

PART III
STANDARD DRAWINGS

WEST BASIN MUNICIPAL WATER DISTRICT

STANDARD DRAWINGS

TABLE OF CONTENTS

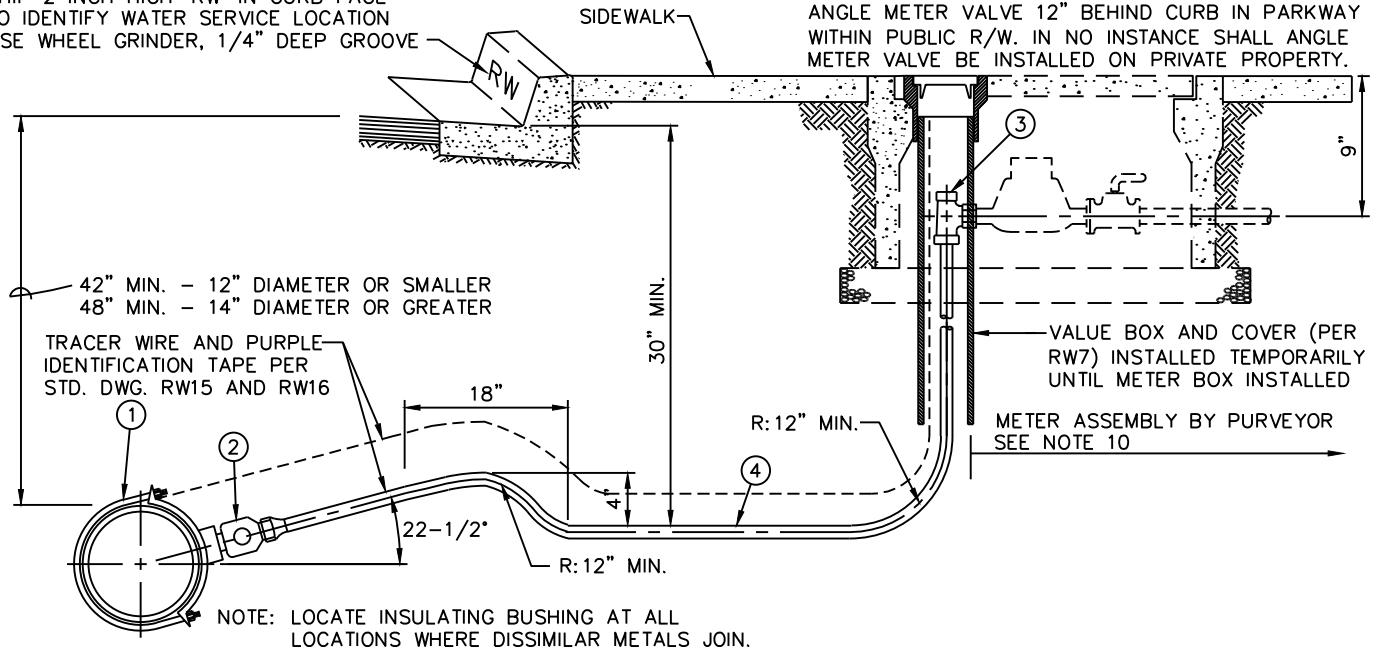
<u>Drawing No.</u>	<u>Description</u>
RW1	1-Inch Recycled Water Service
RW2	1-1/2-Inch Recycled Water Service (<i>Not Recommended</i>)
RW3	2-Inch Recycled Water Service
RW4	3 and 4-Inch Recycled Water Service
RW5	6, 8 and 10-Inch Recycled Water Service
RW6	Tapping of PVC or DIP Mains
RW6A	Tapping of Steel Mains (CML&C Steel Pipe)
RW7	Butterfly Valve, Valve Box and Cover
RW7A	Gate Valve, Valve Box and Cover
RW8	Valve Stem Extension
RW9	1-Inch and 2-Inch Combination Air Valve Assembly
RW10	Recycled Water Sampling Station
RW11	Temporary Test Bulkhead Detail (DIP/PVC)
RW12	Dead End with Permanent 2-Inch Blow-off
RW13	4-Inch Blow-off
RW14	Retaining Wall Detail
RW15	Recycled Water Pipe Identification
RW16	Warning Tags and Tape
RW17	Pipe Zone and Bedding
RW18	Trench and Paving Section
RW19	Typical Thrust Blocks
RW20	Steel Casing Pipe
RW21	Criteria for the Separation of Water Mains from Recycled Water Mains
RW22	Double Check and Reduced Pressure Backflow Assembly
RW23	Blanket Protection for Pipes
RW24	Concrete Saddle for Existing Pipes Crossed under New Pipe
RW25	Concrete Encasement
RW26	Guard Post
RW27	Sign Post
RW28	Marker Post

TABLE OF CONTENTS

<u>Drawing No.</u>	<u>Description</u>
RW29	Pipe Support and Dimension Table
RW30	Water Main Vertical Offset
RW31	Cut/Cap and Plug Installation; Tie-in Connection Installation
RW32	Slope Anchors
RW33	Cut-in Tee
RW34	Pipe Plug Detail; Abandoned Storm Drain
RW35	Butt Strap Joint for CML&C Steel Pipe
RW36	4- to 12-inch Outlet Detail for CML&C Steel Pipe
RW37	Standard Tap to CML&C Steel Main
RW38	Insulating Flange
RW39	Service Abandonment Details
RW40	Standard Recycled Water System Notes

CHIP 2 INCH HIGH 'RW' IN CURB FACE TO IDENTIFY WATER SERVICE LOCATION USE WHEEL GRINDER, 1/4" DEEP GROOVE

WHERE SIDEWALK IS NOT ADJACENT TO CURB INSTALL ANGLE METER VALVE 12" BEHIND CURB IN PARKWAY WITHIN PUBLIC R/W. IN NO INSTANCE SHALL ANGLE METER VALVE BE INSTALLED ON PRIVATE PROPERTY.



CONSTRUCTION ITEMS / MATERIALS LIST			
ITEM NO.	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC.
①	SERVICE SADDLE WITH IP THR'D. FOR: PVC PIPE DUCTILE-IRON PIPE (D.I.P.)	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	BR 2 S J-969 202BSD 73885
②	1" BRASS BALL STYLE CORPORATION STOP	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	BR 2 B 202B 3826
③	1" BRASS ANGLE BALL METER VALVE WITH LOCKWING	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	B-24255 E-1929 FB700 74704B
④	1" COPPER TUBING	—	TYPE "K" SOFT

NOTES:

- DOUBLE STRAP SERVICE SADDLE FOR ALL MAINS.
- INSTALL CORPORATION STOP WITH KEY SIDWAYS, IN OPEN POSITION.
- THE CORPORATION STOP TAP WILL BE MADE AS SPECIFIED BY THE PIPE MANUFACTURER. ALL DRY TAPS WILL BE MADE USING MACHINE GUIDE OR PILOT TAP. TAPS INTO PVC PIPE SHALL BE MADE WITH APPROVED TAPPING BIT FOR C900 PVC PIPE.
- THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP EXCEPT IN CUL-DE-SAC ENDS, WHERE NON-PERPENDICULAR INSTALLATION IS ALLOWED.
- NO TAP TO MAIN SHALL BE WITHIN 24" OF VALVE, COUPLING, JOINT, FITTING, OR ANOTHER TAP.
- NO SPLICES WILL BE PERMITTED BETWEEN CORPORATION STOP AND ANGLE METER STOP EXCEPT WHEN SERVICE RUN EXCEEDS 60 FEET, IN WHICH CASE A SILVER SOLDER COUPLING SHALL BE USED.
- SERVICE TERMINATION POINT SHALL NOT BE PLACED IN DRIVEWAYS.
- WARNING TAG SHALL BE PLACED ON THE ANGLE METER VALVE PER STANDARD DRAWING RW 16.
- TRENCH BACKFILL SHALL BE ONE SACK SLURRY (100-E-100) AS REQUIRED BY LOCAL JURISDICTIONAL AGENCY/CITY, UNLESS OTHERWISE SHOWN.
- METER BOX AND ASSEMBLY TO BE FURNISHED AND INSTALLED BY OTHERS PER PURVEYOR.
- ALL SWEAT FITTINGS SHALL BE ASSEMBLED WITH SILVER SOLDER.
- FINAL LOCATION OF METER ASSEMBLY SHALL BE CONFIRMED WITH THE DISTRICT AND THE PURVEYOR PRIOR TO CONSTRUCTION.

