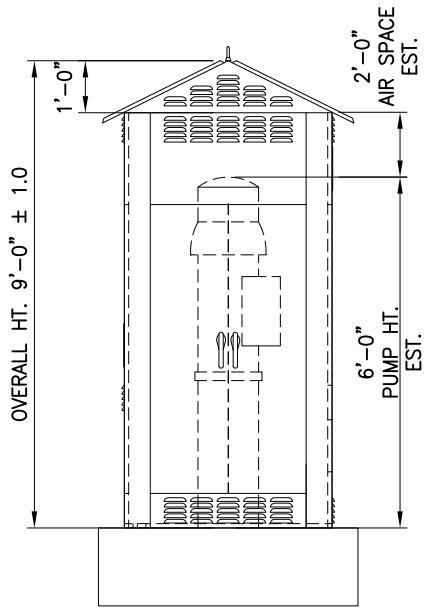
1. Acoustical enclosure shall be installed by contractor.
2. The enclosure shall be installed with a boom truck or equivalent.
3. The contractor shall not disassemble pump enclosure for or during installation.
4. Concrete slab, electrical connections and anchor bolts not provided by rps industries.
5. Powder coat: color shall be selected for each project.
6. Install (2) Grainger fan P/N 4YDY82, (1) Grainger thermostat P/N 2E340











ACOUSTIC PUMP ENCLOSURE
NTS

NOTES:

1. Acoustical enclosure shall be installed by contractor.
2. The enclosure shall be installed with a boom truck or equivalent.
3. The contractor shall not disassemble pump enclosure for or during installation.
4. Concrete slab, electrical connections and anchor bolts not provided by rps industries.
5. Powder coat: color shall be selected for each project.
6. Install (4) Grainger fan P/N 4YDY82, (2) Grainger thermostat P/N 2E340

ACOUSTIC PUMP ENCLOSURE
NTS

APPROVED BY:
GSWC STANDARDS COMMITTEE

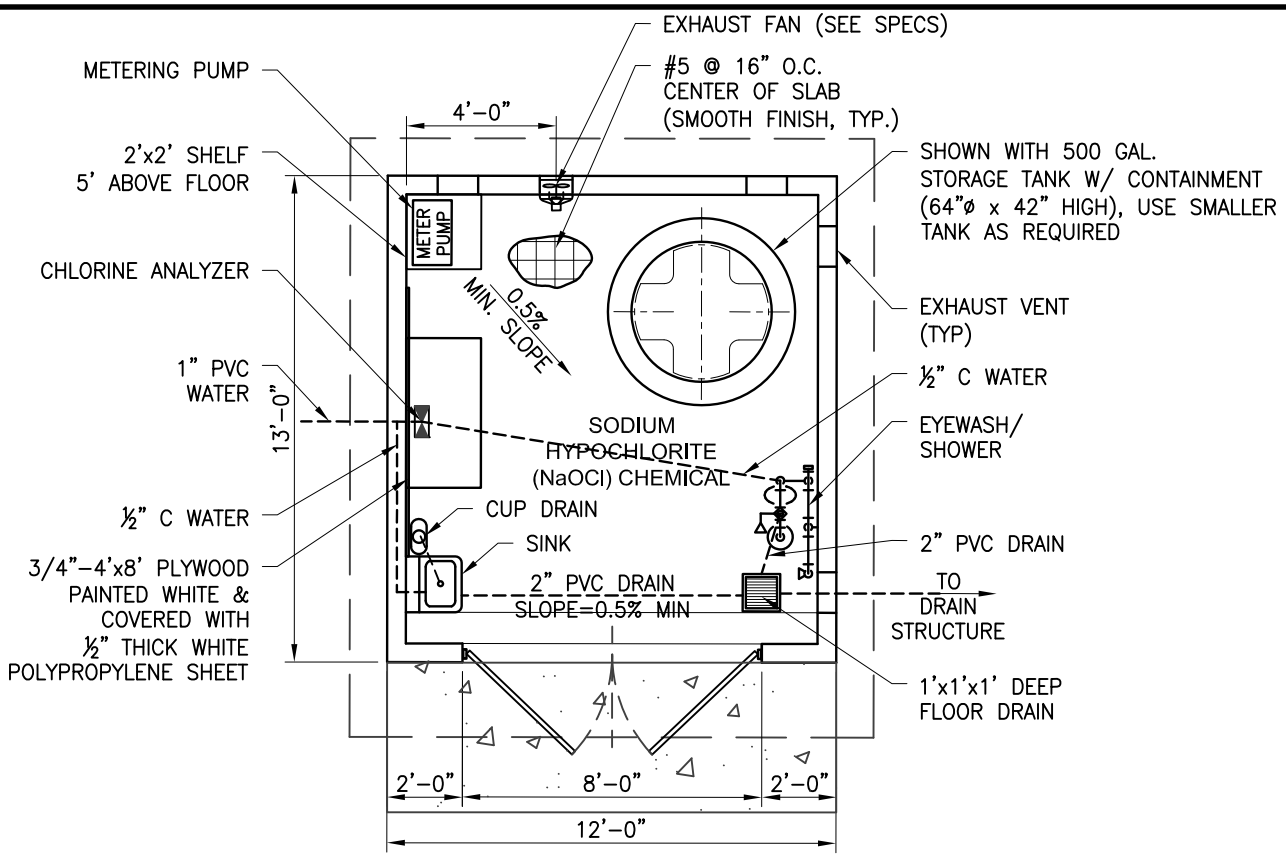
Robert N. Hartfuss
EDC MANAGER

01/16
DATE

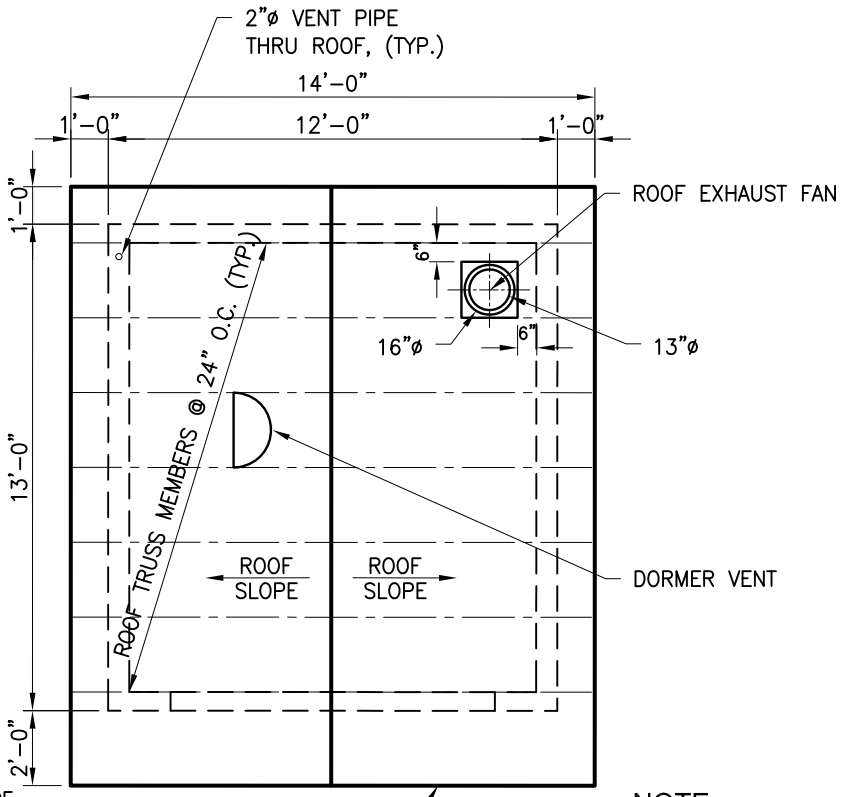
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
ACOUSTIC WELL PUMP ENCLOSURE (250 HP AND LARGER)

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**W-13B**



FLOOR PLAN
NTS



ROOF PLAN
NTS

NOTE:
ROOF EXHAUST FAN SHALL PROVIDE 190 CFM AIR FLOW. USE COOK ACE-D(70 C15 DH) OR APPROVED EQUAL. FAN TO BE INSTALLED PARALLEL TO ROOF.

NOTE:
SEE PUMP STATION BUILDING STANDARD DRAWINGS FOR BUILDING FRAMING AND ROOF DETAILS.

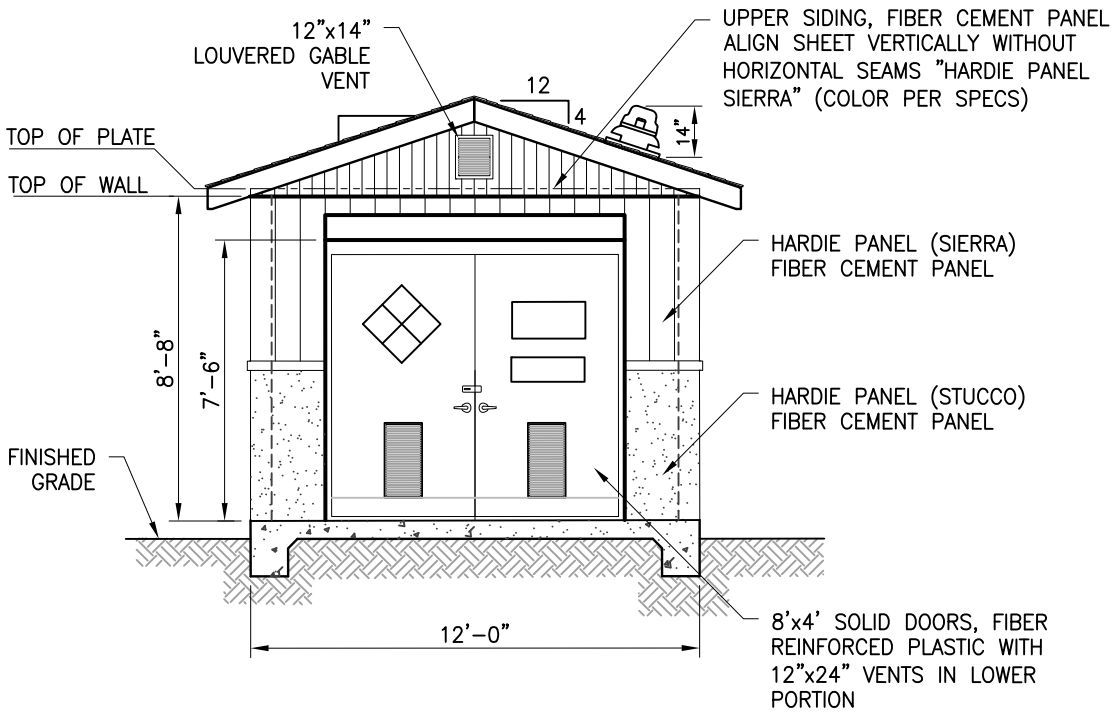
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hanford — 10/16
EDC MANAGER — DATE

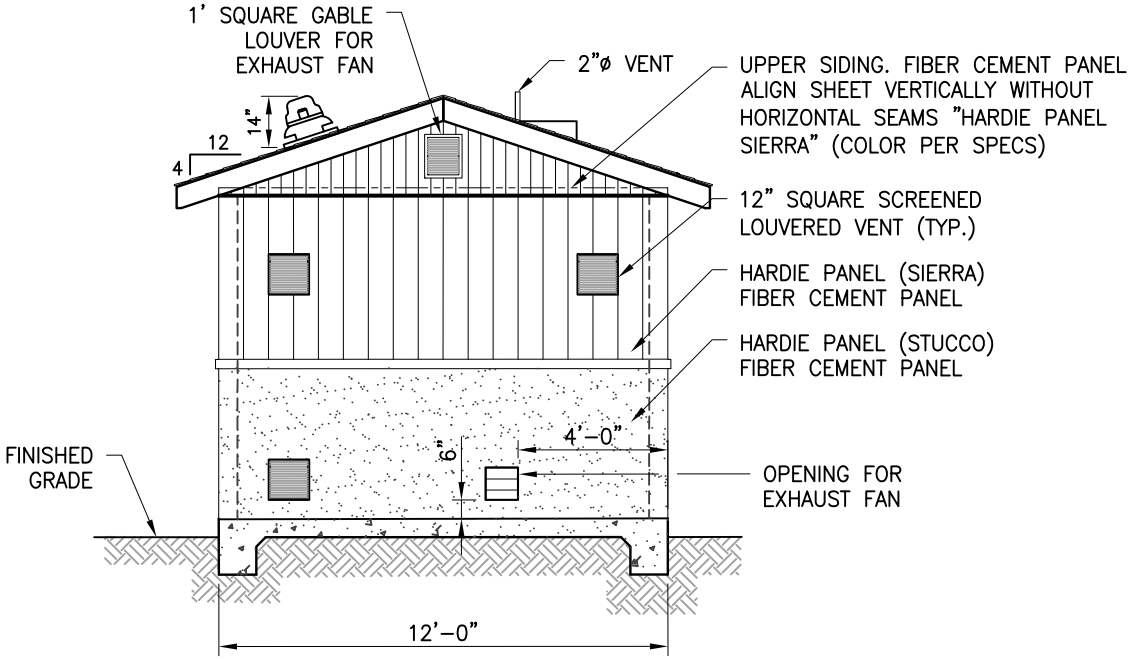
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **FLOOR AND ROOF PLAN OF DISINFECTION BUILDING (1 BAY BUILDING)**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-14A**



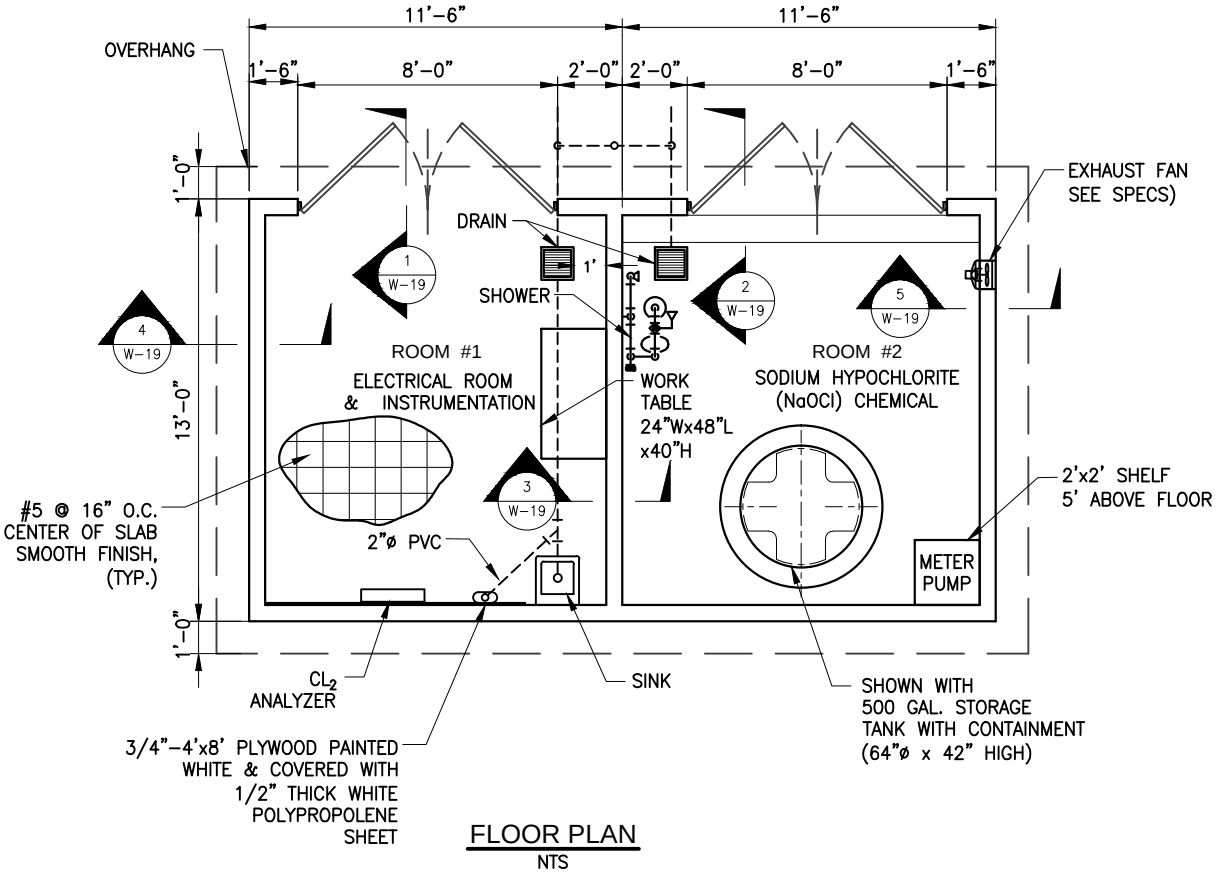
FRONT ELEVATION
N.T.S.



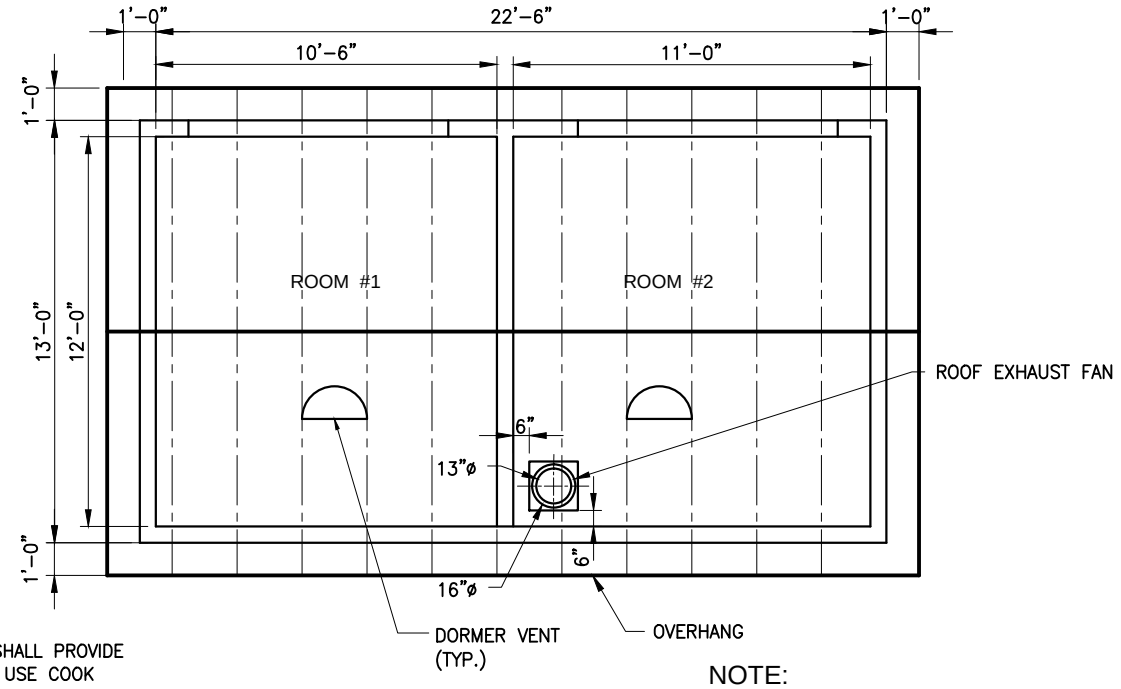
REAR ELEVATION
N.T.S.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **ARCHITECTURAL VIEWS OF DISINFECTION BUILDING**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-14B**



FLOOR PLAN
NTS



NOTE:
ROOF EXHAUST FAN SHALL PROVIDE 190 CFM AIR FLOW. USE COOK ACE-D(70 C15 DH) OR APPROVED EQUAL. FAN TO BE INSTALLED PARALLEL TO ROOF.

ROOF PLAN
NTS

NOTE:
SEE PUMP STATION BUILDING STANDARD DRAWINGS FOR BUILDING FRAMING AND ROOF DETAILS.

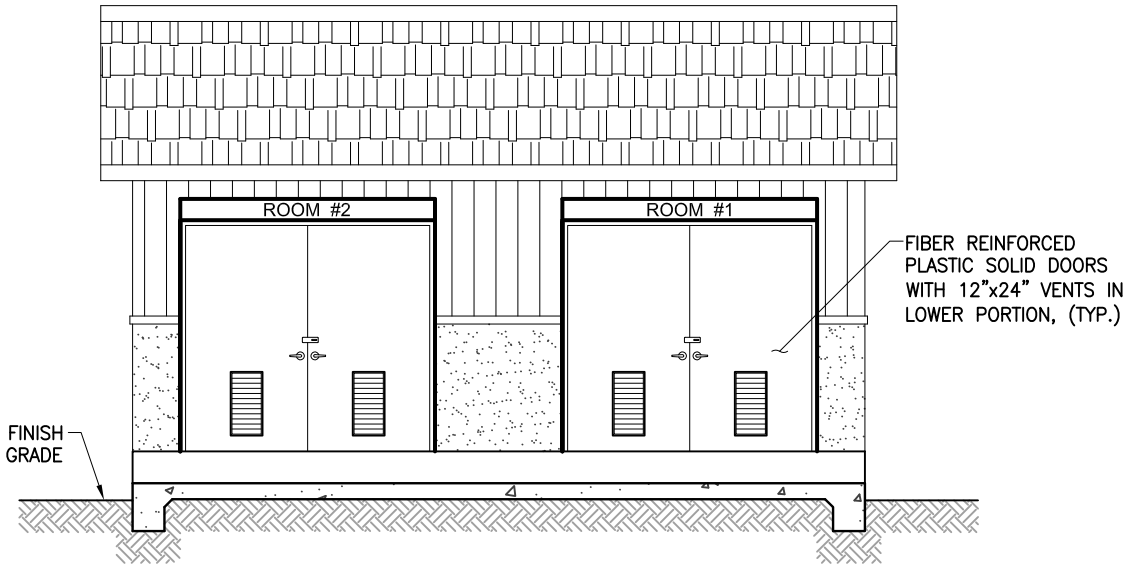
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert N. Hartford — 09/16
EDC MANAGER — DATE

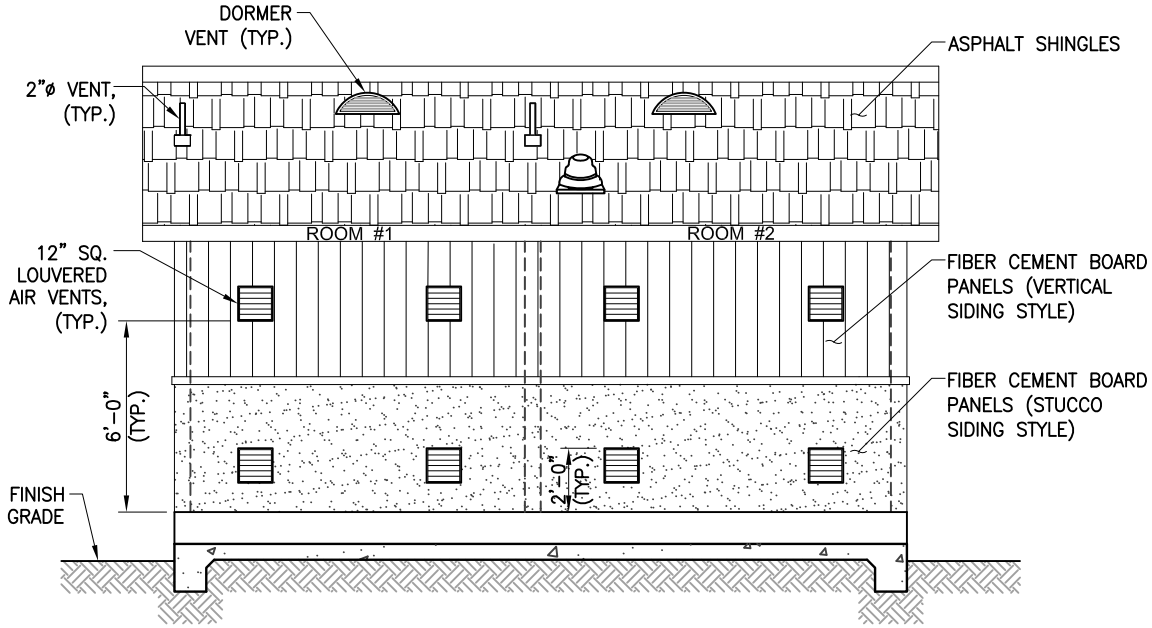
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **FLOOR AND ROOF PLAN OF DISINFECTION BUILDING (2-BAY BUILDING)**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-15A**



FRONT ELEVATION
NTS



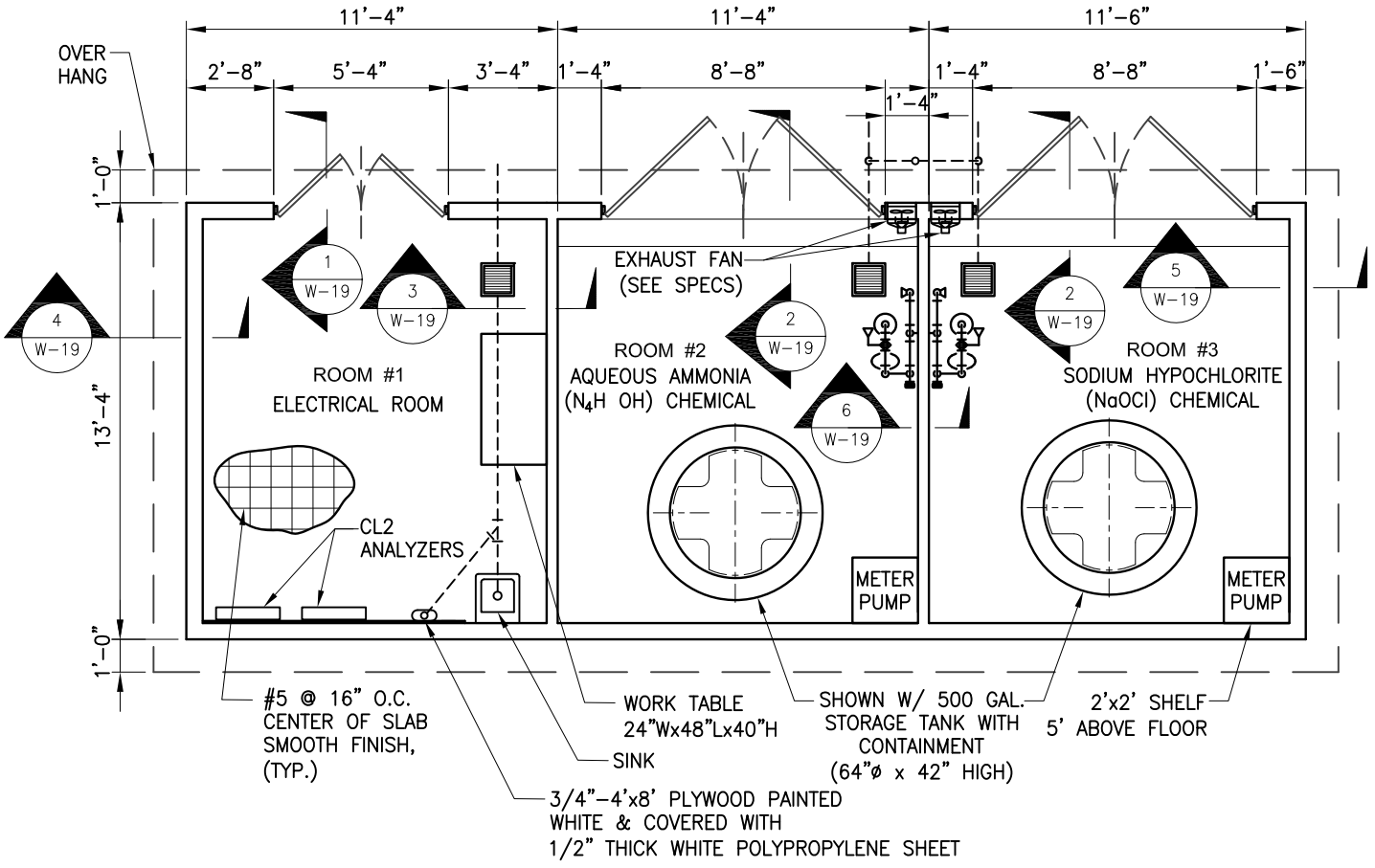
REAR ELEVATION
NTS

NOTE:

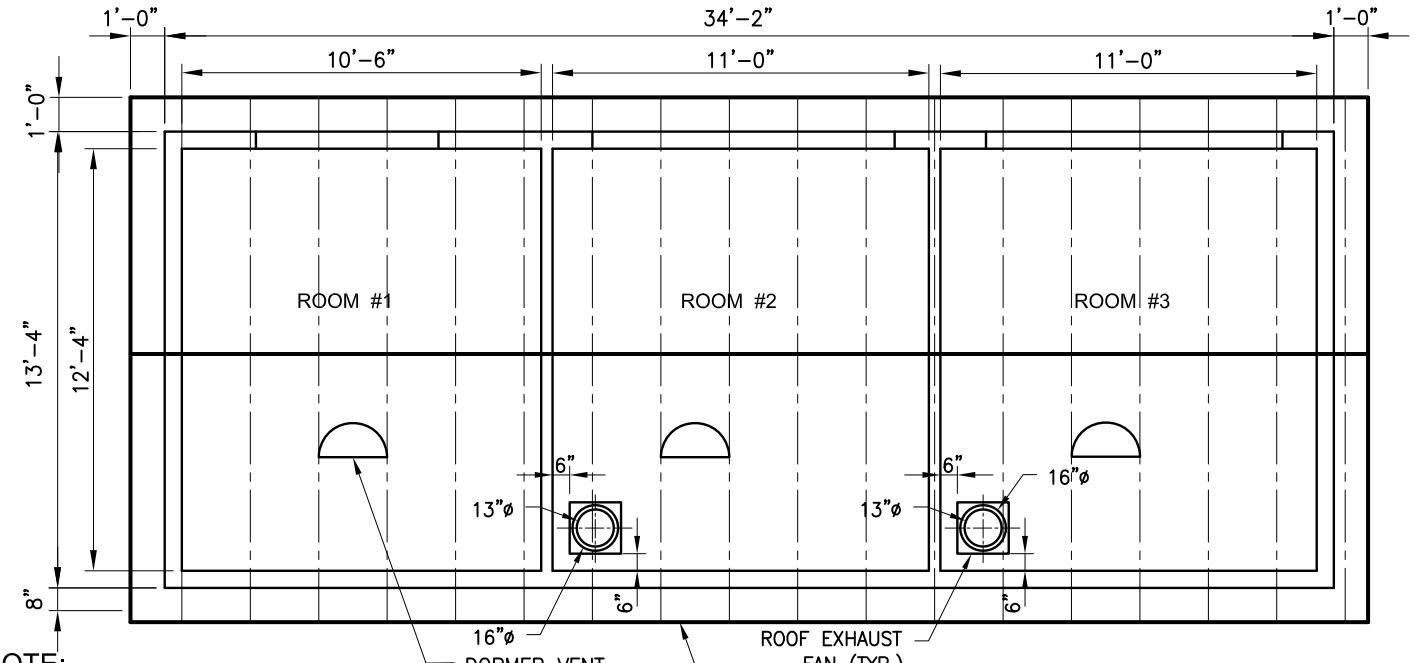
All interior corners in the walls and ceiling shall be sealed with a rubber silicone joint sealant resistant to chlorine vapors prior to painting.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **ARCHITECTURAL VIEWS OF DISINFECTION BUILDING**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-15B**



FLOOR PLAN
NTS



NOTE:
ROOF EXHAUST FAN SHALL PROVIDE 190 CFM AIR FLOW. USE COOK ACE-D(70 C15 DH) OR APPROVED EQUAL. FAN TO BE INSTALLED PARALLEL TO ROOF.

