FRESNO IRRIGATION DISTRICT

2025

STANDARD DRAWINGS

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PREFACE

Engineered drawings are the backbone of design and construction. These illustrations translate ideas and information into actionable plans that guide the creation of structures and irrigation infrastructure. This collection of District Drawings has been prepared to provide clarity, accuracy, and comprehensiveness. Each Drawing adheres to industry standards and best practices. The Drawings are structured to provide clear and detailed information allowing for seamless interpretation and implementation. Every component, dimension, and specification has been carefully considered and represented to facilitate a thorough understanding of the design intent. These Drawings are applicable only for common or typical situations and are not to be used as technical documents, substitutions for plan details, sound engineering, or conditions and/or situations that are not common or typical within the District.

As you review these Drawings, the District encourages you to plan, analyze, design, and create your Drawings tailored to the individual project. These Drawings are provided as a guide to ensure that the final product is safe, functional, and built to the highest standards of quality and durability. The District hopes this will serve as a valuable resource and reference, guiding the successful realization of the Project.

While every effort has been made to ensure accuracy, errors and omissions may still occur. Should there be errors or omissions, the District's Chief Engineer shall be informed and will make the final determination on the issue. These documents serve as a guide to understanding the technical requirements of the Fresno Irrigation District.

The District's Standard Drawings are subject to periodic updates. It is the responsibility of the user to ensure that the most current version is being referenced. Revisions, corrections or additional information will be provided through subsequent addenda or official updates issued by the District.

FID STANDARD DRAWINGS

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ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
ACI	AMERICAN CONCRETE INSTITUTE
AGG	AGGREGATE
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALIGN	ALIGNMENT
AP	ANGLE POINT
APPROX	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AV	AIR VENT
BC	BEGIN CURVE
BLDG	BUILDING
BM	BENCHMARK
BTM	BOTTOM
C	CHANNEL
CA	CALIFORNIA
CAL-OSHA	CALIFORNIA DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
CE	CIVIL ENGINEER
C.F.S.	CUBIC FEET PER SECOND
CIP	CAST-IN-PLACE
CL	CLASS
℄,C/L	CENTERLINE
CLF	CHAIN LINK FENCE
CLR	CLEAR, CLEARANCE
CIR.	CIRCUMFERENCE
CMLC	CEMENT MORTAR LINED & COATED
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCT/CONSTRUCTION
CP	CONTROL POINT
CY	CUBIC YARDS
Db	BAR DIAMETER
DEG	DEGREE
DEMO	DEMOLISH/DEMOLITION
DIA.,D,Ø	DIAMETER
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
D/S	DOWNSTREAM
DWG	DRAWING
(E)	EXISTING
EA	EACH
EC	END CURVE
EF	EACH FACE
EG	EXISTING GRADE
EL.,ELEV	ELEVATION
ELEC	ELECTRIC
ELL,ELB	ELBOW
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
EW	EACH WAY
F&I	FURNISH & INSTALL
FB	FLAT BAR
FF	FINISHED FLOOR
FG	FINISHED GRADE
FID	FRESNO IRRIGATION DISTRICT
FL,F/L	FLOW LINE
FNC	FENCE
FT	FEET/FOOT
GA.	GAUGE
GALV.	GALVANIZED
GB	GRADE BREAK
GPM	GALLONS PER MINUTE
GUY	GUY WIRE
HD	HEAD
HDPE	HIGH DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HORIZ,H	HORIZONTAL
HP	HINGE POINT
HWL	HIGH WATER LINE
ID	INSIDE DIAMETER
IN	INCH
INV	INVERT
IP	IRON PIPE
IRR	IRRIGATION
∠	ANGLE
LB,LBS.	POUNDS
LC	LENGTH OF CURVE
LCW	LONG CRESTED WEIR
LF	LINEAR FEET
LT	LEFT
MAX.	MAXIMUM
MH	MANHOLE
MIL	THOUSANDTHS OF AN INCH
MIN.	MINIMUM
MISC	MISCELLANEOUS
N/A	NOT APPLICABLE
NAVD	NORTH AMERICAN VERTICAL DATUM
NGVD	NATIONAL GEODETIC VERTICAL DATUM
NIC	NOT IN CONTRACT
No.,#	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OP	OPERATING
OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
O&M	OPERATIONS AND MAINTENANCE
(P)	PROPOSED
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PIP	PLASTIC IRRIGATION PIPE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PL	PROPERTY LINE
POC	POINT ON CURVE
POL	POINT ON LINE
POT	POINT ON TANGENT
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
RAD,R	RADIUS
ROC	RADIUS OF CURVE
RC	RELATIVE COMPACTION
RCP	REINFORCED CONCRETE PIPE
RE	REFERENCE
REQD	REQUIRED
REV	REVISION
RGRCP	RUBBER GASKET REINFORCED CONCRETE PIPE
ROW,R/W	RIGHT-OF-WAY
RP	RADIUS POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
RTU	REMOTE TERMINAL UNIT
S	SLOPE
SCH	SCHEDULE
SE	STRUCTURAL ENGINEER
SEC	SECTION
SF	SQUARE FEET/FOOT
SP	SERVICE POLE
SPEC.	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
ST	STRUCTURAL TUBING
STA	STATION
STD.	STANDARD
SWL	SWALE
STWL	STILLING WELL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
TB	TOP OF BANK
TBM	TEMPORARY BENCHMARK
TC	TOP OF CURB
TCE	TEMPORARY CONSTRUCTION EASEMENT
TELE	TELEPHONE
TL	TOP OF LINING
TOB	TOP OF BANK
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE
TP	TELEPHONE POLE
TR	TELEPHONE RISER
TRANS	TRANSFORMER
TS	TOP OF STRUCTURE
CIR.A.	TYPICAL
TWL	TOP OF WALL
UG	UNDERGROUND
UP	UTILITY POLE
U/S	UPSTREAM
VERT,V	VERTICAL
WL	WATER LEVEL
W/	WITH
W/O	WITHOUT
YD	YARD
<	LESS THAN
>	GREATER THAN
≤	LESS THAN OR EQUAL TO
≥	GREATER THAN OR EQUAL TO

FRESNO IRRIGATION DISTRICT		ABBREVIATIONS	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 0-03
		DATE: 2025	SHEET 1 OF 1

CALIFORNIA WATER CODE
CHAPTER 3 EXCERPTS
(Page 1 of 4)

Chapter 3 - Bridges and Conduits On or Near Highways

7030 Conduit defined

As used in this chapter, "conduit" includes canal, ditch, culvert, pipeline, flume, or other appliance for conducting water. (Enacted by Stats 1961 Ch. 1786)

7031 Highway defined

As used in this chapter, except in Section 7034, "highway" includes both state and county highways as defined by or identified in the Streets and Highways Code. (Enacted by Stats 1961 Ch. 1786)

7031.5 Bridge defined

As used in this chapter, "bridge" means a structure constructed to allow the conducting of water underneath by canal, ditch, flume or other uncovered appliance for conducting water. (Enacted by Stats 1961 Ch. 998)

7032 Ban on obstruction of highway

No conduit shall be laid, constructed, or maintained so as to obstruct any highway. (Enacted by Stats 1961 Ch. 1786)

7033 Standards for conduit crossing or running along highway

Every person or public district or agency who or which initially constructs, or improves for his or its own benefit, any conduit crossing or running along any pre-existing highway, shall construct or improve such conduit in accordance with standards established by the county or State as the case may be, and at the expense of the person so constructing or improving such conduit. (Enacted by Stats 1961 Ch. 1786)

7034 Bridges or conduits accepted by county; succession by state to responsibility

Bridges and conduits heretofore or hereafter constructed in a permanent manner, whether by encroachment permit or otherwise, which cross county highways and which have been constructed or brought up to county standards, and have been accepted, either formally or informally by appropriate action, shall, after such acceptance, and regardless of who constructed them, be the sole responsibility of the county, so far as maintenance, repair, improvement for the benefit of the county, reconstruction or replacement of such bridges and conduits are concerned. If any such county highways become state highways, the State shall succeed to the foregoing obligations of the County. The amendment of this section made at the 1963 Regular Session of the Legislature does not constitute a change in, but is declaratory of, the pre-existing law. (Amended by Stats 1963 Ch. 524)

7035 Responsibility for conduit presumed prior to highway

Whenever any conduit for conducting water crosses a highway and no written records exist showing that the highway rights-of-ways existed prior to the conduit rights-of-way, it shall be conclusively presumed that the conduit was in place and lawfully maintained prior to the highway and such conduit shall be repaired, improved for the benefit of the public agency having jurisdiction over such highway, and replaced, if necessary, by the public agency having jurisdiction over such highway, provided that usual acts of maintenance of the conduit, such as cleaning the conduit of dirt or silt, shall be performed by and at the expense of the person using the conduit. This Section shall not apply to any conduit as to which Section 7034 is applicable. (Amended by Stats 1974 Ch. 36)

7036 Agreement between public district or private utility and county to apportion costs

Any public district or private utility and any county may enter into a contract agreeing to pay and apportion between them the costs of locating, removing, repairing, or relocating any facilities owned or to be owned by either party on the roads or other property of the other in such proportion and upon such terms as the governing boards of the parties shall determine to be equitable. This section shall not supersede the provisions of this chapter. (Enacted by Stats 1967 Ch. 998)

CALIFORNIA WATER CODE
MISCELLANEOUS EXCERPTS
AND
OTHER STATUTORY CODE SECTIONS
(Page 3 of 4)

WATER CODE SECTION

22456 Right to Take

The District may exercise the right of eminent domain to take any property necessary to carry out its purposes.

CIVIL CODE SECTION

1007 Full Period of Adverse Possession

One may not adversely possess against the real property interests (easements, fee title, rights-of-way, etc.) held/owned by District. Occupancy for the period prescribed by the Code of Civil Procedure as sufficient to bar any action for the recovery of property convers a title thereto, denominated a title by prescription, which is sufficient against all but no possession by any person, firm or corporation no matter how long continued of any land, water, water right, easement, or other property whatsoever dedicated to public use by a public utility, or dedicated to or owned by the state or any public entity, or dedicated to or owned by the state or any public entity, shall ever ripen into any title, interest or right against the owner thereof.

1009 Means of Protecting Owners of Real Property Who Make Lands Available for Public Use.

(d) Where a governmental entity is using private lands by an expenditure of public funds on visible improvements on or across such lands or on the cleaning or maintenance related to the public use of such lands in such a manner so that the owner knows or should know that the public is making such use of his land, such use, including any public use reasonably related to the purposes of such improvement, in the absence of either express permission by the owner to continue such use or the taking by the owner of reasonable steps to enjoin, remove or prohibit such use, shall after five years ripen to confer upon the governmental entity a vested right to continue such use.

PENAL CODE SECTION

555 Unlawful entry or remaining upon posted property.

It is unlawful to enter or remain upon any posted property without the written permission of the owner, tenant, or occupant in legal possession or control thereof. Every person who enters or remains upon posted property without such written permission is guilty of a separate offense for each day during any portion of which he enters or remains upon such posted property.

554 Posted property.

Any property, except that portion of such property to which the general public is accorded access, may be posted against trespassing and loitering in the manner provided in Section 554.1, and thereby become posted property subject to the provisions of this article applicable to posted property, if such property consists of, or is used, or is designed to be used, for any one or more of the following:.....(e) A water well, dam, reservoir, pumping plant, aqueduct, canal, tunnel, siphon, conduit, or any other structure, facility, or conductor for producing, storing, diverting, conserving, treating, or conveying water.

CALIFORNIA WATER CODE
MISCELLANEOUS EXCERPTS
AND
OTHER STATUTORY CODE SECTIONS
(Page 4 of 4)

PENAL CODE SECTION (CON'D)

554.1 Manner of posting

Any property described in Section 554 may be posted against trespassing and loitering in the following manner:

(a) If it is not enclosed within a fence and if it is of an area not exceeding one (1) acre and has no lineal dimension exceeding one (1) mile, by posting signs at each corner of the area and at each entrance.

(b) If it is not enclosed within a fence, and if it is of an area exceeding one (1) acre, or contains any lineal dimension exceeding one (1) mile, by posting signs along or near the exterior boundaries of the area at intervals of not more than 600 feet, and also at each corner, and, if such property has a definite entrance or entrances, at each such entrance.

(c) If it is enclosed within a fence and if it is of an area not exceeding one (1) acre, and has no lineal dimension exceeding one (1) mile, by posting signs at each corner of such fence and at each entrance.

(d) If it is enclosed within a fence and if it is of an area exceeding one (1) acre, or has any lineal dimension exceeding one (1) mile, by posting signs on, or along the line of, such fence at intervals of not more than 600 feet, and also at each corner and at each entrance.

STANDARD EASEMENT WIDTHS FOR
OPEN CANALS AND PIPELINES

SOURCE:

Board Policy No. 155

Rev. 5/29/02

Section 22438 of the California Water Code, attached as Exhibit "A" hereto, entitles the District to a secondary easement on each side of any open canal for which the District holds a prescriptive easement, with the width of the secondary easement to be whatever is reasonably required by the District for maintenance, repair, cleaning and operations of the secondary easement and open canal with equipment owned by or available to the District for that use at the time the rights are exercised. Exhibit "B" attached hereto, sets forth the dimensions of secondary easements for Fresno Irrigation District canals which are deemed to be reasonably required and which are claimed by the District under Section 22438.

Easements for pipelines or for open canals for which the District holds a written grant or judgement providing a legal description of the easement are not subject to the secondary easement provisions of Section 22438. District activities and the locations of canal facilities are therefore restricted to the limits established by the legal description of the easement.

For the purposes of acquiring easements for pipelines by grant or condemnation, the standard easement requirements are shown on Exhibit "C", attached hereto. Extraordinary conditions or circumstances may dictate modification of the standard easement, but such modification shall be subject to approval of the Board of Directors.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	STANDARD EASEMENT WIDTHS FOR OPEN CANALS AND PIPELINES	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 0–05 SHEET 1 OF 1

STANDARD EASEMENT WIDTHS FOR

OPEN CANALS AND PIPELINES

EXHIBIT "A"

SENATE BILL No. 891

An act to add Section 22438 to the Water Code, relating to irrigation districts.

Approved by the Governor on July 5, 1989.

Filed with the Secretary of State July 5, 1989.

LEGISLATIVE COUNSEL'S DIGEST

SB 891, Vuich. Irrigation Districts: canal easements.

Under existing law, an irrigation district may acquire by any means any property or interest in property to carry out its purposes.

This bill would declare that whenever any irrigation district is the owner of an easement for an open canal for the transportation of water across lands not owned by it, other than as specified, the district shall have a secondary easement on each side of the open canal for the maintenance, repair, cleaning, operation, and control of the open canal, as prescribed, and would specify related matters.

The people of the State of California do enact as follows:

SECTION 1. Section 22438 is added to the Water Code, to read:

22438. (a) Whenever any district is the owner of an easement for an open canal for the transportation of water across lands not owned by it, other than an easement evidenced by a written grant or judgement providing a legal description of the easement, the district shall have a secondary easement on each side of the open canal for the maintenance, repair, cleaning, operation, and control of the open canal and such other use thereof as may be reasonably be required by the district in exercising those rights and in the maintenance, repair, cleaning, and operation of that easement and open canal with equipment owned by or available to the district for that use at the time the rights are exercised. The duration of the secondary easement shall be for so long as the district, or its successors or assigns, continues to own the open canal easement regardless of what use has or has not been made of the secondary easement.

(b) The owner of the land upon which a secondary easement is located, or any lessee of the land, shall have the right to use the surface of the land upon which the secondary easement is located for his or her own purposes to the extent that the use does not unreasonably interfere with the district's ownership or use of the secondary easement, or upon the open canal easement. Any encroachment or obstruction placed or permitted upon the secondary easement by the owner of the land or any lessee of the land, which unreasonably interferes with the secondary easement or the open canal easement, may be removed by the district at the owner's or lessee's expense, or by legal action filed by the district.

This section shall not be construed to limit the right of a district or of any person to acquire any easement by prescriptive or condemnation or to enter into a written agreement concerning an easement or secondary easement upon such terms as are agreed upon the parties.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	STANDARD EASEMENT WIDTHS FOR OPEN CANALS AND PIPELINES EXHIBIT A	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 0–06 SHEET 1 OF 1

STANDARD EASEMENT WIDTHS FOR

OPEN CANALS AND PIPELINES EXHIBIT "B"

(Page 1 of 2)

GENERAL REQUIREMENTS

The following requirements have been approved and adopted by the Board of Directors to provide a guideline for establishing adequate Right-of-Way widths for canals and ditches owned, operated, and maintained by the Fresno Irrigation District. Any extraordinary conditions, circumstances, misunderstandings, failure or refusal of a property owner to accept or comply with the general requirements described below should be brought to the immediate attention of the General Manager.

1. When establishing top of bank width required for operation and maintenance purposes, some existing top of bank widths may be more than required by the District, but in most cases, will be less. Therefore, the Right-of-Way line should be established in accordance with the requirements for future improvements, operations, and maintenance of the canal.

2. To determine the requirements for top of bank widths, canals and ditches shall be classified into two different categories. First, canals with banks which are not more than one foot 1.0') above the surrounding ground level will be classified in a "cut" category. Second, canals with banks which are more than one foot (1.0') above the adjacent ground level will be classified as "fill".

3. Required top of bank widths shall be measured on a level plane from the inside edge of the canal or ditch bank.

4. Canals with capacity of 50 C.F.S or more:

   a). Canals which are in a "cut" or at grade shall require a top of bank width no less than twenty feet (20') wide.

   b). Canals which are in a" fill" shall require a top of bank width of no less than fifteen feet (15') plus one and one-half feet (1.5') for each vertical foot outside of the bank slope plus and an additional two feet (2') to establish the Right-of-Way line beyond the outside toe of the canal bank. Easement width will be as required or no less than twenty feet (20') from the top inside bank to Right-of-Way line.

5. Canals with a capacity of less than 50 C.F.S:

   a). Canals which are in a "cut" shall require a top of bank width no less than fifteen feet (15') wide.

   b). Canals which are in a "fill" shall require a top of bank width of no less than twelve feet (12') plus one and one-half feet (1.5') for each vertical foot outside of the bank slope. "Fill" canals also require an additional two feet (2.0') to establish the Right-of-Way line beyond the outside toe of the canal.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	STANDARD EASEMENT WIDTHS FOR OPEN CANALS AND PIPELINES EXHIBIT B	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 0–07 SHEET 1 OF 2

STANDARD EASEMENT WIDTH FOR

OPEN CANALS AND PIPELINES EXHIBIT "B"

(Page 2 of 2)

6. Canals with a capacity less than 50 C.F.S: (Alternate)

   a). Canals which are in a "cut" shall require a top of bank width no less than fifteen feet (15') wide.

   b). Canals which are in a "fill" shall require a top of bank width of no less than four feet (4') plus four feet (4.0') for each vertical foot outside of the bank slope.

   c). On smaller sloper type ditches, it may be necessary to resort to access along and outside the ditch, but in all cases the requirements should be established to prevent encroachments on the Right-of-Way.

   d). The alternate section cannot be used if the overall width exceeds the standard width and is permitted only when the District operations and maintenance functions do not require a standard road Right-of-Way.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	STANDARD EASEMENT WIDTHS FOR OPEN CANALS AND PIPELINES EXHIBIT B	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 0–07 SHEET 2 OF 2

STANDARD EASEMENT WIDTHS FOR
OPEN CANALS AND PIPELINES EXHIBIT "C"
PIPELINE EASEMENT WIDTHS

The following shall be used by staff in the determination and acquisition of new pipeline easement widths:

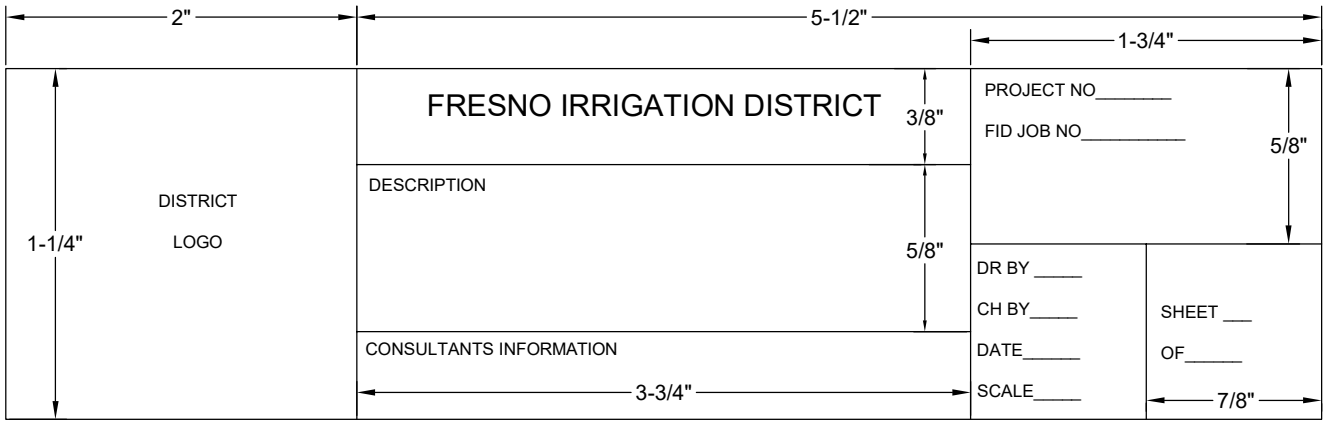
Type of Pipe	Easement Width for Dia. ≤ 24" I.D.	Easement Width for 24" > Dia. ≤ 36" I.D.	Easement Width for Dia. > 36" I.D.
PVC (SDR41, PIP)	20 feet	N/A	N/A
RGRCP (C-361)	20 feet	30 feet	40 feet
CIP (ACI 346)	N/A	30 feet	40 feet
Min. Width Adjacent to Right-of-Way	15 feet	15 feet	20 feet

Where the pipeline easement will be contiguous and parallel to a Joint Use Right-of-Way such as a "local" public street Right-of-Way or a "rural" road with a Right-of-Way sixty feet (60') or less, the required easement may be reduced if the street maintaining agency allows the District to perform maintenance using a portion of the road Right-of-Way. On any street or rural road where curbside parking will be permitted by the street maintaining agency, the easement width may be reduced.

The easement width may not be reduced for controlled access streets designed as freeways, expressways, super arterials, arterials, collectors, or landscaped drives. No easement reduction will be permitted adjacent to turn lanes or bus stops or other locations posted to prohibit stopping or parking without special provision for maintenance access. Written evidence may be required from the street maintaining agency showing that the predetermined easement width reduction can be satisfied.

Where public utility easements or landscape easements will overlap the District's pipeline easement, regardless of pipeline diameter, the required pipeline easement width shall be increased as necessary so that fifty percent (50%) of the required easement width is free from overlapping utilities. The District may waive this easement requirement for landscape easements if the District can be assured the landscaping will not impact the pipeline.

SHEET SIZE	BORDER	TITLE BLOCK
8 1/2" X 11"	0.5"	A
24" X 36"	1.0"	B



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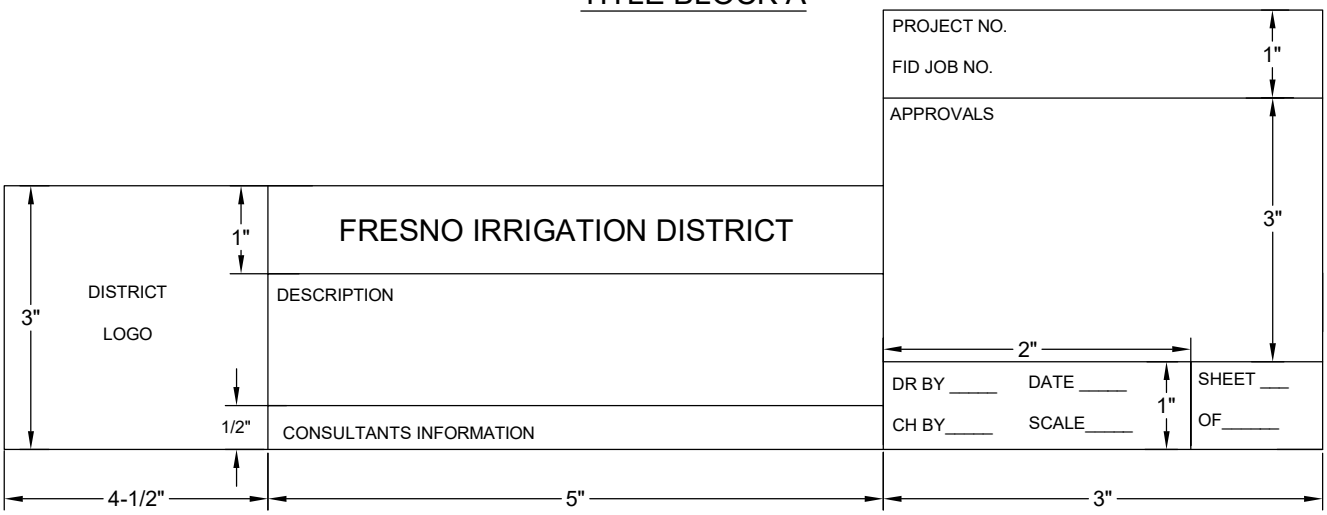


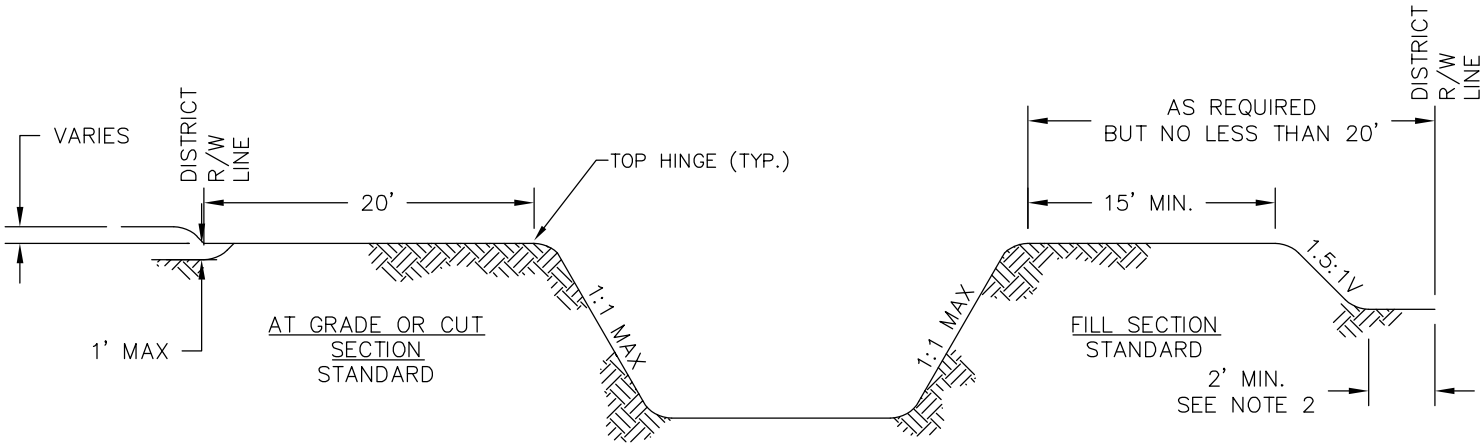
TITLE BLOCK B

NOTES:

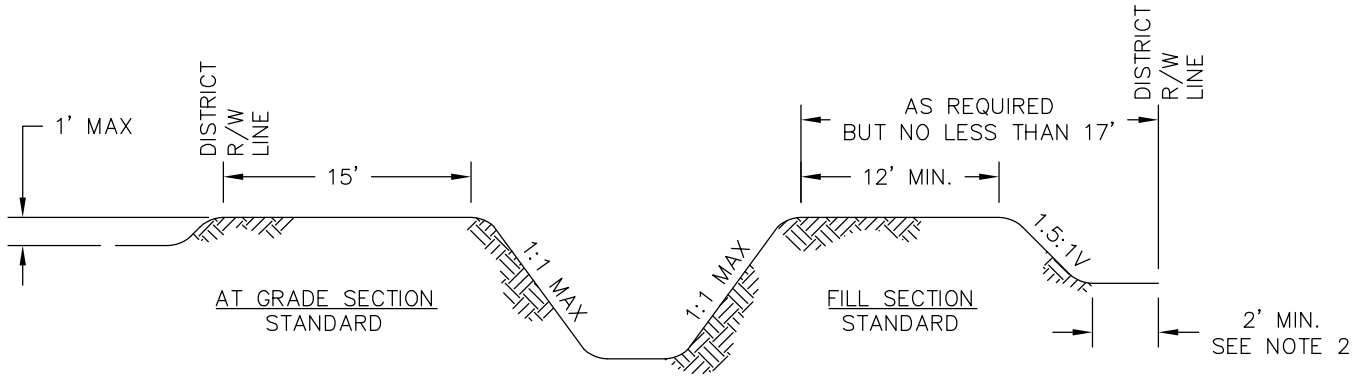
1. ALL PLANS SHALL INCLUDE A BENCHMARK, A BASIS OF BEARING/BENCHMARK, A NORTH ARROW, A SCALE, A VICINITY MAP, A LEGEND, A GENERIC 811 LOGO, AND A TABLE OF CONTENTS.
2. ALL EXHIBITS SHALL INCLUDE A NORTH ARROW, A SCALE, A LEGEND, AND A SPACE FOR A STAMP AND SIGNATURE FROM DESIGN ENGINEER OR LAND SURVEYOR.
3. TITLE BLOCK SHALL BE LOCATED AT THE BOTTOM OF THE PAGE FOR 8-1/2" X 11 AND AT THE BOTTOM RIGHT CORNER FOR 24' X 36".
4. ALL TEXTUAL CONTENT SHALL BE ARIAL, 10-POINT FONT "(OR EQUAL)", REGULAR WEIGHT.
5. SEE TABLE BELOW FOR LINEWEIGHTS.
6. THE SCALE FOR 8-1/2" X 11 SHALL BE 1":50', OR APPROVED ALTERNATIVE.
7. THE SCALE FOR 24" X 36" SHALL BE 1":30', OR APPROVED ALTERNATIVE.

LINEWEIGHTS TABLE			
8-1/2" X 11"		24" X 36"	
BOARDER	0.50 MM TO 0.70 MM	BOARDER	0.80 MM TO 1.20 MM
TITLE BLOCK LINEWORK	0.50 MM	TITLE BLOCK LINEWORK	0.80 MM

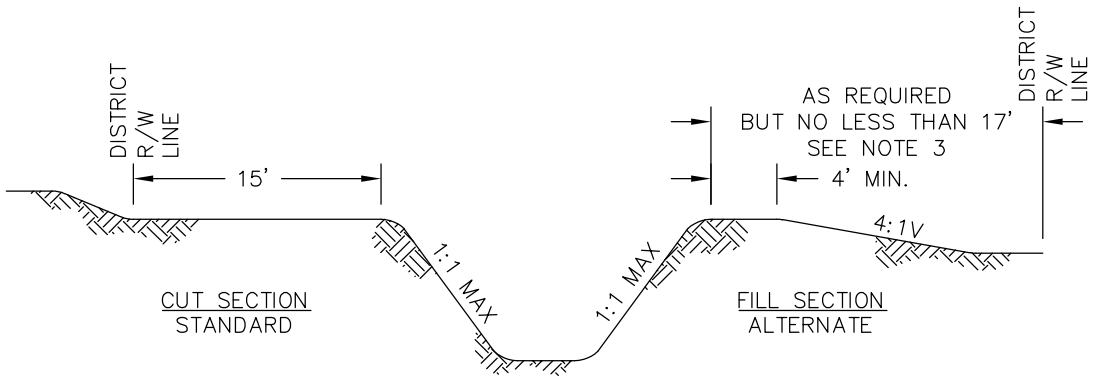
FRESNO IRRIGATION DISTRICT		STANDARD DRAWING SIZES	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 0-09
		DATE: 2025	SHEET 1 OF 1



50 C.F.S. & ABOVE



UNDER 50 C.F.S.

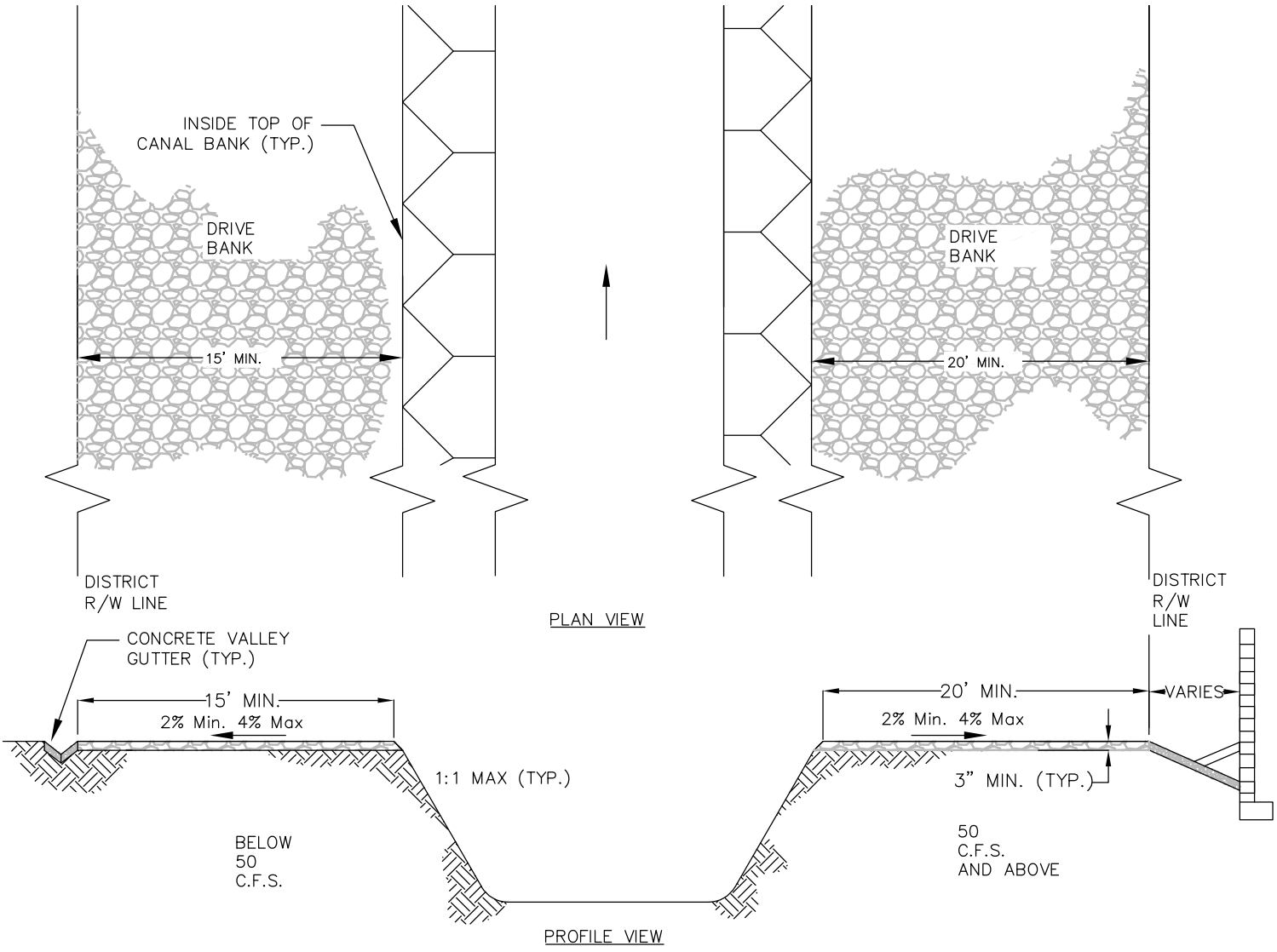


UNDER 50 C.F.S.

NOTES:

1. ALL PRIVATE FACILITIES TO BE LOCATED OUTSIDE DISTRICT RIGHT-OF-WAY.
2. ADD 2 FEET TO EMBANKMENT WIDTH TO ESTABLISH OVERALL RIGHT-OF-WAY WIDTH TO ACCOMMODATE GRADER BLADE CLEARANCE.
3. THE ALTERNATE SECTION CANNOT BE USED IF THE OVERALL WIDTH EXCEEDS THE STANDARD WIDTH AND IS PERMITTED ONLY WHEN DISTRICT OPERATIONS AND MAINTENANCE FUNCTIONS DO NOT REQUIRE A STANDARD ROADWAY.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	CANAL RIGHT-OF-WAY - RURAL	
	"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 1-01 SHEET 1 OF 2



NOTES:

1. DIMENSIONS AND NOTES ARE FOR LAYOUT PURPOSES ONLY. A SCALED DRAWING SHALL BE PREPARED AND SUBMITTED WITH ALL PLAN SETS PRIOR TO CONSTRUCTION.

2. DRAINAGE WILL NOT BE ACCEPTED IN THE CANAL AND SHALL BE ROUTED AWAY FROM DISTRICT PROPERTY/DRIVE BANKS. SLOPE DRIVE BANKS A MIN. 2% AND A MAX. OF 4% AWAY FROM THE CANAL WITH PROVISIONS MADE FOR RAINFALL. RUNOFF TO BE CONVEYED TO NEARBY PUBLIC STREETS OR DRAINAGE SYSTEM BY DRAINAGE SWALES OR OTHER DISTRICT ACCEPTABLE ALTERNATIVES.

3. WITHIN DISTRICT EASEMENT/RIGHT-OF-WAY AREA, ALL EXISTING TREES, BUSHES, DEBRIS, OLD CANAL STRUCTURES, PUMPS, CANAL GATES, AND OTHER NON OR INACTIVE DISTRICT AND PRIVATE STRUCTURES MUST BE REMOVED.

4. THREE INCH (3") THICK VIRGIN CLASS II AGG. BASE COMPACTED TO 93% R.C. PER DISTRICT STANDARD SPECIFICATION 8-05. AGG. BASE SHALL BE REQUIRED AT EACH DRIVE BANK AS DETERMINED BY DISTRICT'S ENGINEER. NO RECYCLED/REGRIND ASPHALT.

5. DRIVEWAY APPROACH MINIMUM WIDTH PER DISTRICT DRAWING 1-02.

FRESNO IRRIGATION DISTRICT		CANAL RIGHT-OF-WAY - URBAN
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 1-01 SHEET 2 OF 2

NOTES:

1. DIMENSIONS AND NOTES ARE FOR LAYOUT PURPOSES ONLY. A SCALED DRAWING SHALL BE PREPARED AND SUBMITTED WITH ALL PLAN SETS PRIOR TO CONSTRUCTION.

2. DRAINAGE WILL NOT BE ACCEPTED IN THE CANAL AND SHALL BE ROUTED AWAY FROM DISTRICT PROPERTY/DRIVE BANKS. SLOPE DRIVE BANKS A MINIMUM 2% AND A MAXIMUM OF 4% AWAY FROM THE CANAL WITH PROVISIONS MADE FOR RAINFALL. RUNOFF TO BE CONVEYED TO NEARBY PUBLIC STREETS OR DRAINAGE SYSTEM BY DRAINAGE SWALES OR OTHER DISTRICT ACCEPTABLE ALTERNATIVES.

3. WITHIN DISTRICT EASEMENT/RIGHT-OF-WAY AREA, ALL EXISTING TREES, BUSHES, DEBRIS, OLD CANAL STRUCTURES, PUMPS, CANAL GATES, AND OTHER NON OR INACTIVE DISTRICT AND PRIVATE STRUCTURES MUST BE REMOVED.

4. IF AN ACCESS GATE IS PERMITTED BY THE DISTRICT, GATE MUST BE PLACED A MINIMUM OF 115 FEET AWAY FROM ROAD, WHERE DRIVE BANK NARROWS TO 20 FEET.

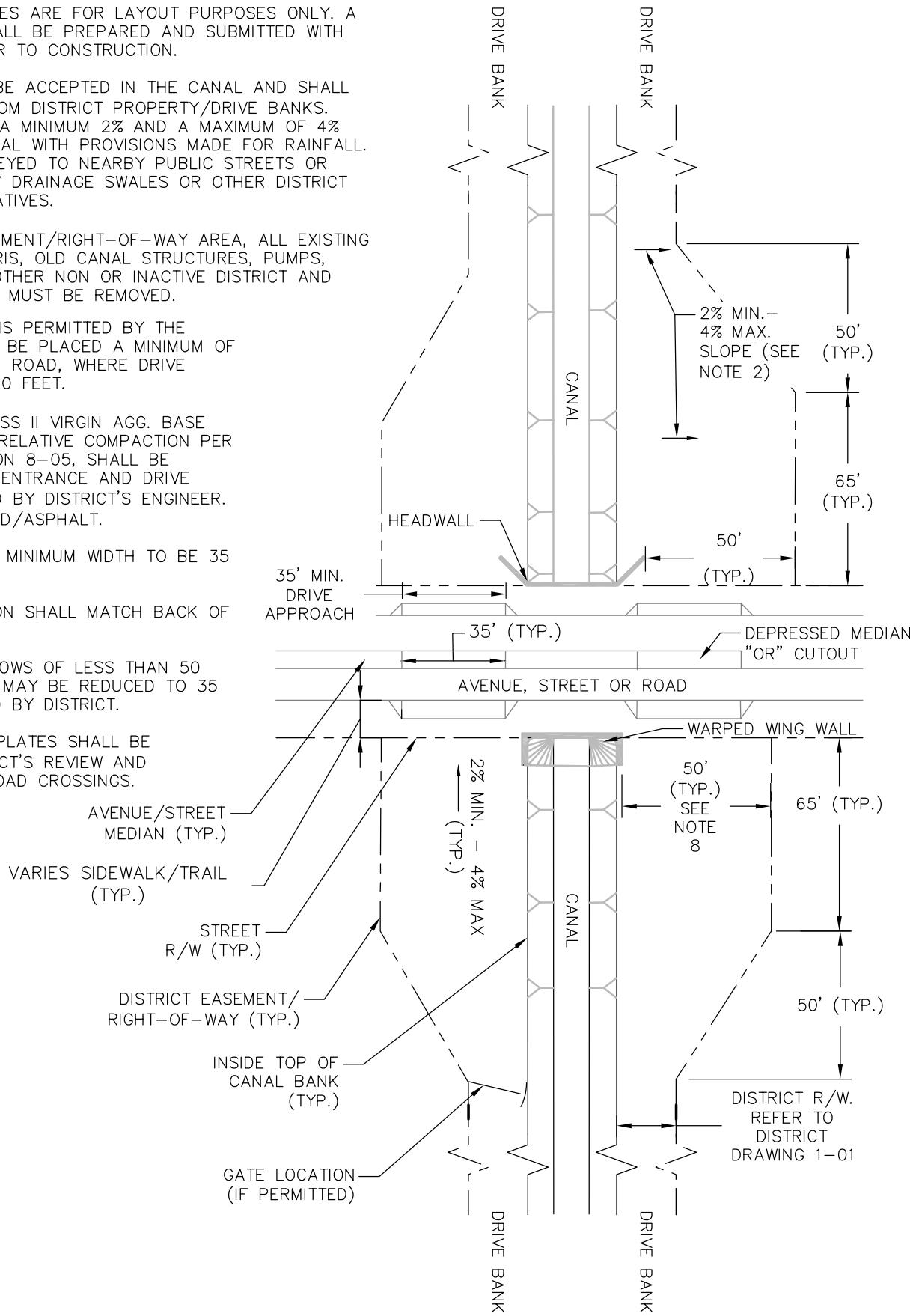
5. THREE INCH (3") CLASS II VIRGIN AGG. BASE COMPACTED TO 93% RELATIVE COMPACTION PER DISTRICT SPECIFICATION 8-05, SHALL BE REQUIRED FOR EACH ENTRANCE AND DRIVE BANK AS DETERMINED BY DISTRICT'S ENGINEER. NO RECYCLED REGRIND/ASPHALT.

6. DRIVEWAY APPROACH MINIMUM WIDTH TO BE 35 FEET.

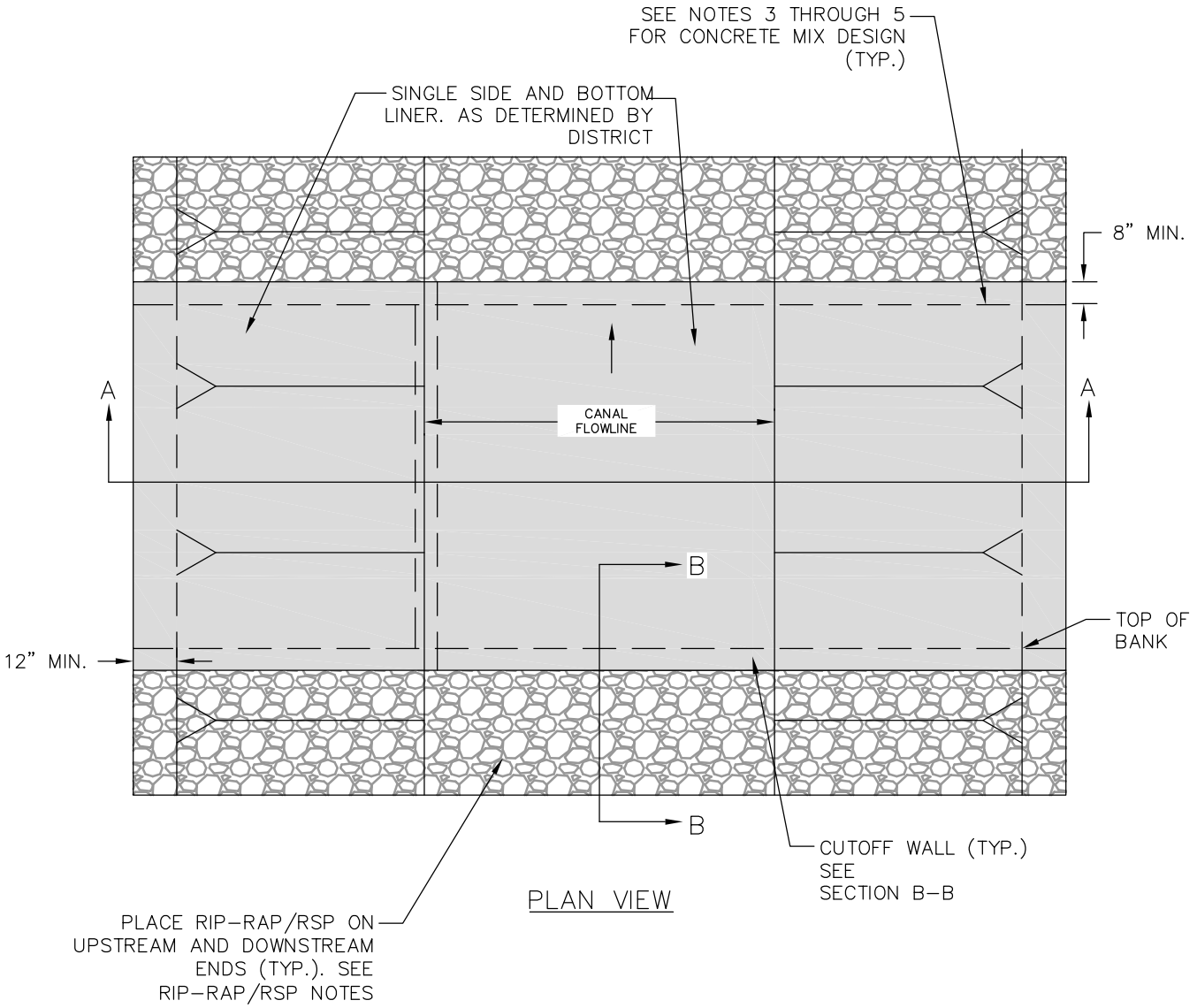
7. DRIVE BANK ELEVATION SHALL MATCH BACK OF SIDEWALK ELEVATION.

8. FOR CANALS WITH FLOWS OF LESS THAN 50 C.F.S. ACCESS WIDTH MAY BE REDUCED TO 35 FEET, AS DETERMINED BY DISTRICT.

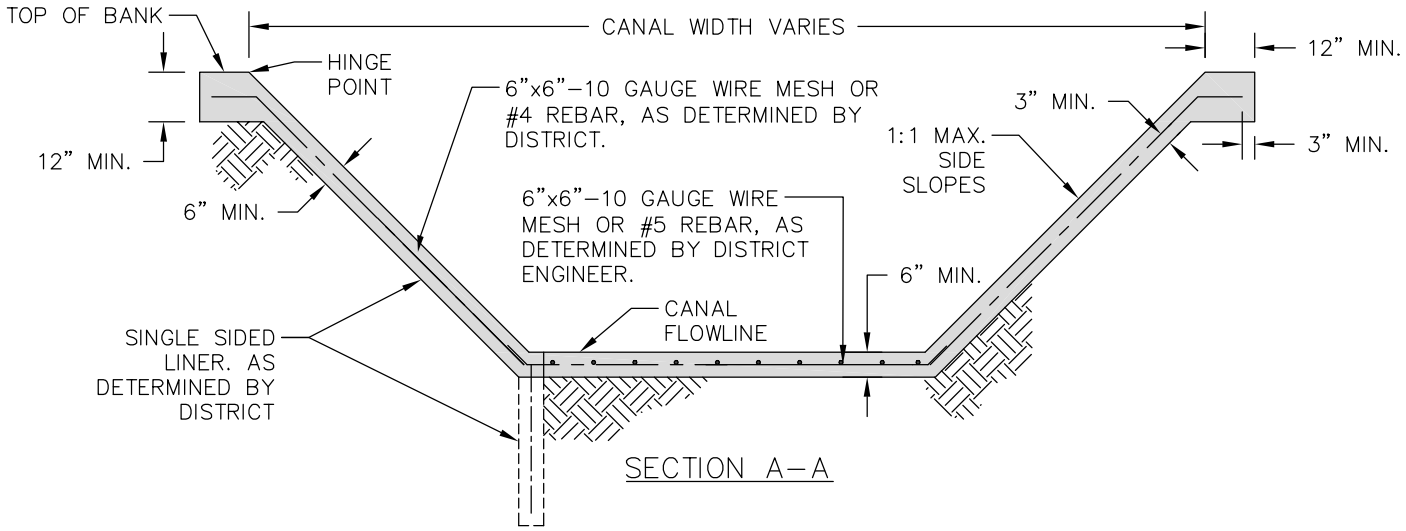
9. WB-67 TURNING TEMPLATES SHALL BE PROVIDED FOR DISTRICT'S REVIEW AND APPROVAL AT ALL ROAD CROSSINGS.



FRESNO IRRIGATION DISTRICT		DRIVE APPROACH AND CANAL BANK ACCESS APRON
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 1-02 SHEET 1 OF 1

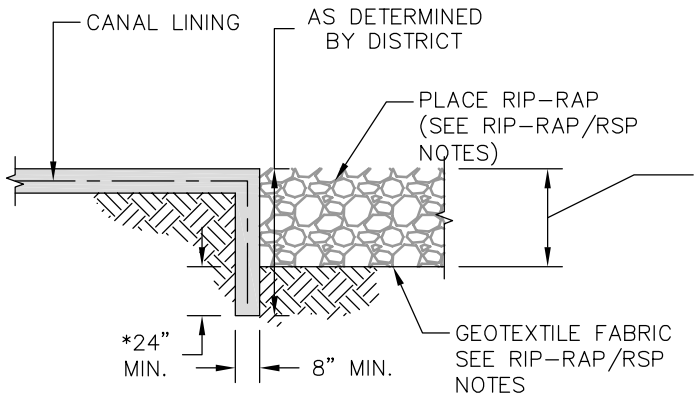


PLAN VIEW

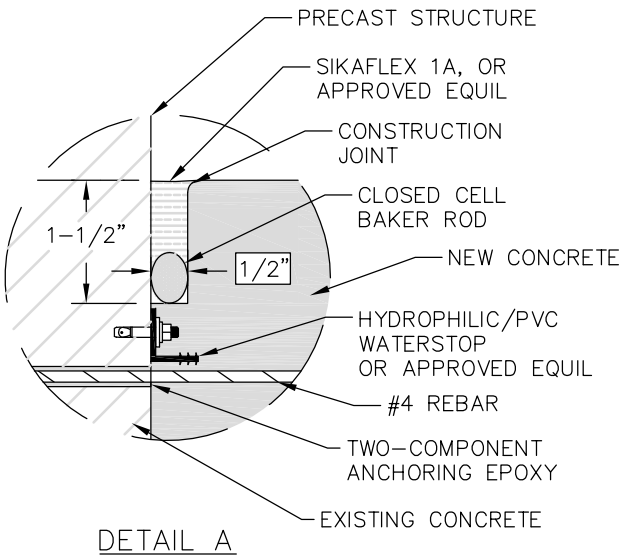


SECTION A-A

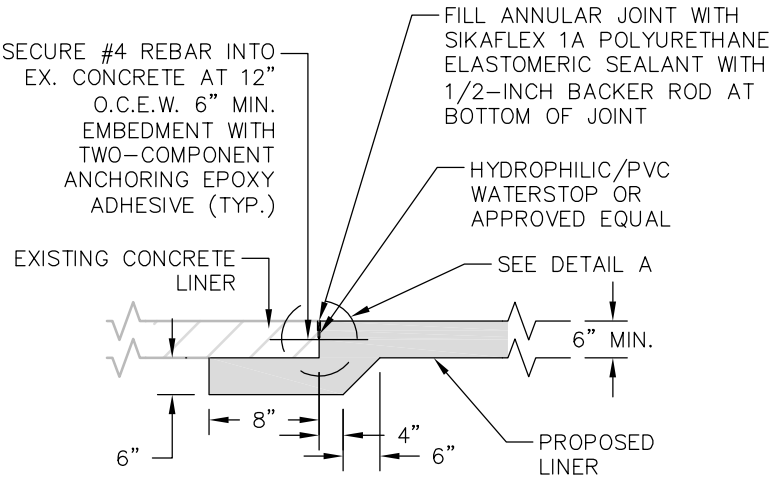
FRESNO IRRIGATION DISTRICT		CANAL LINING
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-01 SHEET 1 OF 3



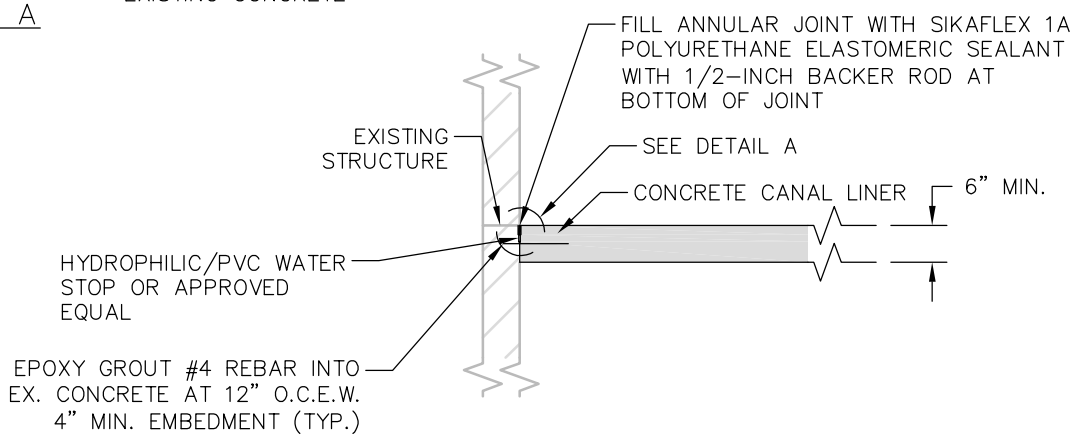
SECTION B-B
LINING CUTOFF WALL
*MIN. DEPTH SUBJECT TO DISTRICT ENGINEER



DETAIL A



UNDERLAP JOINT DETAIL



LINING CONNECTION TO
EXISTING/PRECAST STRUCTURE
DETAIL

FRESNO IRRIGATION DISTRICT		CANAL LINING	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 2-01
		DATE: 2025	SHEET 2 OF 3

CANAL LINING NOTES:

1. LINING SHALL BE PLACED ON FIRM COMPETENT MATERIAL. IF THE UNDERLYING SOILS ARE NOT SUITABLE FOR CONCRETE PLACEMENT, CONTRACTOR SHALL OVER-EXCAVATE AND REPLACE WITH COMPACTED ENGINEERED FILL.

2. ALL DISTURBED SOILS TO HAVE MINIMUM 93% RELATIVE COMPACTION PER ASTM D-1557 IN FILL AREAS FOR A DISTANCE FIVE FEET (5') MINIMUM AROUND CONCRETE LINER.

3. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.

4. CONCRETE LINING SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

5. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.

6. 6 INCH X 6 INCH - 10 GAUGE GALVANIZED WIRE MESH, AS DIRECTED BY THE DISTRICT ENGINEER.

7. CHANNEL FLOOR REBAR SHALL BE A MINIMUM NUMBER FIVE (#5), INSTALLED TWELVE INCHES (12") ON CENTER EACH WAY, WHERE DIRECTED BY THE DISTRICT ENGINEER OR WHERE EQUIPMENT CAN BE UTILIZED INSIDE THE CANAL.

8. CHANNEL SLOPE REBAR SHALL BE A MINIMUM NUMBER FOUR (#4), INSTALLED TWELVE INCHES (12") ON CENTER EACH WAY, WHERE DIRECTED BY THE DISTRICT ENGINEER.

9. INSTALL ACCESS/SAFETY LADDERS ON ALTERNATING SIDES OF CANAL FOURTEEN INCHES (14") ON CENTER AT 100 FEET INTERVALS OR FRACTION THEREOF. ACCESS/SAFETY LADDERS SHALL BE INSTALLED ON ALL LINING IN EXCESS OF TWENTY FEET (20') AND ON ALL INLET/OUTLET STRUCTURES PER STANDARD DRAWING 2-02 OR AS DIRECTED BY THE DISTRICT ENGINEER.

10. LINING CUTOFF WALLS TO BE CONSTRUCTED UPSTREAM AND DOWNSTREAM OF CONCRETE LINING. LINING CUTOFF DEPTH TO BE DETERMINED BY DISTRICT. CUTOFF WALLS SHALL BE EXCAVATED TO A MINIMUM OF THREE FEET (3') BELOW NATIVE GRADE.

11. CONTRACTOR SHALL MAKE AVAILABLE 7-DAY AND 28-DAY COMPRESSIVE STRENGTH TEST RESULTS, PRIOR TO ACCEPTANCE.

12. CONTROL JOINTS REQUIRED EVERY TEN FEET (10') IN TRAVERSE DIRECTION WITH CONCRETE JOINT SEAL AND CLOSED CELL BACKER ROD.

13. CONSTRUCTION/COLD JOINTS REQUIRED EVERY TWENTY LINEAR FEET (20') WITH CONCRETE JOINT SEAL AND CLOSED CELL BACKER ROD.

14. CONCRETE LINER REQUIRED FOR A MINIMUM OF FIVE FEET (5') OR GREATER IN LENGTH, SUBJECT TO CANAL VELOCITIES, CANAL ALIGNMENT, OR LIMITS OF DISTURBED SOIL. REFER TO DISTRICT STANDARD SPECIFICATION 4-01 FOR LIMITS AND ADDITIONAL INFORMATION.

RIP-RAP/RSP NOTES:

1. RIP-RAP/ROCK SLOPE PROTECTION (RSP) SHALL BE PER DISTRICT STANDARD SPECIFICATION 8-06, AS DETERMINED BY DISTRICT ENGINEER.

2. PLACE WOVEN GEOTEXTILE FABRIC PRIOR TO RIP-RAP/RSP PLACEMENT.

3. WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI FW500 OR APPROVED EQUIVALENT.

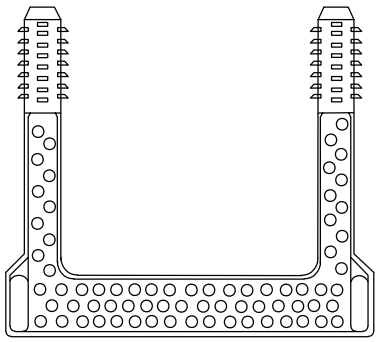
4. RIP-RAP/RSP SHALL BE PLACED ON SIDE SLOPES AND CHANNEL FLOOR, AS DETERMINED BY DISTRICT ENGINEER.

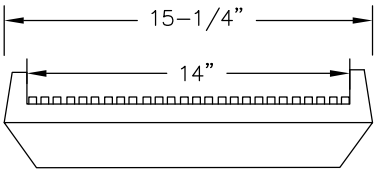
5. RSP CLASS SHALL BE DETERMINED BY CHANNEL VELOCITIES. REFER TO DISTRICT STANDARD SPECIFICATION 08-06 FOR ADDITIONAL INFORMATION.

6. RIP-RAP/RSP SHALL BE A MINIMUM OF ONE-FOOT (1') IN THICKNESS OR AS DETERMINED BY DISTRICT ENGINEER. SUBGRADE SHALL BE COMPACTED TO 93% RELATIVE COMPACTION.

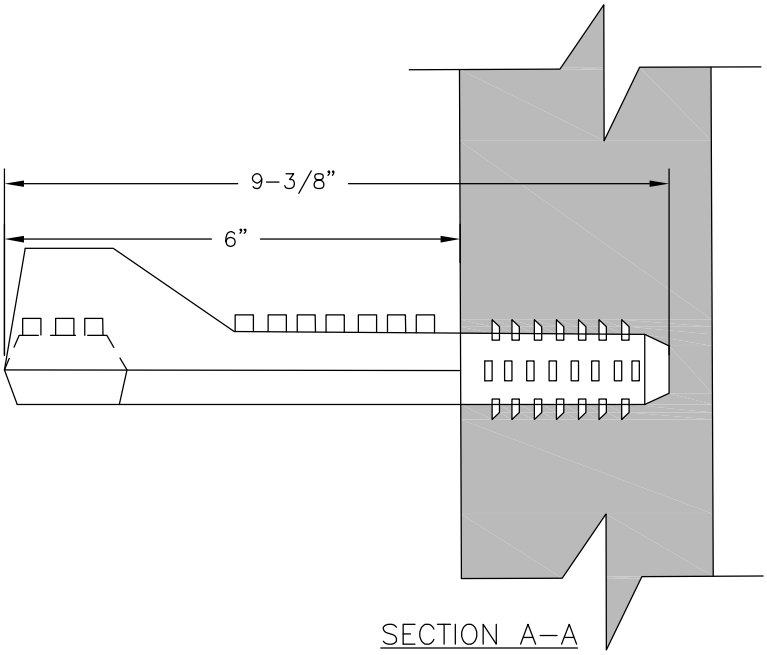
7. RIP-RAP/RSP REQUIRED FOR A MINIMUM OF FIVE FEET (5') OR GREATER IN LENGTH UPSTREAM AND DOWNSTREAM OF CONCRETE LINING, SUBJECT TO VELOCITY AND CANAL ALIGNMENT. REFER TO DISTRICT STANDARD SPECIFICATION 8-06 FOR LIMITS AND ADDITIONAL INFORMATION.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	CANAL LINING NOTES
	"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025
		DISTRICT DRAWING 2-01
		SHEET 3 OF 3

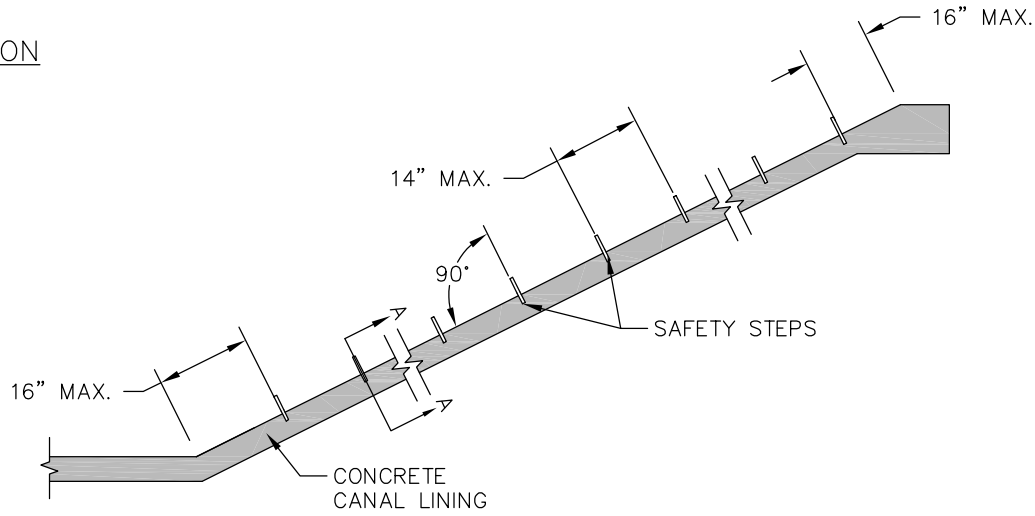




STEPS SECTION



SECTION A–A

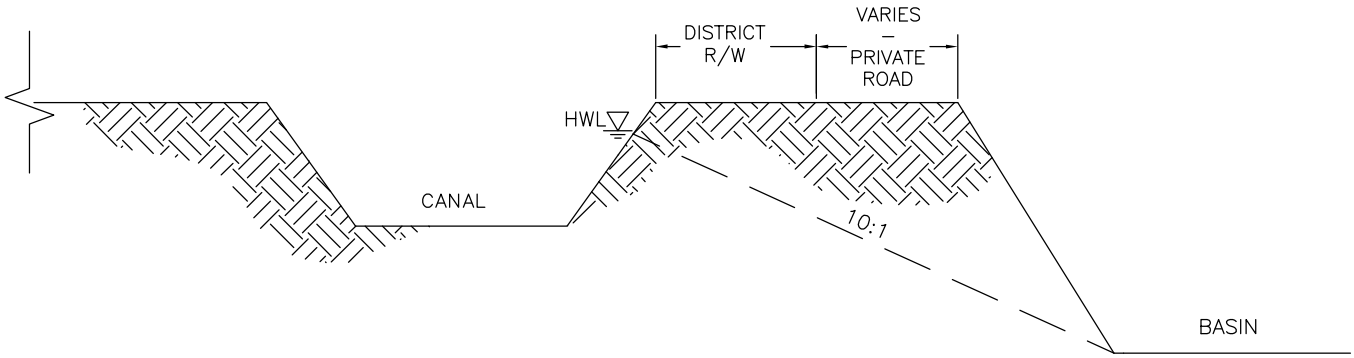


SIDE VIEW

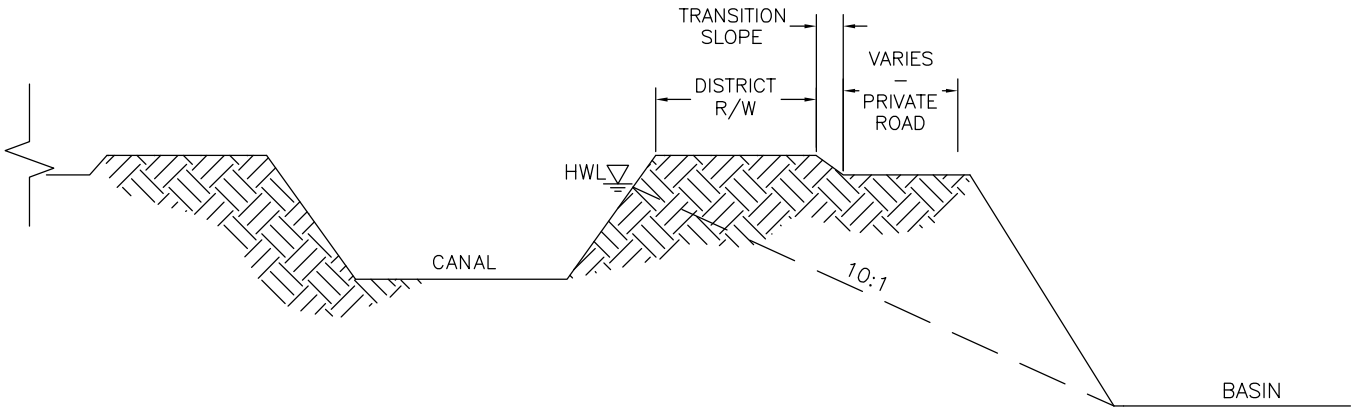
NOTES:

1. STEPS SHALL BE LANE POLYPROPYLENE, P–14938.
2. SEE CAL/OSHA STANDARDS FOR FIXED LADDER REQUIREMENTS.
3. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
4. INSTALL ON ALTERNATING SIDES OF CANAL LINING AT 100 FEET INTERVALS OR FRACTION THEREOF OR AS DIRECTED BY DISTRICT ENGINEER.
5. FOR CONCRETE CANAL LINING, SEE DISTRICT DRAWING 2–01.
6. STEPS ARE TO BE INSTALLED PERPENDICULAR TO LINING.