REVISION	DRAWN	APP'D.	DATE
MARCH 2010			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

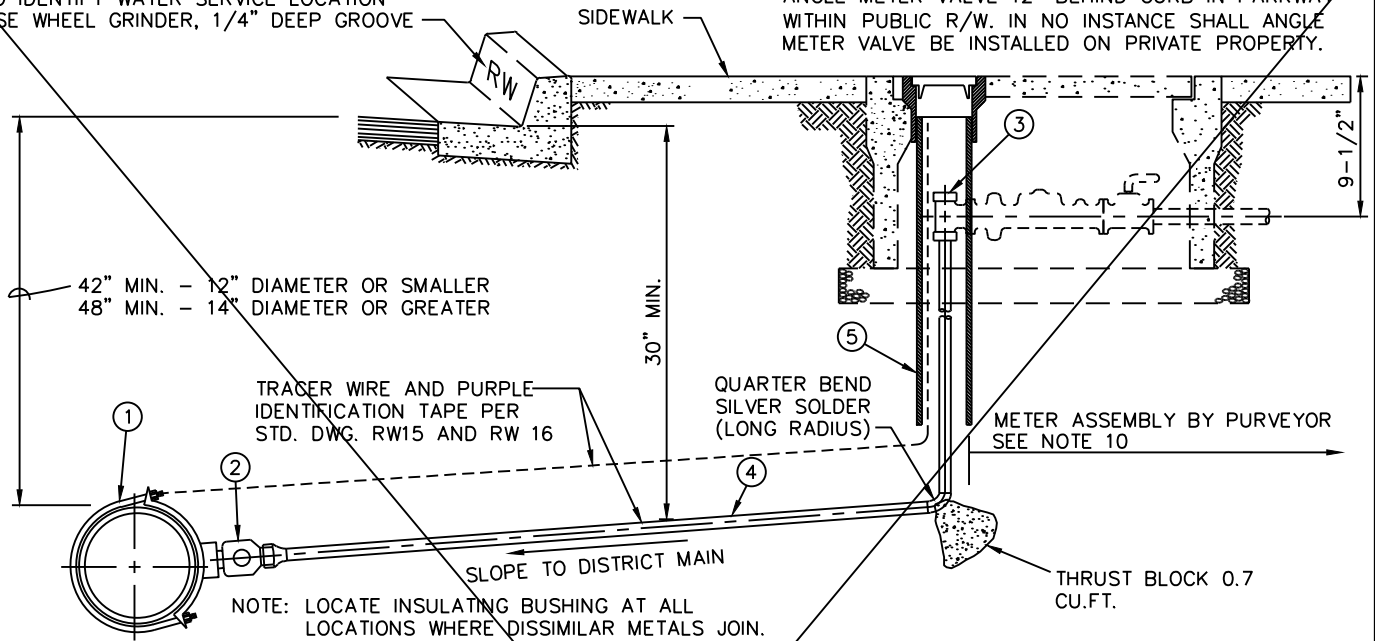
WEST BASIN MUNICIPAL WATER DISTRICT

1-INCH RECYCLED WATER SERVICE

STANDARD
DRAWING
RW1

CHIP 2 INCH HIGH 'RW' IN CURB FACE TO IDENTIFY WATER SERVICE LOCATION USE WHEEL GRINDER, 1/4" DEEP GROOVE

WHERE SIDEWALK IS NOT ADJACENT TO CURB INSTALL ANGLE METER VALVE 12" BEHIND CURB IN PARKWAY WITHIN PUBLIC R/W. IN NO INSTANCE SHALL ANGLE METER VALVE BE INSTALLED ON PRIVATE PROPERTY.



CONSTRUCTION ITEMS / MATERIALS LIST

ITEM NO.	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC.
①	SERVICE SADDLE WITH CC THR'D. FOR PVC PIPE DIP	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	BR 2 S J-969 2020BSD 73885
②	1-1/2" BRASS BALL STYLE CORPORATION STOP	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	B-25000N E-1930 FB600 74701B
③	1-1/2" BRASS ANGLE BALL METER VALVE WITH LOCKWING	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	B-24277 E-1973W BFA23-666W-NL 74602B
④	1-1/2" COPPER TUBING	---	TYPE "K" SOFT
⑤	VALVE BOX AND COVER PER STANDARD DRAWING RW7	---	---

NOTE:

- DOUBLE STRAP SERVICE SADDLE FOR ALL MAINS WITH TYPE 316 SS STRAPS AND TYPE 316 SS BOLTS OR SCREWS
- INSTALL CORPORATION STOP WITH KEY SIDEWAYS, IN OPEN POSITION.
- THE CORPORATION STOP TAP WILL BE MADE AS SPECIFIED BY THE PIPE MANUFACTURER. ALL DRY TAPS WILL BE MADE USING MACHINE GUIDE OR PILOT TAP. TAPS INTO PVC PIPE SHALL BE MADE WITH AN APPROVED TAPPING BIT FOR C900 PVC PIPE.
- THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP EXCEPT IN CUL-DE-SAC ENDS, WHERE NON-PERPENDICULAR INSTALLATION IS ALLOWED.
- NO TAP TO MAIN SHALL BE WITHIN 24" OF VALVE, COUPLING, JOINT, FITTING OR ANOTHER TAP
- NO SPLICES WILL BE PERMITTED BETWEEN CORPORATION STOP AND ANGLE METER STOP EXCEPT WHEN SERVICE RUN EXCEEDS 60 FEET, IN WHICH CASE A SILVER SOLDER COUPLING SHALL BE USED.
- SERVICE TERMINATION POINT SHALL NOT BE PLACED IN DRIVEWAYS.
- WARNING TAG SHALL BE PLACED ON THE ANGLE METER VALVE PER STANDARD DRAWING RW16.
- TRENCH BACKFILL SHALL BE ONE SACK SLURRY (100-E-100) AS REQUIRED BY LOCAL JURISDICTIONAL AGENCY/CITY, UNLESS OTHERWISE SHOWN.
- METER BOX AND ASSEMBLY TO BE FURNISHED AND INSTALLED BY OTHERS PER PURVEYOR.
- ALL SWEAT FITTINGS SHALL BE ASSEMBLED WITH SILVER SOLDER.
- FINAL LOCATION OF METER ASSEMBLY SHALL BE CONFIRMED WITH THE DISTRICT AND THE PURVEYOR PRIOR TO CONSTRUCTION.