ROOF PLAN
NTS

NOTE:
SEE PUMP STATION BUILDING STANDARD DRAWINGS FOR BUILDING FRAMING AND ROOF DETAILS.

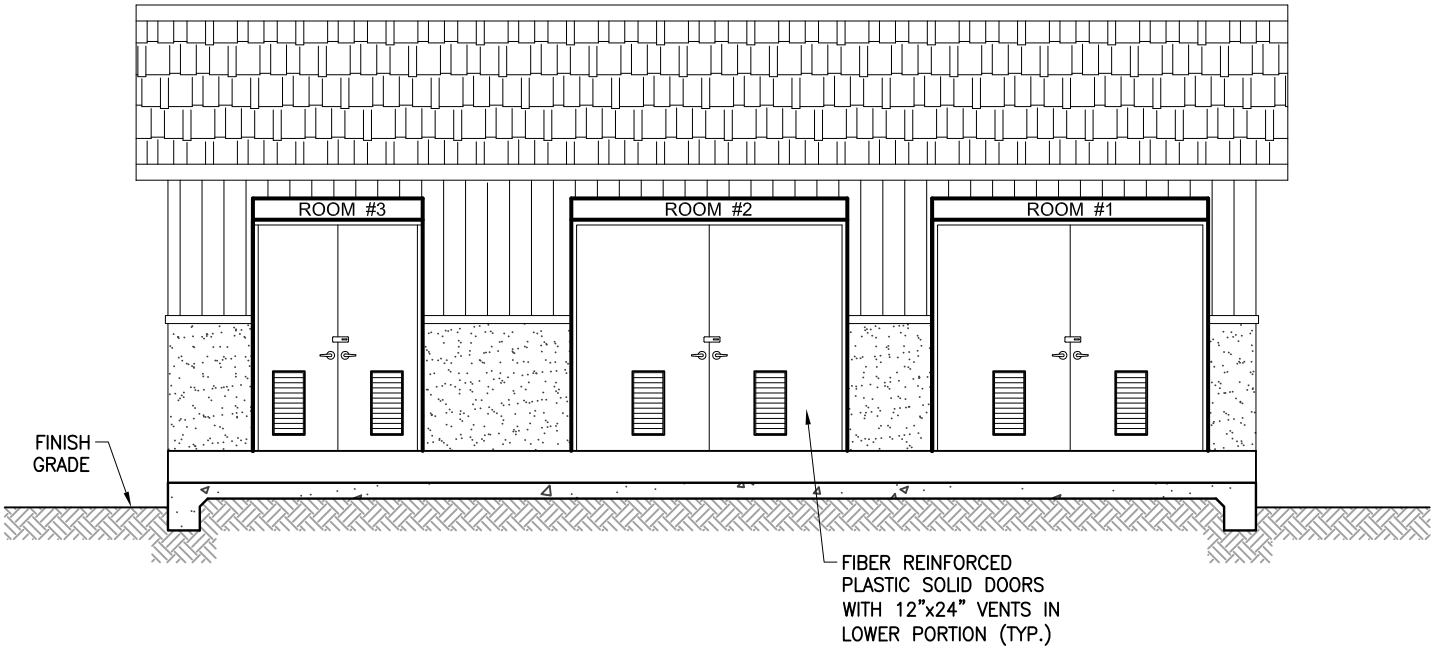
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

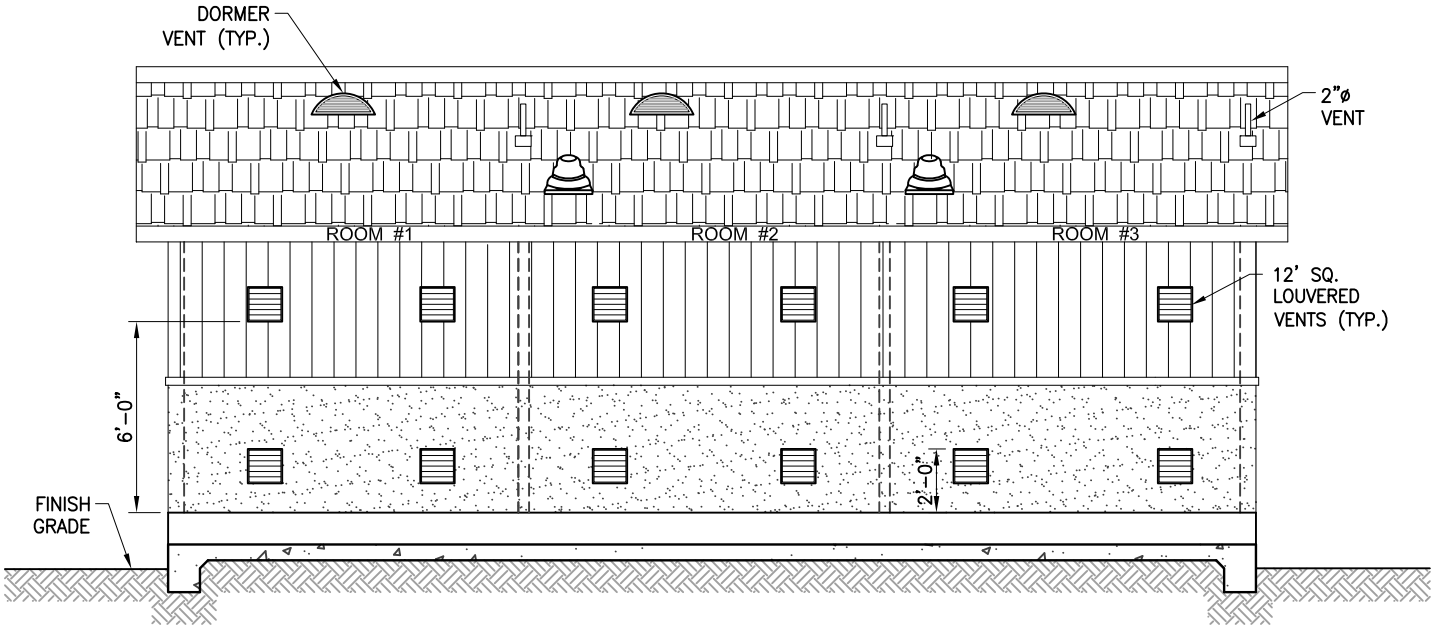
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **FLOOR AND ROOF PLAN OF DISINFECTION BUILDING (3 BAY BUILDING)**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-16A**



FRONT ELEVATION
NTS



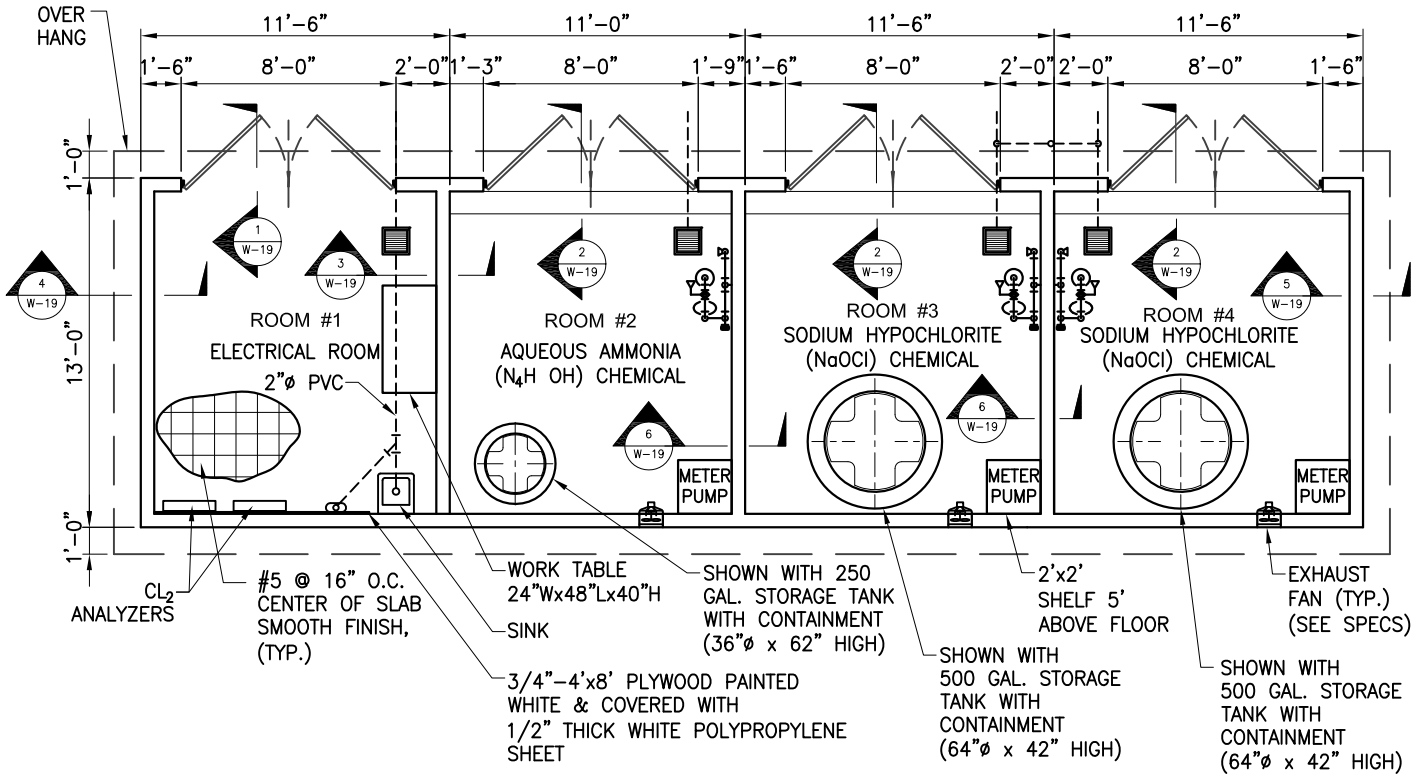
REAR ELEVATION
NTS

NOTE:

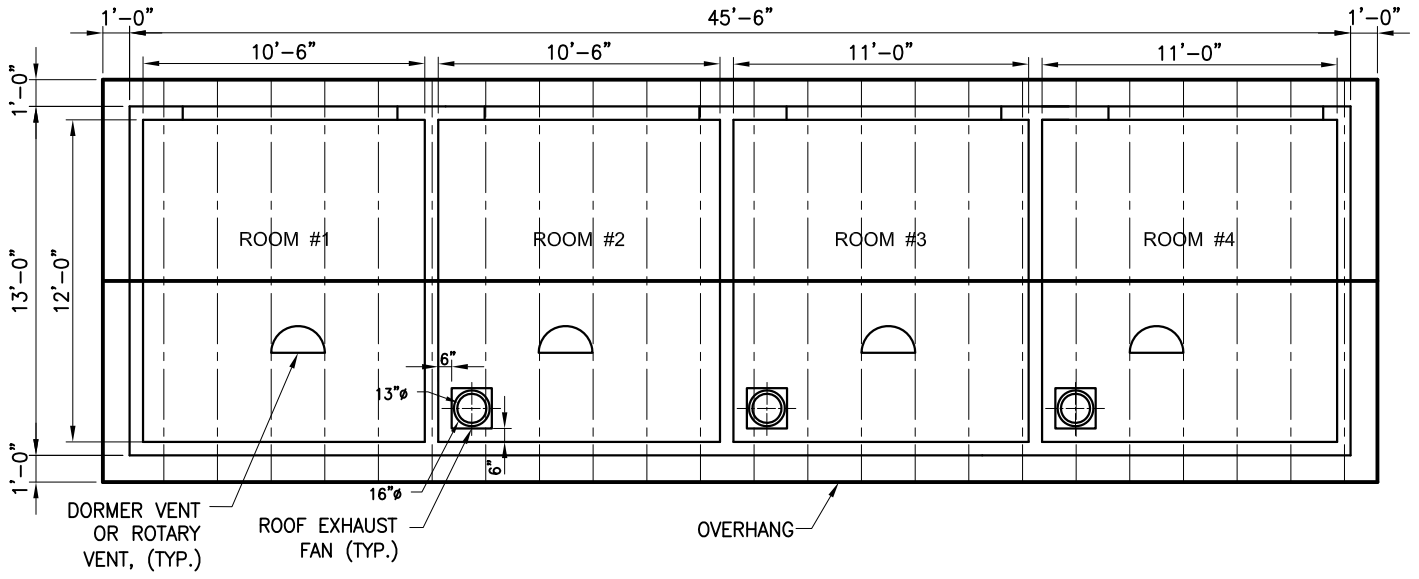
All interior corners in the walls and ceiling shall be sealed with a rubber silicone joint sealant resistant to chlorine vapors prior to painting.

APPROVED BY: GSWC STANDARDS COMMITTEE Robert N. Hartfuss EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **ARCHITECTURAL VIEWS OF DISINFECTION BUILDING**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-16B**



FLOOR PLAN
NTS



ROOF PLAN
NTS

NOTE:
ROOF EXHAUST FAN SHALL PROVIDE 190 CFM AIR FLOW. USE COOK ACE-D(70 C15 DH) OR APPROVED EQUAL. FAN TO BE INSTALLED PARALLEL TO ROOF.

NOTE:
SEE PUMP STATION BUILDING STANDARD DRAWINGS FOR BUILDING FRAMING AND ROOF DETAILS.

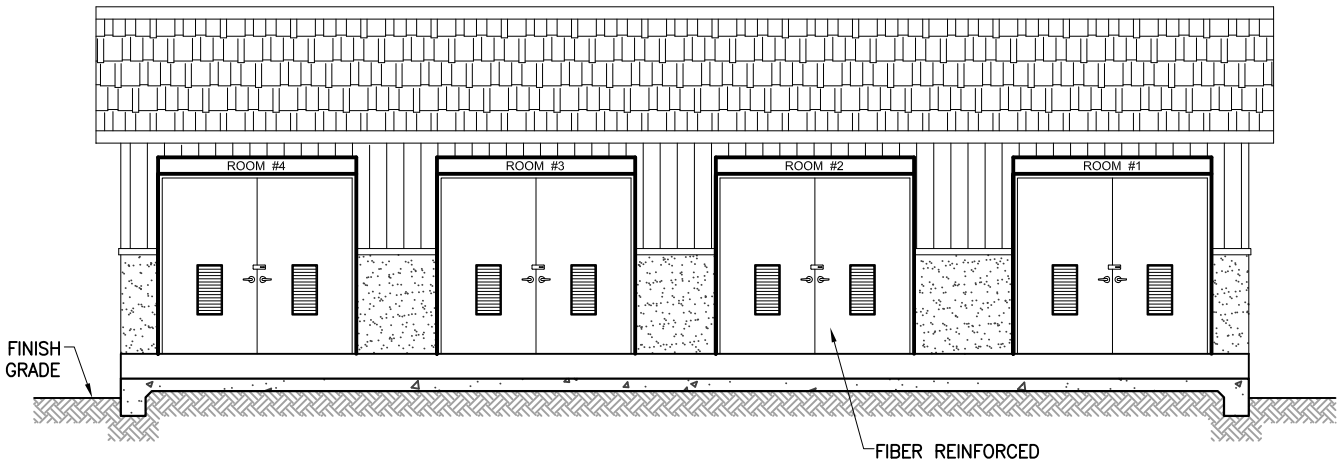
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

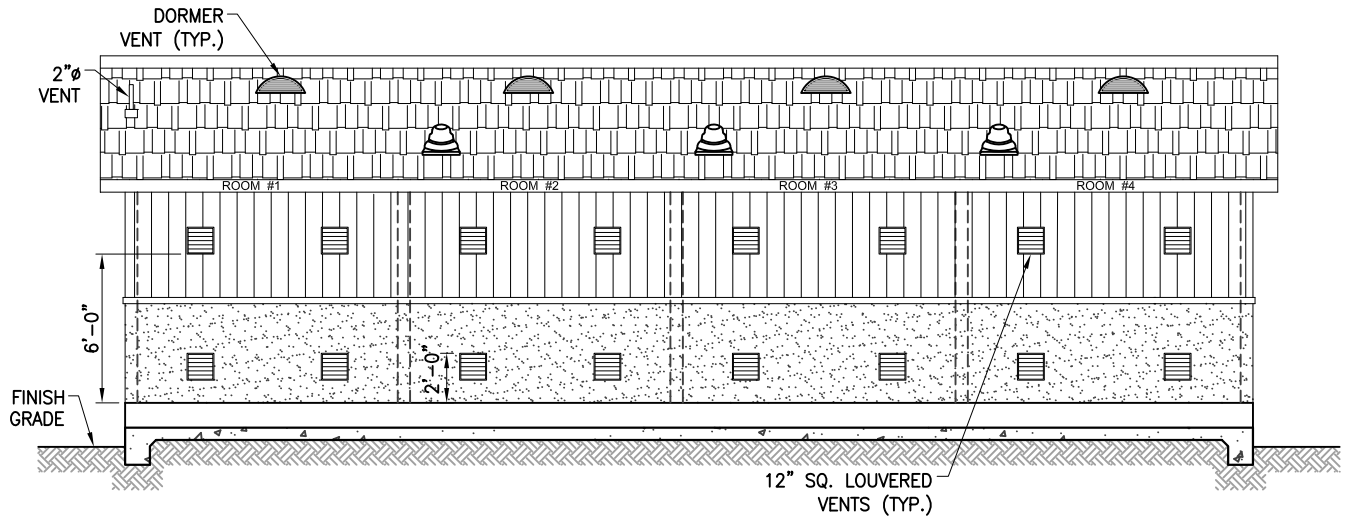
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **FLOOR AND ROOF PLAN OF DISINFECTION BUILDING (4 BAY BUILDING)**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-17A**



FRONT ELEVATION
NTS



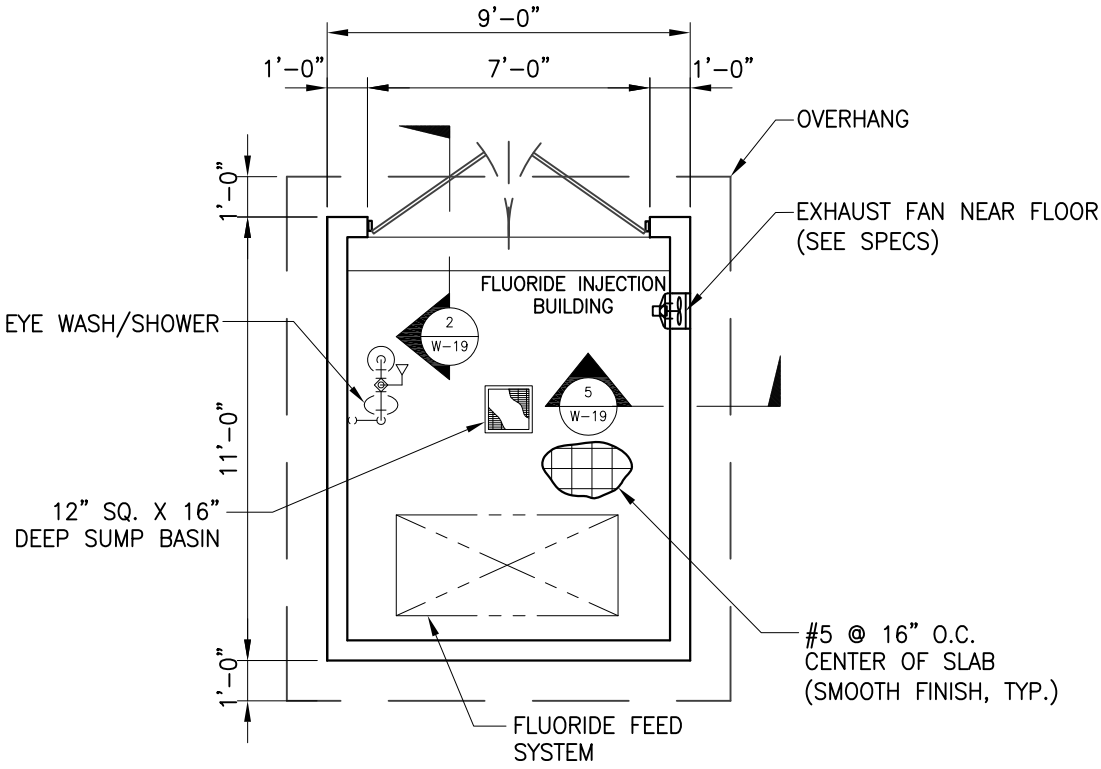
REAR ELEVATION
NTS

NOTE:

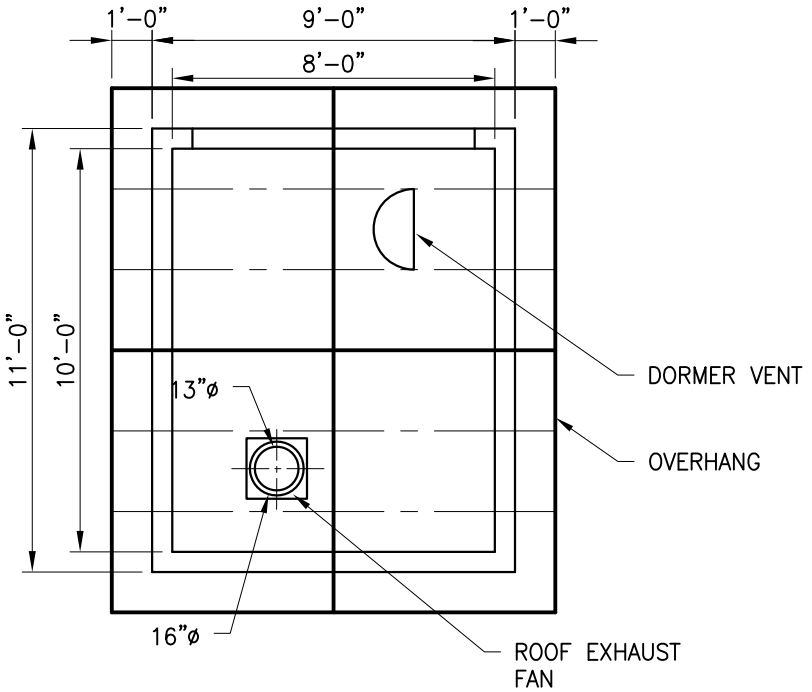
All interior corners in the walls and ceiling shall be sealed with a rubber silicone joint sealant resistant to chlorine vapors prior to painting.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **ARCHITECTURAL VIEWS OF DISINFECTION BUILDING**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-17B**



FLOOR PLAN
N.T.S.



NOTE:
ROOF EXHAUST FAN SHALL PROVIDE 190 CFM AIR FLOW. USE COOK ACE–D(70 C15 DH) OR APPROVED EQUAL. FAN TO BE INSTALLED PARALLEL TO ROOF.

ROOF PLAN
N.T.S.

NOTE:
SEE PUMP STATION BUILDING STANDARD DRAWINGS FOR BUILDING FRAMING AND ROOF DETAILS.

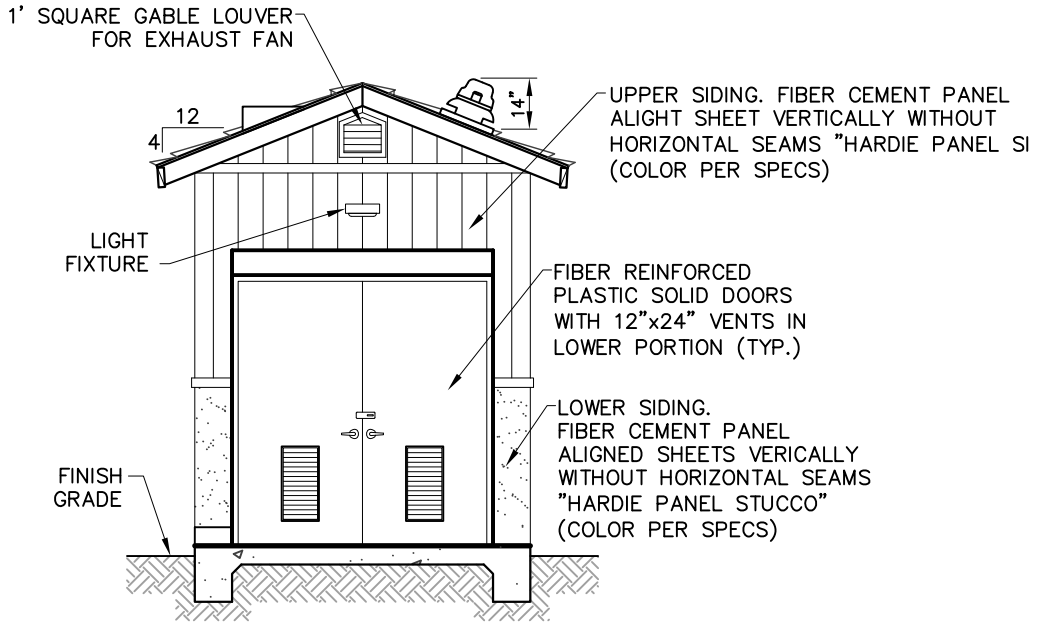
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

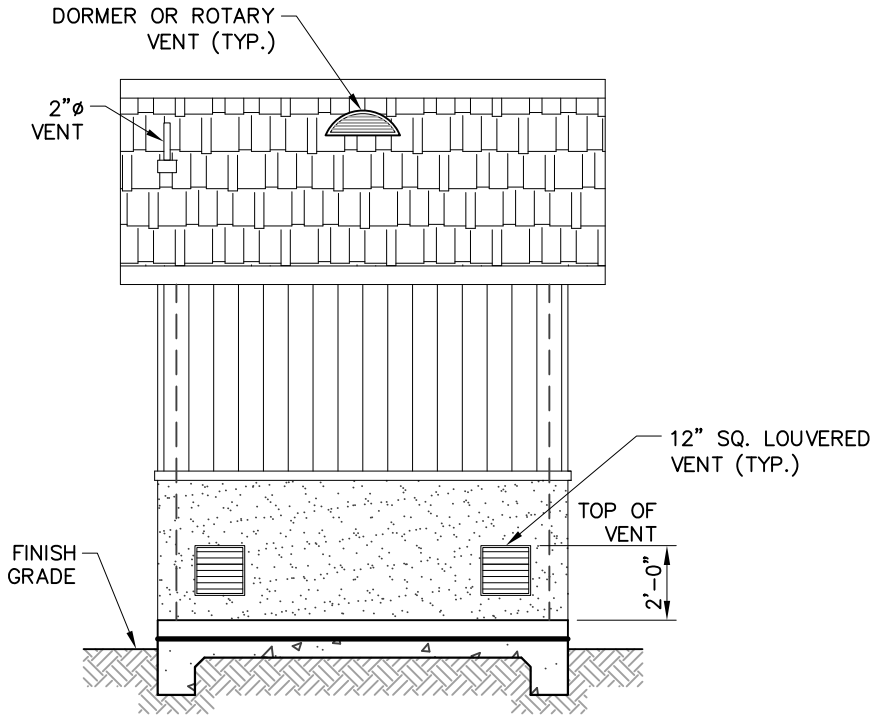
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
FLOOR AND ROOF PLAN OF FLUORIDE INJECTION BUILDING

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W–18A**



FRONT ELEVATION
N.T.S.



SIDE ELEVATION
N.T.S.