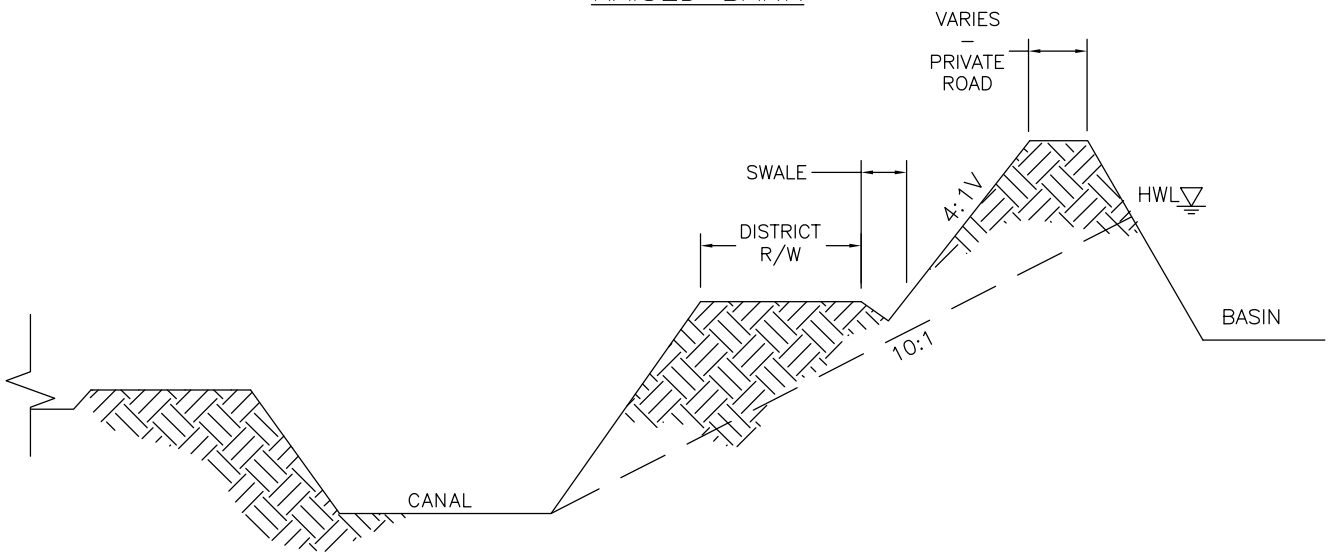
FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	LADDER – OPEN CHANNEL	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2–02 SHEET 1 OF 1



AT GRADE



RAISED BANK



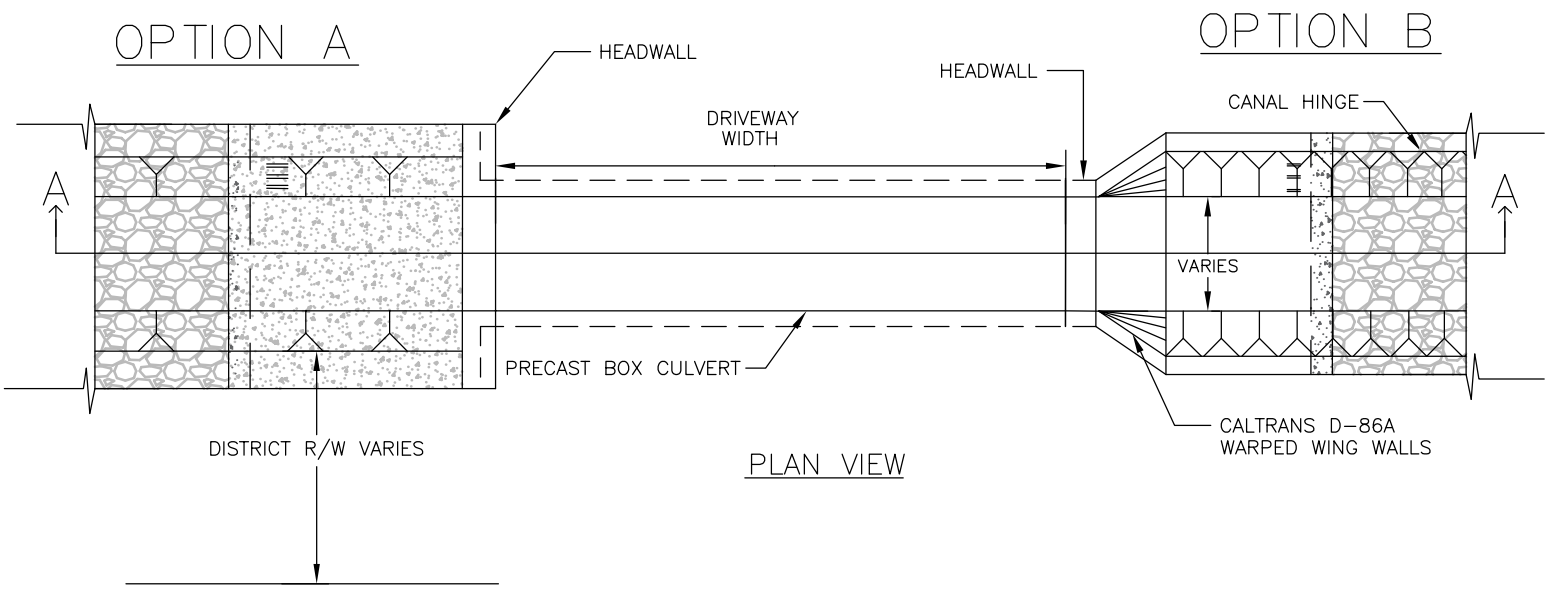
RAISED BASIN

FRESNO IRRIGATION DISTRICT		BASIN ADJACENT TO CANAL	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 2–03
		DATE: 2025	SHEET 1 OF 2

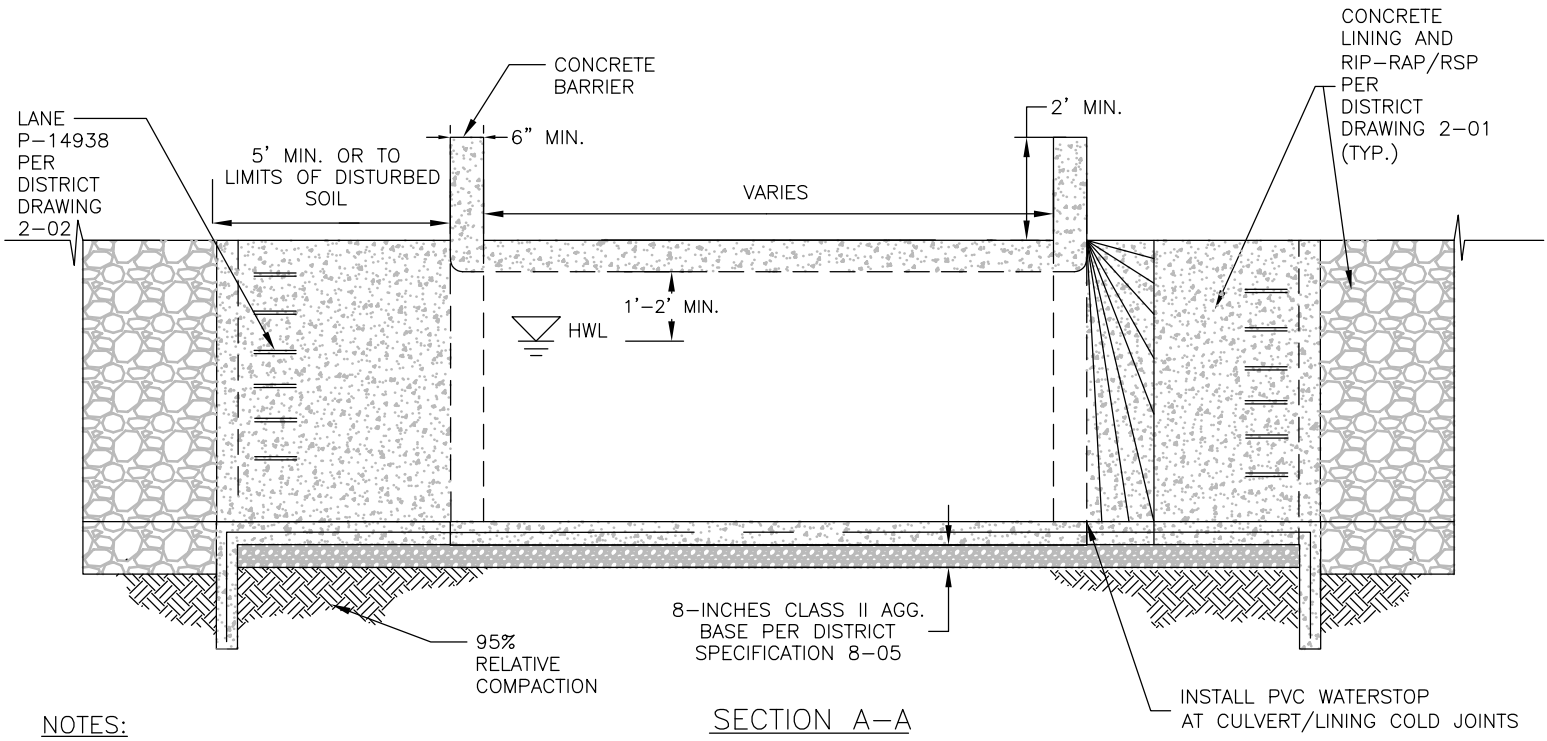
NOTES:

1. WIDTH OF CANAL BANK RIGHT-OF-WAY SHALL CONFORM TO DISTRICT STANDARD DRAWING 1-01.
2. DISTRICT WILL REQUIRE A MIN. 1.0 TO 2.0 FEET OF FREEBOARD ALONG DRIVE BANK.
3. DRAINAGE WILL NOT BE ACCEPTED INTO THE CANAL AND SHALL BE ROUTED AWAY FROM DISTRICT PROPERTY/DRIVE BANKS. SLOPE DRIVE BANK(S) A MINIMUM 2% AND A MAXIMUM OF 4% AWAY FROM THE CANAL WITH PROVISIONS MADE FOR RAINFALL.
4. CONCRETE LINING PER DISTRICT STANDARD DRAWING 2-01 MAY BE SUBSTITUTED IF BASIN CANNOT MEET STANDARD, IF APPROVED BY DISTRICT ENGINEER, PRIOR TO CONSTRUCTION OF BASIN.
5. THREE INCH (3") THICK VIRGIN CLASS II AGG. BASE PER DISTRICT STANDARD SPECIFICATION 8-05, COMPACTED TO 93% RELATIVE COMPACTION SHALL BE REQUIRED FOR EACH ENTRANCE AND DRIVE BANK AS DETERMINED BY DISTRICT ENGINEER. RECYCLED/REGRIND ASPHALT WILL NOT BE ALLOWED.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	BASIN ADJACENT TO CANAL	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-03 SHEET 2 OF 2



PLAN VIEW



SECTION A-A

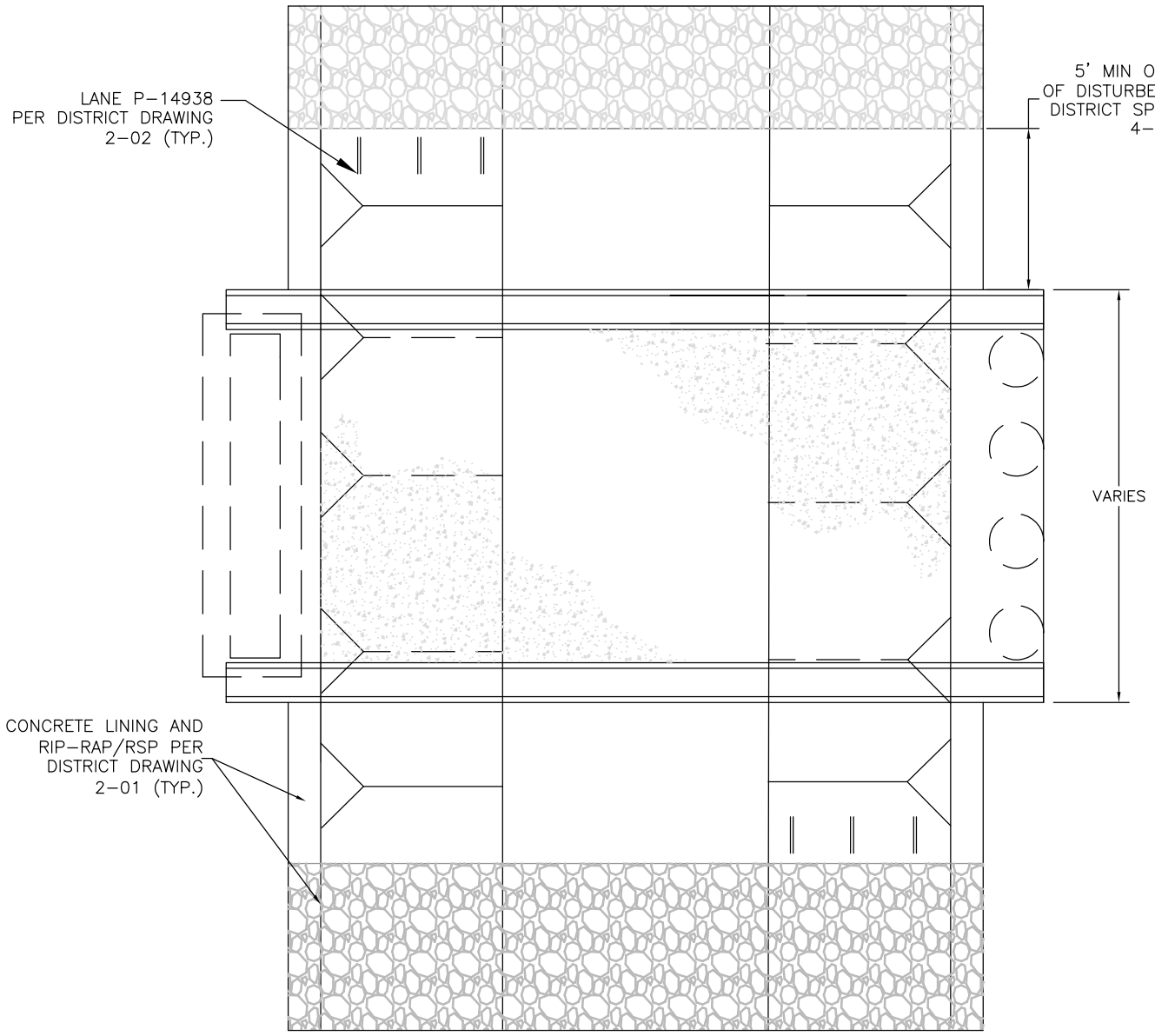
NOTES:

1. CONCRETE LINING SHALL BE INSTALLED PER DISTRICT DRAWING 2-01.
2. PROPERTY OWNER WILL HAVE TO ENTER INTO THE APPROPRIATE AGREEMENT FOR THE PROJECT.
3. ENGINEERED PLANS ARE REQUIRED TO BE APPROVED BEFORE INSTALLATION.
4. CULVERT SIZE SHALL BE DETERMINED BY DISTRICT ENGINEER.
5. CULVERT SHALL NOT REDUCE THE EXISTING CHANNEL FLOOR WIDTH.

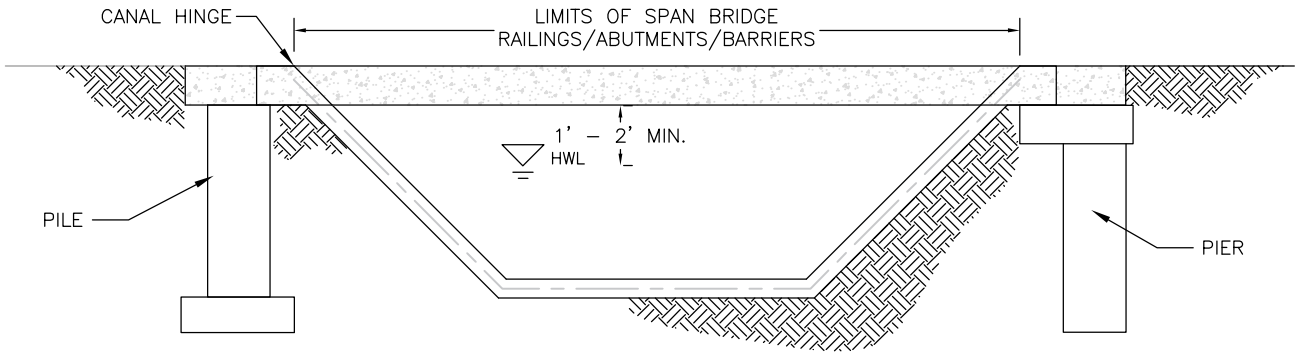
RIP-RAP/RSP NOTES:

1. RIP-RAP/ROCK SLOPE PROTECTION PER DISTRICT STANDARD SPECIFICATION 8-06 AND STANDARD DRAWING 2-01.

FRESNO IRRIGATION DISTRICT		DRIVEWAY CULVERT
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-04 SHEET 1 OF 3



PLAN



OPTION A

OPTION B

PROFILE

FRESNO IRRIGATION DISTRICT		SPAN BRIDGE
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-04 SHEET 2 OF 3

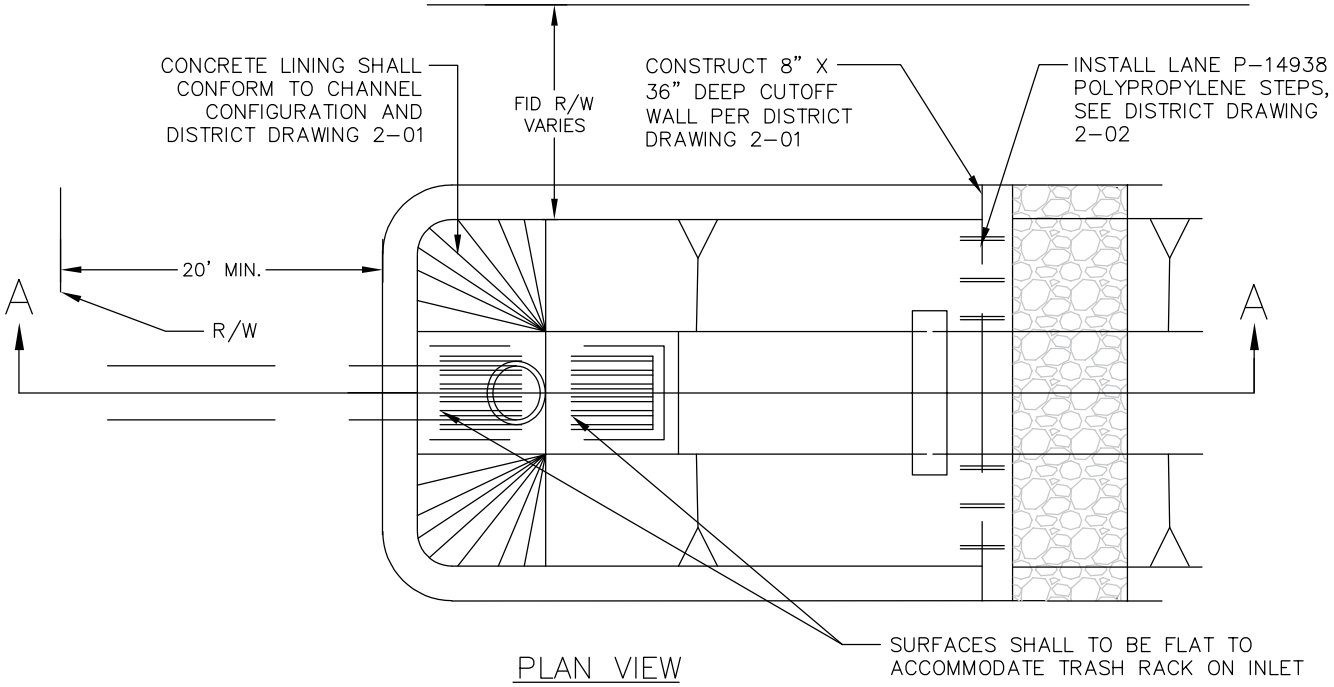
NOTES:

1. PROPERTY OWNER WILL HAVE TO ENTER INTO THE APPROPRIATE AGREEMENT FOR THE PROJECT.
2. ENGINEERED PLANS ARE REQUIRED TO BE APPROVED BEFORE INSTALLATION.
3. ABUTMENTS AND/OR RAILINGS SHALL NOT EXTEND INTO CANAL DRIVE BANK AND MUST STAY WITHIN THE FOOTPRINT OF THE STRUCTURE.
4. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATION 4-01 FOR ADDITIONAL INFORMATION.
5. CONCRETE LINING SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED .50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
6. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.
7. REMOVE DEPOSITS/SEDIMENT TO THE NATIVE FLOWLINE OF THE CANAL. CANAL FLOWLINE TO BE FIELD VERIFIED BY DISTRICT INSPECTOR PRIOR TO CANAL LINING BEING PLACED.
8. THE DISTRICT ENGINEER MUST APPROVE ANY CHANGES THAT MAY OCCUR DUE TO FIELD CONDITIONS.
9. COMPACTION TESTING SHALL BE PERFORMED BY THE OWNER/AGENCY AS DIRECTED BY DISTRICT ENGINEER.
10. LINING SHALL BE INSTALLED PER DISTRICT SPECIFICATION 4-01 AND DRAWING 2-01.
11. SEE DISTRICT DRAWING 1-01 FOR RIGHT-OF-WAY REQUIREMENTS.

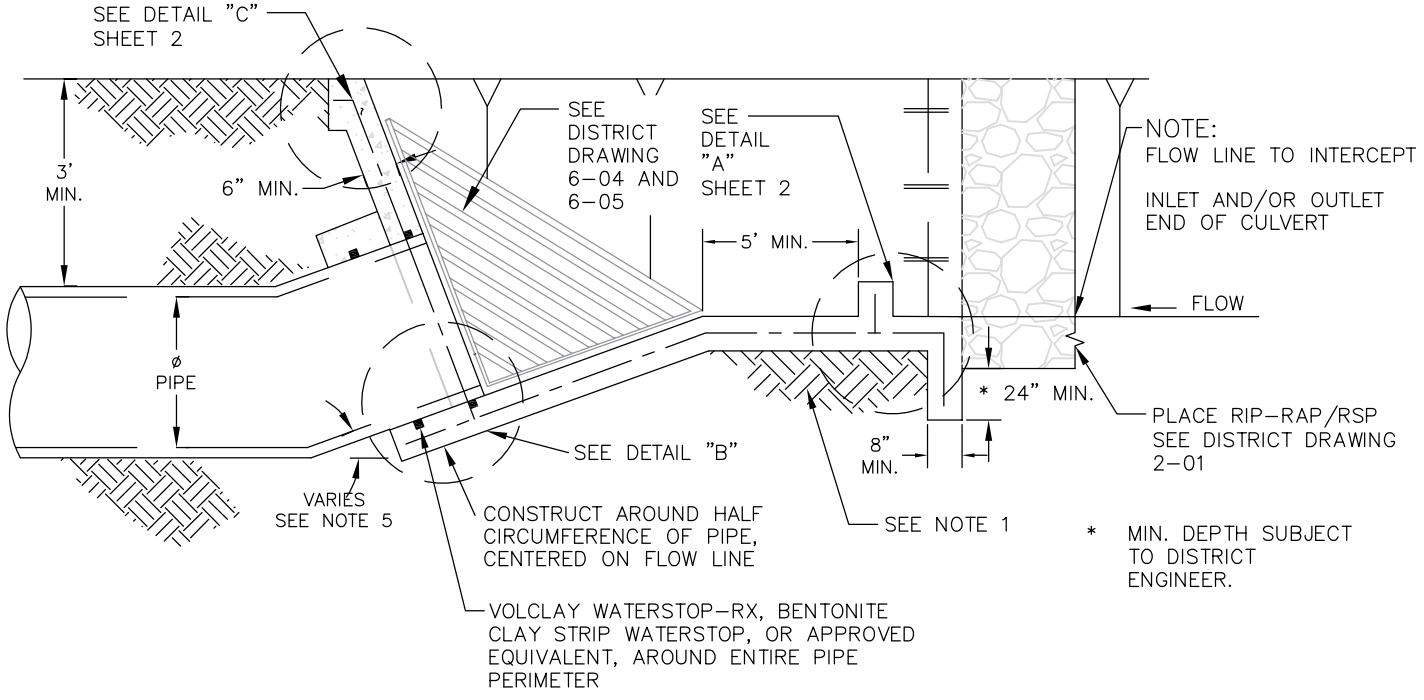
RIP-RAP/RSP NOTES:

1. RIP-RAP/ROCK SLOPE PROTECTION PER DISTRICT DRAWING 2-01.
2. PLACE WOVEN GEOTEXTILE FABRIC PRIOR TO RIP-RAP/RSP PLACEMENT.
3. WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI FW500 OR APPROVED EQUIVALENT.
4. RIP RAP/RSP WITH METHOD B PLACEMENT, PER DISTRICT SPECIFICATION 8-06 AROUND CHANNEL FLOOR AND SIDE SLOPES OR AS DETERMINED BY DISTRICT ENGINEER.
5. RIP-RAP/RSP SHALL BE A MINIMUM OF ONE-FOOT (1') IN THICKNESS OR AS DETERMINED BY DISTRICT ENGINEER. SUBGRADE SHALL BE COMPACTED TO 93% RELATIVE COMPACTION.
6. RIP-RAP/RSP REQUIRED FOR A MINIMUM OF FIVE FEET (5') OR GREATER IN LENGTH UPSTREAM AND DOWNSTREAM OF CONCRETE LINING, SUBJECT TO VELOCITY AND CANAL ALIGNMENT. REFER TO DISTRICT STANDARD SPECIFICATION 8-06 FOR ADDITIONAL INFORMATION.

FRESNO IRRIGATION DISTRICT	FRESNO IRRIGATION DISTRICT	CULVERT/BRIDGE NOTES
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-04 SHEET 3 OF 3

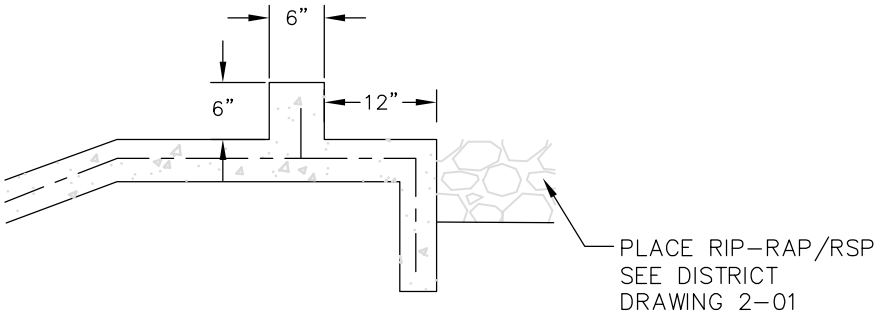


PLAN VIEW

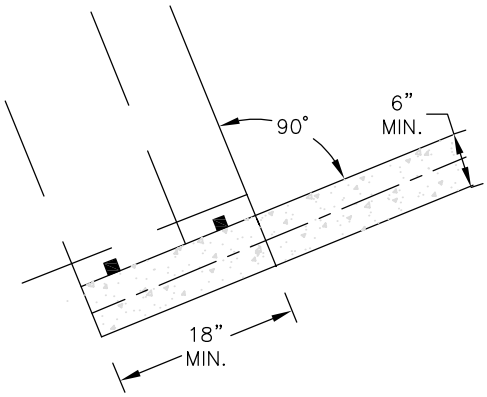


SECTION A–A

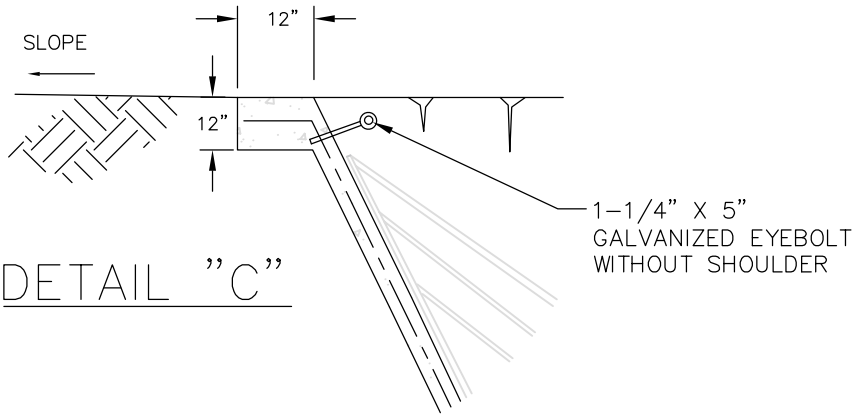
FRESNO IRRIGATION DISTRICT "Your Most Valuable Resource – Water"	FRESNO IRRIGATION DISTRICT	RURAL INLET/OUTLET BATHTUB	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2–05 SHEET 1 OF 2



DETAIL "A"
INLET ONLY



DETAIL "B"



DETAIL "C"

NOTES:

1. ALL DISTURBED SOIL TO HAVE A MINIMUM 93% RELATIVE COMPACTION PER ASTM D-1557 IN FILL AREAS FOR A DISTANCE 5 FEET MINIMUM AROUND CONCRETE LINER.

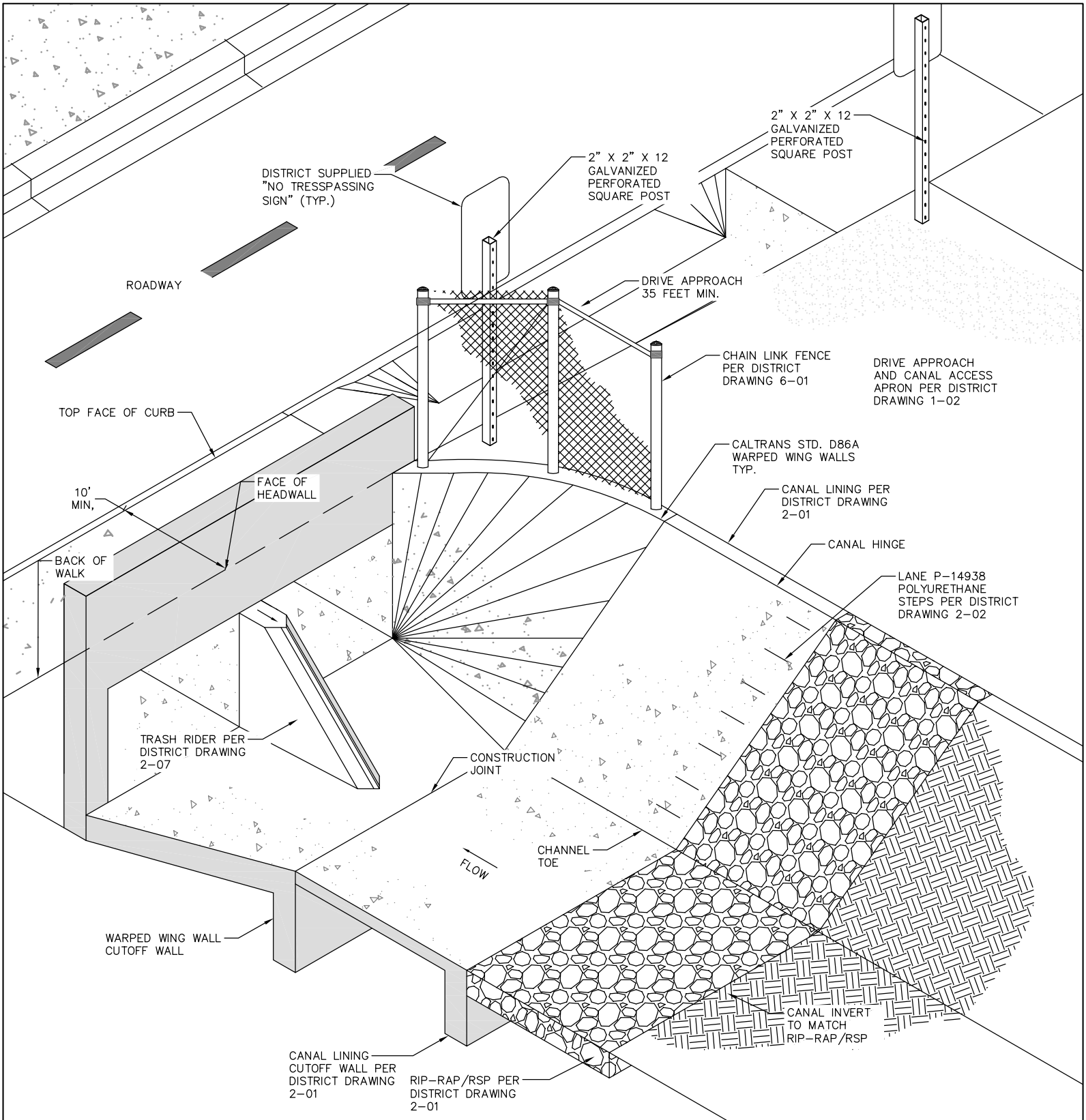
2. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.

3. CONCRETE LINING SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

4. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.

5. INLET SHALL BE 45° MAX. AND OUTLET SHALL BE 22.5° MAX.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	RURAL INLET/OUTLET DETAILS AND NOTES	
	"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-05 SHEET 2 OF 2



NOTES:

1. LEFT BANK OMITTED FOR CLARITY
2. BOX CULVERT AND ROAD IMPROVEMENTS PER ROADWAY AGENCY REQUIREMENTS

ISOMETRIC VIEW

FRESNO IRRIGATION DISTRICT		CULVERT CHANNEL IMPROVEMENTS	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 2-06
		DATE: 2025	SHEET 1 OF 2

CANAL LINING NOTES:

1. LINING SHALL BE PLACED ON FIRM COMPETENT MATERIAL. IF THE UNDERLYING SOILS ARE NOT SUITABLE FOR CONCRETE PLACEMENT, CONTRACTOR SHALL OVER-EXCAVATE AND REPLACE WITH COMPACTED ENGINEERED FILL.

2. ALL DISTURBED SOILS TO HAVE MINIMUM 93% RELATIVE COMPACTION PER ASTM D-1557 IN FILL AREAS FOR A DISTANCE FIVE FEET (5') MINIMUM AROUND CONCRETE LINER.

3. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.

4. CONCRETE LINING SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

5. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.

6. 6 INCH X 6 INCH - 10 GAUGE GALVANIZED WIRE MESH, AS DIRECTED BY THE DISTRICT ENGINEER.

7. CHANNEL FLOOR REBAR SHALL BE A MINIMUM NUMBER FIVE (#5), INSTALLED TWELVE INCHES (12") ON CENTER EACH WAY, WHERE DIRECTED BY THE DISTRICT ENGINEER OR WHERE EQUIPMENT CAN BE UTILIZED INSIDE THE CANAL.

8. CHANNEL SLOPE REBAR SHALL BE A MINIMUM NUMBER FOUR (#4), INSTALLED TWELVE INCHES (12") ON CENTER EACH WAY, WHERE DIRECTED BY THE DISTRICT ENGINEER.

9. INSTALL ACCESS/SAFETY LADDERS ON ALTERNATING SIDES OF CANAL FOURTEEN INCHES (14") ON CENTER AT 100 FEET INTERVALS OR FRACTION THEREOF. ACCESS/SAFETY LADDERS SHALL BE INSTALLED ON ALL LINING IN EXCESS OF TWENTY FEET (20') AND ON ALL INLET/OUTLET STRUCTURES PER STANDARD DRAWING 2-02 OR AS DIRECTED BY THE DISTRICT ENGINEER.

10. LINING CUTOFF WALLS TO BE CONSTRUCTED UPSTREAM AND DOWNSTREAM OF CONCRETE LINING. LINING CUTOFF DEPTH TO BE DETERMINED BY DISTRICT. CUTOFF WALLS SHALL BE EXCAVATED TO A MINIMUM OF THREE FEET (3') BELOW NATIVE GRADE.

11. CONTRACTOR SHALL MAKE AVAILABLE 7 DAY AND 28-DAY COMPRESSIVE STRENGTH TEST RESULTS, PRIOR TO ACCEPTANCE.

12. CONTROL JOINTS REQUIRED EVERY TEN FEET (10') IN TRAVERSE DIRECTION WITH CONCRETE JOINT SEAL AND CLOSED CELL BACKER ROD.

13. CONSTRUCTION/COLD JOINTS REQUIRED EVERY TWENTY LINEAR FEET (20') WITH CONCRETE JOINT SEAL AND BACKER ROD.

14. CONCRETE LINER REQUIRED FOR A MINIMUM OF FIVE FEET (5') OR GREATER IN LENGTH, SUBJECT TO CANAL VELOCITIES, CANAL ALIGNMENT, OR LIMITS OF DISTURBED SOIL. REFER TO DISTRICT STANDARD SPECIFICATION 4-01 FOR LIMITS AND ADDITIONAL INFORMATION.

RIP-RAP/RSP NOTES:

1. RIP-RAP/ROCK SLOPE PROTECTION (RSP) SHALL BE PER DISTRICT STANDARD SPECIFICATION 8-06, AS DETERMINED BY DISTRICT ENGINEER.

2. PLACE WOVEN GEOTEXTILE FABRIC PRIOR TO RIP-RAP/RSP PLACEMENT.

3. WOVEN GEOTEXTILE FABRIC SHALL BE MIRAFI FW500 OR APPROVED EQUIVALENT.

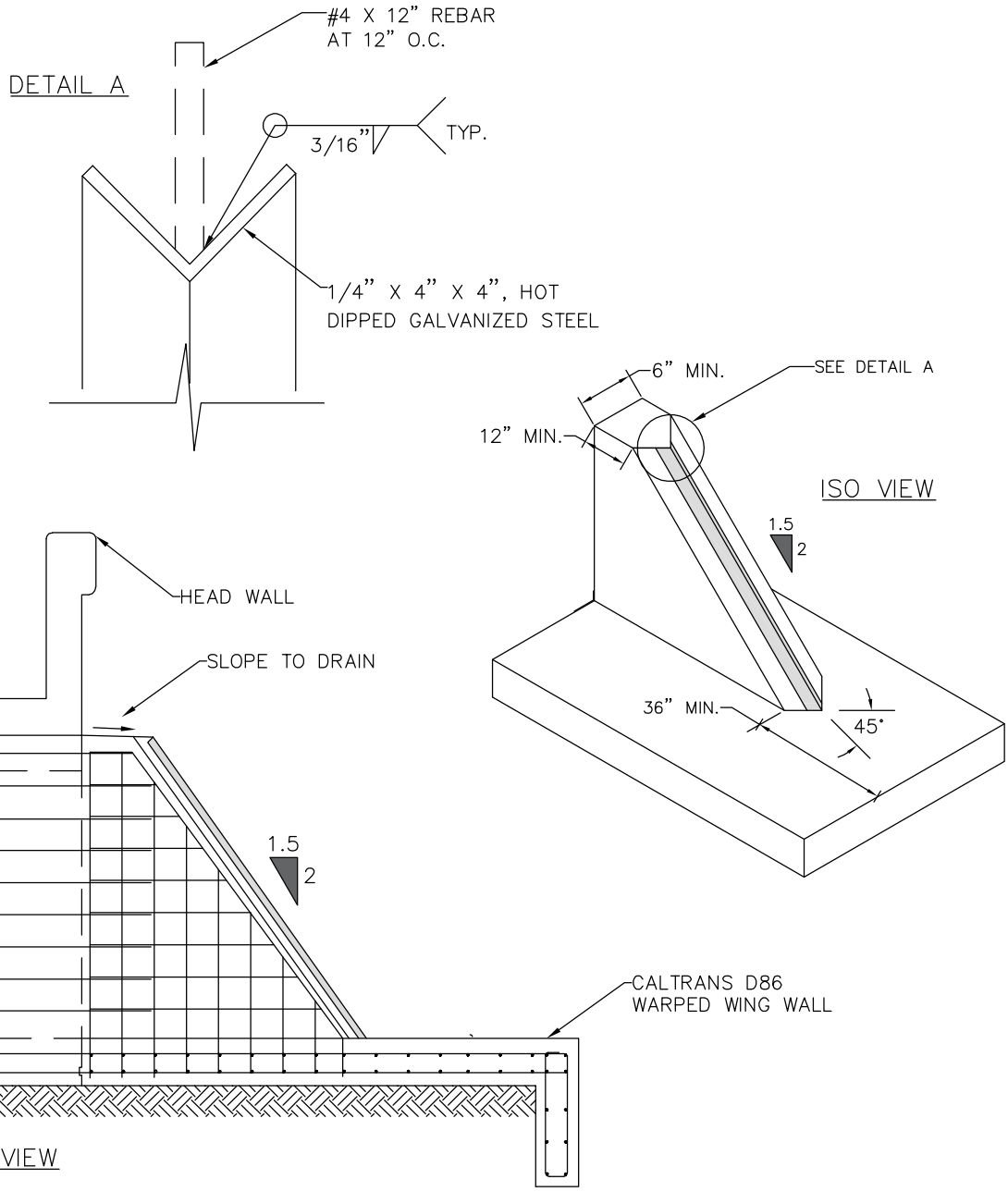
4. RIP-RAP/RSP SHALL BE PLACED ON SIDE SLOPES AND CHANNEL FLOOR, AS DETERMINED BY DISTRICT ENGINEER.

5. RSP CLASS SHALL BE DETERMINED BY CHANNEL VELOCITIES. REFER TO DISTRICT STANDARD SPECIFICATION 08-06 FOR ADDITIONAL INFORMATION.

6. RIP-RAP/RSP SHALL BE A MINIMUM OF ONE-FOOT (1') IN THICKNESS OR AS DETERMINED BY DISTRICT ENGINEER. SUBGRADE SHALL BE COMPACTED TO 93% RELATIVE COMPACTION.

7. RIP-RAP/RSP REQUIRED FOR A MINIMUM OF FIVE FEET (5') OR GREATER IN LENGTH UPSTREAM AND DOWNSTREAM OF CONCRETE LINING, SUBJECT TO VELOCITY AND CANAL ALIGNMENT. REFER TO DISTRICT STANDARD SPECIFICATION 8-06 FOR LIMITS AND ADDITIONAL INFORMATION.

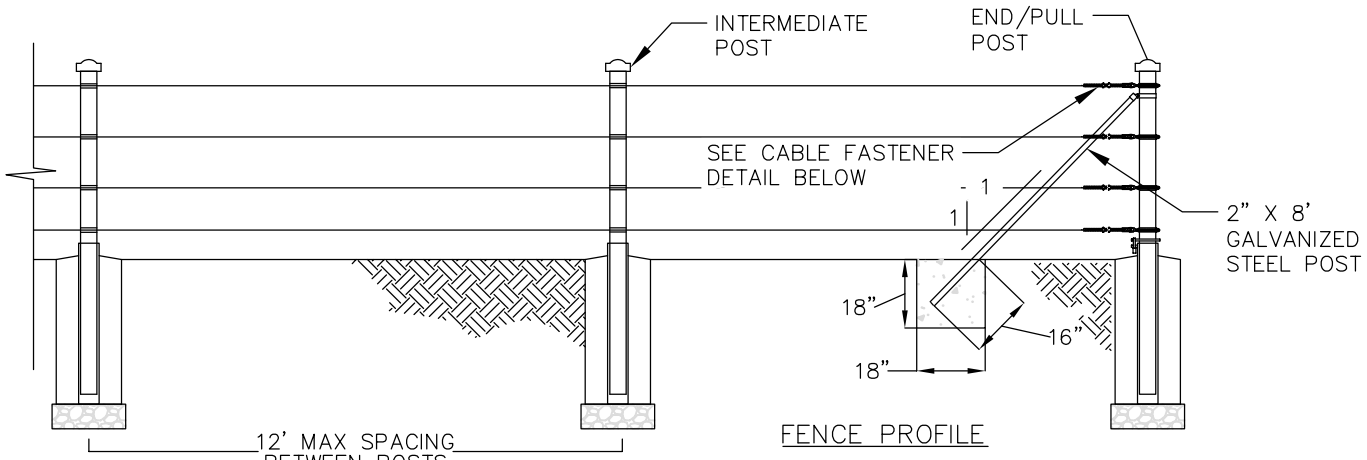
FRESNO IRRIGATION DISTRICT	FRESNO IRRIGATION DISTRICT	CULVERT CHANNEL IMPROVEMENT NOTES
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-06 SHEET 2 OF 2



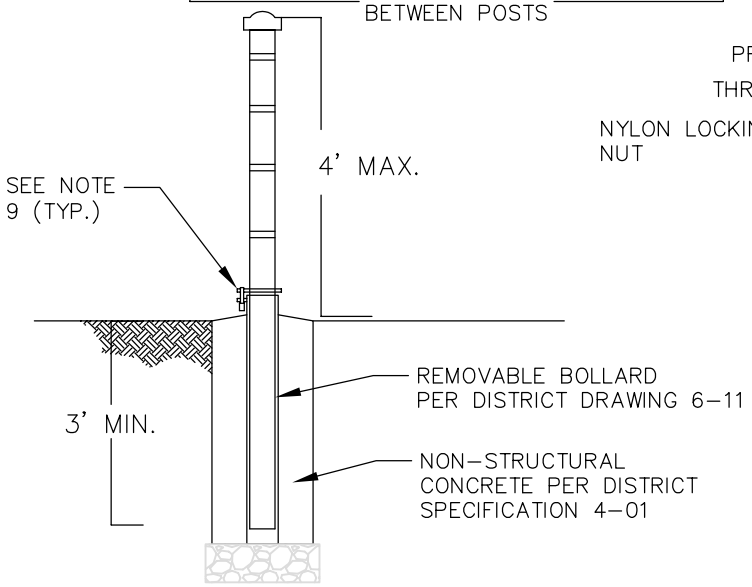
NOTES:

1. PIER TRASH RIDERS ARE REQUIRED ON UPSTREAM SIDES FOR BRIDGES AND BOX CULVERTS WHERE A CENTER WALL IS INCORPORATED. THE MINIMUM WALL THICKNESS SHALL BE 6" AS SHOWN ABOVE WITH 1.5 : 2 SLOPE.
2. DIMENSIONS ASSUME EASY ACCESS FROM CULVERT HEADWALL. THE CONTRACTOR SHALL VERIFY DIMENSIONS WITH DISTRICT PRIOR TO CONSTRUCTION.
3. INSTALL CONCRETE LINING ON UPSTREAM AND DOWNSTREAM SIDES AND RIP-RAP/RSP PER DISTRICT STANDARD SPECIFICATIONS 8-06 AND DISTRICT DRAWING 2-01.
4. INSTALL ACCESS LADDERS ON UPSTREAM AND DOWNSTREAM SIDES OF CONCRETE LINING PER DISTRICT DRAWING 2-02.
5. STEEL ANGLE IRON TO BE PLACED ON PIER TRASH RIDER SHALL BE HOT DIP GALVANIZED 1/4" X 4" X 4" ANGLE.
6. ALL DIMENSIONS SHALL BE DETERMINED BY THE AGENCY OR OUTSIDE ENGINEERING FIRM AND NOT THE DISTRICT'S ENGINEERING STAFF.

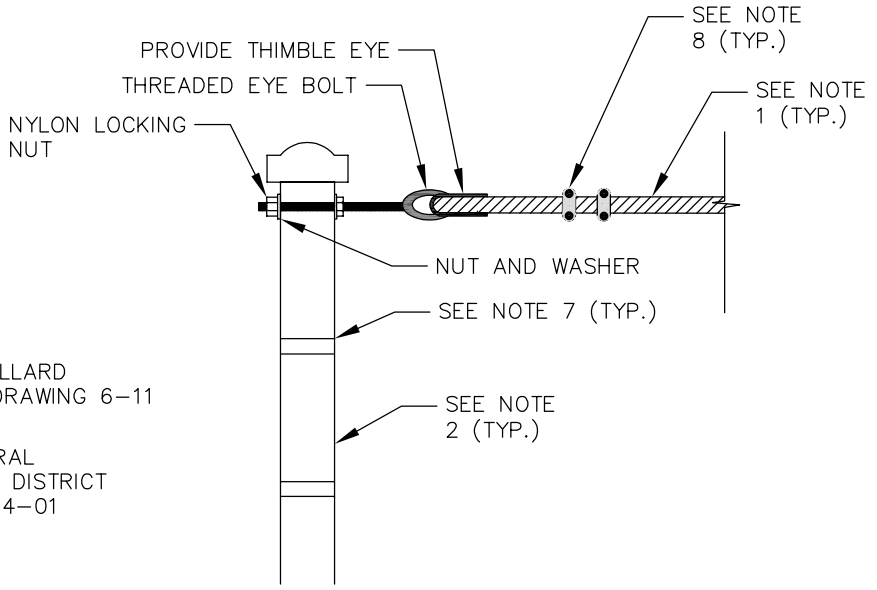
FRESNO IRRIGATION DISTRICT		PIER TRASH RIDER
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-07 SHEET 1 OF 1



FENCE PROFILE



REMOVABLE BOLLARD

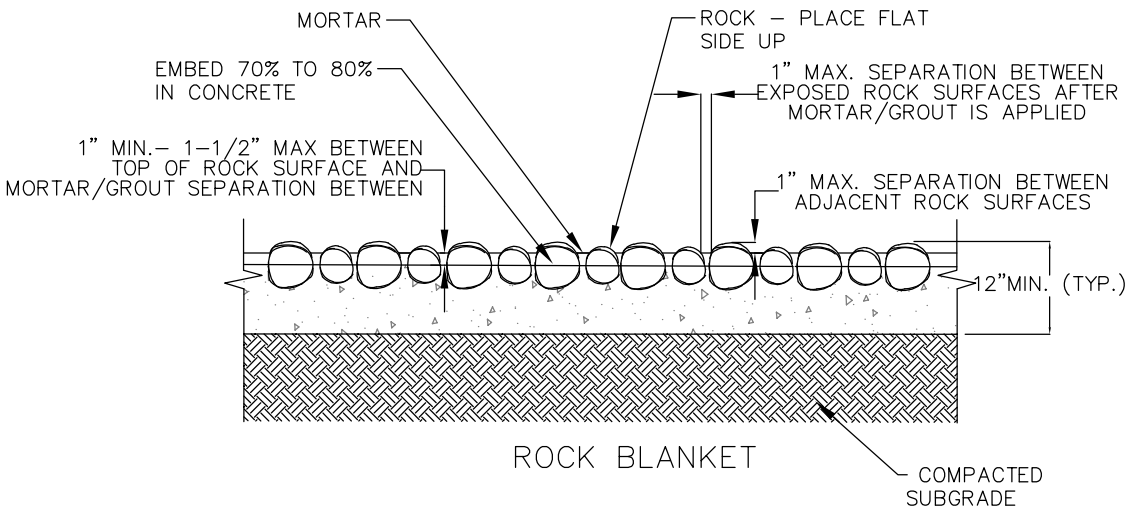


CABLE FASTENER DETAIL

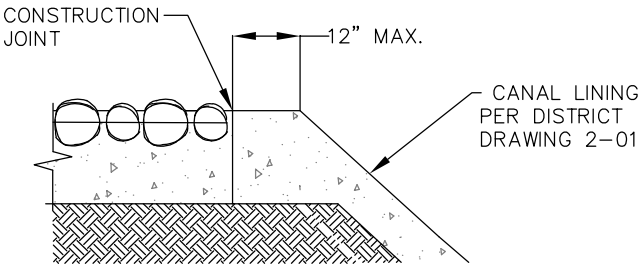
NOTES:

1. 1/2" DIA. CABLE WITH 3/4" DIA. HOLES FOR CABLE. PROVIDE ADEQUATE TENSION IN THE CABLE TO MINIMIZE SAG.
2. INTERMEDIATE POSTS SHALL BE 2 3/8" O.D. AND END POSTS SHALL BE 4" O.D. PER DISTRICT DRAWING 6-11.
3. ALL DISTURBED SOILS TO HAVE MINIMUM 93% RELATIVE COMPACTION PER ASTM D-1557 IN ALL AREAS.
4. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATION SECTION 4-01 FOR ADDITIONAL INFORMATION.
5. NON-STRUCTURAL CONCRETE SHALL BE 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED .50 BY WEIGHT, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
6. ALL POSTS SHALL BE PROVIDED A CAP ON TOP.
7. INTERMEDIATE POSTS TO HAVE CABLE RUNNING THROUGH HOLES, BUT NOT SECURED TO POSTS.
8. CABLE CLAMPS TO BE INSTALLED ON CANAL SIDE OF FENCING AND CABLE ENDS TO BE CRIMPED SO ALL SHARP EDGES ARE SMOOTHED TO PREVENT INJURY.
9. PROVIDE LOCKING MECHANISM AT EVERY END/PULL POST PER DISTRICT DRAWING 6-11.
10. PROVIDE A PULL/END POST EVERY 200 FEET AND AT ALL ANGLE POINTS.

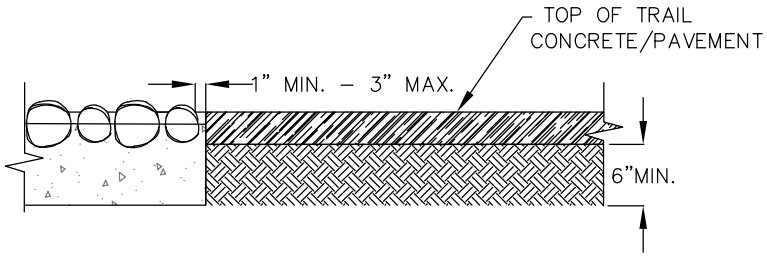
FRESNO IRRIGATION DISTRICT	TRAIL FENCE	
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2-08 SHEET 1 OF 1



ROCK BLANKET

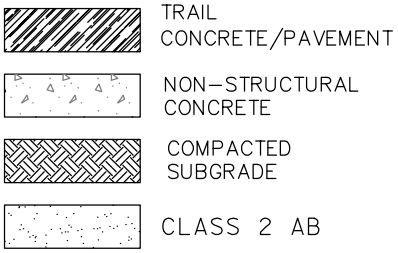


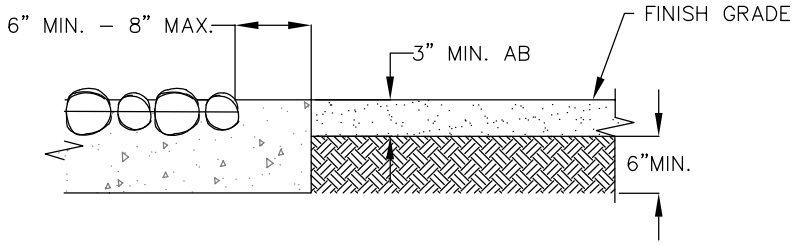
ROCK BLANKET AT CANAL HINGE



ROCK BLANKET AT TRAIL CONCRETE/PAVEMENT

LEGEND:



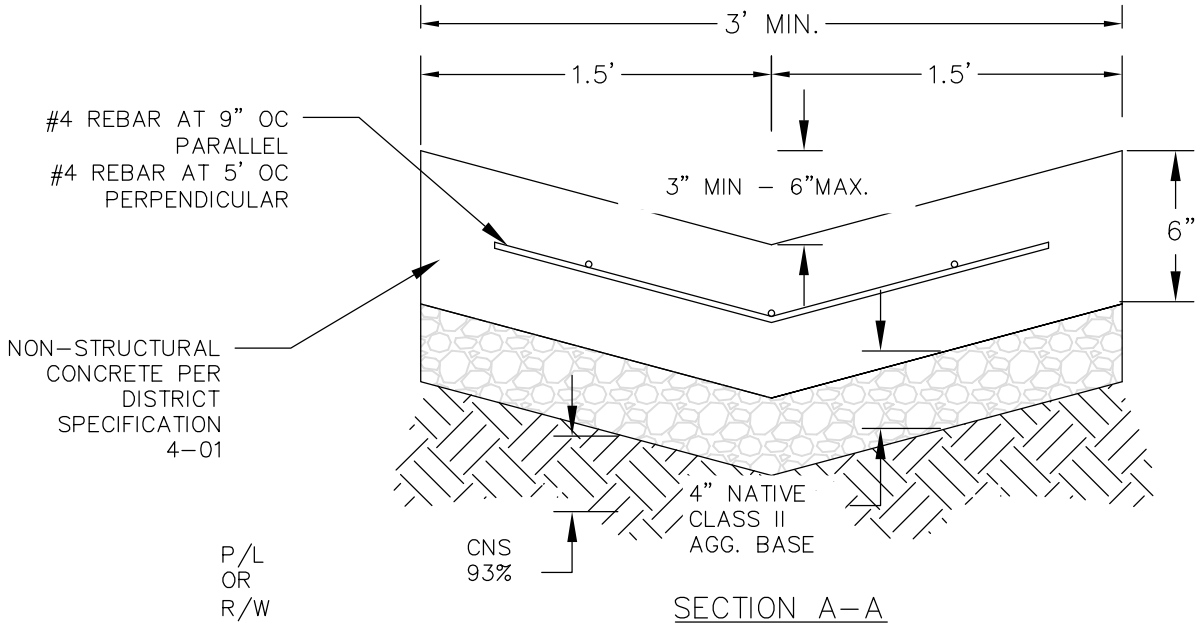


ROCK BLANKET AT FINISHED GRADE

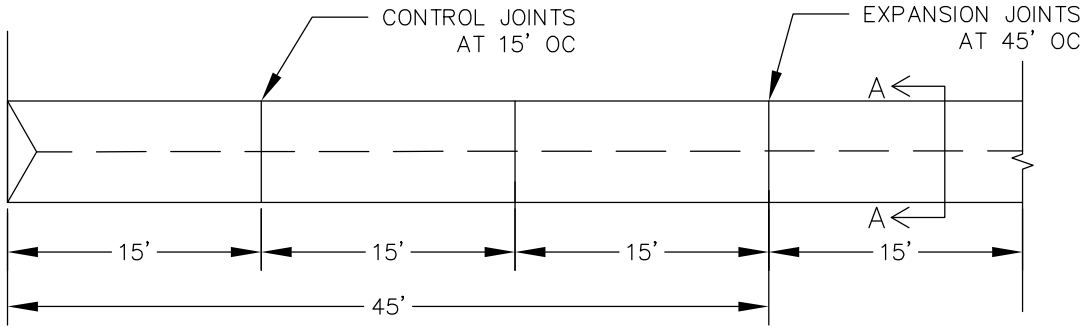
ROCK BLANKET NOTES:

1. ROCK BLANKET SHALL BE INSTALLED PER DISTRICT STANDARD SPECIFICATION 8–07.
2. ALL DISTURBED SOILS TO HAVE MINIMUM 93% RELATIVE COMPACTION PER ASTM D–1557 IN ALL AREAS.
3. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE FID SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.
4. NON–STRUCTURAL CONCRETE SHALL BE 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 3,500 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED .50 BY WEIGHT, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

FRESNO IRRIGATION DISTRICT		ROCK BLANKET
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2–09 SHEET 1 OF 1

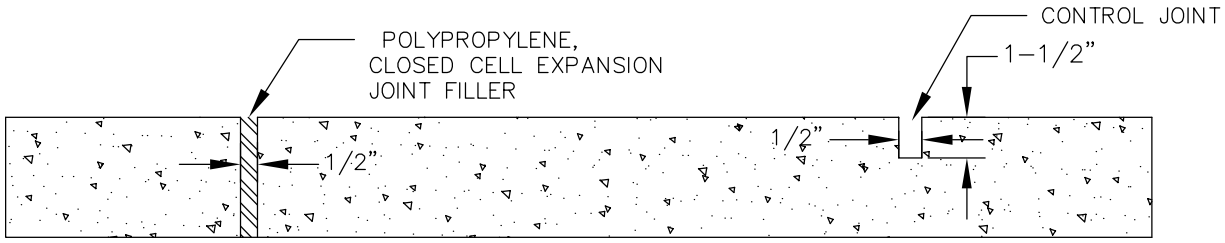


SECTION A–A



EXPANSION JOINT AND CONTROL JOINTS

PLAN VIEW

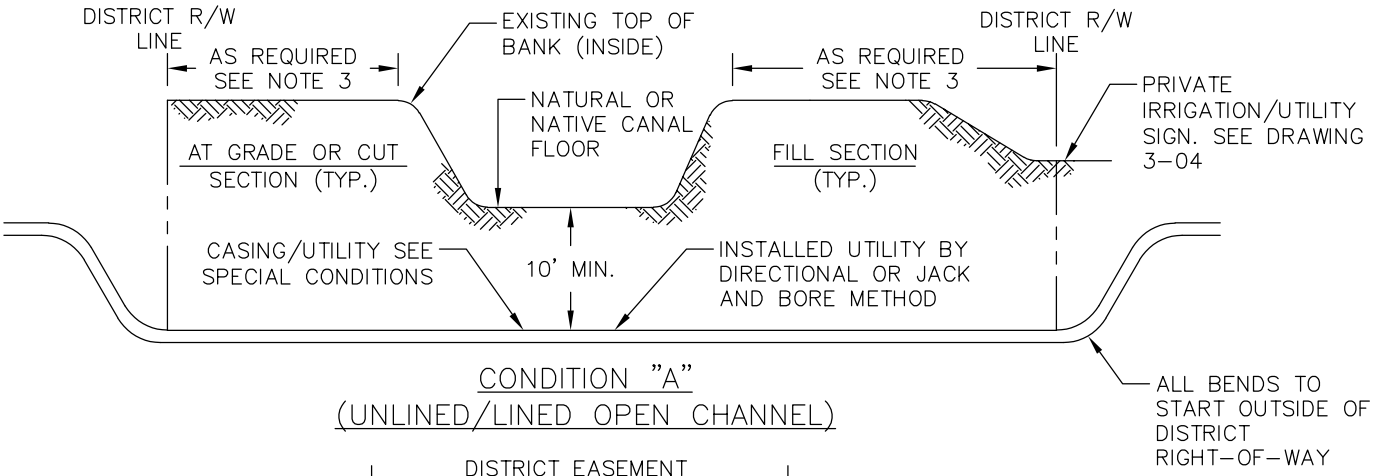


PROFILE VIEW

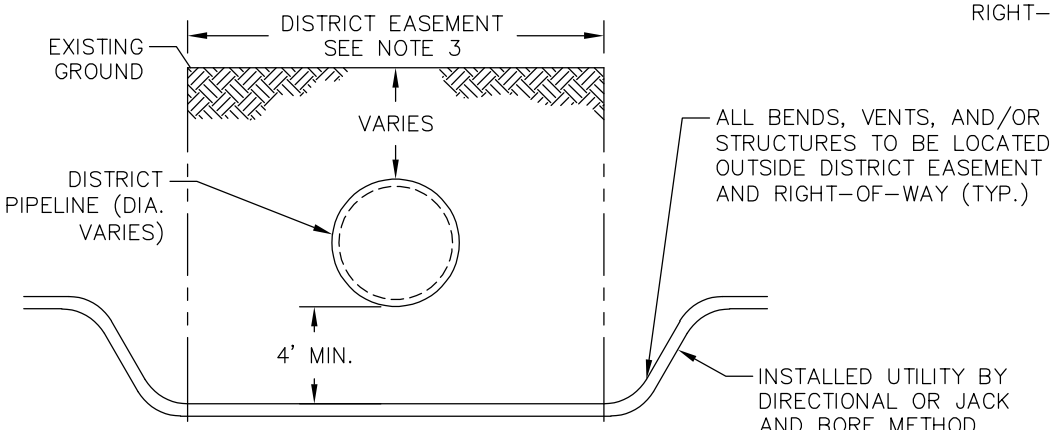
NOTES:

1. EXPANSION JOINTS REQUIRED EVERY FORTY–FIVE LINEAR FEET (45') AND SHALL HAVE LIGHTWEIGHT, FLEXIBLE POLYPROPYLENE, CLOSED CELL EXPANSION JOINT FILLER. THE FILLER TYPE TO BE REZI WELD X–FOAM OR APPROVED EQUIVALENT.
2. CONTROL JOINTS REQUIRED EVERY FIFTEEN LINEAR FEET (15').
3. VALLEY GUTTER MUST FLOW WATER AWAY FROM CANAL DRIVE BANK TO CITY/COUNTY STREET OR DRAINAGE SYSTEM.
4. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.
5. NON–STRUCTURAL CONCRETE SHALL BE 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 3,500 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED .50 BY WEIGHT, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

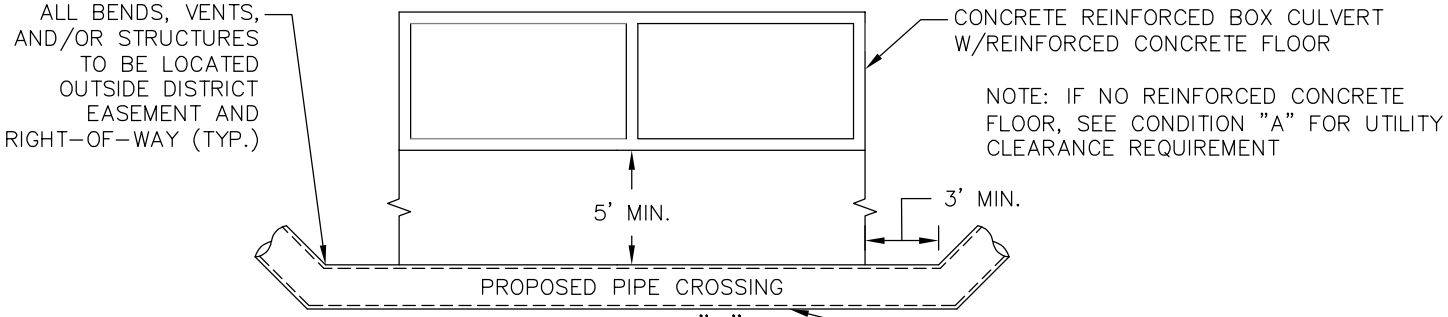
FRESNO IRRIGATION DISTRICT		CONCRETE VALLEY GUTTER
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 2–10 SHEET 1 OF 1



CONDITION "A"
(UNLINED/LINED OPEN CHANNEL)



CONDITION "B"
(UNDERGROUND PIPELINE/PIPE CULVERT)



CONDITION "C"
(BOX CULVERT)

NOTES:

1. ALL BORING OPERATIONS ARE NOT ALLOWED DURING DISTRICT'S IRRIGATION SEASON (TYPICALLY MARCH 1 THROUGH AUGUST 31).
2. DISTRICT INSPECTOR SHALL BE ON-SITE DURING THE BORE. UTILITY CLEARANCE MUST BE VERIFIED BY DISTRICT INSPECTOR.
3. REFER TO DRAWING 1-01 FOR RIGHT-OF-WAY REQUIREMENTS AND 0-08 FOR PIPELINE EASEMENT REQUIREMENTS.
4. FOR SITE SPECIFIC REQUIREMENTS, SEE SPECIAL CONDITIONS ISSUED WITH PERMIT.
5. ALL BORE PITS MUST BE SITUATED OUTSIDE OF DISTRICT'S RIGHT-OF-WAY.
6. WET UTILITY CROSSINGS MAY REQUIRE STEEL CASING AS DETERMINED BY DISTRICT ENGINEER.
7. ANNULAR SPACE AND VOIDS RESULTING FROM BORING SHALL BE SLURRY FILLED.

FRESNO IRRIGATION DISTRICT		PIPE CROSSING – BORING CLEARANCE
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 3-01

FRESNO IRRIGATION DISTRICT
SPECIAL CONDITIONS
FOR
JACK AND BORE / DIRECTIONAL BORE UTILITY INSTALLATIONS

THE CONTRACTOR IS SUBJECT TO THE CONDITIONS STATED BELOW:

1. FRESNO IRRIGATION DISTRICT'S (FID OR DISTRICT) ENGINEERING DEPARTMENT, (559) 233-7161, SHALL BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION. NO WORK SHALL BEGIN WITHOUT A 'PERMIT TO WORK WITHIN EASEMENT AND RIGHT-OF-WAY' ISSUED BY DISTRICT. IF ADDITIONAL INSPECTION HOURS ARE NECESSARY, THE COST INCURRED WILL BE WITHHELD FROM THE DEPOSIT OR INVOICED TO THE PERMITTEE. ALL WORK SHALL BE COMPLETED BY THE DATE SPECIFIED ON THE DISTRICT PERMIT, AND THE AREA RESTORED TO ITS ORIGINAL CONDITION. ANY WORK REQUIRED AFTER THE COMPLETION DATE, SHALL BE APPROVED BY DISTRICT'S ENGINEER AND ASSESSED A LATE COMPLETION FEE AS SPECIFIED ON THE PERMIT (SEE PERMIT FOR ADDITIONAL INFORMATION). BORE LOGS SHOWING DEPTH OF BORE SHALL BE SUBMITTED TO DISTRICT PRIOR TO THE PERMIT BEING CLOSED.

2. ALL UTILITY CROSSINGS SHALL BE INSTALLED UNDER DISTRICT'S PIPELINE/PIPE CULVERT/CANAL/BOX CULVERT AND MINIMUM CLEARANCE SHALL BE MAINTAINED FOR ENTIRE LENGTH OF RIGHT-OF-WAY.

3. AT LOCATIONS WHERE DISTRICT APPROVES UTILITY CROSSINGS OVER DISTRICT'S PIPELINE, THE UTILITY SHALL BE BACKFILLED WITH A RED CONCRETE SLURRY MIXTURE. THE SLURRY BACKFILL SHALL CONSIST OF A FLUID, WORKABLE MIXTURE OF AGGREGATE, CEMENT AND WATER. AGGREGATE MATERIAL SHALL BE A DIAMETER OF 1/4-INCH (.25") OR LESS WITH A 2-SACK CEMENT MIX AND 4 POUNDS OF RED DYE PER CUBIC YARD AND PER DISTRICT STANDARD SPECIFICATION 4-01.

4. CONSTRUCTION SHALL NOT INTERFERE WITH THE MAINTENANCE AND/OR OPERATION OF DISTRICT'S FACILITY. BORE PITS SHALL BE SITUATED SUCH THAT THEY ARE OUTSIDE DISTRICT'S RIGHT-OF-WAY LIMITS. LOCATION OF BORE PITS ARE TO BE CONFIRMED WITH DISTRICT'S INSPECTOR.