REVISION	DRAWN	APP'D.	DATE
MARCH 2010			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

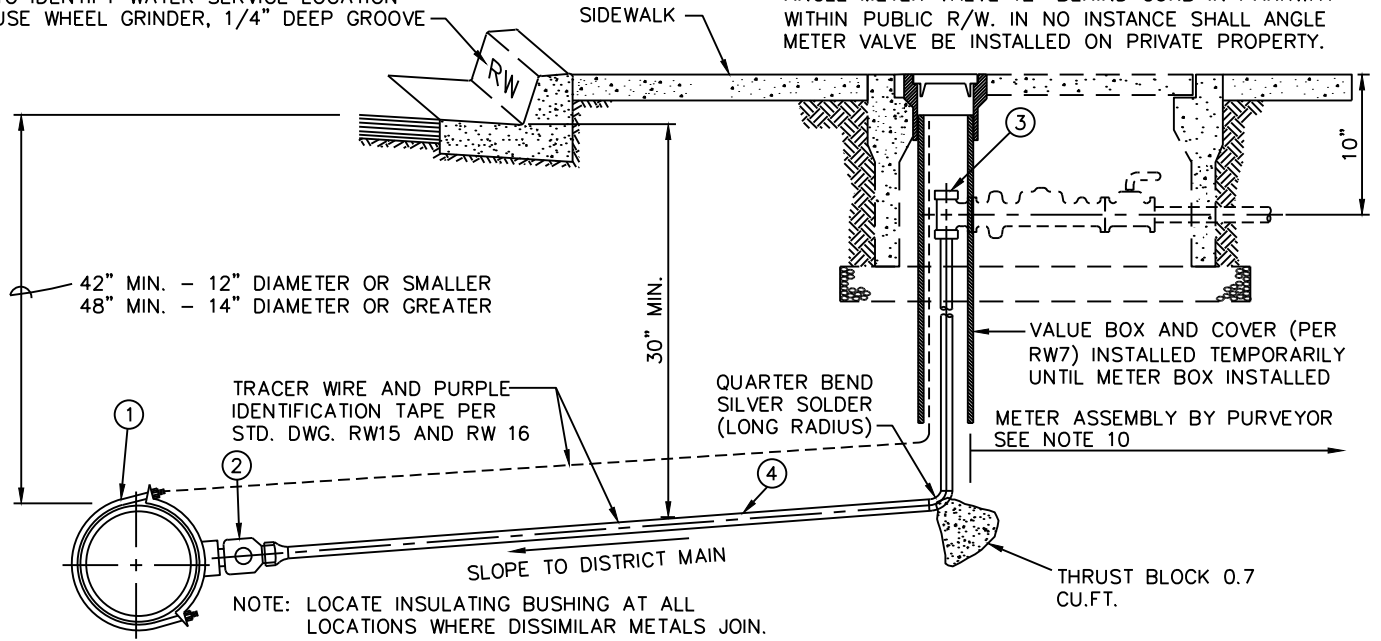
WEST BASIN MUNICIPAL WATER DISTRICT

1-1/2-INCH RECYCLED WATER SERVICE
NOT RECOMMENDED FOR USE

STANDARD
DRAWING
RW2

CHIP 2 INCH HIGH 'RW' IN CURB FACE TO IDENTIFY WATER SERVICE LOCATION USE WHEEL GRINDER, 1/4" DEEP GROOVE

WHERE SIDEWALK IS NOT ADJACENT TO CURB INSTALL ANGLE METER VALVE 12" BEHIND CURB IN PARKWAY WITHIN PUBLIC R/W. IN NO INSTANCE SHALL ANGLE METER VALVE BE INSTALLED ON PRIVATE PROPERTY.



CONSTRUCTION ITEMS / MATERIALS LIST			
ITEM NO.	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC.
①	SERVICE SADDLE WITH IP THR'D. FOR: PVC PIPE DUCTILE IRON PIPE (D.I.P.)	MUELLER JAMES JONES FORD METER BOX AY MCDONALD MUELLER FORD METER BOX AY MCDONALD	BR 2 S J-969 202BSD 73885 BR 2 B 202B 3826
②	2" BRASS BALL STYLE CORPORATION STOP	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	B-25025N E-1929 FB700 74704B
③	2" BRASS ANGLE BALL METER VALVE WITH LOCKWING	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	B-24286N-3 E-1974W-L/S BFA23-777WR-NL 74604BCS
④	2" COPPER TUBING	—	TYPE "K" SOFT

NOTE:

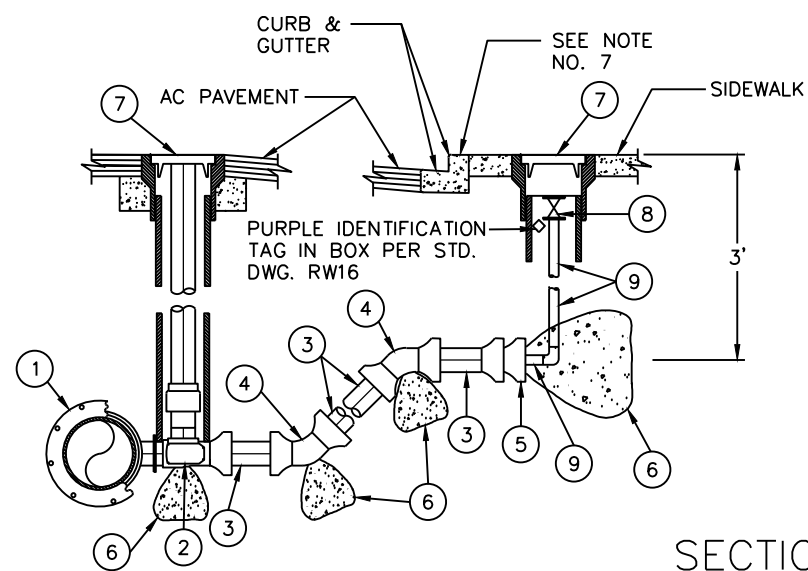
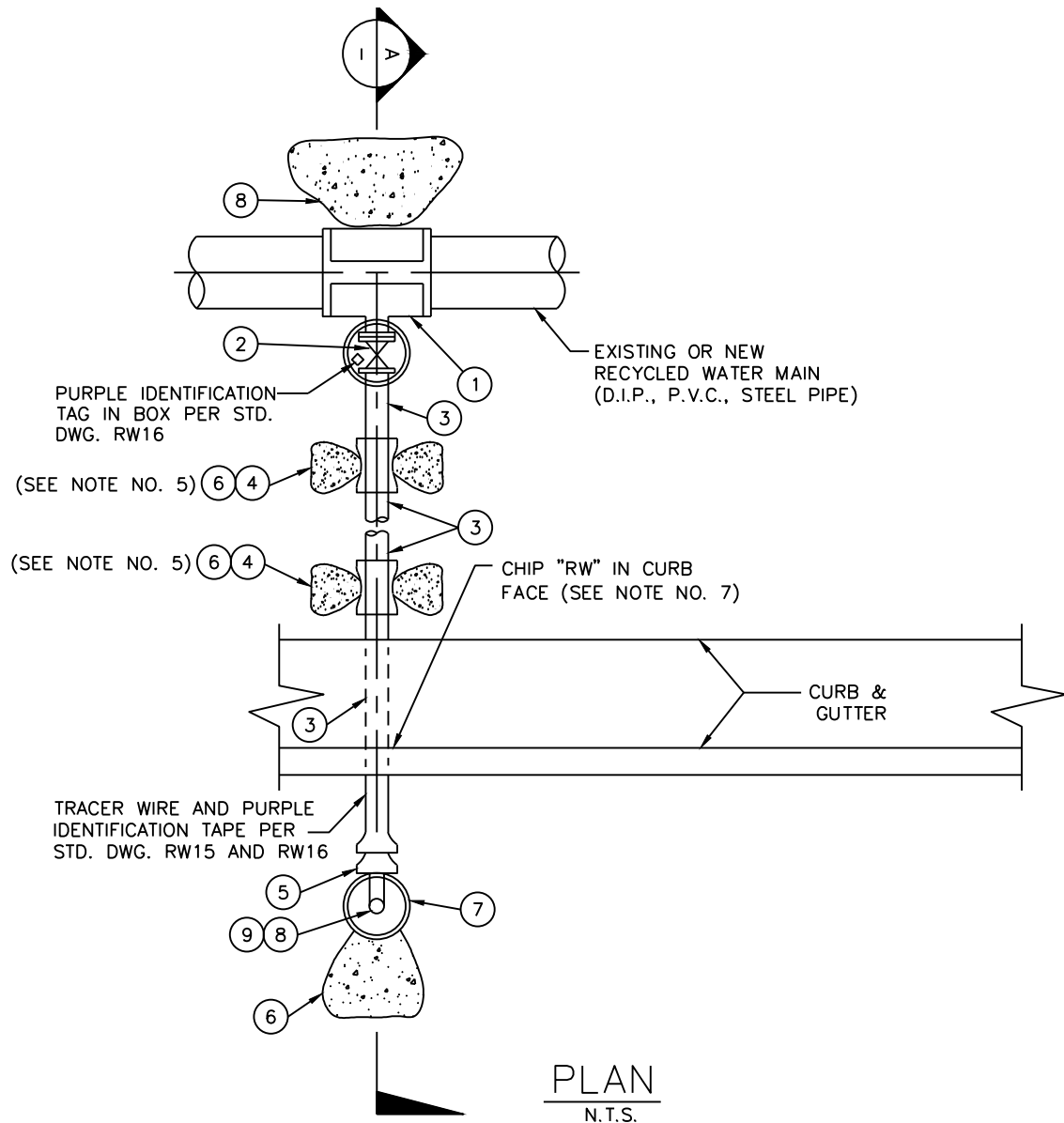
- DOUBLE STRAP SERVICE SADDLE FOR ALL MAINS.
- INSTALL CORPORATION STOP WITH KEY SIDEWAYS, IN OPEN POSITION.
- THE CORPORATION STOP TAP WILL BE MADE AS SPECIFIED BY THE PIPE MANUFACTURER. ALL DRY TAPS WILL BE MADE USING MACHINE GUIDE OR PILOT TAP. TAPS INTO PVC PIPE SHALL BE MADE WITH AN APPROVED TAPPING BIT FOR C900 PVC PIPE.
- THE WATER SERVICE SHALL EXTEND PERPENDICULAR TO THE CENTERLINE OF THE STREET FROM THE WATER MAIN TO THE METER STOP EXCEPT IN CUL-DE-SAC ENDS, WHERE NON-PERPENDICULAR INSTALLATION IS ALLOWED.
- NO TAP TO MAIN SHALL BE WITHIN 24" OF VALVE, COUPLING, JOINT, FITTING, OR ANOTHER TAP.
- NO SPLICES WILL BE PERMITTED BETWEEN CORPORATION STOP AND ANGLE METER STOP EXCEPT WHEN SERVICE RUN EXCEEDS 60 FEET, IN WHICH CASE A SILVER SOLDER COUPLING SHALL BE USED.
- SERVICE TERMINATION POINT SHALL NOT BE PLACED IN DRIVEWAYS.
- WARNING TAG SHALL BE PLACED ON THE ANGLE METER VALVE PER STANDARD DRAWING RW16.
- TRENCH BACKFILL SHALL BE ONE SACK SLURRY (100-E-100) AS REQUIRED BY LOCAL JURISDICTIONAL AGENCY/CITY, UNLESS OTHERWISE SHOWN.
- METER BOX AND ASSEMBLY TO BE FURNISHED AND INSTALLED BY OTHERS PER PURVEYOR.
- ALL SWEAT FITTINGS SHALL BE ASSEMBLED WITH SILVER SOLDER.
- FINAL LOCATION OF METER ASSEMBLY SHALL BE CONFIRMED WITH THE DISTRICT AND THE PURVEYOR PRIOR TO CONSTRUCTION.