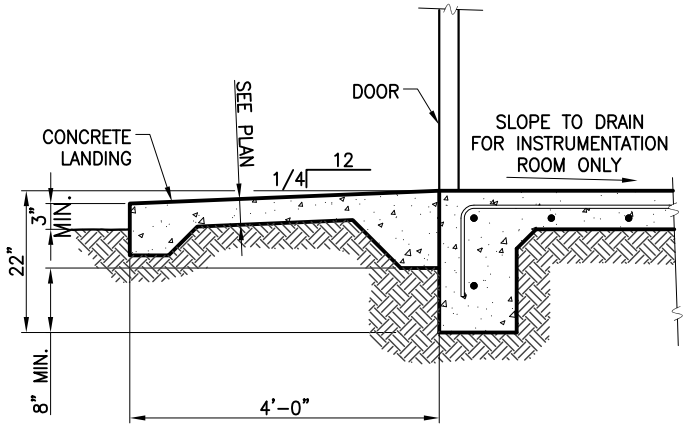
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

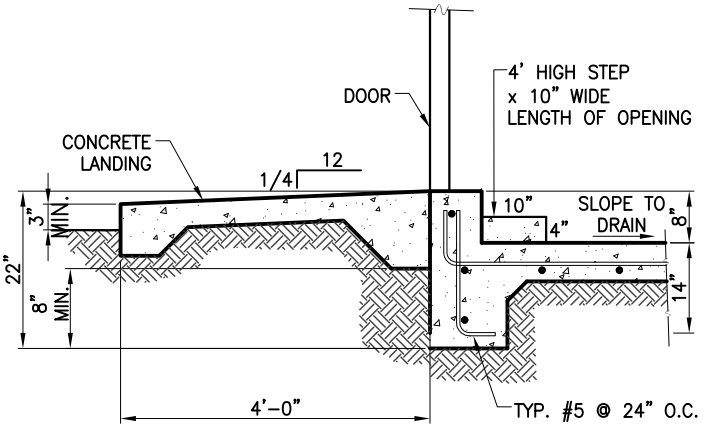
TITLE:
ARCHITECTURAL VIEWS OF FLUORIDE INJECTION BUILDING

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-18B**



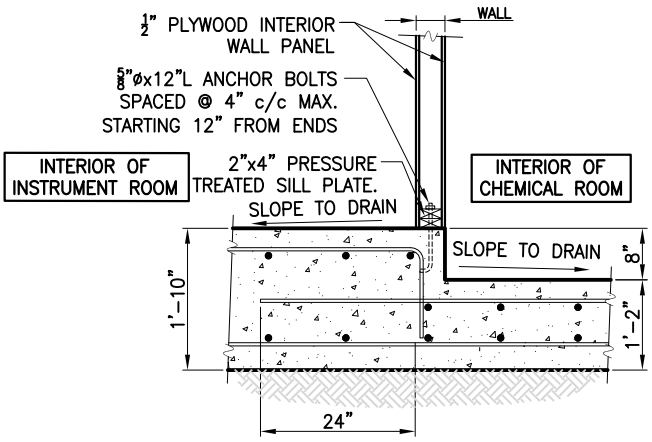
DETAIL 1

N.T.S. W–11A,B,C



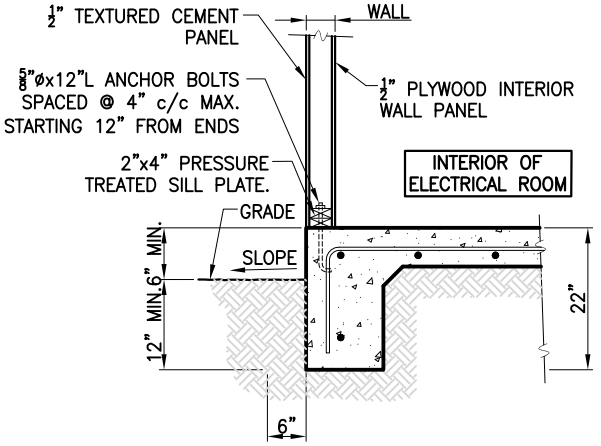
DETAIL 2

N.T.S. W–11A,B,C
W–12A,17A



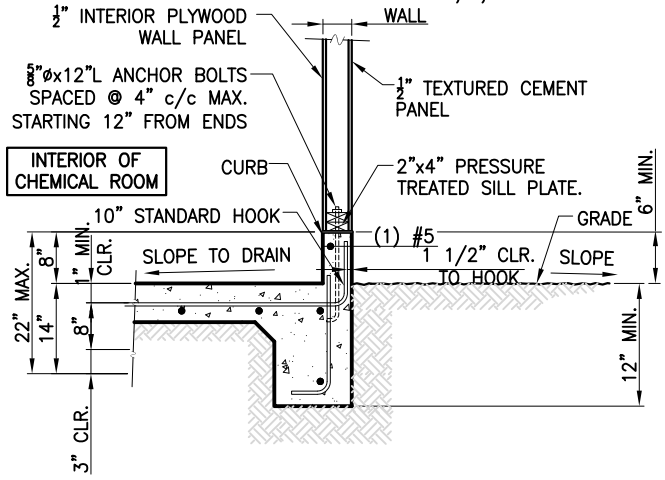
DETAIL 3

N.T.S. W–11A,B,C



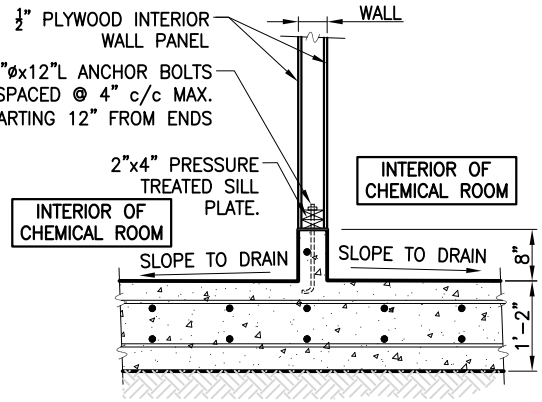
DETAIL 4

N.T.S. W–11A,B,C



DETAIL 5

N.T.S. W–11A,B,C
W–12A



DETAIL 6

N.T.S. W–11B,C

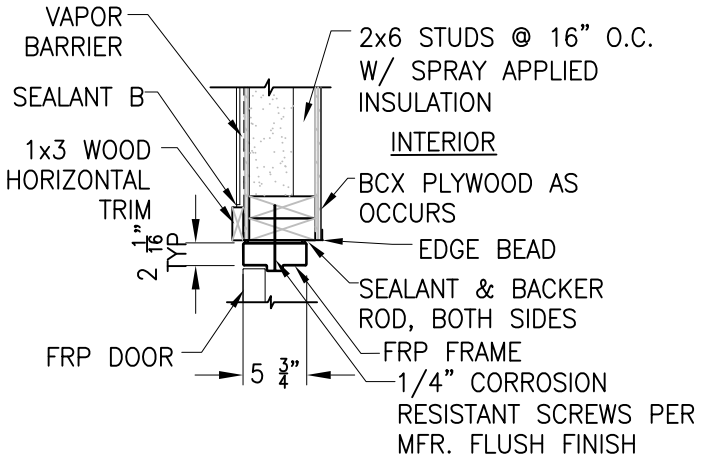
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

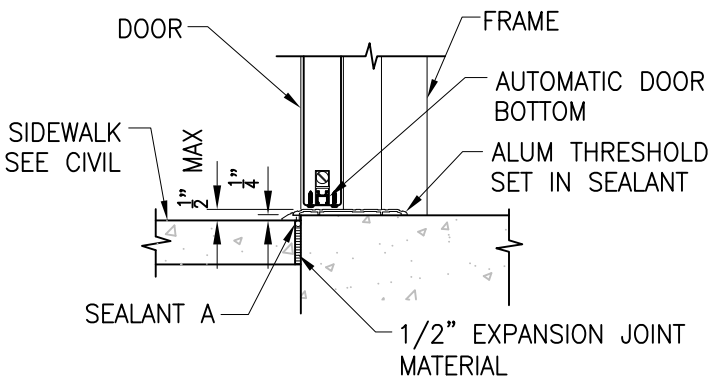
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
FLOOR AND FOUNDATION STRUCTURAL DETAILS

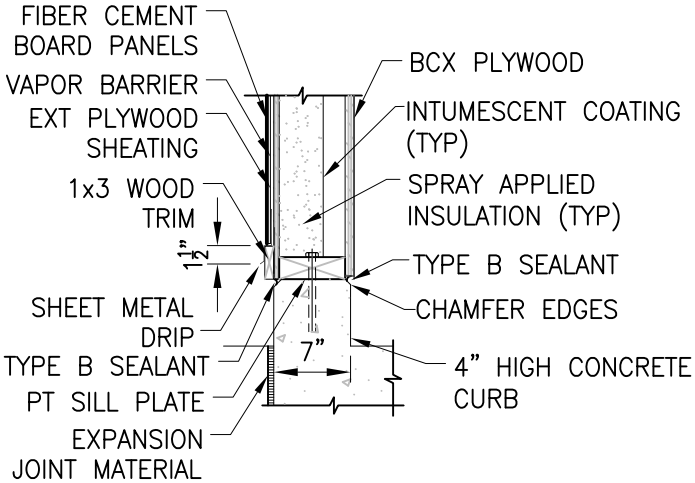
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W–19**



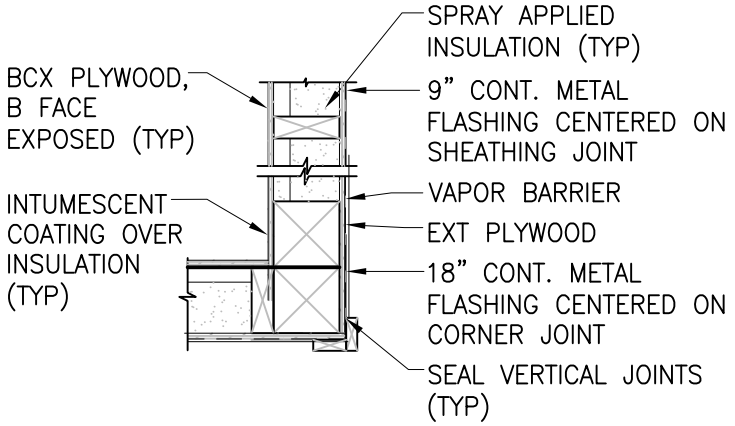
DOOR JAMB 1
N.T.S.



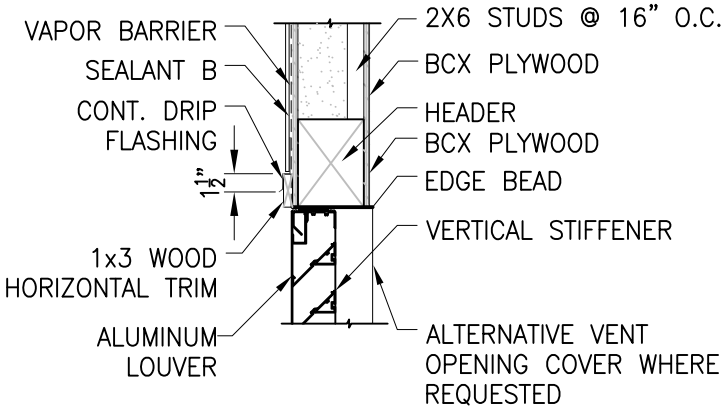
EXTERIOR DOOR SILL 2
N.T.S.



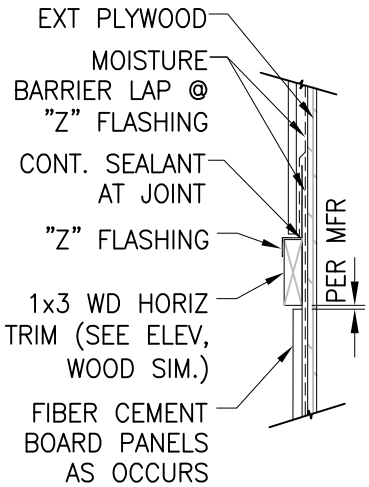
CURB DETAIL 3
N.T.S.



CORNER DETAIL 4
N.T.S.



VENT INSTALLATION 5
N.T.S.



TRIM SECTION DETAIL 6
N.T.S.

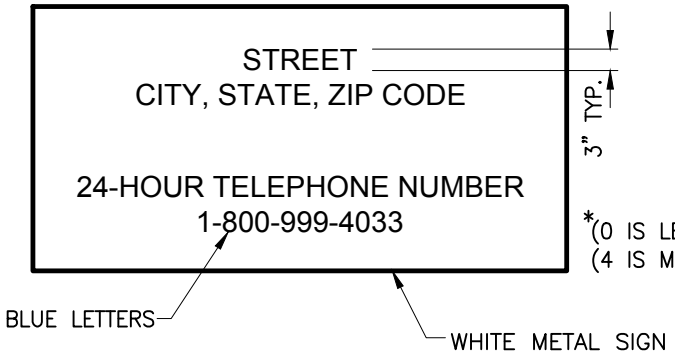
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 01/16

Golden State Water Company
A Subsidiary of American States Water Company

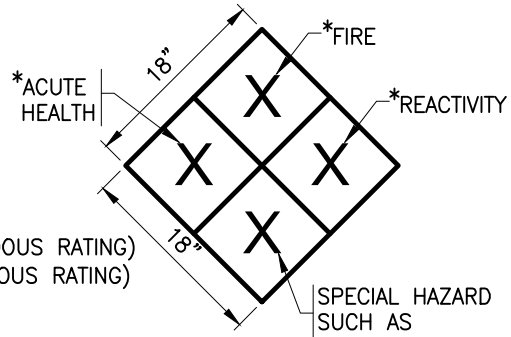
TITLE:
CHEMICAL BUILDING DOOR AND LOUVER DETAILS

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	W-20



SITE ADDRESS SIGN

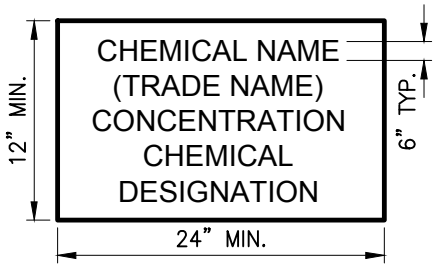
LOCATE ON ENTRANCE GATE & BUILDING



NOTE:
SEE N.F.P.A. 704 FOR COLOR AND SIZE OF NUMERALS AND LETTERS.

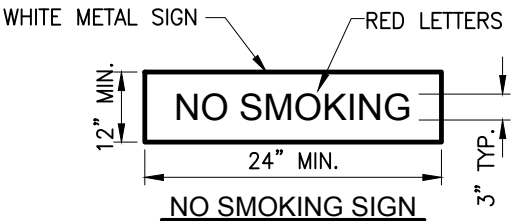
N.F.P.A. HAZARDOUS MATERIALS IDENTIFICATION SIGN

LOCATE ON SITE ENTRANCE GATES, BUILDING AND EACH ROOM ENTRANCE. GSWC SHALL CONFIRM RATINGS ON ALL SIGNS FOR ACTUAL MATERIAL USED



CHEMICAL NAME SIGN

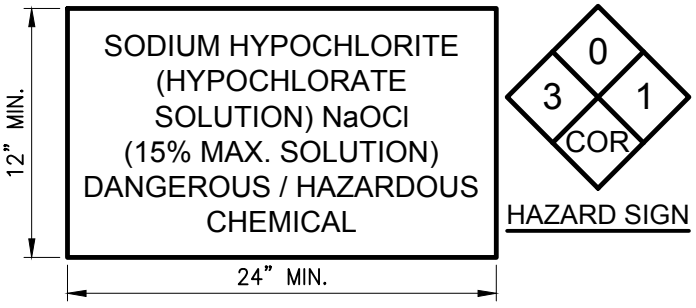
LOCATE ON ROOM ENTRANCE



NO SMOKING SIGN

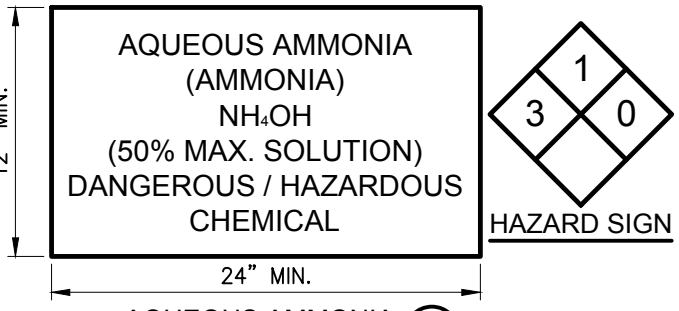
LOCATE ON ENTRANCE GATE & BUILDING

TYPICAL SIGN DETAILS (1) — N.T.S.



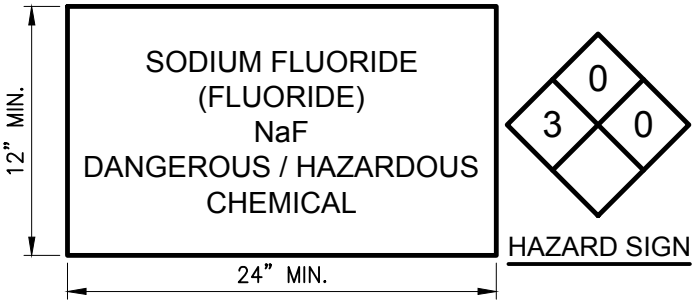
HAZARD SIGN

SODIUM HYPOCHLORITE CHEMICAL SIGN (2) — N.T.S.



HAZARD SIGN

AQUEOUS AMMONIA CHEMICAL SIGN (3) — N.T.S.



HAZARD SIGN

SODIUM FLOURIDE CHEMICAL SIGN (4) — N.T.S.

NOTES:

1) N.F.P.A. SIGNS SHOWN ARE TYPICAL EXAMPLES
2) EXACT N.F.P.A. SIGNS SHALL BE AS DIRECTED BY GSWC AND/OR CHEMICAL SUPPLIER.

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/18 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **CHEMICAL BUILDING SIGNAGE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**W-21A**

CHEMICAL STORAGE NOTES

1. Building Requirements
   a. The Disinfection Building shall be constructed of either wood frame construction, pre-cast concrete or cement masonry block (CMU) as shown on the plans for each specific project.
      i. All exposed electrical conduits shall be constructed of non-corrosive materials except where metal conduits used in the concrete slab project above the floor. Such projections of metal conduits shall be wrapped with PVC tape.
      ii. The doors, frames and ventilation equipment shall be constructed of non-corrosive materials such as Fiberglass Reinforced Plastic (FRP), aluminum or stainless steel to minimize corrosion from chemical vapors that will be present in the chemical rooms.
   b. Each room in the building shall have a depressed floor at least 8-inches deep for backup spill containment. Rooms shall have grated floor drains connected to the on-site underdrain system that discharges to the local storm drain for which GSWC has a NPDES permit. Each floor drain shall be connected to the underdrain system with a normally closed ball valve. The floor drains shall not be connected to any sink or chemical analyzer drains.
   c. In the event of an accidental spill into one or more of the containment areas, one chemical at a time shall be diluted with clean water and then released into the underdrain system so that chemicals are not released at full strength or at the same time.
   d. All rooms of the Disinfection Building shall be securely locked when employees are not present.
   e. A Material Safety Data Sheet (MSDS) shall be maintained on the premises and be readily available for reference.
2. Storage Tank Requirements
   a. Storage tanks with double walls for secondary containment shall be furnished by either GSWC or an outside vendor. See the Bid Sheets for specific requirements on each project. Chemical treatment will be provided to the ground water pumped from the local wells by injection of sodium hypochlorite and/or other water treatment chemicals.
      i. The secondary containment shall be capable of holding 100% of the storage tank volume without spilling over the top.
   b. Storage tanks shall be either a 275 gallon or 500 gallon double-walled tank for storing sodium hypochlorite. (See the Plans for specific tank size.) Other tank sizes may be called for on the construction plans.
   c. Chemical tanks shall be clearly marked and labeled in accordance with nationally recognized standards.
   d. There may be other chemicals stored in the building which are used for further water treatment. These may include but not be limited to ammonia and sodium fluoride.
      i. Each chemical shall be in its own room with its own double-walled chemical storage tank and its own chemical injection pump system.
   e. All chemical tanks and related equipment shall be anchored to meet anticipated seismic loads per the latest requirements of the California Building Standards Code (CBSC).
   f. Tanks shall be equipped with level measurement equipment connected to the local SCADA system. The SCADA system shall be modified to signal the District's Operations Staff on tank level and leak detection.
3. Chemical Piping Requirements
   a. All chemical piping shall be accordance with 8001.4.3 of the California Fire Code (CFC). Tubing carrying the chemicals shall be fully contained in rigid Schedule 80 PVC piping.
   b. All chemical piping shall be clearly identified in English to indicate material being conveyed and showing the direction of flow.
   c. Shutoff valves shall be installed on the chemical injection systems at the following locations:
      i. At the pump suction point on each tank.
      ii. At each injection point within the plant.
      iii. On both sides of each pump.
   d. All shutoff valves shall be identified by signs.
   e. Check valves shall be installed at all locations where backflows could create a hazardous condition or unauthorized discharge of hazardous materials.
   f. Installation Instructions
      i. Materials: Use ½" OD black polypropylene fittings, ½' black polypropylene tubing, 2" schedule 80 PVC pipe, 2" male adapters and 2" Nalgene clear vinyl tubing with stainless steel hose clamps.
      ii. Installation:
         1. The Schedule 80 PVC pipe shall be installed below ground with long sweeps at each turn.
         2. A socket female thread coupling and male hose adapter shall be placed at each end of the pipe.
         3. The clear vinyl tubing shall be installed over the male hose adapters with hose clamps.
         4. The black polyethylene line shall be pulled through the PVC pipe and clear vinyl tubing.
         5. The black polyethylene line shall be connected at the pump and the point of injection with the black polyethylene fittings and the clear vinyl tubing pulled over the fittings and clamped.
4. Sign Requirements
   a. Signs shall be installed at the following locations:
      i. Hazardous Material Signs complying with National Fire Protection Association (NFPA) 704 shall be installed:
         1. At entrances to the site.
         2. At entrances to buildings.
         3. On each tank.
      ii. No Smoking Signs shall be posted at all buildings.
   b. A Site Location Sign shall be attached on each entrance gate using 3-inch high blue letters on a white background. The sign material shall be 0.08-inch thick sheet aluminum. Mount the sign on the outside of the gates using the wording shown on the plans.
      i. At a minimum provide the site address and a 24-hour phone number.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company

TITLE: **CHEMICAL BUILDING STORAGE/USAGE NOTES**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-21B**

HAZARDOUS MATERIAL NOTES:

1. Storage tanks shall have secondary containment capable of holding storage tank contents.

2. Tanks shall be clearly marked and labeled in accordance with nationally recognized standards.

3. A material safety data sheet (M.S.D.S.) shall be maintained on the premises and be readily available.

4. Piping for chemicals, all materials being used for primary lines and secondary containment lines shall be compatible with the chemical solutions and shall be

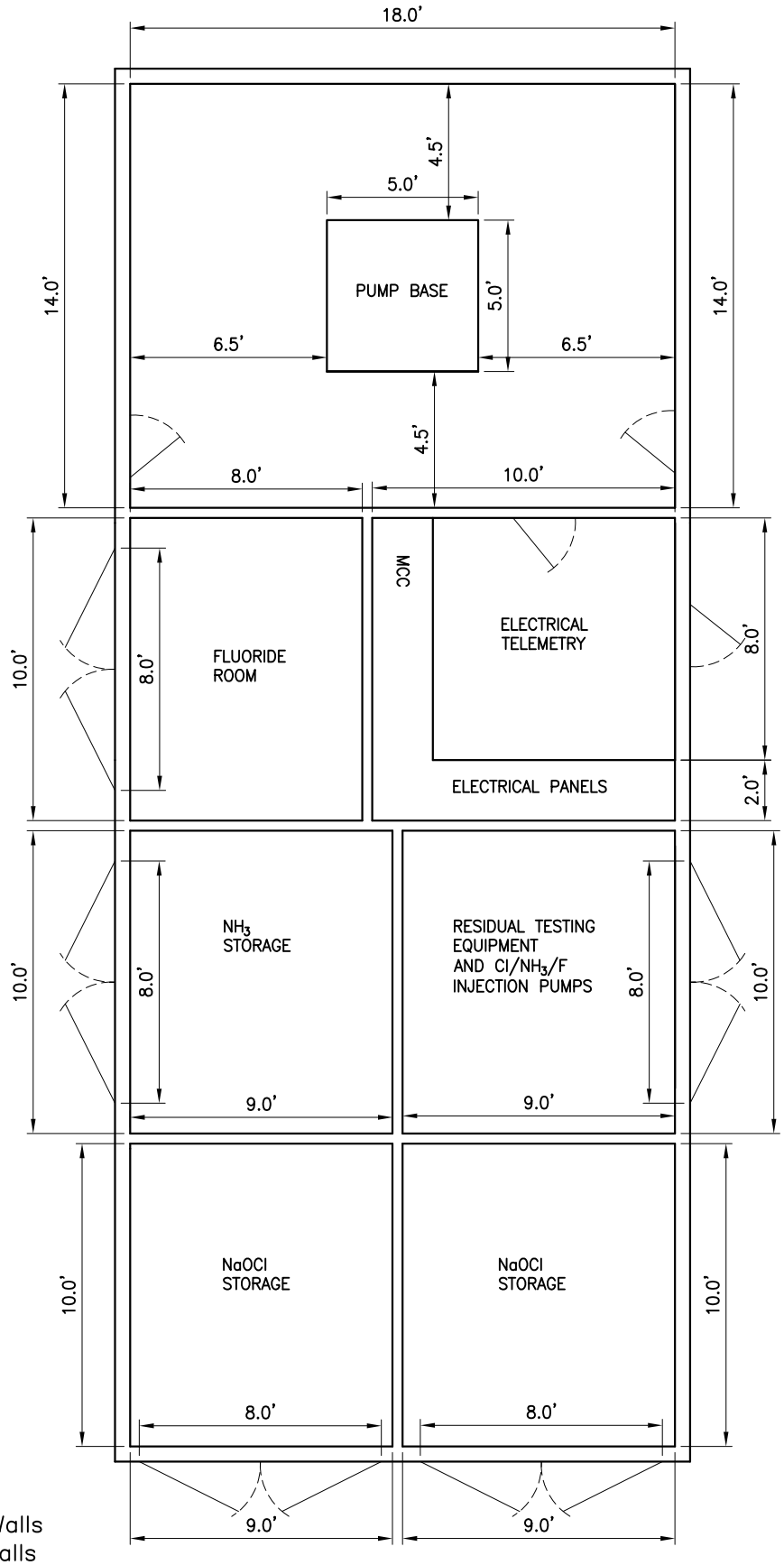
   as follows:

   USE:
   1/2" O.D. black polypropylene fittings, 1/2" black polypropylene tubing, 2" schedule 80 PVC pipe an 2" male adapters and 2" nalgene clear vinyl tubing with stainless steel hose clamps. The PVC pipe shall be installed below ground with long sweeps at each turn. A socket female thread coupling and male hose adapter shall be placed at each end of the pipe. The clear vinyl shall be installed over the male hose adapters with hose clamps. The black polyethylene line shall be pulled through the PVC pipe and clear vinyl tubing. The black polyethylene line shall be connected at the pump and the point of injection with the black polyethylene fittings and the clear vinyl pulled over the fittings and clamped. This procedure shall be the same for the suction line.

5. Shut off valves shall be located on all chemical piping at pumps and at injection points.

APPROVED BY: GSWC STANDARDS COMMITTEE Robert A. Hartford — 01/16 EDC MANAGER — DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **CHEMICAL BUILDING HAZARDOUS MATERIAL NOTES**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**W-21C**



NOTE:

2"X6" Exterior Walls
2"X4" Interior Walls

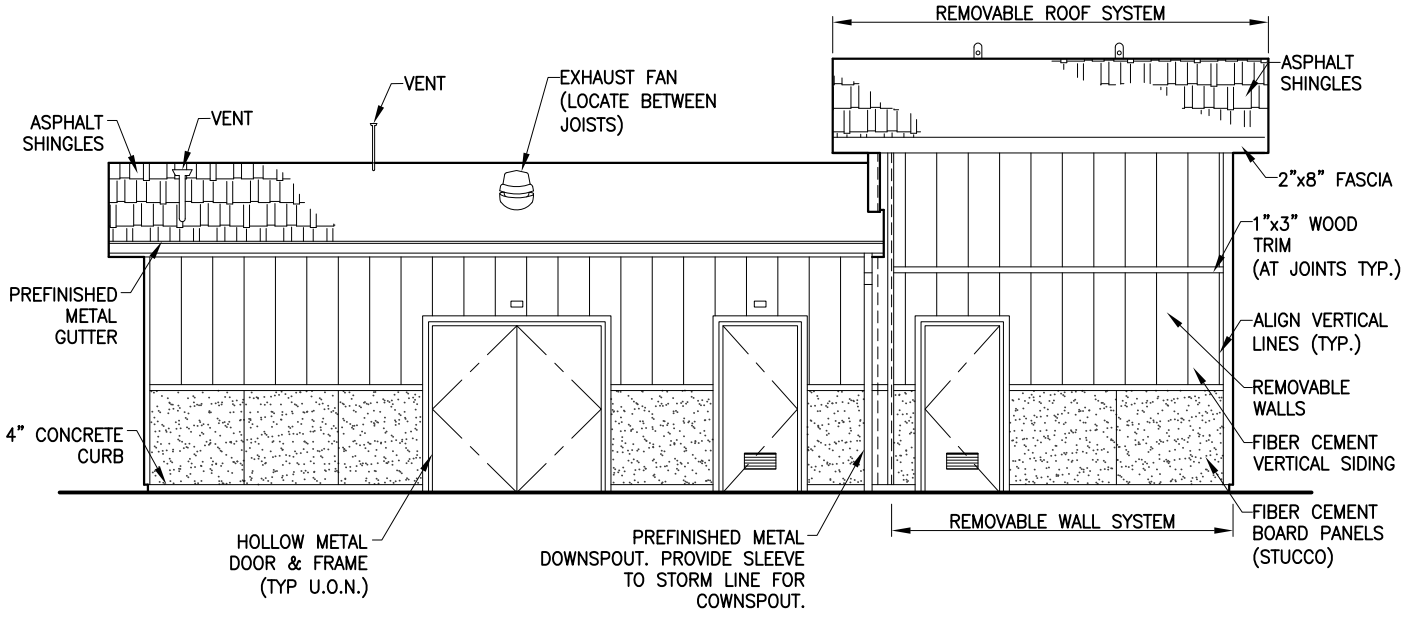
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

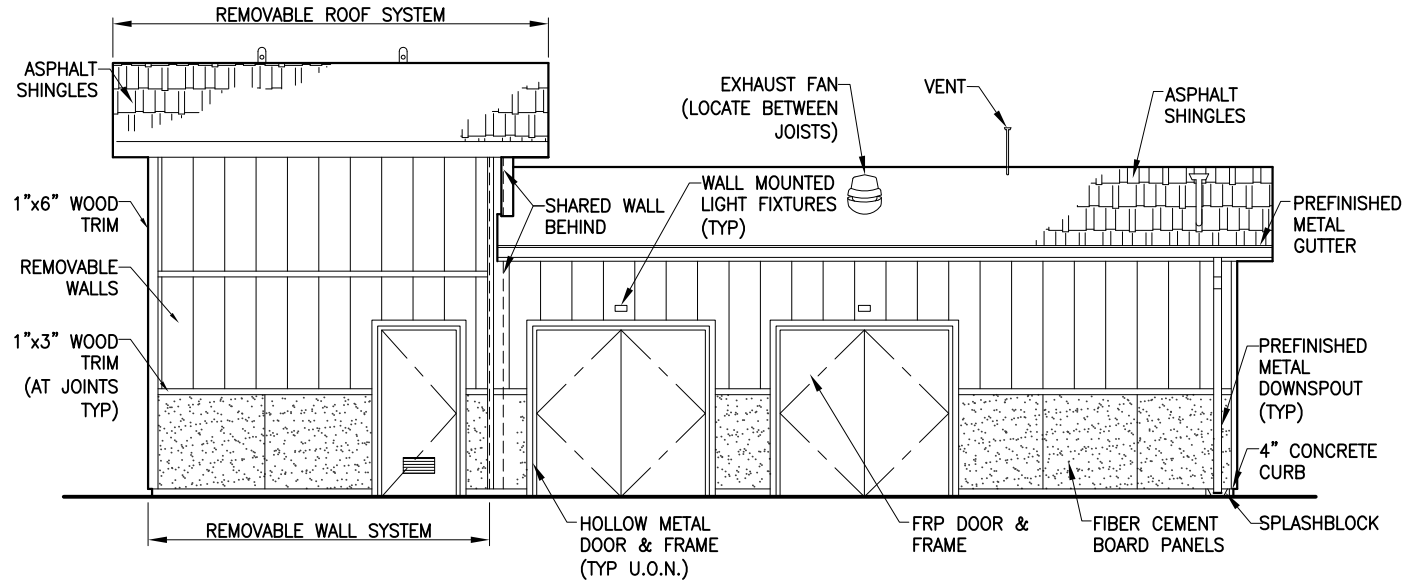
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **WELL PUMP BUILDING WITH REMOVABLE ROOF AND WALLS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-22A**



EAST ELEVATION
N.T.S.



WEST ELEVATION
N.T.S.