5. IF THE DISTRICT CANAL IS A MAJOR CONVEYOR OF STORM WATERS, THE ANTICIPATED STORM FLOWS THROUGH THE CANAL MAY REQUIRE CONSTRUCTION TO BE TEMPORARILY SHUT DOWN UNTIL PEAK FLOWS HAVE PASSED. JACK AND BORE AND DIRECTIONAL BORE WILL NOT BE ALLOWED DURING DISTRICT'S IRRIGATION SEASON, WHICH USUALLY RUNS MARCH 1 THROUGH AUGUST 31 BUT MAY EXTEND THROUGH OCTOBER DURING UNUSUALLY WET YEARS.

6. DISTRICT SHALL NOT BE RESPONSIBLE FOR ANY WATER THAT MAY FLOW IN THE IRRIGATION FACILITY OR AREA OF CONSTRUCTION DURING THE TIME OF THE UTILITY INSTALLATION, INCLUDING ANY DAMAGE RESULTING FROM SUCH WATER..

7. CONTRACTOR AND/OR AGENCY SHALL HAVE EQUIPMENT MOBILIZED TO REPAIR DAMAGE IN THE EVENT OF A CANAL BREACH.

8. ALL EXCESS MATERIAL AND/OR DEBRIS SHALL BE REMOVED FROM DISTRICT'S EASEMENT AND RIGHT-OF-WAY UPON COMPLETION OF ALL UTILITY INSTALLATION.

9. ALL WORK WITHIN DISTRICT EASEMENT AND RIGHT-OF-WAY SHALL BE INSPECTED AND APPROVED BY DISTRICT'S FIELD INSPECTOR OR ENGINEER BEFORE BACKFILLING CAN OCCUR.

10. ALL WORK SHALL BE COMPLETED BY THE DATE SPECIFIED ON THE FID CONSTRUCTION PERMIT AND THE AREA RESTORED TO ITS ORIGINAL CONDITION. ANY WORK REQUIRED AFTER THE COMPLETION DATE SHALL BE APPROVED BY DISTRICT'S ENGINEER AND LIQUATED DAMAGES WILL BE ASSESSED, PER DAY.

11. IN SITUATIONS WHERE A CASING IS REQUIRED, VOIDS SHALL BE FILLED WITH SUITABLE MATERIAL THROUGH INJECTION POINTS AT A MINIMUM 3 FEET (3') ON CENTER (I.E. SAND, GROUT, ETC.) AND SEALED IN ORDER TO MINIMIZE FLOW THROUGH CASING/VOID SHOULD THE INTEGRITY BE COMPROMISED AS DETERMINED BY DISTRICT'S INSPECTOR. AT A MINIMUM, CASING ENDS SHALL BE SEALED. CASING/VOID GROUT ENDS SHALL BE TERMINATED AT THE EDGE OF DISTRICT'S RIGHT-OF-WAY UNLESS APPROVED OTHERWISE.

JACK AND BORE SPECIFIC NOTES:

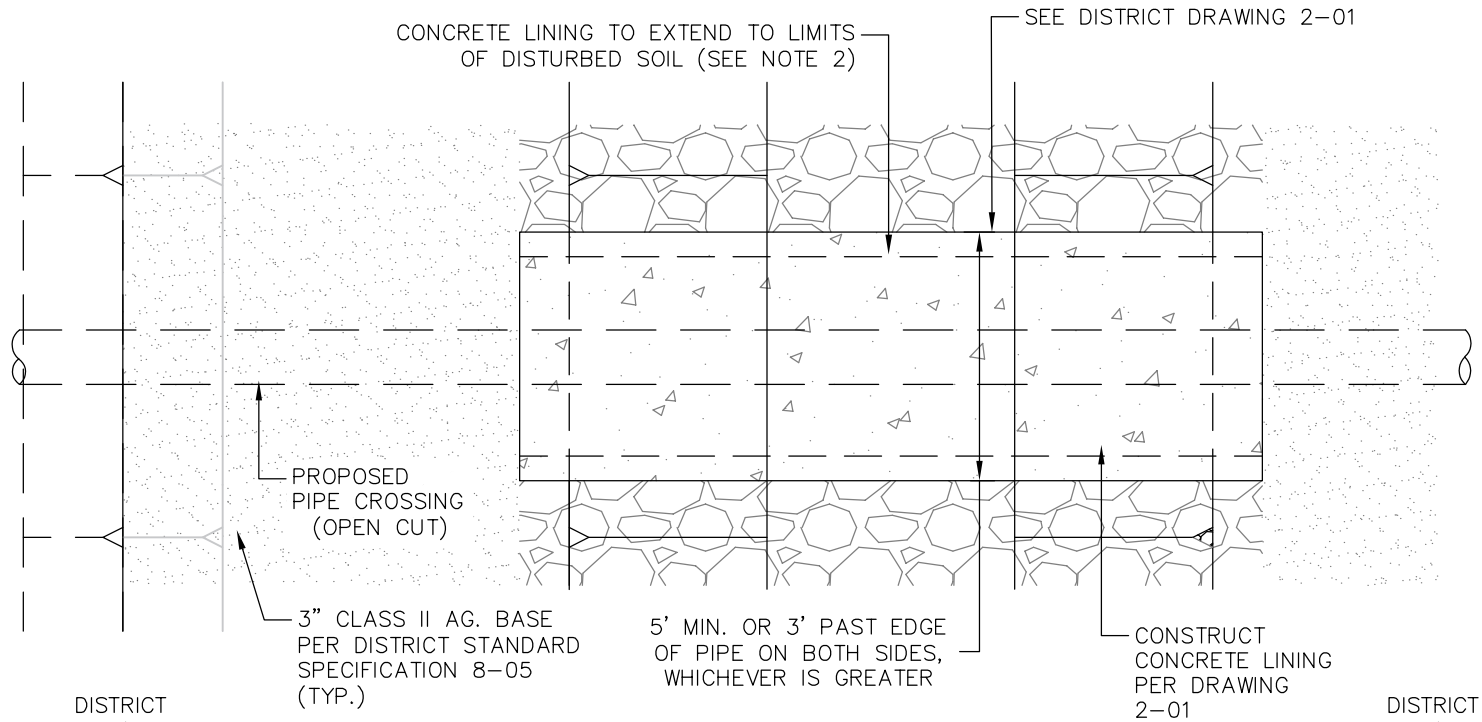
1. TOP OF BORE PITS SHALL BE A MINIMUM OF ONE-FOOT (1') HIGHER THAN EXISTING HIGH WATER MARK OF THE CANAL. IN ADDITION, BORE PITS SHALL BE DESIGNED TO CONTAIN WATER SHOULD THE CANAL BREACH. ALL BORE PIT BERMS SHALL BE COMPACTED TO 93% RELATIVE COMPACTION.

2. BORE PITS SHALL BE BACKFILLED IMMEDIATELY AFTER CONSTRUCTION IS COMPLETED AND ALL DISTURBED SOIL SHALL BE COMPACTED TO A MINIMUM 93% RELATIVE COMPACTION.

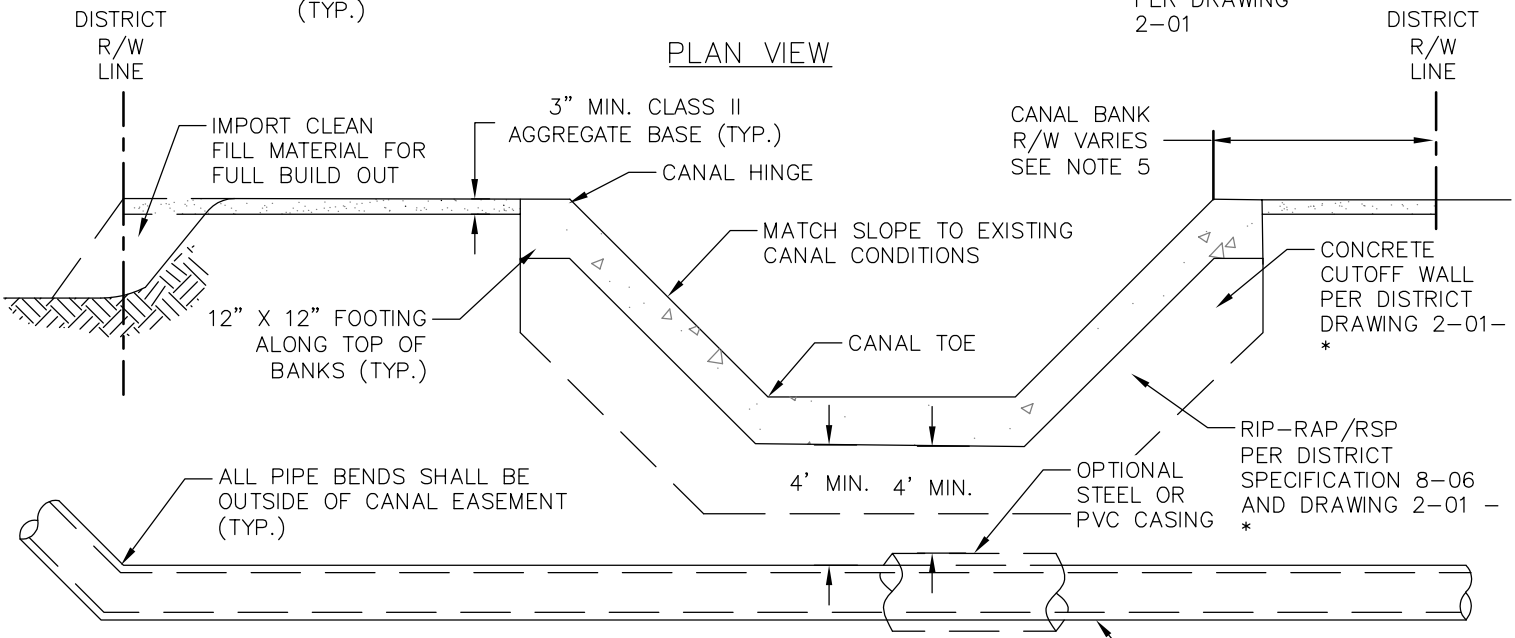
3. COMPACTION TESTS SHALL BE PROVIDED TO DISTRICT UPON REQUEST BY DISTRICT'S ENGINEER.

4. CASING PIPE SHALL BE PROVIDED WITH END SEALS APPROVED BY DISTRICT ENGINEER.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	PIPE CROSSING BORE CLEARANCE NOTES	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 3-01
		DATE: 2025	SHEET 2 OF 2



PLAN VIEW



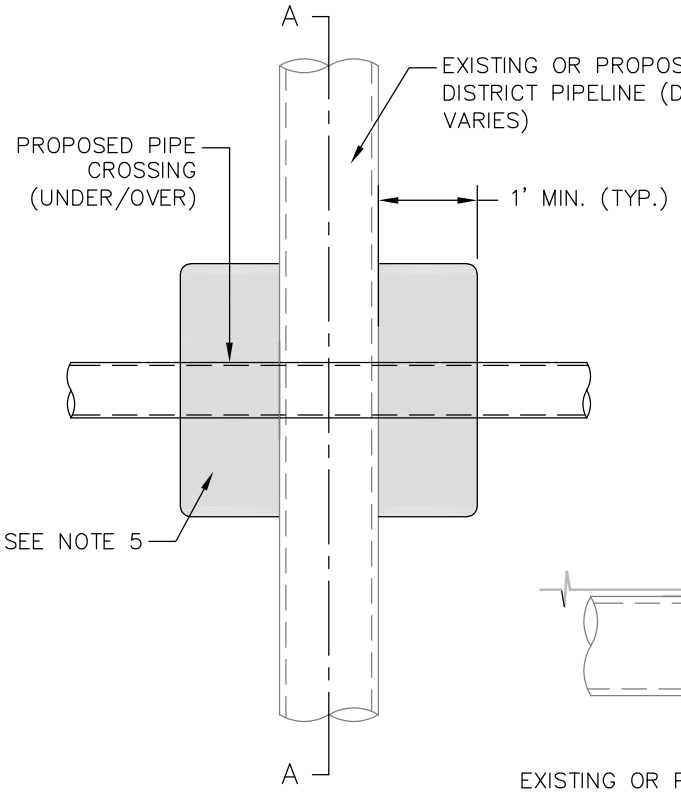
CROSS SECTION

NOTES:

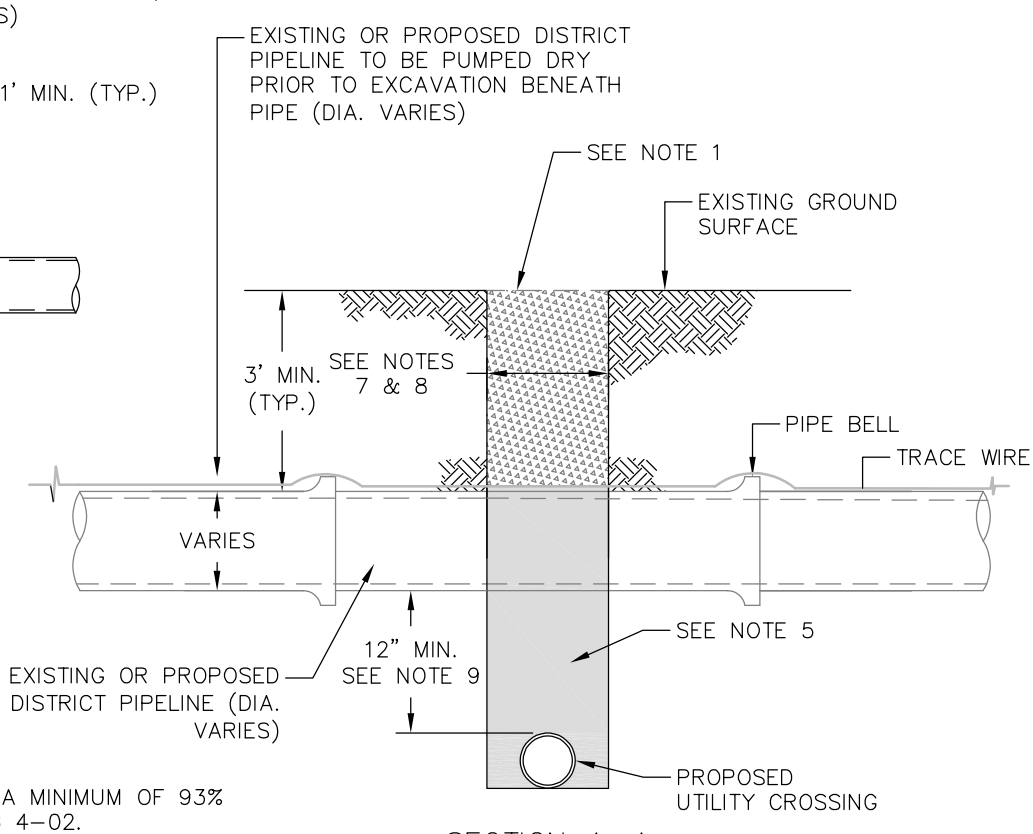
1. ALL DISTURBED SOIL TO HAVE 93% RELATIVE COMPACTION.
2. THE DISTRICT'S INSPECTOR TO DETERMINE LIMITS OF DISTURBED SOIL.
3. NO BENDS, VENTS OR STRUCTURES TO BE LOCATED WITHIN DISTRICT RIGHT-OF-WAY.
4. CONCRETE LINING PER DISTRICT DRAWING 2-01 REQUIRED FOR OPEN CUT INSTALLATIONS.
5. WIDTH OF CANAL BANK RIGHT-OF-WAY SHALL CONFORM TO DISTRICT DRAWING 1-01.
6. THE CONCRETE LINER SHALL NOT BE CONSTRUCTED HIGHER THAN THE FLOOR ELEVATION OF AN EXISTING CULVERT OR CHECK STRUCTURE UPSTREAM OF THE PROPOSED CROSSING AS REQUIRED BY DISTRICT ENGINEER.
7. THREE INCH (3") COMPACTED AGGREGATE BASE PER DISTRICT SPECIFICATION 8-05. AGGREGATE BASE SHALL BE PLACED, COMPACTED, AND EXTEND TO THE LIMITS OF RSP/RIP-RAP.

* CONCRETE CUTOFF WALL AND RIP-RAP/RSP OMITTED FOR CLARITY.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	CANAL CROSSING – OPEN CUT	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 3-02 SHEET 1 OF 1



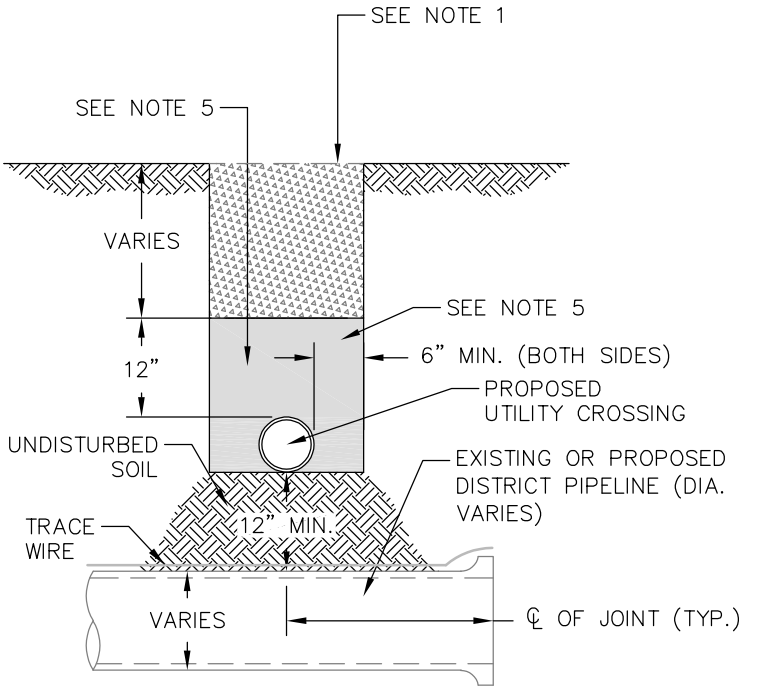
PLAN



SECTION A–A
PIPE CROSSING UNDER FID

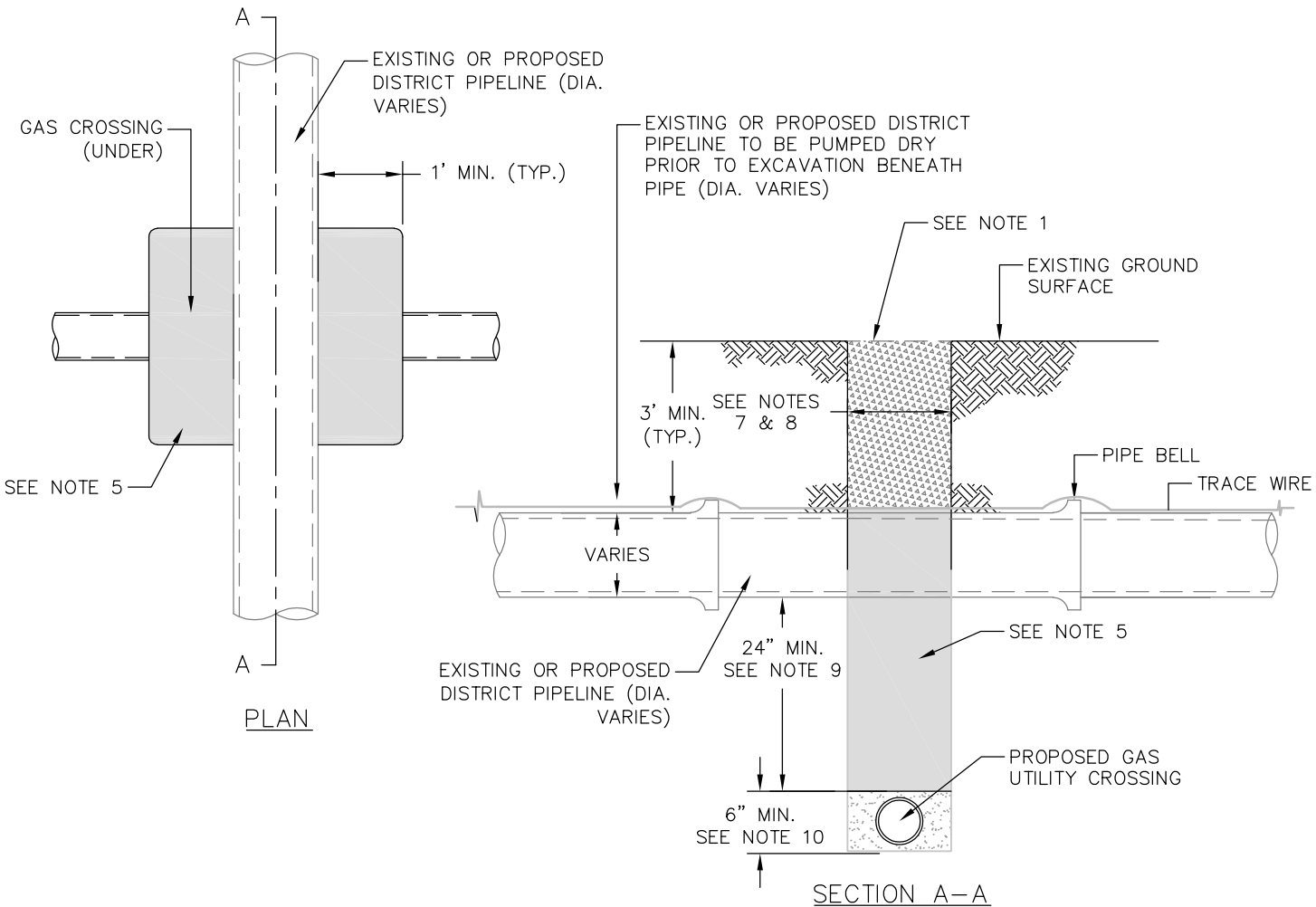
NOTES:

1. ALL COMPACTED BACKFILL TO HAVE A MINIMUM OF 93% RELATIVE COMPACTION. SEE DRAWING 4–02.
2. CONTRACTOR SHALL POT–HOLE AND VERIFY THE HORIZONTAL ALIGNMENT AND VERTICAL DEPTH OF DISTRICT'S PIPELINE PRIOR TO COMMENCEMENT OF WORK.
3. NO VIBRATORY COMPACTION WITHIN 10 FEET OF DISTRICT'S FACILITY UNLESS APPROVED OTHERWISE.
4. NO BENDS, VENTS OR STRUCTURES TO BE LOCATED WITHIN DISTRICT'S PIPELINE EASEMENT AND/OR RIGHT–OF–WAY.
5. ALL CROSSINGS REQUIRE 2–SACK RED CONCRETE SLURRY WITH 4 POUNDS OF RED DYE PER CUBIC YARD, PER DISTRICT STANDARD SPECIFICATION 4–01.
6. AT LOCATIONS WHERE A CASING IS REQUIRED BY UTILITY OWNER, CASING PIPE NEEDS TO MAINTAIN CLEARANCES NOTED.
7. TRENCH WIDTH SHALL NOT EXPOSE PIPE JOINTS WITHOUT BEING SUPPORTED. CONTRACTOR SHALL SUBMIT WORK PLAN CERTIFIED BY A LICENSED ENGINEER TO DISTRICT PRIOR TO PERMIT ISSUANCE IF TRENCH WIDTH IS GREATER THAN 48 INCHES WIDE OR 48 INCHES IN LENGTH. SEE DISTRICT DRAWING 3–05 FOR ADDITIONAL INFORMATION.
8. ANY JOINT ON DISTRICT'S PIPELINE THAT IS EXPOSED ALL AROUND SHALL BE SUPPORTED.
9. ALL UTILITY CROSSINGS SHALL BE PLACED A MINIMUM 12 INCHES ABOVE OR BELOW EXISTING, PROPOSED OR MASTER PLANNED DISTRICT PIPE EXTENTS AND DEPTH, WHICHEVER IS GREATER.



SECTION A–A
PIPE CROSSING OVER FID

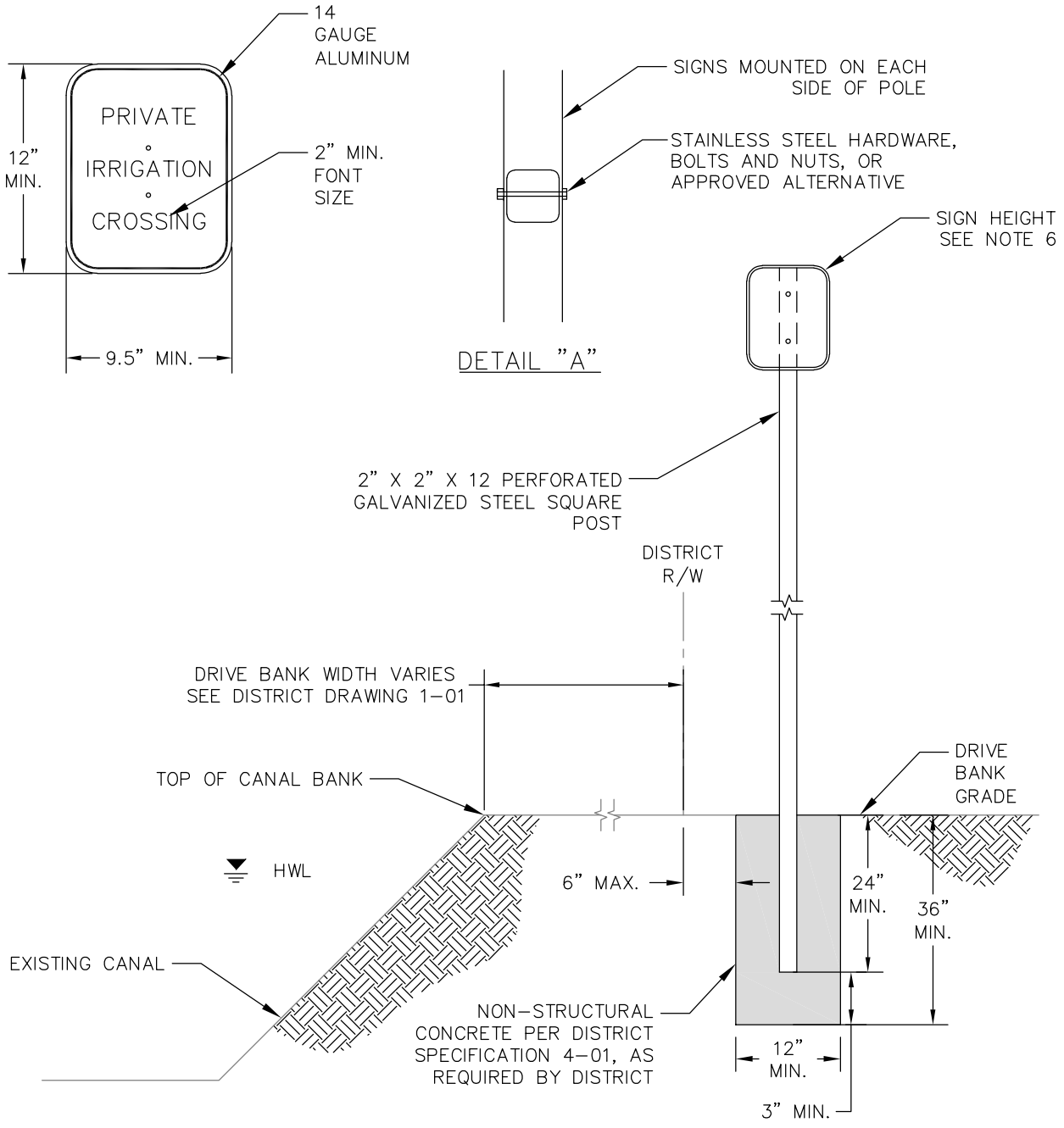
FRESNO IRRIGATION DISTRICT		CONDUIT/PIPELINE CROSSING OPEN CUT
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 3–03
		SHEET 1 OF 2



NOTES:

1. ALL COMPACTED BACKFILL TO HAVE A MINIMUM OF 93% RELATIVE COMPACTION. SEE DRAWING 4–02.
2. CONTRACTOR SHALL POT–HOLE AND VERIFY THE HORIZONTAL ALIGNMENT AND VERTICAL DEPTH OF DISTRICT'S PIPELINE PRIOR TO COMMENCEMENT OF WORK.
3. NO VIBRATORY COMPACTION WITHIN 10 FEET OF DISTRICT FACILITY UNLESS APPROVED OTHERWISE.
4. NO BENDS, VENTS OR STRUCTURES TO BE LOCATED WITHIN DISTRICT PIPELINE EASEMENT AND/OR RIGHT–OF–WAY.
5. ALL CROSSINGS REQUIRE 2–SACK RED CONCRETE SLURRY WITH 4 POUNDS OF RED DYE PER CUBIC YARD, PER DISTRICT STANDARD SPECIFICATION 4–01.
6. AT LOCATIONS WHERE A CASING IS REQUIRED BY UTILITY OWNER, CASING PIPE NEEDS TO MAINTAIN CLEARANCES NOTED.
7. TRENCH WIDTH SHALL NOT EXPOSE PIPE JOINTS WITHOUT BEING SUPPORTED. CONTRACTOR SHALL SUBMIT WORK PLAN CERTIFIED BY A LICENSED ENGINEER TO DISTRICT PRIOR TO PERMIT ISSUANCE IF TRENCH WIDTH IS GREATER THAN 48 INCHES WIDE OR 48 INCHES IN LENGTH, SEE DISTRICT DRAWING 3–05 FOR ADDITIONAL INFORMATION.
8. ANY JOINT ON DISTRICT'S PIPELINE THAT IS EXPOSED ALL AROUND SHALL BE SUPPORTED.
9. ALL GAS UTILITY CROSSINGS SHALL BE PLACED A MINIMUM 24 INCHES BELOW EXISTING, PROPOSED OR MASTER PLANNED DISTRICT PIPE EXTENTS AND DEPTH, WHICHEVER IS GREATER.
10. ALL GAS UTILITY CROSSINGS MUST BE PLACED WITHIN 6 INCHES OF SAND BED PRIOR TO POURING CONCRETE SLURRY.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	GAS CONDUIT/PIPELINE CROSSING – OPEN CUT	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 3–03
		DATE: 2025	SHEET 2 OF 2

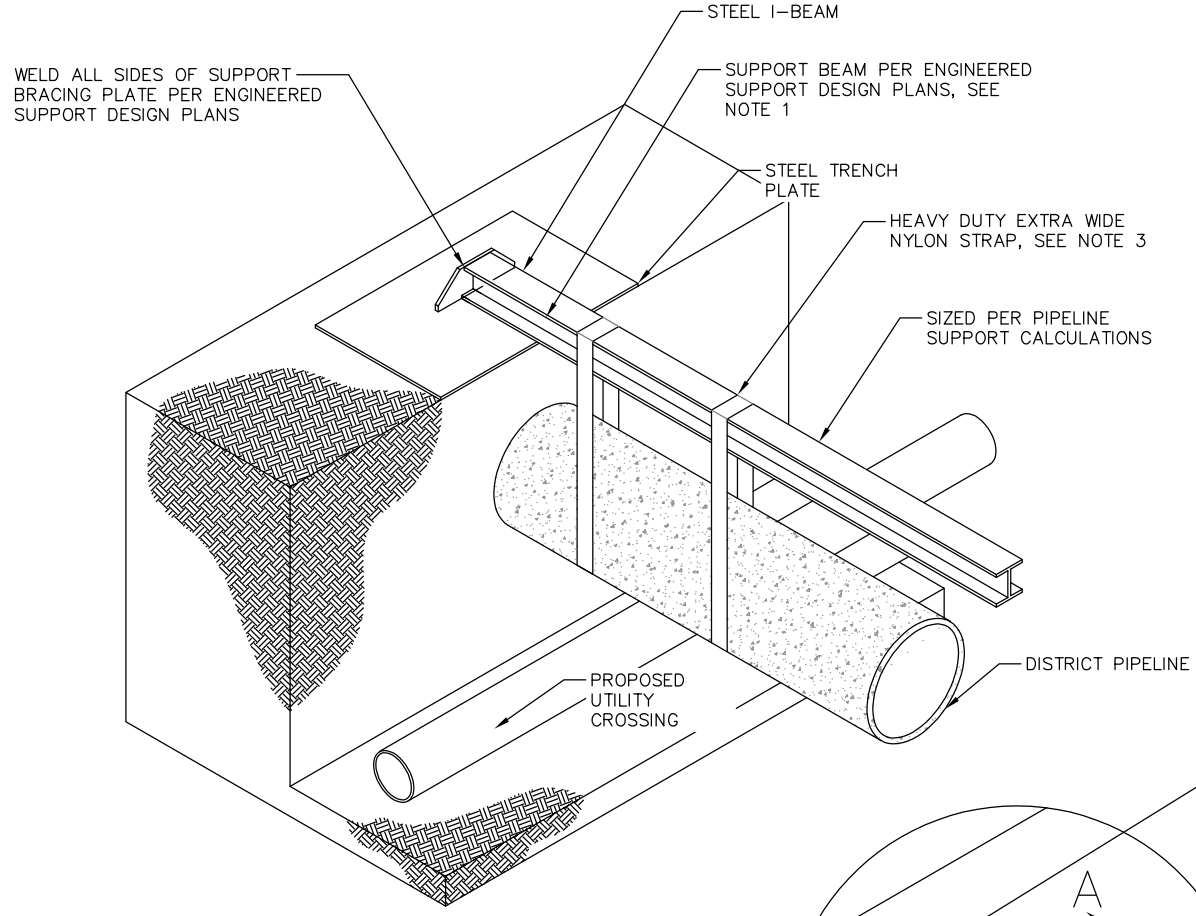


PROFILE VIEW

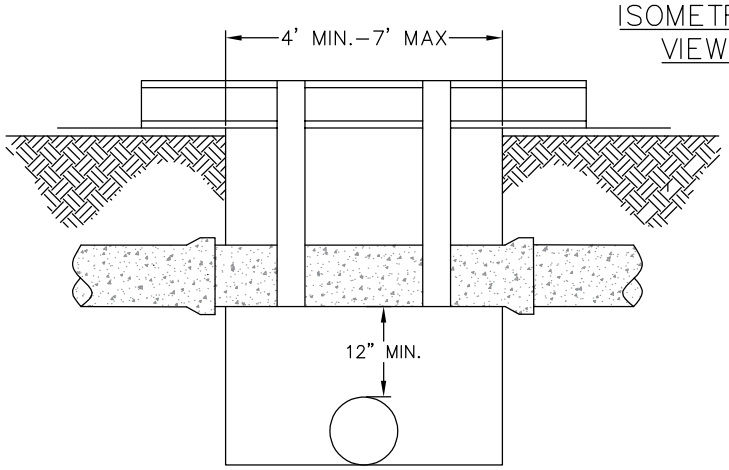
NOTES:

1. OWNER RESPONSIBLE FOR THE FURNISHMENT, INSTALLATION, AND MAINTENANCE OF PRIVATE UTILITY CROSSING SIGNS.
2. SIGNS SHALL BE PROVIDED ON BOTH CANAL BANKS, MOUNTED ON EACH SIDE OF POLE, AND BE VISIBLE FROM EACH DIRECTION.
3. SIGNS SHALL BE PLACED OUTSIDE CANAL RIGHT-OF-WAY, OUTSIDE OF VEHICULAR TRAFFIC.
4. SEE DISTRICT DRAWING 1-01 FOR DISTRICT RIGHT-OF-WAY REQUIREMENTS.
5. REQUIRED ON ALL HORIZONTAL DIRECTIONAL DRILLING (HDD) BORE INSTALLATIONS.
6. SIX FEET (6') ± SIX INCHES (6") ABOVE TOP OF CANAL DRIVE BANK.

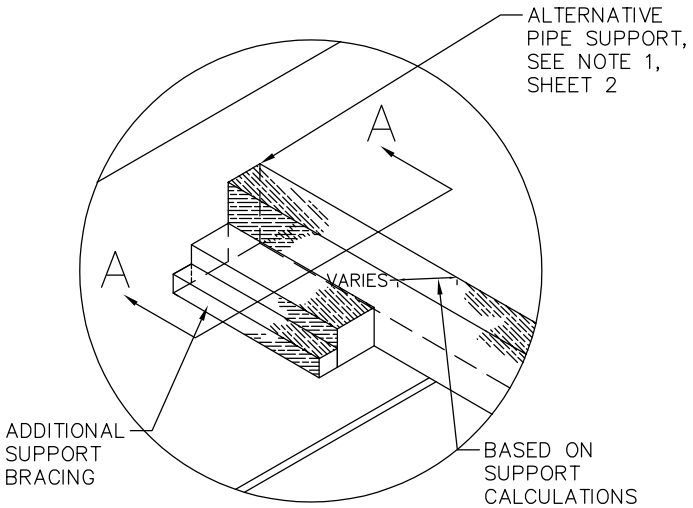
FRESNO IRRIGATION DISTRICT		PRIVATE IRRIGATION/UTILITY CROSSING SIGN
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 3-04 SHEET 1 OF 1

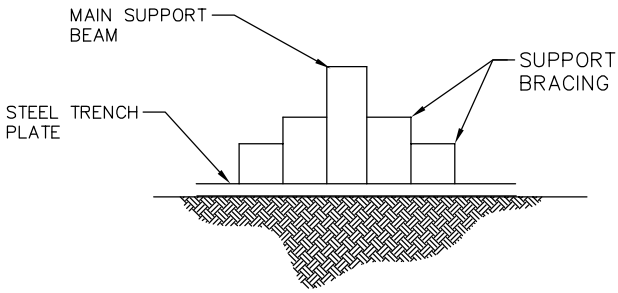


ISOMETRIC VIEW



PROFILE VIEW





SECTION A – A

PIPELINE SUPPORT DETAIL

FRESNO IRRIGATION DISTRICT		PIPELINE SUPPORT
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 3-05 SHEET 1 OF 2

NOTES:

1. PIPELINE SUPPORT CALCULATIONS STAMPED AND SIGNED BY A CIVIL OR STRUCTURAL ENGINEER ARE REQUIRED FOR ANY OPEN CUT CROSSING INSTALLATION WHERE DISTRICT FACILITIES WILL BE EXPOSED.

2. ADDITIONAL SUPPORT BRACING SHALL BE ANCHORED TO MAIN SUPPORT BEAM TO LIMIT ROLLING OF SUPPORT BEAM. SEE SUPPORT DESIGN PLANS FOR ADDITIONAL DETAILS.

3. A MINIMUM OF TWO (2) SEPARATE HEAVY DUTY EXTRA WIDE NYLON STRAPS A MIN. 5000 PSI WILL BE REQUIRED TO BE INSTALLED OR AS REQUIRED BY CALCULATIONS, WHICHEVER IS GREATER. CHAINED RESTRAINT, FRAYED, OR DAMAGED STRAPS ARE NOT ALLOWED.

4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PUMP ALL WATER OUT OF PIPELINE SECTION BEING SUPPORTED, AND POTHOLE TO VERIFY A BELL OR JOINT WILL NOT BE EXPOSED DURING CONSTRUCTION ACTIVITIES.

5. CONFINED SPACE, SHORING OR SLOPING SHALL BE IN COMPLIANCE WITH CALIFORNIA LABOR CODE AND CAL/OSHA REQUIREMENTS.

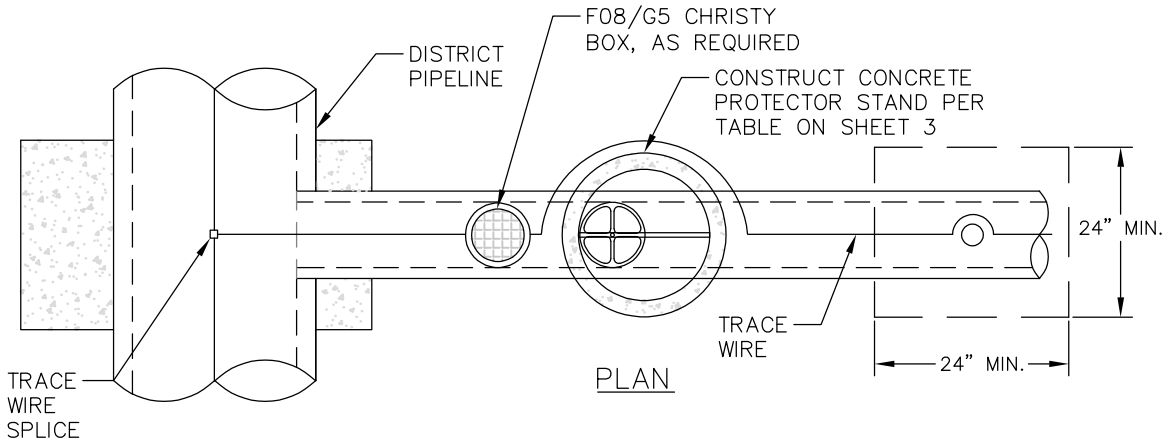
6. COMPACTION OF ALL MATERIALS SHALL COMPLY WITH ASTM D–1557. COMPACTION TESTING SHALL BE PERFORMED AS DIRECTED BY THE DISTRICT ENGINEER OR DISTRICT INSPECTOR.

7. PRIOR TO REMOVAL OF SUPPORT SYSTEM, COMPACTION UNDER DISTRICT PIPE SHALL HAVE MET 95% RELATIVE COMPACTION AS SPECIFIED IN DISTRICT SPECIFICATION 8–03 AND DRAWING 4–02. THE RESULTS SHALL BE PROVIDED TO DISTRICT FOR REVIEW AND APPROVAL.

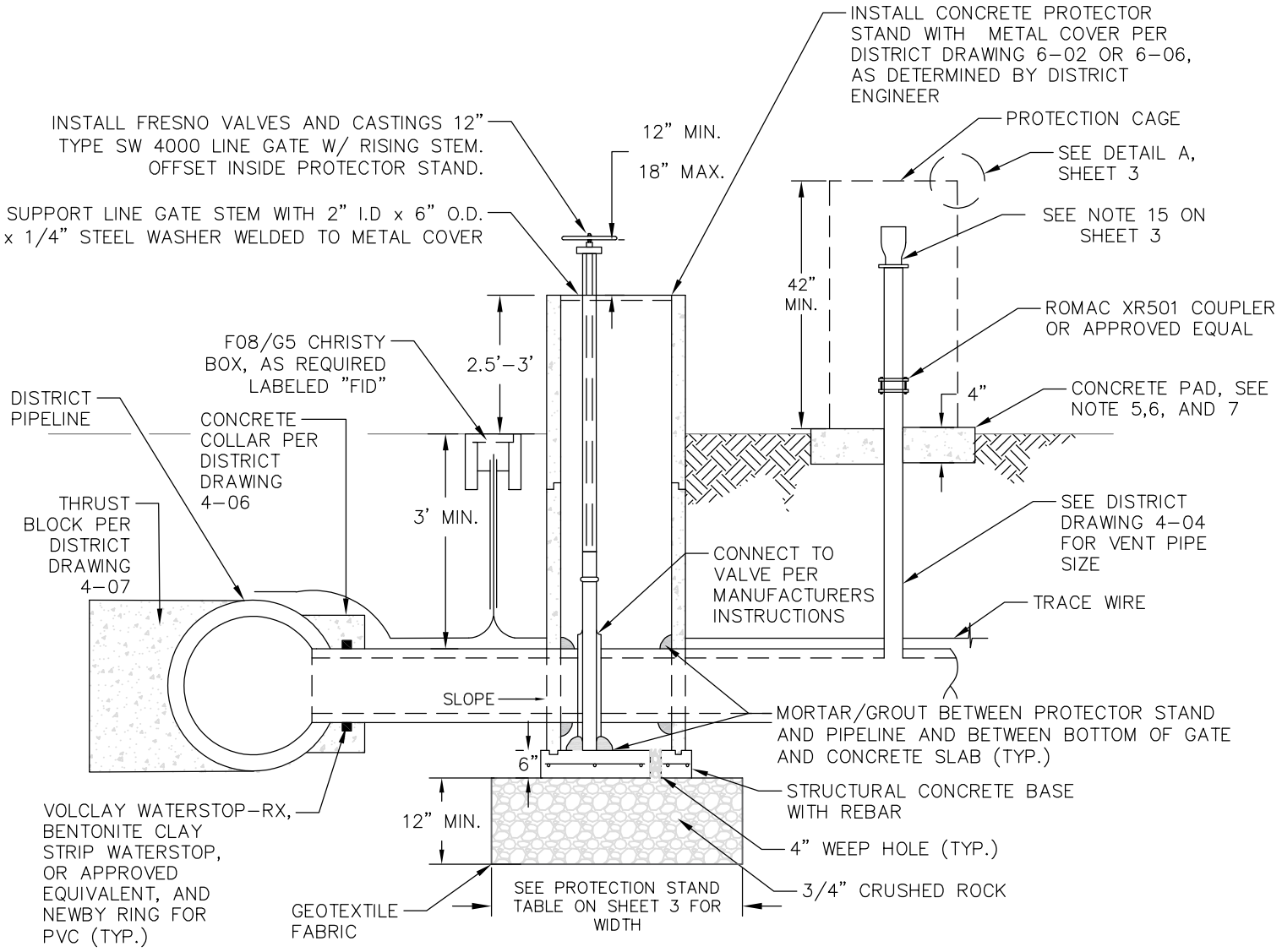
8. ALL CROSSINGS REQUIRE 2–SACK RED CONCRETE SLURRY WITH 4 POUNDS OF RED DYE PER CUBIC YARD, SEE DISTRICT DRAWING 3–03 FOR ADDITIONAL DETAILS.

9. EXCAVATION SITE SHALL BE PROPERLY SECURED FROM PUBLIC ACCESS.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	PIPELINE SUPPORT NOTES	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 3–05 SHEET 2 OF 2

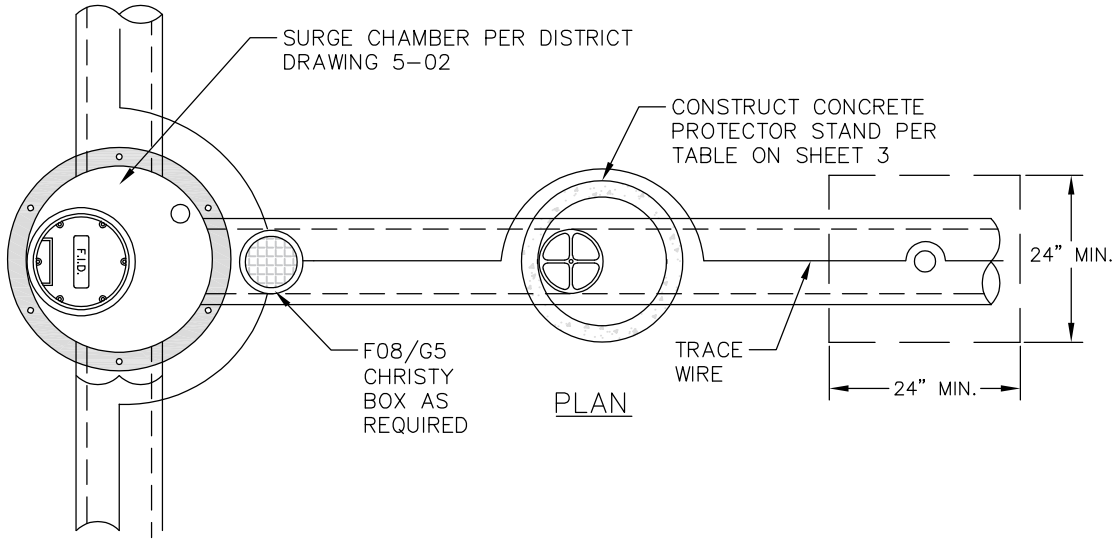


PLAN



PROFILE

FRESNO IRRIGATION DISTRICT		TURNOUT – LINE GATE W/ PROTECTOR STAND
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4–01 SHEET 1 OF 3



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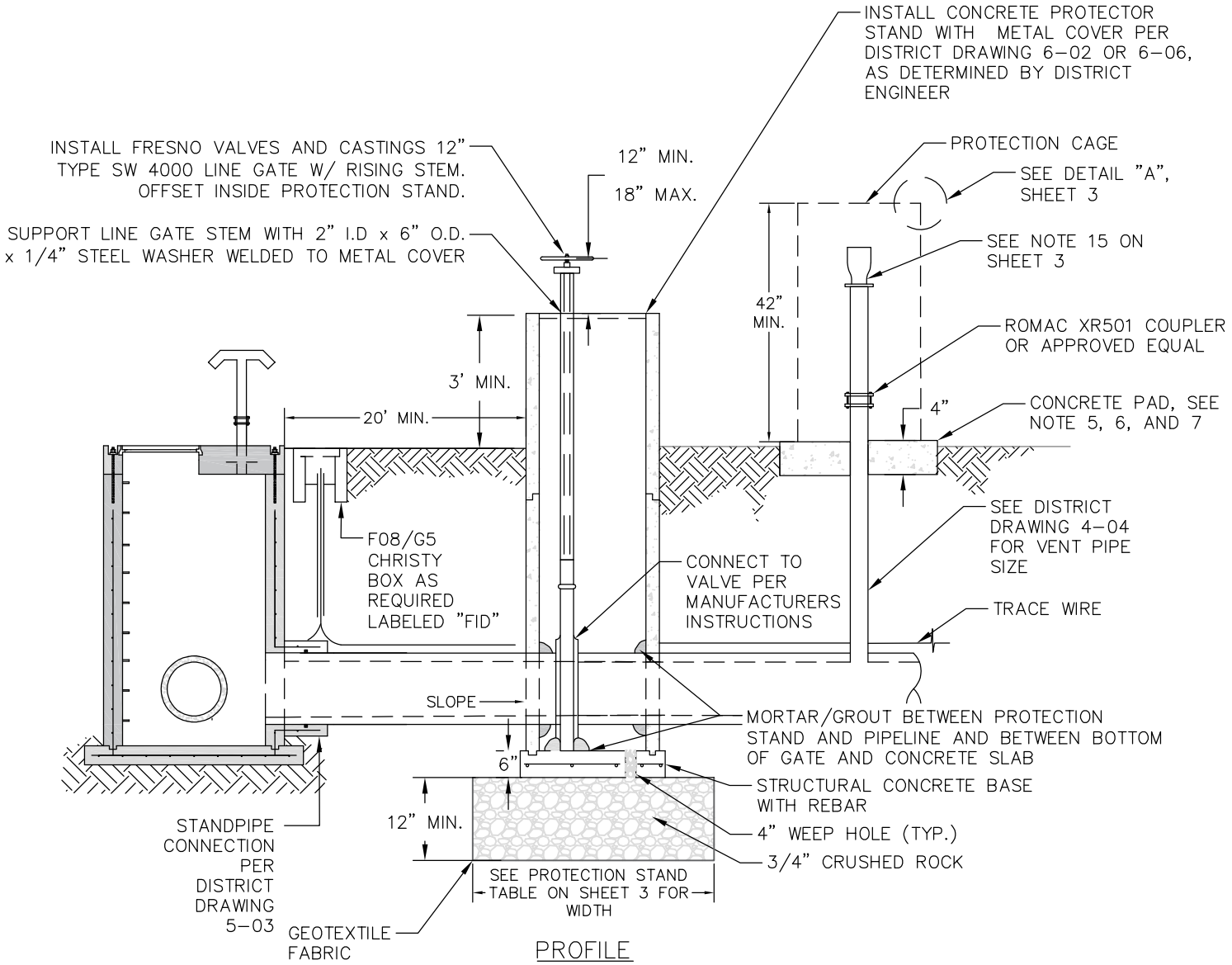
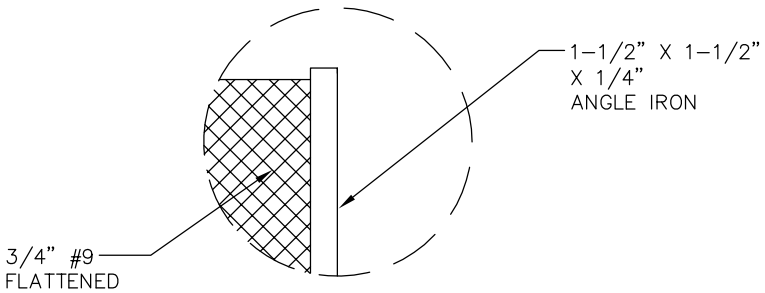


PROFILE

FRESNO IRRIGATION DISTRICT		SURGE CHAMBER – TURNOUT LINE GATE W/ PROTECTOR STAND
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4–01 SHEET 2 OF 3

NOTES:

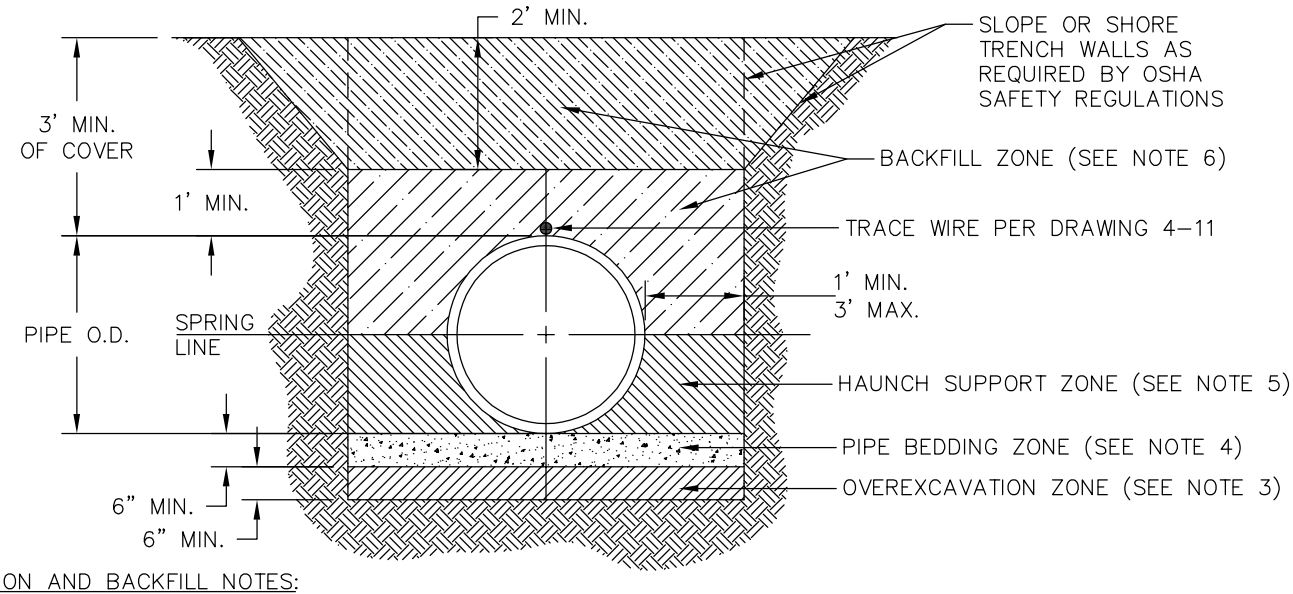
1. ENGINEERED PLANS SHALL BE PROVIDED TO DISTRIC FOR REVIEW AND APPROVAL PRIOR TO DISTRICT ISSUED PERMIT AND THE START OF CONSTRUCTION.
2. DRAWING SHOWS CONNECTION TO DISTRICT PIPELINE. IF DISTRICT'S PIPELINE IS PVC, USE PVC SADDLE OR APPROVED EQUIVALENT WITH STAINLESS STEEL HARDWARE, INSTEAD OF MORTAR/COLLAR CONNECTION. A THRUST BLOCK WILL BE REQUIRED.
3. ALL CONNECTIONS SHALL BE WATERTIGHT.
4. PRESSURE TESTING IS REQUIRED FOR ACCEPTANCE PER DISTRICT STANDARD SPECIFICATION 2-07.
5. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.
6. STRUCTURAL CONCRETE SHALL BE A MINIMUM OF 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF MIN. 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 (BY WEIGHT), AIR ENTRAINMENT OF 3% ± 5.5%, AND FOUR INCH (4") ± ONE INCH (1"), SLUMP AT PLACEMENT.
7. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.
8. ALL STEEL EXPOSED TO SOIL SHALL HAVE A MINIMUM OF TWO LAYERS OF PASCO ALL-WEATHER 20 MIL. PIPE PROTECTION TAPE INSTALLED.
9. VENTS SHALL BE INSTALLED AT NO MORE THAN 600 FOOT INTERVALS, IMMEDIATELY UPSTREAM OF PIPELINE GRADE CHANGES, AT HIGH POINTS, IMMEDIATELY DOWNSTREAM OF ANY INLET STRUCTURE, AND IMMEDIATELY UPSTREAM OF ANY BENDS.
10. ALL VENTS SHALL BE WELDED HOT DIPPED GALVANIZED STEEL PIPE WITH EXPANDED METAL COVER.
11. TOP OF VENT SHALL BE A MINIMUM OF 1.5 FEET (1.5') ABOVE HYDRAULIC GRADIENT OR A MINIMUM OF 3 FEET (3') ABOVE SURROUNDING GROUND, WHICHEVER IS GREATER.
12. ALL PIPE SHALL BE MINIMUM SCHEDULE 40 AND HOT DIPPED GALVANIZED.
13. DEPENDING ON DEPTH OF COVER OVER DISTRICT PIPELINE AND VENT DIAMETER, OFFSET VENTS MAY NOT BE ALLOWED.
14. MORTAR/GROUT TO BE CONSTRUCTION GRADE, 5,000 PSI MINIMUM. GROUT SHALL BE NON SHRINK.
15. MECHANICAL AIR/VACUUM BALL VENT OR TEE VENT, AS REQUIRED BY DISTRICT ENGINEER.
16. BERMAD AIR RELEASE VALVE MODEL C50 SHALL BE USED WHERE CALLED OUT ON PLANS ON PRESSURIZED SYSTEMS, ABOVE NORMAL HEAD PRESSURES, OR AS REQUIRED BY THE DISTRICT ENGINEER. SEE DISTRICT DRAWING 4-08 FOR ADDITIONAL INFORMATION.



DETAIL "A"

PROTECTOR STAND	
GATE	STAND
≤15"	60"
>15"	72"

FRESNO IRRIGATION DISTRICT	TURNOUT END LINE GATE W/ PROTECTOR STAND NOTES	
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 4-01
	DATE: 2025	SHEET 3 OF 3



TRENCH EXCAVATION AND BACKFILL NOTES:

1. SHORING OR SLOPING SHALL BE IN COMPLIANCE WITH CALIFORNIA LABOR CODE AND CAL/OSHA REQUIREMENTS.

2. COMPACTION OF ALL MATERIALS SHALL COMPLY WITH ASTM D-1557. COMPACTION TESTING SHALL BE PERFORMED BY THE OWNER/AGENCY AS DIRECTED BY THE DISTRICT ENGINEER OR DISTRICT INSPECTOR.

3. OVEREXCAVATION ZONE:
   BOTTOM OF TRENCH SHALL BE IN FIRM, UNIFORM-BEARING SOIL SURFACES. WHEN SOIL IS SOFT, WET, UNSTABLE, UNSUITABLE, OR OTHERWISE DISTURBED, THE CONTRACTOR SHALL REMOVE, REPLACE AND COMPACT MATERIAL TO 95% RELATIVE COMPACTION OR AS DIRECTED BY THE DISTRICT ENGINEER, AND AS SPECIFIED IN THE DISTRICT'S STANDARD SPECIFICATION 9-01.

4. PIPE BEDDING ZONE:
   PIPE BEDDING SHALL BE UNCOMPACTED GRANULAR SOIL OR APPROVED EQUIVALENT CONTAINING NO MORE THAN 5% MATERIAL PASSING THE NUMBER 200 SIEVE, AND SHALL HAVE A MAXIMUM PARTICLE SIZE OF 3/4 INCH (.75"). HOLES SHALL BE EXCAVATED FOR PIPE BELLS SUCH THAT PIPE IS SUPPORTED UNIFORMLY ALONG THE SHAFT AND BELLS.

5. HAUNCH SUPPORT ZONE:
   HAUNCH SUPPORT BACKFILL SHALL BE GRANULAR MATERIAL CONTAINING MORE THAN 5% MATERIAL PASSING THE NUMBER 200 SIEVE. HAUNCH SUPPORT ZONE SHALL BE SOUND EARTHEN MATERIAL FREE OF ROCKS, HARDPAN, ORGANICS, AND DELETERIOUS MATERIAL, AND HAVE A MAXIMUM PARTICLE SIZE OF 3/4 INCH, PLACED IN LOOSE LIFTS NOT TO EXCEED 6 INCHES (6") IN DEPTH, AND COMPACTED TO A MINIMUM OF 95% RELATIVE COMPACTION, OR 2-SACK CEMENT-SAND SLURRY MIX MAY BE USED. TRENCH WIDTH MAY BE REDUCED BY 6 INCHES (6") ON EACH SIDE OF PIPE IF CEMENT-SAND SLURRY IS USED.

6. BACKFILL ZONE:
   BACKFILL SHALL BE SOUND EARTHEN MATERIAL FREE OF ROCKS, HARDPAN, ORGANICS, AND DELETERIOUS MATERIAL, HAVE A MAXIMUM PARTICLE SIZE OF 3/4 INCH (.75"), PLACED IN LOOSE LIFTS NOT TO EXCEED 8 INCHES (8") IN DEPTH, AND COMPACTED TO 93% RELATIVE COMPACTION (95% WITHIN CITY OR COUNTY RIGHT-OF-WAY FOR TOP 24 INCHES) OR AS SPECIFIED ON THE PLANS.

7. MAC-WRAP:
   ALL URBAN AND LANDSCAPED AREAS REQUIRE MAC-WRAP EXTERNAL JOINT WRAP BAND.

8. TRACE WIRE:
   TRACER WIRE IS TO BE USED WITH ALL RGRCP AND PVC PIPELINE PROJECTS WHERE CALLED FOR ON THE PLANS. TRACER WIRE SHALL BE SOLID CORE COPPER WIRE, BLUE, TYPE UF, SIZE AWG #10 AND SHALL BE PLACED OVERTOP THE PIPELINE, AS SPECIFIED IN THE DISTRICT'S STANDARD SPECIFICATION 7-01. TRACER TAPE IS NOT ALLOWED. ALL WIRE TO WIRE CONNECTIONS SHALL USE 3M DBR/Y-6 SPLICE KIT TO PROVIDE CONTINUITY AND PREVENT ENTRY OF MOISTURE. WHERE TRACER WIRE IS CALLED FOR, IT SHALL BE SECURELY ATTACHED TO EACH STRUCTURE, VENT, AND/OR EACH LATERAL.

9. TRACE WIRE THROUGH ROADWAYS:
   TRACER WIRE IS TO BE USED AS REFERENCE ABOVE, THE DISTRICT'S STANDARD SPECIFICATION 7-01 AND INSTALLED WITHIN SCHEDULE 80 PVC CONDUIT. CONDUIT SHALL MEET ANSI/UL 651 SPECIFICATIONS. THE CONDUIT SHALL ALSO BE SECURELY ATTACHED TO EACH STRUCTURE AND/OR VENT ON EACH SIDE OF THE ROADWAY.

FRESNO IRRIGATION DISTRICT	FRESNO IRRIGATION DISTRICT	PIPELINE BACKFILL
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4-02 SHEET 1 OF 1

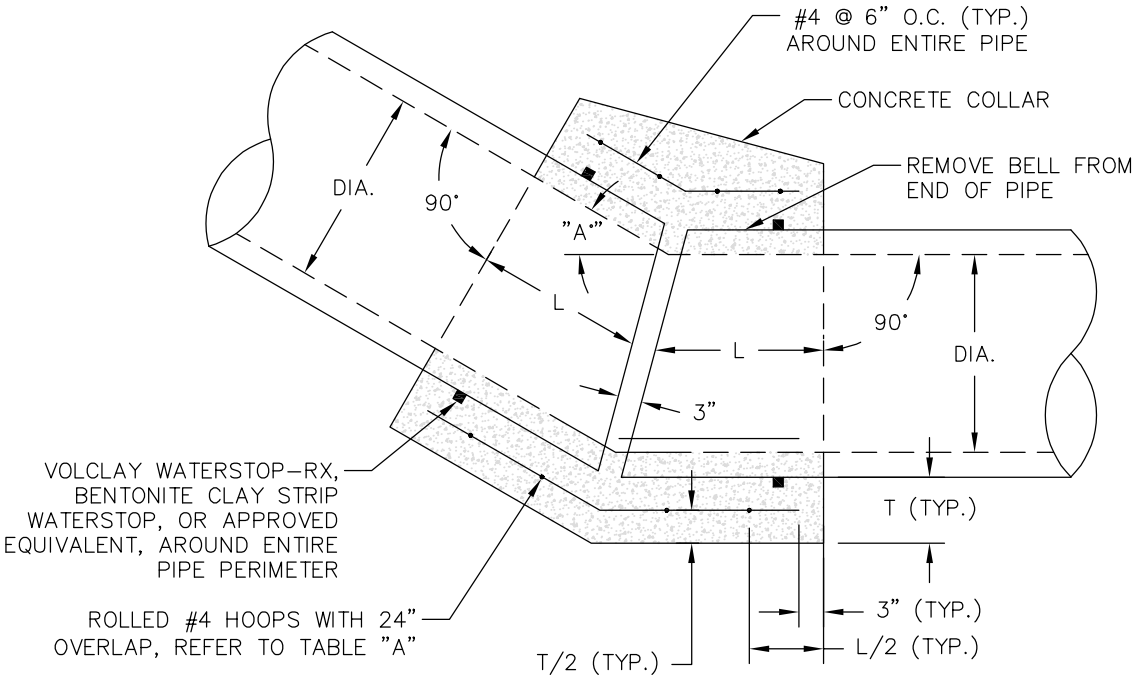
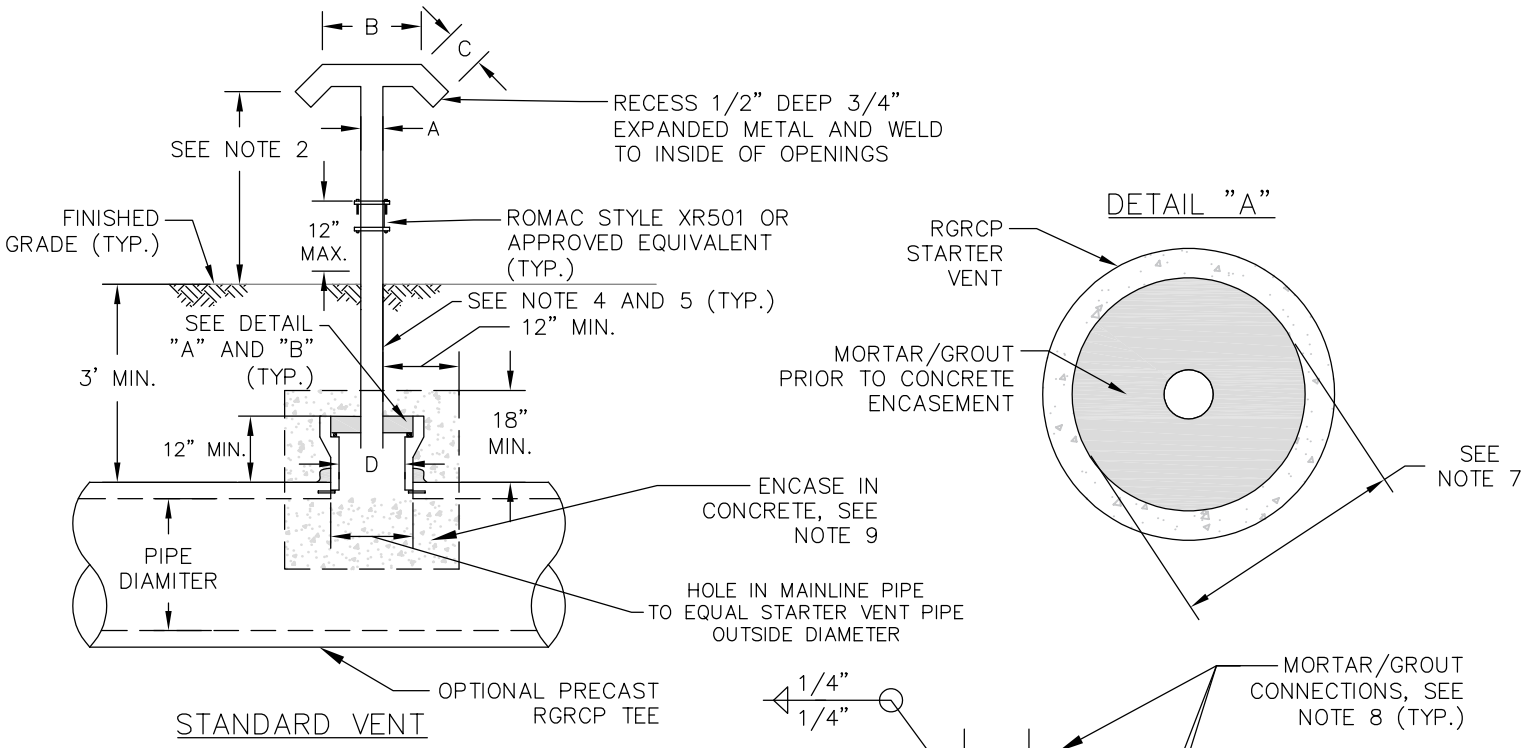


TABLE "A"			
MAX. PIPE SIZE	L (MIN.)	T	MIN. HOOP QTY.
24" – 42"	18"	8"	4
48" – 60"	24"	10"	4
72"	30"	12"	6
> 72"	BY DESIGN		

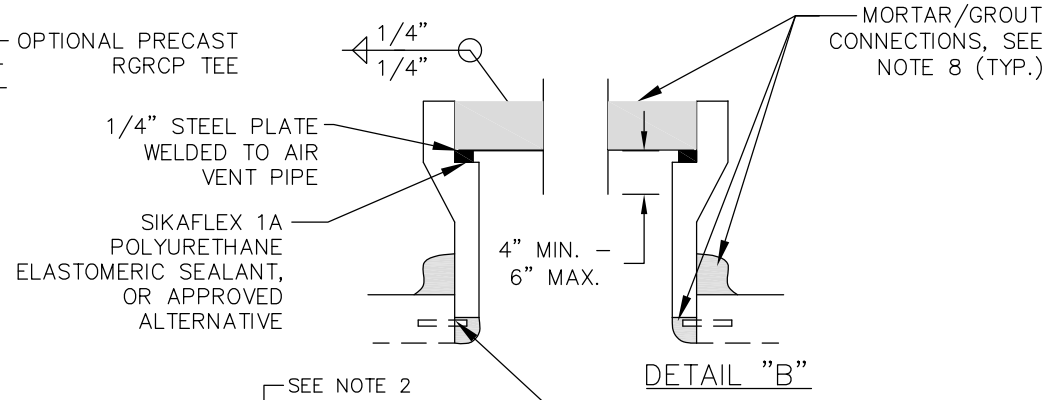
NOTES:

1. ANGLE "A" SHALL BE DETERMINED IN THE FIELD AND REBAR PLACEMENT APPROVED BY DISTRICT ENGINEER PRIOR TO CONCRETE PLACEMENT. ANGLE "A" SHALL NOT EXCEED 45°.
2. INSIDE JOINT TO HAVE A BRUSHED FINISH AND SHALL BE FLUSH WITH ADJOINING PIPES.
3. JOINT SHALL BE WATERTIGHT.
4. PREPARE SURFACE OF EXISTING PIPES BY WIRE BRUSHING, WATER BLASTING, OR SAND BLASTING AS DIRECTED BY DISTRICT ENGINEER OR INSPECTOR.
5. CONCRETE PIPE SHALL BE CLEANED AND TREATED WITH PRE-APPROVED CONCRETE BONDING AGENT PRIOR TO CONCRETE PLACEMENT.
6. DIAMETER OF ROLLED HOOPS SHALL BE INSIDE PIPE DIAMETER + (2 X WALL THICKNESS) + T.
7. FIELD BEND SHALL BE FORMED TO THE NECESSARY WIDTH AND LENGTH TO LIMIT EXCESS CONCRETE. SOIL SHALL NOT BE USED IN PLACE OF FORMS.
8. FORMS USED TO POUR CONCRETE COLLAR SHALL BE REMOVED PRIOR TO BACKFILL.
9. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.
10. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% – 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
11. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.
12. CONCRETE SHALL BE VIBRATED AROUND PIPE JOINT DURING PLACEMENT.
13. SEE DISTRICT DRAWING 4-07 FOR THRUST BLOCK. FIELD BEND SHALL BE POURED SEPARATE AND PRIOR TO THRUST BLOCK.