REVISION	DRAWN	APP'D.	DATE
MARCH 2010			
2021			
APPROVED			
DISTRICT ENGINEER	RCE		DATE

WEST BASIN MUNICIPAL WATER DISTRICT

2-INCH RECYCLED WATER SERVICE

STANDARD
DRAWING
RW3



NOTES:

1. WHERE SIDEWALK IS NOT ADJACENT TO CURB SET TOP OF VALVE BOX ADJACENT TO AND AT CURB ELEVATION. PRECISE LOCATION TO BE ESTABLISHED AND APPROVED BY THE DISTRICT AND BY THE PURVEYOR. VAULT COVER TO BE SET TO CONFORM TO PARKWAY GRADE (INSTALLED BY OTHERS PER PURVEYOR).
2. MINIMUM SERVICE CONNECTION FOR A 3" METER SHALL BE 4" IN SIZE.
3. EASEMENTS MUST BE PROVIDED IF INSTALLATION IS ON PRIVATE PROPERTY.
4. FOR METERS IN SLOPES, SEE STANDARD DRAWING RW14.
5. PROVIDE NECESSARY FITTINGS AND THRUST BLOCKS TO CONSTRUCT SERVICE LINE TO CORRECT ELEVATION AT METER VAULT AND TO CLEAR VERTICALLY ANY EXISTING UTILITIES.
6. TWO (2) WARNING TAGS SHALL BE PLACED IN THE RECYCLED WATER METER FACILITY.
7. MARK CURB FACE WITH "RW" IN 2-INCH HIGH LETTERS AS PER STANDARD DRAWING RW1.
8. EXTEND TRACER WIRE TO VALVE BOX AND EXTEND TO WITHIN METER VAULT (A MINIMUM OF ADDITIONAL 10 FEET)
9. LOCATE INSULATING KITS AT ALL LOCATIONS WHERE DISSIMILAR METALS JOIN.
10. METER, VALVES, FITTINGS, SPOOLS, THRUST BLOCKS AND METER VAULT TO BE FURNISHED AND INSTALLED BY OTHERS PER PURVEYOR. 3-INCH METER ASSEMBLY WILL REQUIRE 4-INCH BY 3-INCH REDUCER.
11. ALL FLANGED NUTS AND BOLTS SHALL BE TYPE 316 STAINLESS STEEL
12. METER VAULT ASSEMBLY SHALL HAVE A MINIMUM OF 36" CLEARANCE FROM ANY WALL, TREES, ABOVE GROUND STRUCTURE OR UTILITY FACILITY.