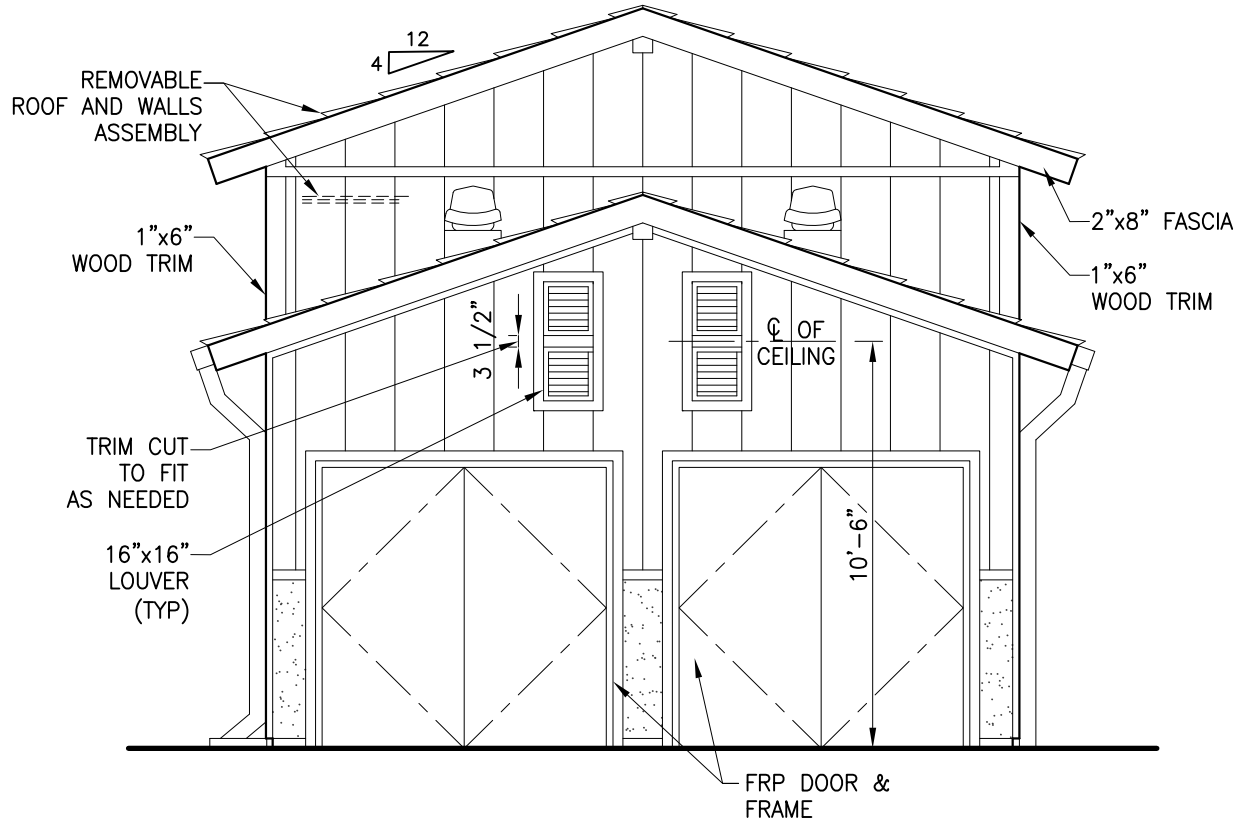
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

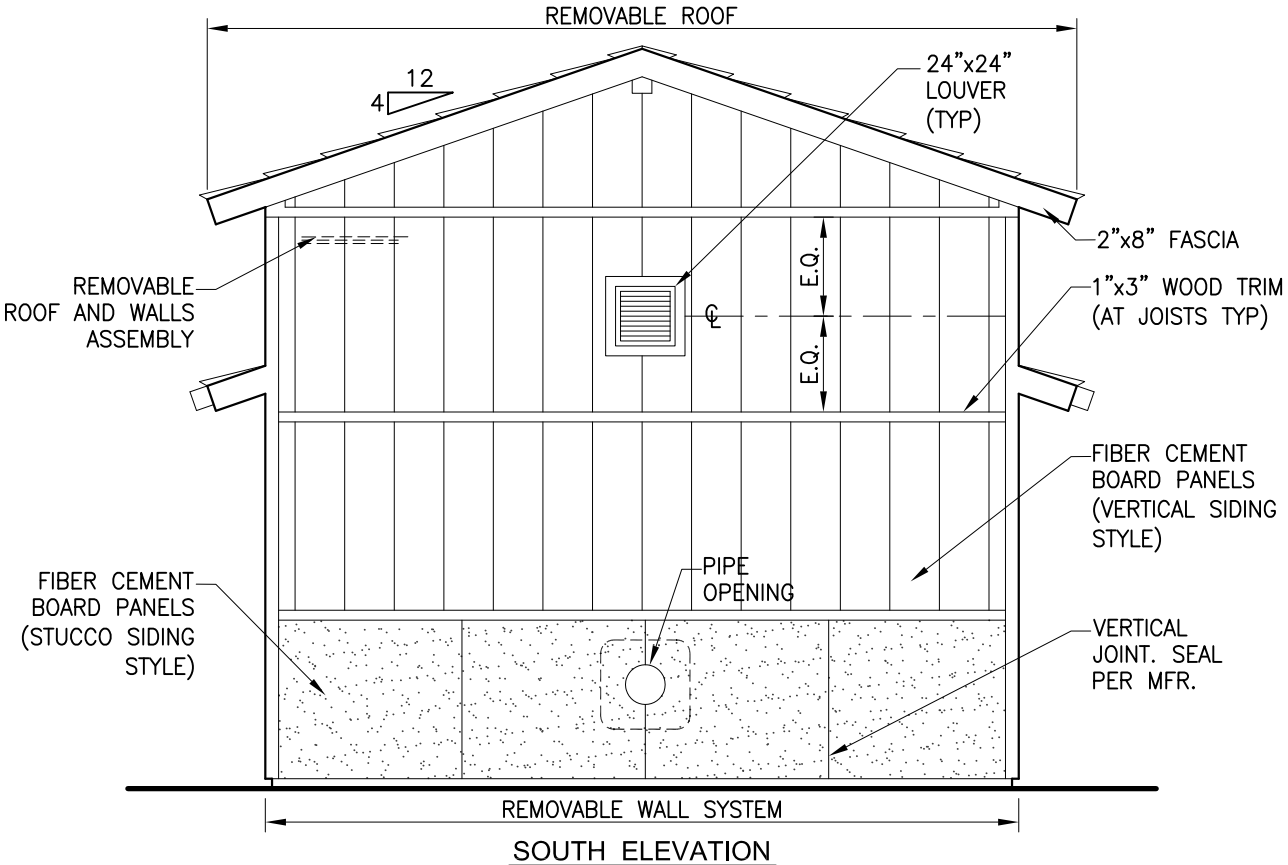
TITLE:
ARCHITECTURAL VIEWS OF WELL BUILDING WITH REMOVALBLE ROOF

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-22B**



NORTH ELEVATION

N.T.S.



SOUTH ELEVATION

N.T.S.

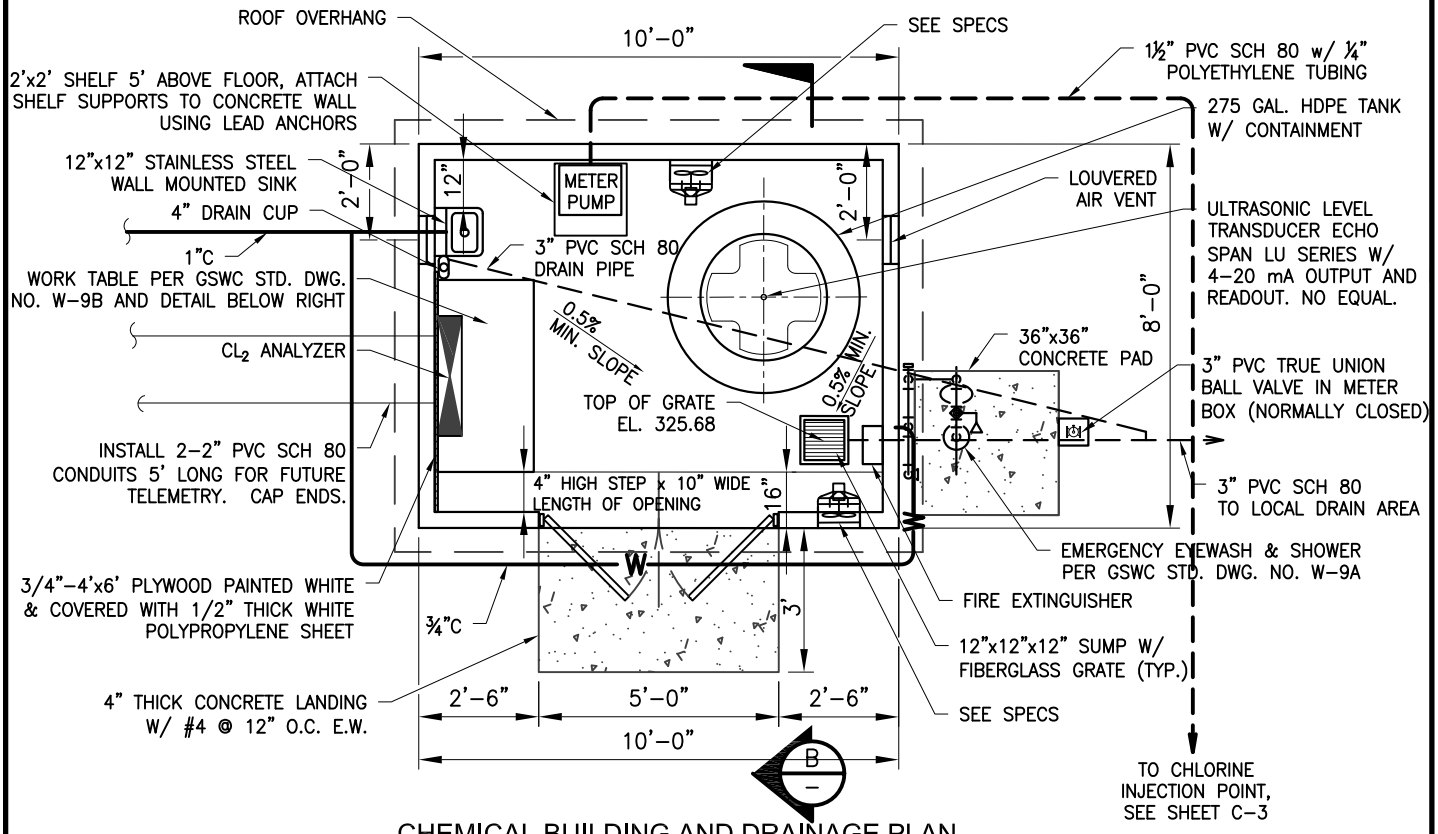
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **ARCHITECTURAL VIEWS OF WELL BUILDING WITH REMOVABLE ROOF**

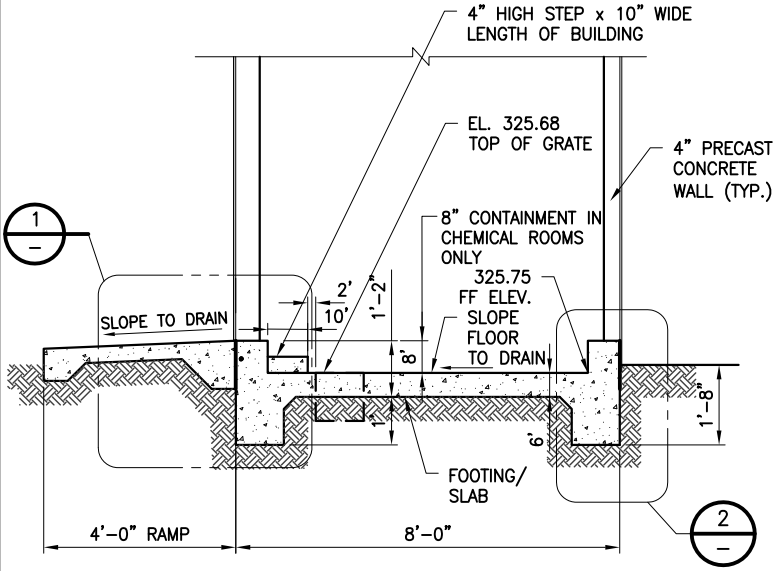
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**W-22C**



CHEMICAL BUILDING AND DRAINAGE PLAN

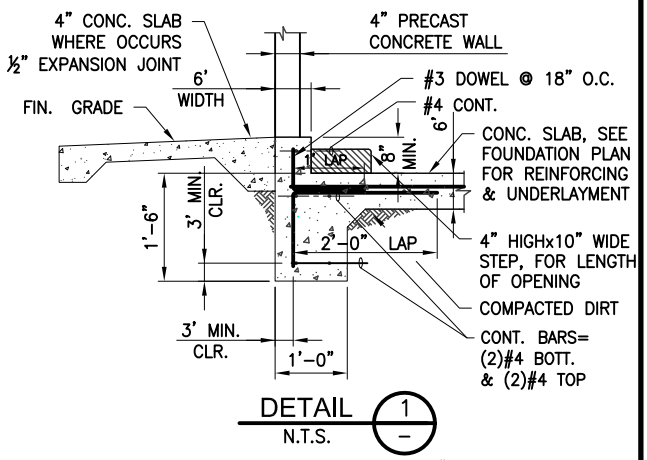
N.T.S.

N.T.S.



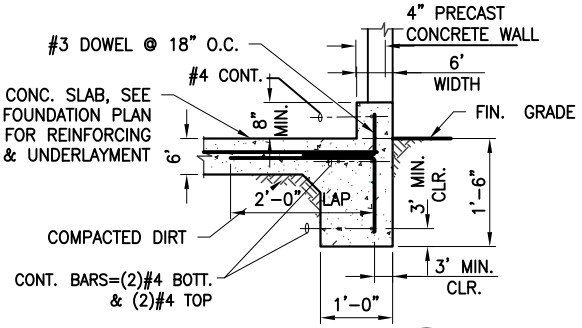
SECTION B

N.T.S.



DETAIL 1

N.T.S.



DETAIL 2

N.T.S.

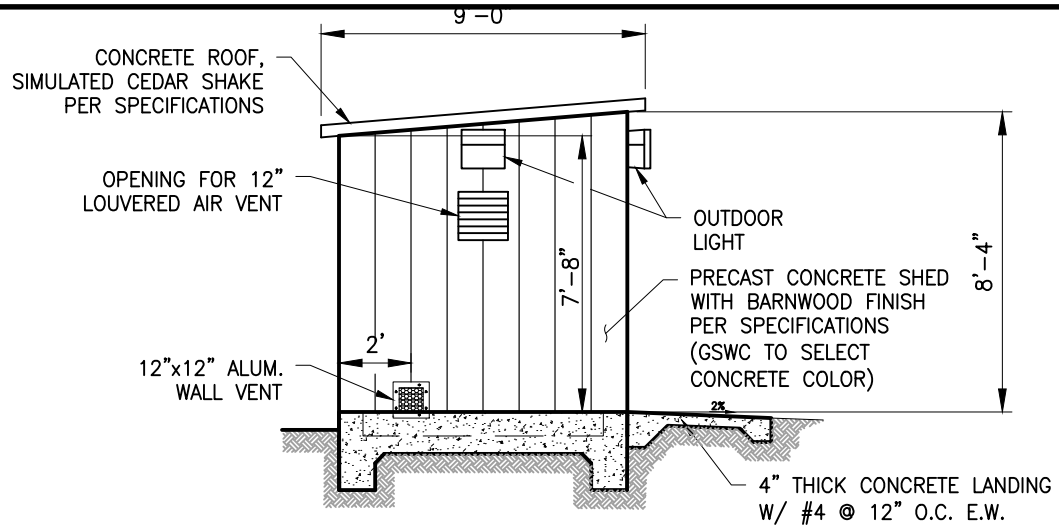
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

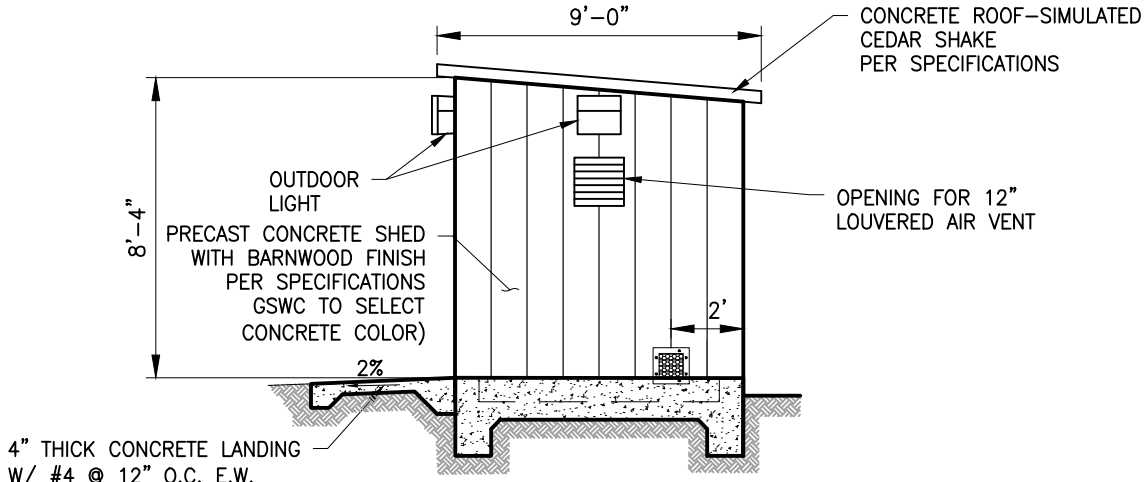
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
PRECAST CONCRETE DISINFECTION BUILDING FLOOR AND FOUNDATION PLAN

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	W-23A



LEFT SIDE ELEVATION SECTION
N.T.S.



RIGHT SIDE ELEVATION SECTION
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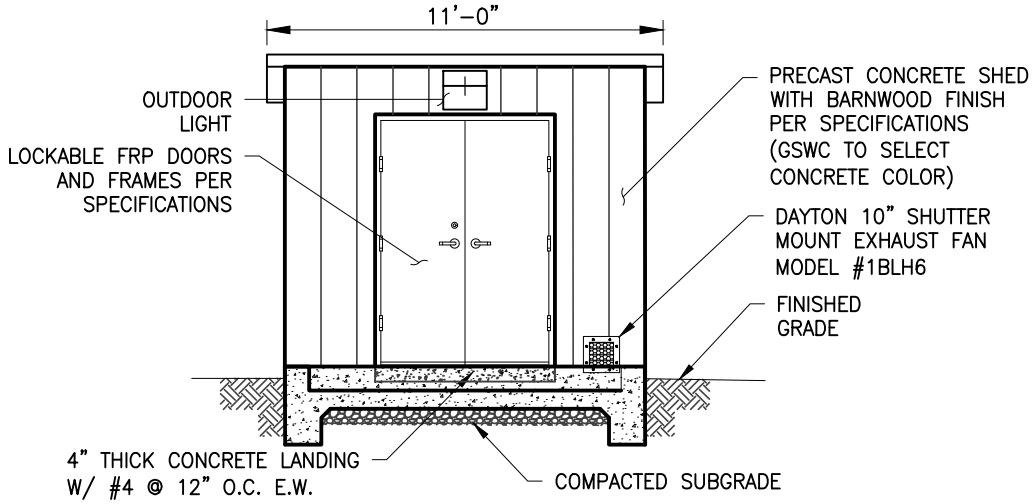


FRONT ELEVATION SECTION
N.T.S.

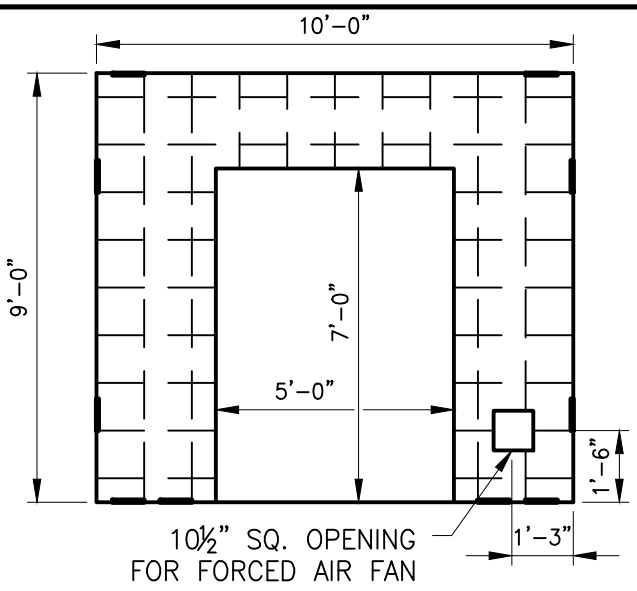
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 1/18

Golden State Water Company
A Subsidiary of American States Water Company

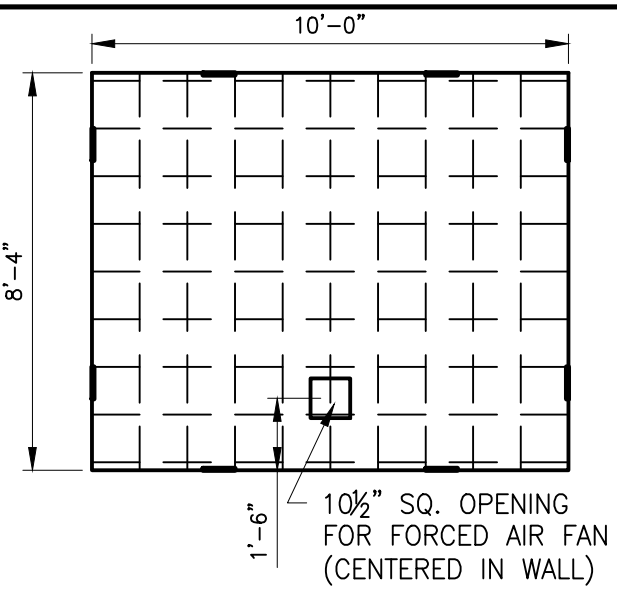
TITLE:
PRECAST CONCRETE DISINFECTION BUILDING ARCHITECTURAL VIEWS

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**W-23B**



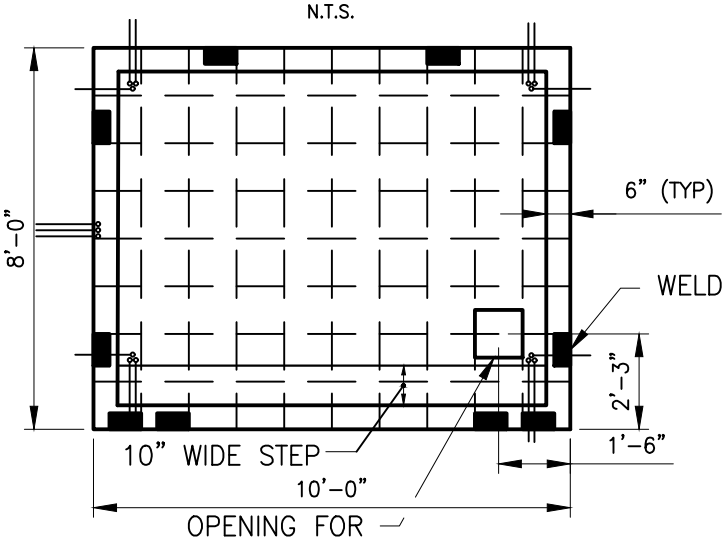
FRONT PANEL 4" THICK (1) REQUIRED

N.T.S.



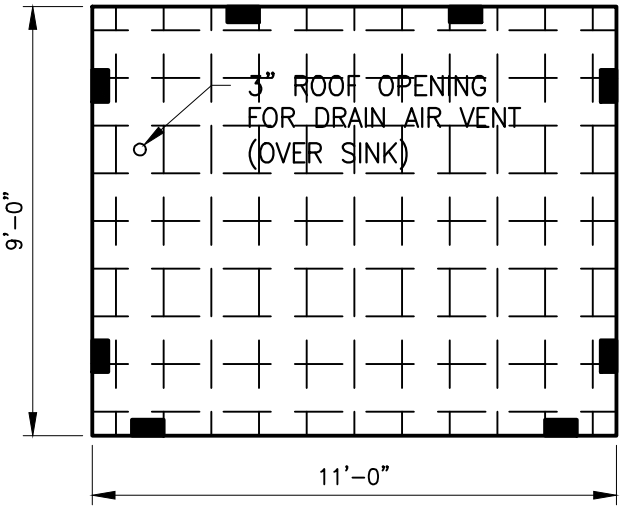
REAR PANEL 4" THICK (1) REQUIRED

N.T.S.



BUILDING FLOOR 6" THICK (1) REQUIRED

N.T.S.



ROOF PANEL 4" THICK (1) REQUIRED

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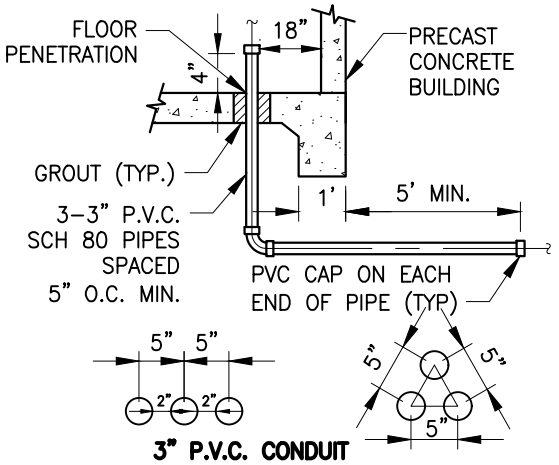
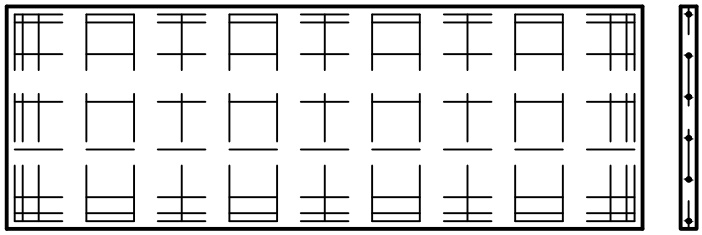


CONDUIT AND PENETRATION DETAIL

N.T.S.



TYPICAL PANEL REINFORCING PLACEMENT

N.T.S.

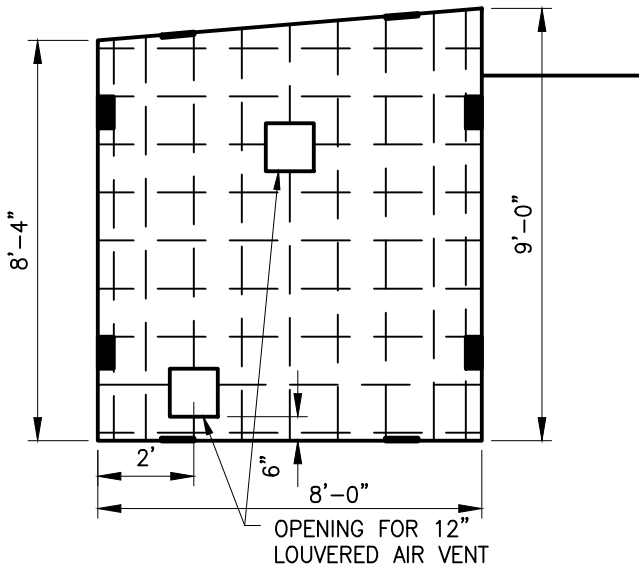
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

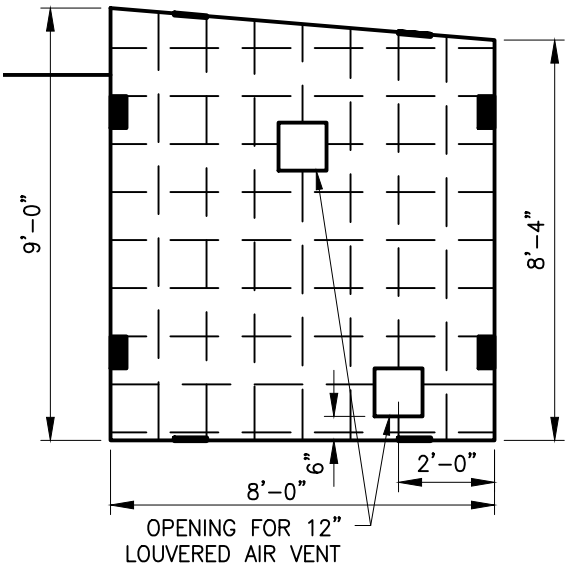
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **PRECAST CONCRETE DISINFECTION BUILDING ARCHITECTURAL VIEWS**

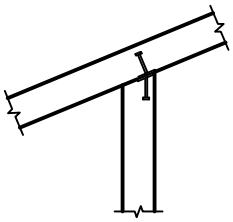
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**W–23C**



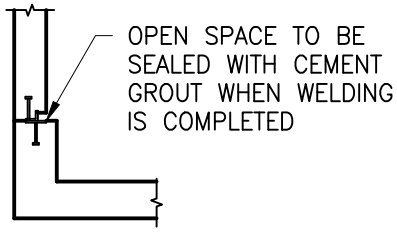
LEFT SIDE 4" THICK (1) REQUIRED
N.T.S.



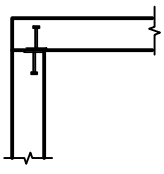
REAR PANEL 4" THICK (1) REQUIRED
N.T.S.



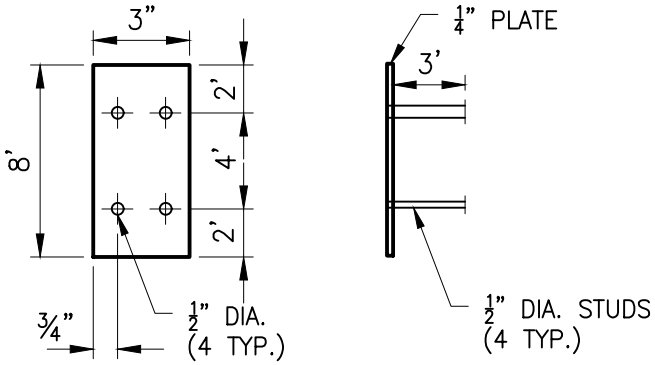
TYP. WALL TO ROOF SLAB
WELDED CONNECTION DETAIL
N.T.S.



TYP. WALL TO FLOOR SLAB
WELDED CONNECTION DETAIL
N.T.S.



TYP. WALL TO FLOOR SLAB
WELDED CONNECTION DETAIL
N.T.S.



WELD PLATE DETAIL
N.T.S.

NOTES:

1. (2) #4 rebar at all panel edges and openings.
2. #4 rebar @ 12" o.c. each way (typ.).
3. Reinforcing steel: Grade 60, f_y = 60 ksi.
4. Concrete: footings and slab on grade: f'c = 4000 psi.
   All other concrete: f'c = 4000 psi.
5. Adjust weld plates spacing for openings. Match weld plates on floor panel to wall panels, and roof panels to wall panels.
6. Two weld plates at each wall panel connection.
7. Reinforcing steel placed in panels, 2" from panel surface.
8. After construction all weld plates shall be covered by cement grout to protect from corrosion.
9. Install two ½-inch wide beads of butyl rubber sealant between wall panels and top rim of building floor and between top of walls and roof panel prior to setting wall panels and roof. clean any excess from interior or exterior vertical surfaces.
10. Floor sloped 0.5% to floor drain.

APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

Golden State Water Company
A Subsidiary of American States Water Company

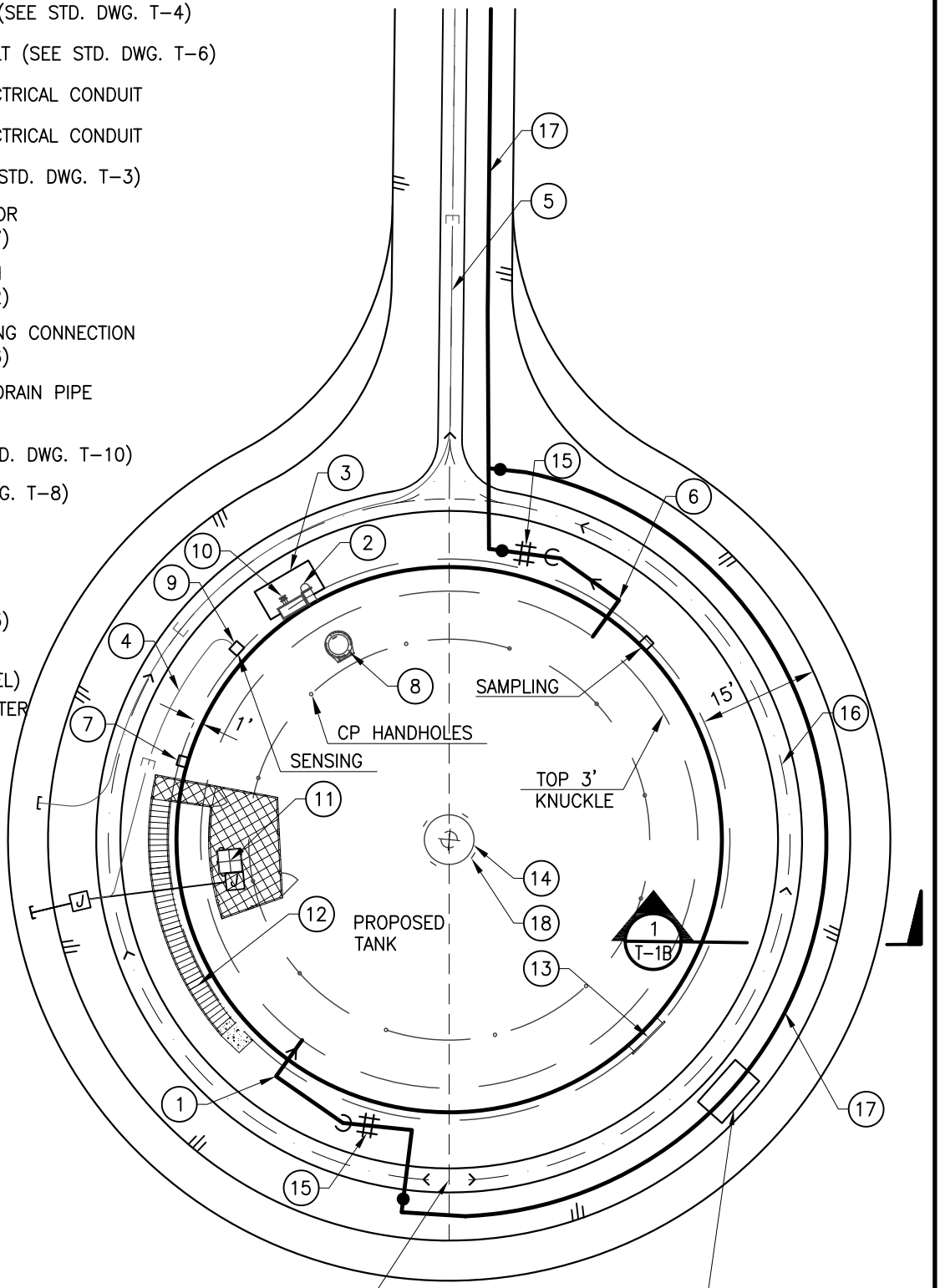
TITLE: **PRECAST CONCRETE DISINFECTION BUILDING ARCHITECTURAL VIEWS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**W-23D**

Section 5

Water Tanks

1. TANK INLET PIPING (SEE STD. DWG. T-2)
2. 12" OVERFLOW PIPE (SEE STD. DWG. T-4)
3. 4'x8' CONCRETE VAULT (SEE STD. DWG. T-6)
4. 1" SCH 40 PVC ELECTRICAL CONDUIT
5. 4" SCH 40 PVC ELECTRICAL CONDUIT
6. OUTLET PIPING (SEE STD. DWG. T-3)
7. WATER LEVEL INDICATOR (SEE STD. DWG. T-17)
8. FLANGED ROOF HATCH (SEE STD. DWG. T-12)
9. SENSING AND SAMPLING CONNECTION (SEE STD. DWG. T-16)
10. LARGE MANWAY AND DRAIN PIPE (SEE STD. DWG. T-5)
11. ROOF HATCH (SEE STD. DWG. T-10)
12. STAIRS (SEE STD. DWG. T-8)
13. 36" ACCESS MANWAY (SEE STD. DWG. T-7)
14. CENTER ROOF VENT (SEE STD. DWG. T-13)
15. TRANSITION COUPLING (PVC OR DIP TO STEEL)
16. CONCRETE ALLEY GUTTER (SEE STD. DWG. C-6)
17. 12" PVC AWWA C900 CLASS 235
18. TIE-OFF ANCHORS AROUND ROOF VENT (SEE STD. DWG. T-9)



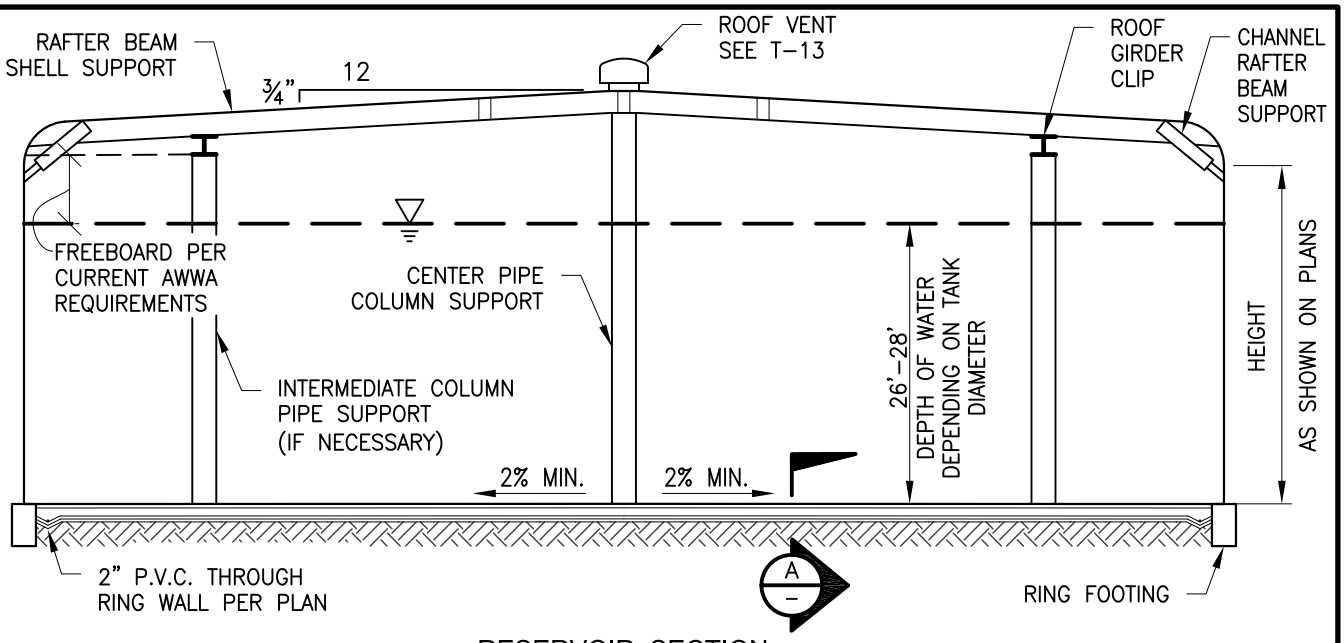
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

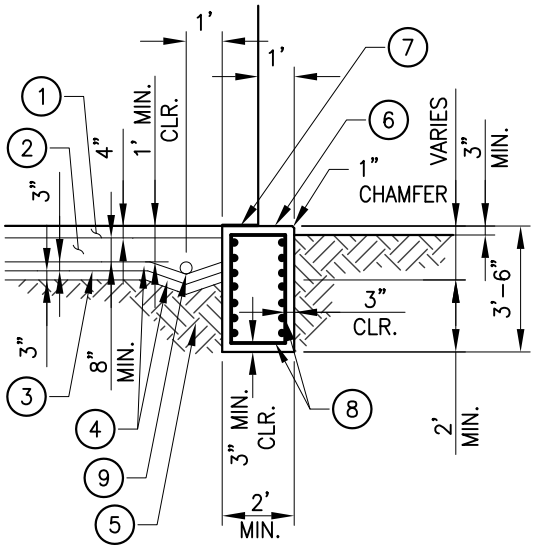
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
WELDED STEEL RESERVOIR TYPICAL SITE PLAN

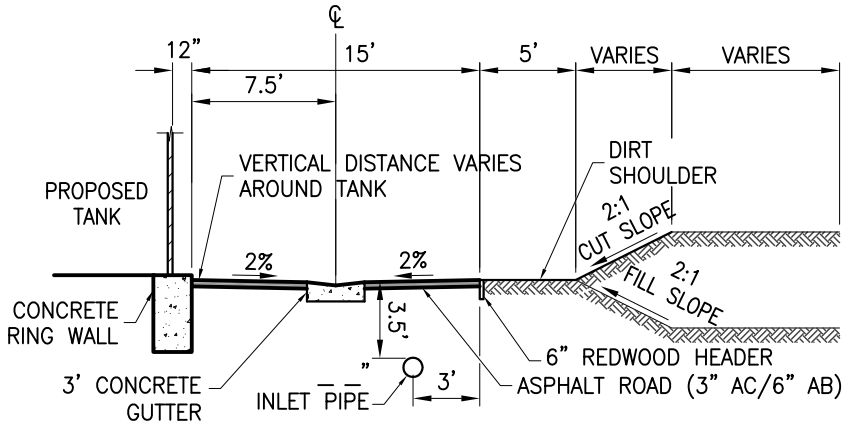
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**T-1A**



RESERVOIR SECTION



RING FOOTING A



SITE GRADING AND PAVING SECTION 1 T-1A
N.T.S.

LIST OF MATERIALS	
1	Compacted oil sand w/ 6–8 lbs. of SC–800 liquid asphalt per 100 lbs. of sand
2	⅜" drain rock
3	Impermeable membrane (1% min. slope to leak detection drain; lap a min. of 3" on conc. footing
4	Sand (SE30)
5	Select granular material per soils engineer's recommendations
6	Steel trowel finish top (to be level with ⅛" in any 30" and ¼" overall)
7	Continuous cellular fiber joint filler between floor plate and top of ring wall–1/2" thick (WR Meadows Product)
8	Rebar per plans
9	2" Sch. 40 P.V.C., perforated and wrapped in filter fabric

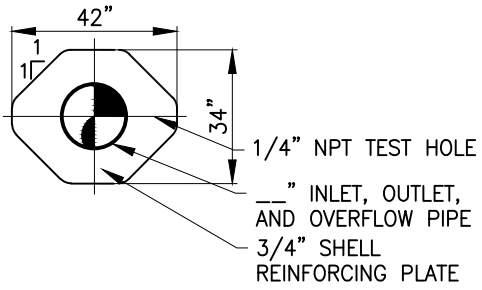
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

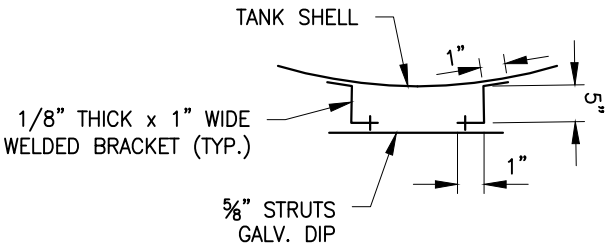
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
WELDED STEEL RESERVOIR TYPICAL SECTION VIEW

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**T–1B**

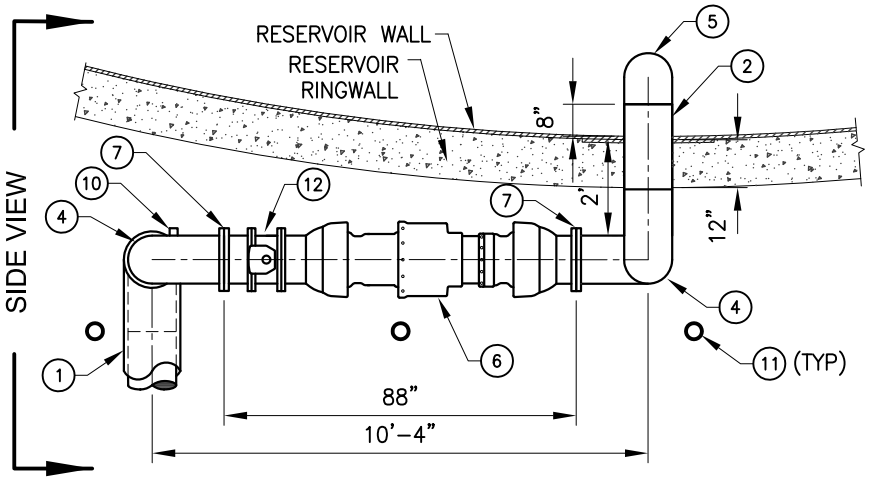


SHELL REINFORCING PLATE

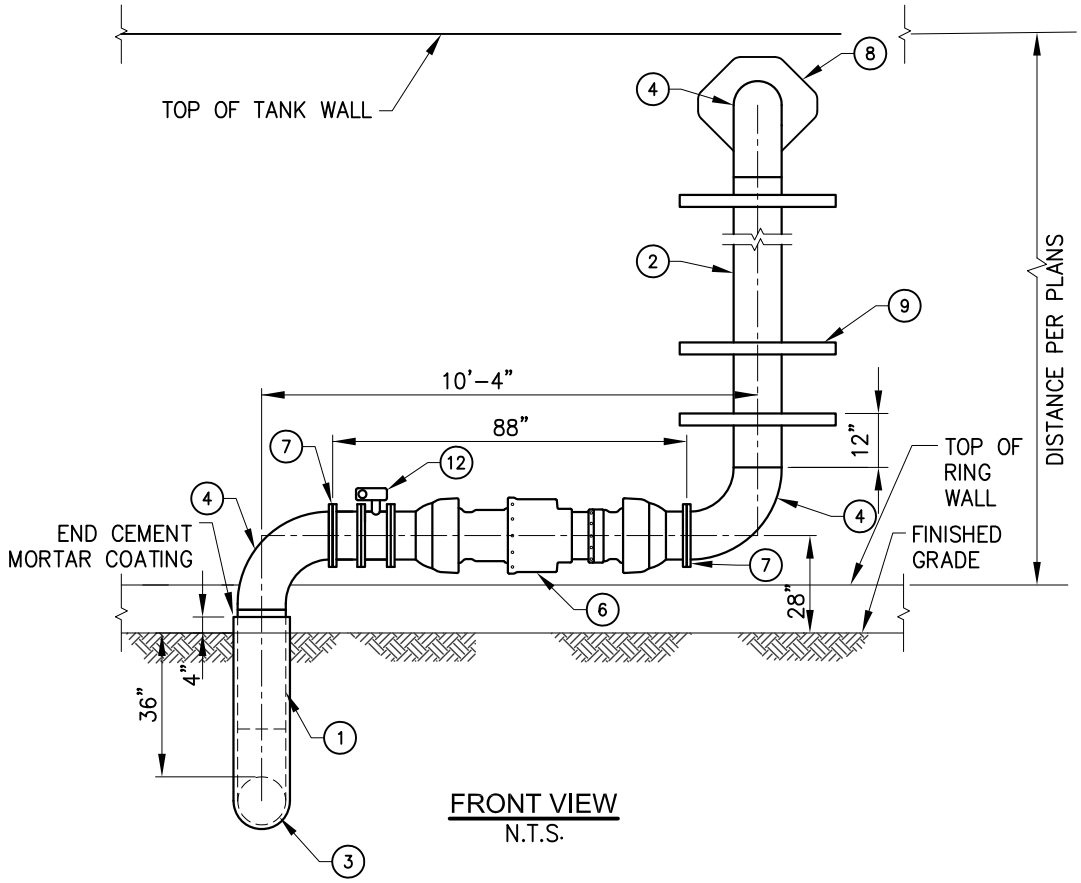


TELEMETRY CONDUIT
WELDED BRACKET DETAIL
N.T.S.
(LOCATIONS TO BE SHOWN ON THE PLANS)

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **SHELL REINFORCING PLATE**	
		SCALE: NONE / DATE: 02/17 / REV 1.1	STANDARD DWG NO. **T–1C**



PLAN VIEW
INLET PIPING DETAIL
N.T.S.

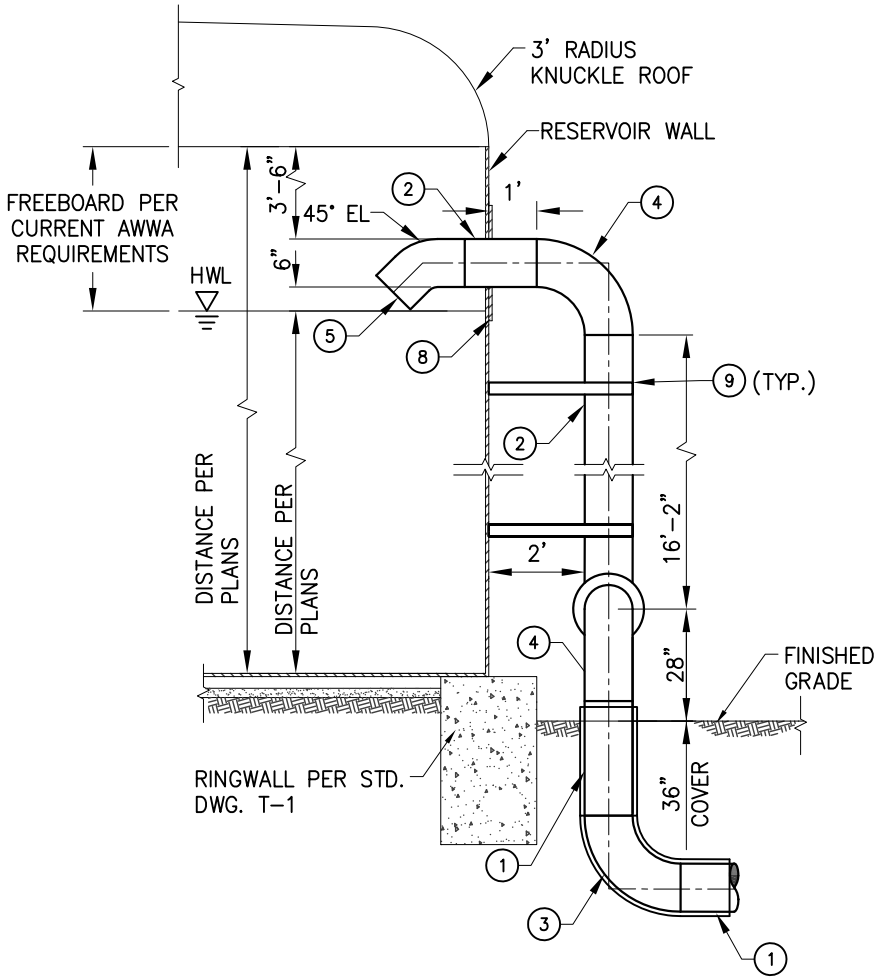


FRONT VIEW
N.T.S.

NOTES:

1. Pipe diameter to be called out in drawings.
2. All steel pipe below grade shall be cement mortar coated. All steel pipe above grade shall be painted to match tank.
3. Dimensions shown are for 12" pipe. Larger or smaller pipe will require modifications to these dimensions.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: INLET CONNECTION		
		SCALE: NONE	DATE: 10/16	REV 1.1
		STANDARD DWG NO. T–2A		



SIDE VIEW
N.T.S.

INLET CONNECTION CONSTRUCTION NOTES:

1. __" WELDED STEEL PIPE, SCH. 40, CMC & EPOXY LINED.
2. __" WELDED STEEL PIPE, SCH. 40, EPOXY LINED.
3. __" WELDED STEEL 90° L.R. ELBOW, SCH. 40, CMC & EPOXY LINED.
4. __" WELDED STEEL 90° L.R. ELBOW, SCH. 40, EPOXY LINED.
5. __" WELDED STEEL 45° ELBOW, SCH. 40, EPOXY LINED.
6. __" FLEX-TEND FORCE BALANCED EXPANSION JOINT FROM EBAA IRON.
7. __" SLIP-ON WELDED FLANGE.
8. SHELL REINFORCING PLATE PER GSWC STD. DWG. T-1 AND AWWA D-100.
9. SUPPORT BRACKET PER GSWC STD. DWG. T-6.
10. 1" WELDED THREAD-O-LET, 1" BALL VALVE AND 1" PLUG FOR SAMPLING.
11. VEHICLE BARRIER PER GSWC STD. DWG. C-9.
12. __" BFV, FE.

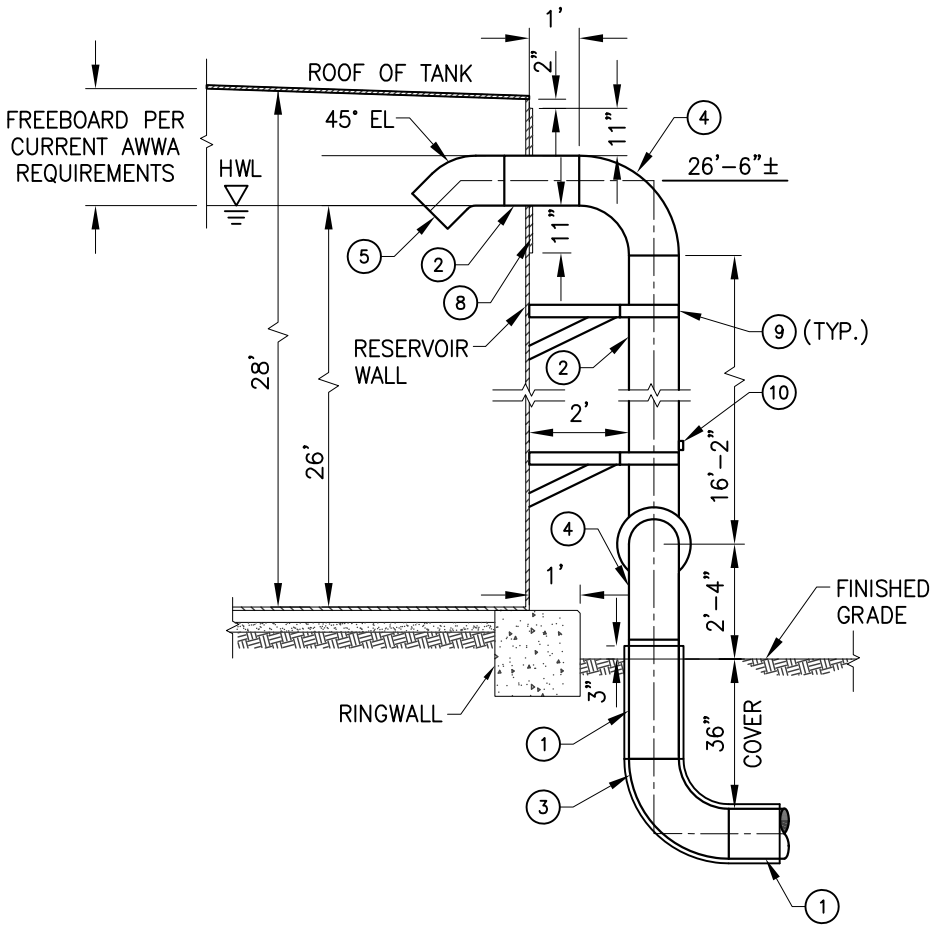
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 10/16 DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
INLET CONNECTION KNUCKLE ROOF TANK

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**T-2B**



SIDE VIEW
N.T.S.

INLET CONNECTION CONSTRUCTION NOTES:

1. __" WELDED STEEL PIPE, SCH. 40, CMC & EPOXY LINED.
2. __" WELDED STEEL PIPE, SCH. 40, EPOXY LINED.
3. __" WELDED STEEL 90° L.R. ELBOW, SCH. 40, CMC & EPOXY LINED.
4. __" WELDED STEEL 90° L.R. ELBOW, SCH. 40, EPOXY LINED.
5. __" WELDED STEEL 45° ELBOW, SCH. 40, EPOXY LINED.
6. __" FLEX-TEND FORCE BALANCED EXPANSION JOINT FROM EBAA IRON.
7. __" SLIP-ON WELDED FLANGE.
8. SHELL REINFORCING PLATE PER GSWC STD. DWG. T-1 AND AWWA D-100.
9. SUPPORT BRACKET PER GSWC STD. DWG. T-6.
10. 1" WELDED THREAD-O-LET, 1" BALL VALVE AND 1" PLUG FOR SAMPLING.
11. VEHICLE BARRIER PER GSWC STD. DWG. C-9.
12. __" BFV, FE.

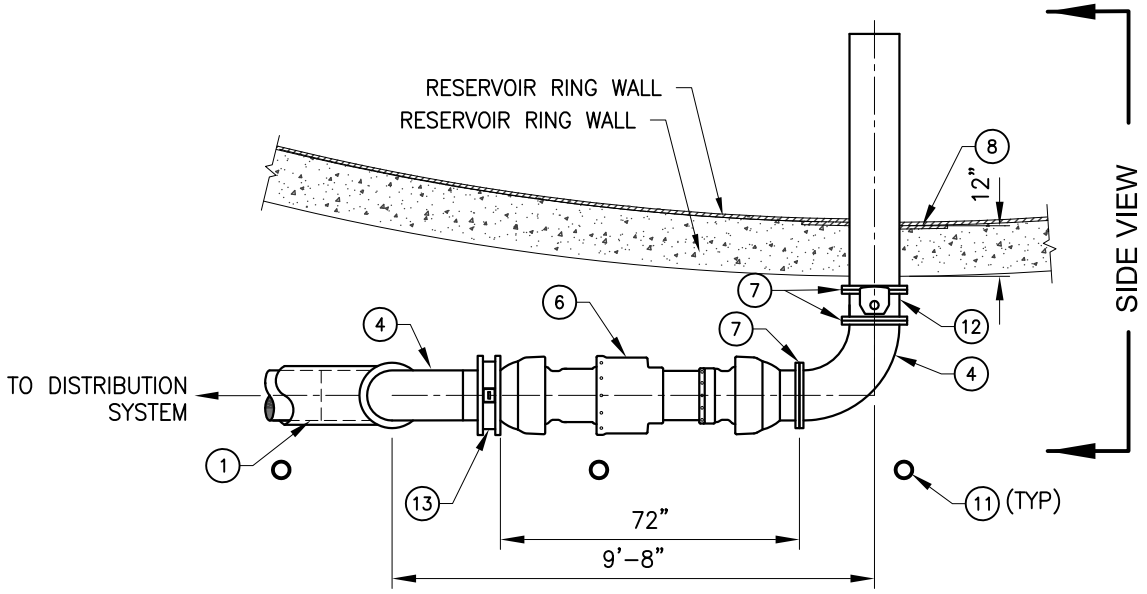
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 01/16 DATE

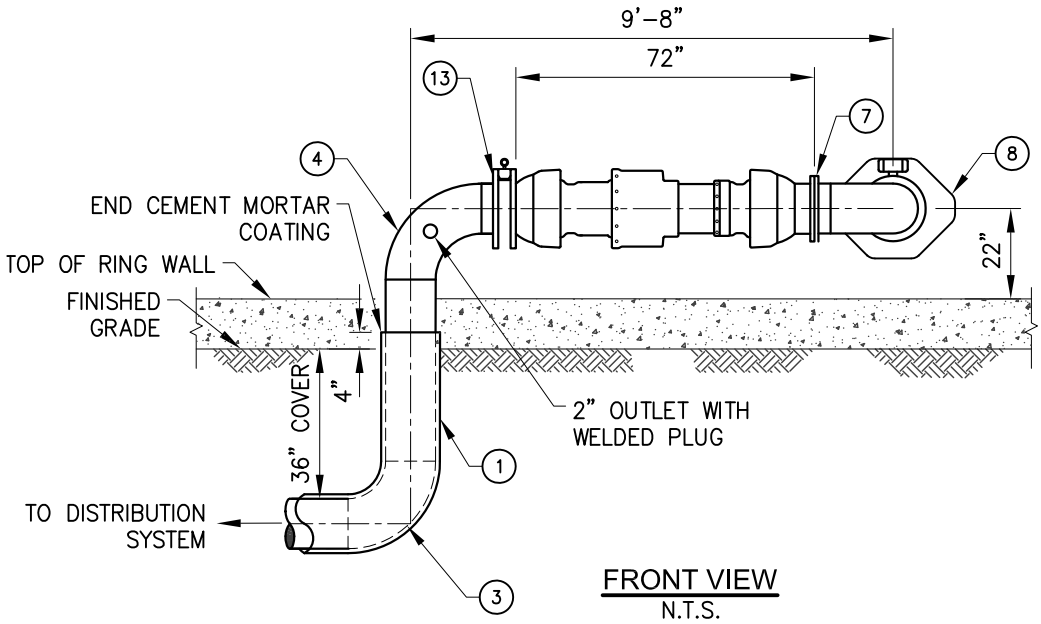
Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
INLET CONNECTION FLAT ROOF TANK

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T-2C**



PLAN VIEW
OUTLET PIPING DETAIL
N.T.S.



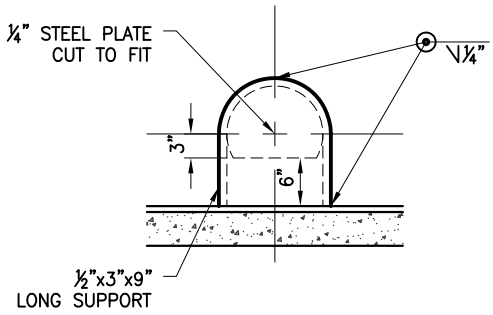
FRONT VIEW
N.T.S.

NOTES:

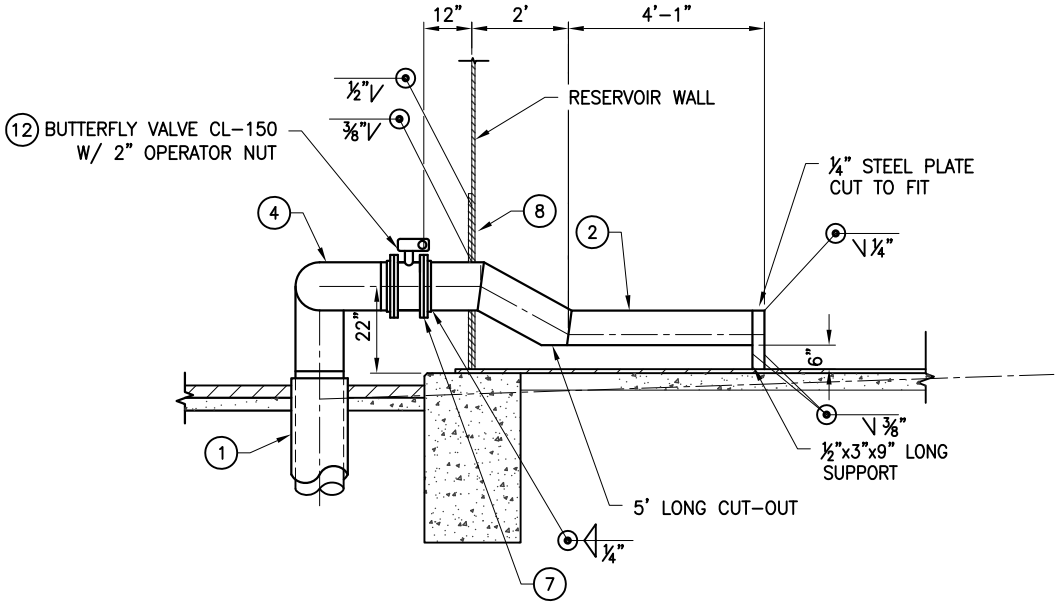
1. Pipe diameter to be called out in drawings.
2. All steel pipe below grade shall be cement mortar coated. All steel pipe above grade shall be painted to match tank.
3. Dimensions shown are for 12" pipe. Larger or smaller pipe will require modifications to these dimensions.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 09/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **OUTLET CONNECTION**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	09/16	1.1	**T-3A**



OUTLET CONNECTION END VIEW
N.T.S.



SIDE VIEW
N.T.S.

OUTLET CONNECTION CONSTRUCTION NOTES:

1. __" WELDED STEEL PIPE, SCH. 40, CMC & EPOXY LINED.
2. __" WELDED STEEL PIPE, SCH. 40, EPOXY LINED.
3. __" WELDED STEEL 90° L.R. ELBOW, SCH. 40, CMC & EPOXY LINED.
4. __" WELDED STEEL 90° L.R. ELBOW, SCH. 40, EPOXY LINED.
5. __" WELDED STEEL 45° ELBOW, SCH. 40, EPOXY LINED.
6. __" FLEX-TEND FORCE BALANCED EXPANSION JOINT FROM EBAA IRON.
7. __" SLIP-ON WELDED FLANGE.
8. SHELL REINFORCING PLATE PER GSWC STD. DWG. T-1 AND AWWA D-100.
9. SUPPORT BRACKET PER GSWC STD. DWG. T-6.
10. 1" WELDED THREAD-O-LET, 1" BALL VALVE AND 1" PLUG FOR SAMPLING.
11. VEHICLE BARRIER PER GSWC STD. DWG. C-9.
12. __" BFV, FE.
13. __" WAFER SWING CHECK, CLA-VAL SERIES 501A.