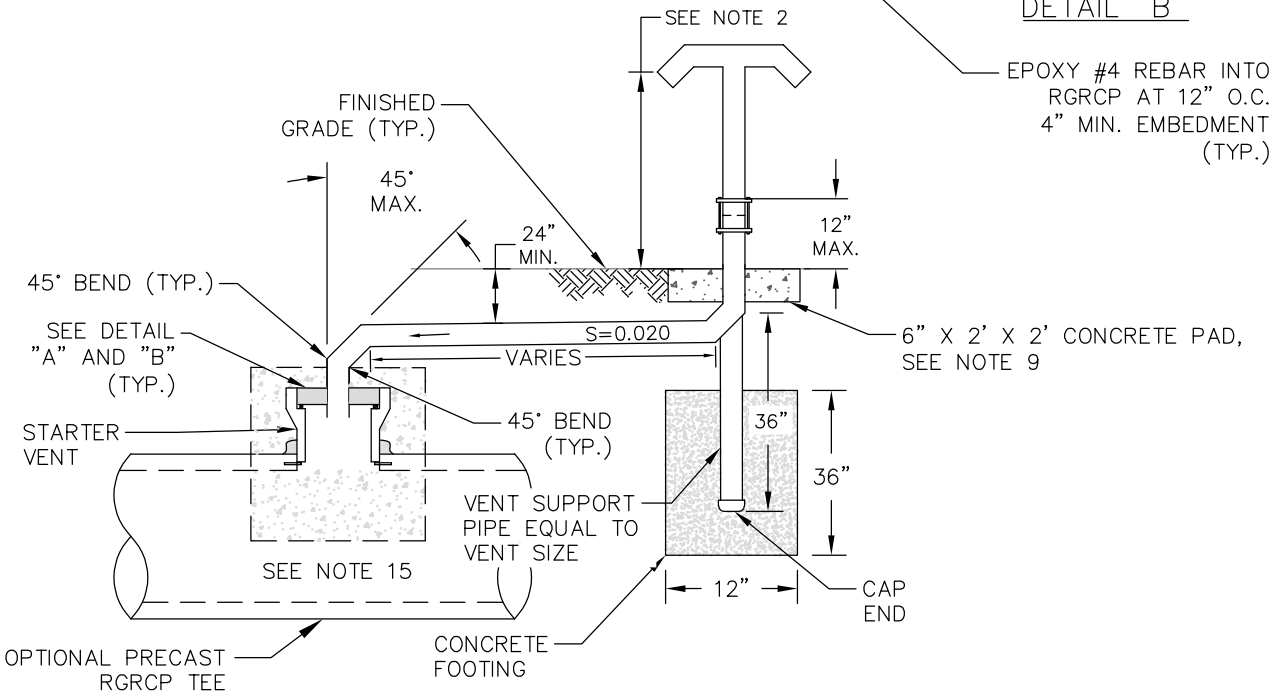
FRESNO IRRIGATION DISTRICT		FIELD BEND	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 4-03
		DATE: 2025	SHEET 1 OF 1



STANDARD VENT



DETAIL "B"



OFFSET VENT
(TO BE DETERMINED BY DISTRICT)

FRESNO IRRIGATION DISTRICT		VENT – METAL T
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4–04

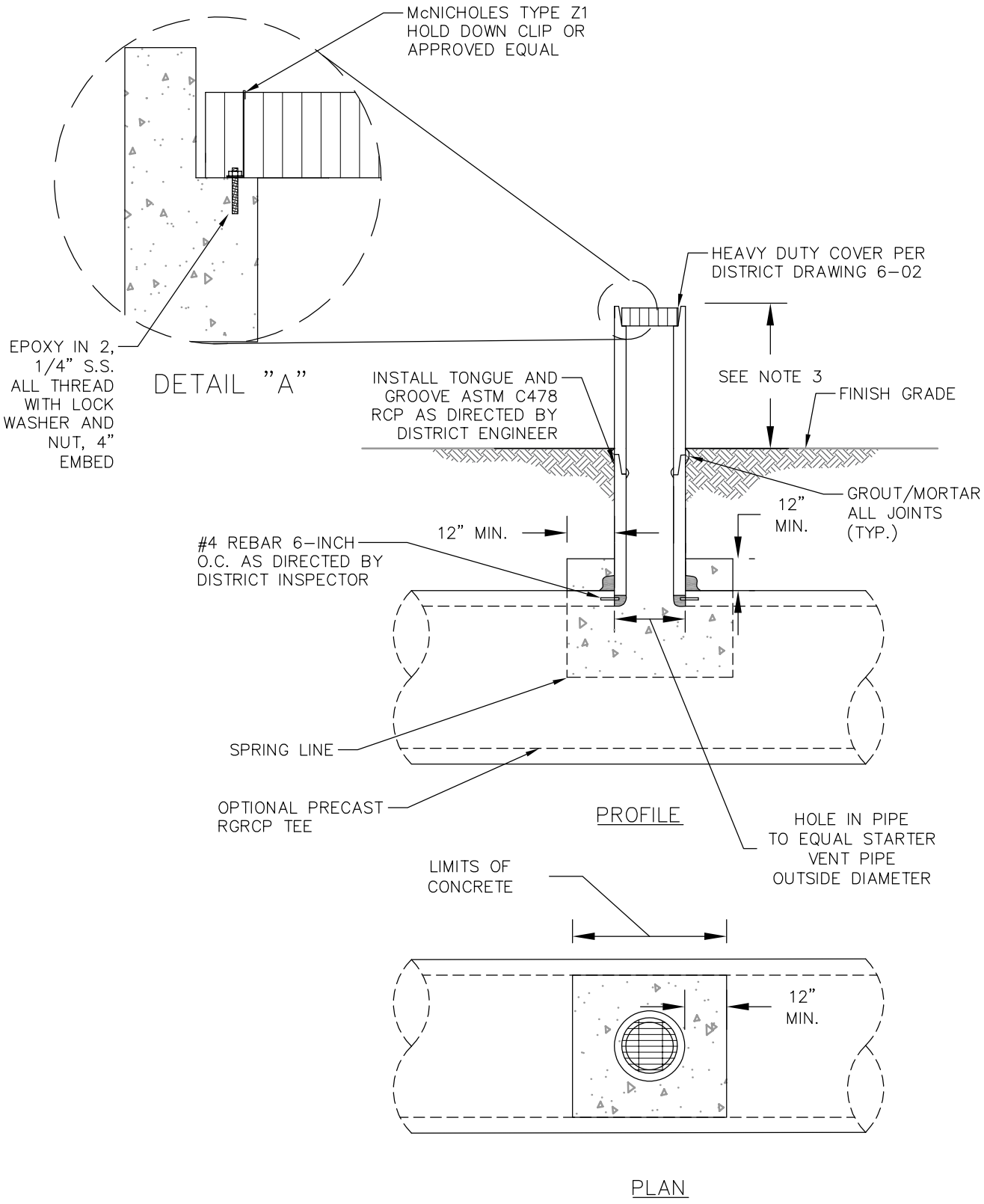
RUBBER GASKET REINFORCED CONCRETE PIPE (RGRCP):	
FOR PIPE DIA. 12" TO 30"	USE 4" DIA. GALVANIZED T–VENT WITH STARTER VENT.
FOR 36" TO 42"	USE 6" DIA. GALVANIZED T–VENT WITH STARTER VENT.
FOR 48" TO 60"	USE 8" DIA. GALVANIZED T–VENT WITH STARTER VENT.
FOR PIPE DIA. > 60"	USE 12" DIA. GALVANIZED T–VENT WITH STARTER VENT OR SEE 4–05 FOR CONCRETE VENT.

T – VENT DESIGN CRITERIA			
"A"	"B"	"C"	"D"
4"	18"	7"	12"
6"	22"	8"	15"
8"	22"	8"	18"
12"	22"	8"	18"

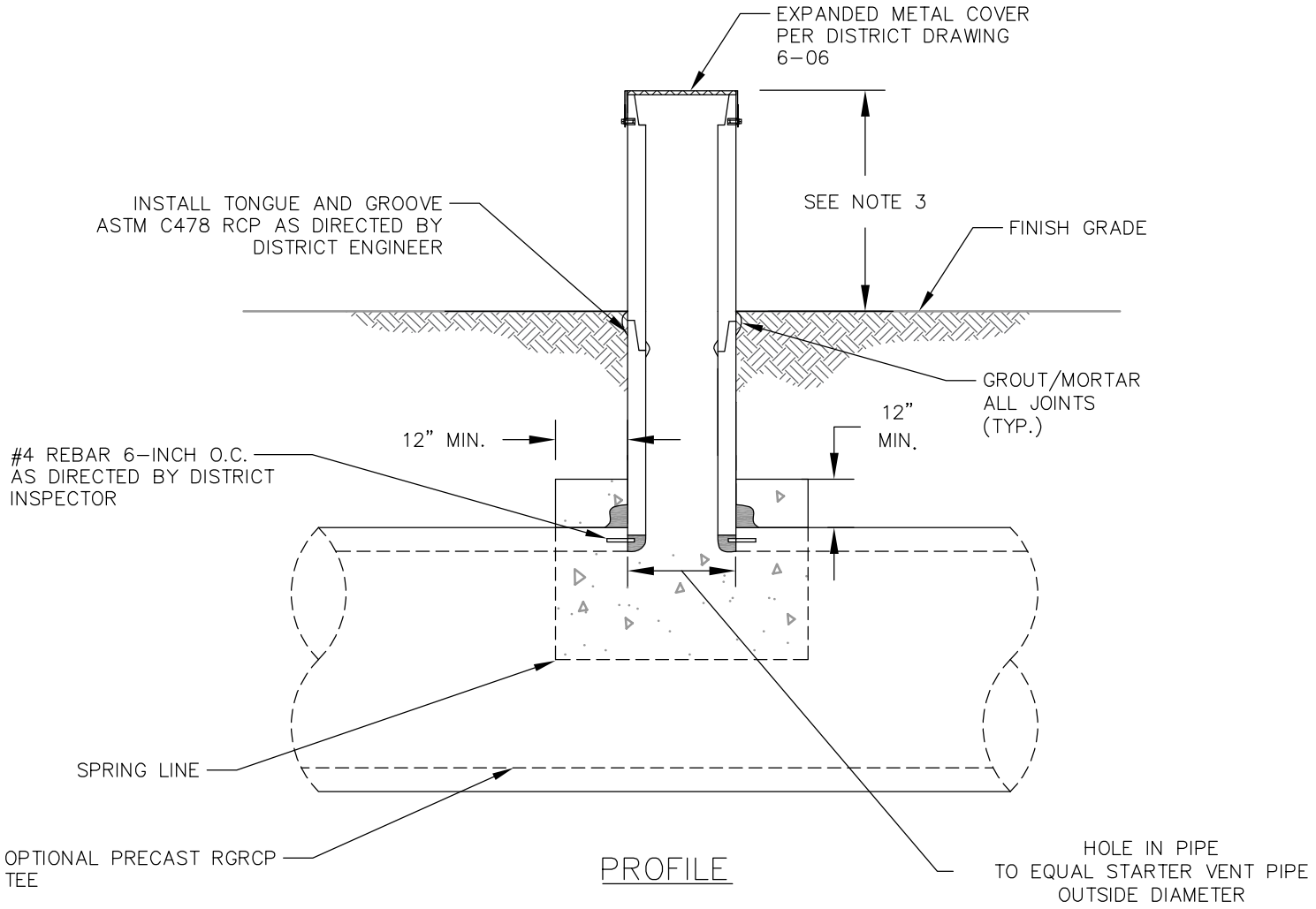
NOTES:

1. VENTS SHALL BE INSTALLED AT NO MORE THAN 600 FOOT INTERVALS, IMMEDIATELY UPSTREAM OF PIPELINE GRADE CHANGES, AT HIGH POINTS, IMMEDIATELY DOWNSTREAM OF ANY INLET STRUCTURE, AND IMMEDIATELY UPSTREAM OF ANY BENDS.
2. TOP OF VENT SHALL BE A MINIMUM OF 1.5 FEET (1.5') ABOVE HYDRAULIC GRADIENT OR A MINIMUM OF 3 FEET (3') ABOVE SURROUNDING GROUND, WHICHEVER IS GREATER.
3. 90° ELBOW FITTINGS FOR OFFSET VENTS ARE NOT ALLOWED.
4. ALL STEEL PIPE SHALL BE BLACK SCHEDULE 40, AND HOT DIPPED GALVANIZED.
5. ALL STEEL EXPOSED TO SOIL SHALL HAVE A MINIMUM TWO (2) LAYERS OF PASCO PIPE PROTECTION TAPE INSTALLED PRIOR TO BACKFILL.
6. DEPENDING ON DEPTH OF COVER OVER FID PIPELINE AND VENT DIAMETER, OFFSET VENTS MAY NOT BE ALLOWED.
7. COPING OF STARTER VENT PIPE MAY BE NECESSARY.
8. MORTAR/GROUT TO BE CONSTRUCTION GRADE, 5,000 PSI MINIMUM. GROUT SHALL BE NON SHRINK.
9. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.
10. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6–1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% – 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
11. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.
12. ALL FIELD WELDS SHALL BE PREPARED BY REMOVING ALL ZINC COATING AROUND THE WELD AREA. WELD THE NECESSARY LOCATION(S), AND REPAIR/REPLACE GALVANIZING WITH ZRC COLD GALVANIZING COMPOUND PER ASTM A780, OR APPROVED EQUAL.
13. STEEL PLATE DIAMETER SHALL BE 1/2" SMALLER THAN I.D. OF STARTER VENT.
14. SEE DISTRICT STANDARD SPECIFICATION 9–01 FOR ADDITIONAL INFORMATION.
15. PROJECTS PROPOSING OFFSET AIR VENTS SHALL INCREASE DEPTH OVER COVER OVER PIPELINE TO ACCOMMODATE MINIMUM CLEARANCES.

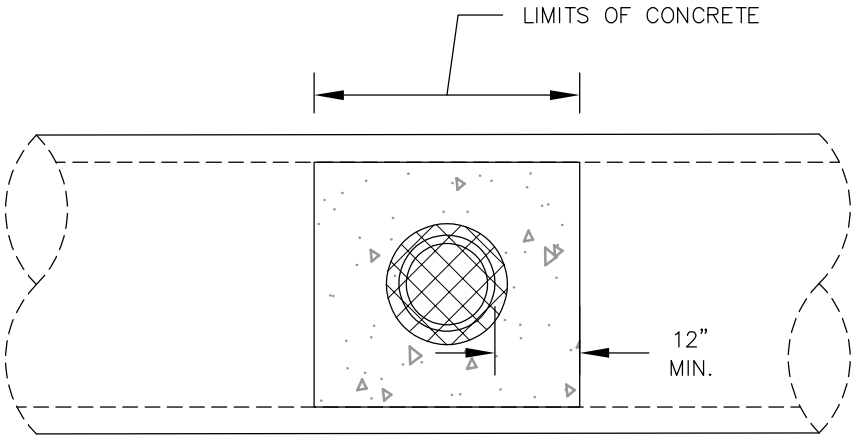
FRESNO IRRIGATION DISTRICT		VENT – METAL T
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4–04 SHEET 2 OF 2



FRESNO IRRIGATION DISTRICT		CONCRETE VENT – URBAN	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 4-05
		DATE: 2025	SHEET 1 OF 3



PROFILE



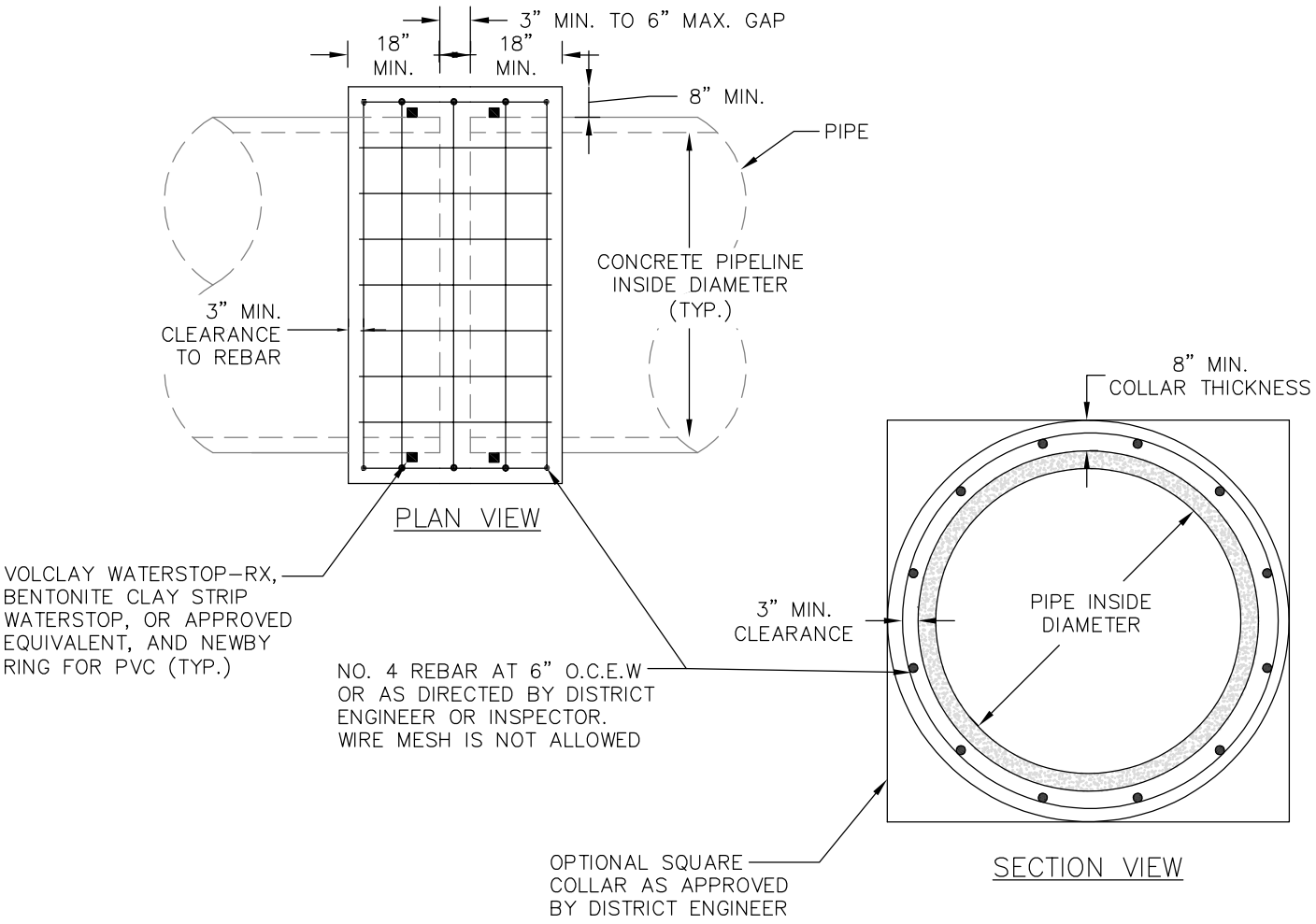
PLAN

FRESNO IRRIGATION DISTRICT		CONCRETE VENT – RURAL	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 4–05
		DATE: 2025	SHEET 2 OF 3

A.S.T.M. C478 REINFORCED CONCRETE PIPE	
PIPE DIA. UP TO 36"	SEE DRAWING 4–04
36" RGRCP TO 42" RGRCP	USE 12" DIA. CONCRETE PIPE WITH HEAVY DUTY COVER.
48" RGERCP TO 60" RGRCP	USE 15" DIA. CONCRETE PIPE WITH HEAVY DUTY COVER.
PIPE DIA. GREATER THAN 60" RGRCP	USE 24" DIA. CONCRETE PIPE WITH HEAVY DUTY COVER.

NOTES:

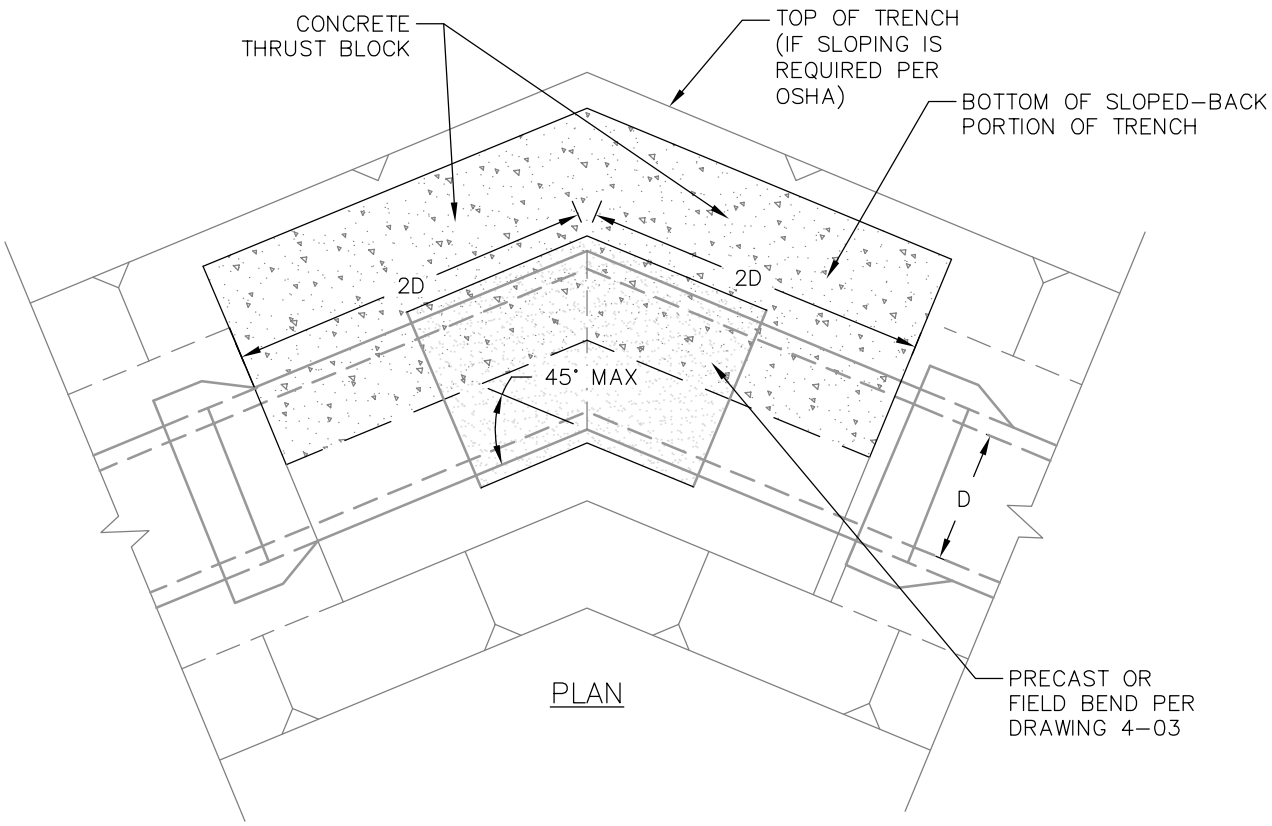
1. VENTS SHALL BE INSTALLED AT NO MORE THAN 600 FEET INTERVALS, IMMEDIATELY UPSTREAM OF PIPELINE GRADE CHANGES, AT HIGH POINTS, IMMEDIATELY DOWNSTREAM OF ANY INLET STRUCTURE, AND IMMEDIATELY UPSTREAM OF ANY BENDS.
2. ALL GRATING SHALL BE McNICHOLS 1–1/2" X 1/8" BEARING BARS OR APPROVED EQUIVALENT, SPACED AT 1–3/16" O.C. STEEL BAR GRATING TO BE HOT DIP GALVANIZED.
3. TOP OF VENT SHALL BE 1.5 FEET (1.5') ABOVE HYDRAULIC GRADIENT OR 3 FEET (3') ABOVE SURROUNDING GROUND, WHICHEVER IS GREATER.
4. COPING OF STARTER VENT PIPE MAY BE NECESSARY.
5. MORTAR/GROUT TO BE CONSTRUCTION GRADE, 5,000 PSI MINIMUM. GROUT SHALL BE NON SHRINK.
6. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.
7. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6–1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% – 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
8. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.



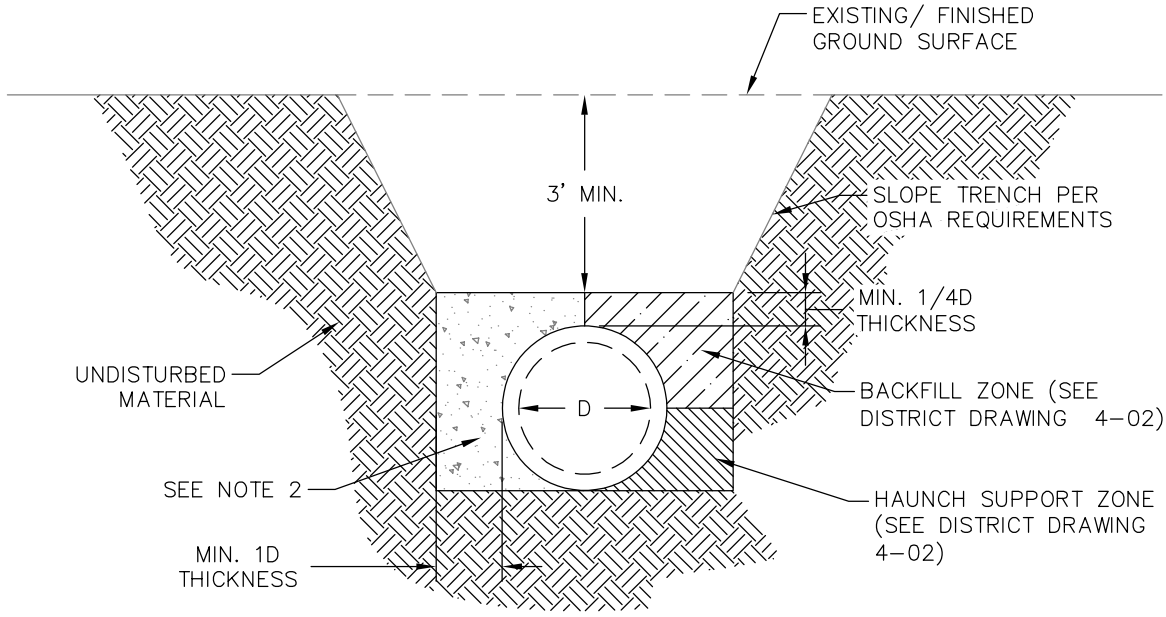
NOTES:

1. JOINT GAP SEAM TO BE GROUTED ON THE INSIDE PRIOR TO PLACING OF COLLAR (HAND HOLE IN EXISTING PIPE MAY BE ALLOWED TO MAKE INSIDE BAND, IF APPROVED BY DISTRICT ENGINEER). TO BE INSPECTED PRIOR TO CONCRETE COLLAR BEING POURED.
2. TWENTY-FOUR HOURS AFTER INSIDE BAND IS MADE, COAT WITH REZI WELD 1000 OR APPROVED EQUIVALENT OVER BANDED AREA.
3. IF REQUIRED, HAND HOLE PLUG TO BE EPOXIED AT MATCHING SURFACES WITH PIPE AND THEN MORTAR AND PLUG HOLE.
4. THE ENTIRE SURFACE OF THE PIPE IN THE COLLAR AREA IS TO BE COATED WITH EPOXY JUST PRIOR TO POURING THE COLLAR. EPOXY TYPE TO BE REZI WELD 1000 OR APPROVED EQUIVALENT.
5. EXTERNAL COLLAR, WHEN IN PLACE AND SET, MUST BE WATERED DOWN TO A POINT OF SATURATION THEN COVERED WITH WET BURLAP AND SHADED WITH 6 INCHES (6") OF SOIL OVER ENTIRE AREA. SAID SOIL MUST BE KEPT MOIST FOR A PERIOD OF FIVE CONTINUOUS DAYS.
6. COLLAR MUST BE APPROVED BY DISTRICT ENGINEER OR INSPECTOR PRIOR TO BACKFILLING PIPELINE TRENCH.
7. JOINT SHALL BE WATERTIGHT.
8. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.
9. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
10. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.

FRESNO IRRIGATION DISTRICT		CONCRETE COLLAR
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4-06 SHEET 1 OF 1



PLAN

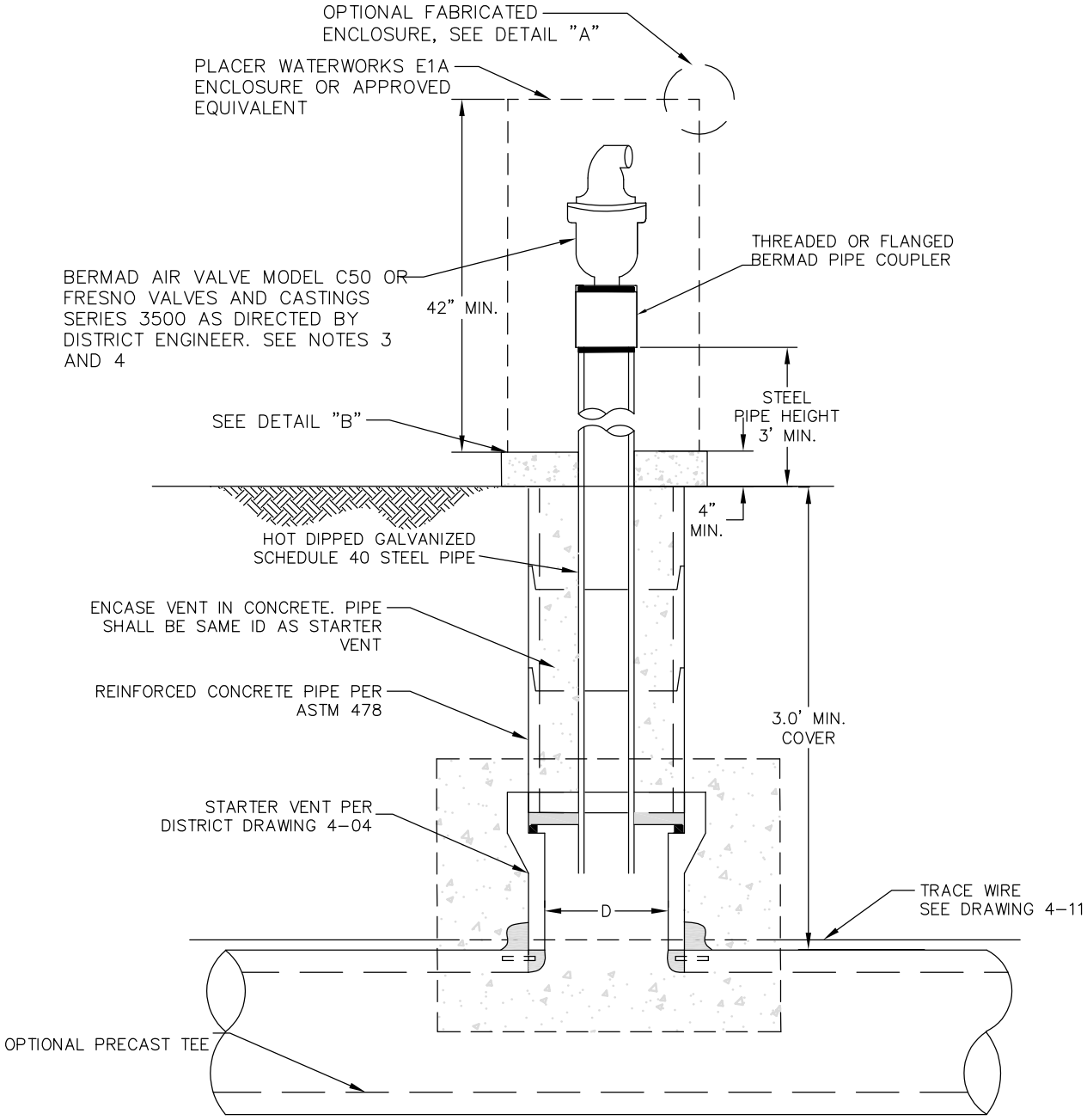


PROFILE

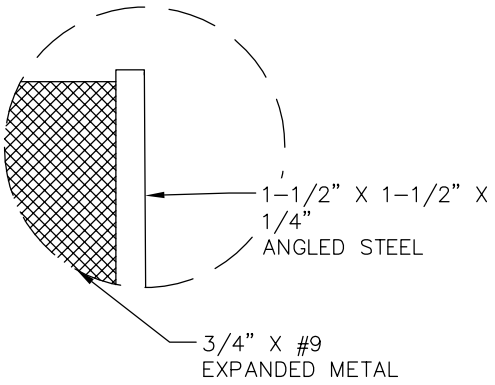
NOTES:

1. THRUST BLOCKS REQUIRED AT EACH PIPELINE BEND.
2. NONSTRUCTURAL CONCRETE SHALL BE A MINIMUM OF 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF MIN. 3,500 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 (BY WEIGHT), AND FOUR INCH (4") ± ONE INCH (1"), SLUMP AT PLACEMENT.
3. SEE DISTRICT DRAWING 4-02 FOR PIPELINE TRENCH AND BACKFILL REQUIREMENTS.

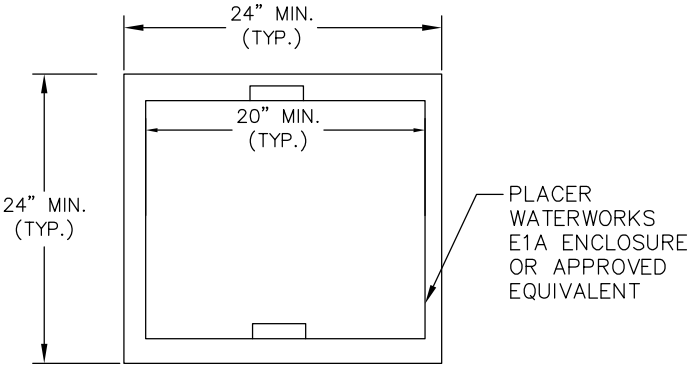
FRESNO IRRIGATION DISTRICT		THRUST BLOCK
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4-07 SHEET 1 OF 1



PROFILE VIEW



DETAIL "A"



DETAIL "B"
PLAN VIEW

FRESNO IRRIGATION DISTRICT		HIGH PRESSURE VENT	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4-08 SHEET 1 OF 2

NOTES:

1. VENTS SHOULD BE INSTALLED AT NO MORE THAN 600 FEET INTERVALS, AT PIPELINE GRADE CHANGES, AT HIGH POINTS, AND IMMEDIATELY DOWNSTREAM OF ANY INLET STRUCTURES.

2. VENT GAP SEAM TO BE GROUTED ON THE INSIDE PRIOR TO PLACING OF CONCRETE (HAND HOLE IN EXISTING PIPE IS ALLOWED TO MAKE INSIDE BAND, IF APPROVED BY DISTRICT ENGINEER). TO BE INSPECTED PRIOR TO CONCRETE BEING POURED.

3. FRESNO VALVES AND CASTINGS SERIES 3500 CONTINUOUS ACTING AIR AND VACUUM RELIEF.

4. BERMAD MODEL C50 (FLANGED)– RURAL AREAS – USE GLASS–REINFORCED NYLON BODY. URBAN AREAS – USE STAINLESS STEEL BODY.

5. THE ENTIRE SURFACE OF THE VENT PIPE IS TO BE COATED WITH EPOXY JUST PRIOR TO POURING CONCRETE. EPOXY TYPE TO BE REZI WELD 1000 OR APPROVED EQUIVALENT.

6. JOINT SHALL BE WATERTIGHT.

7. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.

8. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6–1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% – 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

9. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.

ASTM C478 REINFORCED CONCRETE PIPE (RCP):	
FOR PIPE DIA. 12" TO 30"	USE 4" DIA. GALVANIZED WITH 12" DIA. STARTER VENT.
FOR 36" TO 42"	USE 6" DIA. GALVANIZED VENT WITH 15" DIA. STARTER VENT.
FOR 48" TO 60"	USE 8" DIA. GALVANIZED VENT WITH 18" DIA. STARTER VENT.
FOR PIPE DIA. GREATER THAN 60"	USE 12" DIA. GALVANIZED VENT WITH 24" DIA. STARTER VENT.

FRESNO IRRIGATION DISTRICT

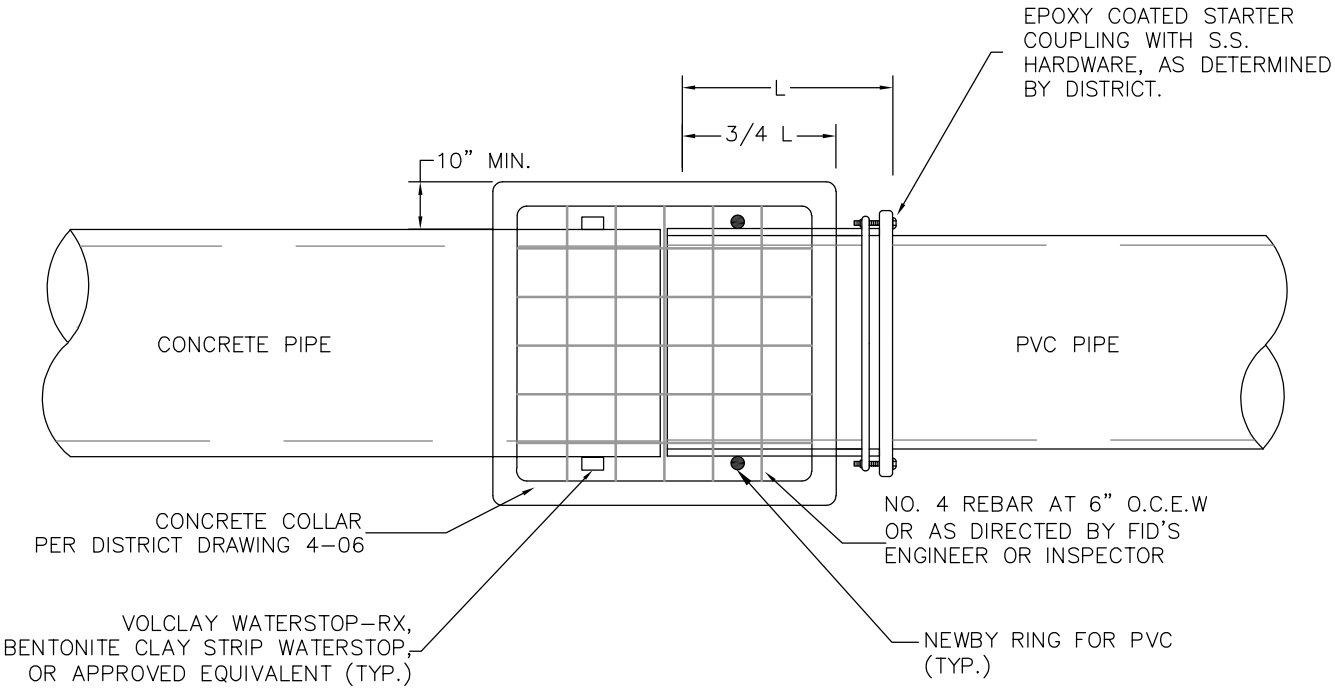
"Your Most Valuable Resource – Water"

HIGH PRESSURE VENT NOTES

SCALE: NOT TO SCALE

DATE: 2025

DISTRICT DRAWING 4–08

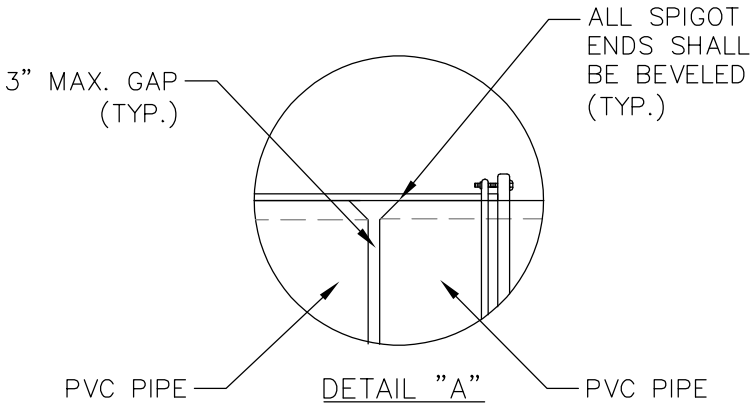


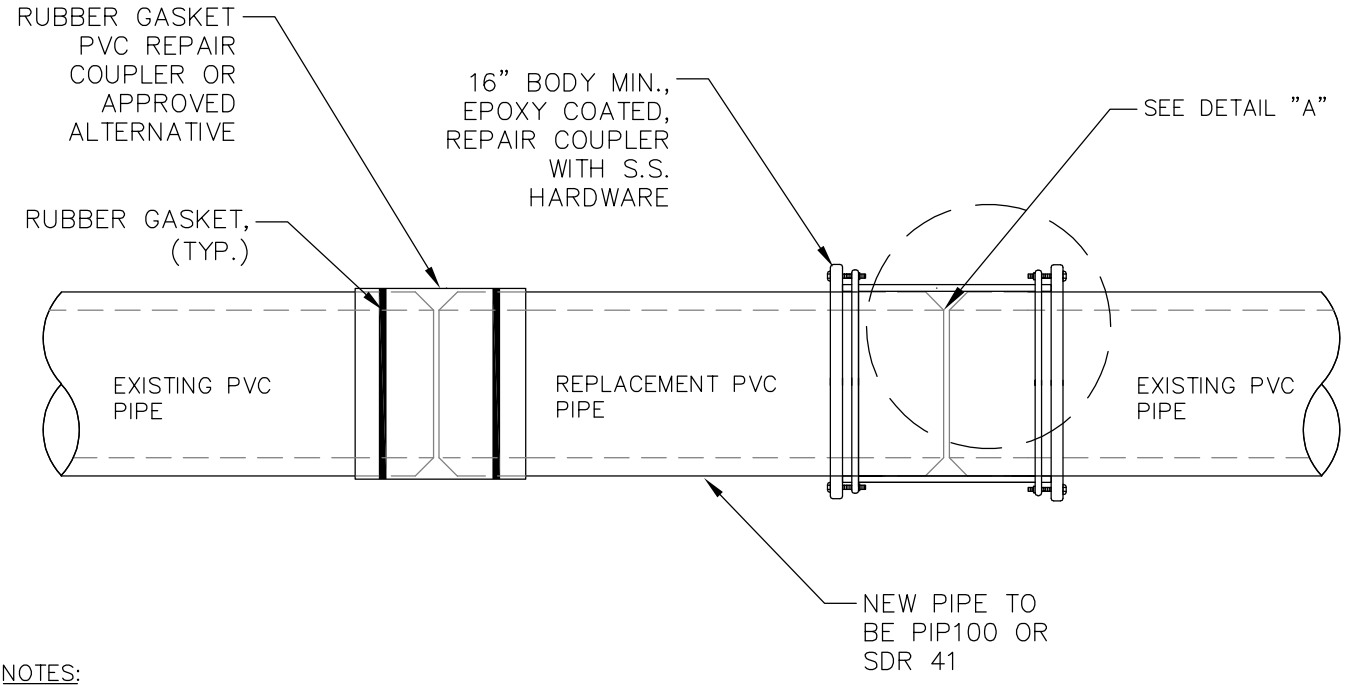
L = VARIES WITH PIPE SIZE
MIN. 24"

NOTES:

1. JOINT GAP SEAM TO BE GROUTED ON THE INSIDE PRIOR TO PLACING OF COLLAR (HAND HOLE IN EXISTING PIPE MAY BE ALLOWED TO MAKE INSIDE BAND), IF APPROVED BY DISTRICT ENGINEER. TO BE INSPECTED PRIOR TO CONCRETE COLLAR BEING POURED.
2. IF REQUIRED, HAND HOLE PLUG TO BE EPOXIED AT MATCHING SURFACES WITH PIPE AND THEN GROUT AND PLUG HOLE.
3. TWENTY-FOUR HOURS AFTER INSIDE BAND IS MADE, COAT THE ENTIRE SURFACE OF THE PIPE IN THE COLLAR AREA WITH EPOXY JUST PRIOR TO POURING THE COLLAR. EPOXY TYPE TO BE REZI WELD 1000 OR APPROVED EQUIVALENT.
4. THE ENTIRE SURFACE OF THE CONCRETE AND PVC PIPE IN THE COLLAR AREA IS TO BE COATED WITH EPOXY JUST PRIOR TO POURING THE COLLAR. EPOXY TYPE TO BE REZI WELD 1000 OR APPROVED EQUIVALENT.
5. EXTERNAL COLLAR, WHEN IN PLACE AND SET, MUST BE WATERED DOWN TO A POINT OF SATURATION THEN COVERED WITH WET BURLAP AND SHADED WITH 6 INCHES (6") OF SOIL OVER ENTIRE AREA. SAID SOIL MUST BE KEPT MOIST FOR A PERIOD OF FIVE CONTINUOUS DAYS.
6. COLLAR MUST BE APPROVED BY DISTRICT ENGINEER OR INSPECTOR PRIOR TO BACKFILLING PIPELINE TRENCH.
7. JOINT SHALL BE WATERTIGHT.
8. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATION 4-01 FOR ADDITIONAL INFORMATION.
9. CONCRETE LINING SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
10. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	PVC TO CONCRETE CONNECTION	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4-09 SHEET 1 OF 1

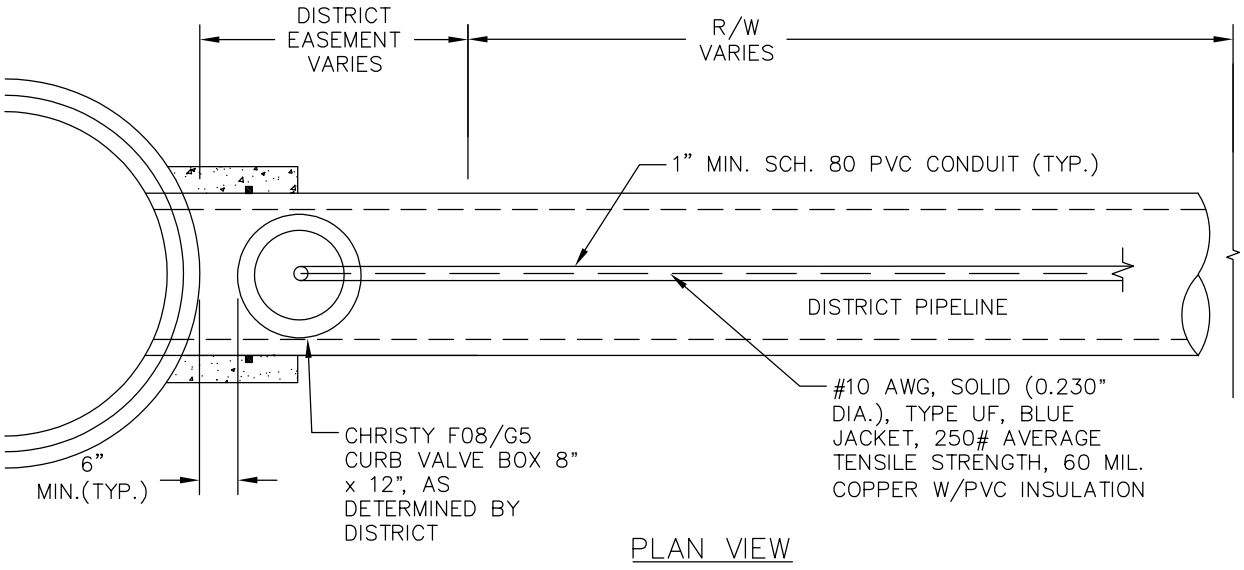




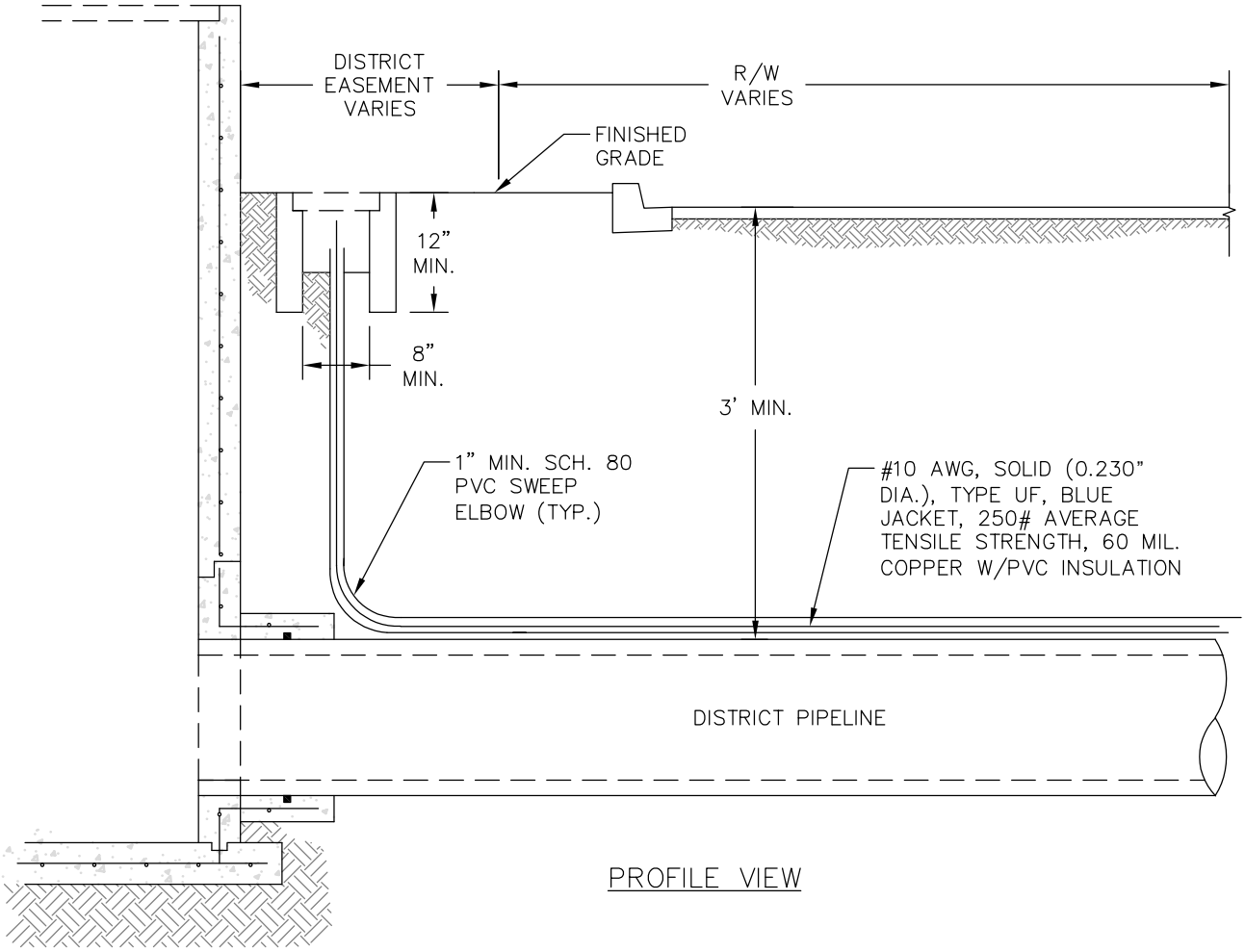
NOTES:

1. CLEAN ALL DEBRIS FROM THE CUT END OF THE PIPE AND OR COUPLER. CHECK THE GASKET POSITION. BE SURE IT'S COMPLETELY SEATED IN THE GROVE, WITH NO RAISED AREAS.
2. LUBRICATE THE SPIGOT END, USING ONLY THE MANUFACTURER'S RECOMMENDED LUBRICANT.
3. SLIP–ON GLUE JOINTS AS APPROVED BY DISTRICT ENGINEER.
4. PLACE PIPE IN STRAIGHT ALIGNMENT. ASSEMBLE TO THE STOP LINE ON SPIGOT, COUPLER OR BELL.
5. APPLICATION SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS.
6. JOINTS SHALL BE WATER TIGHT.
7. REPAIR COUPLER SHALL BE FACTORY APPLIED EPOXY COATED WITH S.S. HARDWARE.
8. PRIOR TO BACKFILL, LONG BODY REPAIR COUPLER SHALL BE DOUBLE WRAPPED IN 10 MIL. VISQUEEN AND ENDS TAPED WITH PASCO PIPE PROTECTION TAPE.
9. BACKFILL PIPE PER DISTRICT SPECIFICATION 8–03 AND DRAWING 4–02.

FRESNO IRRIGATION DISTRICT	PVC REPAIR	
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 4–10
	DATE: 2025	SHEET 1 OF 1

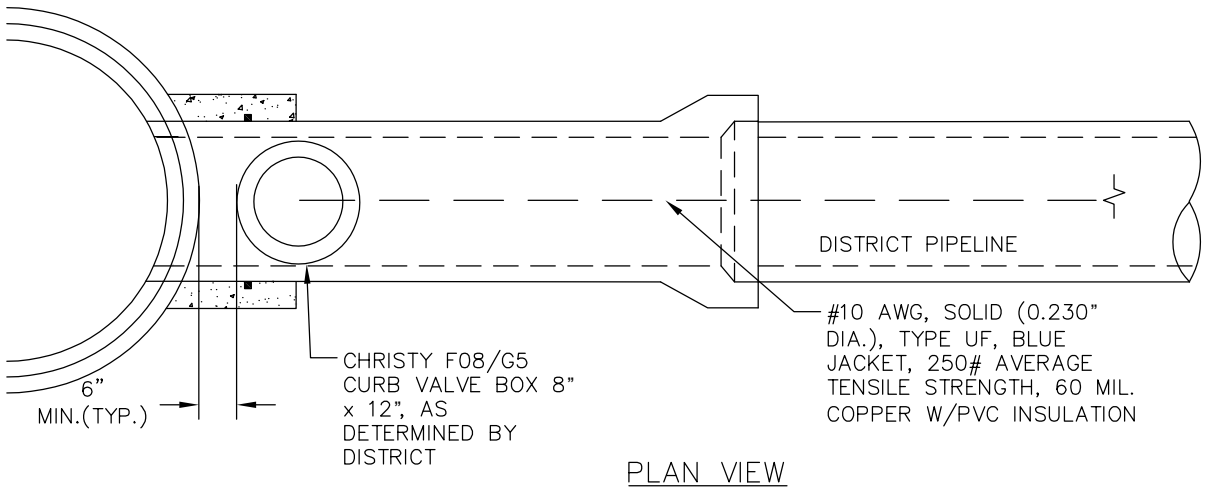


PLAN VIEW

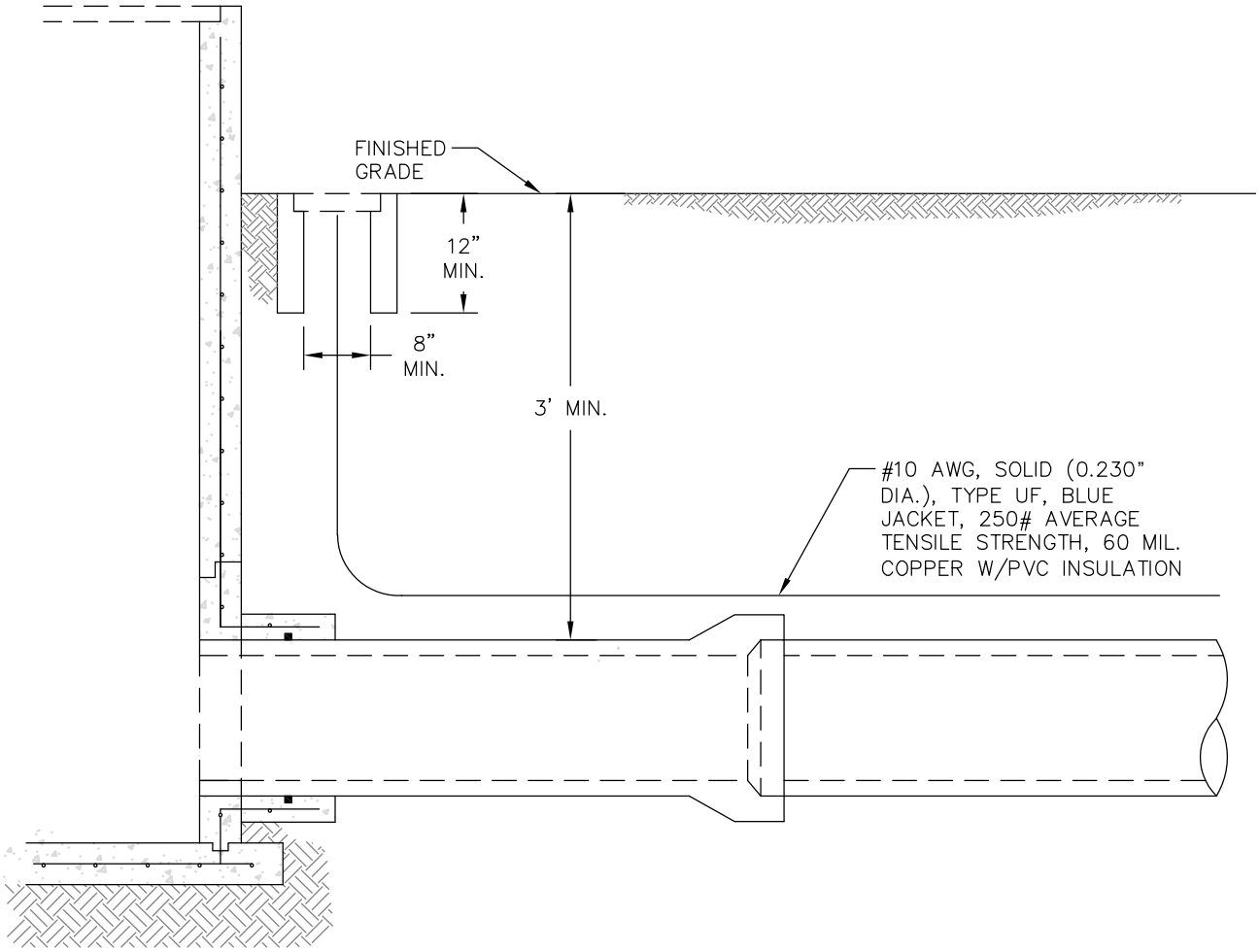


PROFILE VIEW

FRESNO IRRIGATION DISTRICT		TRACE WIRE – THROUGH ROAD
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4–11 SHEET 1 OF 3



PLAN VIEW



PROFILE VIEW

FRESNO IRRIGATION DISTRICT		TRACE WIRE – DIRECT BURY	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 4–11
		DATE: 2025	SHEET 2 OF 3

NOTES:

1. CHRISTY G5 SHALL BE USED IN ANY LOCATIONS WHERE TRACE WIRE WILL BE WITHIN CONCRETE WALKWAYS OR ROADWAYS.

2. TRACE WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT TEN FEET (10') INTERVALS OR AS REQUIRED BY THE DISTRICT ENGINEER.

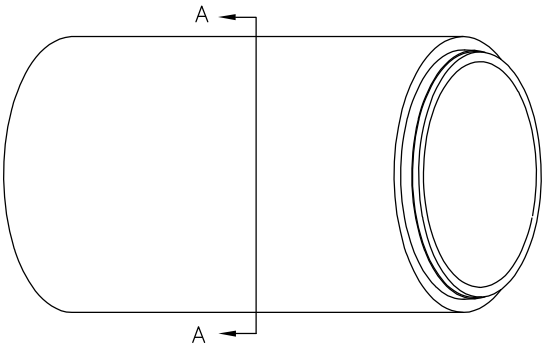
3. IF PIPELINE IS INSTALLED WITH MACWRAP, MACWRAP SHALL BE INSTALLED PRIOR TO TRACE WIRE. MACWRAP RATCHETS SHALL BE POSITIONED SO AS TO NOT INTERFERE WITH THE WIRE PLACEMENT. TRACE WIRE SHALL NOT BE INSTALLED BETWEEN THE PIPELINE AND MACWRAP

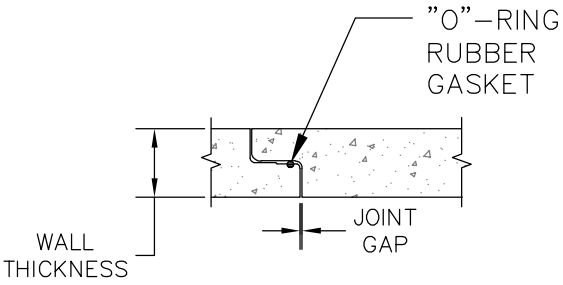
4. TRACE WIRE AND/OR CONDUIT SHALL BE SECURED TO THE PIPE WITH PLASTIC TIE-WRAPS, STAINLESS STEEL HOSE CLAMPS OR OTHER APPROVED METHOD TO ENSURE THE WIRE OR CONDUIT REMAINS ATOP OF PIPE.

5. CHRISTY BOX SHALL BE SET TO FINISHED GRADE OR THREE INCHES (3") BELOW FINISHED GRADE, AS DIRECTED BY DISTRICT INSPECTOR.