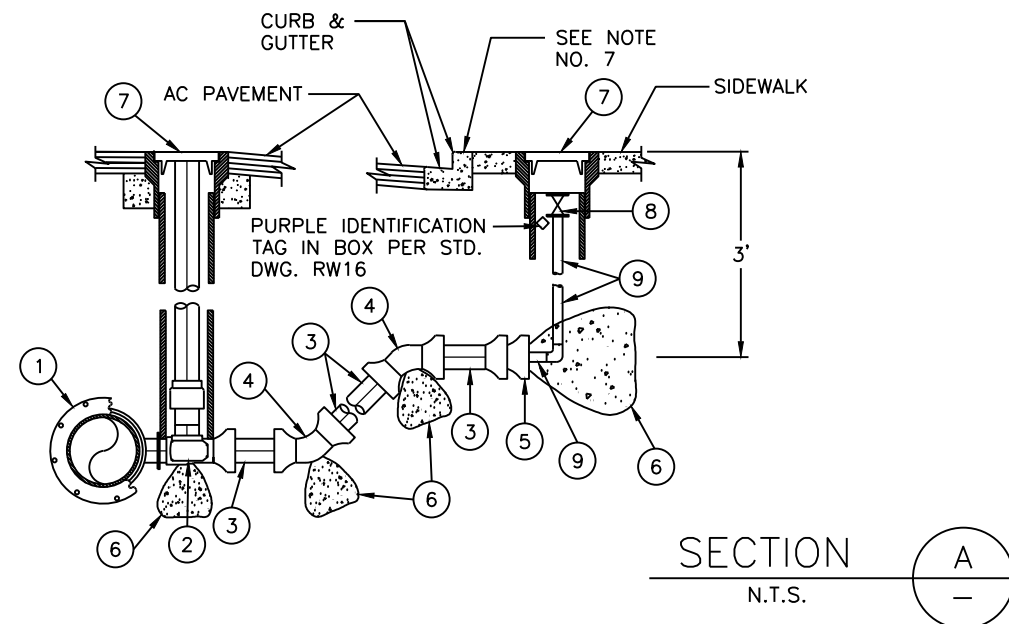
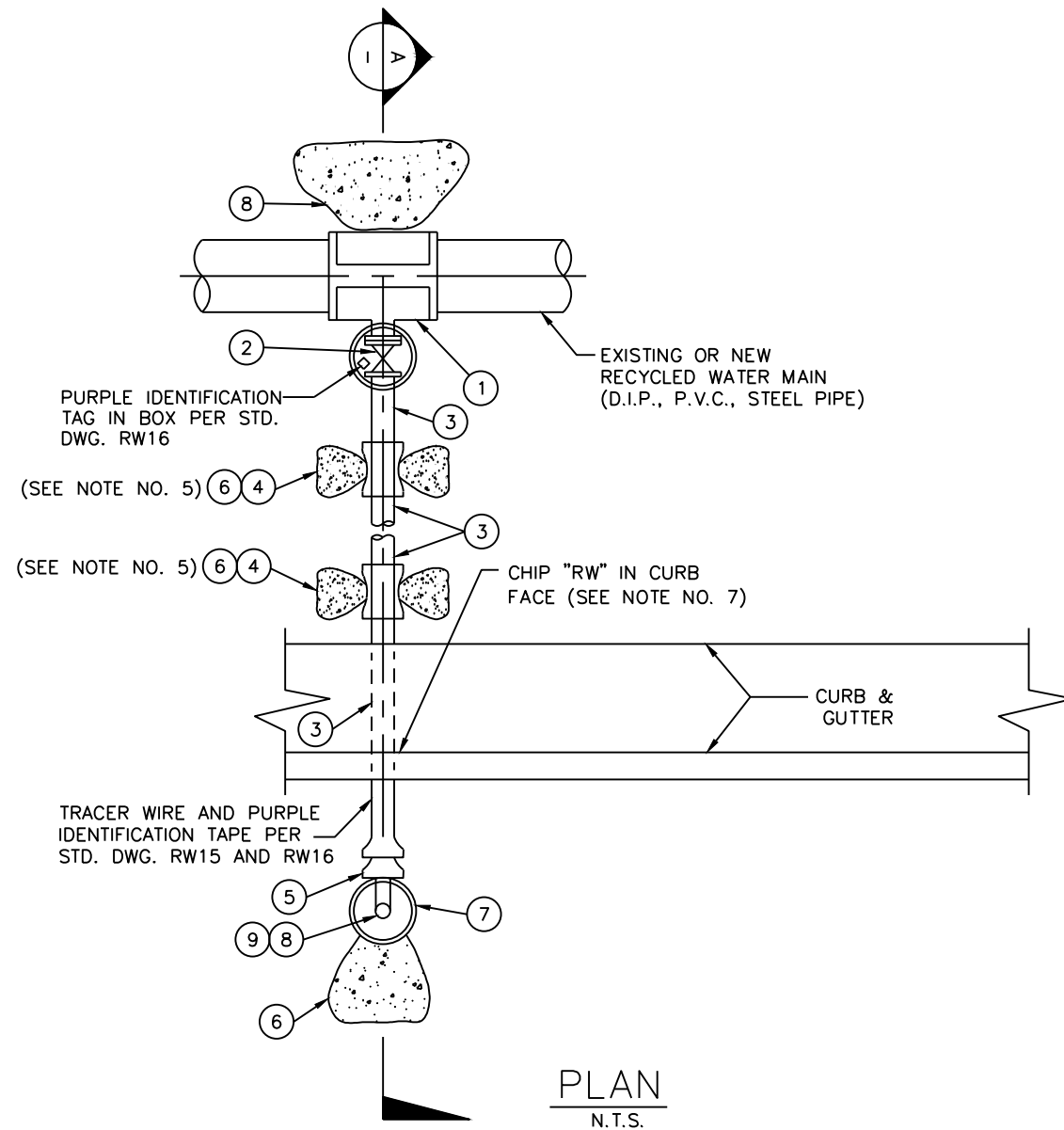
CONSTRUCTION ITEMS / MATERIALS LIST	
ITEM NO.	SIZE AND DESCRIPTION
①	MAIN SIZE x 4-INCH TAPPING SLEEVE PER STANDARD DRAWING RW6 FOR EXISTING PVC OR DIP MAINS AND RW6A FOR EXISTING STEEL MAINS. SUBSTITUTE DIP TEE ON NEW INSTALLATION.
②	4-INCH GATE VALVE (FLG. x P.O.), VALVE BOX AND COVER PER STANDARD DRAWING RW7.
③	4-INCH C900 PVC PIPE, DR14 (LENGTH AS REQUIRED)
④	4-INCH DUCTILE IRON FITTINGS AS NECESSARY TO RAISE SERVICE ELEVATION TO SPECIFIED DEPTH AND CLEAR EXISTING UTILITIES.
⑤	4-INCH DUCTILE IRON PLUG WITH 2 1/2-INCH I.P. THREADED TAP, 2 1/2-INCH x 2-INCH NYLON REDUCING BUSHING AND 2-INCH BRASS PIPE NIPPLE.
⑥	THRUST BLOCK PER STANDARD DRAWING RW19.
⑦	VALVE BOX AND COVER PER STANDARD DRAWING RW7. TEMPORARILY INSTALLED UNTIL METER VAULT ASSEMBLY INSTALLED.
⑧	2-INCH BRASS BALL VALVE AND 2-INCH BRASS THREADED PLUG.
⑨	2-INCH BRASS 90° ELBOW AND 2-INCH BRASS PIPING

REVISION	DRAWN	APP'D.	DATE
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

3-INCH AND 4-INCH
RECYCLED WATER SERVICE

STANDARD
DRAWING
RW4



NOTES:

1. WHERE SIDEWALK IS NOT ADJACENT TO CURB SET TOP OF VALVE BOX ADJACENT TO AND AT CURB ELEVATION. PRECISE LOCATION TO BE ESTABLISHED AND APPROVED BY THE DISTRICT AND BY THE PURVEYOR. VAULT COVER TO BE SET TO CONFORM TO PARKWAY GRADE (INSTALLED BY OTHERS PER PURVEYOR).
2. EASEMENT MUST BE PROVIDED IF INSTALLATION IN ON PRIVATE PROPERTY.
3. FOR METERS IN SLOPES, SEE STANDARD DRAWING RW14.
4. PROVIDE NECESSARY FITTINGS AND THRUST BLOCKS TO CONSTRUCT SERVICE LINE TO CORRECT ELEVATION AT METER VAULT AND TO CLEAR VERTICALLY ANY EXISTING UTILITIES.
5. TWO (2) WARNING TAGS SHALL BE PLACED IN THE RECYCLED WATER METER FACILITY.
6. MARK CURB FACE WITH "RW" IN 2-INCH HIGH LETTERS AS PER STANDARD DRAWING RW1.
7. EXTEND TRACER WIRE TO VALVE BOX AND EXTEND TO WITHIN METER VAULT (A MINIMUM OF ADDITIONAL 10 FEET)
8. LOCATE INSULATING KITS AT ALL LOCATIONS WHERE DISSIMILAR METALS JOIN.
9. METER, VALVES, FITTINGS, SPOOLS, THRUST BLOCKS AND METER VAULT TO BE FURNISHED AND INSTALLED BY OTHERS PER PURVEYOR.
10. ALL FLANGED NUTS AND BOLTS SHALL BE TYPE 316 STAINLESS STEEL
11. METER VAULT ASSEMBLY SHALL HAVE A MINIMUM OF 36" CLEARANCE FROM ANY WALL, TREES, ABOVE GROUND STRUCTURE OR UTILITY FACILITY.