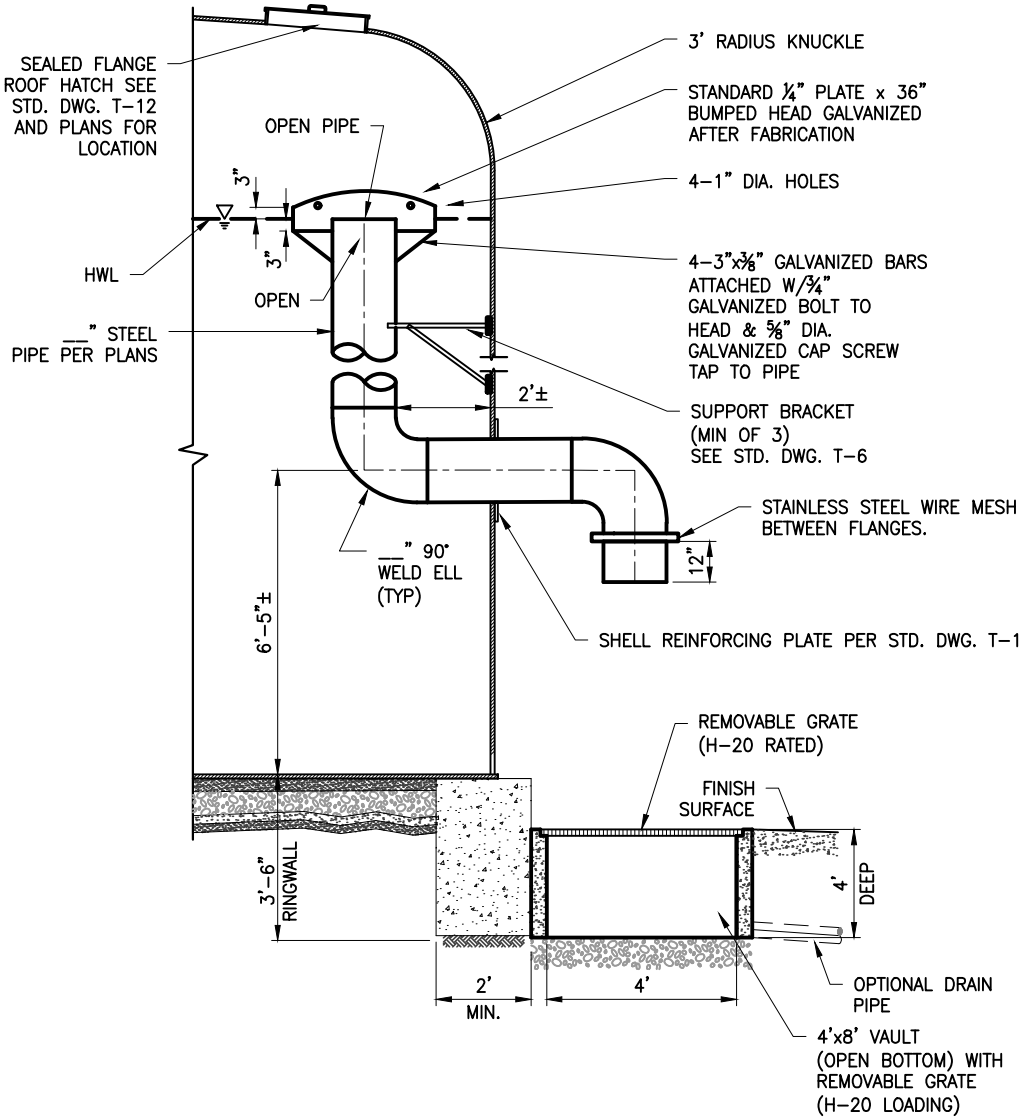
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

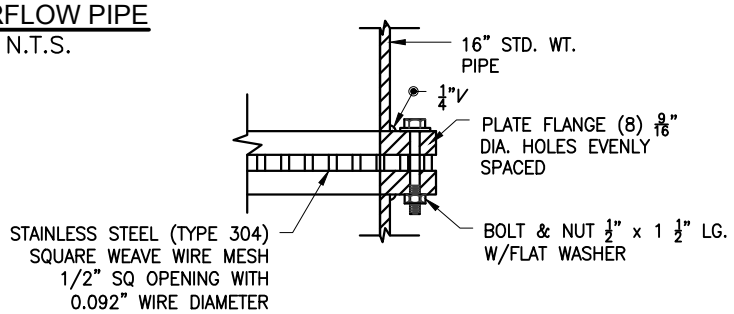
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **OUTLET CONNECTION**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	T-3B



OVERFLOW PIPE
N.T.S.



STAINLESS STEEL SCREEN DETAIL
N.T.S.

1
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NOTES:

1. See plans for size of overflow pipe.
2. See Std. Dwg. T-5 and T-6 for front and plan view and to see complete assembly with Large Access Manway.

APPROVED BY:
GSWC STANDARDS COMMITTEE

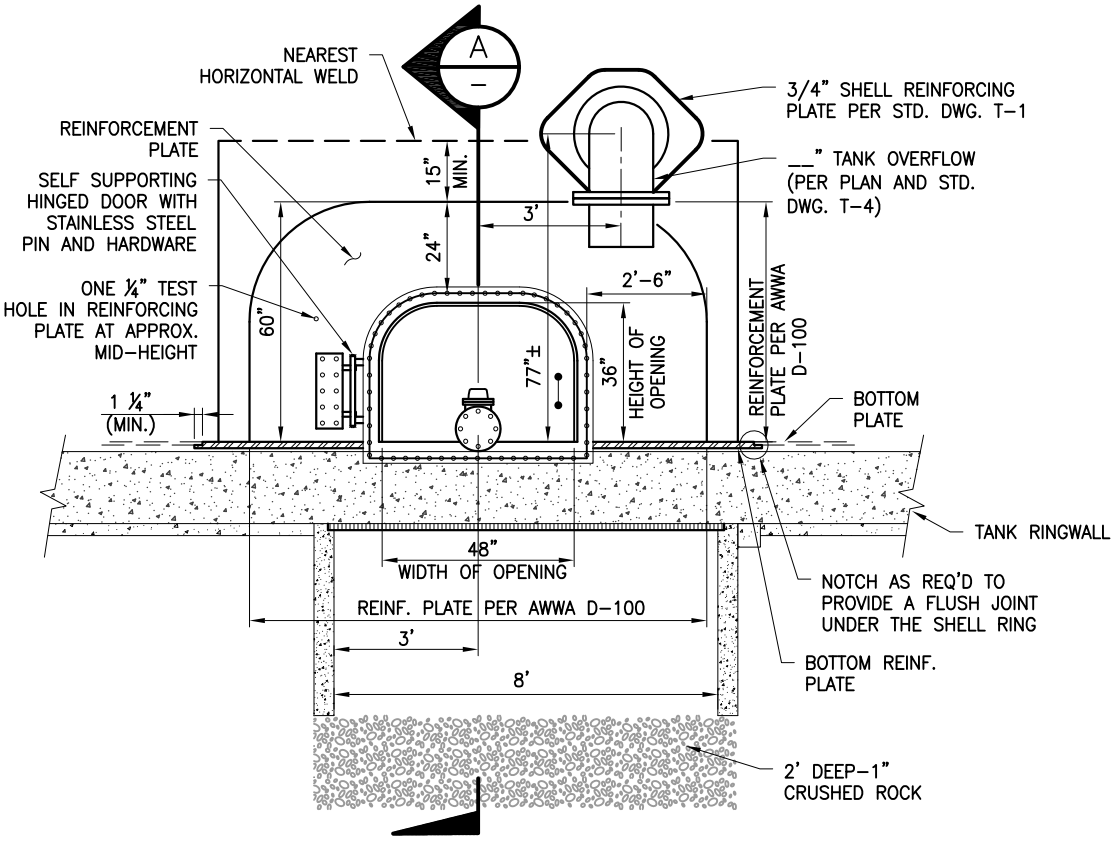
EDC MANAGER

01/18
DATE

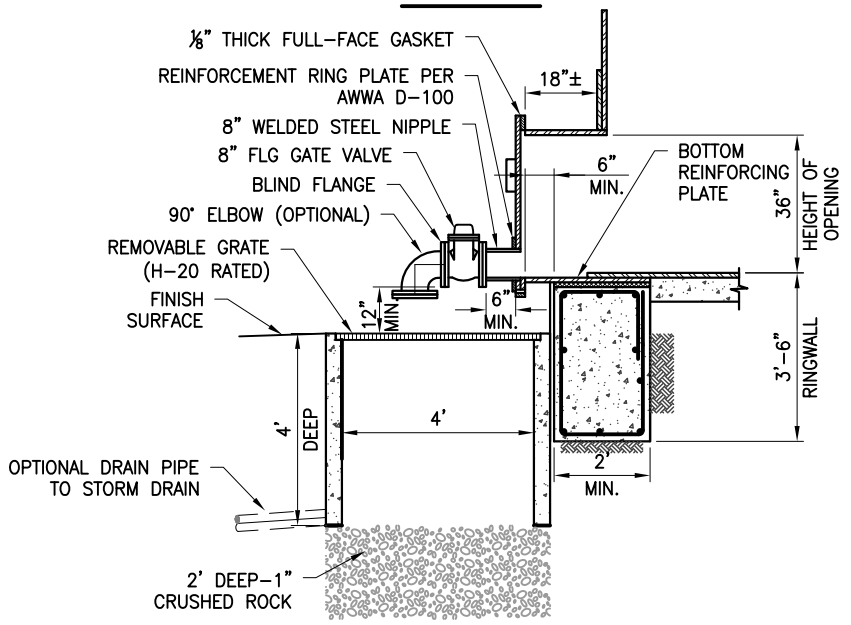
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **OVERFLOW PIPE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/18	1.3	T-4



FRONT



SECTION A-A

NOTES:

1. Top of concrete ringwall will need to be notched to suit bottom reinforcing plate and flush-type cleanout manhole. Contractor shall verify with tank manufacture exact dimensions and limits of required work on concrete ringwall.

2. This Std. Dwg. is based on a 16" dia overflow pipe. Larger or smaller pipes will require appropriate resizing of affected facilities.

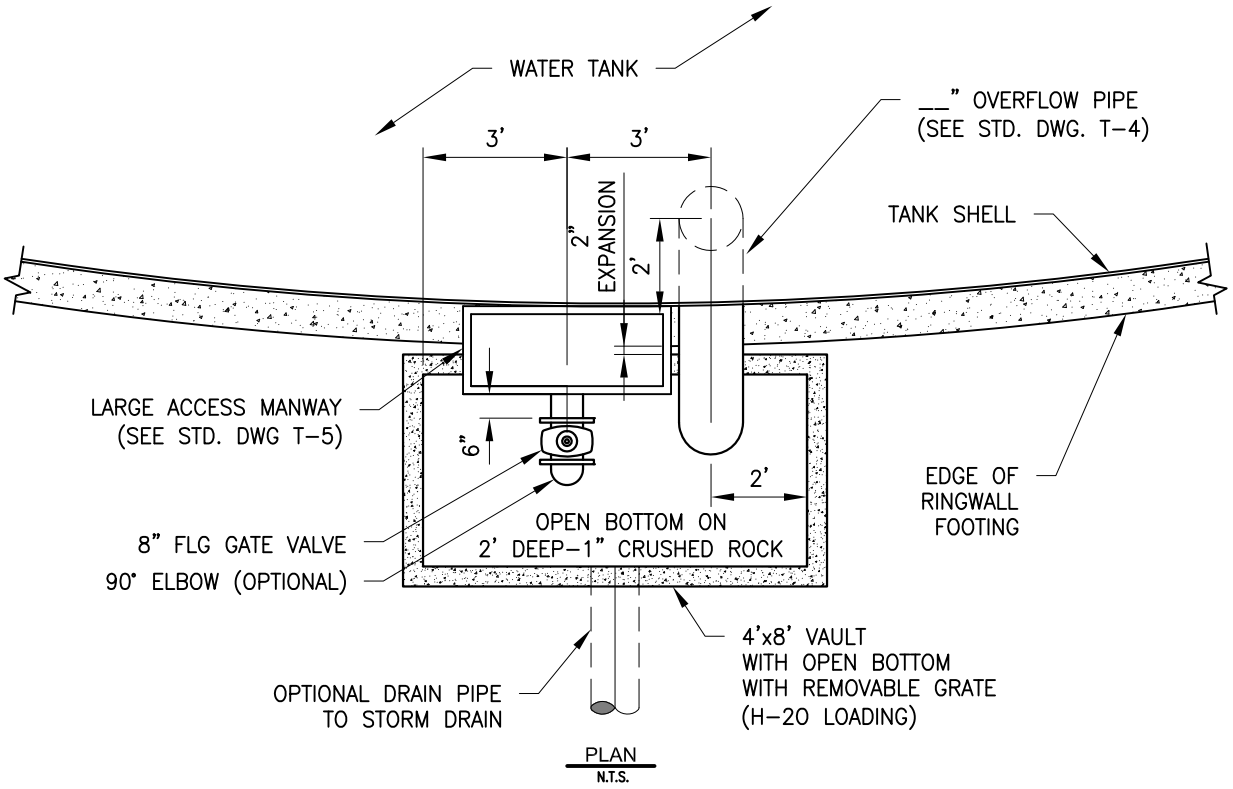
APPROVED BY:
GSWC STANDARDS COMMITTEE

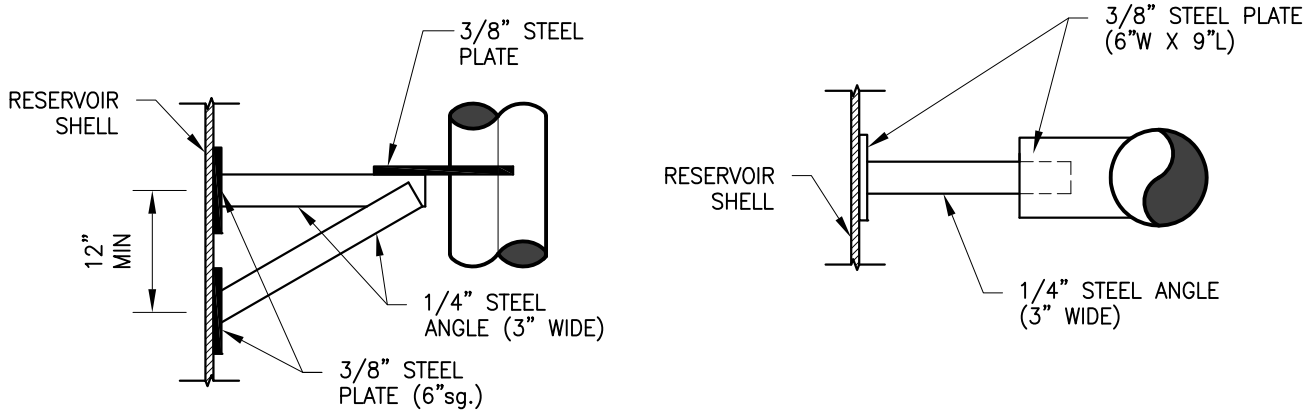
EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **LARGE ACCESS MANWAY WITH CLEAN-OUT**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	T-5





SUPPORT BRACKET DETAIL
N.T.S.
(See Note 3)

NOTES:

1. See plans for size of overflow pipe. Some resizing of dimensions may be required.
2. See plans for location of clean-out and overflow pipe.
3. Fully weld steel plates to shell and pipe and weld steel angles to each other and steel plates per shop drawings.

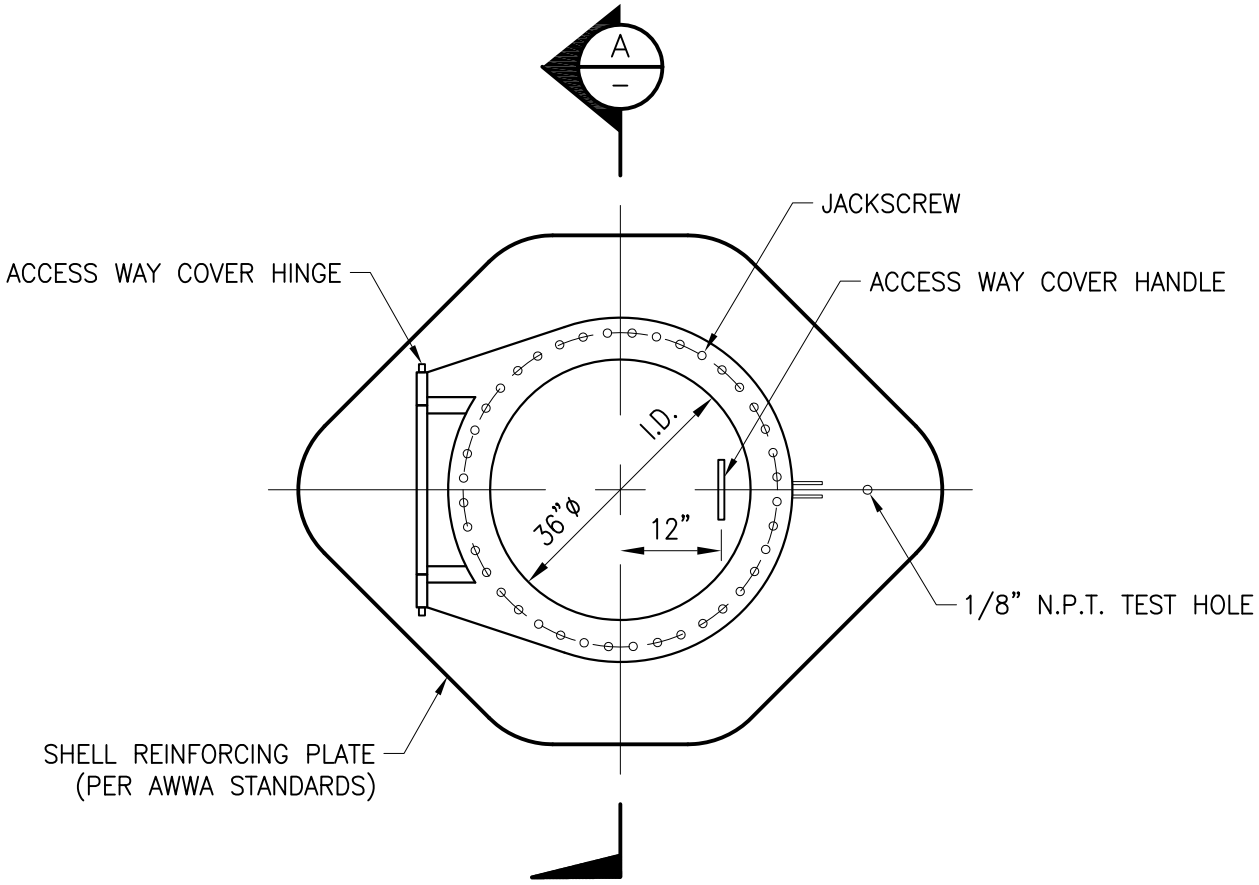
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

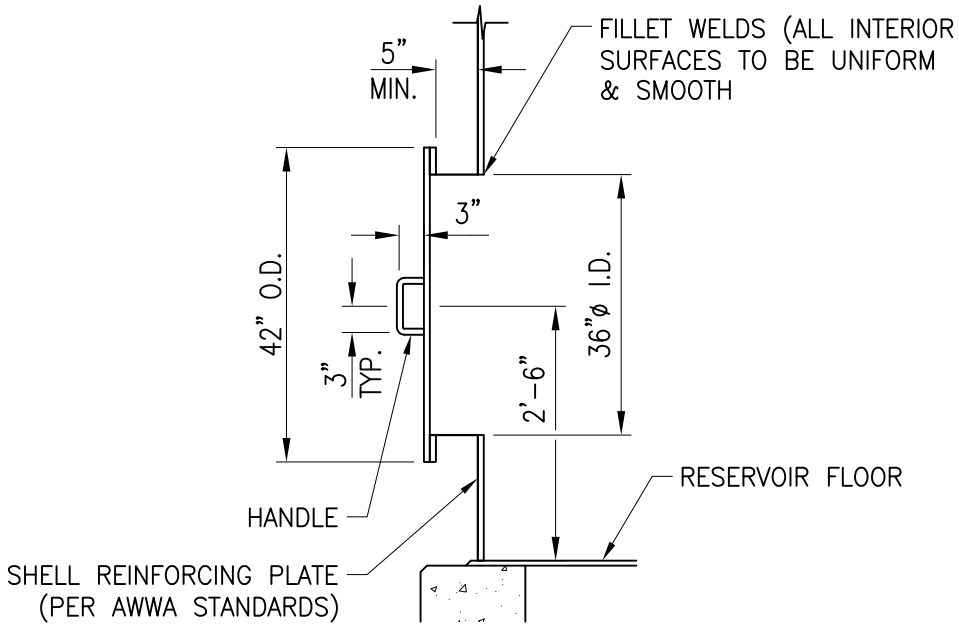
Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **OVERFLOW & CLEAN-OUT CATCH BASIN AND SUPPORT BRACKET**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**T-6**



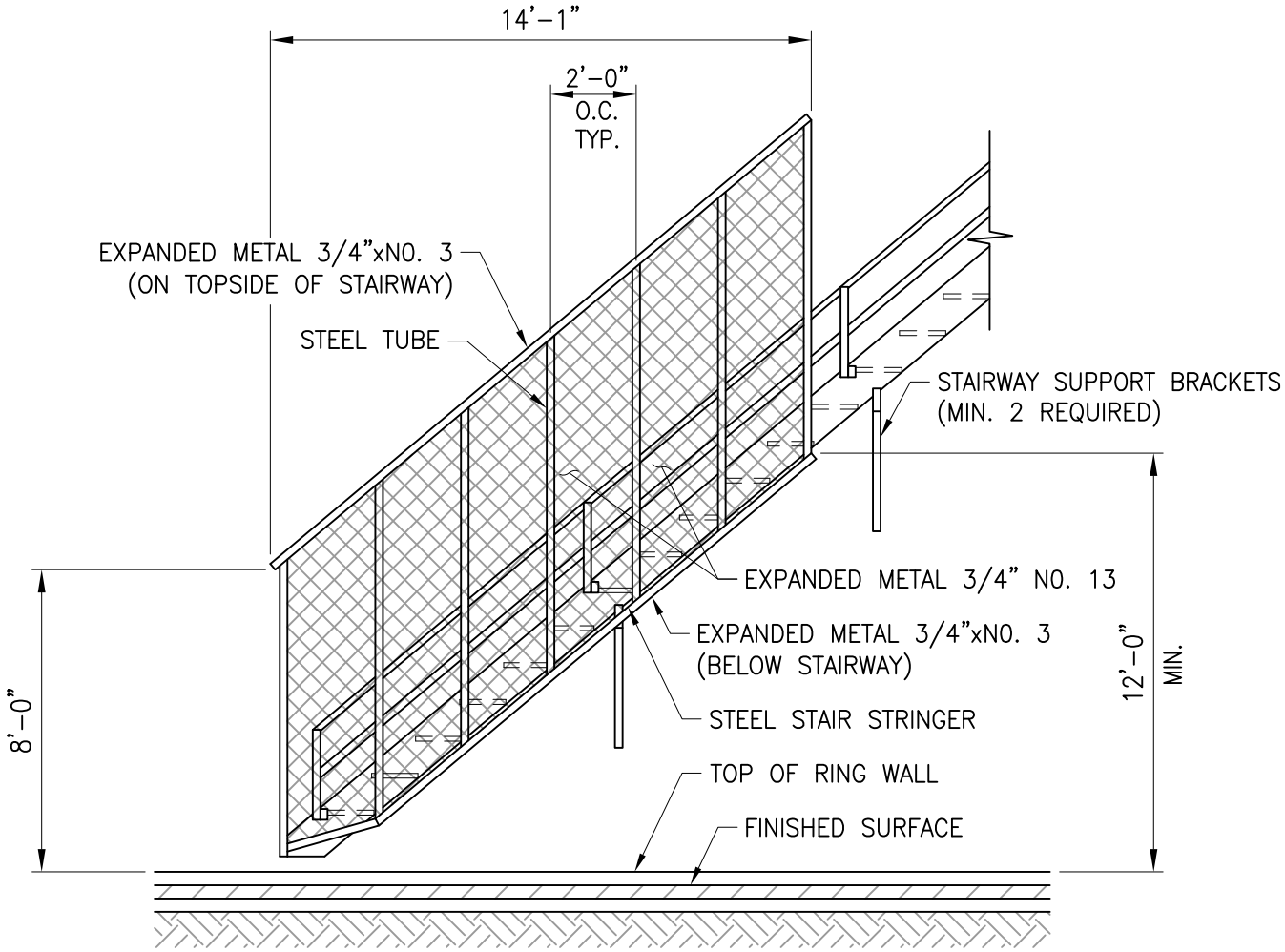
PLAN



SECTION A

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **36-INCH ACCESS WAY AND SECTION**

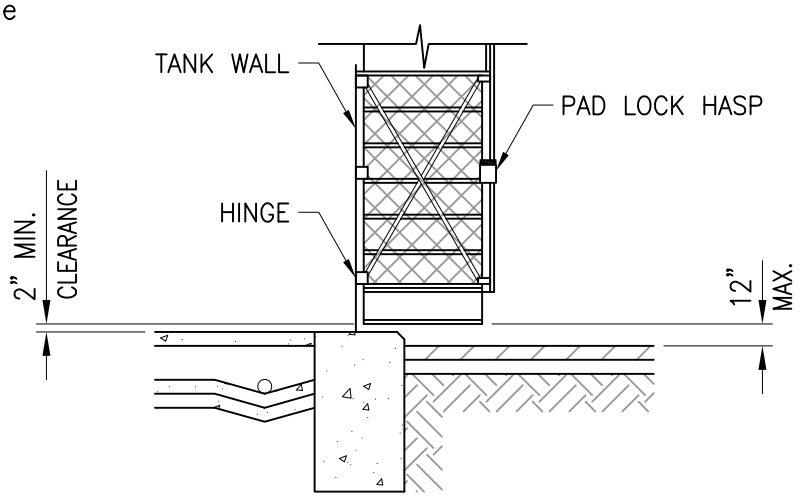
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T-7**



ANTI-CLIMB STAIRWAY CAGE

NOTE:

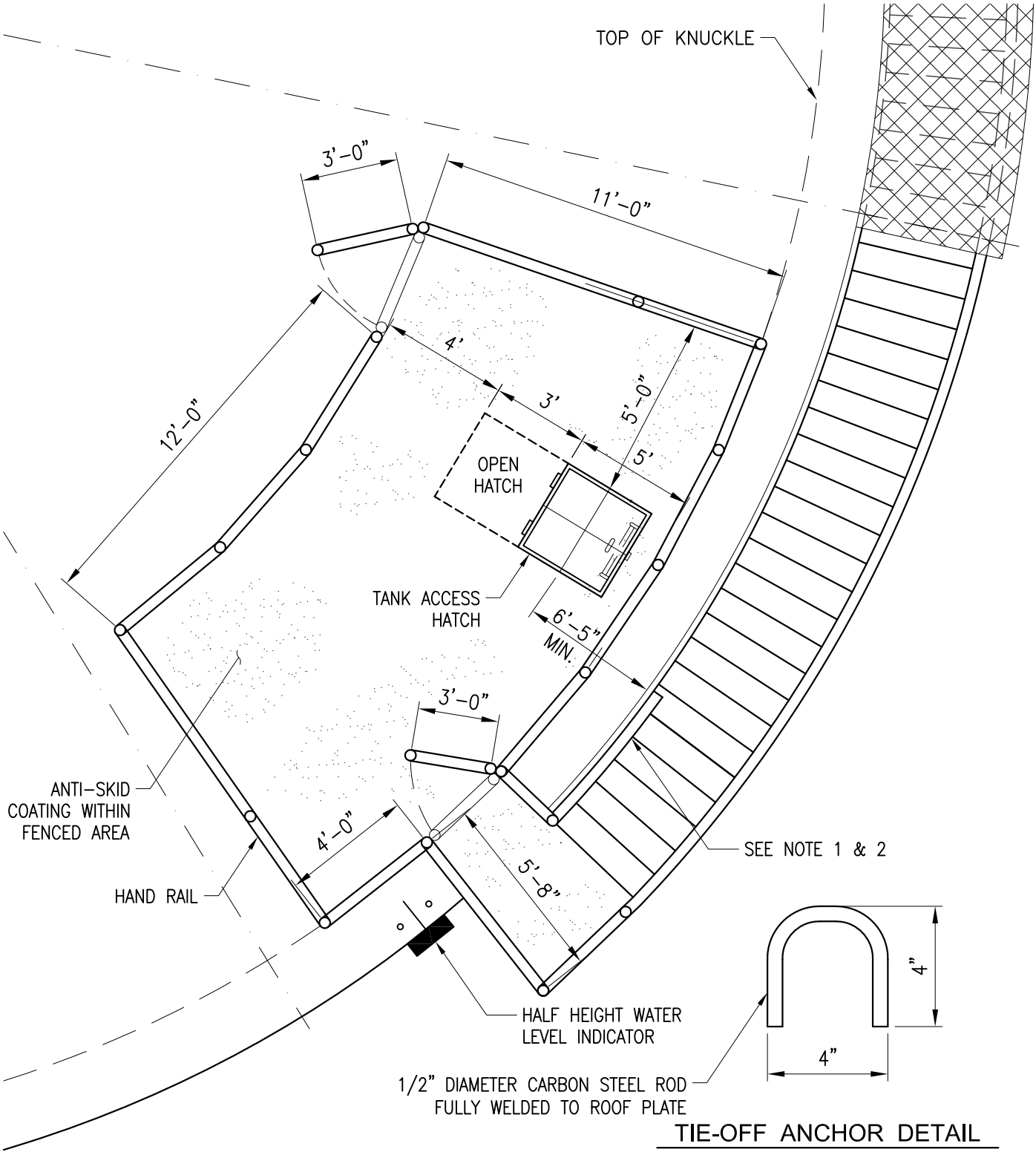
1. Nothing to be installed under stair cage that could be used to assist climbing efforts.



ANTI-CLIMB STAIRWAY GATE

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **STAIRWAY & ANTI-CLIMB CAGE**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T-8**



TIE-OFF ANCHOR DETAIL

NOTES:

1. Construct handrail against tank from top of platform to 1 foot below bottom of knuckle.
2. Handrail to extend 1-1/2" min. from the tank shell at all locations.
3. Locate tie-off anchors 90° apart around center vent.
4. Construct 4" high toe kick plate under all handrail. Leave 1/4" gap at bottom for drainage.