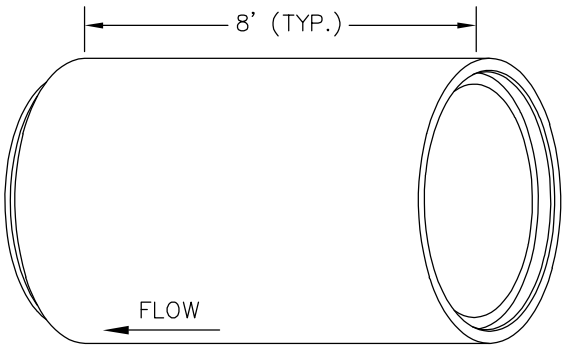
6. SEE DISTRICT SPECIFICATION 7-01 FOR ADDITIONAL INFORMATION.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	TRACE WIRE – NOTES	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4-11 SHEET 3 OF 3

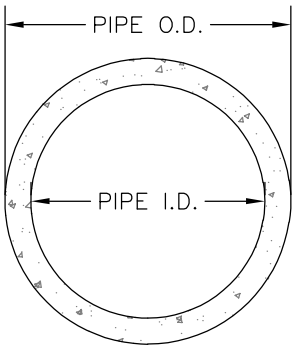




TONGUE AND
GROOVE
JOINT DETAIL

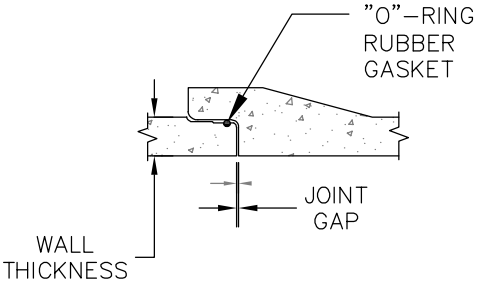


ISO VIIEW

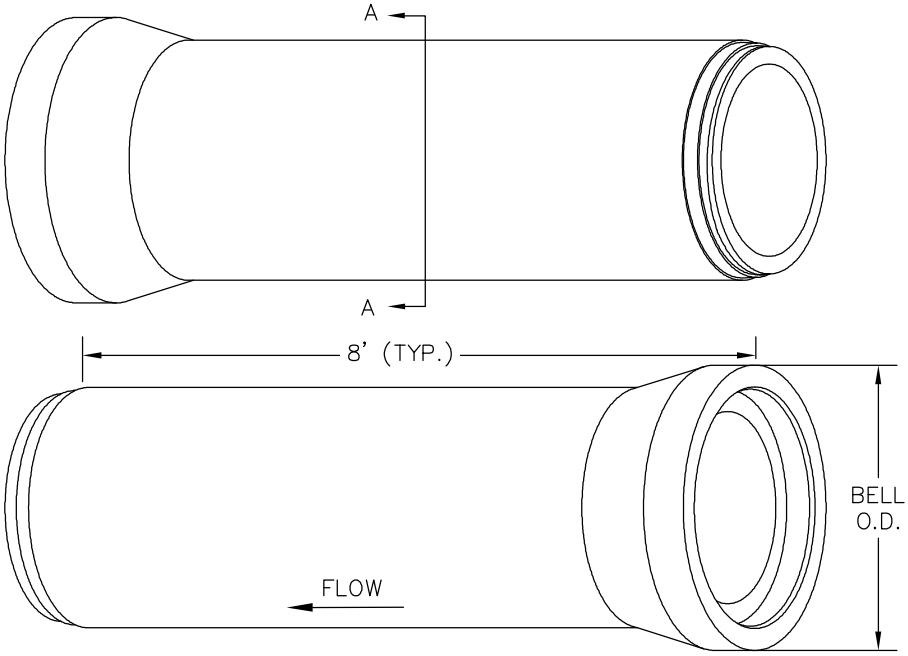


SECTION A–A

TONGUE AND GROOVE
RGRCP



BELL AND SPIGOT
JOINT DETAIL



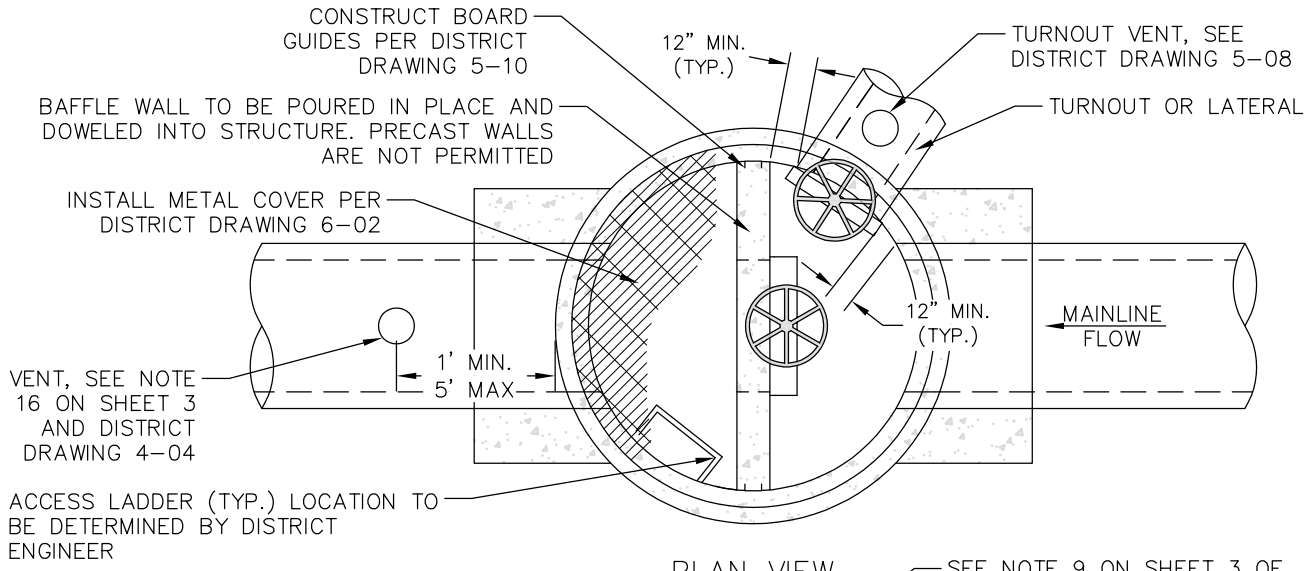
BELL AND SPIGOT RGRCP

FRESNO IRRIGATION DISTRICT		RGRCP PIPE
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 4–12 SHEET 1 OF 2

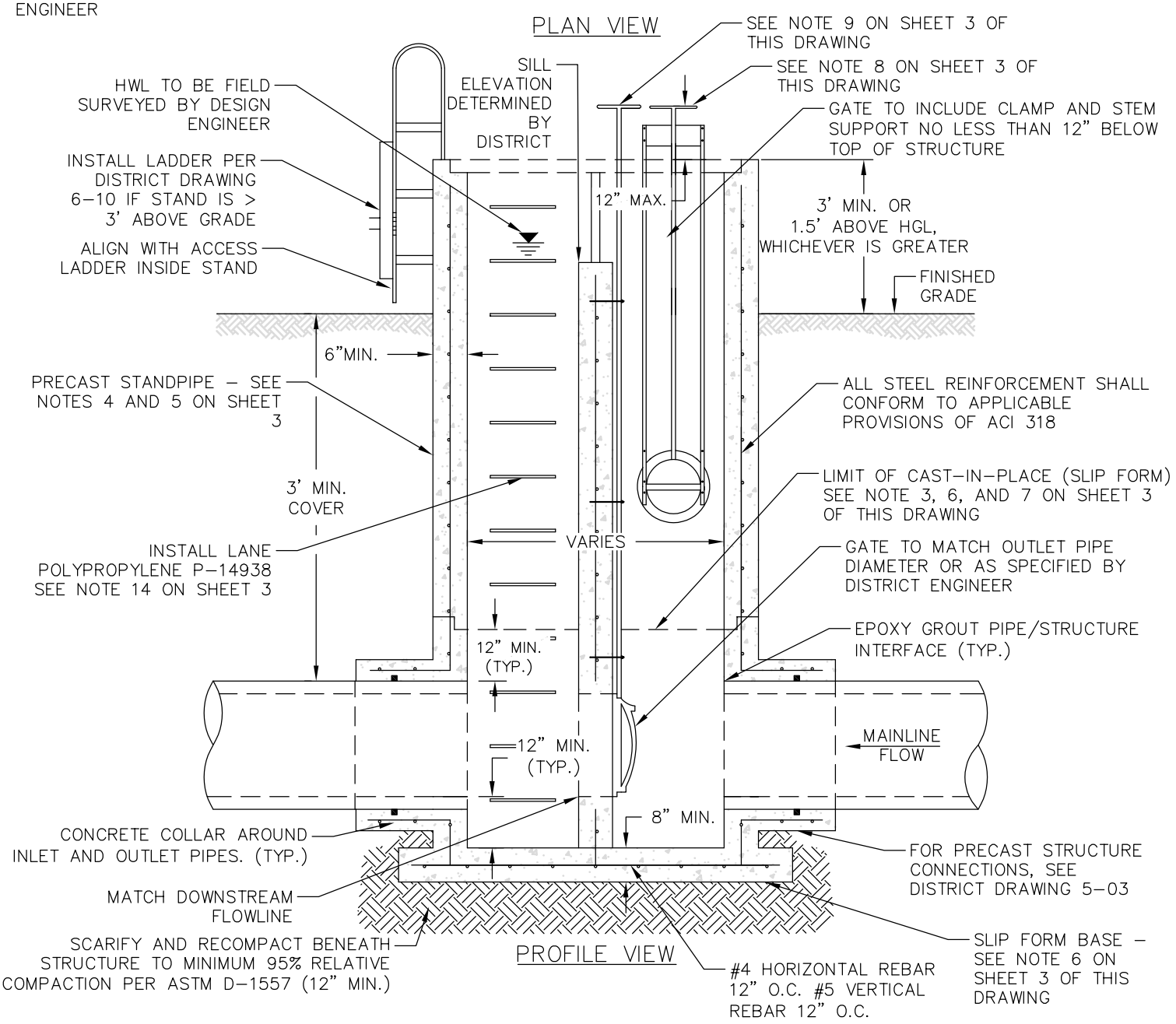
CONCRETE PIPE TABLE						
PIPE I.D.	WALL THICKNESS (MIN.)	WALL	PIPE O.D. (MIN.)	BELL O.D. (MIN.)	RCP CLASS	JOINT DEPTH (MIN.)
12"	2–1/4"	B, C, D,	16–1/2"	20–5/8"	V	3–3/4"
15"	2–3/8"	B, C, D,	19–3/4"	24–1/8"	IV, V	3–3/4"
18"	2–1/2"	B, C, D,	23"	28"	IV, V	3–3/4"
24"	3"	B, C, D,	30"	36"	IV, V	3–7/8"
30"	3–1/2"	B, C, D,	37"	43–1/2"	IV, V	3–7/8"
36"	4"	B, C, D,	44"	52"	IV, V	3–7/8"
42"	4–1/2"	B, C, D,	51"	59–1/2"	IV, V	4–5/8"
48"	4–3/4"	B, C, D,	59–1/2"	59–1/2"	IV, V	4–1/4"
54"	5–1/2"	B, C, D,	65"	65"	IV, V	4–1/4"
60"	6"	B, C, D,	72"	72"	IV, V	4–3/4"

NOTES:

1. CONFORMS TO CURRENT ASTM C361 REQUIREMENTS.
2. MANUFACTURED WITH TYPE II/V CEMENT.
3. LAY LENGTH FOR ALL SIZES SHALL BE 8'.
4. ALLOWABLE JOINT GAP 0.04' (1/2").
5. PIPE SHALL BE INSTALLED WITH BELL/GROOVE FACING UPSTREAM.
6. REINFORCEMENT SHALL BE CIRCULAR OR APPROVED ALTERNATIVE.
7. ANY DEFLECTIONS OF PIPE SHALL MEET MANUFACTURERS REQUIREMENTS.
8. SEE DISTRICT STANDARD SPECIFICATION 9–01 PIPE AND FITTINGS FOR ADDITIONAL INFORMATION.

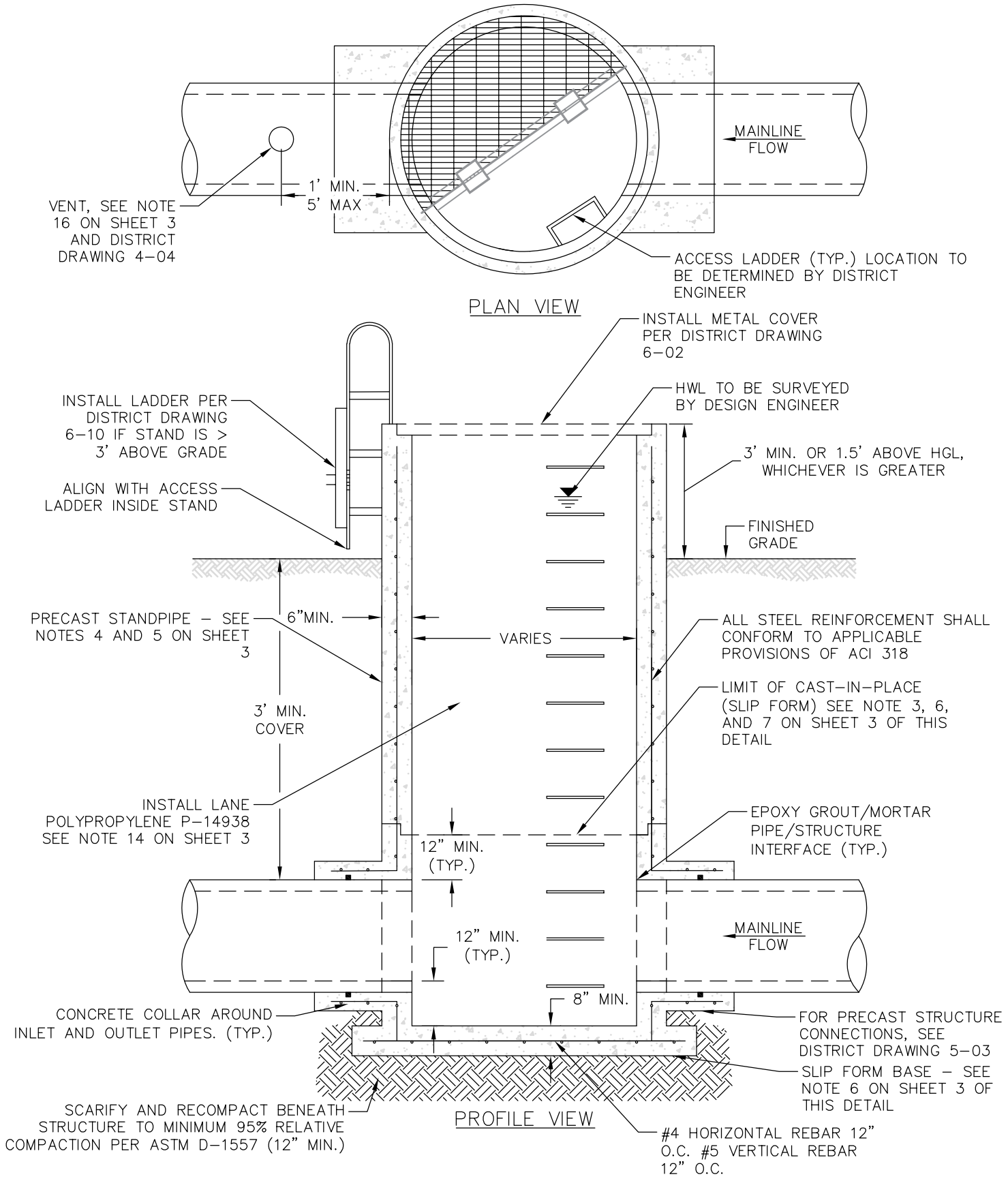


PLAN VIEW



PROFILE VIEW

FRESNO IRRIGATION DISTRICT		STANDPIPE	
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 5-01	
	DATE: 2025		SHEET 1 OF 3



FRESNO IRRIGATION DISTRICT		STANDPIPE W/O GATES
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-01 SHEET 2 OF 3

STRUCTURE NOTES:

1. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.

2. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

3. ALL CAST-IN-PLACE (SLIP FORM) STRUCTURES SHALL INCLUDE FIBERCAST 500 OR EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH (1.5") TO 2 INCH (2"). APPLICATION RATE AT A MINIMUM OF 1.5 POUNDS PER CUBIC YARD.

4. USE RAMNEC BUTYL RUBBER JOINT COMPOUND AROUND PRECAST JOINT(S) OR APPROVED EQUIVALENT WATERSTOP.

5. PRECAST STANDPIPE SHALL MEET ASTM C-478. ALL JOINTS SHALL BE WATERTIGHT PER ASTM C990.

6. CAST-IN-PLACE (SLIP FORM) BASE SHALL MEET ACI 318 AND ASTM C-150 SPECIFICATIONS. WALLS SHALL BE MIN. 8 INCH (8") THICK. POUR PAD AND WALLS AT THE SAME TIME. ALL JOINTS SHALL BE WATERTIGHT.

7. TOP OF SLIP FORM SHALL BE CAST WITH APPROPRIATE IMPRESSION RINGS TO ACCEPT SPIGOT, BELL IMPRESSIONS WILL NOT BE ACCEPTED.

8. INSTALL FRESNO VALVES AND CASTINGS GATE PER SPECIFICATIONS ON PLAN SHEET. RISING STEM REQUIRED FOR ALL GATES. USE MODEL 20-10C FOR ALL TURNOUT GATES.

9. INSTALL 101C FRESNO VALVES AND CASTINGS GATE PER SPECIFICATIONS ON PLAN SHEET. RISING STEM REQUIRED FOR ALL GATES. CONTRACTOR SHALL SUBMIT SHOP DRAWING FOR FID APPROVAL PRIOR TO ORDERING THE GATE.

10. TOP OF SLIP FORM SHALL BE CAST WITH APPROPRIATE IMPRESSION RINGS TO ACCEPT SPIGOT, BELL IMPRESSIONS WILL NOT BE ACCEPTED.

11. SOIL ADJACENT TO STRUCTURE SHALL BE BUILT UP AND BUILT OUT TO FINISHED GRADE, COMPACTED TO 93% RELATIVE COMPACTION AND COMPLY WITH ASTM D-1557.

12. EXTERIOR FORMS MAY BE REQUIRED TO ENSURE UNIFORM WALL THICKNESS.

13. STAND SHALL BE LEVEL AND PLUMB. SHIMMING OF JOINTS WILL NOT BE ALLOWED.

14. SEE CAL/OSHA STANDARDS FOR FIXED LADDER REQUIREMENTS.

15. THE DISTRICT ENGINEER MUST APPROVE ALL CHANGES WHICH MAY OCCUR DUE TO FIELD CONDITIONS.

16. DOWNSTREAM AIR VENT MAY BE REQUIRED BY DISTRICT ENGINEER.

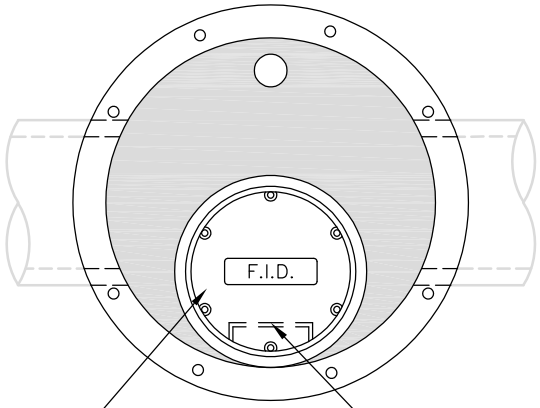
17. BACKUP STANDPIPES TO BE A MIN. 60" DIAMETER UNLESS SPECIFIED BY DISTRICT ENGINEER.

18. PIPE CONNECTION TO STANDPIPE SHALL BE RADIAL TO CENTER OF STANDPIPE.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	STANDPIPE NOTES	
	"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-01 SHEET 3 OF 3

NOTES:

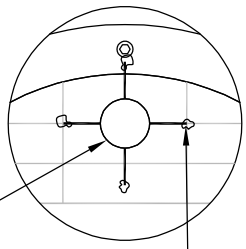
1. UNLESS OTHERWISE SPECIFIED ALL SURGE CHAMBERS SHALL BE MONOLITHIC.
2. BERMAD AIR RELEASE VALVE MODEL C50 SHALL BE USED WHERE CALLED OUT FOR ON PLANS.
3. DIMENSIONS, REINFORCEMENT, AND NOTES ARE FOR REFERENCE PURPOSES ONLY. A SCALED DRAWING SHALL BE PREPARED AND SUBMITTED WITH ALL PLAN SETS PRIOR TO CONSTRUCTION.



PLAN VIEW

ACCESS LADDER (TYP.)

DETAIL "A"



VENT

TIE IN VENT TO REBAR PRIOR TO POURING CONCRETE FOR LID

INSTALL 30" DIA. PRESSURE TYPE (10 PSI) D&L A-1366/A-1363-R10 SERIES W/6-BOLT AND GASKET. CAST MANHOLE IN LID, FLUSH WITH TOP OF LID, OFFSET FOR VENT CLEARANCE, AND TO BE ABOVE LADDER.

INSTALL VENT AS REQUIRED. SEE DISTRICT DRAWING 4-04

LID TO BE MIN. OF 12 INCH THICK WITH #6 REBAR AT 12" O.C. BOTH WAYS

12" MAX.

ROMAC XR501 COUPLER

RECESS BOLTS OR GRIND EXCESS THREADS TO A SMOOTH FINISH

SEE DETAIL "A"

SEE NOTE 7 ON SHEET 2

SEE NOTE 7 ON SHEET 2

FINISHED GRADE

SEE NOTE 4 ON SHEET 2

OFFSET VENT. SEE SHEET 2

30"

SECURE LID PER BOLT SCHEDULE ON SHEET 2 WITH GALVANIZED GRADE 5 ALL-THREAD 3/4 INCH BOLTS, UNIFORM SPACING. ALL-THREAD SHALL BE EMBEDDED A MIN. OF 12 INCHES INTO CHAMBER WALLS. EPOXY COAT ALL EXPOSED FASTENERS

3' MIN. (TYP.)

48" MIN.

ALL STEEL REINFORCEMENT SHALL CONFORM TO APPLICABLE PROVISIONS OF ACI 318

DISTRICT ENGINEER TO DETERMINE IF A PRECAST STANDPIPE MAY BE USED.

#5 VERTICAL REBAR AT 12" O.C., #4 HORIZONTAL REBAR AT 12 " O.C. (TYP.)

EPOXY GROUT PIPE/STRUCTURE INTERFACE (TYP.) SEE NOTE 13

12"

12" (TYP.)

8" MIN.

INSTALL LANE POLYPROPYLENE P-14938 RUNGS AND SEE NOTE 11 ON SHEET 2

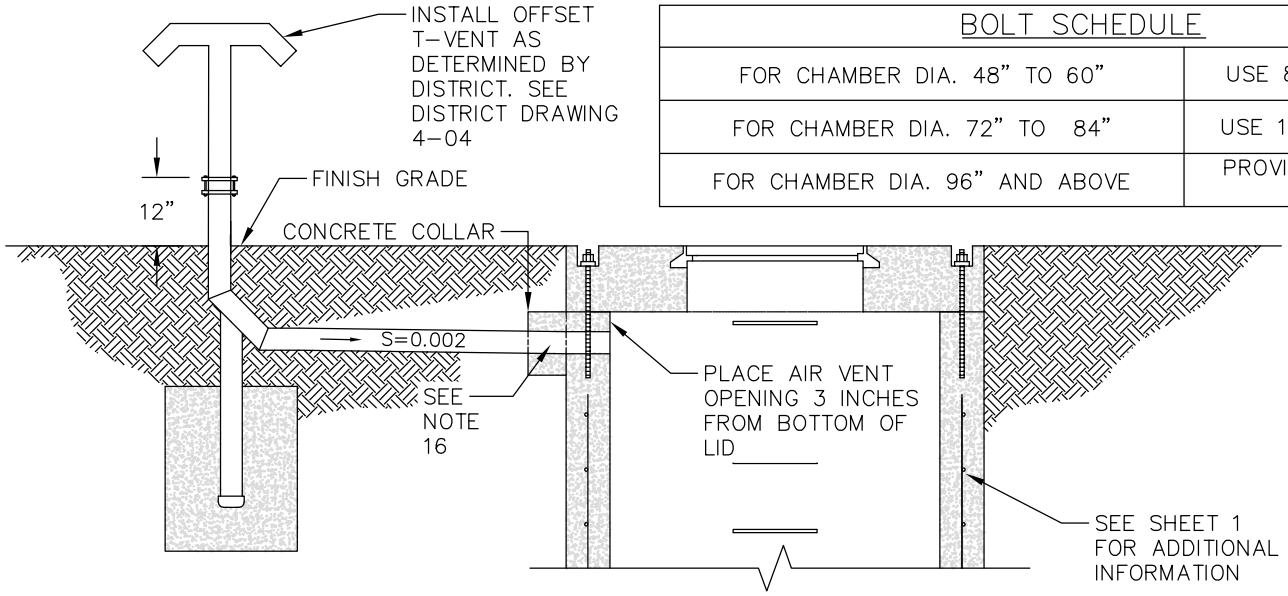
FOR STANDPIPE CONNECTIONS, SEE DISTRICT DRAWING 5-03

PROFILE VIEW

SCARIFY AND RECOMPACT BENEATH STRUCTURE TO MIN. 95% RC PER ASTM D-1557 (12" MIN.)

SLIP FORM BASE - SEE NOTE 5 ON SHEET 2

FRESNO IRRIGATION DISTRICT		SURGE CHAMBER
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-02



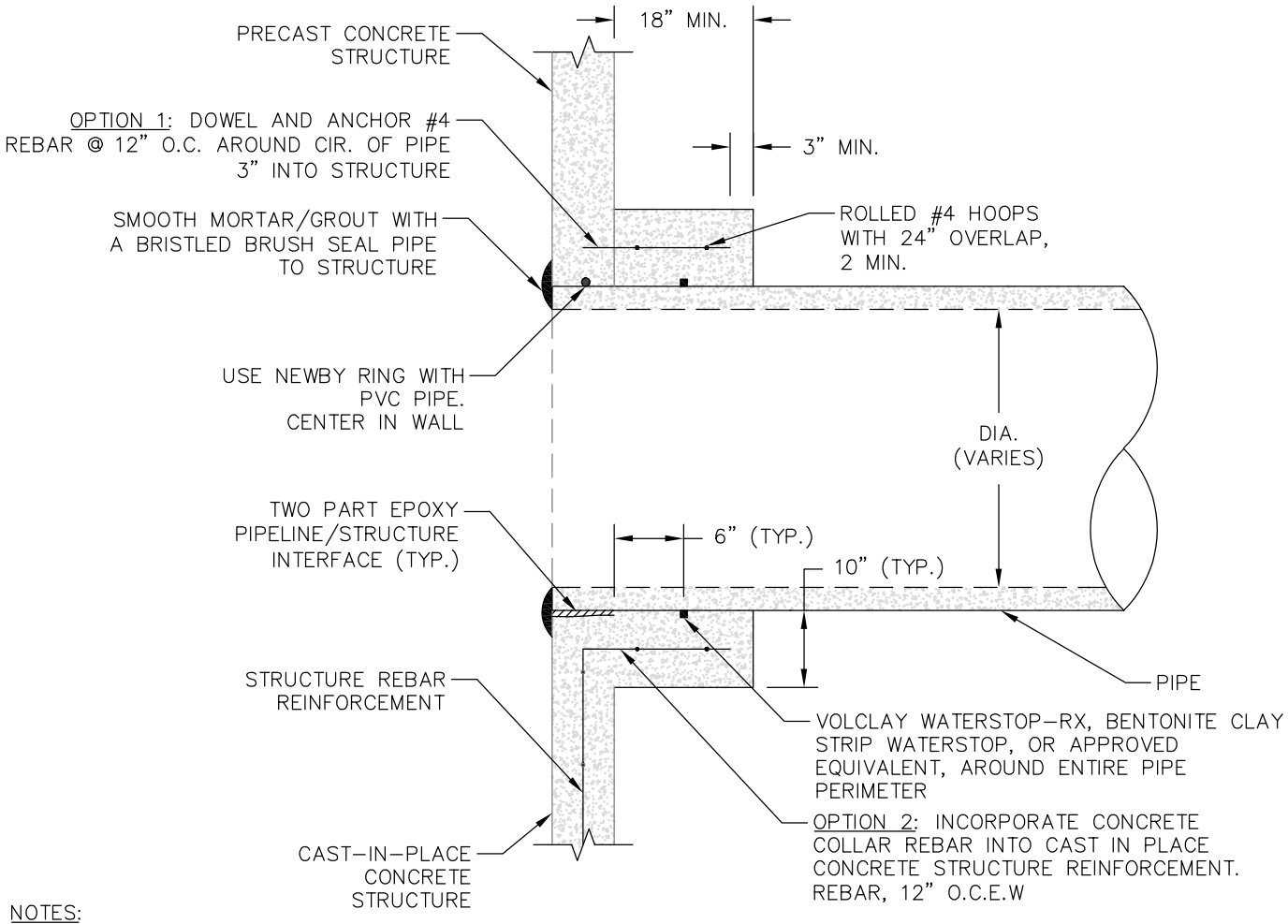
BOLT SCHEDULE	
FOR CHAMBER DIA. 48" TO 60"	USE 8 ALL-THREAD.
FOR CHAMBER DIA. 72" TO 84"	USE 10 ALL-THREAD.
FOR CHAMBER DIA. 96" AND ABOVE	PROVIDE ENGINEERED DESIGN

STRUCTURE NOTES:

1. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.
2. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
3. FIBERCAST 500 OR EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE AT A MINIMUM OF 1.5 POUNDS PER CUBIC YARD AND SHALL BE INCLUDED IN THE CONCRETE MIX.
4. USE BUTYL RUBBER JOINT COMPOUND OR APPROVED EQUIVALENT WATERSTOP AROUND JOINTS.
5. CAST-IN-PLACE (SLIP FORM) BASE SHALL MEET ACI 318 AND ASTM C-150 SPECIFICATIONS. WALLS SHALL BE MIN. EIGHT INCH (8") THICK. POUR PAD AND WALLS AT THE SAME TIME. ALL JOINTS SHALL BE WATERTIGHT.
6. TOP OF SLIP FORM SHALL BE CAST WITH APPROPRIATE IMPRESSION RINGS BEFORE CONCRETE HAS COMPLETELY SET.
7. TOP OF LID SHALL BE FLUSH WITH ADJACENT CONCRETE OR 0.10 FEET HIGHER THAN FINISHED GRADE.
8. A MINIMUM OF 12 INCHES OF CONCRETE IS REQUIRED BETWEEN THE TOP OF DISTRICT PIPE AND THE BOTTOM OF THE LID.
9. SOIL ADJACENT TO SLIP FORM CONSTRUCTION SHALL BE BUILT UP AND BUILT OUT A MINIMUM OF 5 FEET OR LIMITS OF DISTURBED SOIL, WHICHEVER IS GREATER, TO FINISHED GRADE, AND COMPACTED TO 93% RELATIVE COMPACTION, AND COMPLY WITH ASTM D-1557.
10. EXTERIOR FORMS MAY BE REQUIRED TO ENSURE UNIFORM WALL THICKNESS.
11. SEE CAL/OSHA STANDARDS FOR FIXED LADDER REQUIREMENTS.
12. THE DISTRICT ENGINEER MUST APPROVE ANY DESIGN CHANGES THAT MAY OCCUR DUE TO UNEXPECTED FIELD CONDITIONS.
13. NON SHRINK GROUT OR HIGH STRENGTH MORTAR SHALL BE CONSTRUCTION GRADE AND 5,000 PSI MINIMUM.
14. ALL STEEL EXPOSED TO SOIL SHALL HAVE A MINIMUM OF TWO LAYERS OF PASCO ALL-WEATHER 20 MIL. PIPE PROTECTION TAPE INSTALLED. ALL FIELD WELDS SHALL BE COLD GALVANIZED.
15. OFFSET VENT SHALL BE CAST INTO SLIP FORM WHILE CONCRETE IS WORKABLE. CORING SHALL ONLY BE ALLOWED WITH APPROVAL FROM THE DISTRICT ENGINEER. IF ALLOWED, CORE A HOLE 1.5 TIMES LARGER THAN VENT AND SEAL USING NEWBY AND MORTAR/GROUT.
16. A CONCRETE COLLAR SHALL BE POURED ON THE OUTSIDE OF THE STRUCTURE PER DISTRICT SPECIFICATIONS AND DRAWING 4-06.
17. A STRUCTURAL DESIGN CREATED BY A CIVIL OR STRUCTURAL ENGINEER SHALL BE PREPARED AND APPROVED BY DISTRICT ENGINEER, FOR VERTICAL SUBGRADE STRUCTURES EXCEEDING 10 FEET IN HEIGHT OR HEAD PRESSURES GREATER THAN 10 FEET, MEASURED FROM THE STRUCTURE INVERT.

FRESNO IRRIGATION DISTRICT		SURGE CHAMBER NOTES	
"Your Most Valuable Resource - Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 5-02
		DATE: 2025	SHEET 2 OF 2

*FOR CONCRETE WALLS 4 INCHES OR GREATER



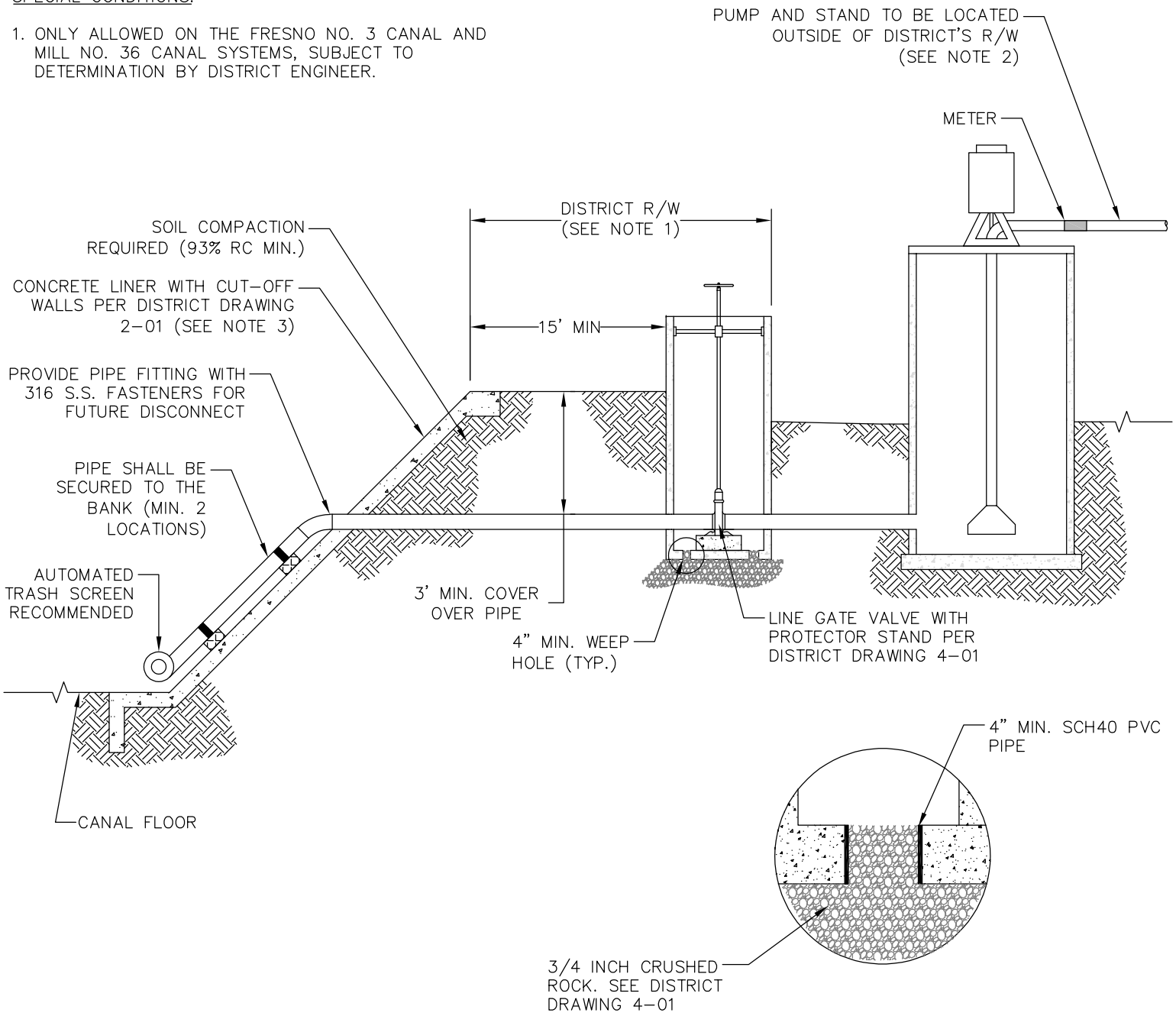
NOTES:

1. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.
2. CONCRETE LINING SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
3. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.
4. COLLARS SHALL BE FORMED TO LIMIT EXCESS CONCRETE PLACEMENT. REMOVE FORMS PRIOR TO BACKFILL.
5. DIAMETER OF ROLLED HOOPS SHALL BE PIPE INSIDE DIAMETER + (2 X WALL THICKNESS) + 10 INCHES.
6. CONCRETE SHALL BE VIBRATED AROUND PIPE JOINT DURING PLACEMENT.
7. PREPARE SURFACE OF STRUCTURE AND PIPE BY WIRE BRUSHING, WATER BLASTING, OR SAND BLASTING AS REQUIRED AND TREATED WITH A MEDIUM VISCOSITY TWO COMPONENT CONSTRUCTION GRADE STRUCTURAL EPOXY ADHESIVE PRIOR TO CONCRETE PLACEMENT.
8. IF A VENT IS REQUIRED, VENT SHALL BE INCORPORATED INTO CONCRETE COLLAR. LENGTHEN COLLAR AS NECESSARY. COLLAR TO EXTEND 12 INCH MINIMUM BEYOND VENT.
9. OPTION 1 SHALL BE USED FOR THE STRUCTURE TO COLLAR REBAR CONNECTION.
10. JOINT SHALL BE WATERTIGHT.
11. FOR SLIP FORM CONSTRUCTION, ALL REBAR SHALL BE INTEGRATED INTO THE STRUCTURE.
12. NEWBY RING SHALL BE USED AT THE PIPELINE STRUCTURE INTERFACE WHEN PVC PIPE IS USED.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	STRUCTURE/STANDPIPE CONNECTION	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-03 SHEET 1 OF 1

SPECIAL CONDITIONS:

1. ONLY ALLOWED ON THE FRESNO NO. 3 CANAL AND MILL NO. 36 CANAL SYSTEMS, SUBJECT TO DETERMINATION BY DISTRICT ENGINEER.



NOTES:

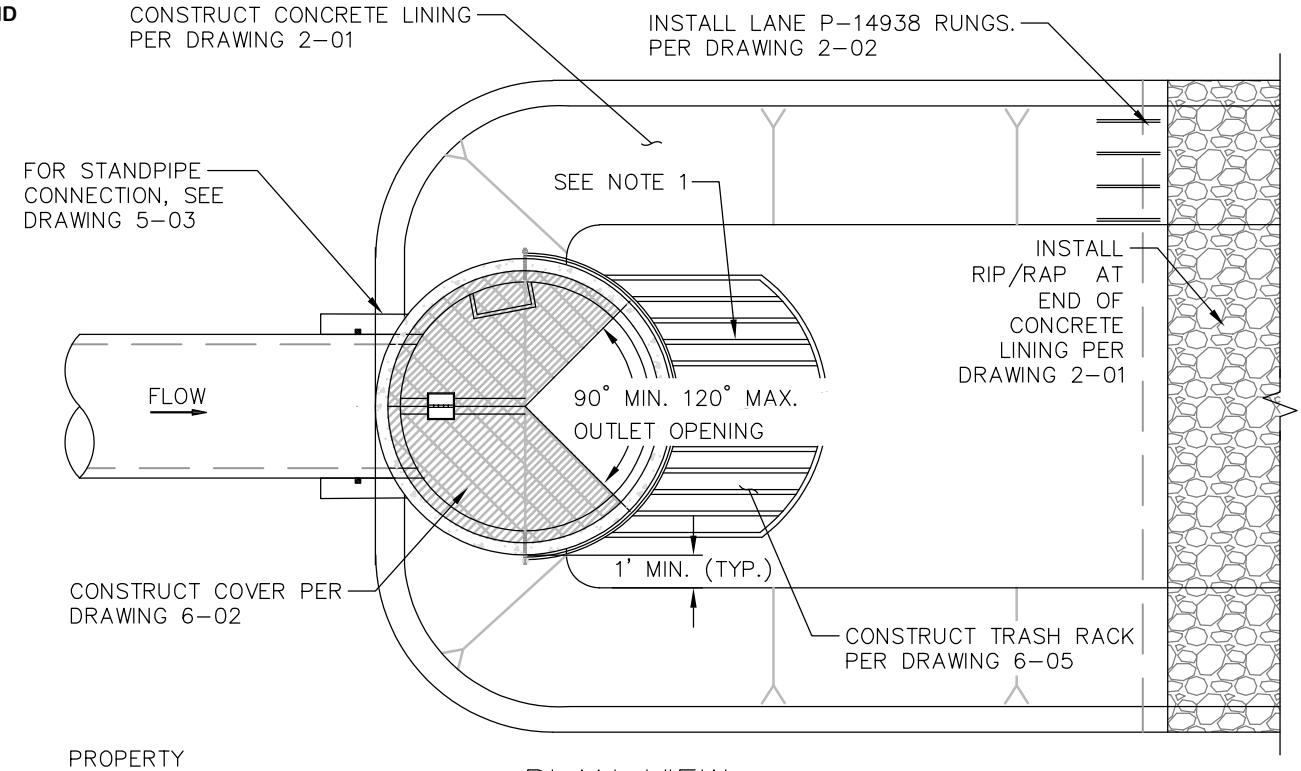
1. DISTRICT R/W:
   CANALS 50 C.F.S. AND ABOVE AS REQUIRED BUT NOT LESS THAN 20 FEET.
   CANALS UNDER 50 C.F.S. AS REQUIRED BUT NOT LESS THAN 17 FEET.

2. WHEN REQUIRED, A FLOW METER APPROVED BY DISTRICT SHALL BE FURNISHED AND INSTALLED ON THE DISCHARGE PIPE, PER MANUFACTURERS INSTALLATION REQUIREMENTS.

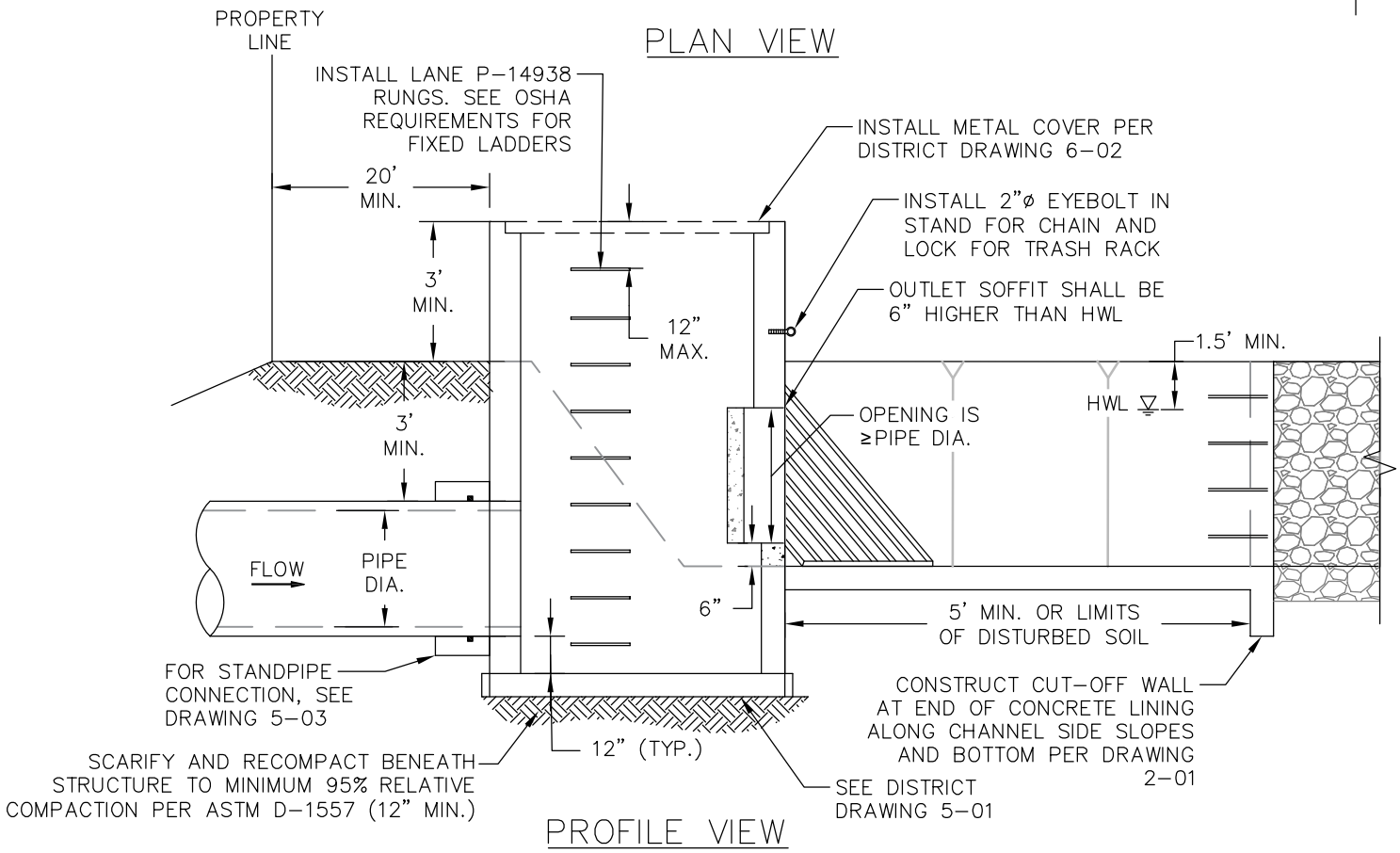
3. LANDOWNER ASSUMES ALL RESPONSIBILITY FOR THE MAINTENANCE, REPAIR OR REPLACEMENT OF CONCRETE LINING, PIPELINE, AND PIPELINE APPURTENANCES.

FRESNO IRRIGATION DISTRICT		OFFSET PUMP STAND ROTATING SCREEN INTAKE
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 5-04
	DATE: 2025	SHEET 1 OF 1

***INLET STAND ON SHEET 2**



PLAN VIEW

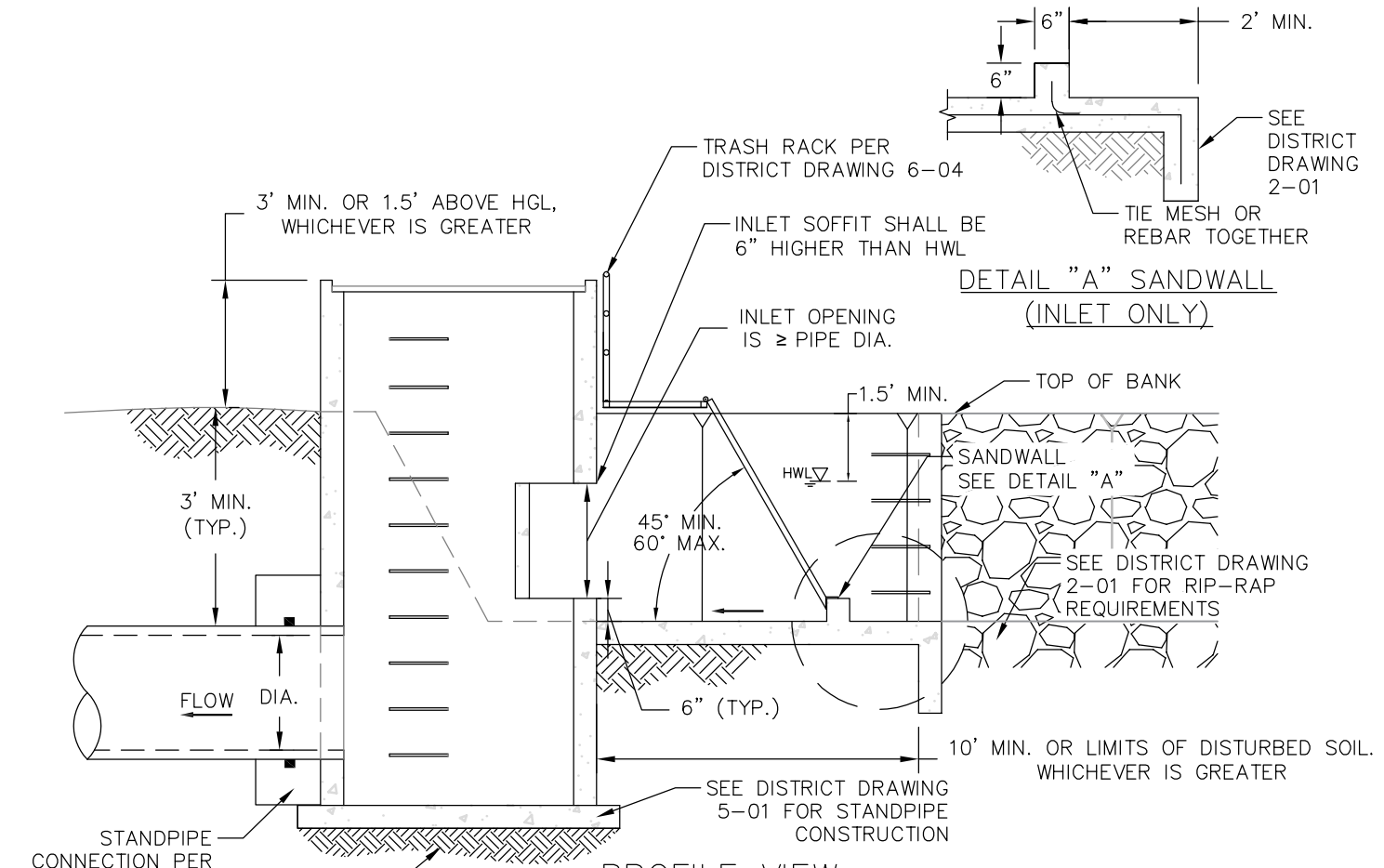


PROFILE VIEW

NOTES:

1. BOTTOM MUST REMAIN FLAT AND LEVEL WITH FLOW LINE TO A POINT BEHIND TRASH RACK PLACEMENT.
2. BACKFILL REQUIREMENTS PER DISTRICT DRAWING 4-02.
3. STANDS GREATER THAN 3 FEET ABOVE FINISHED GRADE, REQUIRE EXTERNAL LADDER PER DRAWING 6-10.

FRESNO IRRIGATION DISTRICT		OUTLET STAND
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-05



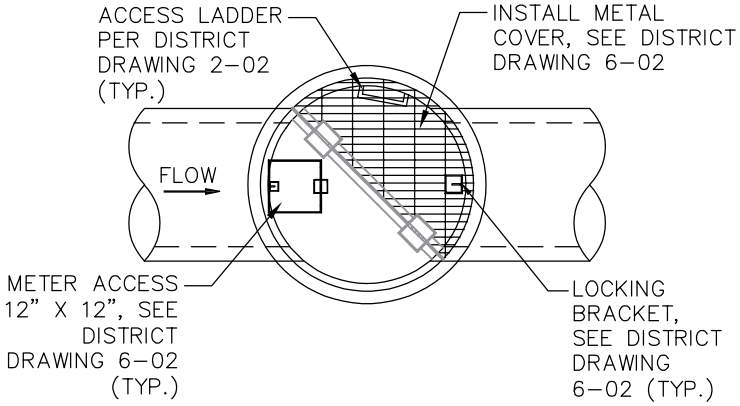
DETAIL "A" SANDWALL (INLET ONLY)

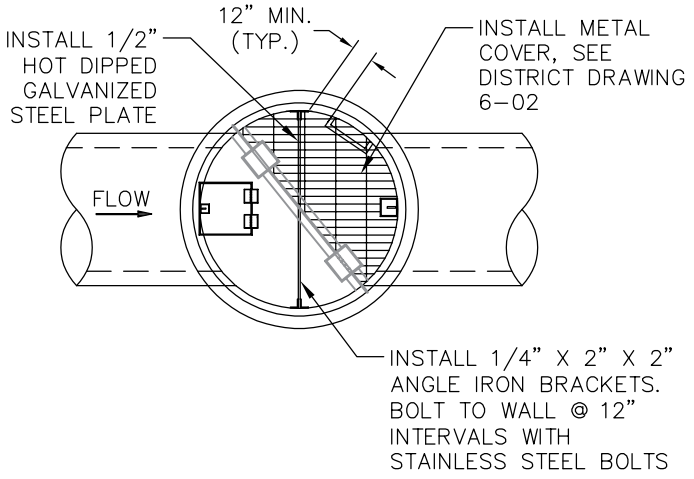
PROFILE VIEW

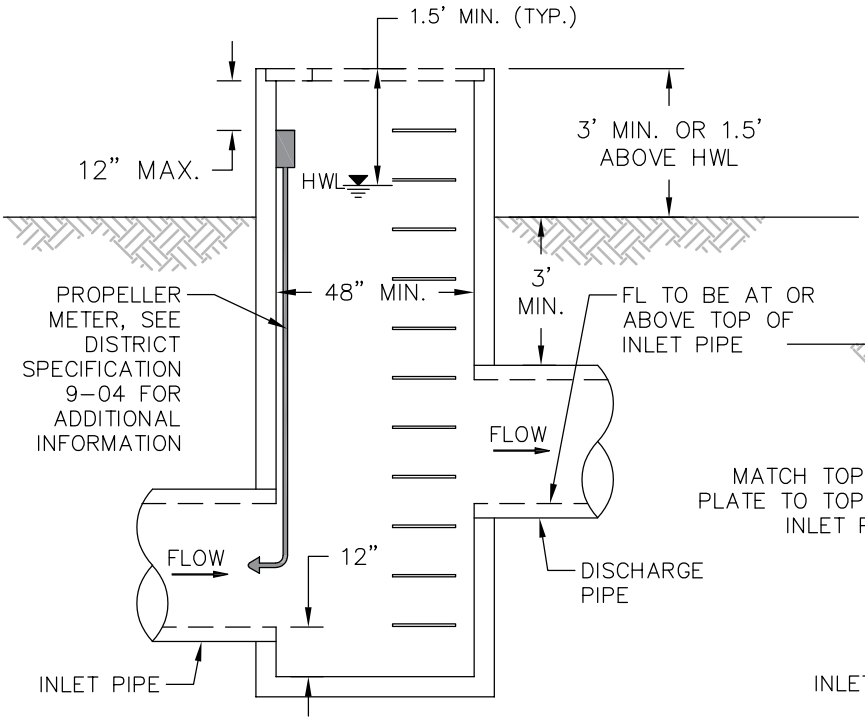
PLAN VIEW

***OUTLET STAND ON SHEET 1**

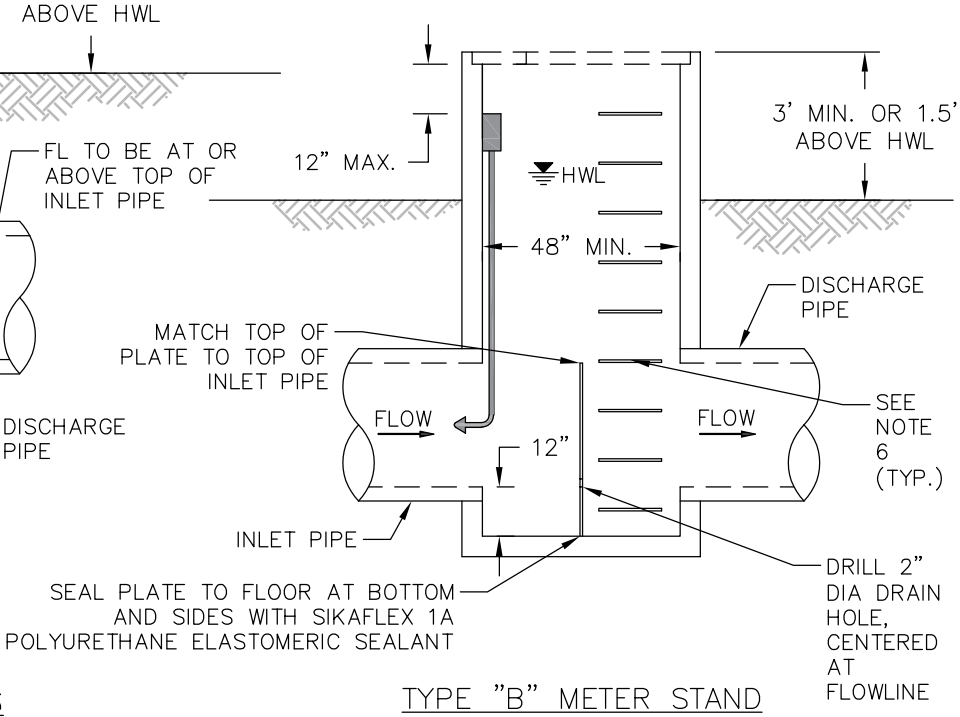
FRESNO IRRIGATION DISTRICT	INLET STAND	
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-05 SHEET 2 OF 2







TYPE "A" METER STAND
OFFSET CONNECTING PIPES

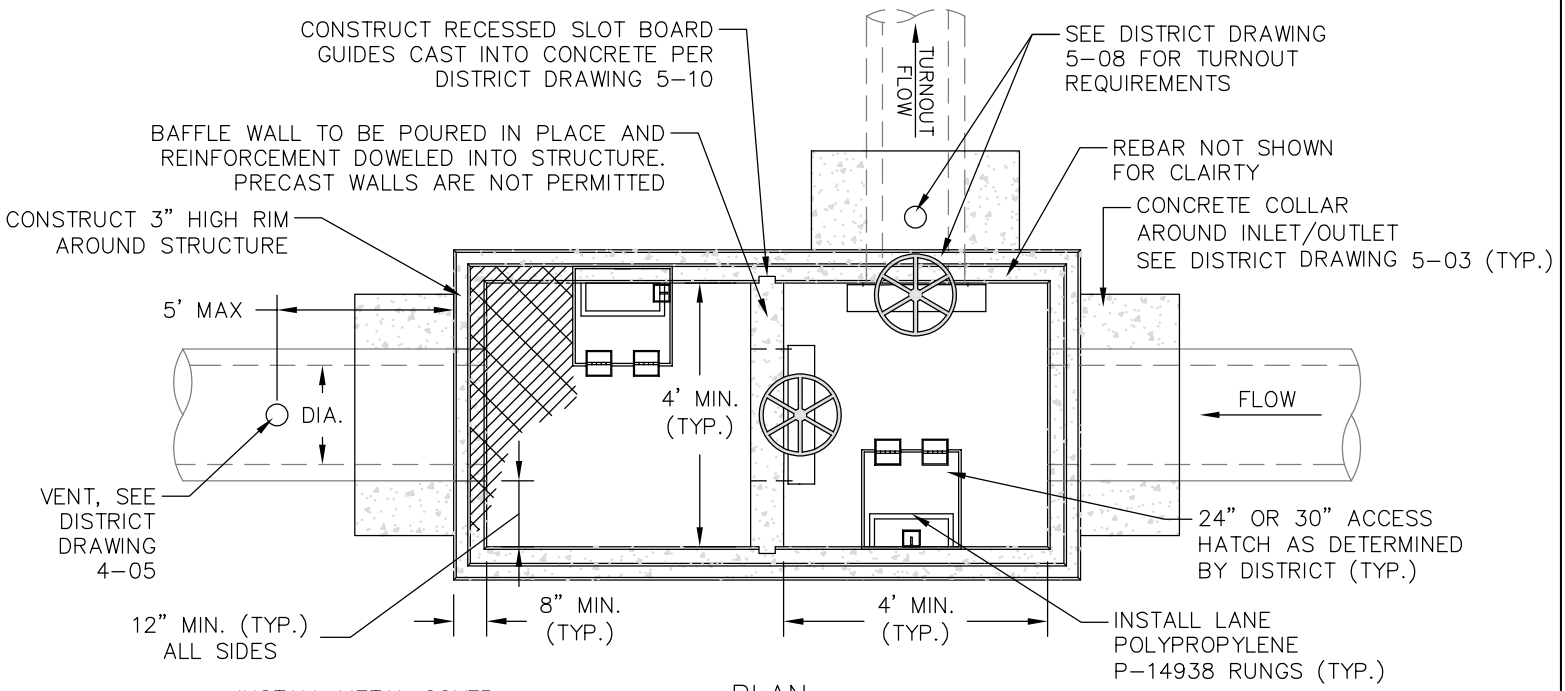


TYPE "B" METER STAND

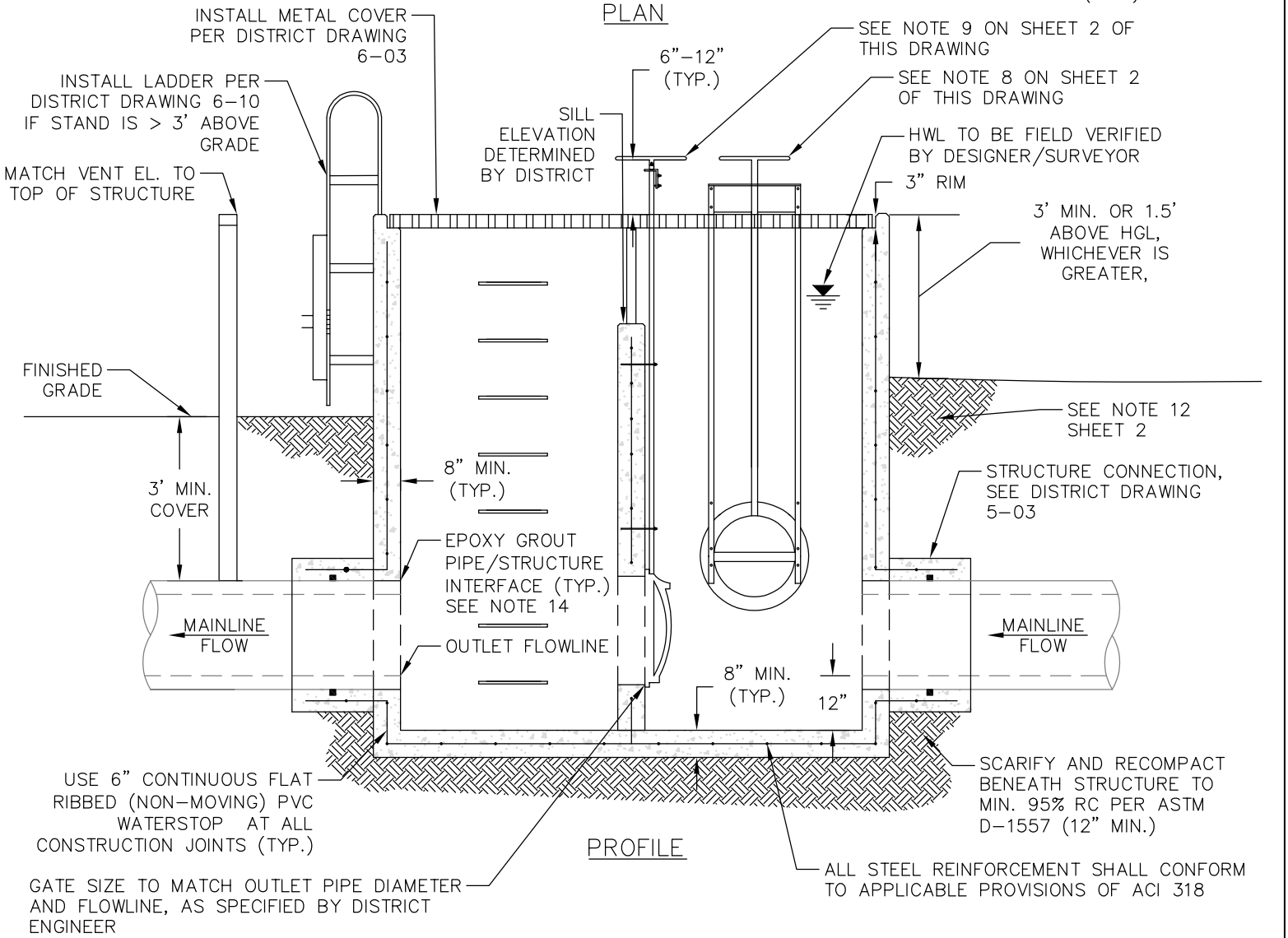
NOTES:

1. SEE DRAWING 5-01 FOR STANDPIPE CONSTRUCTION.
2. ALL METER STANDS MUST BE INSTALLED A MINIMUM OF 10 PIPELINE DIAMETERS DOWNSTREAM FROM GATE OR BEND.
3. METERS SHALL BE PER DISTRICT SPECIFICATION 9-04 AND INSTALLED PER MANUFACTURERS SPECIFICATIONS.
4. COVERS FOR STANDS LARGER THAN 60 INCHES SHALL INCLUDE A HINGE TO ALLOW FOR HALF OF COVER TO OPEN.
5. ALL METAL COVERS SHALL INCLUDE A 12 INCH BY 12 INCH METER ACCESS HOLE.
6. SUBSTITUTE LANE INTERNATIONAL P14938 STEPS WITH LANE 10938 FOR ALL STEPS AT OR BELOW BACKUP PLATE – 48 INCH STANDS ONLY.
7. METER STAND DIAMETER IS DEPENDENT ON CONNECTING PIPES, AS DETERMINED BY DISTRICT ENGINEER.

FRESNO IRRIGATION DISTRICT		METER STAND
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-06
		SHEET 1 OF 1



PLAN



PROFILE

GATE SIZE TO MATCH OUTLET PIPE DIAMETER AND FLOWLINE, AS SPECIFIED BY DISTRICT ENGINEER

ALL STEEL REINFORCEMENT SHALL CONFORM TO APPLICABLE PROVISIONS OF ACI 318

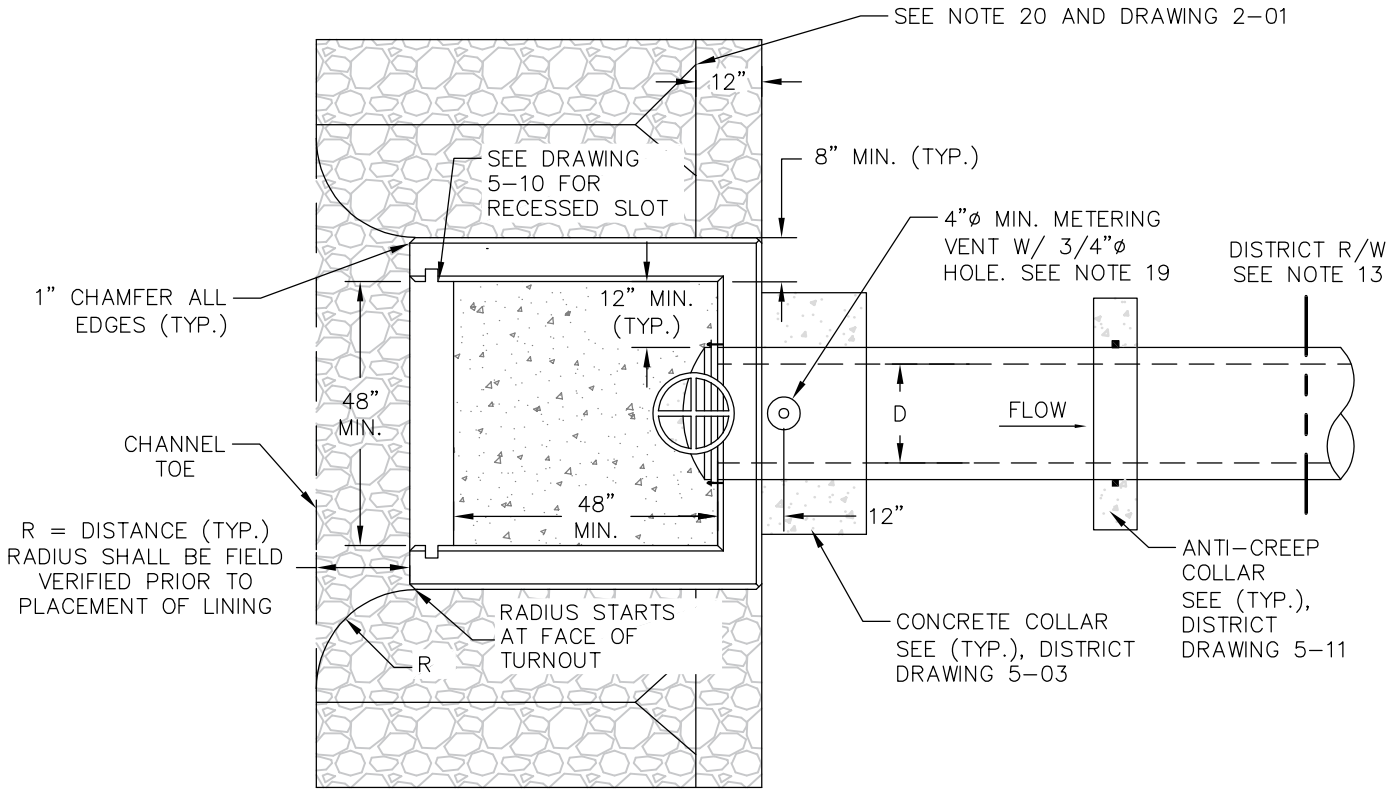
FRESNO IRRIGATION DISTRICT		BACKUP STRUCTURE – BOX
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-07 SHEET 1 OF 2

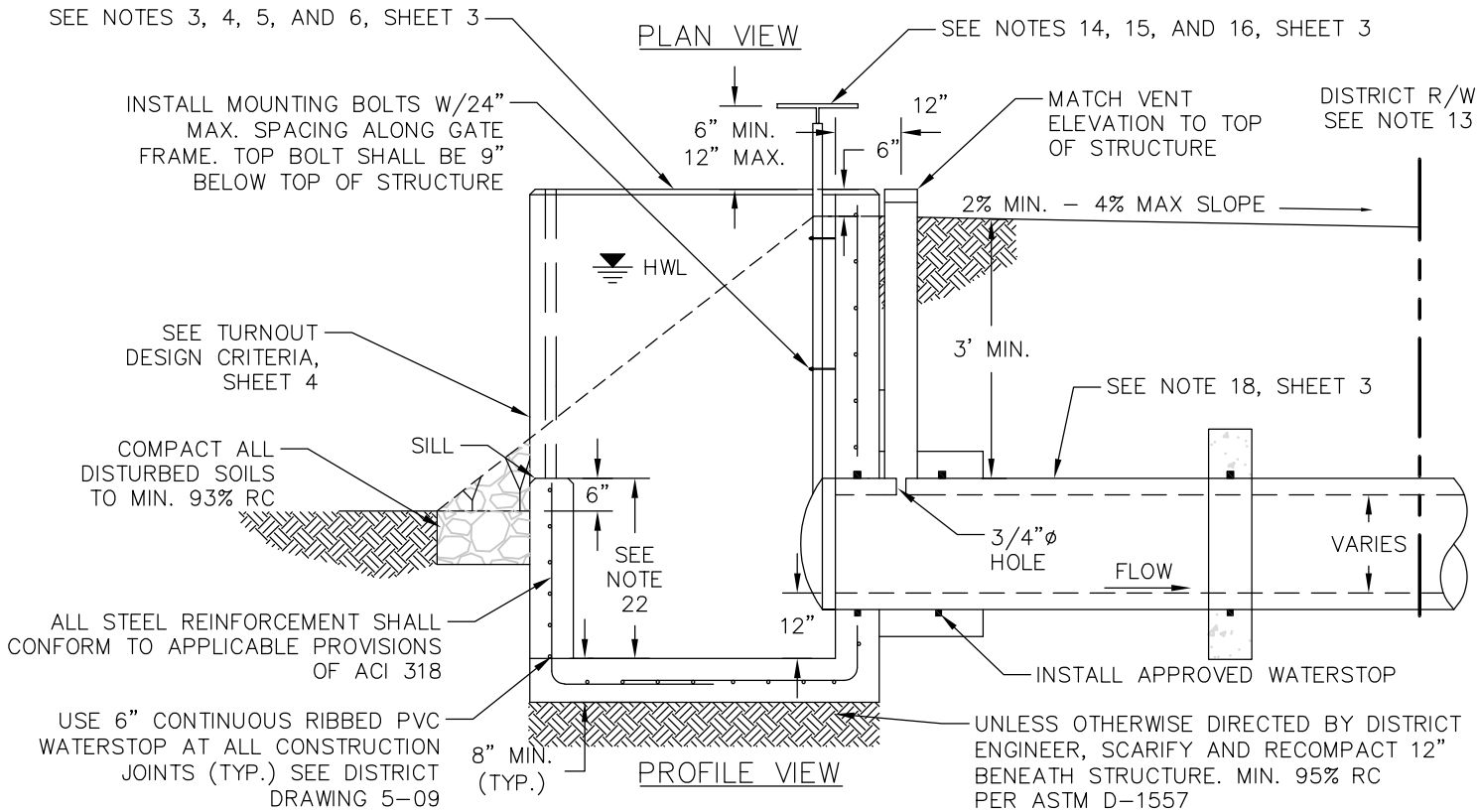
STRUCTURE NOTES:

1. DIMENSIONS, REINFORCEMENT, AND NOTES ARE FOR DRAWING PURPOSES ONLY. A SCALED DETAIL SHALL BE PREPARED AND SUBMITTED WITH ALL PLAN SETS PRIOR TO CONSTRUCTION.
2. STRUCTURE SHALL MEET ACI 318 REQUIREMENTS. THE CONTRACTOR SHALL SUBMIT A CONCRETE MIX DESIGN AND STEEL REINFORCEMENT SPECIFICATIONS FOR DISTRICT REVIEW AND APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.
3. USE BUTYL OR SIMILAR WATERSTOP AROUND JOINTS. JOINTS SHALL BE GROUTED ON THE INSIDE AND OUTSIDE. ALL JOINTS SHALL BE WATERTIGHT.
4. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6–1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% – 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
5. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.
6. DISTRICT'S ENGINEER MUST APPROVE ALL DESIGN CHANGES THAT OCCUR DUE TO UNEXPECTED FIELD CONDITIONS.
7. THE CONTRACTOR SHALL SUBMIT TO DISTRICT FOR REVIEW AND APPROVAL SHOP DRAWINGS FOR ALL GATES, PRIOR TO ORDERING.
8. TURNOUT GATES: INSTALL FRESNO VALVES AND CASTINGS GATE PER SPECIFICATIONS ON PLAN SHEET. RISING STEM REQUIRED FOR ALL GATES. ALL TURNOUT GATES TO USE MODEL 20–10C.
9. INLINE GATES: INSTALL 101C FRESNO VALVES AND CASTINGS GATE PER SPECIFICATIONS ON PLAN SHEET. RISING STEM REQUIRED FOR ALL GATES. GATE SHALL BE GREATER THAN OR EQUAL TO DOWN STREAM PIPE SIZE OR AS DETERMINED BY DISTRICT ENGINEER.
10. GATES GREATER THAN OR EQUAL TO 48 INCH, ADD 3:1 GEAR REDUCER, OR APPROVED ALTERNATIVE BASED ON MANUFACTURER RECOMMENDATIONS.
11. ACCESS LADDERS TO BE PROVIDED UPSTREAM AND DOWNSTREAM OF THE BAFFLE WALL. SEE CAL/OSHA STANDARDS FOR FIXED LADDER REQUIREMENTS.
12. 93% MINIMUM COMPACTION REQUIRED AROUND STRUCTURE FOR A MINIMUM OF FIVE (5) FEET OR LIMITS OF DISTURBED SOIL, WHICHEVER IS GREATER.
13. DOWN STREAM AIR VENT SHALL BE INSTALLED ON ALL STRUCTURES.
14. NON SHRINK GROUT OR HIGH STRENGTH MORTAR SHALL BE CONSTRUCTION GRADE AND 5,000 PSI MINIMUM.
15. EXTERNAL LADDER COVER REQUIRED PER DRAWING 6–10 IF STRUCTURE IS MORE THAN 3 FEET ABOVE GRADE.