CONSTRUCTION ITEMS / MATERIALS LIST

ITEM NO.	METER SIZE AND DESCRIPTION
①	MAIN SIZE x METER SIZE TAPPING SLEEVE PER STANDARD DRAWING RW6 FOR EXISTING PVC OR DIP MAINS AND RW6A FOR EXISTING STEEL MAINS. SUBSTITUTE DIP TEE ON NEW INSTALLATION.
②	METER SIZE GATE VALVE (FLG. x P.O.), VALVE BOX AND COVER PER STANDARD DRAWING RW7.
③	METER SIZE - C900 PVC PIPE, DR 14 (LENGTH AS REQUIRED)
④	METER SIZE -FITTING AS NECESSARY TO RAISE SERVICE ELEVATION TO SPECIFIED DEPTH AND CLEAR EXISTING UTILITIES.
⑤	METER SIZE DUCTILE IRON PLUG WITH 2 1/2-INCH I.P. THREADED TAP, 2 1/2-INCH x 2-INCH NYLON REDUCING BUSHING AND 2-INCH BRASS PIPE NIPPLE.
⑥	THRUST BLOCK PER STANDARD DRAWING RW19.
⑦	VALVE BOX AND COVER PER STANDARD DRAWING RW7. TEMPORARILY INSTALLED UNTIL METER VAULT ASSEMBLY INSTALLED.
⑧	2-INCH BRASS 90° ELBOW AND 2-INCH BRASS PIPING.
⑨	2-INCH BRASS BALL VALVE AND 2-INCH BRASS THREADED PLUG.

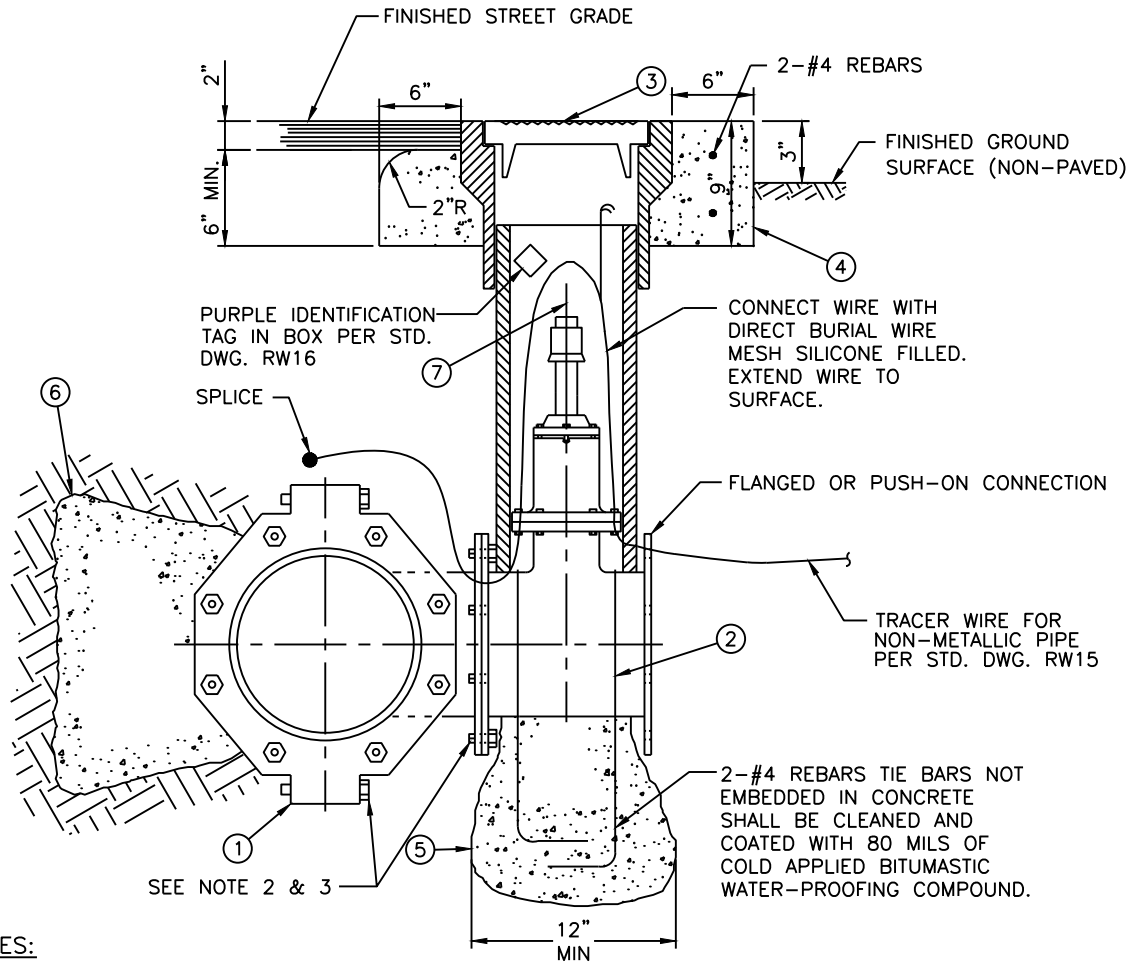
VALVE BOX AND COVER PER STANDARD DRAWING RW7.

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

6-, 8-, AND 10-INCH
RECYCLED WATER SERVICE

STANDARD
DRAWING
RW5



NOTES:

1. FOR SIZES 6" TO 12" TAPPING SLEEVES SHALL BE MECHANICAL JOINT TYPE OR STAINLESS STEEL FULL-CIRCLE. FOR SIZES LARGER THAN 12", STAINLESS STEEL FULL-CIRCLE TAPPING SLEEVE ONLY.
2. ALL CONTRACTOR PROVIDED BURIED BOLTS AND NUTS SHALL BE 316 STAINLESS STEEL AND COATED WITH COLD APPLIED BITUMASTIC WATER-PROOFING COMPOUND.
3. CONTRACTOR TO PROVIDE DOUBLE NUTS ON ALL SLEEVE BOLTS (316 SS), WITH NON-GREASE LUBRICATION.
4. TAP ON EXISTING MAIN SHALL BE ONE SIZE LESS, AND MIN. OF 5 FT. FROM COLLAR OR SERVICE.
5. ANCHOR BLOCK REQUIRED AT ALL TIMES. ANCHOR BLOCK SHALL BE TRENCH WIDTH PLUS TWO PIPE DIAMETERS.