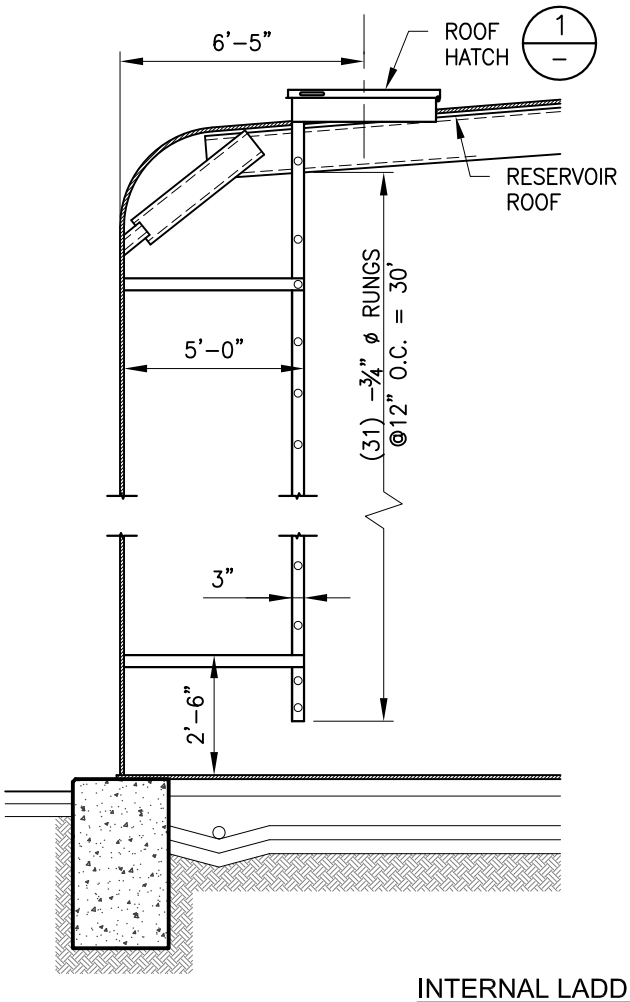
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — DATE: 10/16

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TANK ROOF WORKING AREA**

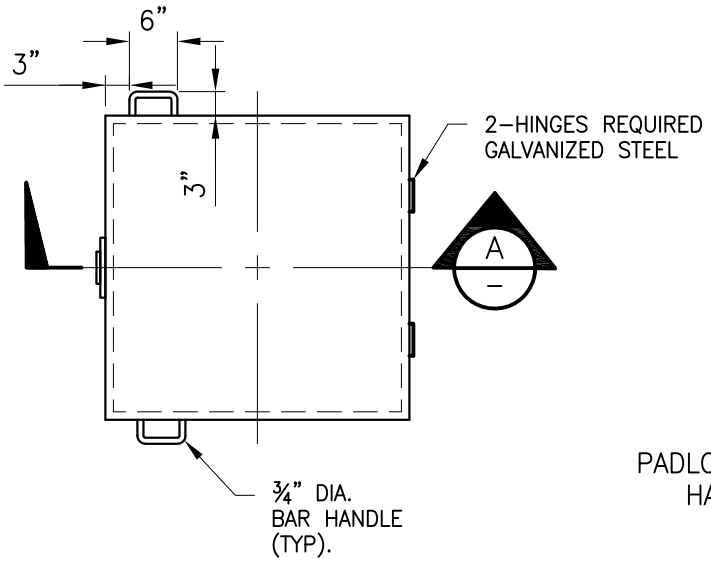
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**T-9**



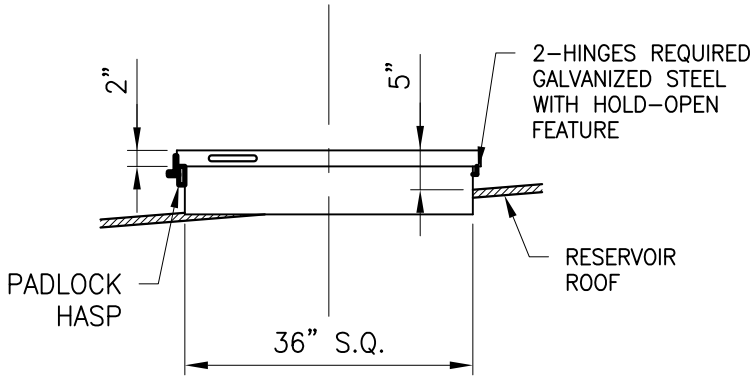
INTERNAL LADDER
N.T.S.

NOTES:

1. Ladder, brackets, & hardware shall be type 316 stainless steel.
2. Carbon steel brackets shall be welded to tank shell and bolted to ladder.
3. Ladder shall be equipped with type 316 stainless steel saf-t-climb fall prevention system.
4. All dissimilar metals shall be electrically isolated from each other.
5. A rubberized water proof gasket shall be installed on the interior of the hatch that prevents dust and dirt from entering the tank.
6. All steel plate for roof hatch and neck shall be ⅜" thick min.



1 — 36" HINGED ROOF HATCH
N.T.S.



A — ROOF HATCH SECTION
N.T.S.

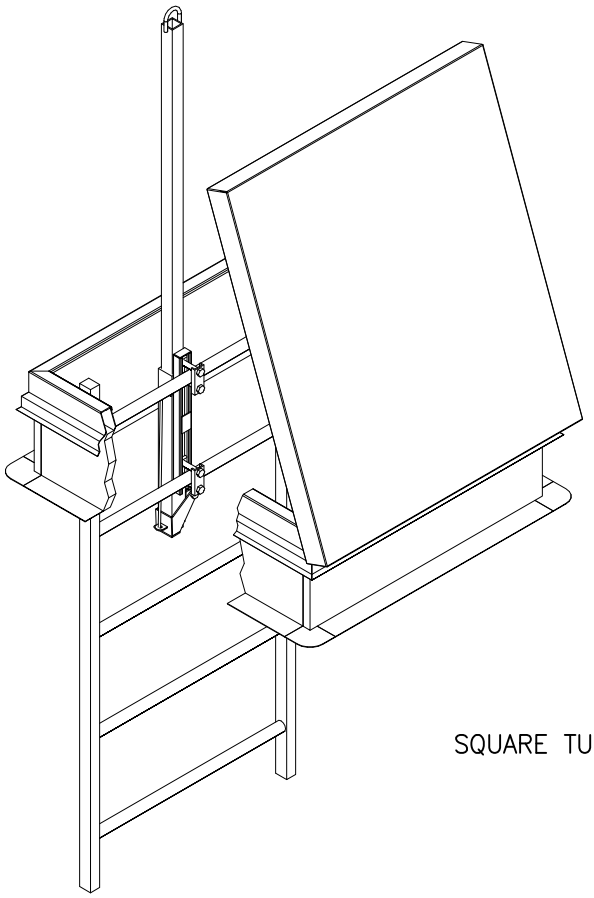
APPROVED BY:
GSWC STANDARDS COMMITTEE

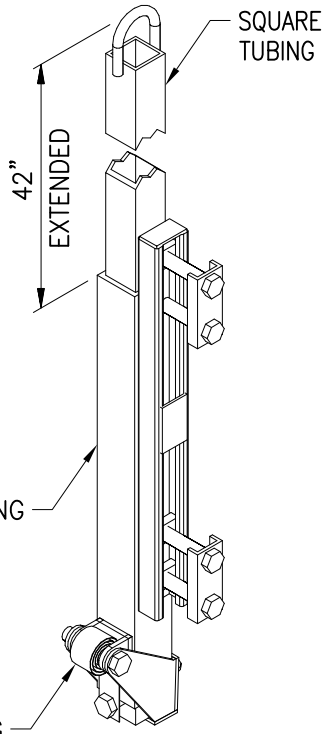
EDC MANAGER — DATE: 10/16

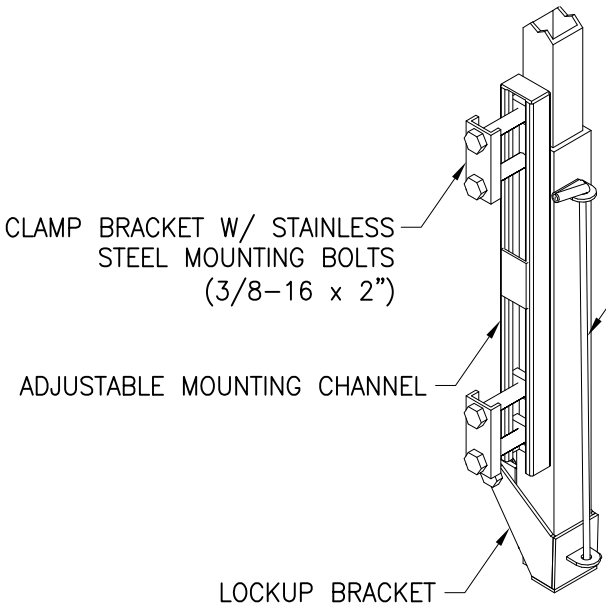
Golden State Water Company
A Subsidiary of American States Water Company

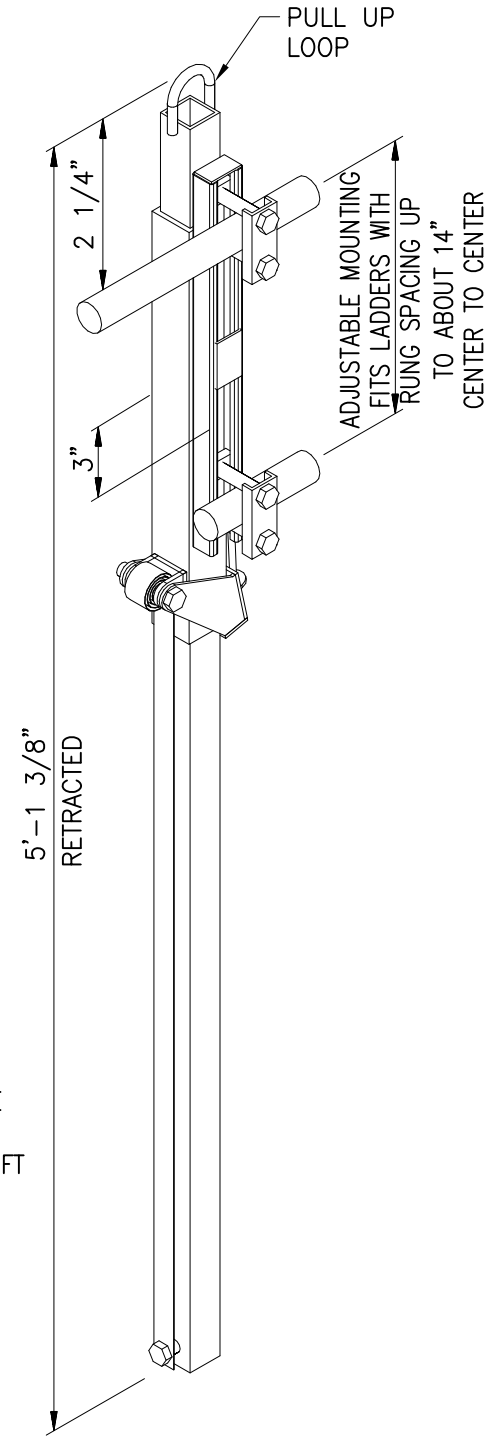
TITLE: **ROOF HATCH AND INTERIOR LADDER**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	10/16	1.1	**T-10**









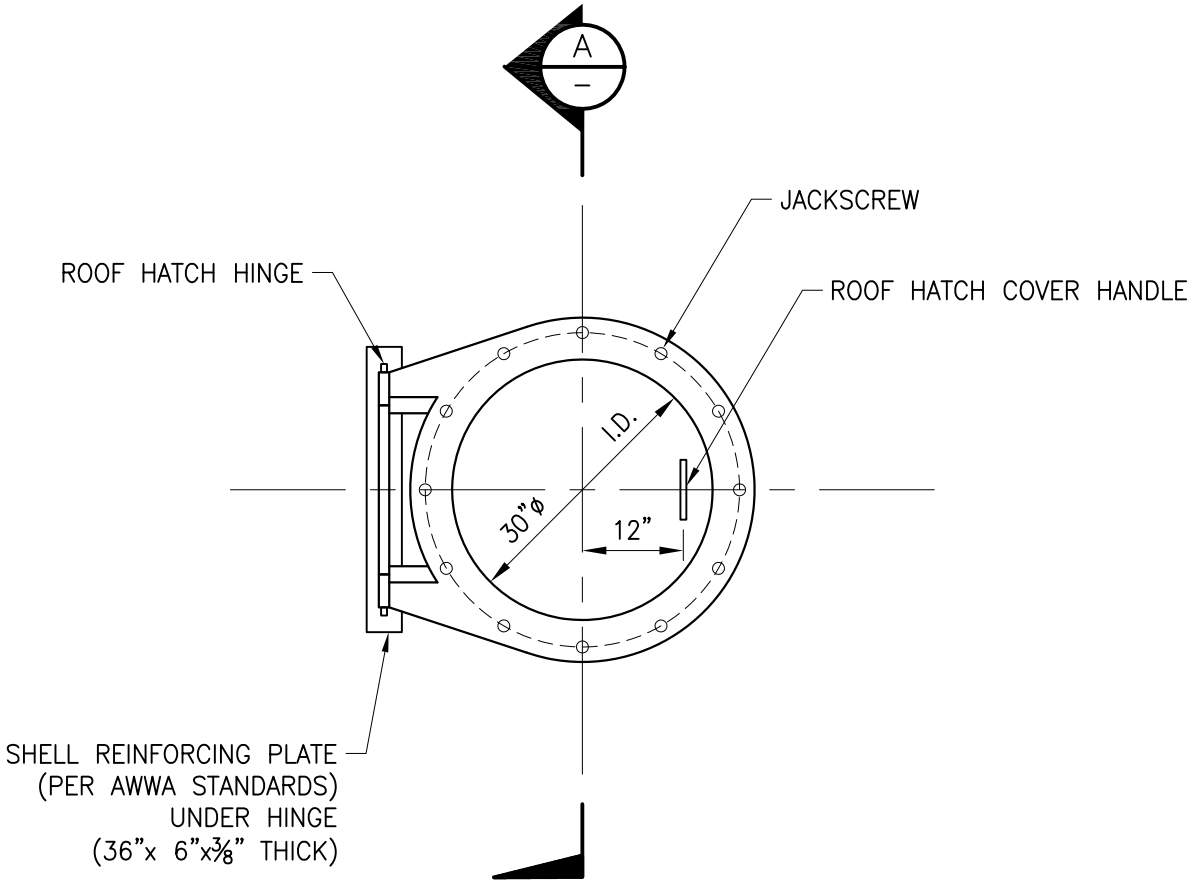
NOTE:

CLAMP BRACKET MAY BE REVERSED TO ACCOMMODATE RUNG SIZES OF ¾" TO 1 ¼" WITH STANDARD 2" BOLTS FURNISHED. LARGER RUNGS WILL REQUIRE LONGER BOLTS.

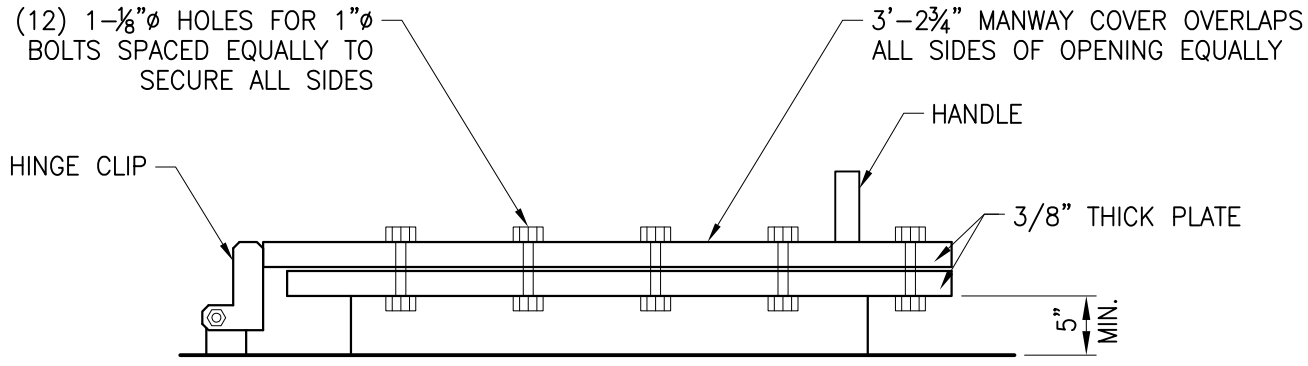
APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company

TITLE: **INTERIOR LADDER SAFETY POST**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	T–11



PLAN

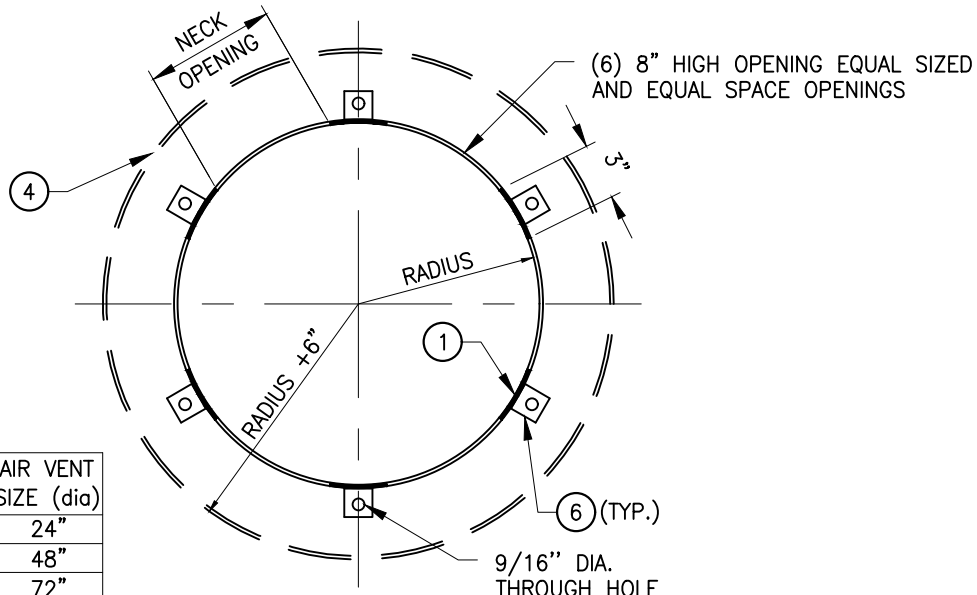


NOTE: Full faced gasket shall be installed between the roof hatch cover and shell flange.

SECTION A

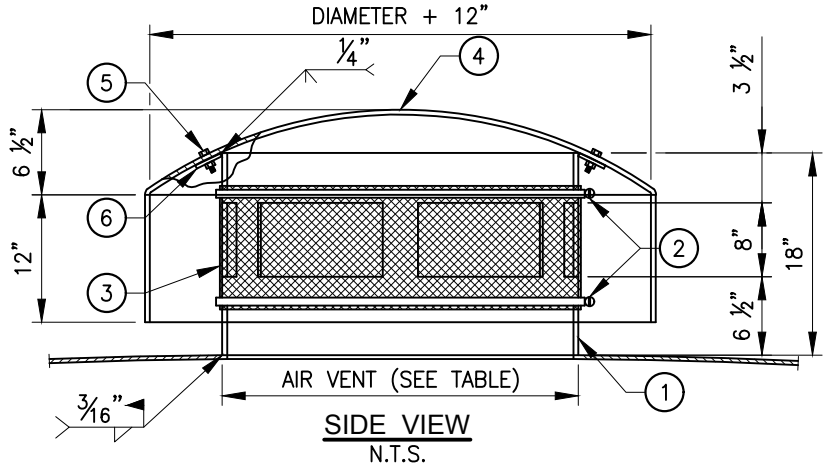
APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **SEALED FLANGED ROOF HATCH**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T–12**

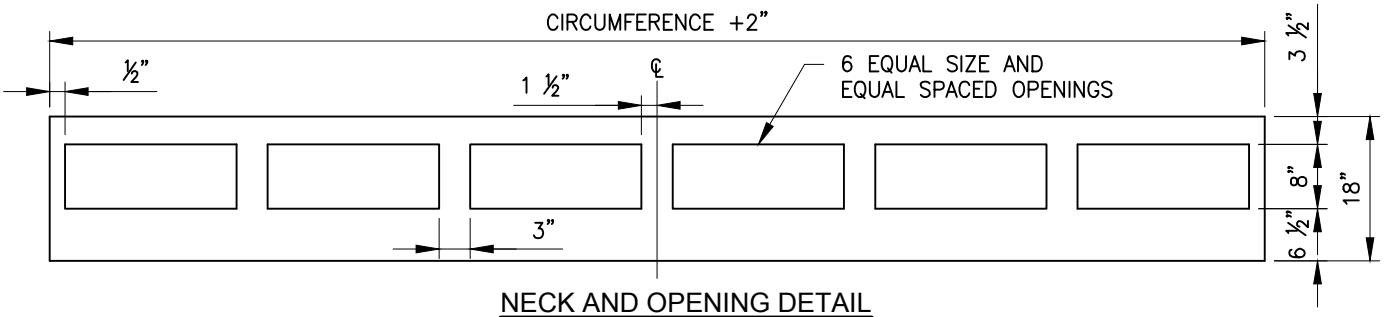


TOP VIEW
N.T.S.

SIZE (MG)	TANK DIA (ft)	AIR VENT SIZE (dia)
less than 0.5	60	24"
0.5 to 2.0	68–113	48"
2.1 to 4.0	113–159	72"
larger than 4.0	160+	84"



SIDE VIEW
N.T.S.



NECK AND OPENING DETAIL
N.T.S.

MATERIALS LIST			
ITEM	DESCRIPTION		QTY
1	NECK: 1/4" THK. x 18" WIDE x CIRCUMFERENCE +2"	A36	1
2	1/2" WORM DRIVE BAND	316 S.S.	2
3	20 MESH INSECT SCREEN ON INSIDE AND 2x2 MESH ON OUTSIDE	316 S.S.	1
4	3/16" THK. DISHED HEAD	A36	1
5	BOLTS WITH NUT, 1/2" DIA., 1 1/4" LONG	HDG	6
6	PLATE: 1/4" x 2" x 2" W/ 9/16" DIA. THROUGH HOLE	A36	6

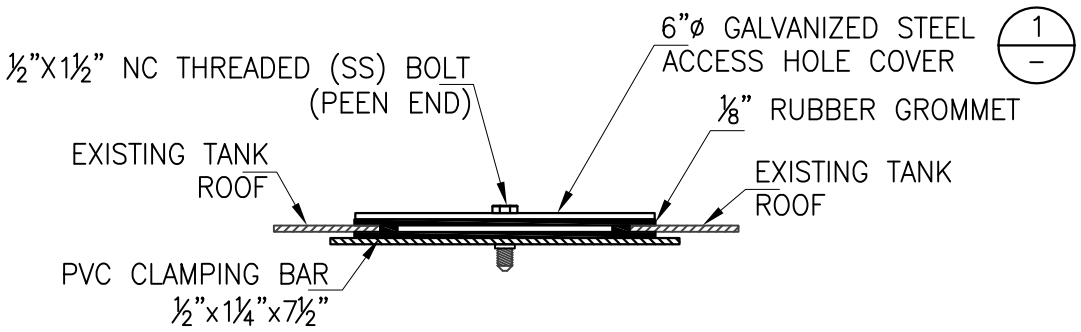
APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER — 1/18 DATE

Golden State Water Company
A Subsidiary of American States Water Company

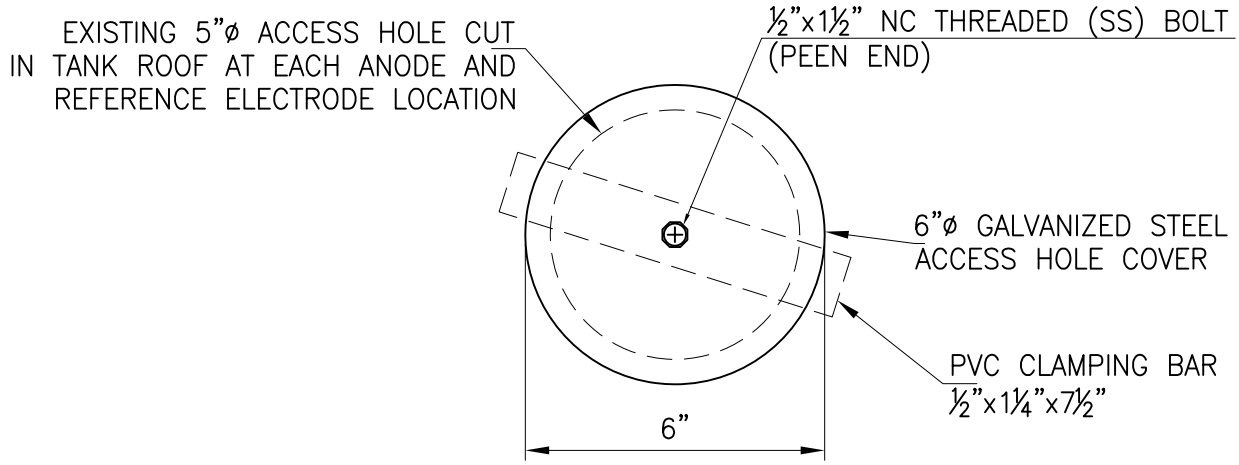
TITLE:
CENTER ROOF VENT

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	1/18	1.3	**T–13**



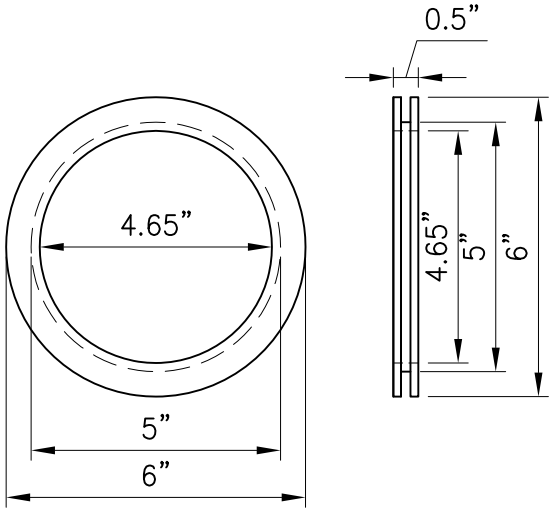
TANK ROOF CP HAND HOLE COVER AND RUBBER GROMMET

N.T.S.



1 - 6" GALVANIZED STEEL ACCESS HOLE COVER

N.T.S.

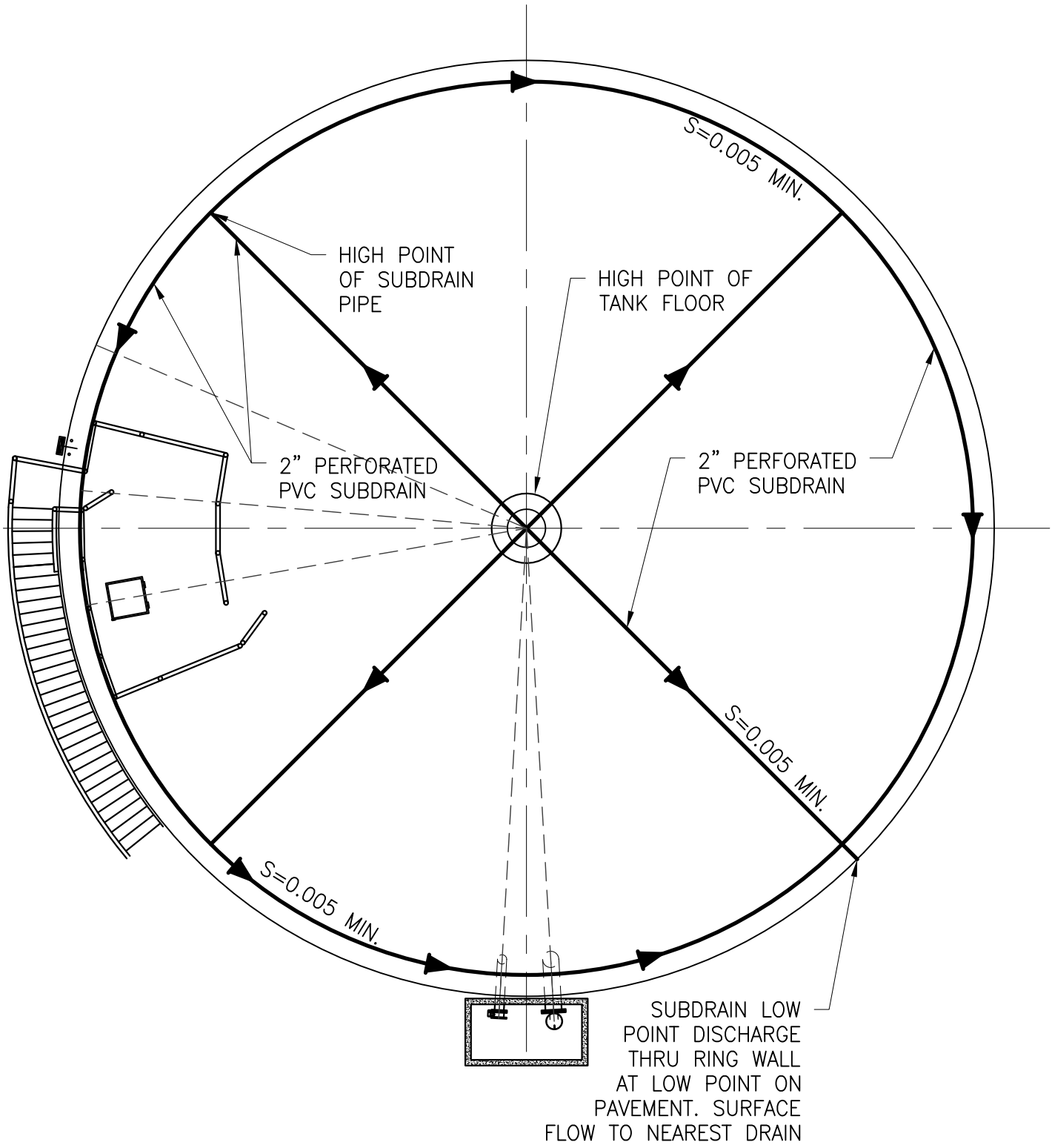


CP HAND HOLE RUBBER GROMMET DETAIL

N.T.S.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **TANK ROOF CP HAND HOLE COVER**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T–14**



RESERVOIR SUBDRAIN PLAN

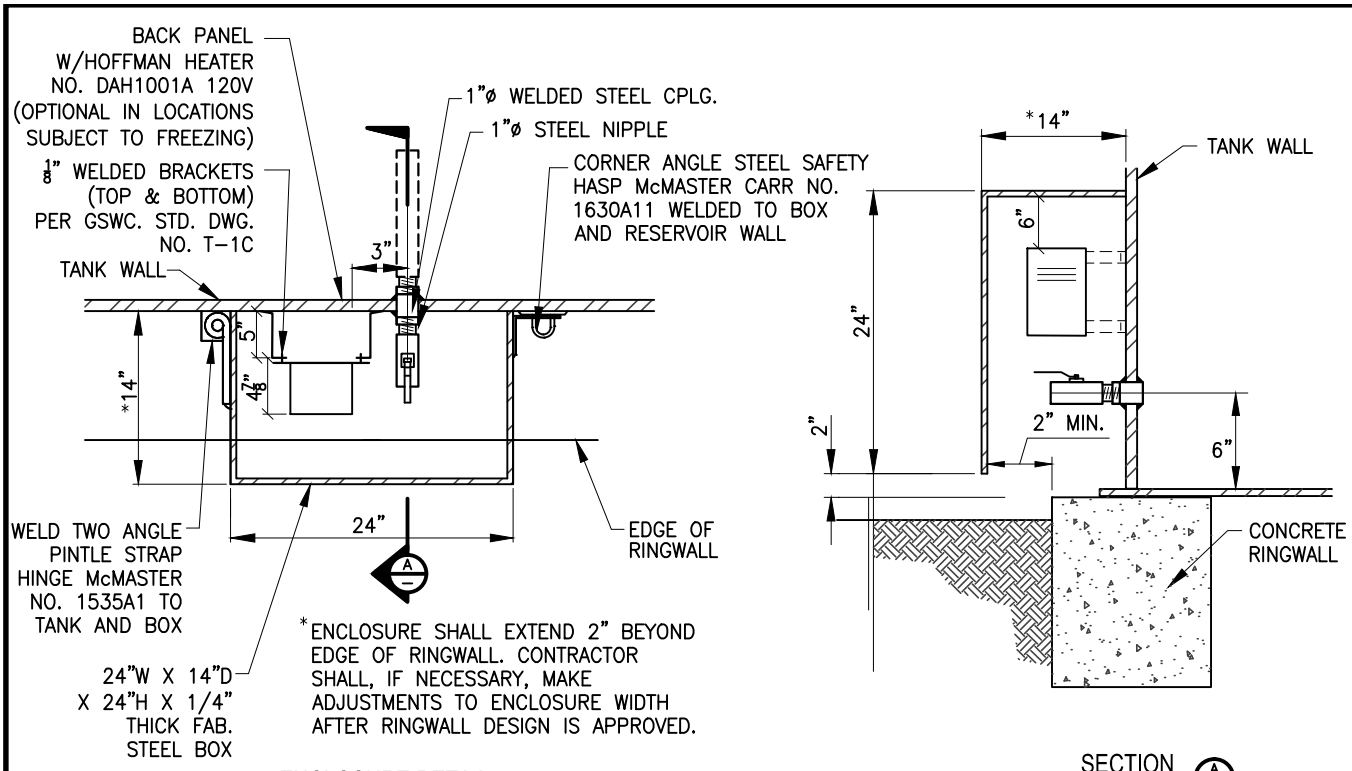
N.T.S.