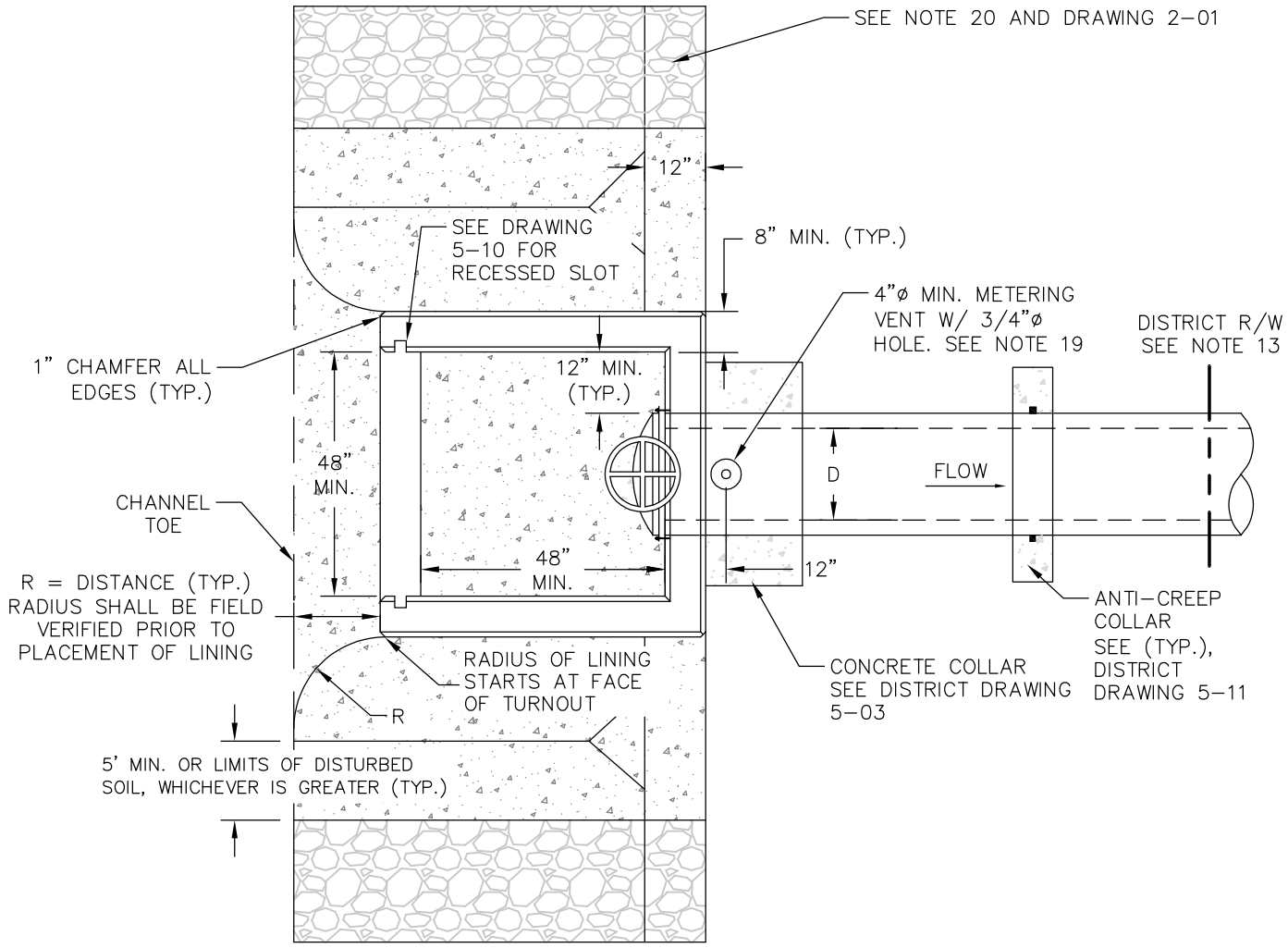
BOX STRUCTURE CRITERIA	
FOR STRUCTURES UP TO 10'	USE #5 VERTICALS, #4 HORIZONTALS AT 10" ON CENTER EACH WAY
FOR STRUCTURES OVER 10'	PROVIDE C.E. OF S.E. STAMPED DESIGN WITH REBAR LAYOUT

FRESNO IRRIGATION DISTRICT		BACKUP STRUCTURE – BOX NOTES	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 5–07
		DATE: 2025	SHEET 2 OF 2

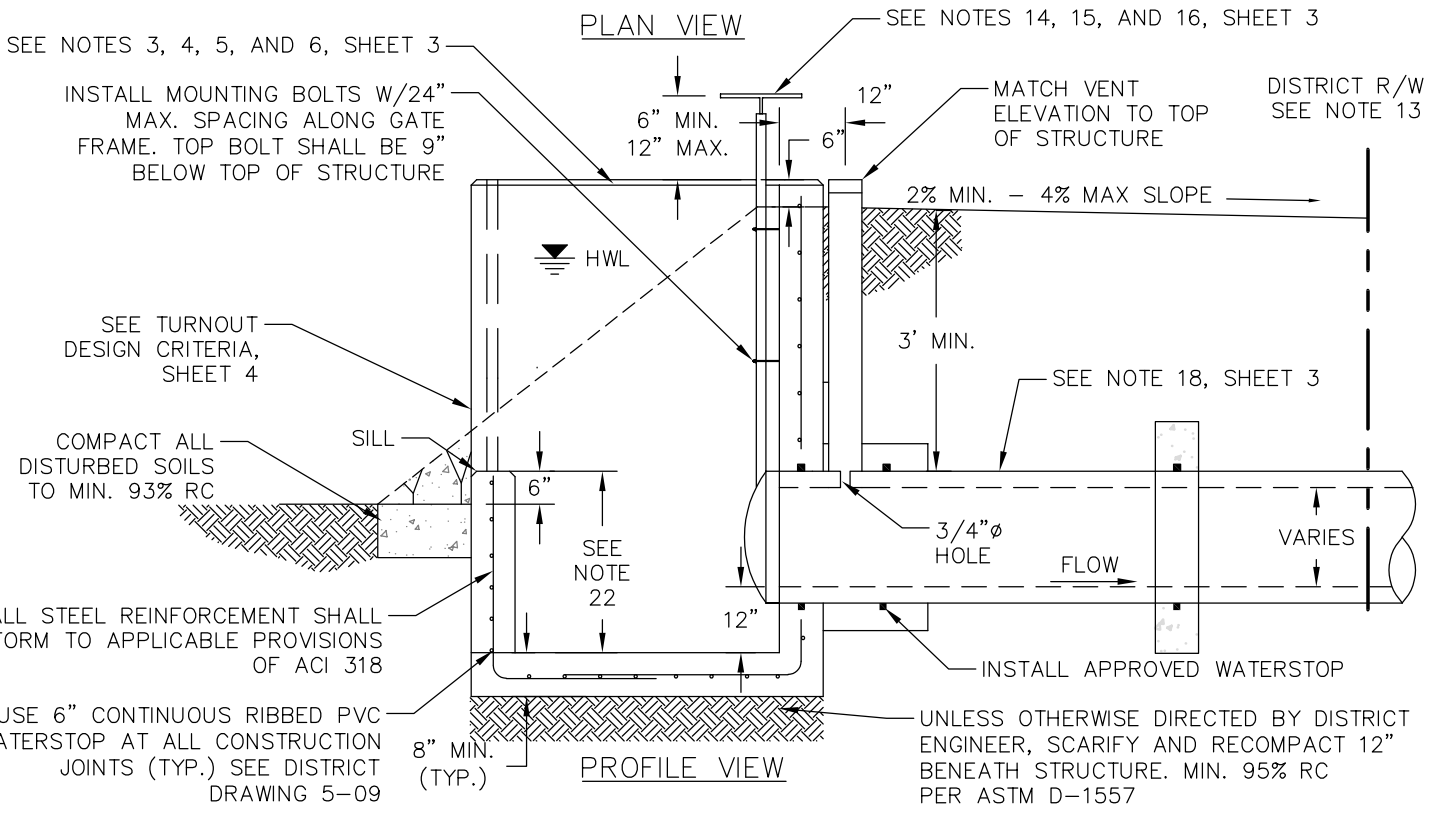




FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	TURNOUT TYPE 1	
	"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-08
			SHEET 1 OF 4



PLAN VIEW



PROFILE VIEW

FRESNO IRRIGATION DISTRICT	TURNOUT TYPE 2	
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-08

STRUCTURE NOTES:

1. TURNOUT TYPE TO BE DETERMINED BY DISTRICT ENGINEER. DETERMINATION SHALL BE BASED ON SOIL TYPE, HEIGHT, OF CANAL BANK, HEIGHT OF CANAL WATER LEVEL COMPARED TO SURROUNDING AREA.

2. DIMENSIONS, REINFORCEMENT, AND NOTES ARE FOR DRAWING PURPOSES ONLY. A SCALED DETAIL SHALL BE PREPARED AND SUBMITTED WITH ALL PLAN SETS PRIOR TO CONSTRUCTION.

3. STRUCTURE SHALL MEET ACI 318 REQUIREMENTS. THE CONTRACTOR SHALL SUBMIT DESIGN AND STEEL REINFORCEMENT SPECIFICATIONS FOR DISTRICT REVIEW AND APPROVAL PRIOR TO CONSTRUCTION. USE BUTYL OR SIMILAR WATERSTOP AROUND JOINT. JOINTS SHALL BE GROUTED ON THE INSIDE AND OUTSIDE. ALL JOINTS SHALL BE WATERTIGHT.

4. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4-01 FOR ADDITIONAL INFORMATION.

5. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6-1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% - 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

6. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.

7. DISTRICT'S ENGINEER MUST APPROVE ALL DESIGN CHANGES THAT OCCUR DUE TO UNEXPECTED FIELD CONDITIONS.

8. ALL NEW TURNOUTS CONSTRUCTED WITHIN A RAISED BANK SHALL CONSTRUCT AN ANTI-CREEP COLLAR PER DRAWING 5-11 OR AS DIRECTED BY DISTRICT'S ENGINEER.

9. REMOVE DEPOSITS/SEDIMENT TO THE NATIVE FLOWLINE OF THE CANAL. CANAL FLOWLINE TO BE FIELD VERIFIED BY DISTRICT INSPECTOR.

10. COMPACTION TESTING SHALL BE PERFORMED BY THE OWNER/AGENCY AS DIRECTED BY DISTRICT'S ENGINEER OR INSPECTOR.

11. SEE STANDARD SPECIFICATION 4-01 FOR ADDITIONAL INFORMATION.

12. SEE DISTRICT DRAWING 4-02 FOR PIPELINE BACKFILL REQUIREMENTS.

13. SEE DISTRICT DRAWING 1-01 FOR RIGHT-OF-WAY REQUIREMENTS.

14. THE CONTRACTOR SHALL SUBMIT TO DISTRICT FOR REVIEW AND APPROVAL SHOP DRAWINGS FOR ALL GATES, PRIOR TO ORDERING.

15. TURNOUT GATES: INSTALL FRESNO VALVES AND CASTINGS GATE PER SPECIFICATIONS ON PLAN SHEET. RISING STEM REQUIRED FOR ALL GATES. USE MODEL 20-10C FOR ALL SIZES.

16. GATES GREATER THAN OR EQUAL TO 48 INCH, ADD 3:1 GEAR REDUCER, OR APPROVED ALTERNATIVE BASED ON MANUFACTURER RECOMMENDATIONS.

17. METER/METER STAND MAY BE REQUIRED PER DISTRICT ENGINEER.

18. ALL PIPE SHALL CONFORM TO ASTM C-361 FOR CONCRETE PIPE, SDR41 OR PIP 100 PSI PVC FOR PLASTIC PIPE AND SHALL EXTEND BEYOND DISTRICT'S EASEMENT. PIPE SHALL BE INSTALLED PER DISTRICT SPECIFICATIONS AND DISTRICT INSPECTOR INSTRUCTIONS.

19. VENT SIZE SHALL BE FOUR INCH (4") MINIMUM, VENT SHALL BE CONCRETE OR HOT DIPPED GALVANIZED FOR CONCRETE PIPE AND PVC FOR PVC PIPE.

20. RIP-RAP/RSP REQUIRED FOR A MINIMUM OF FIVE FEET (5') TO THIRTY FEET (30') UPSTREAM AND DOWNSTREAM OF CONCRETE LINING, SUBJECT TO VELOCITY AND CANAL ALIGNMENT. REFER TO DISTRICT STANDARD SPECIFICATION 8-06 FOR ADDITIONAL INFORMATION.

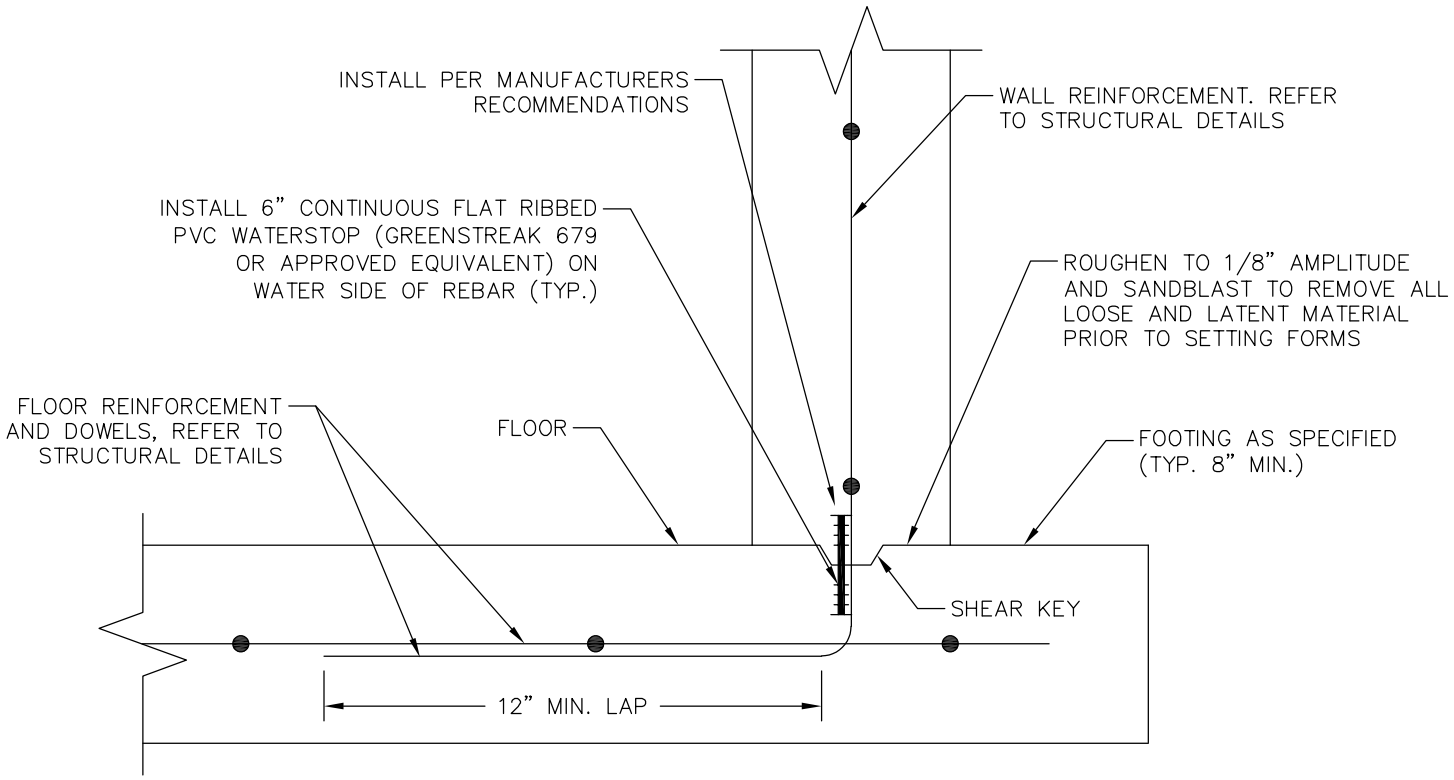
FRESNO IRRIGATION DISTRICT	FRESNO IRRIGATION DISTRICT	TURNOUT NOTES
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-08

STRUCTURE NOTES CONTINUED:

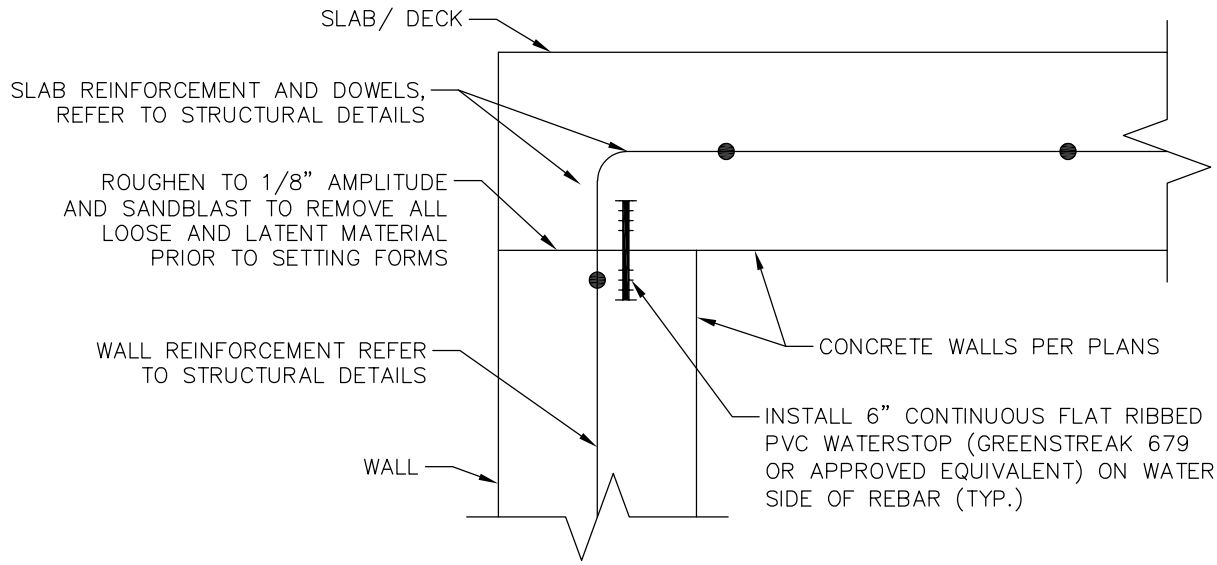
21. TURNOUTS SHALL BE SYMMETRICAL IN DESIGN.

22. VARIES BASED ON MINIMUM 3 FEET COVER OVER PIPE AND SIZE OF CANAL.

TURNOUT DESIGN CRITERIA	
FOR TURNOUTS UP TO 5'	USE #4 REBAR, 12" O.C.E.W.
FOR TURNOUTS 5.1' TO 8'	USE #5 REBAR, 12" O.C.E.W
FOR TURNOUTS 8.1' OR GREATER	PROVIDE CE OR SE STAMPED DESIGN

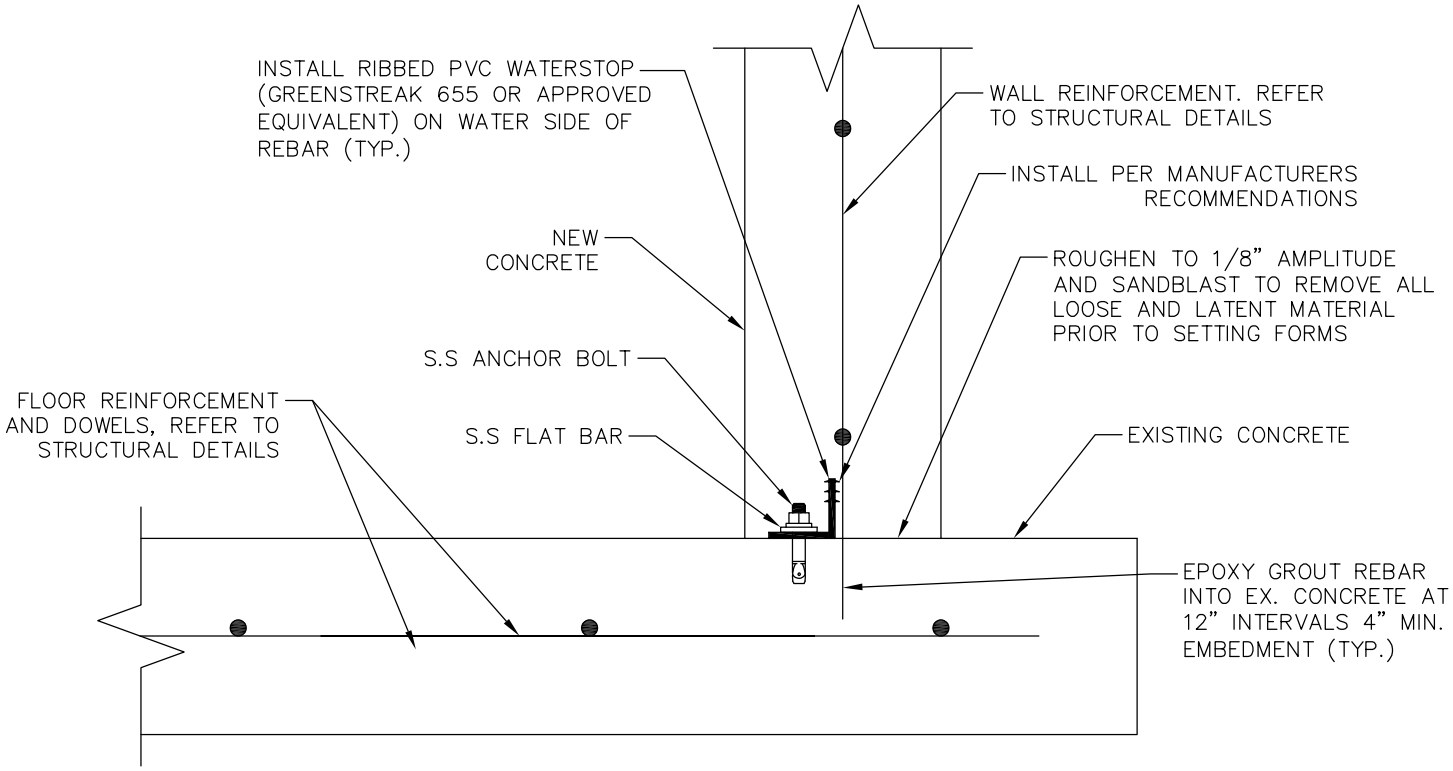


FLOOR TO WALL



WALL TO SLAB

FRESNO IRRIGATION DISTRICT		CONSTRUCTION JOINT
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5–09

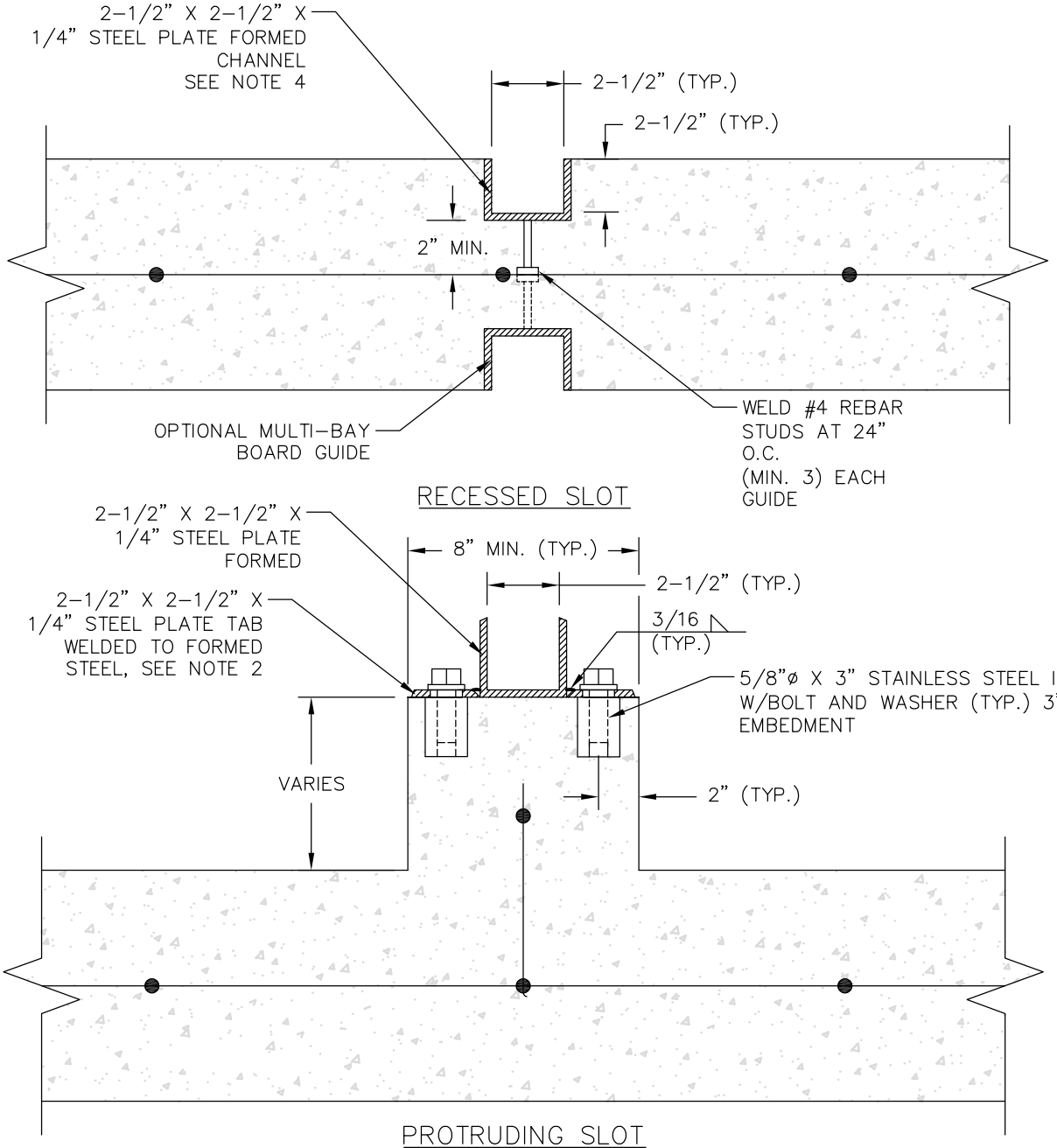


EXISTING TO NEW CONCRETE

NOTES:

1. ALL JOINTS BETWEEN CONCRETE POURS SHALL CONFORM TO THIS DRAWING AND THE DISTRICT STANDARD SPECIFICATIONS.
2. CONSTRUCTION JOINTS ARE REQUIRED FOR ALL FLOOR/SLAB TO WALL TRANSITIONS.
3. CONSTRUCTION JOINTS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS PRE-APPROVED BY DISTRICT ENGINEER. JOINTS SHALL BE THOROUGHLY CLEANED AND LAITANCE REMOVED BEFORE A NEW POUR IS MADE. EACH JOINT SHALL BE WETTED IMMEDIATELY BEFORE THE PLACING OF NEW CONCRETE.
4. REINFORCING STEEL SHALL JOIN THE CONCRETE BETWEEN POURS WITH A MINIMUM OVERLAP CONFORMING TO ACI 318 OR TO BE DETERMINED BY DISTRICT'S ENGINEER.
5. THIS DRAWING INTENTIONALLY DOES NOT SPECIFY CONCRETE THICKNESS OR REINFORCEMENT SIZE, WHICH SHALL BE DESIGNED SEPARATELY.
6. HIGH STRENGTH STRUCTURAL EPOXY ADHESIVE SHALL BE APPLIED PRIOR TO WATERSTOP INSTALLATION PER MANUFACTURERS RECOMMENDATIONS.
7. NAILS OR SCREWS SHALL NOT BE PERMITTED THROUGH THE BODY OF THE WATERSTOP.

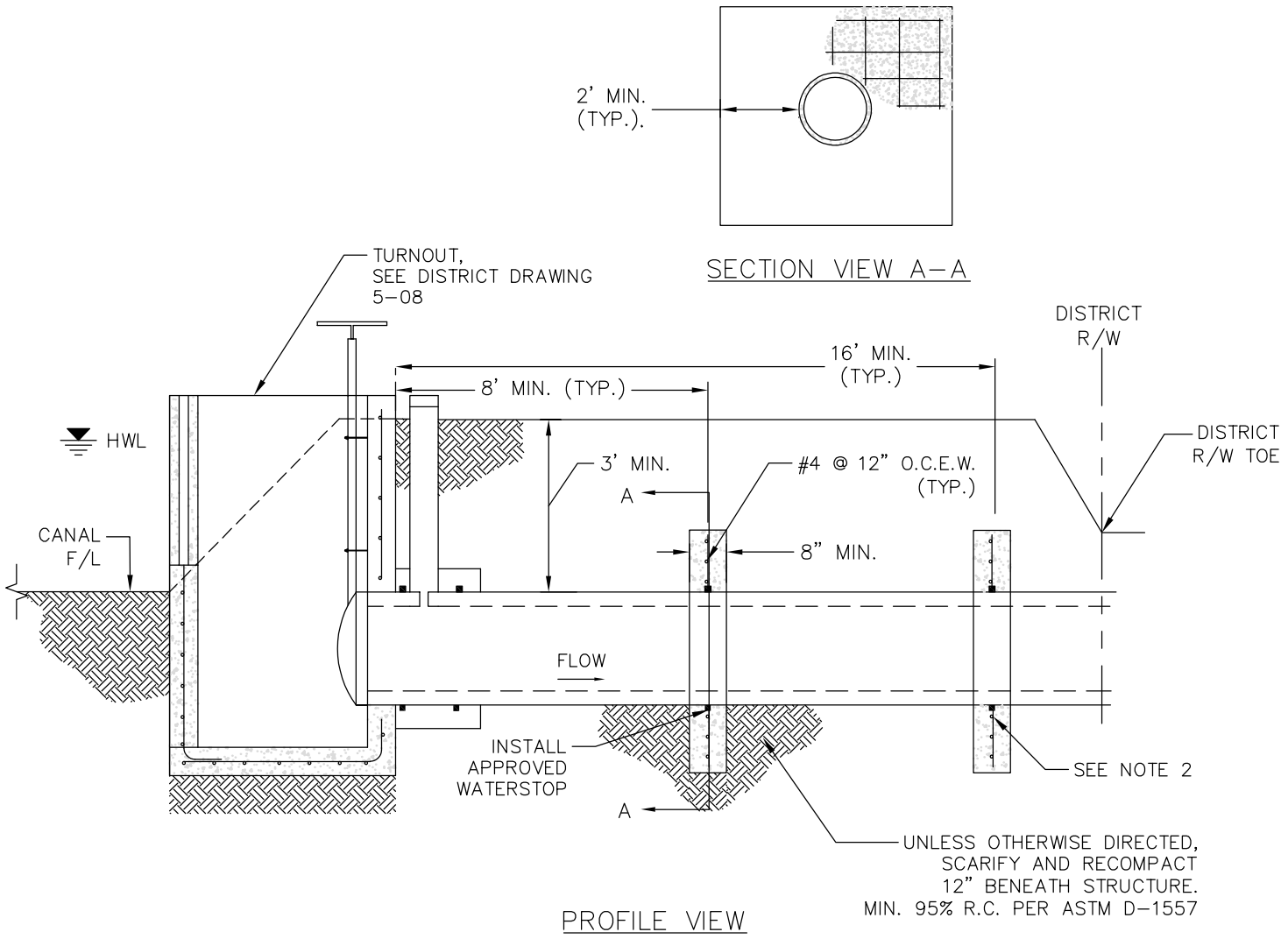
FRESNO IRRIGATION DISTRICT		RETROFIT CONSTRUCTION JOINT	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 5-09
		DATE: 2025	SHEET 2 OF 2



NOTES:

1. ALL BOARD GUIDES SHALL BE 1/4" THICK, 2–1/2" X 2–1/2" I.D., A36 STEEL AND HOT DIPPED GALVANIZED AFTER ALL FABRICATION IS COMPLETE. ALL DIMENSIONS SHALL BE FROM THE INVERT OR WEIR SILL TO THE TOP OF THE STRUCTURE.
2. TABS SHALL BE WELDED AT TOP AND BOTTOM OF FORMED STEEL AND AT 12 INCH ON CENTER. INSTALLATION SHALL BE WATERTIGHT.
3. BOARD GUIDES SHALL BE RECESSED INTO CONCRETE FOR NEW CONSTRUCTION AND PLACED FLUSH WITH CONCRETE WALL FACES FOR RETROFIT CONSTRUCTION, AS SPECIFIED ON THE PLANS OR AS DIRECTED BY DISTRICT ENGINEER.
4. ALL FORMED STEEL SHALL BE INSTALLED PLUMB, SQUARE, AND TRUE. ALL INSTALLATIONS SHALL BE VERIFIED USING THE APPROPRIATE MEASURING TOOLS. DEVIATIONS SHALL NOT EXCEED 1/8–INCH PER 10 FEET.
5. LARGER CANAL/PIPELINE SYSTEMS MAY REQUIRE LARGER SIZE BOARD GUIDES AS DETERMINED BY DISTRICT.

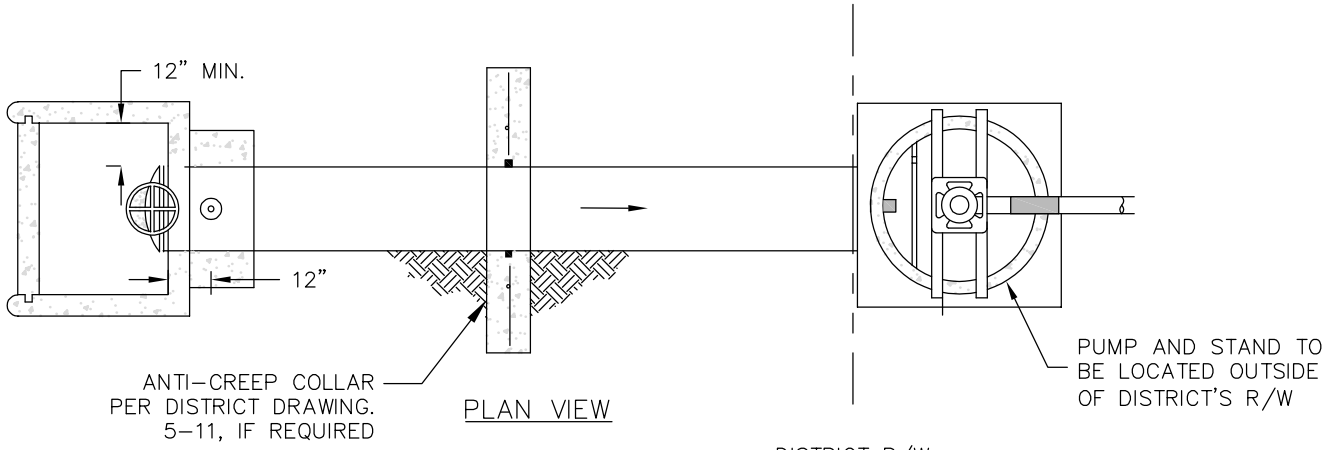
FRESNO IRRIGATION DISTRICT		BOARD GUIDES
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5–10 SHEET 1 OF 1



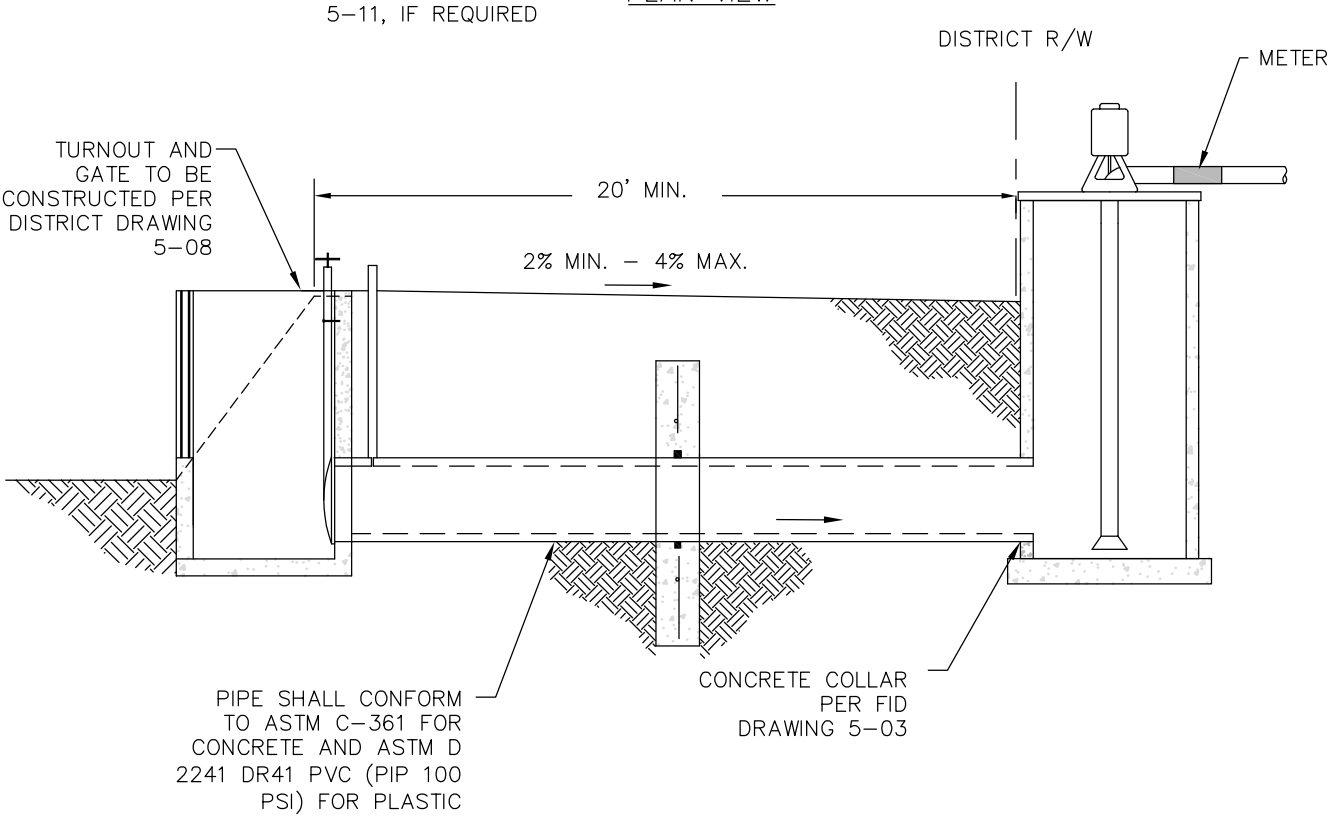
NOTES:

1. ANTI–CREEP WALL SHALL BE INSTALLED WHEN HWL IS 2' OR GREATER FROM THE GRADE AT EDGE OF DISTRICT R/W TOE.
2. ADD AN ADDITIONAL ANTI–CREEP WALL WHEN CHANNEL F/L IS HIGHER THAN GRADE AT EDGE OF DISTRICT R/W TOE.
3. NON–STRUCTURAL CONCRETE SHALL BE A MINIMUM OF 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF MIN. 3,500 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED 0.50 (BY WEIGHT), AIR ENTRAINMENT OF 1.5% ± 1%, AND FOUR INCH (4") ± ONE INCH (1"), SLUMP AT PLACEMENT.
4. USE BUTYL RUBBER JOINT COMPOUND OR SIMILAR WATERSTOP AROUND PIPE.
5. REBAR SHALL BE GRADE 60, #4 PLACED 12 INCH O.C.E.W.
6. PREPARE SURFACE OF PIPELINE BY CLEANING, WIRE BRUSHING, WATER BLASTING OR SAND BLASTING AS REQUIRED AND TREAT WITH BONDING AGENT PRIOR TO CONCRETE PLACEMENT.
7. COLLAR SHALL BE FORMED AND CONCRETE SHALL BE VIBRATED AROUND PIPE DURING PLACEMENT.
8. REMOVE FORMS USED TO POUR ANTI–CREEP COLLAR PRIOR TO BACKFILL.
9. 93% MINIMUM COMPACTION REQUIRED FOR A MINIMUM OF 5 FEET OR LIMITS OF DISTURBED SOIL, WHICHEVER IS GREATER.
10. DISTRICT ENGINEER MUST APPROVE ANY CHANGES THAT MAY OCCUR DUE TO FIELD CONDITIONS.

FRESNO IRRIGATION DISTRICT		ANTI–CREEP COLLAR
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5–11 SHEET 1 OF 1



PLAN VIEW



PROFILE VIEW

NOTES:

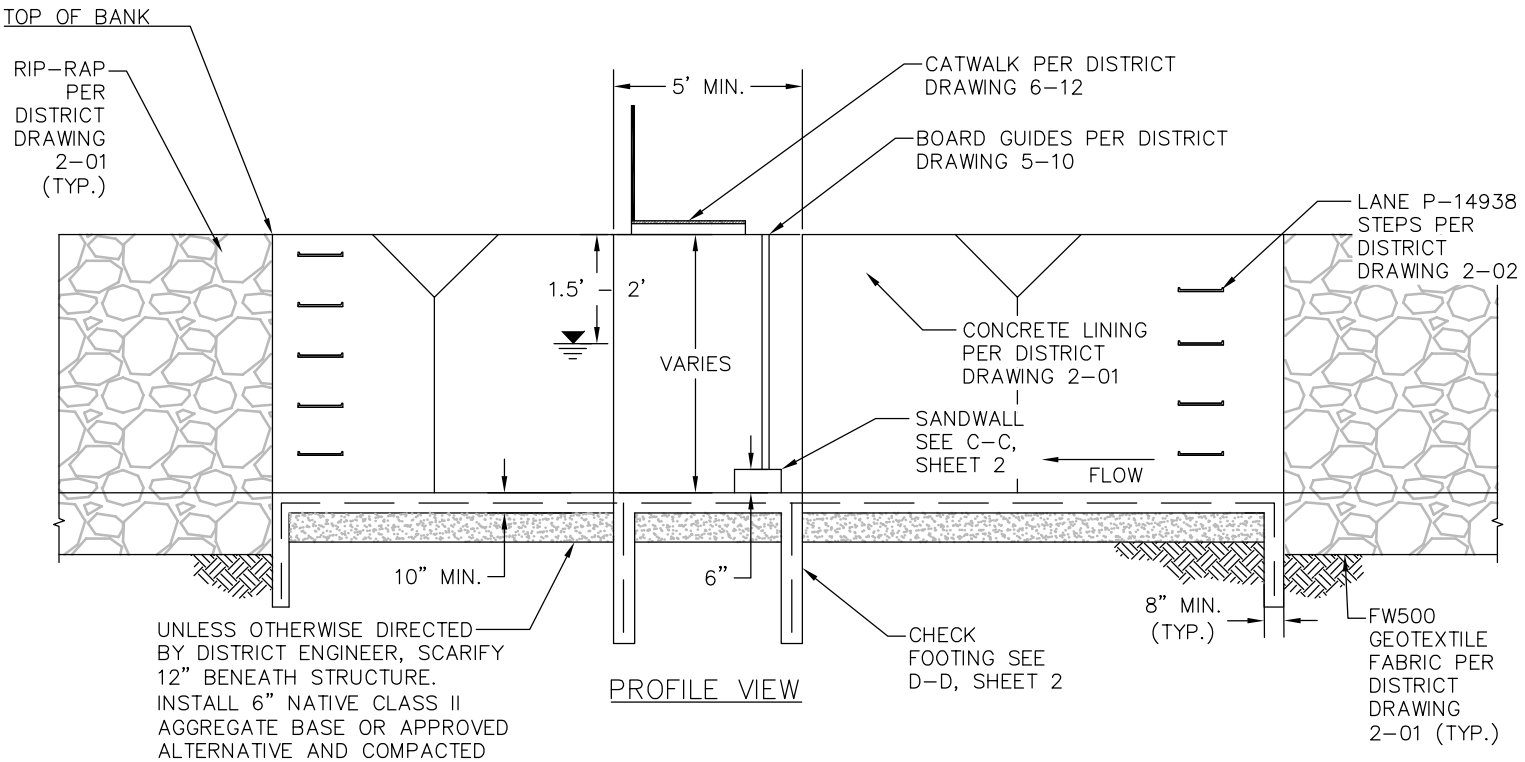
1. DISTRICT R/W:
   CANALS 50 C.F.S. AND ABOVE AS REQUIRED BUT NOT LESS THAN 20 FEET.
   CANALS UNDER 50 C.F.S. AS REQUIRED BUT NOT LESS THAN 17 FEET.

2. AS REQUIRED, A FLOW METER APPROVED BY DISTRICT SHALL BE FURNISHED AND INSTALLED ON THE DISCHARGE PIPE, PER MANUFACTURERS INSTALLATION REQUIREMENTS.

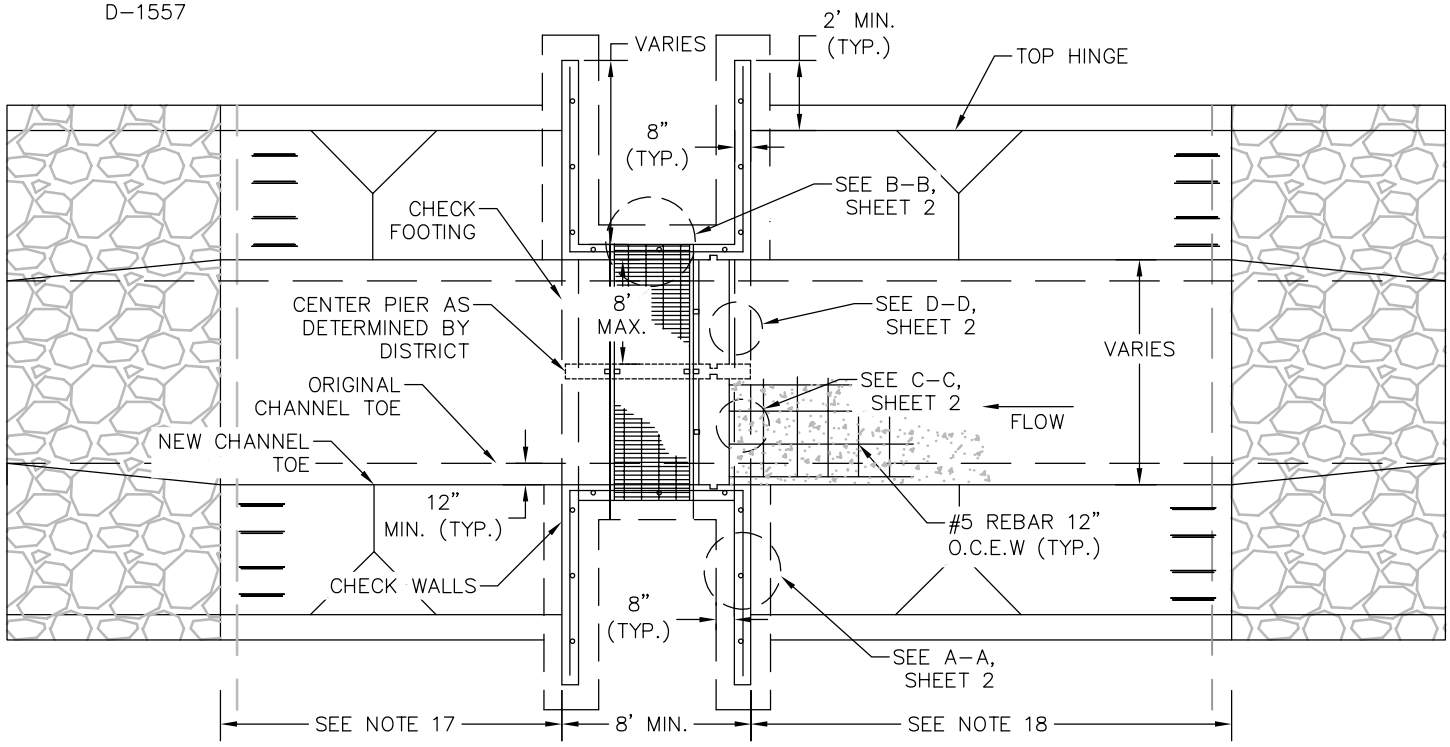
3. LANDOWNER ASSUMES ALL RESPONSIBILITY FOR THE PUMP, PUMP STAND, METER, MAINTENANCE, REPAIR OR REPLACEMENT.

4. GATES WILL NOT BE ALLOWED IN PUMP STAND.

FRESNO IRRIGATION DISTRICT		OFFSET PUMP STAND
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-12 SHEET 1 OF 1

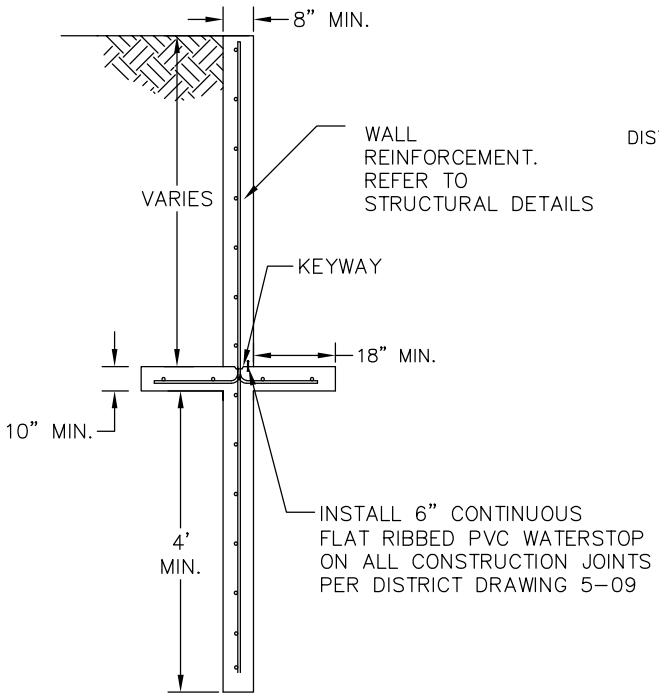


PROFILE VIEW

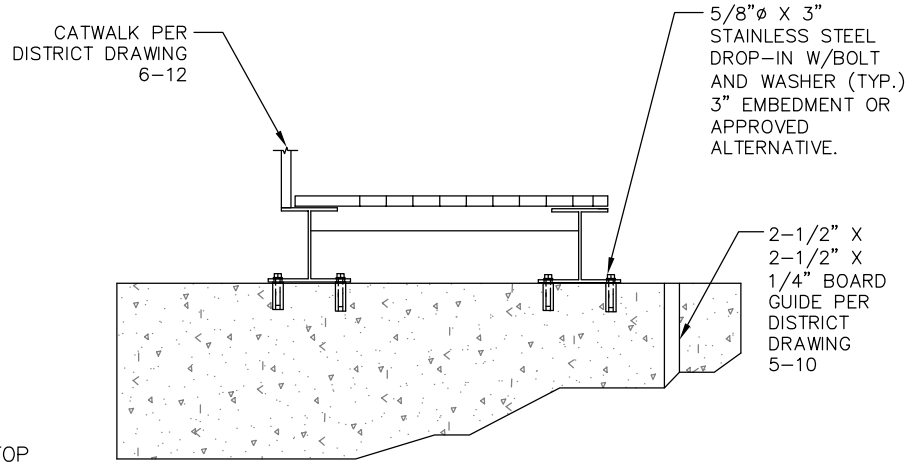


PLAN VIEW

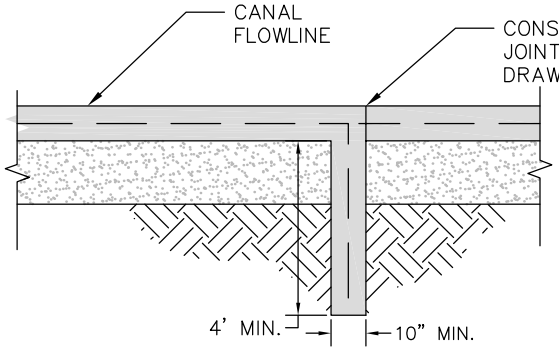
FRESNO IRRIGATION DISTRICT		CHECK STRUCTURE
"Your Most Valuable Resource - Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-13 SHEET 1 OF 3



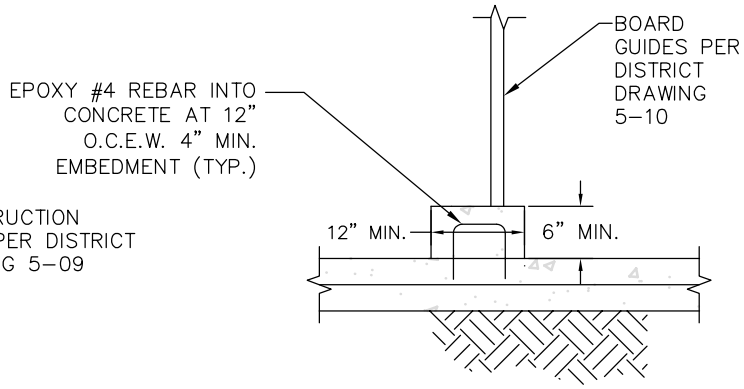
A–A



B–B



D–D



C–C

FRESNO IRRIGATION DISTRICT		CHECK STRUCTURE DETAILS
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5-13
		SHEET 2 OF 3

NOTES:

1. DRAWING, DIMENSIONS, REINFORCEMENT, AND NOTES ARE FOR REFERENCE ONLY. ENGINEER SHALL SUBMIT A SCALED DRAWING. ENGINEERED PLANS SHALL BE PREPARED AND SUBMITTED TO DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

2. PLANS SHALL BE BASED ON CANAL SIZE AND MAY NOT REDUCE CHANNEL WIDTH OR FLOW.

3. A HYDRAULIC SUMMARY REPORT (HEC–RAS) SHALL BE PROVIDED ON ALL NEW STRUCTURE DESIGNS.

4. UNLESS OTHERWISE STATED, ALL DISTURBED SOILS TO HAVE MINIMUM 93% RELATIVE COMPACTION PER ASTM D–1557.

5. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.

6. STRUCTURAL CONCRETE SHA'LL BE A MINIMUM 6–1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% – 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.

7. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.

8. CANAL LINING SHALL BE INSTALLED AS SPECIFIED IN DISTRICT DRAWING 2–01.

9. WALLS SHALL BE LEVEL, SQUARE, AND TRUE.

10. THE DISTRICT'S ENGINEER SHALL APPROVE ALL DESIGN CHANGES THAT OCCUR DUE TO UNEXPECTED FIELD CONDITIONS.

11. INSTALL ACCESS/SAFETY LADDERS ON UPSTREAM AND DOWNSTREAM SIDES OF CHECK AT THE END OF LINING, 14 INCH ON CENTER AT 100 FEET INTERVALS OR AS DIRECTED BY DISTRICT'S ENGINEER SEE DISTRICT DRAWING 2–02 FOR ADDITIONAL INFORMATION.

12. CUTOFF WALLS SHALL BE EXCAVATED BELOW NATIVE GRADE.

13. CATWALK AND HANDRAIL SHALL BE HOT DIPPED GALVANIZED OR APPROVED ALTERNATIVE PRIOR TO INSTALLATION.

14. USE PVC WATERSTOP 679 ON ALL CONSTRUCTION JOINTS AS SPECIFIED IN DRAWING 5–09 OR APPROVED ALTERNATIVE. ALL JOINTS SHALL BE WATERTIGHT PER ASTM C990.

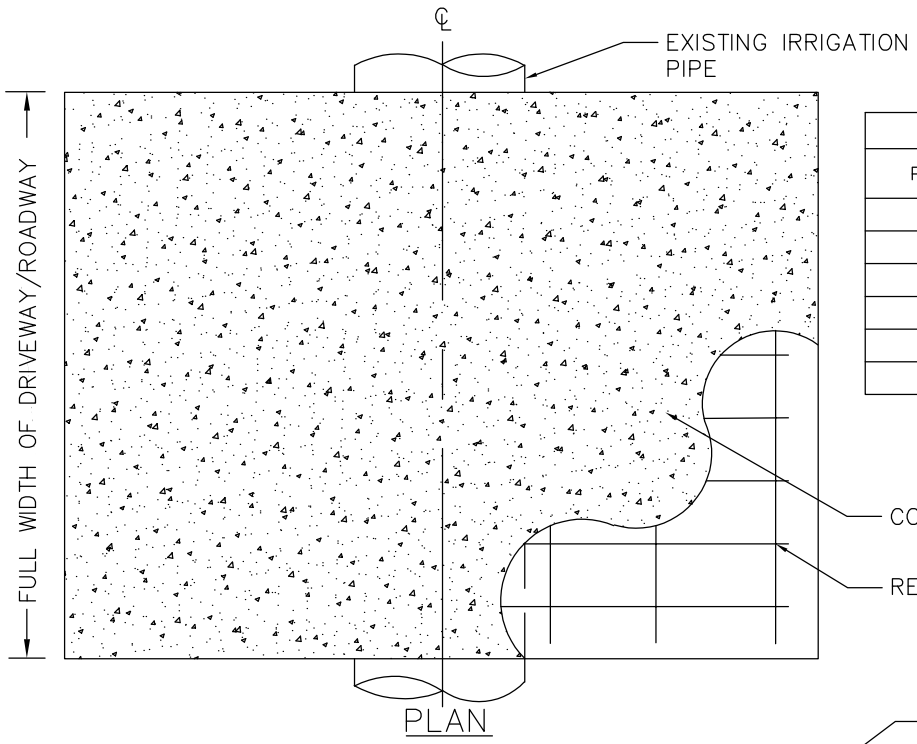
15. RIP–RAP/ROCK SLOPE PROTECTION (RSP) SHALL BE PER DISTRICT STANDARD SPECIFICATION 8–06, DISTRICT DRAWING 2–01 OR AS DETERMINED BY DISTRICT ENGINEER.

16. RIP–RAP/RSP REQUIRED FOR A MINIMUM OF FIVE FEET (5') TO THIRTY FEET (30') UPSTREAM AND DOWNSTREAM OF CONCRETE LINING, SUBJECT TO SIZE OF CANAL, VELOCITY, AND CANAL ALIGNMENT. REFER TO DISTRICT STANDARD SPECIFICATION 8–06 FOR ADDITIONAL INFORMATION.

17. UNLESS OTHERWISE STATED OR SHOWN ON THE PLANS, THE CANAL LINING LIMITS OF THE DOWNSTREAM LINING SHALL BE TWO (2) TIMES THE MINIMUM LENGTHS SPECIFIED IN THE DISTRICT'S STANDARD SPECIFICATION 4–01.

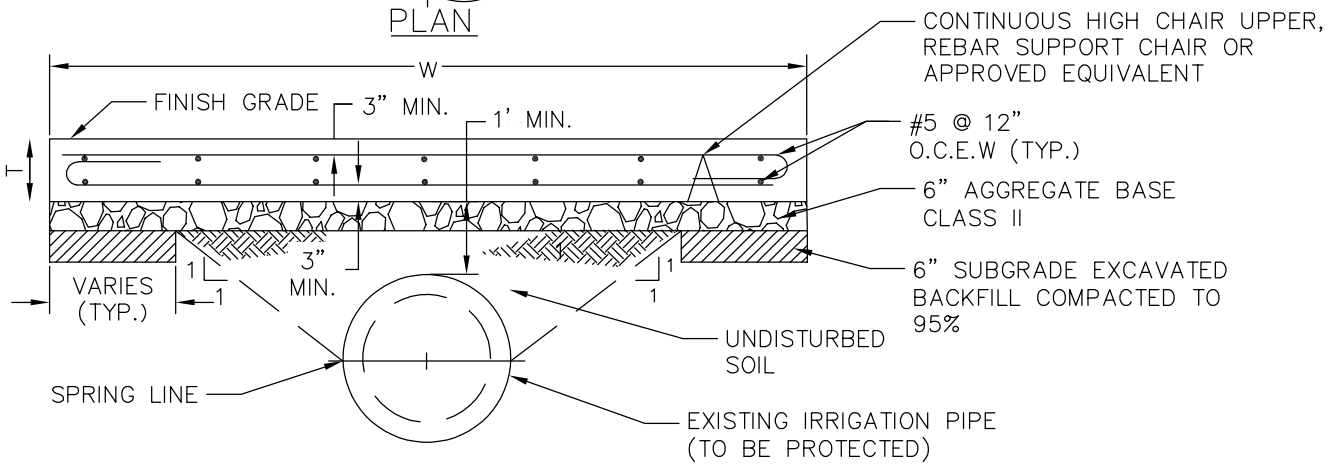
18. UNLESS OTHERWISE STATED OR SHOWN ON THE PLANS, THE CANAL LINING LIMITS OF THE UPSTREAM LINING SHALL BE PER THE MINIMUM LENGTHS SPECIFIED IN THE DISTRICT'S STANDARD SPECIFICATION 4–01.

FRESNO IRRIGATION DISTRICT		CHECK STRUCTURE NOTES
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5–13 SHEET 3 OF 3



PLAN

TABLE		
PIPE I.D.	WIDTH (W)	THICKNESS (T)
24"	15 FEET	10.5 INCHES
30"	18 FEET	10.5 INCHES
36"	20 FEET	10.5 INCHES
42"	20 FEET	12 INCHES
48"	24 FEET	12.5 INCHES
>54"	24 FEET	14.0 INCHES

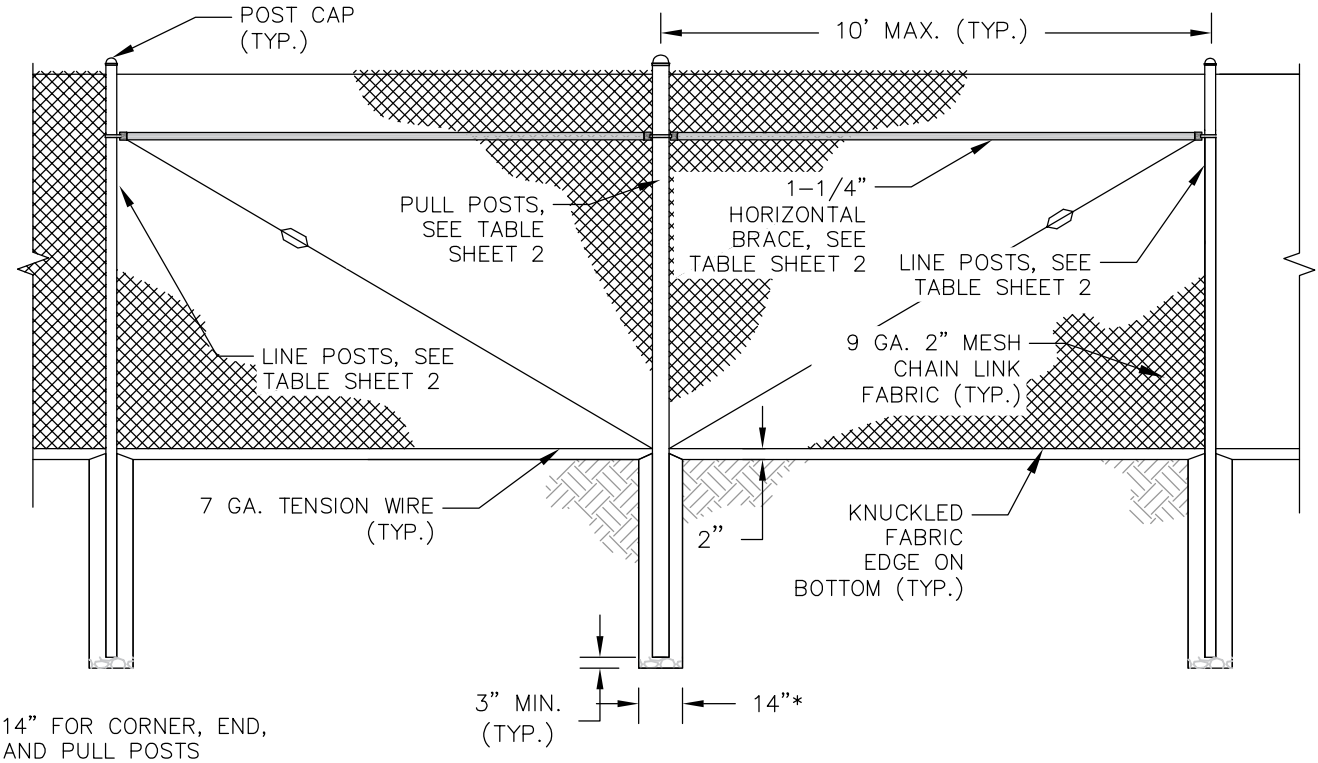


PROFILE

NOTES:

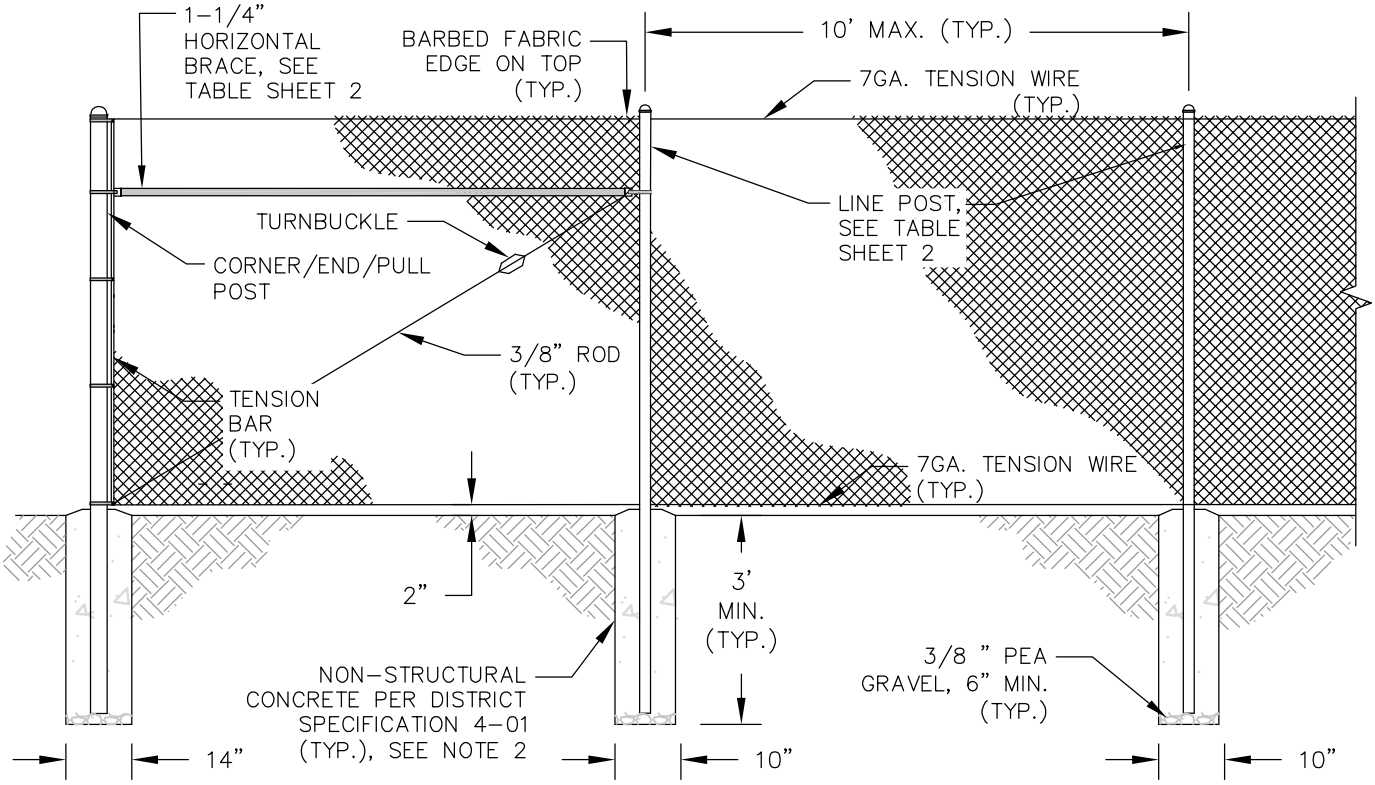
1. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.
2. STRUCTURAL CONCRETE SHALL BE A MINIMUM 6–1/2 SACK (611 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 4,000 PSI, WATER–CEMENT RATIO SHALL NOT EXCEED 0.50 BY WEIGHT, AIR ENTRAINMENT OF 4% + 1.5% – 1%, AND FOUR INCH (4") ± ONE INCH (1") SLUMP AT PLACEMENT.
3. FIBERCAST 500 OR APPROVED EQUIVALENT CONCRETE FIBER REINFORCEMENT WITH FIBER LENGTHS BETWEEN 1.5 INCH TO 2 INCH. APPLICATION RATE SHALL BE A MINIMUM 1.5 POUNDS PER CUBIC YARD AND BE INCLUDED IN THE CONCRETE MIX.
4. REBAR SHALL BE GRADE 60 WITH LAP SPLICES OF 24 INCH MIN. LENGTH.
5. DISTRICT INSPECTOR SHALL VERIFY DEPTH OF PIPE PRIOR TO CONSTRUCTION OF SLAB.
6. NO VIBRATORY COMPACTION IS PERMITTED WITHIN DISTRICT'S EASEMENT.
7. CONCRETE SLAB IS NOT INTENDED FOR LOADING, UNLOADING OR STAGING MATERIALS OR EQUIPMENT AREAS. SHOULD PROTECTION SLAB FAIL TO PROTECT PIPE, CONTRACTOR/OWNER AGREES TO REPLACE PIPELINE DAMAGED BY PROPOSED USE.
8. NOT APPLICABLE TO CAST–IN–PLACE PIPE.