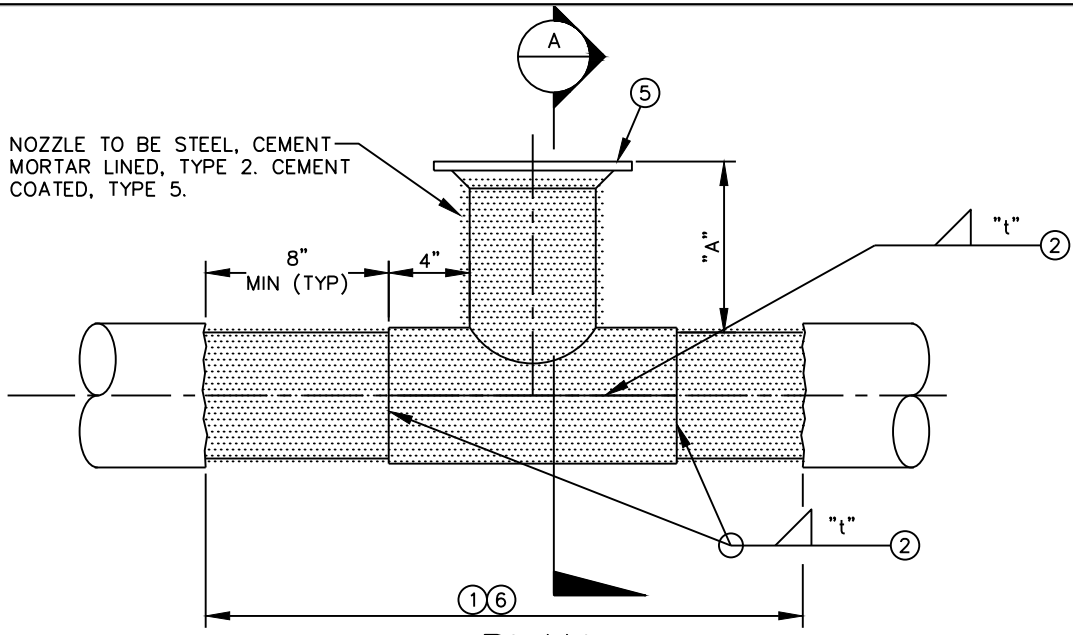
CONSTRUCTION ITEMS / MATERIALS LIST		
ITEM NO.	SIZE AND DESCRIPTION	MANUFACTURER
① ②	TAPPING SLEEVE AND VALVE.	MUELLER, CLOW OR APPROVED EQUAL
③	VALVE BOX & COVER PER STANDARD DRAWING RW7.	-----
④	CONCRETE RING PER STANDARD DRAWING RW7.	-----
⑤	ANCHOR BLOCK PER STANDARD DRAWING RW19 (SEE NOTE 5).	-----
⑥	THRUST BLOCK PER STANDARD DRAWING RW19.	-----
⑦	VALVE STEM EXTENSION PER STANDARD DRAWING RW8 IF DEPTH OF VALVE NUT EXCEEDS 4- FEET.	-----

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER	RCE		DATE

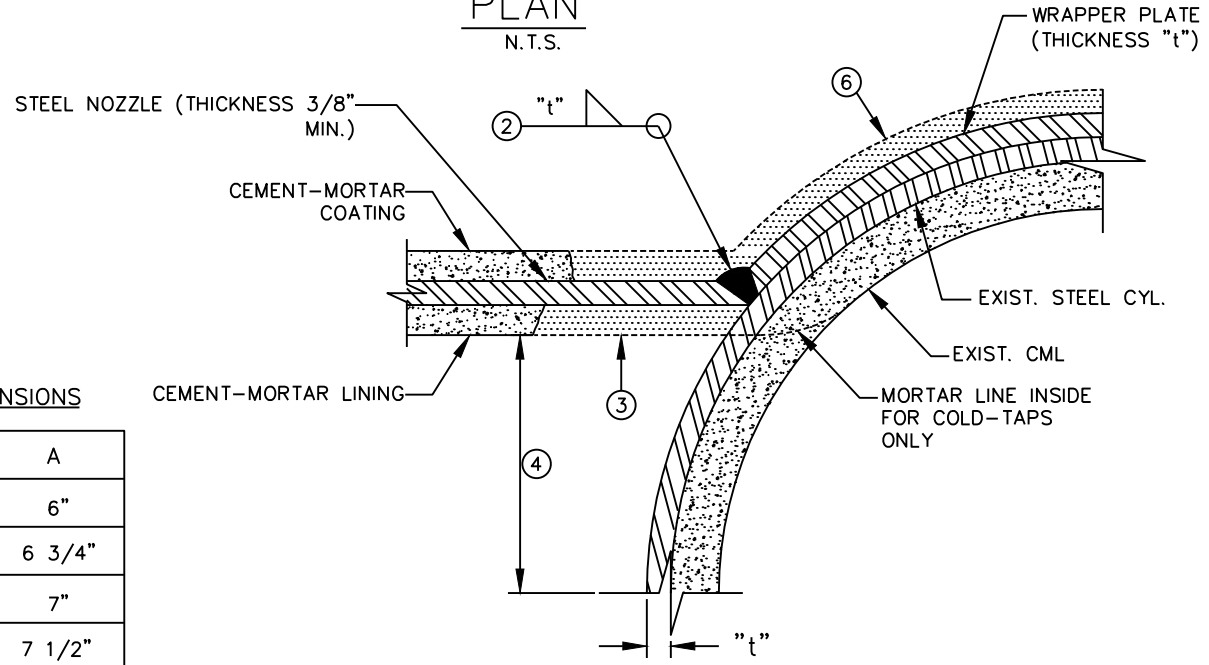
WEST BASIN MUNICIPAL WATER DISTRICT

TAPPING OF PVC OR DIP MAINS

STANDARD
DRAWING
RW6



PLAN
N.T.S.



SECTION
N.T.S.

NOZZLE DIMENSIONS

TAP SIZE	A
6"	6"
8"	6 3/4"
10"	7"
12"	7 1/2"

ORDER OF CONSTRUCTION

- ① REMOVE CEMENT MORTAR COATING ON EXISTING STEEL MAIN
- ② WELD WRAPPER PLATE AND NOZZLE TO EXISTING STEEL CYLINDER
- ③ FILL VOID INSIDE NOZZLE WITH CEMENT-MORTAR
- ④ HOT TAP PIPE - REMOVE COUPON
- ⑤ 2-HOLE FLANGE TO LEVEL VALVE
- ⑥ CEMENT-MORTAR COATING OF PIPE EXTERIOR

GENERAL NOTES:

1. HOT-TAP EXISTING MAINS UNLESS WEST BASIN REQUIRES A COLD-TAP.
2. ALL CEMENT MORTAR LINING AND COATING SHALL BE PER AWWA C205..
3. "t" - THICKNESS OF EXISTING STEEL CYLINDER (PIPE)
4. TAP ON EXISTING MAIN SHALL NOT BE LARGER THAN THE SIZE OF THE MAIN.