NOTES:

See plans for locations of tank appurtenances specific to any project.

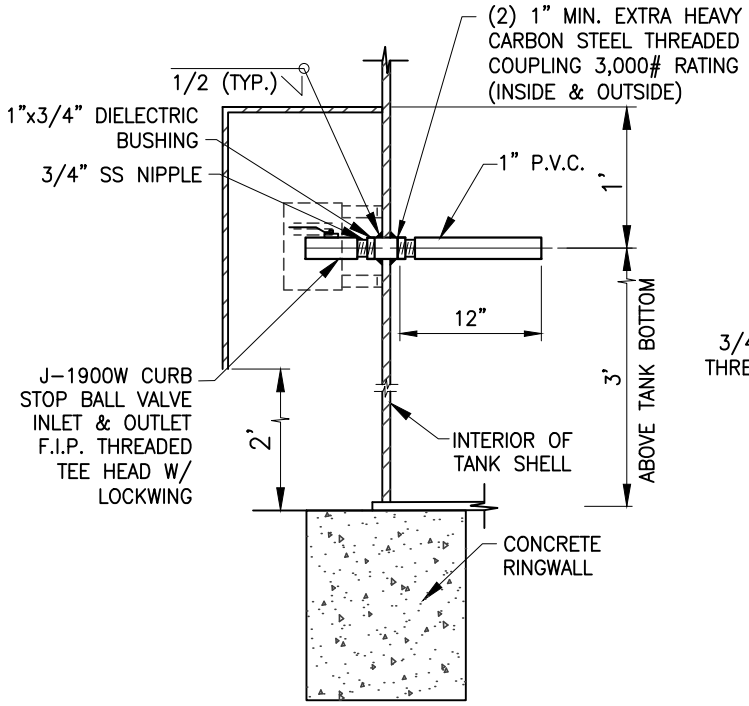
APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **RESERVOIR SUBDRAIN PLAN**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T-15**

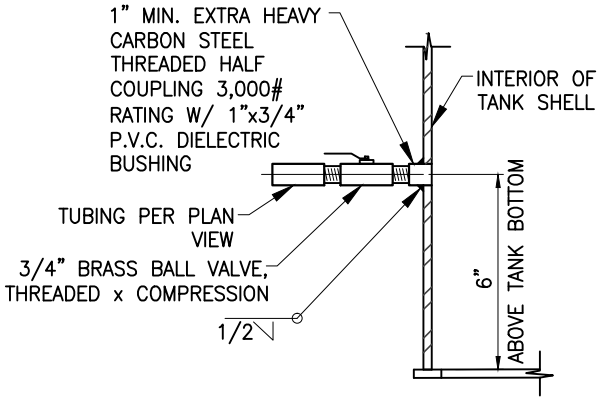


ENCLOSURE DETAIL
N.T.S.
(LEVEL TRANSMITTER TO BE INSTALLED BY OTHERS)

SECTION A
N.T.S.
(SHOWING SENSING LINE)



WATER SAMPLING CONNECTION
N.T.S.



SENSING LINE CONNECTION
N.T.S.

NOTES:

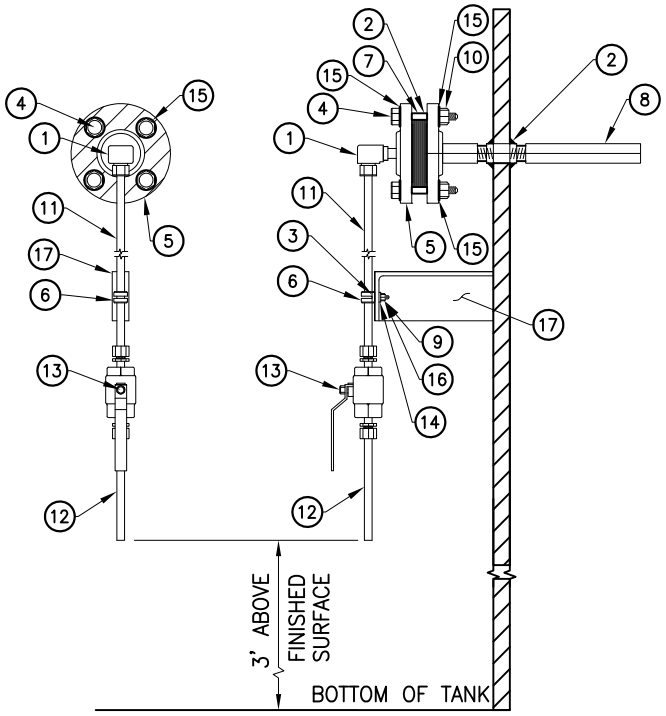
1. Sensing line for altitude valve control and water level depth sensing shall be 6" above the tank bottom.

APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 10/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **WATER SAMPLING CONNECTION AND SENSING LINE CONNECTION**	

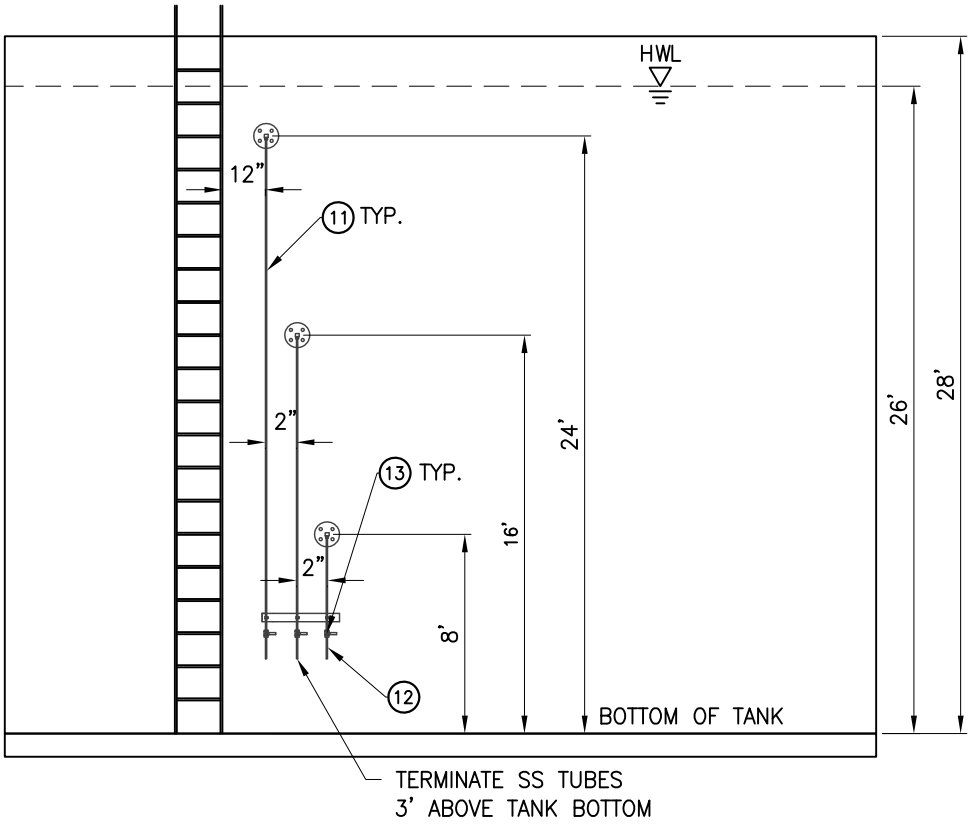
SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	02/17	1.2	**T-16A**

CONSTRUCTION NOTES:

1. ADAPTER 90 BRS 1/2" CMPX 1/2" MPT.
2. ADAPTER SAMPLE PORT WELDMENT 316SS.
3. BOLT 1/4" x 1" HDG GR A325 WITH INSULLATING WASHER BETWEEN BOLT HEAD AND S.S. CLAMP.
4. BOLT, HEX; HVY; 0.625 DIA; UNC; 3.25" LG; CS; RH.
5. FLANGE 2" x 1/2" RD 316SS NPT S40 I.
6. CLAMP 1/2" SS TUBING W/RL 1/4" BN.
7. GASKET FLG 2 RED RUBBER RING 0.125 THICK 150# RING.
8. NOZZLE 3/4" 316SS L 1" EFF x 0.010 SLOT FNPT PER DRAWING SAMPLE SCREEN.DWG.
9. NUT;HH;0.25" DIAMETER GALVANIZED DH (INCLUDED W/ BOLT).
10. NUT;HH;0.75" DIAMETER; STEEL; GALVANIZED DH (INCLUDED W/BOLT).
11. TUBE;RND;SS;316/316L;0.5" 0.035";RND.
12. TUBE;RND;SS;316/316L;0.5" 0.035";RND.
13. VALVE; BALL FULL PT 0.5" 316SS BDY NPT:
14. WASHER 1/4" HOT DIPPED GALVANIZED FLAT.
15. WASHER;FLAT;0.625";CS; GALVANIZED.
16. WASHER;SPLIT;0.25";OD;STEEL;GALVANIZED.
17. WELDED BRACKET AND STRUT (8" LONG x 2" WIDE x ¼" THICK) SIMILAR TO DETAIL (LOCATED 4' VERTICAL O.C.)



TANK SAMPLE PORT
N.T.S.



LOCATION OF TANK SAMPLE PORTS ON TANK SHELL
(HORIZONTAL DISTANCE BETWEEN S.S. TUBES)
N.T.S.

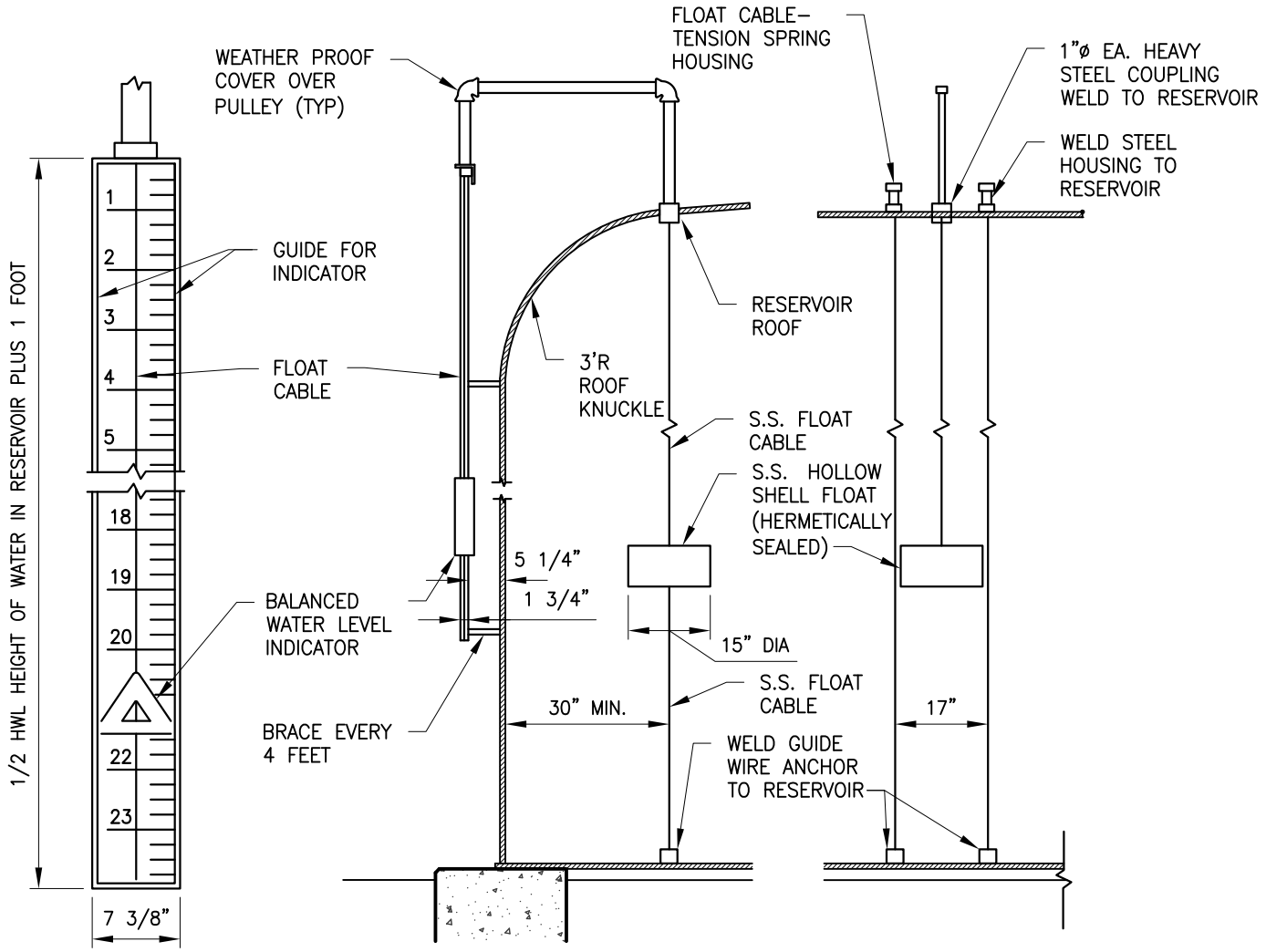
APPROVED BY:
GSWC STANDARDS COMMITTEE

Robert A. Hansford — 01/16
EDC MANAGER — DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE: **TANK MULTIPLE SAMPLE PORTS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T-16B**



INDICATOR
N.T.S.

ELEVATION
N.T.S.

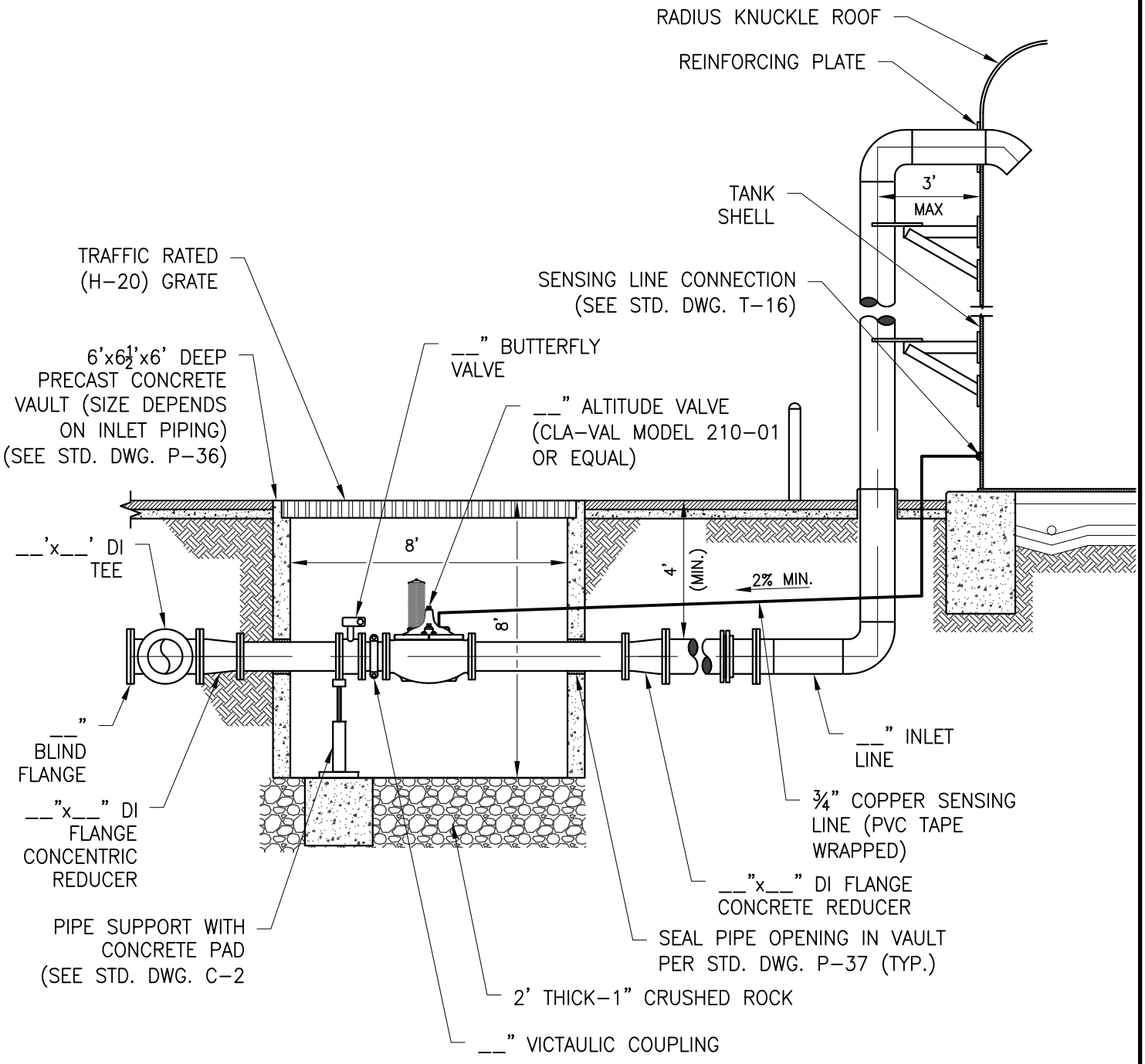
INTERIOR
N.T.S.

HALF HEIGHT WATER LEVEL INDICATOR
N.T.S.

NOTES:

1. See plans for location of level indicator on tank.
2. Locate level indicator as close to roof hatch as possible for maintenance access.

APPROVED BY: GSWC STANDARDS COMMITTEE	Golden State Water Company, A Subsidiary of American States Water Company	TITLE: HALF HEIGHT WATER LEVEL INDICATOR	
EDC MANAGER — 01/16 DATE		SCALE: NONE / DATE: 01/16 / REV: 1.0	STANDARD DWG NO. T–17



ALTITUDE VALVE & VAULT

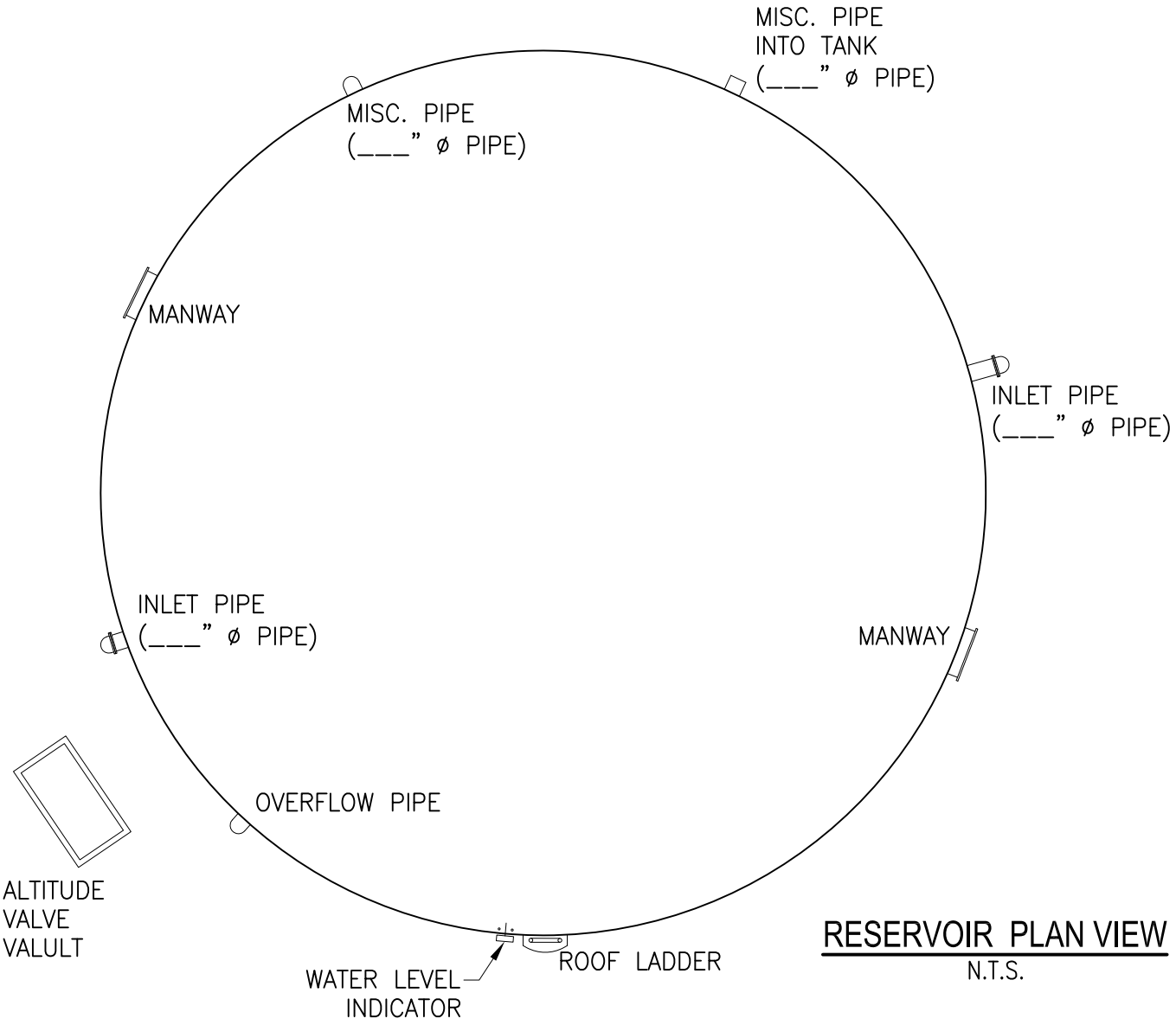
N.T.S.

NOTES:

SEE PLANS FOR LOCATION AND SIZES.

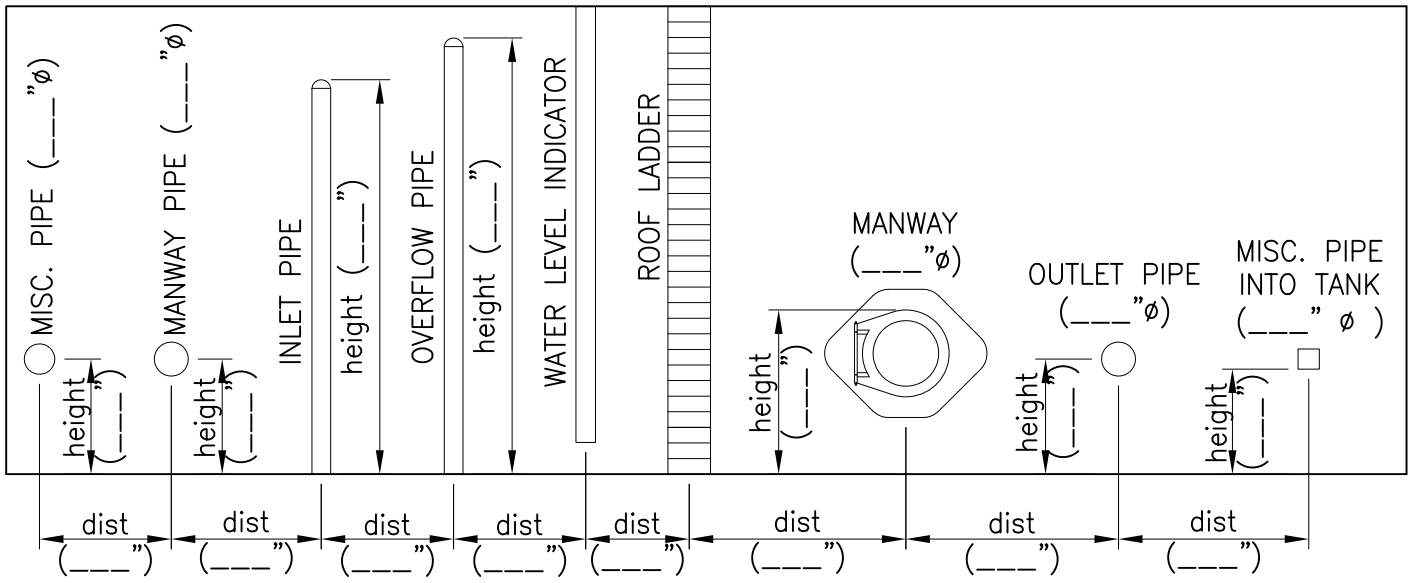
APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER — 09/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **ALTITUDE VALVE & VAULT**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	09/16	1.1	**T-18**



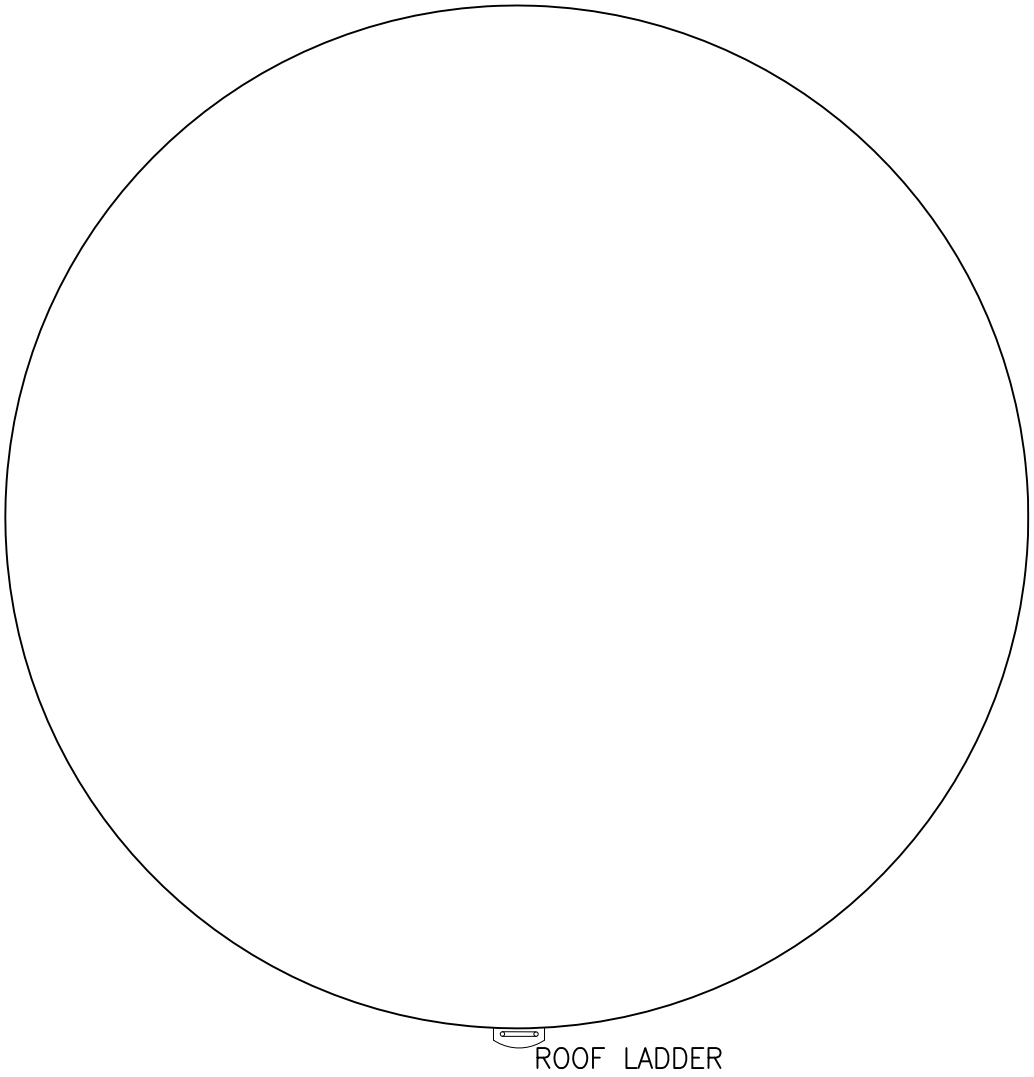
RESERVOIR PLAN VIEW

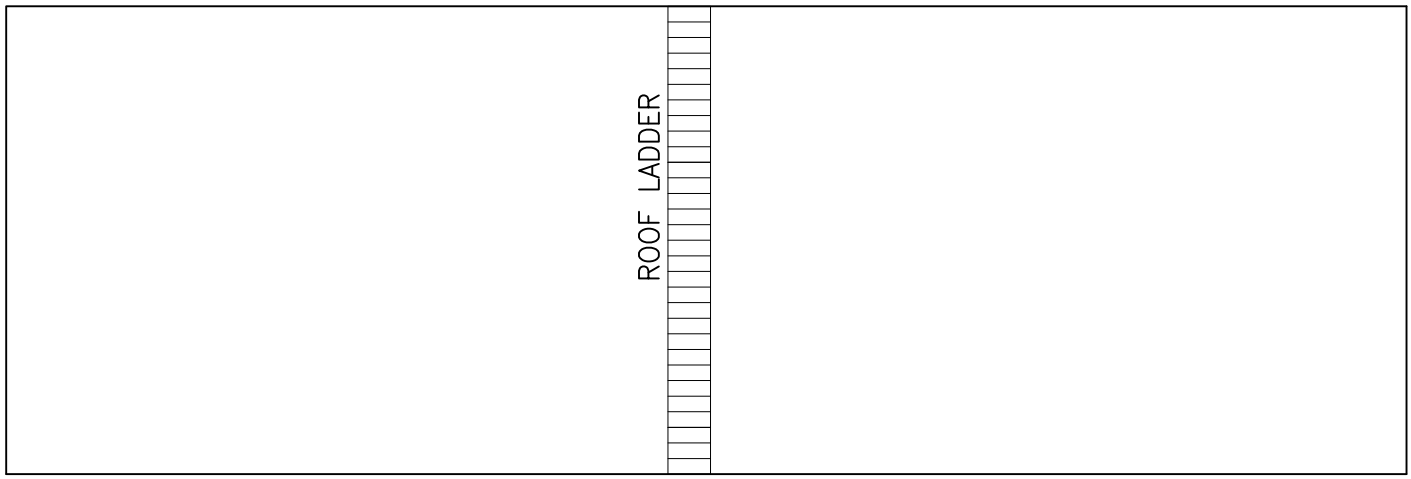
N.T.S.



APPROVED BY: GSWC STANDARDS COMMITTEE EDC MANAGER	01/16 DATE	Golden State Water Company A Subsidiary of American States Water Company	TITLE: **EXAMPLE OF TYPICAL TANK SURVEY APPURTENANCE LOCATIONS**

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T-19A**





APPROVED BY:
GSWC STANDARDS COMMITTEE

EDC MANAGER

01/16
DATE

Golden State Water Company
A Subsidiary of American States Water Company

TITLE:
BLANK
TYPICAL TANK SURVEY
APPURTENANCE LOCATIONS

SCALE:	DATE:	REV	STANDARD DWG NO.
NONE	01/16	1.0	**T-19B**