FRESNO IRRIGATION DISTRICT		PIPELINE PROTECTION SLAB
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 5–14 SHEET 1 OF 1



* 14" FOR CORNER, END, AND PULL POSTS
10" FOR LINE POSTS

PANELS ADJOINING PULL POST



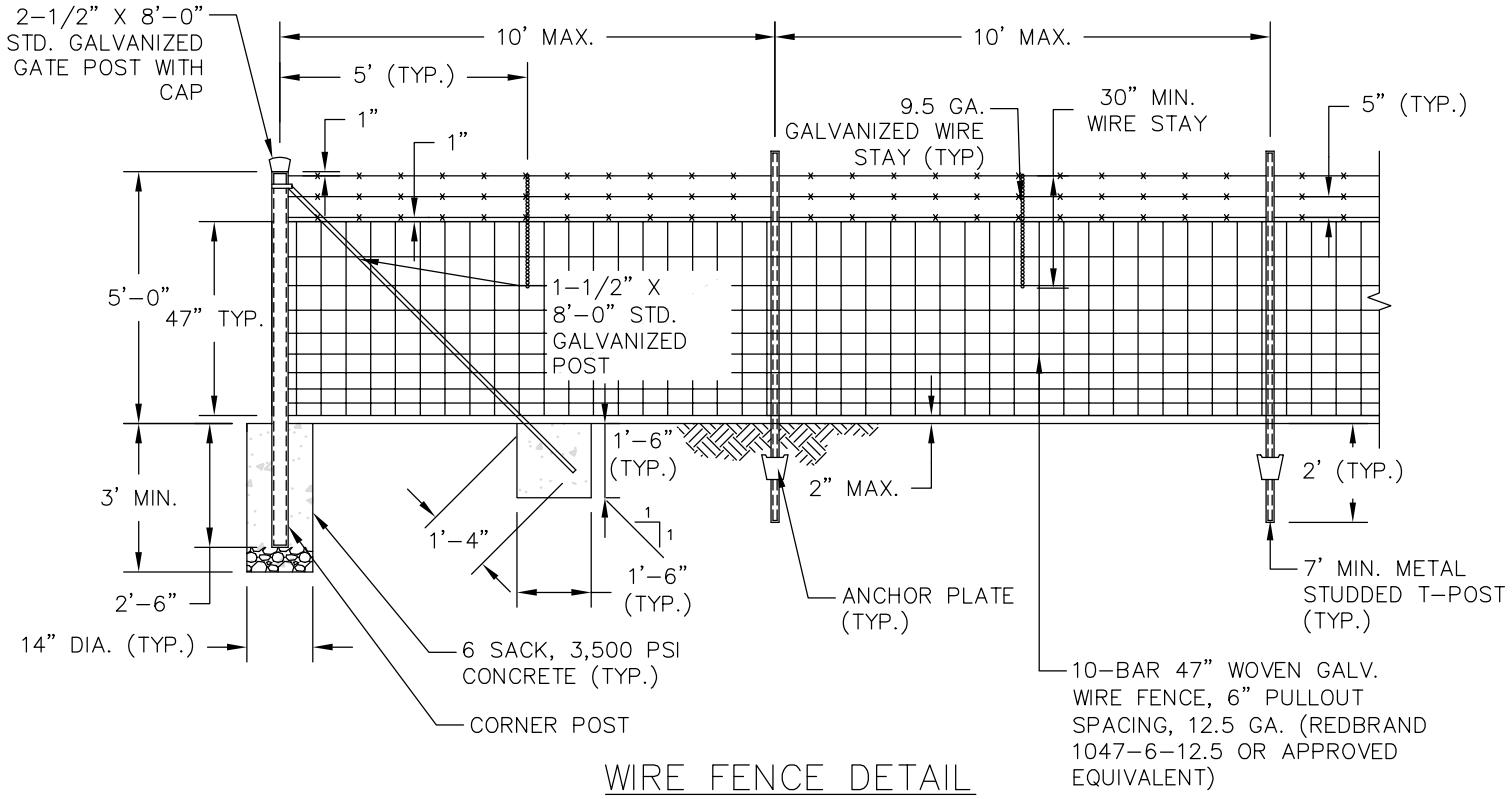
CORNER POST/END POST BRACING

FRESNO IRRIGATION DISTRICT		FENCING – CHAIN LINK
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-01 SHEET 1 OF 4

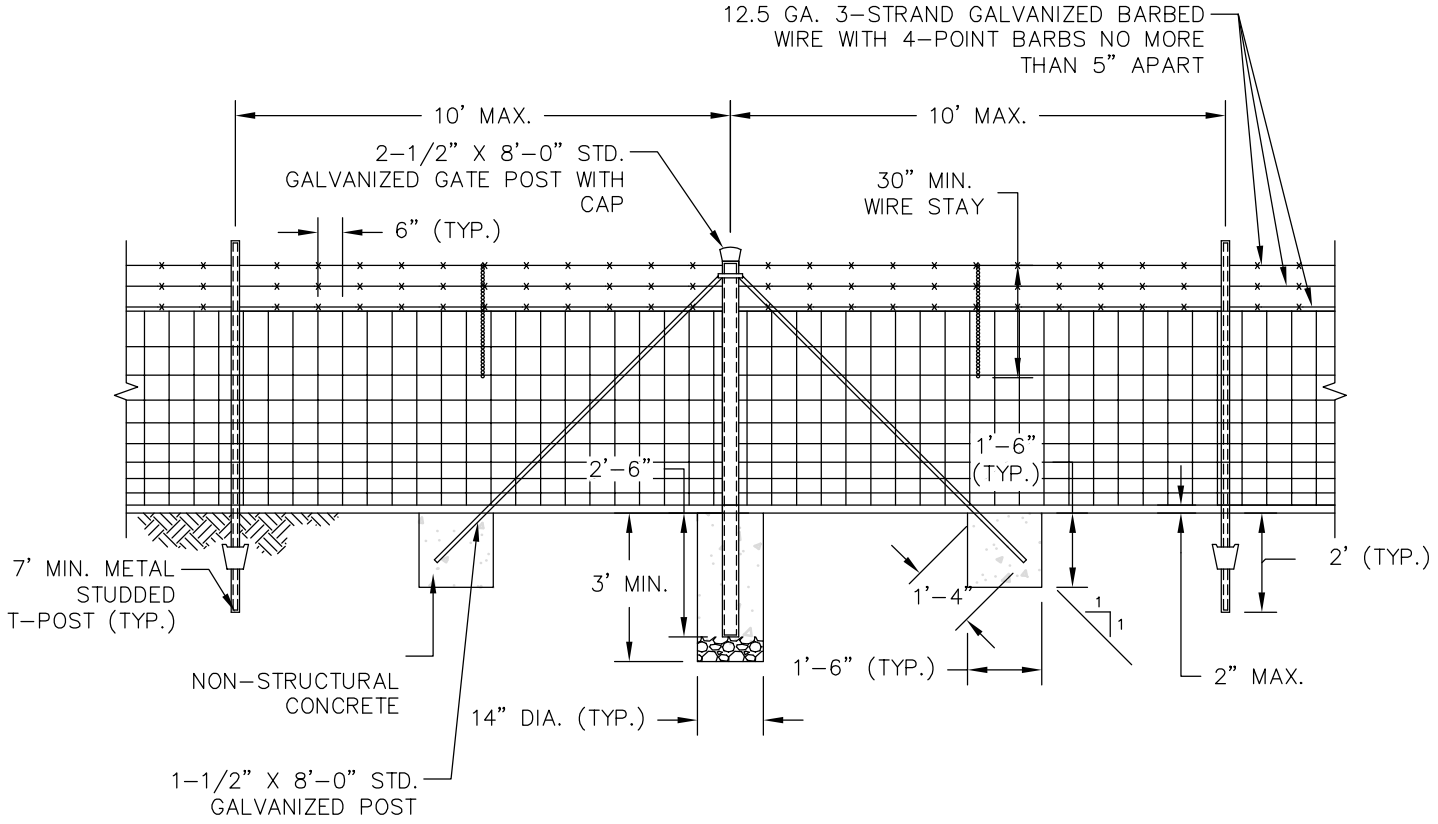
NOTES:

1. LINE POSTS SHALL HAVE HORIZONTAL BRACING WITH TRUSSES IN BOTH DIRECTIONS EVERY 1,000 FEET.
2. CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGN FOR DISTRICT APPROVAL PRIOR TO CONSTRUCTION, SEE DISTRICT SPECIFICATIONS SECTION 4–01 FOR ADDITIONAL INFORMATION.
3. NON–STRUCTURAL CONCRETE SHALL BE A MINIMUM OF 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 3,500 PSI, WATER CEMENT RATIO SHALL NOT EXCEED 0.50 (BY WEIGHT), AND FOUR INCH (4") ± 1", SLUMP AT PLACEMENT.
4. SUBGRADE PREPARATION SHALL BE CONSTRUCTED TRUE TO GRADE.
5. END AND CORNER POSTS SHALL BE BRACED TO THE NEAREST LINE POSTS WITH GALVANIZED HORIZONTAL BRACES USED AS COMPRESSION MEMBERS AND GALVANIZED 3/8 INCH STEEL TRUSS ROD WITH TURNBUCKLES OR TRUSS TIGHTENERS USED AS TENSION MEMBERS.
6. WHEN HEAVY DUTY SCREENING IS REQUIRED IT SHALL BE CONSTRUCTED SO THAT THE SLATS ARE LOCKED INTO POSITION AND CANNOT BE REMOVED WITHOUT THE USE OF TOOLS.
7. TYPICAL LINE POSTS SHALL BE TWO INCH (2") GALVANIZED PIPE.
8. FABRIC SHALL BE FASTENED TO POSTS, TERMINAL POSTS, PULL POST, AND CORNER POST WITH 1/4–INCH X 3/4–INCH STRETCHER BAR AND 1/4–INCH X 1–INCH STRETCHER BAR BANDS AT 18–INCH MAX. SPACING.
9. FABRIC SHALL BE FASTENED TO POSTS AND BRACING WITH 9 GAUGE STEEL FENCE TIES SPACED APPROXIMATELY 14–INCHES APART.
10. TOP AND BOTTOM TENSION WIRE SHALL BE SECURED WITH 9 GAUGE STEEL HOG RINGS SPACED APPROXIMATELY 18–INCHES ON CENTER.
11. FABRIC SHALL BE FASTENED SUCH THAT THE BARBS ARE TO THE TOP, UNLESS APPROVED OTHERWISE BY DISTRICT ENGINEER.
12. CORNER POSTS SHALL BE INSTALLED AT ALL ANGLES IN FENCE LINE IN EXCESS OF 10 DEGREES.
13. MAXIMUM INTERVAL BETWEEN PULL POSTS TO BE 200 FEET.
14. ALL POSTS SHALL BE PROVIDED CAPS/COVERS UNLESS OTHERWISE APPROVED.

FENCE AND POST REQUIREMENTS (SCHEDULE 40)		
POST LOCATION	NOM. DIA.	WEIGHT lb/ft
FENCE BRACES	1 1/4"	2.27
LINE POST	2"	3.65
CORNER/END/PULL POST	2 1/2"	5.79

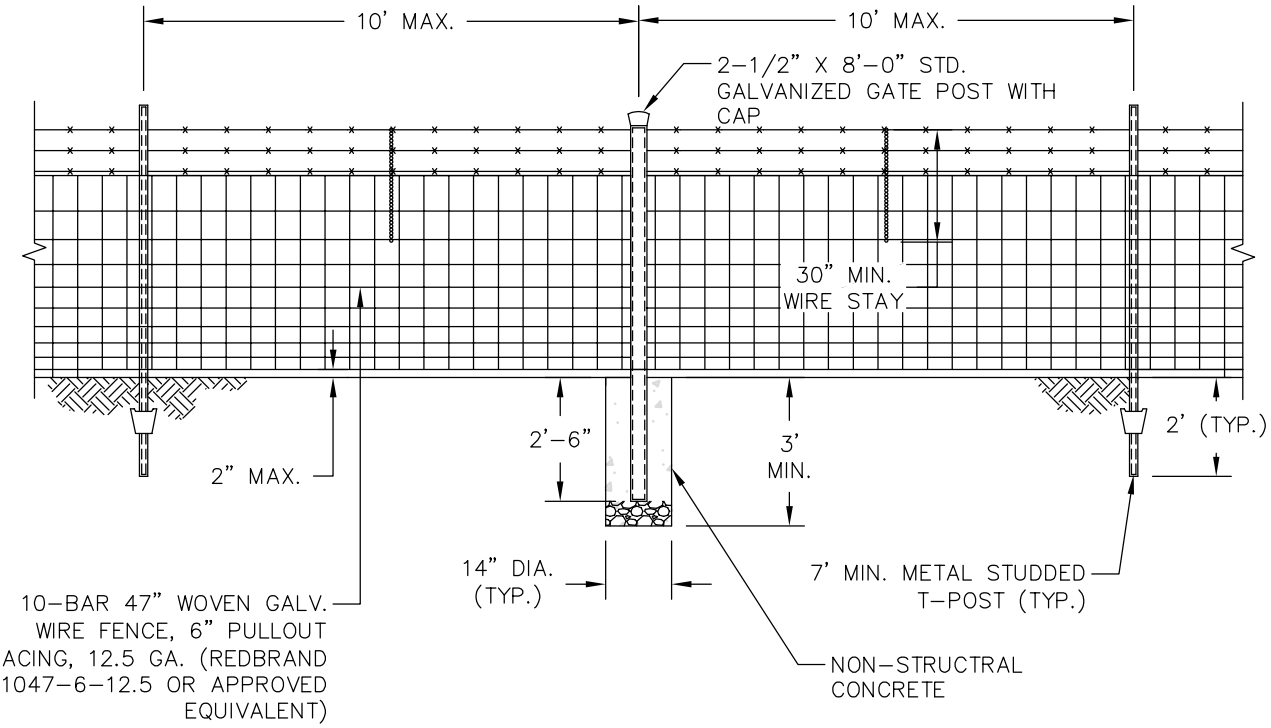


WIRE FENCE DETAIL



WIRE FENCE PULL POST

FRESNO IRRIGATION DISTRICT		FENCING – RURAL	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 6–01
		DATE: 2025	SHEET 3 OF 4

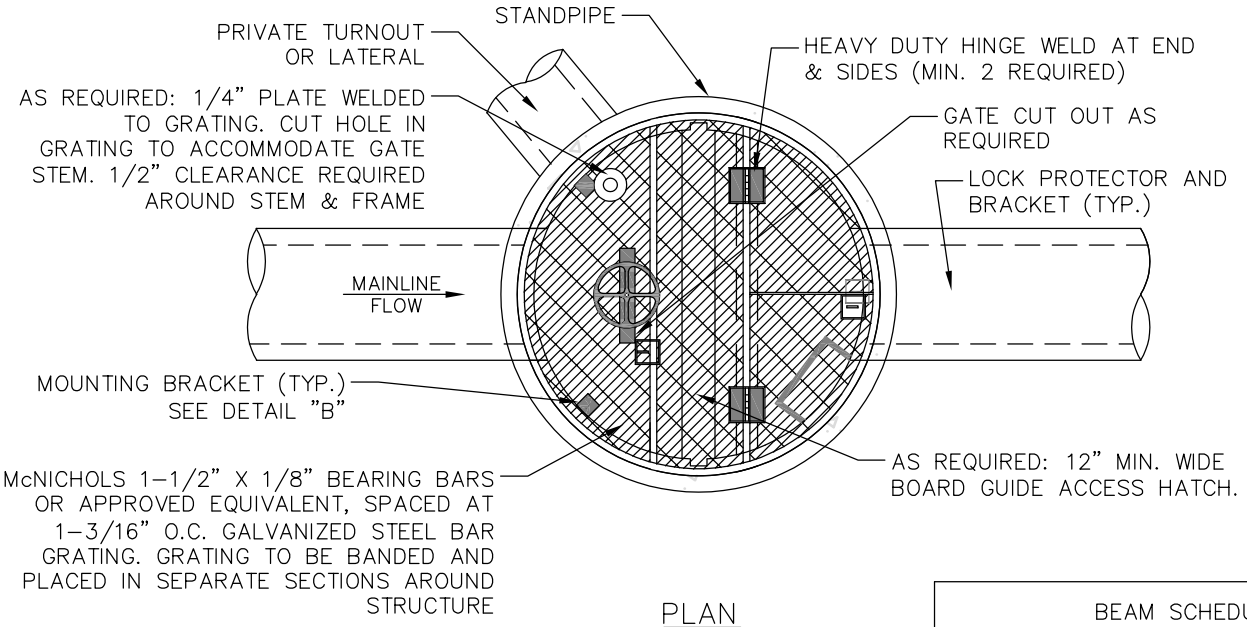


INTERMEDIATE SUPPORT POST

RURAL FENCING NOTES:

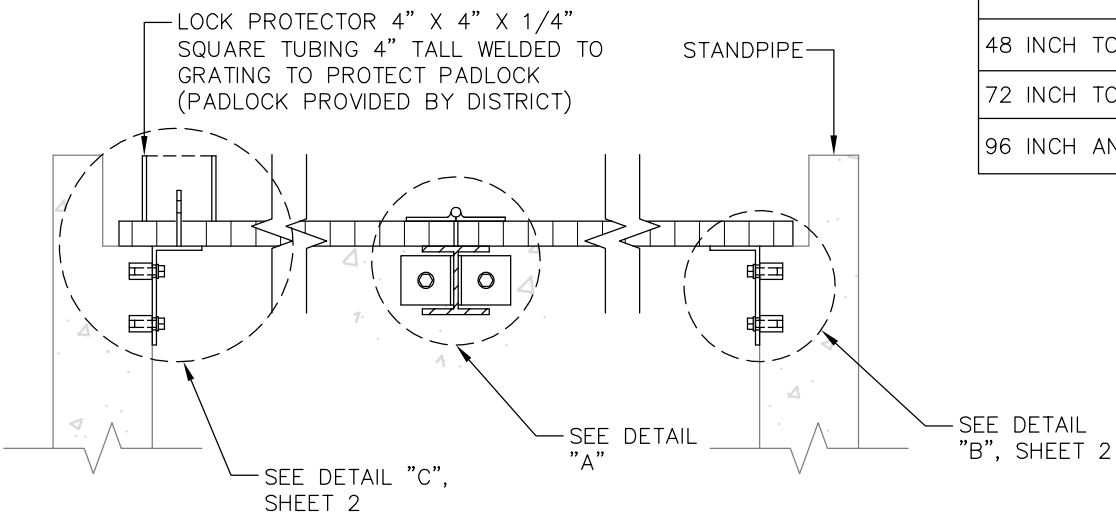
1. SUBGRADE PREPARATION SHALL BE CONSTRUCTED TRUE TO GRADE.
2. FIELD FENCING TO BE PLACED ALONG ALL EXTERIOR PROPERTY LINES.
3. PLACE ALL FENCING AS SPECIFIED IN PLANS.
4. PULL POSTS SHALL BE PLACED AT 500 FEET MAX SPACING.
5. INTERMEDIATE SUPPORT POSTS SHALL BE PLACED AT 100 FEET MAX SPACING.
6. ALL PIPE DIAMETERS SHOWN ARE IRON PIPE SIZES-STANDARD WEIGHT.
7. FENCE POSTS ON CURVES SHALL BE BRACED AS RECOMMENDED BY THE MANUFACTURER.
8. ALL SINGLE DRIVE GATES SHALL BE EQUIPPED WITH GATE FASTENERS SUITABLE FOR LOCKING WITH PADLOCK.
9. CORNER AND END POSTS SHALL BE BRACED IN THE DIRECTION OF PULL.
10. ALTERNATE DETAILS MAY BE SUBMITTED FOR APPROVAL.
11. INCLUDE GATE STOPS ON ALL GATE INSTALLATIONS.
12. FENCE LINES TO BE LOCATED 6 INCHES INSIDE DISTRICT PROPERTY LINES.
13. NON STRUCTURAL CONCRETE SHALL BE A MINIMUM OF 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI, WATER-CEMENT RATIO SHALL NOT EXCEED 0.50 (BY WEIGHT), FOUR INCH (4") ± 1", SLUMP AT PLACEMENT.
14. T-POST FASTENERS AND POST TIES AS REQUIRED ON ALL FENCING.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	FENCING – RURAL	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-01 SHEET 4 OF 4

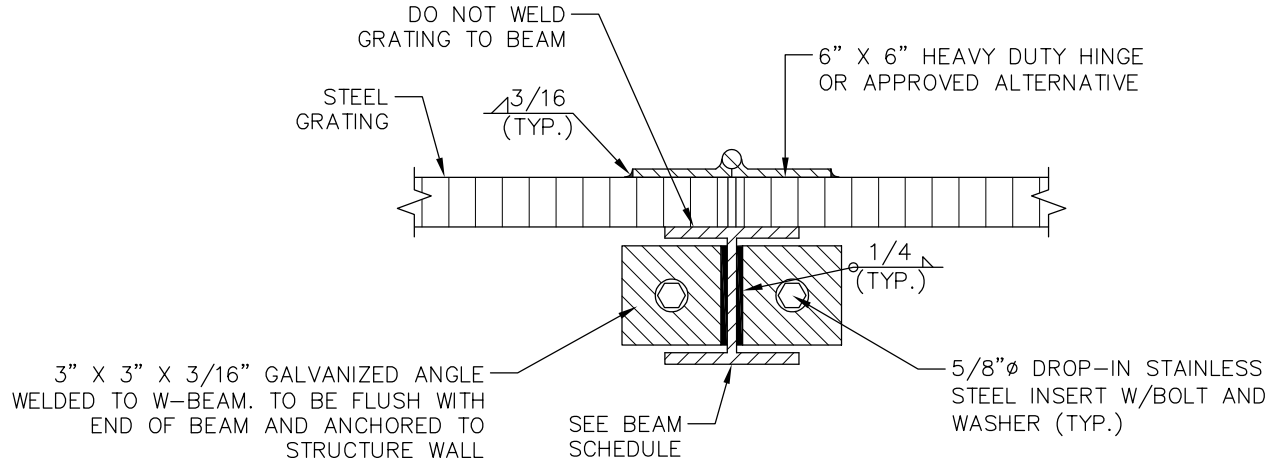


PLAN

BEAM SCHEDULE	
STAND SIZE	BEAM
48 INCH TO 60 INCH	W4 X 13
72 INCH TO 84 INCH	W6 X 20
96 INCH AND ABOVE	ENGINEERED



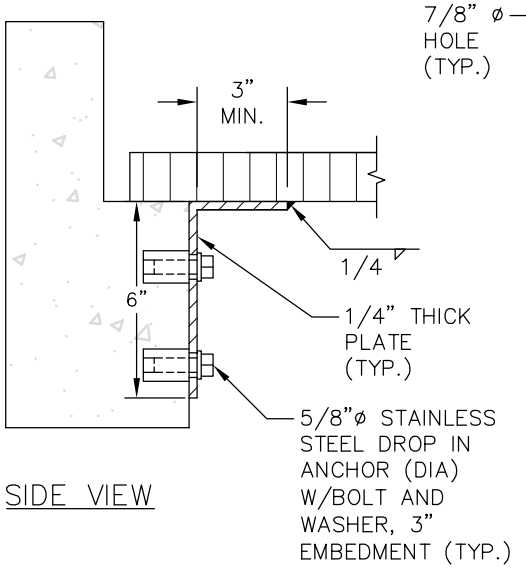
PROFILE



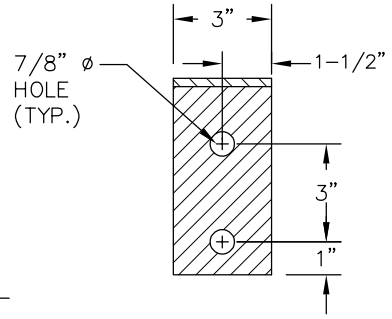
W6 BEAM OR LARGER ADD ADDITIONAL GALVANIZED ANGLES

DETAIL "A" – SUPPORT BEAM

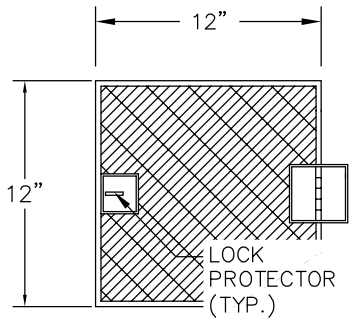
FRESNO IRRIGATION DISTRICT		HEAVY DUTY COVER – STANDPIPE	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 6-02
		DATE: 2025	SHEET 1 OF 2



SIDE VIEW

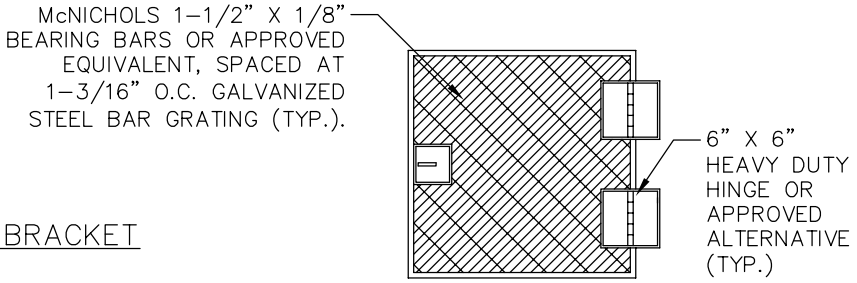


FRONT VIEW

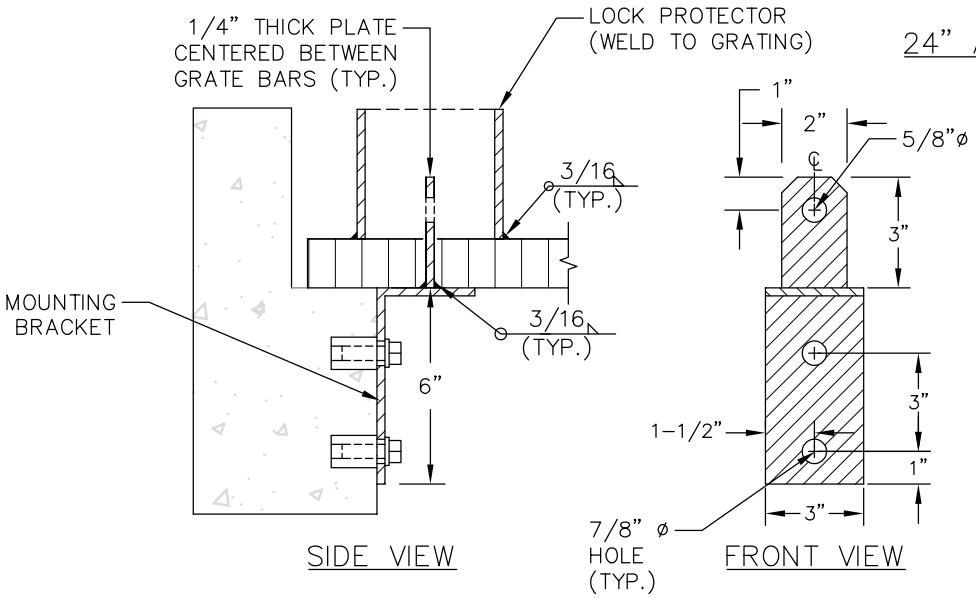


12" X 12" METER HATCH

DETAIL "B" – MOUNTING BRACKET



24" AND 30" ACCESS HATCH



SIDE VIEW

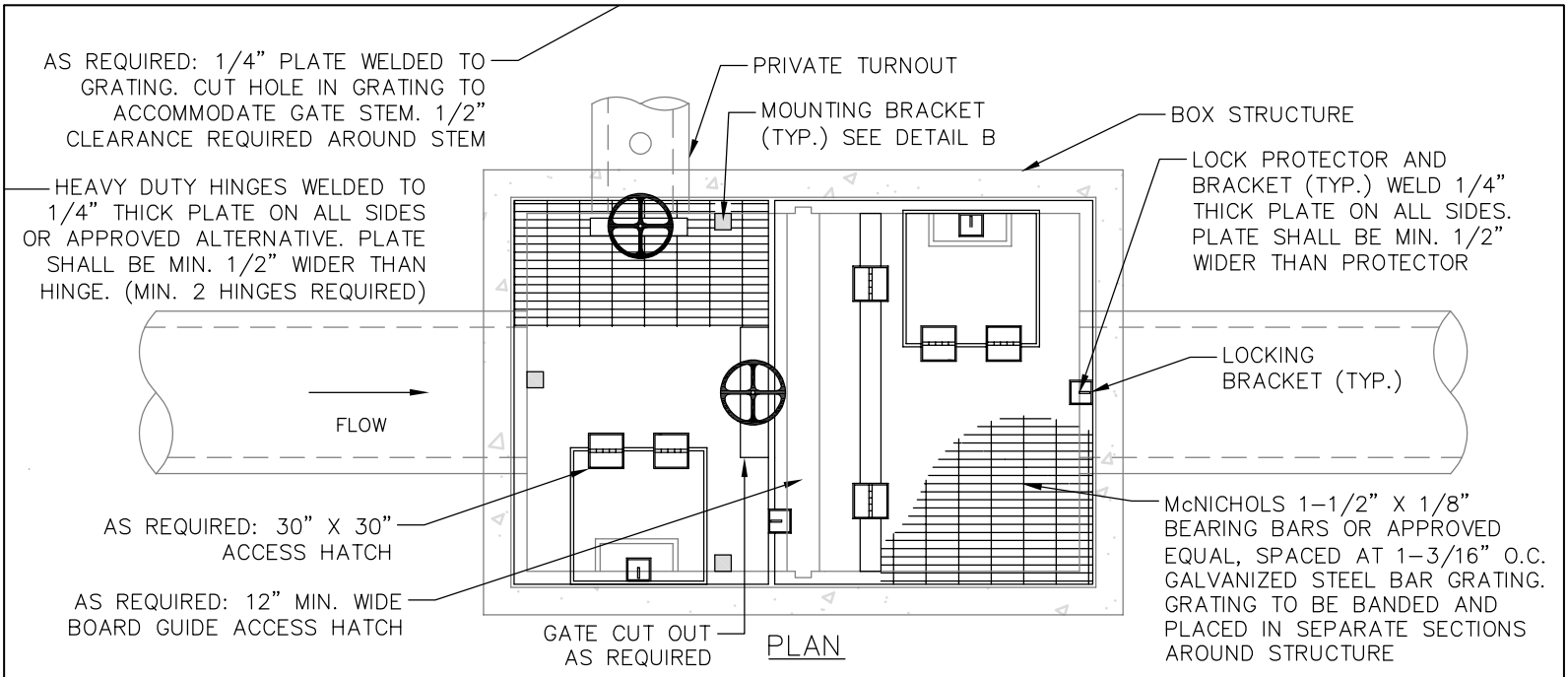
FRONT VIEW

DETAIL "C" – LOCKING BRACKET

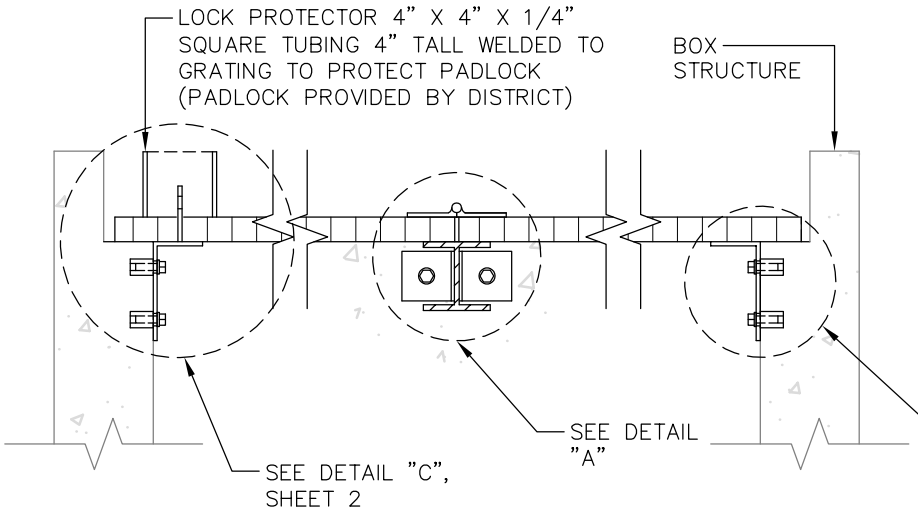
NOTES:

1. ALL STEEL SHALL BE ASTM A36 HOT DIP GALVANIZED UNLESS OTHERWISE DIRECTED.
2. DRAWIING PROVIDED IS FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL FABRICATE METAL COVER BASED ON FIELD DIMENSIONS.
3. ALL COVERS SHALL BE HINGED TO ALLOW ACCESS.
4. COVERS 48-INCH TO 60-INCH SHALL HAVE A 24-INCH WIDE ACCESS HATCH AND LOCKING BRACKET PROVIDED.
5. COVERS 72-INCH OR LARGER SHALL HAVE A 30-INCH WIDE ACCESS HATCH AND LOCKING BRACKET PROVIDED.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	HEAVY DUTY COVER – STANDPIPE DETAILS
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025
		DISTRICT DRAWING 6-02
		SHEET 2 OF 2

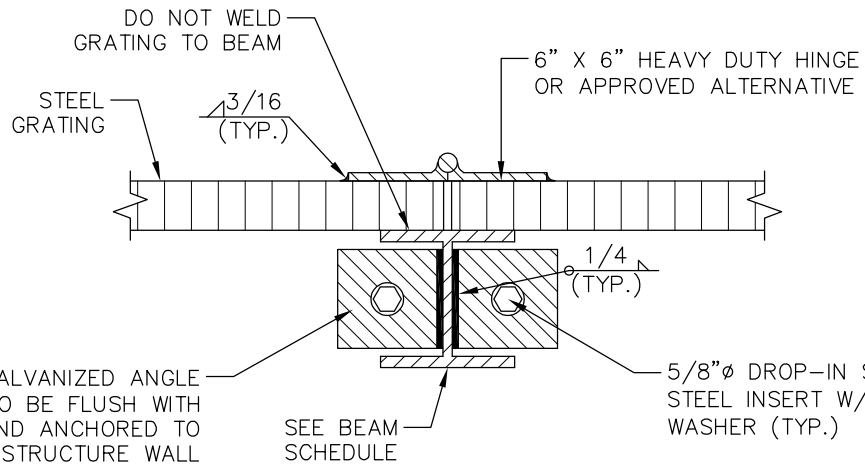


PLAN



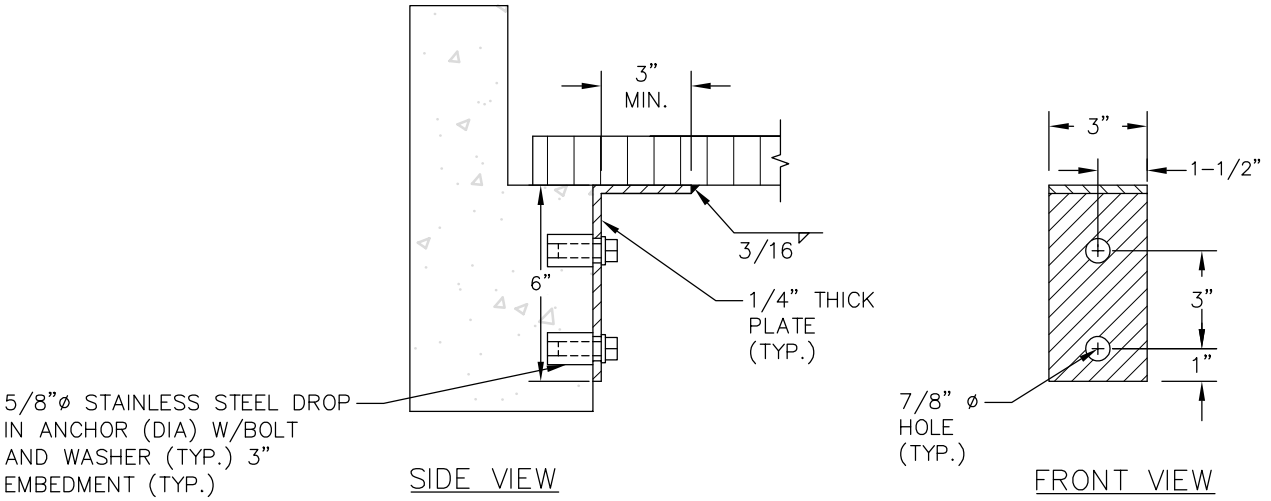
PROFILE

BEAM SCHEDULE	
SPAN LENGTH	BEAM
48 INCH TO 60 INCH	W4 X 13
> 60 INCH	W6 X 20
> 84 INCH	ENGINEERED

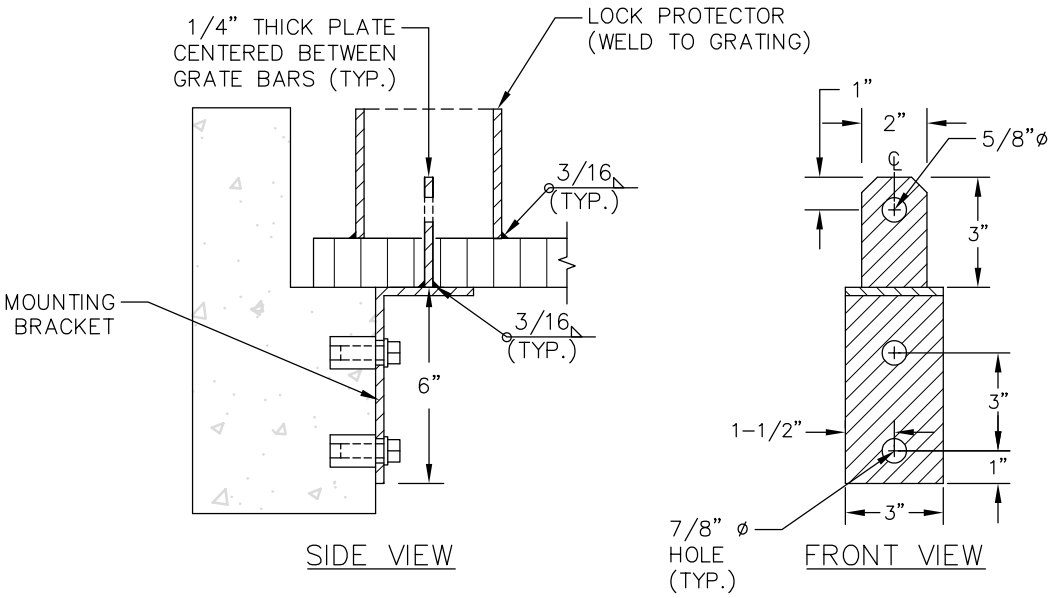


DETAIL "A" – SUPPORT BEAM

FRESNO IRRIGATION DISTRICT	HEAVY DUTY COVER – BOX STRUCTURE	
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 6-03
	DATE: 2025	SHEET 1 OF 2



DETAIL "B" – MOUNTING BRACKET

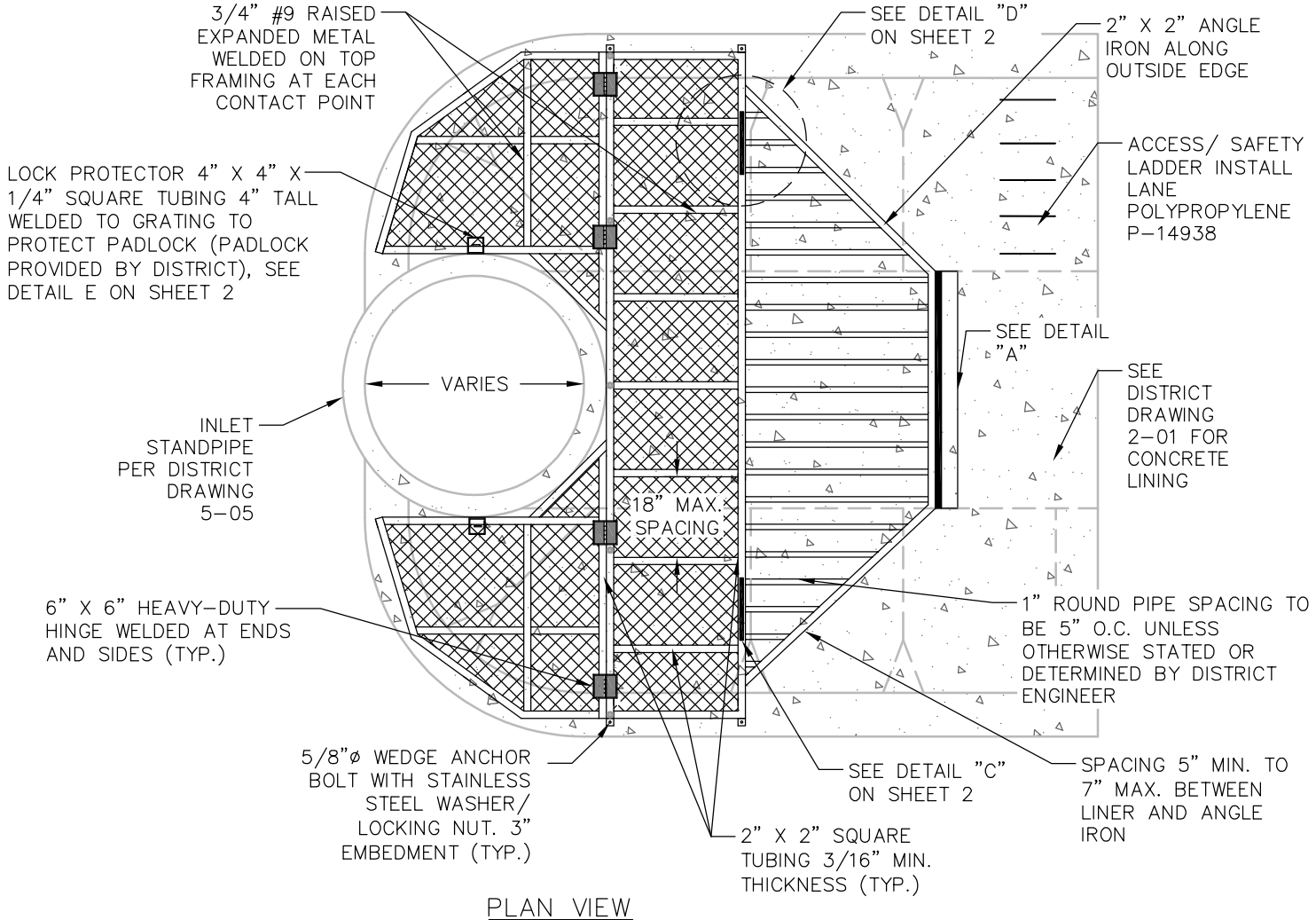


DETAIL "C" – LOCKING BRACKET

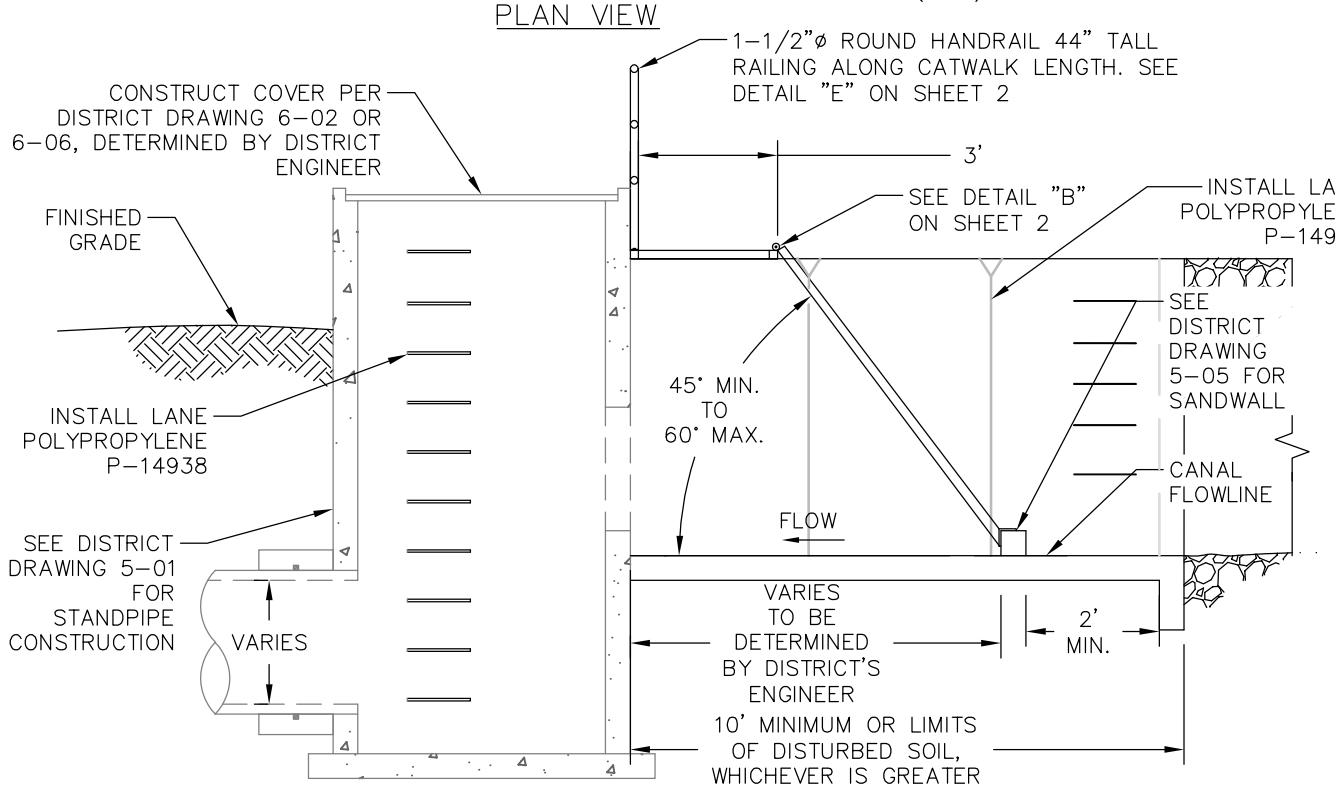
NOTES:

1. ALL STEEL SHALL BE ASTM A36 HOT DIP GALVANIZED UNLESS OTHERWISE DIRECTED.
2. DETAIL PROVIDED IS FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL FABRICATE METAL COVER BASED ON FIELD DIMENSIONS.
3. ALL COVERS SHALL BE HINGED TO ALLOW ACCESS,
4. COVERS 48–INCH TO 60–INCH SHALL HAVE A 24–INCH ACCESS HATCH AND LOCKING BRACKETS.
5. COVERS 72–INCH OR LARGER SHALL HAVE A 30–INCH WIDE ACCESS HATCH WITH LOCKING BRACKETS.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	HEAVY DUTY COVER – BOX STRUCTURE DETAILS	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6–03 SHEET 2 OF 2

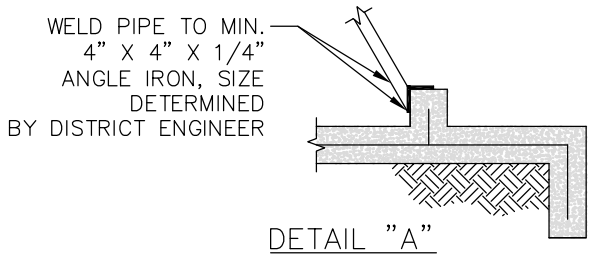


PLAN VIEW

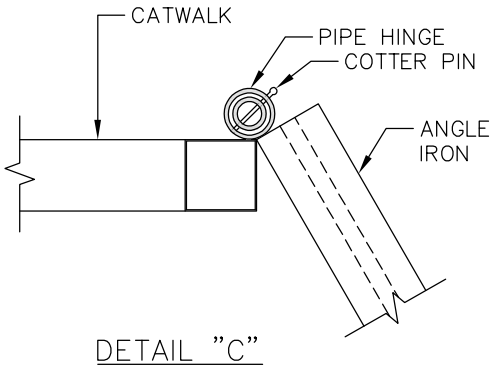


PROFILE VIEW

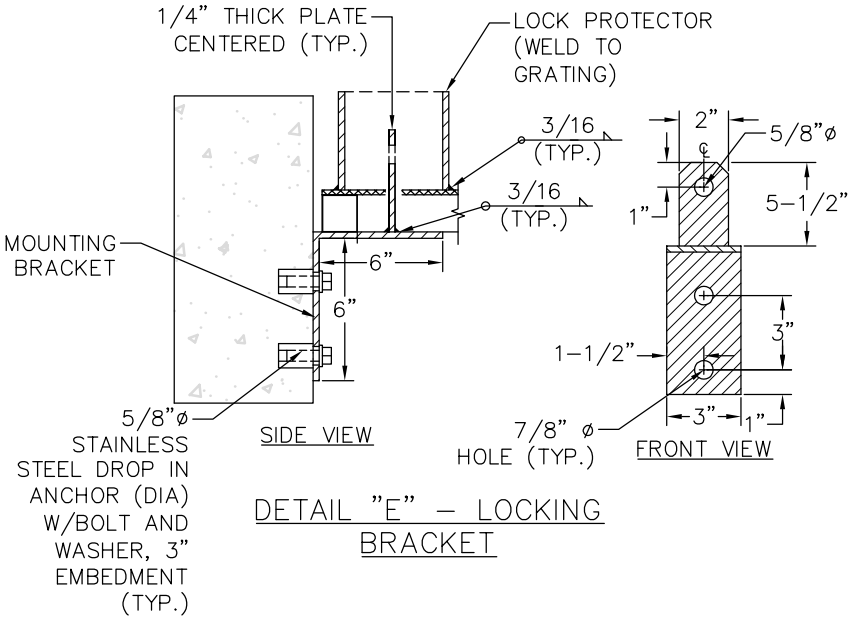
FRESNO IRRIGATION DISTRICT		TRASH RACK – INLET
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-04 SHEET 1 OF 2



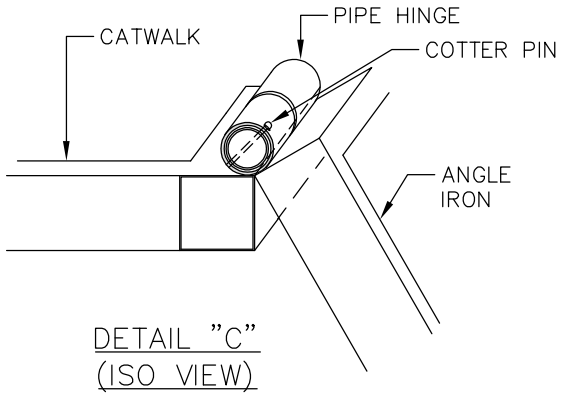
DETAIL "A"
SANDWALL (INLET ONLY)



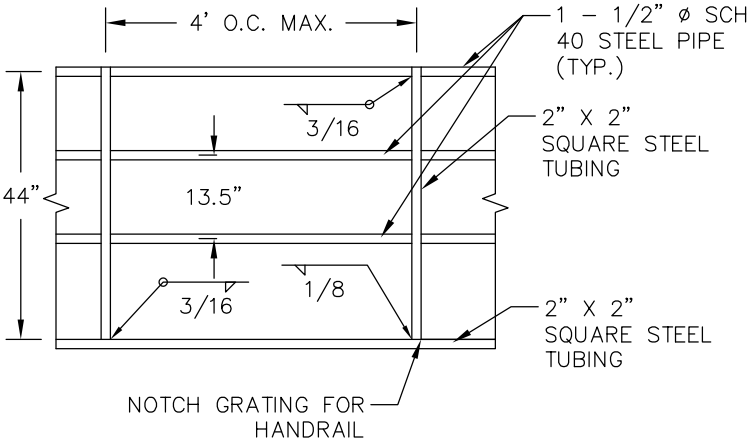
DETAIL "C"
(PIPE HINGE FOR RACK & CATWALK CONNECTION)



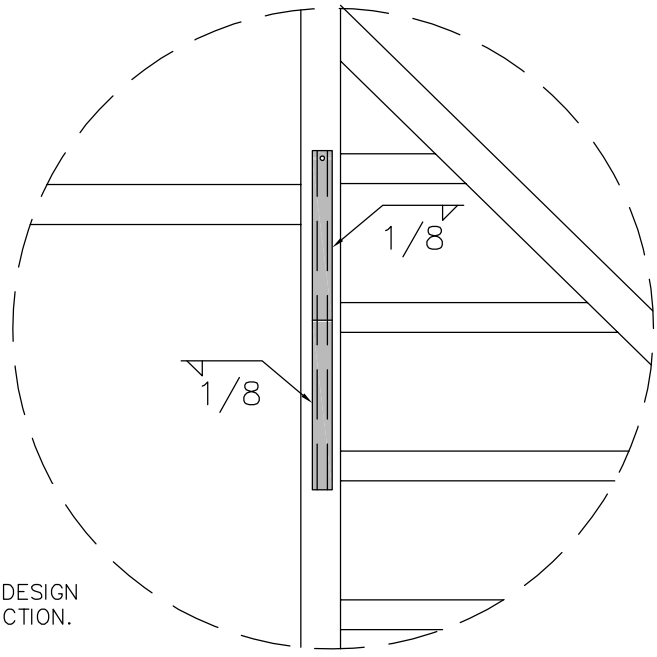
DETAIL "E" – LOCKING BRACKET



DETAIL "C"
(ISO VIEW)



DETAIL "B" HANDRAIL

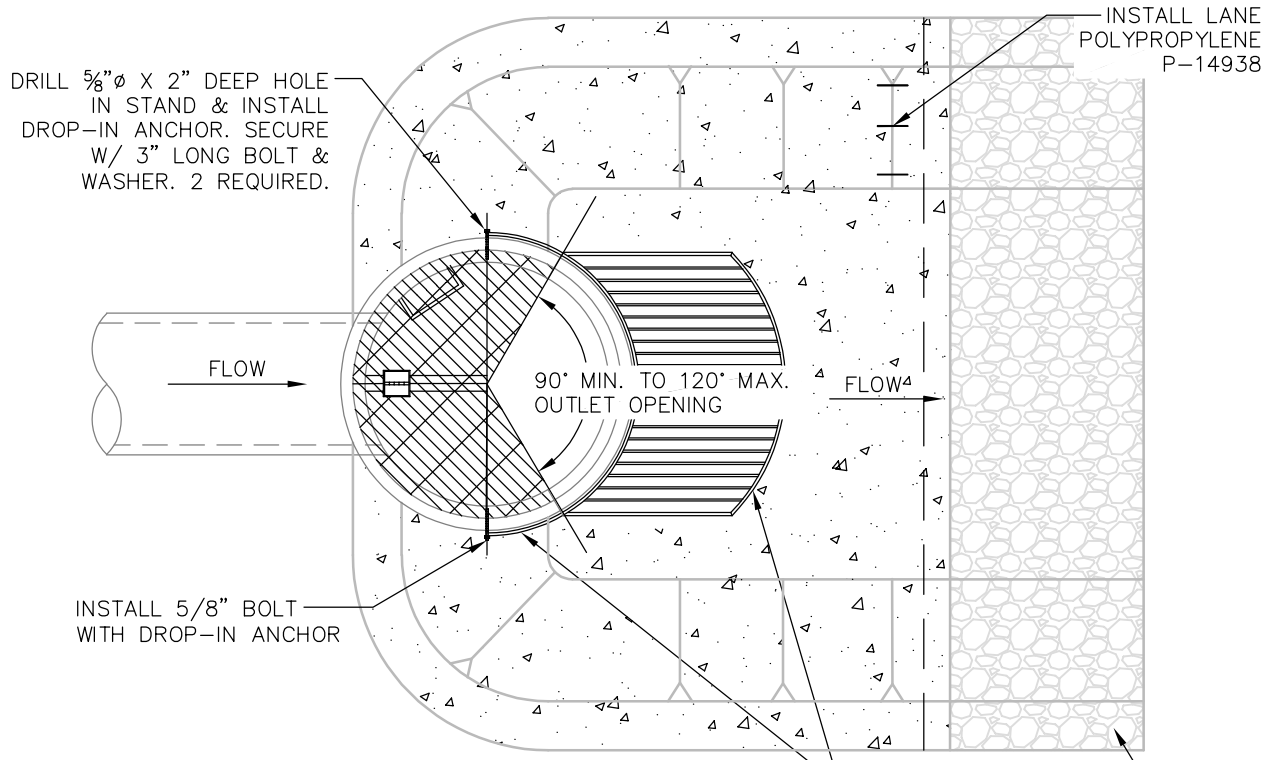


DETAIL "D"

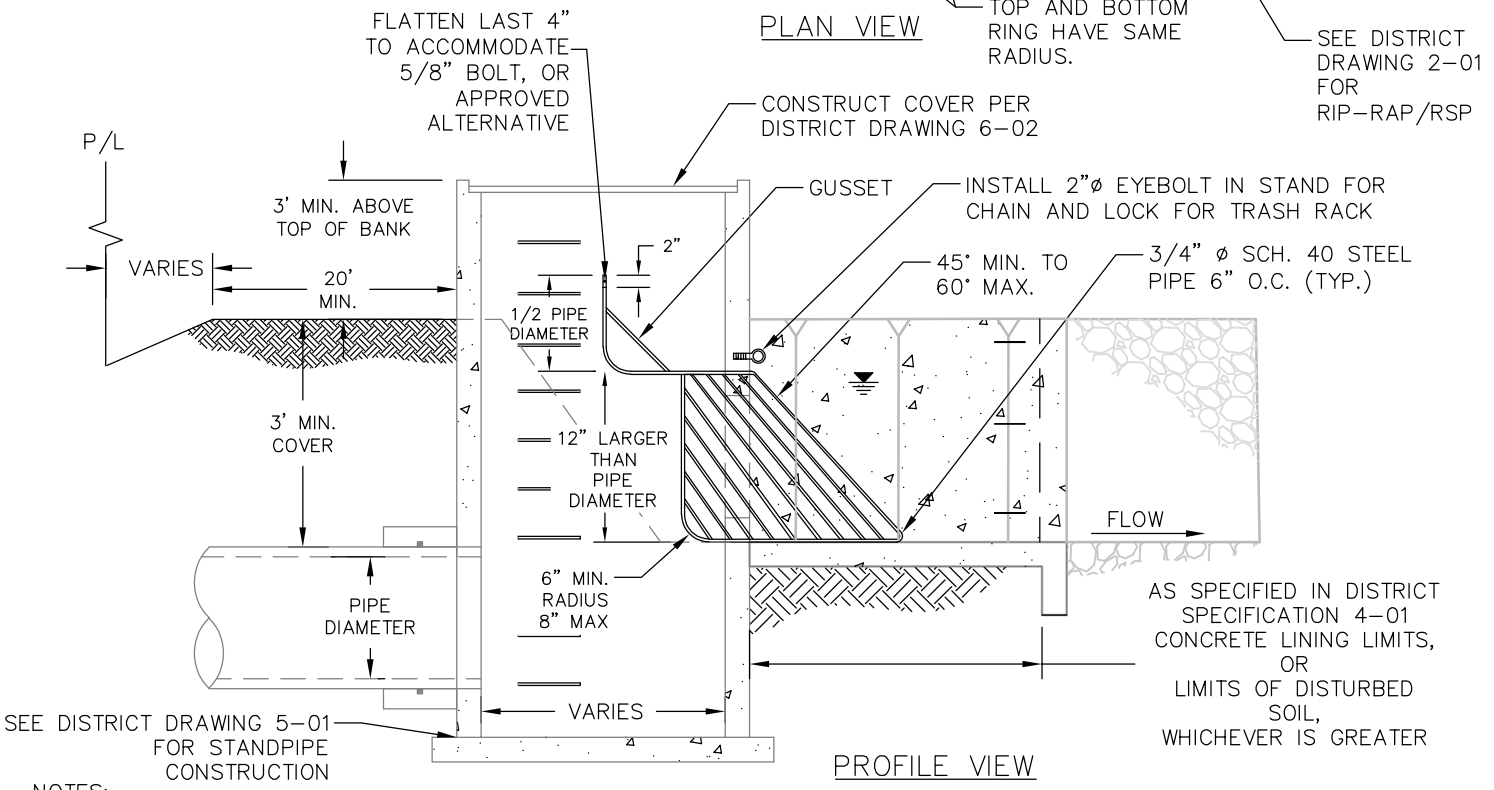
NOTES:

1. FOR REFERENCE ONLY. CONTRACTOR SHALL SUBMIT TRASH RACK DESIGN OR SHOP DESIGN TO DISTRICT FOR APPROVAL PRIOR TO CONSTRUCTION.
2. ENGINEERING SHALL BE BASED ON CANAL SIZE.
3. CATWALK, TRASH RACK, AND HANDRAIL SHALL BE HOT DIPPED GALVANIZED PRIOR TO INSTALLATION.
4. SQUARE STEEL TUBING SHALL MEET ASTM A500 STANDARDS.
5. TUBE SIZE SHALL INCREASE FOR CANALS OVER 5 FEET IN WIDTH AND SHALL NOT DEFLECT.

FRESNO IRRIGATION DISTRICT		TRASH RACK INLET – NOTES
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-04 SHEET 2 OF 2



PLAN VIEW



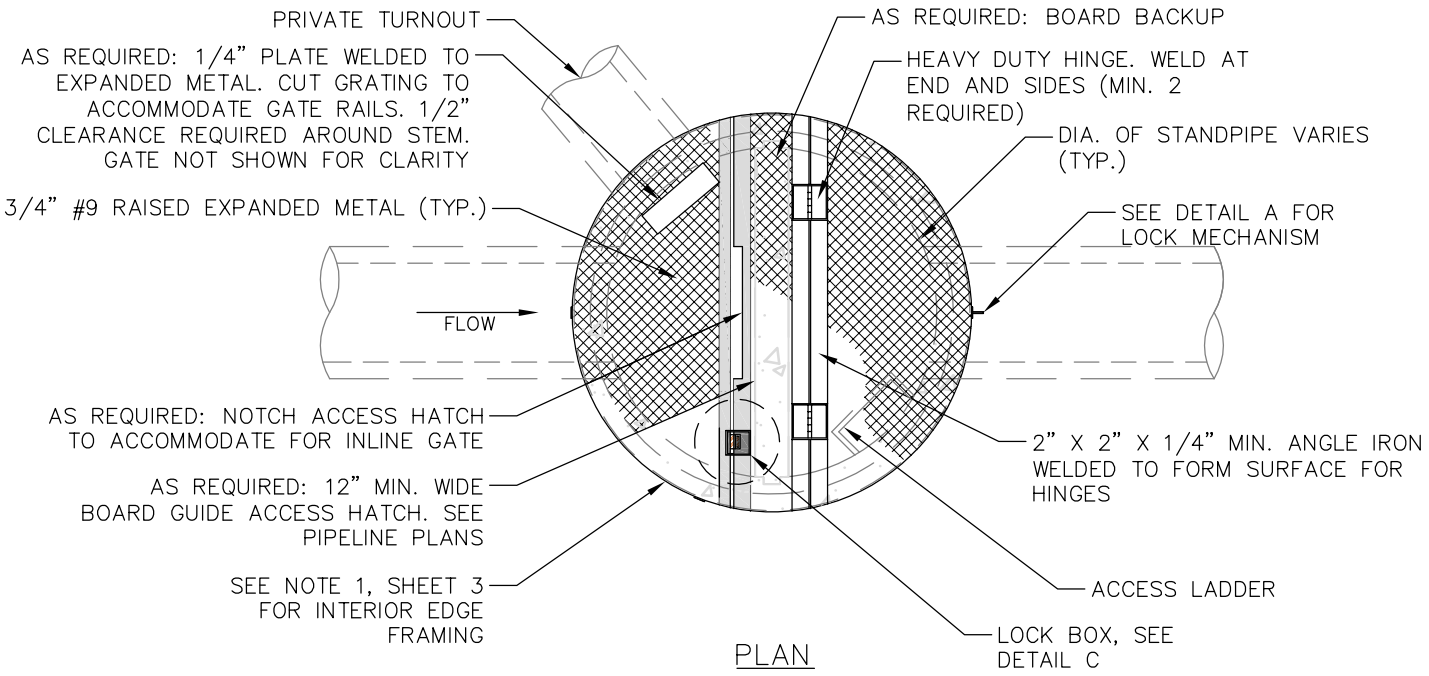
PROFILE VIEW

NOTES:

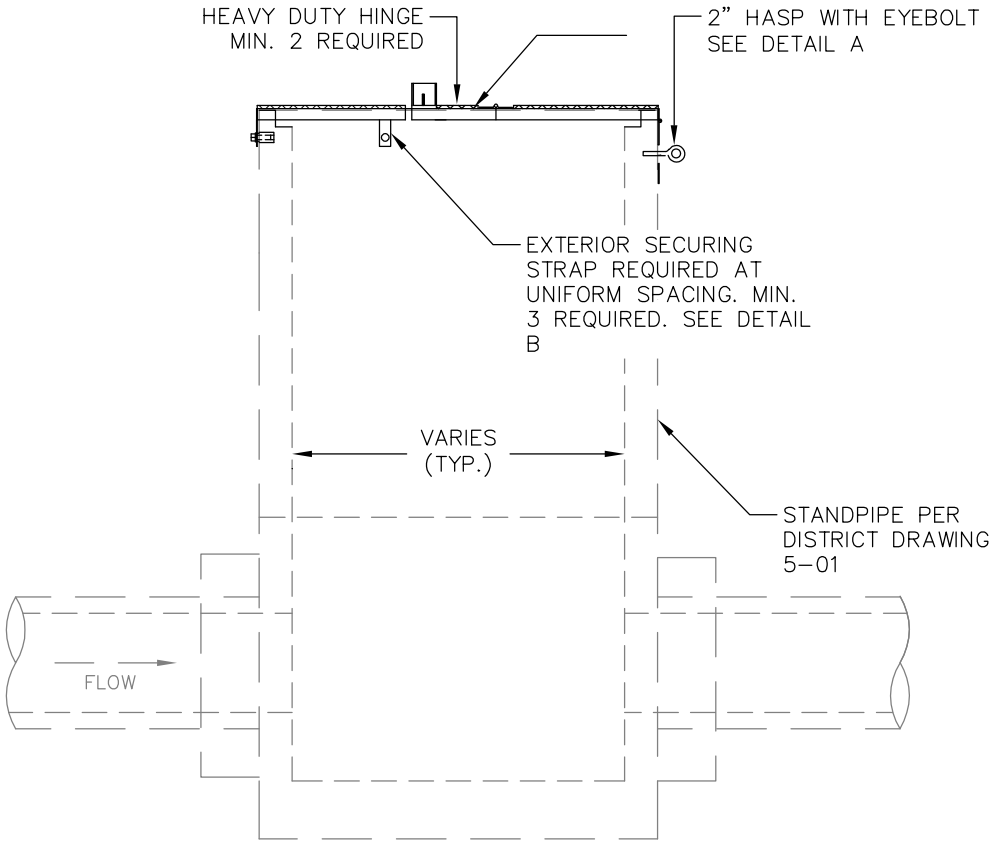
1. FOR REFERENCE ONLY. CONTRACTOR SHALL SUBMIT TRASH RACK DESIGN OR SHOP DESIGN TO DISTRICT FOR APPROVAL PRIOR TO CONSTRUCTION.
2. TRASH RACK SHALL BE HOT DIPPED GALVANIZED PRIOR TO INSTALL.
3. ALL HARDWARE SHALL BE STAINLESS STEEL.
4. IF OUTLET OPEN AREA IS LARGER THAN PIPE DIAMETER, THE TRASH RACK HEIGHT SHALL BE ADJUSTED ACCORDINGLY.

TRASH RACK SCHEDULE	
STAND SIZE	PIPE
48 INCH TO 60 INCH	3/4"
72 INCH TO 84 INCH	1"
96 INCH AND ABOVE	1-1/4"

FRESNO IRRIGATION DISTRICT	TRASH RACK – OUTLET	
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 6-05
	DATE: 2025	SHEET 1 OF 1

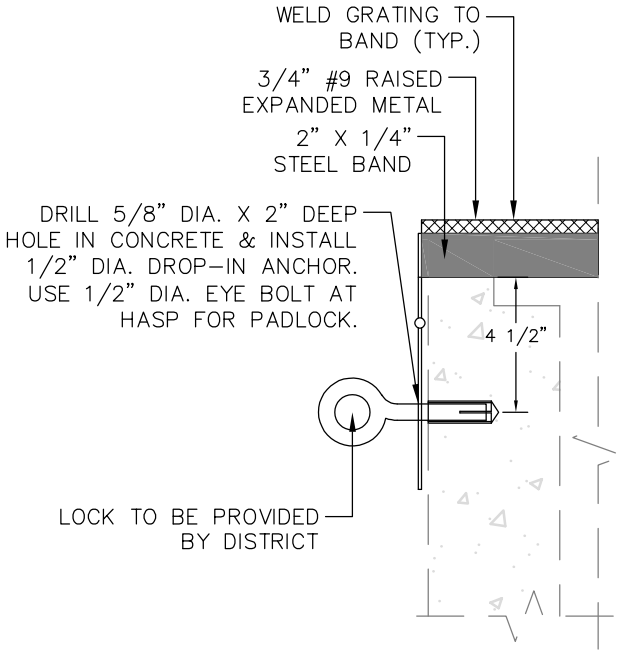


PLAN

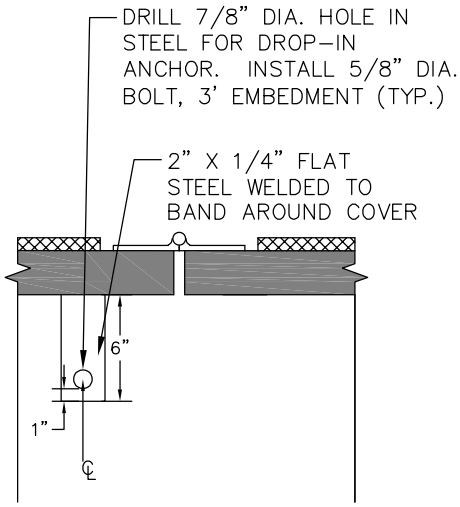


PROFILE

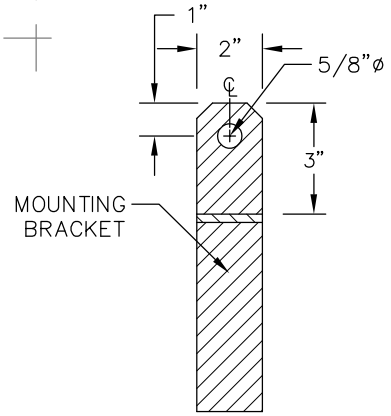
FRESNO IRRIGATION DISTRICT		EXPANDED METAL COVER – STANDPIPE	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 6-06
		DATE: 2025	SHEET 1 OF 4



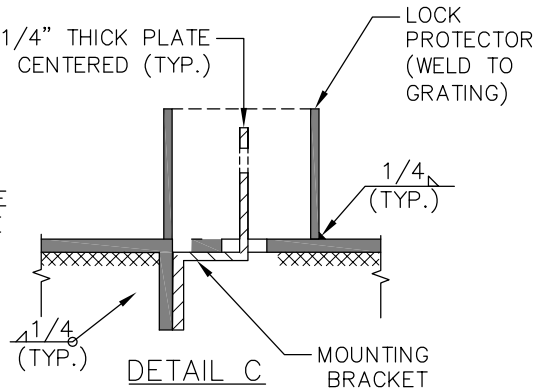
DETAIL A



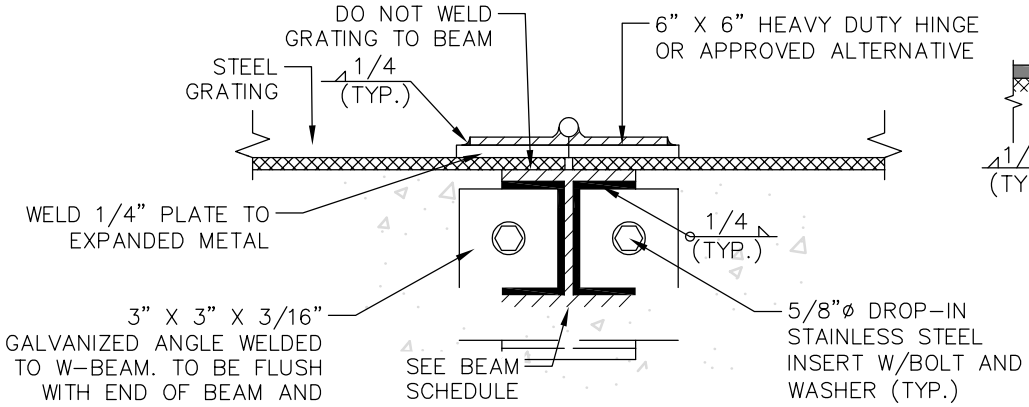
DETAIL B



DETAIL C
FRONT VIEW



DETAIL C



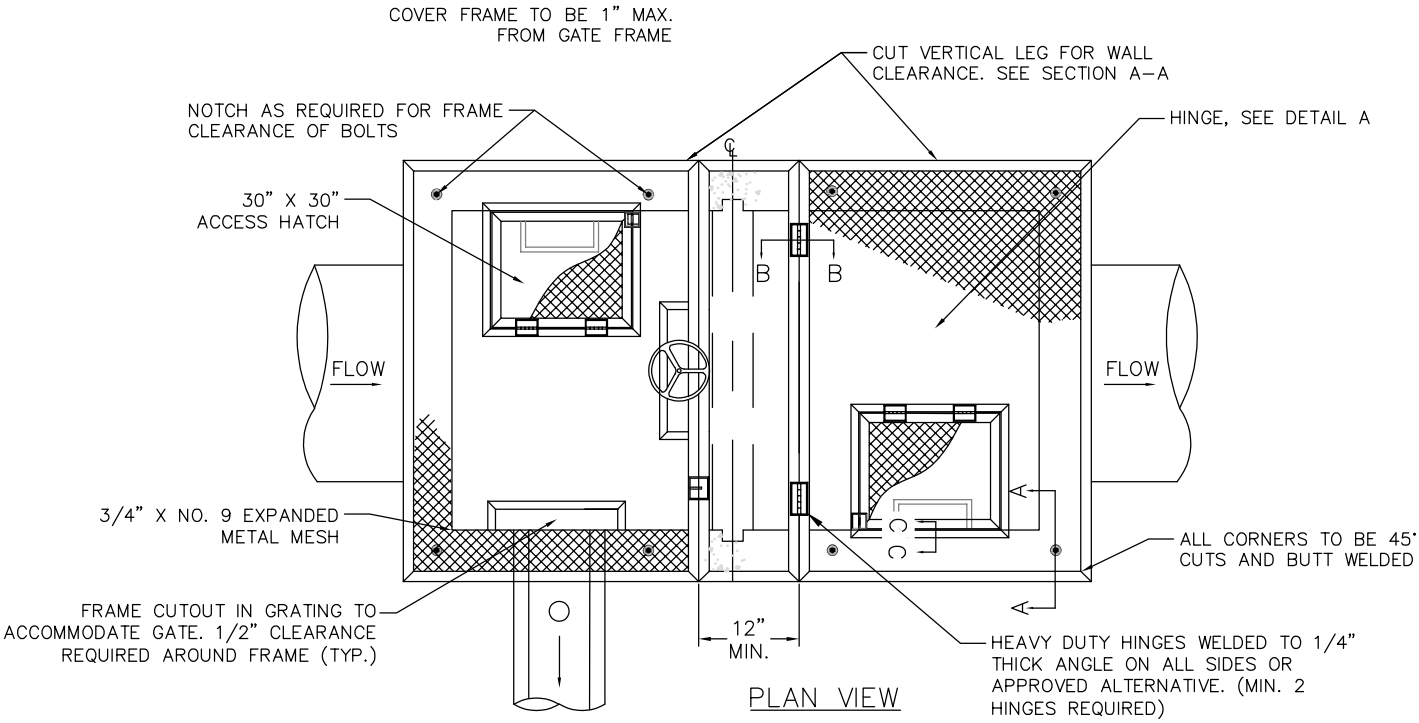
DETAIL D
SUPPORT BEAM

FRESNO IRRIGATION DISTRICT		EXPANDED METAL COVER – STANDPIPE DETAILS
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-06 SHEET 2 OF 4

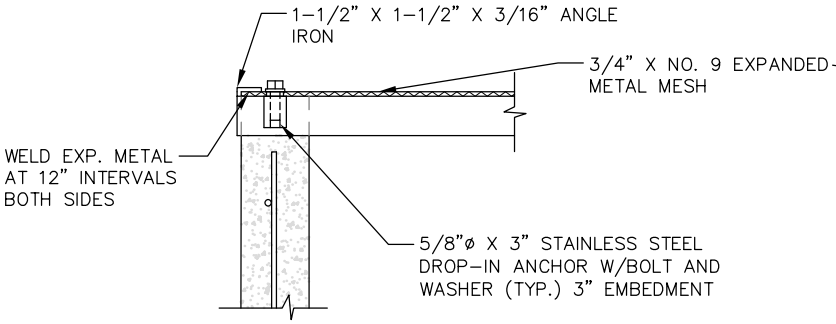
NOTES:

1. ALL INTERIOR EDGES SHALL BE FRAMED WITH 2 INCH X 2 INCH X 1/4 INCH ANGLE IRON.
2. CLEARANCE BETWEEN OUTSIDE EDGE OF STRUCTURE AND COVER SHALL BE 1/4 INCH MINIMUM TO 1/2 INCH MAX AROUND ALL SIDES.
3. COVER SHALL BE HOT DIPPED GALVANIZED.
4. DETAIL PROVIDED IS FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL FABRICATE COVER BASED ON FIELD DIMENSIONS.
5. DISTRICT MAY REQUIRE SHOP DRAWINGS AND DISTRICT APPROVAL PRIOR TO FABRICATION.
6. TURNOUT/ACCESS STANDS – 48 INCH ø OR LESS SHALL BE A COVER WITHOUT HINGES. STAND COVERS GREATER THAN 48 INCH ø SHALL BE INSTALLED PER THIS DETAIL (SEE PLAN) WITH HINGES CENTERED ON OPENING.

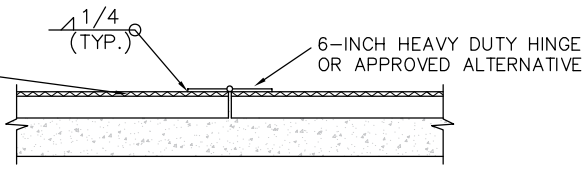
BEAM SCHEDULE			
STAND HIGHT	GATE PRESENT	REQUIRED BEAM	NOTES
48–INCH	NO	NONE	STEAL COVER MUST BE PROPERLY ANCHORED
>48–INCH TO 84–INCH	ANY	W4x13 GALVANIZED STEAL BEAM	MINIMUM BEAM REQUIREMENT
≥96–INCH	ANY	ENGINEER–DESIGN BEAM	SUBMIT STAMPED CIVIL OR STRUCTURAL CALCS AND DESIGN



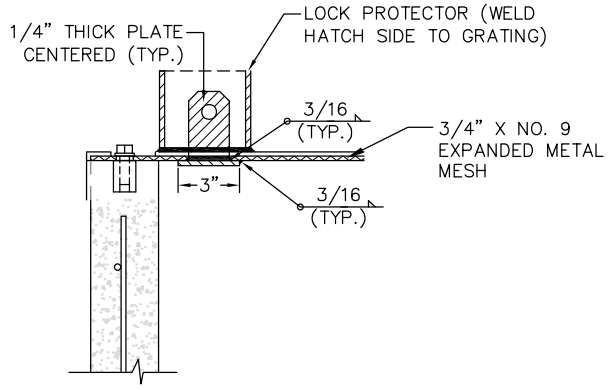
PLAN VIEW



SECTION VIEW A–A



SECTION VIEW B–B

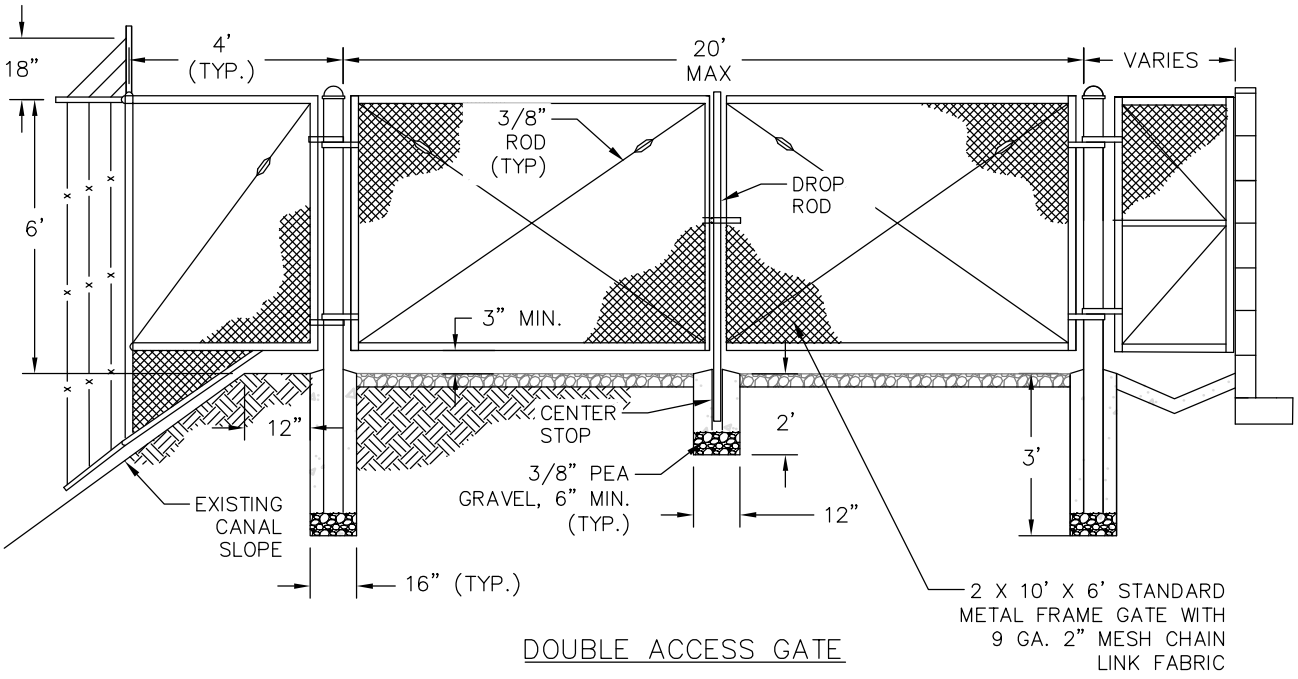


SECTION VIEW C–C

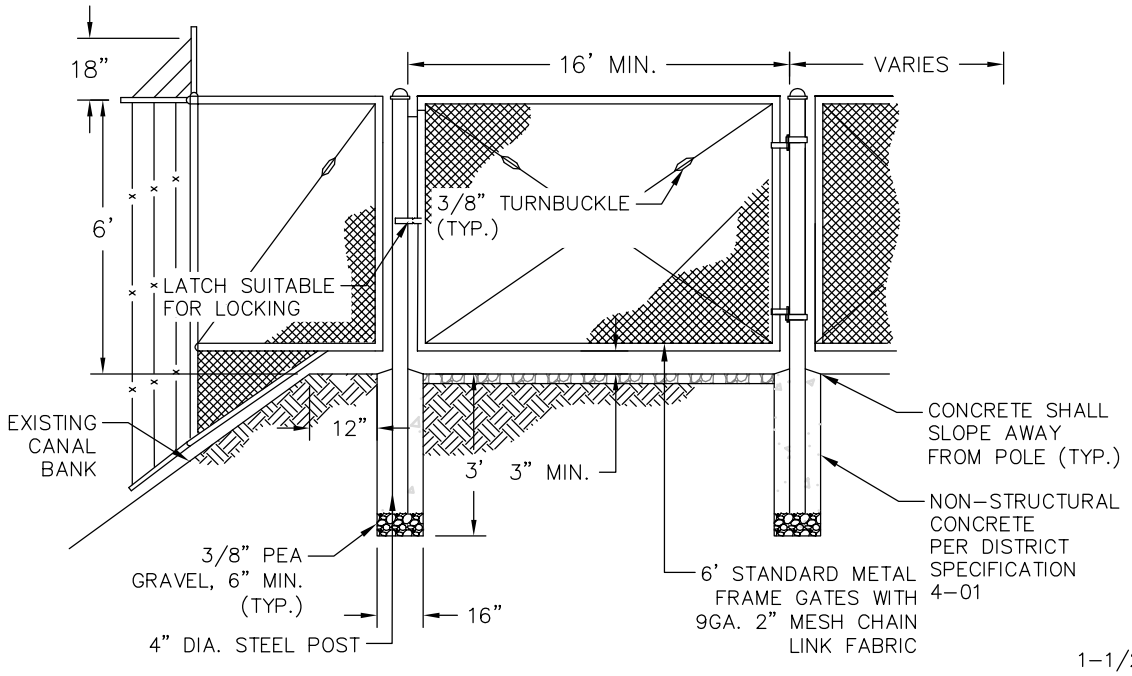
NOTES:

1. CLEARANCE BETWEEN EDGE OF STRUCTURE AND COVER SHALL BE 1/4" MIN. AND 1/2" MAX ALL SIDES.
2. COVER SHALL BE HOT DIPPED GALVANIZED.
3. DRAWING PROVIDED FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL FABRICATE COVER BASED ON FIELD DIMENSIONS.
4. ALL BOX STRUCTURES SHALL HAVE ACCESS HATCHES ON UPSTREAM AND DOWNSTREAM SIDES OF THE BAFFLE WALL. LOCATION OF HATCHES SHALL BE DETERMINED BY DISTRICT ENGINEER.

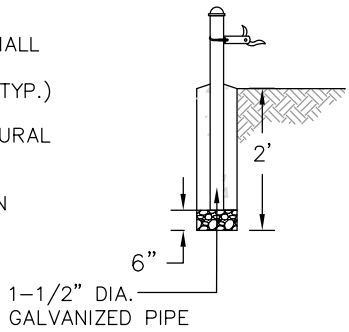
FRESNO IRRIGATION DISTRICT		EXPANDED METAL COVER – BOX W/ HATCH
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6–06 SHEET 4 OF 4



DOUBLE ACCESS GATE



SINGLE ACCESS GATE



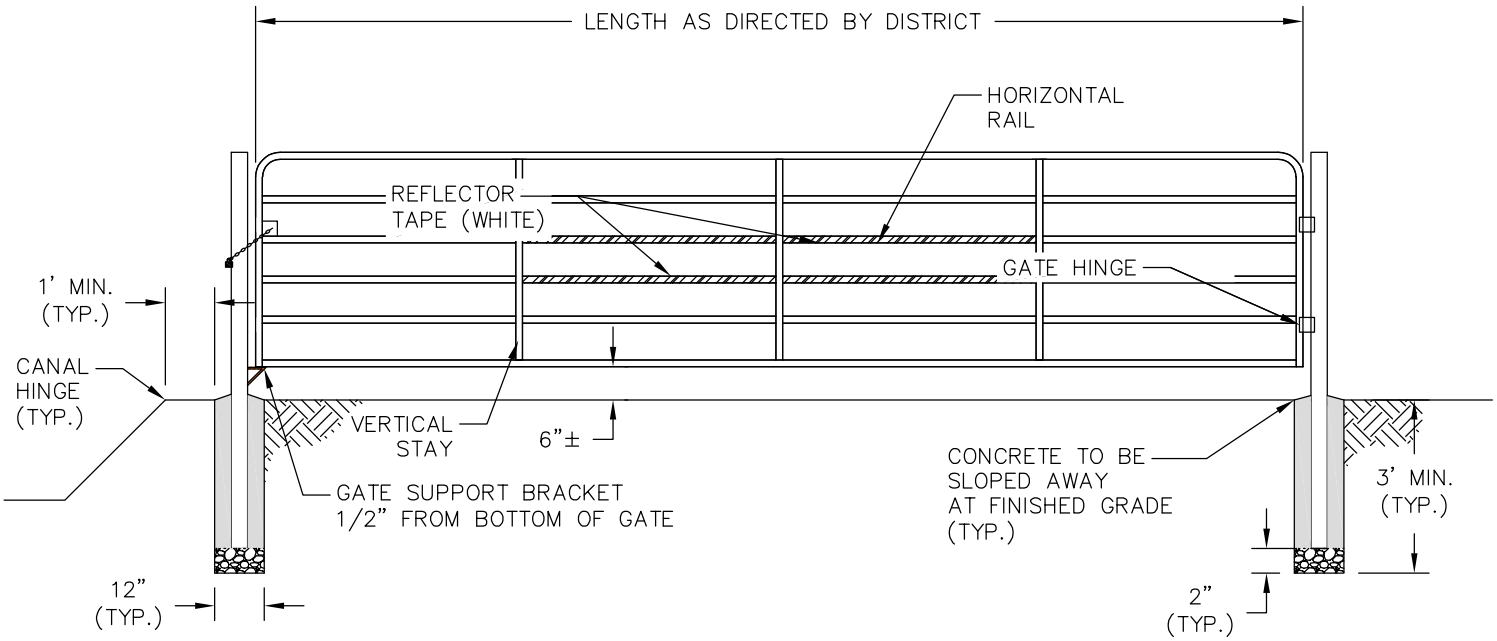
GATE HOLDBACK DETAIL

FRESNO IRRIGATION DISTRICT	GATE – CHAIN LINK	
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-07

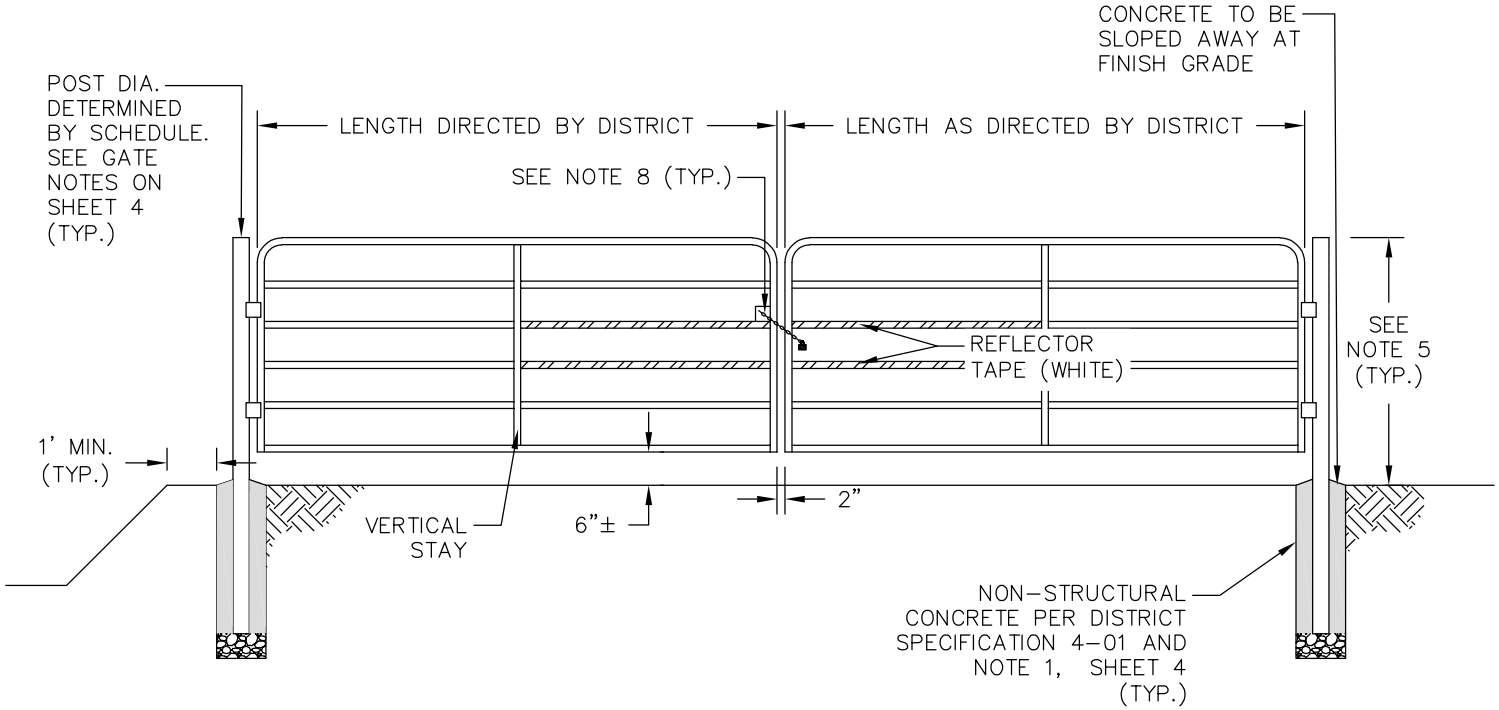
FENCE AND GATE POST SCHEDULE (SCHEDULE 40)		
POST LOCATION	NOM. DIA.	WEIGHT lb/ft
FENCE BRACES	1 1/4"	2.27
LINE POST	2"	3.65
CORNER POST	2 1/2"	5.79
10' DOUBLE DRIVE GATE	5"	10.79
16' SINGLE DRIVE GATE	6"	14.62

NOTES:

1. GATE POSTS SHALL HAVE HORIZONTAL BRACING WITH RODS AND TURNBUCKLES IN BOTH DIRECTIONS.
2. ALL GATES SHALL HAVE AN ADJACENT PANEL SECTION FOR SUPPORT, 3' MIN. FROM GATE POST.
3. NONSTRUCTURAL CONCRETE SHALL BE A MINIMUM OF 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI, WATER CEMENT RATIO SHALL NOT EXCEED 0.50 (BY WEIGHT), AND 4" ± 1" SLUMP AT PLACEMENT.
4. IF FENCE OR GATE IS TO SECURE A STRUCTURE, THE APPLICANT MAY ADD 3 ROWS OF BARBED WIRE TO TOP OF FENCE/GATE.
5. RAZOR WIRE WILL NOT BE ALLOWED.
6. SEE DISTRICT DRAWING 6-01 FOR ADDITIONAL INFORMATION.
7. OPTIONAL COMMERCIAL STRONG ARM DOUBLE GATE LATCH MAY BE USED. IF OPTED FOR, OMIT DROP ROD AND CENTER STOP.
8. ALL POSTS TO HAVE POST CAPS.



SINGLE ACCESS GATE



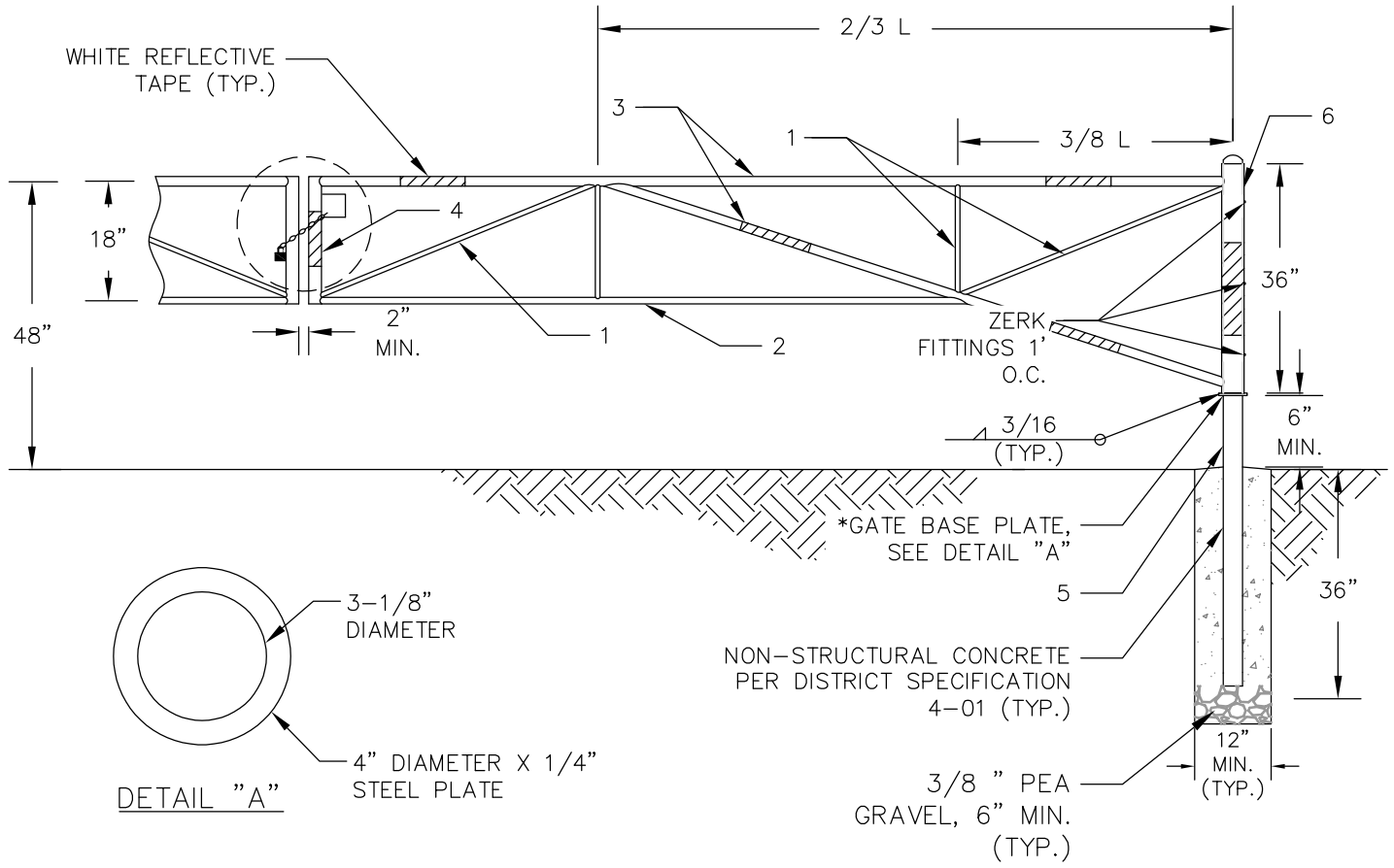
DOUBLE ACCESS GATE

FRESNO IRRIGATION DISTRICT		GATE – PANEL	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-07 SHEET 3 OF 5

NOTES:

1. NON–STRUCTURAL CONCRETE SHALL BE A MINIMUM OF 6 SACK (564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD) WITH A MINIMUM 28–DAY COMPRESSIVE STRENGTH OF 3,500 PSI, WATER CEMENT RATIO SHALL NOT EXCEED 0.45 (BY WEIGHT), AND 4" SLUMP AT PLACEMENT.
2. STRUCTURE PERMIT AND/OR CONSTRUCTION PERMIT IS REQUIRED FOR ALL GATE INSTALLATIONS.
3. LOCATION TO BE VERIFIED WITH DISTRICT INSPECTOR PRIOR TO INSTALLATION.
4. INSTALLED GATE SHALL BE MANUFACTURED BY POWDER RIVER OR APPROVED EQUIVALENT.
5. GATE HEIGHT – 50 INCH MINIMUM.
   GATE WIDTH – AS SPECIFIED IN PLANS OR AS DIRECTED BY DISTRICT.
6. GATE FRAME SHALL BE MADE FROM 1.66 INCH O.D. TUBE, OR LARGER TUBULAR STEEL.
7. GATE SHALL HAVE A MINIMUM OF 2 METAL HINGES.
8. GATE SHALL BE EQUIPPED WITH GATE FASTENERS AND SECURED BY A CHAIN (FURNISHED BY THE LANDOWNER) AND PADLOCK (FURNISHED BY THE DISTRICT). AT THE DISTRICT DISCRETION, ADDITIONAL LOCKS MAY BE INTERLOCKED WITH DISTRICT FURNISHED PADLOCK.
9. GATE POSTS WILL BE PAINTED WITH 1 COAT RUSTOLEUM PRIMER AND 2 COATS EXTERIOR RUSTOLEUM (COLOR TO MATCH GATE) OR APPROVED EQUIVALENT. INSTALL OUTRIGGERS AS NECESSARY TO PREVENT 2 WHEEL BYPASS TRAFFIC ON SLOPES.
10. ALL POSTS TO HAVE CAPS.
11. ALL WEEP HOLES SHALL BE FILLED WITH SPRAY FOAM TO PREVENT INSECT INFESTATION.
12. LANDOWNER IS RESPONSIBLE TO MAINTAIN GATE.
13. WHITE REFLECTIVE TAPE REQUIRED ON ALL GATES.
14. THESE ARE GUIDELINES ONLY, FINAL DESIGN TO BE PROVIDED BY CONTRACTOR.
15. SEE DISTRICT STANDARD SPECIFICATION 9–03 FOR ADDITIONAL INFORMATION.

HINGED GATE POST SCHEDULE (SCHEDULE 40)	
POST LOCATION	NOM. DIA.
8' SINGLE DRIVE GATE	4"
10' SINGLE DRIVE GATE	5"
16' SINGLE DRIVE GATE	6"
20' SINGLE DRIVE GATE	8"

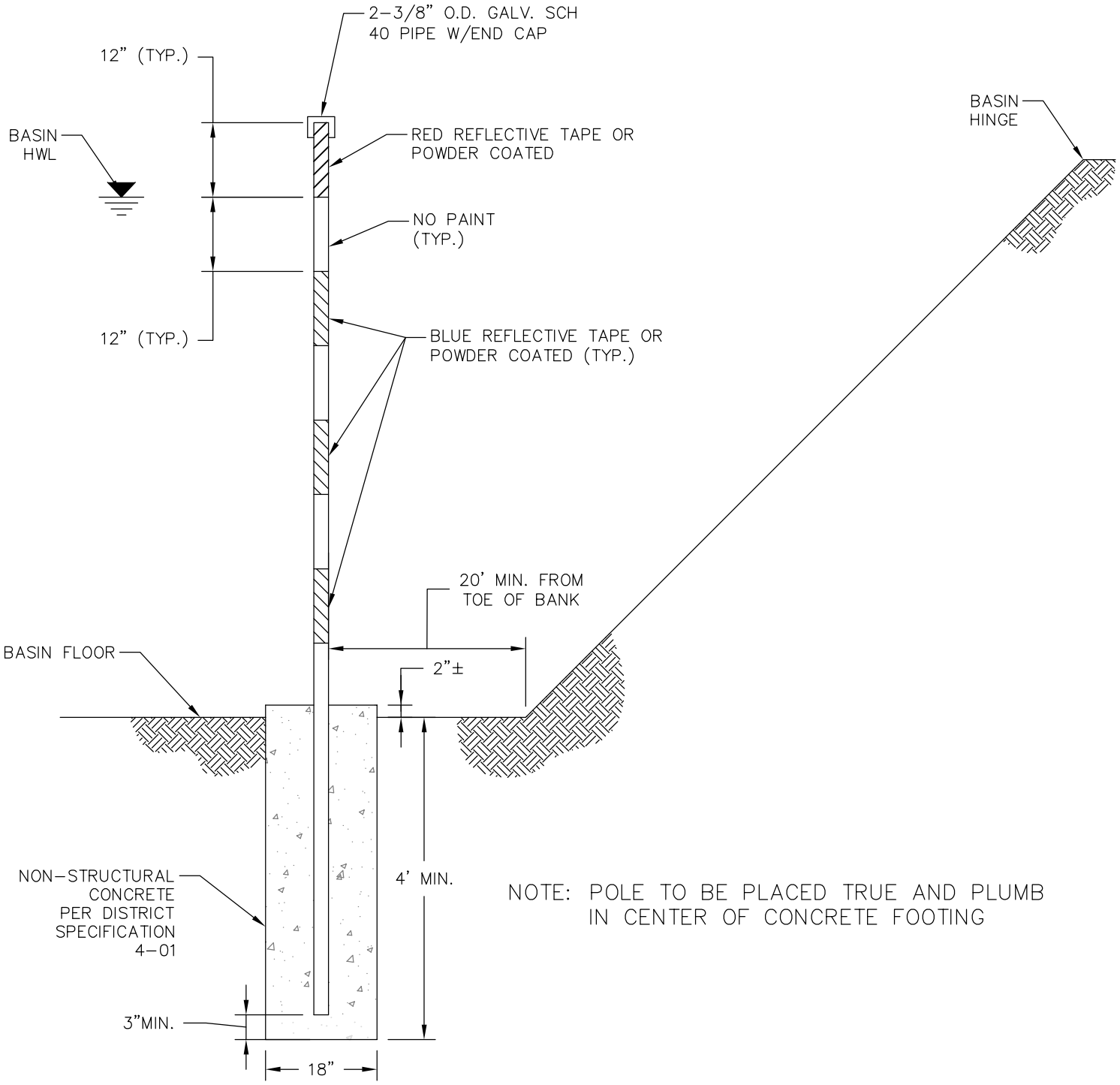


PIPE SCHEDULE (SCHEDULE 40)	
PIPE NO.	DIA.
1	1"
2	1"
3	1-1/2"
4	2"
5	3"
6	3-1/2"

NOTE:

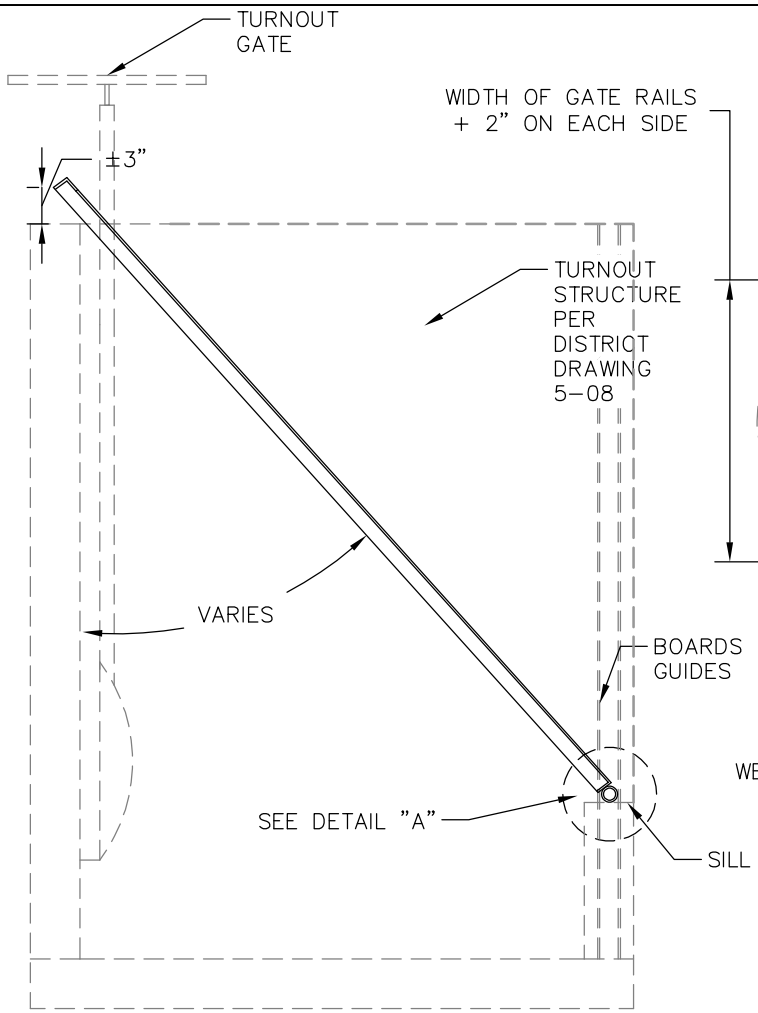
1. USE 1/4" FILLET ON ALL WELDS. WELD BASE PLATE, BOTTOM ONLY TO BE PLACED 6" – 12" FROM GRADE.
2. STEEL TUBE MAY BE SUBSTITUTED FOR PIPE WITH DISTRICT APPROVAL.
3. ALL POSTS TO HAVE CAPS.

FRESNO IRRIGATION DISTRICT		GATE – PIPE	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 6-07
		DATE: 2025	SHEET 5 OF 5

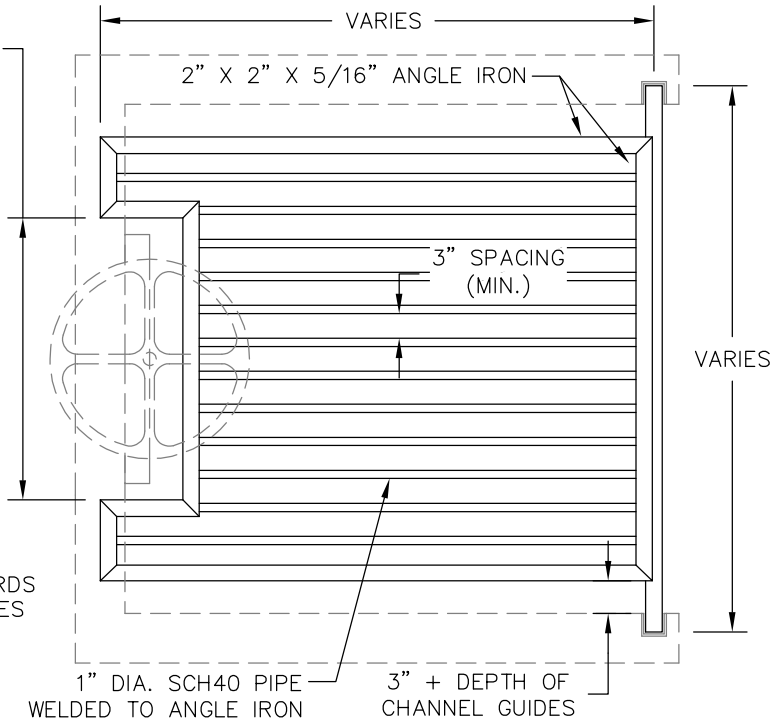


NOTE: POLE TO BE PLACED TRUE AND PLUMB IN CENTER OF CONCRETE FOOTING

FRESNO IRRIGATION DISTRICT		BASIN MEASURING POLE
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-08 SHEET 1 OF 1



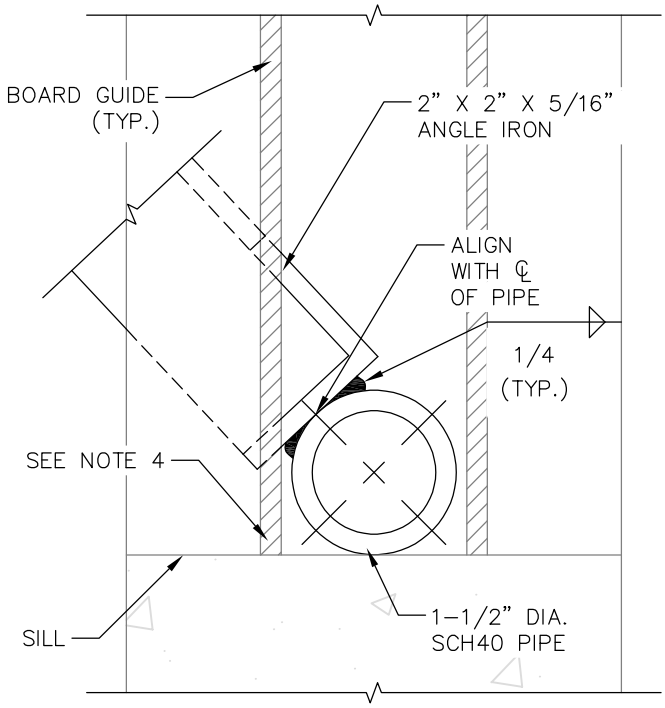
SIDE VIEW



TOP VIEW

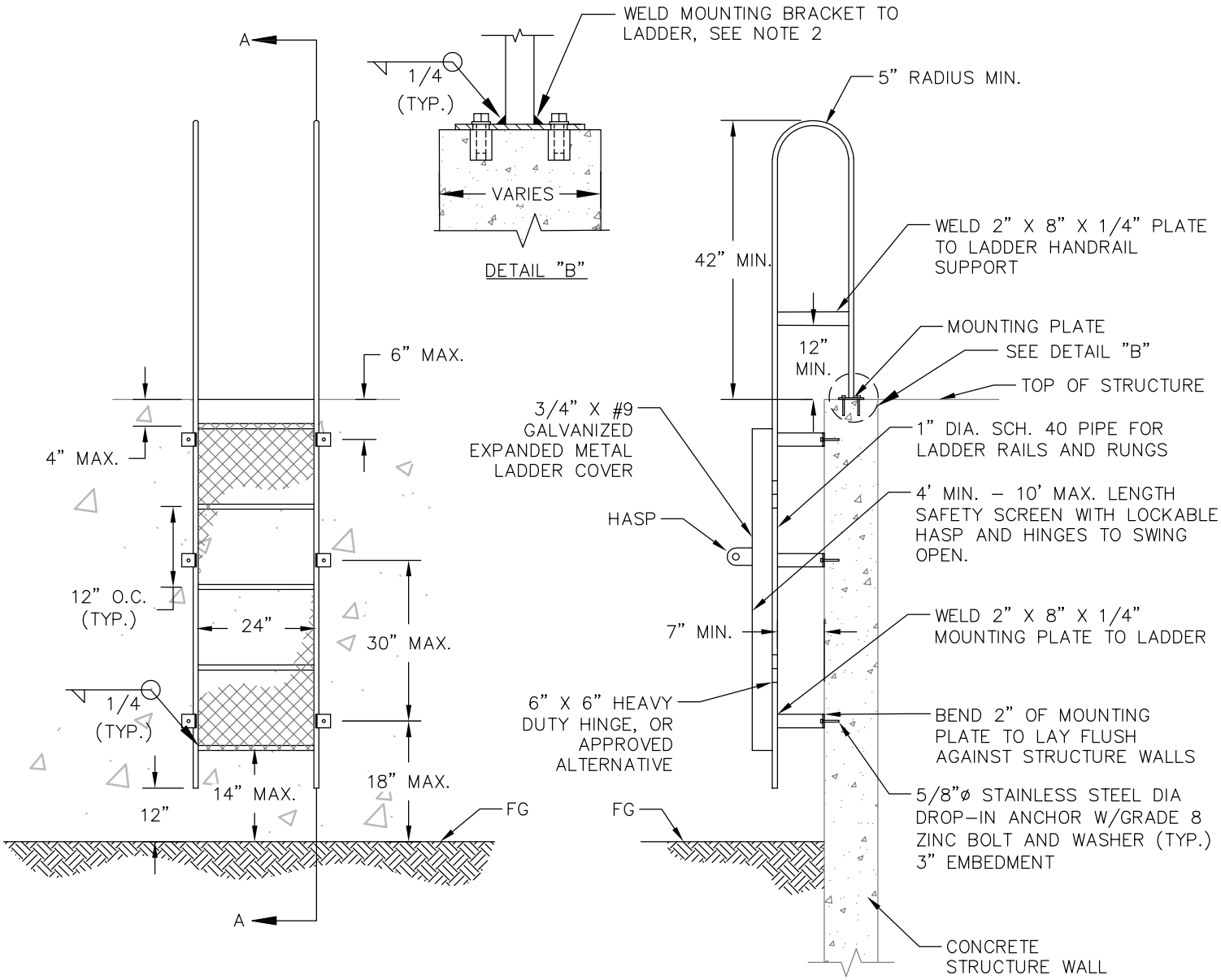
NOTES:

1. UNLESS OTHERWISE NOTES, ALL METAL SHALL BE HOT-DIPPED GALVANIZED.
2. ANY CHANGES OR DEVIATIONS REQUIRED BY FIELD CONDITIONS SHALL BE APPROVED BY DISTRICT ENGINEER.
3. DISTRICT MAY REQUIRE CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION.
4. 2.5 INCH X 2.5 INCH X 1/4 INCH BOARD GUIDES. SEE DRAWING 5-10.
5. ALL METALWORK SHALL BE WELDED.
6. DETAIL PROVIDED IS FOR SCHEMATIC PURPOSES ONLY. CONTRACTOR SHALL FABRICATE TRASH RACK BASED ON FIELD DIMENSIONS.



DETAIL "A"

FRESNO IRRIGATION DISTRICT	TRASH RACK – TURNOUT	
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 6-09
	DATE: 2025	SHEET 1 OF 1

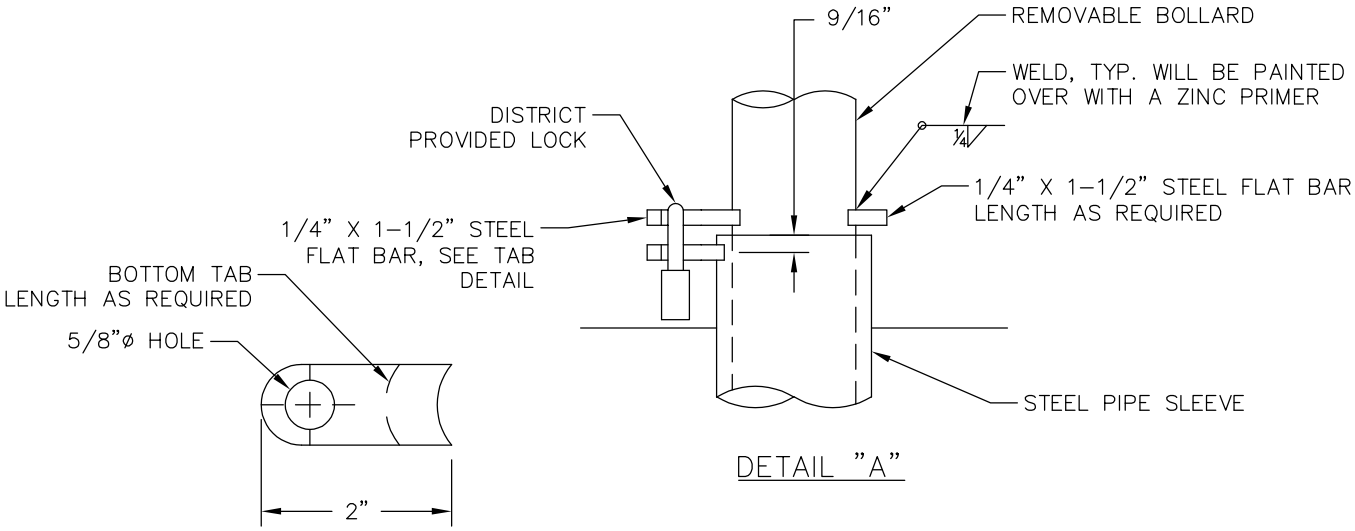


SECTION A–A

NOTES:

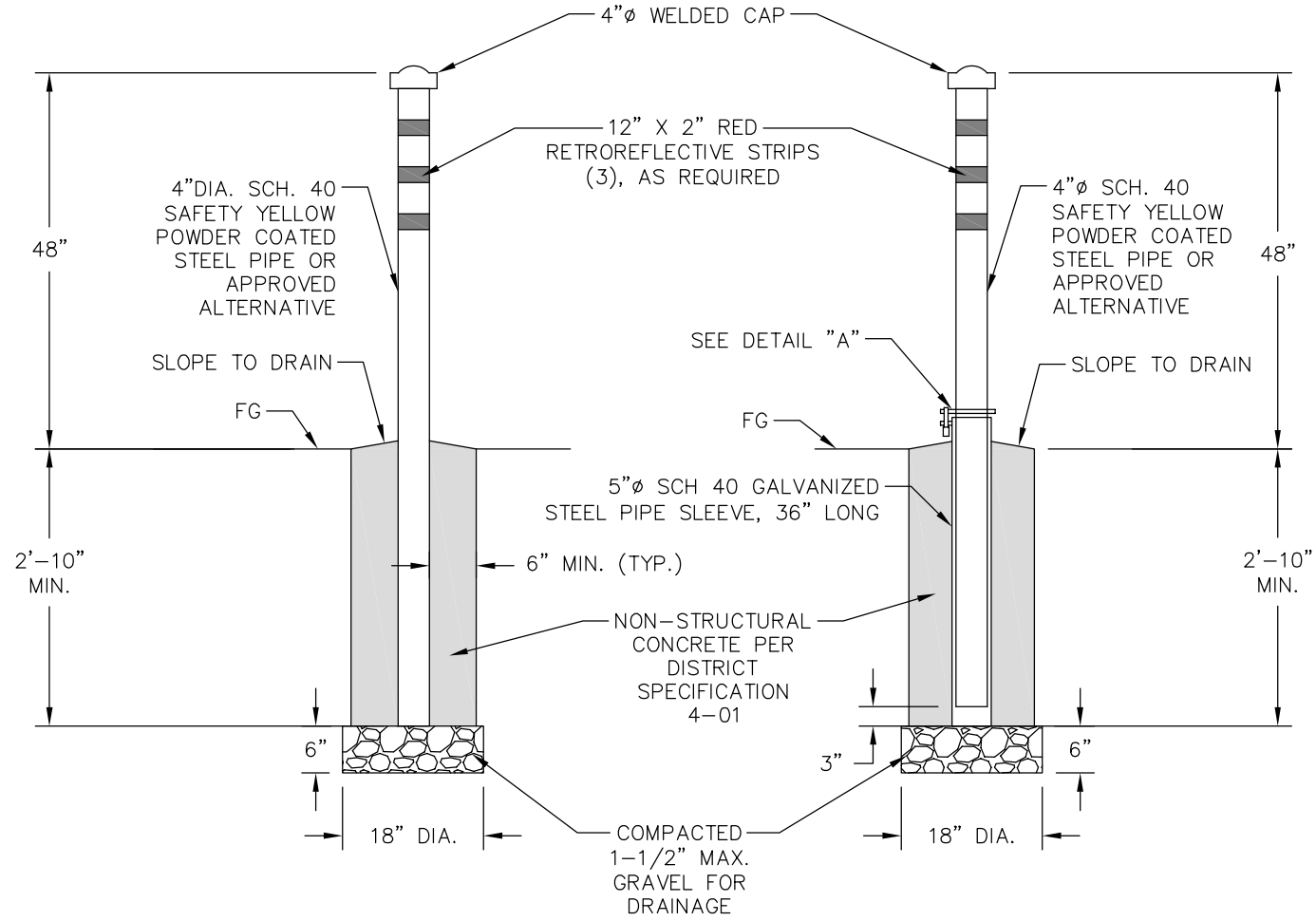
1. LADDER SHALL BE HOT DIPPED GALVANIZED AND ALL HARDWARE SHALL BE STAINLESS STEEL. LADDER COVER SHALL BE 3/4" X #9 EXPANDED METAL.
2. HANDRAIL MOUNTAIN BRACKET TO SIT CENTERED ON STOP OF STRUCTURE.
3. INSTALL HASP WITH 5/8" HOLE FOR LOCK ON SAFETY LADDER COVER.
4. ANY CHANGES OR DEVIATIONS REQUIRED BY FIELD CONDITIONS SHALL BE APPROVED BY DISTRICT ENGINEER.
5. LADDER MUST CONFORM TO ALL CAL OSHA STANDARDS.
6. LADDER SHALL BE REQUIRED FOR STRUCTURES GREATER THAN OR EQUAL TO 3 FEET IN HEIGHT.
.
7. LADDER COVER SHALL BE TO TOP LADDER RUNG OR MAXIMUM 10 FEET FROM GRADE, BOTTOM OF COVER SHALL BE AT BOTTOM LADDER RUNG.
8. LADDER RUNGS SHALL BE FISH MOUTH CUT AND HAVE 1/4" FILLET WELD AT EACH CONNECTION

FRESNO IRRIGATION DISTRICT		LADDER AND COVER CONCRETE STRUCTURES
"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE	DISTRICT DRAWING 6–10
	DATE: 2025	SHEET 1 OF 1



DETAIL "A"

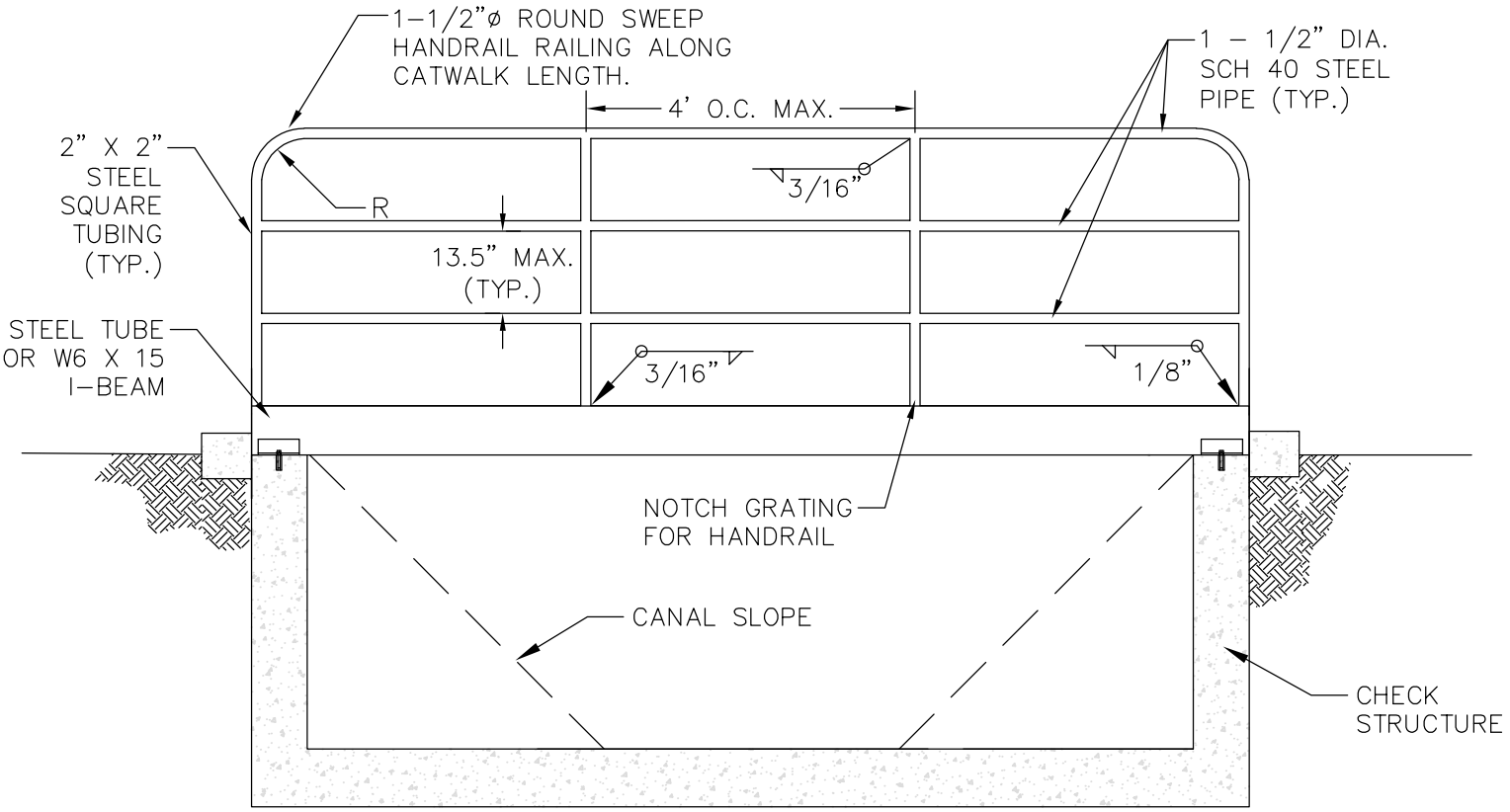
TAB DETAIL



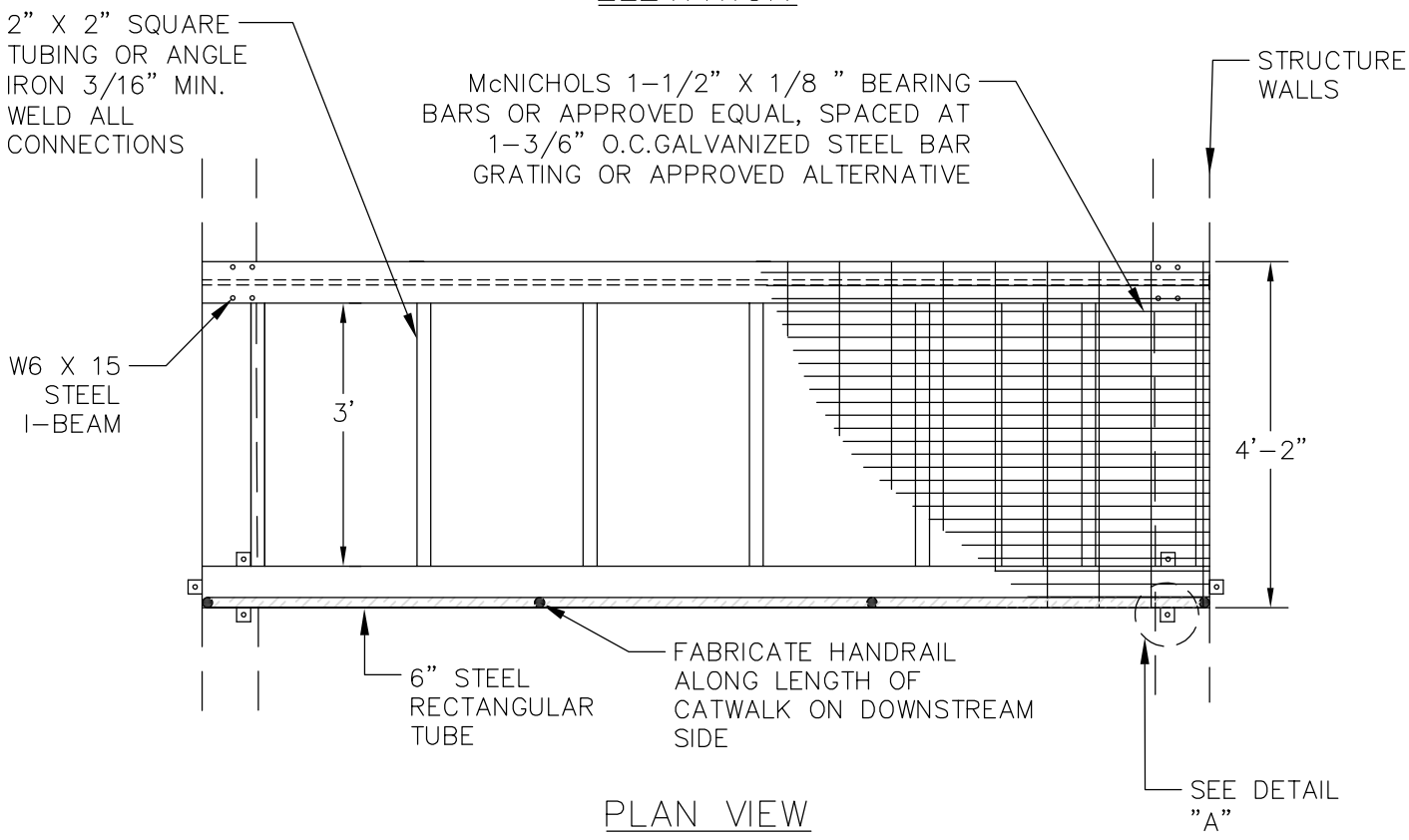
FIXED BOLLARD

REMOVABLE BOLLARD

FRESNO IRRIGATION DISTRICT		BOLLARD	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 6-11
		DATE: 2025	SHEET 1 OF 1

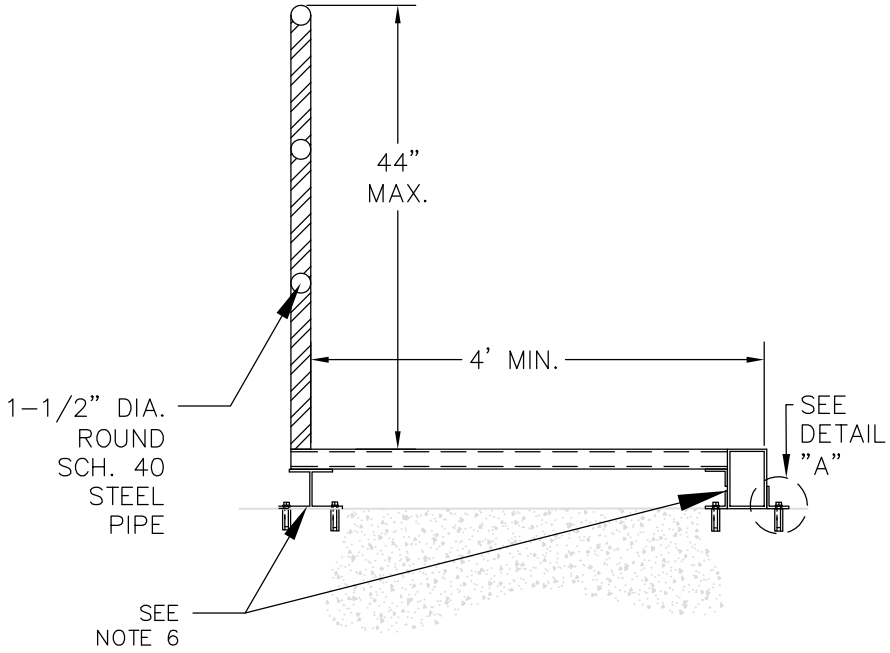


ELEVATION

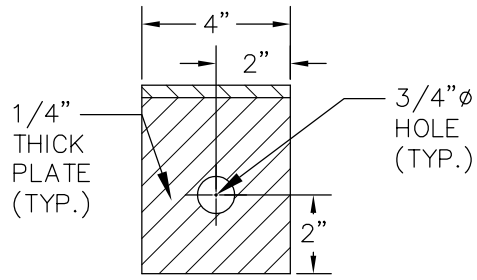


PLAN VIEW

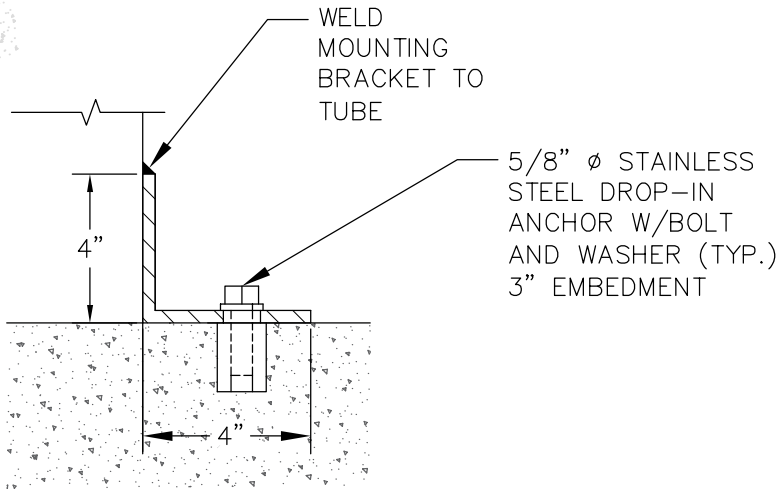
FRESNO IRRIGATION DISTRICT		CATWALK	
"Your Most Valuable Resource – Water"		SCALE: NOT TO SCALE	DISTRICT DRAWING 6–12
		DATE: 2025	SHEET 1 OF 2



SECTION VIEW



DETAIL "A"



DETAIL "B"

NOTES:

1. FOR REFERENCE PURPOSES ONLY. CONTRACTOR SHALL SUBMIT DESIGN OR SHOP DESIGN TO DISTRICT FOR APPROVAL PRIOR TO CONSTRUCTION.
2. DESIGN SHALL BE BASED ON CANAL SIZE AND SHAPE.
3. CATWALK, FRAME, AND HANDRAIL SHALL BE HOT DIP GALVANIZED OR APPROVED ALTERNATIVE, PRIOR TO INSTALLATION.
4. LOCATION TO BE VERIFIED WITH DISTRICT INSPECTOR PRIOR TO INSTALLATION.
5. ALL STEEL MEMBERS TO BE WELDED TOGETHER AT ALL POINTS OF CONNECTION.
6. I-BEAM OR TUBE STEEL MAY BE USED AS CATWALK BASE.
7. I-BEAM SHALL MEET ASTM A36 STANDARDS. TUBE SIZE SHALL MEET ASTM A500 STANDARDS. BEAM OR TUBE SHALL BE BASED ON SPAN LENGTH, POINT LOAD, AND SUPPORT CONDITIONS.

FRESNO IRRIGATION DISTRICT EST. 1920	FRESNO IRRIGATION DISTRICT	CATWALK NOTES	
	"Your Most Valuable Resource – Water"	SCALE: NOT TO SCALE DATE: 2025	DISTRICT DRAWING 6-12 SHEET 2 OF 2