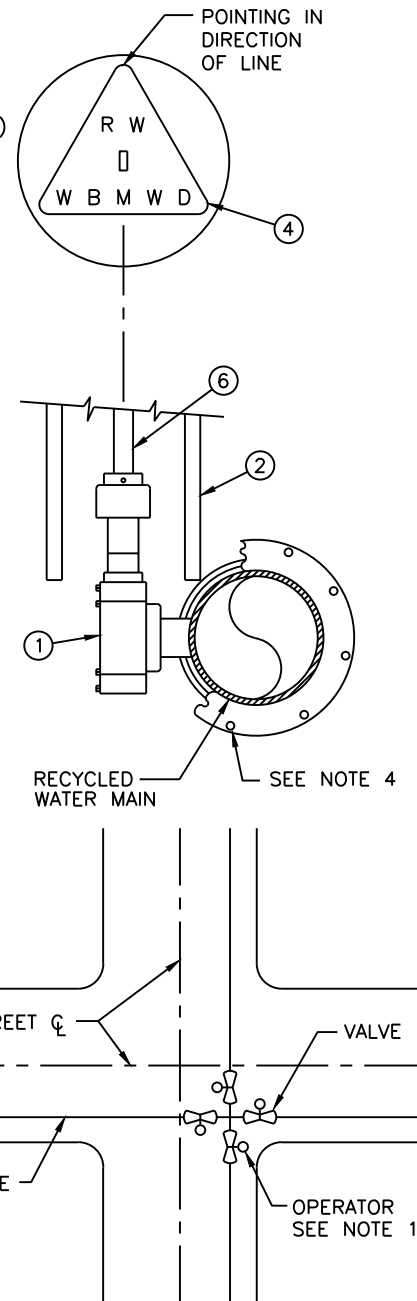
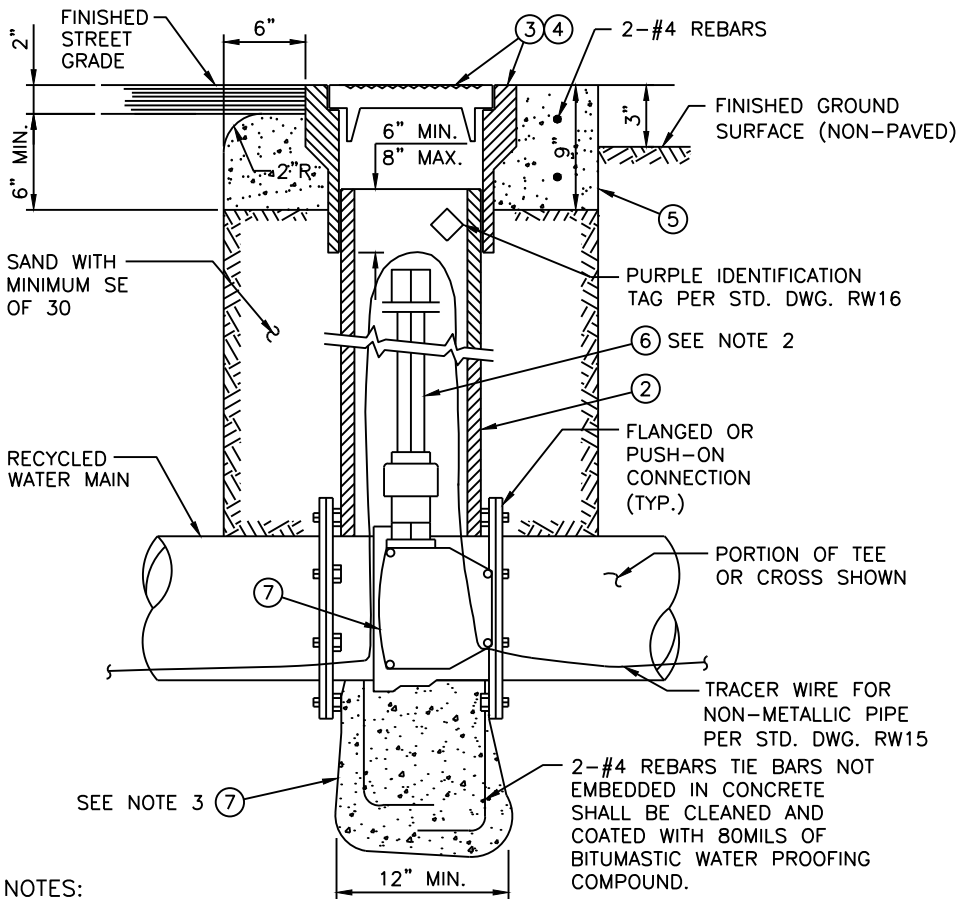
REVISION	DRAWN	APP'D.	DATE
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

TAPPING OF STEEL MAINS
(CML&C STEEL PIPE)

STANDARD
DRAWING
RW6A

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-6A.dwg 10/05/2021 12:00



NOTES:

1. BUTTERFLY VALVE OPERATORS SHALL BE LOCATED ON THE LEFT HAND SIDE OF THE VALVE WHEN STANDING ON THE FLANGED END OF THE VALVE (AT THE TEE OR CROSS) AND LOOKING THROUGH THE VALVE TOWARD THE PIPE END. AT STREET INTERSECTIONS WHERE VALVE BOX LOCATION MAY INTERFERE WITH PROPOSED CONCRETE CROSS GUTTER, PIPELINE SHALL BE MOVED AWAY FROM STANDARD LOCATION AS REQUIRED PER DETAIL HEREON.
2. PROVIDE VALVE STEM EXTENSION IF DEPTH TO VALVE NUT EXCEEDS 4 FEET.
3. ANCHOR BLOCK REQUIRED AT ALL TIMES. ANCHOR BLOCK SHALL BE TRENCH WIDTH PLUS TWO PIPE DIAMETERS WIDE AND SHALL EXTEND VALVE SIZE PLUS SIX INCHES BELOW BOTTOM OF TRENCH.
4. ALL CONTRACTOR PROVIDED BURIED BOLTS AND NUTS SHALL BE 316 STAINLESS STEEL AND COATED WITH 80 MILS OF COLD-APPLIED BITUMASTIC WATER-PROOFING COMPOUND.

BUTTERFLY VALVE OPERATOR POSITIONS

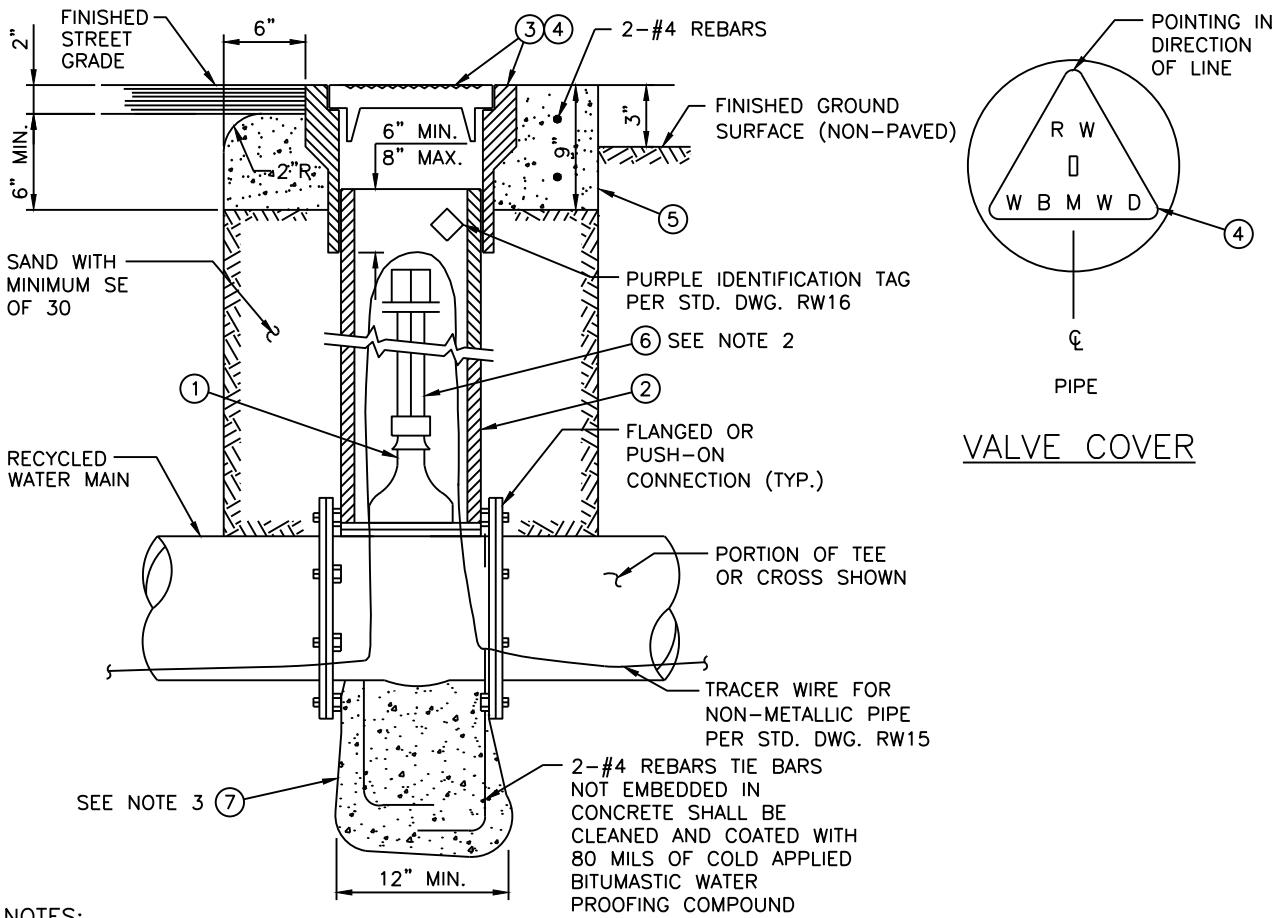
CONSTRUCTION ITEMS / MATERIALS LIST			
ITEM NO.	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC.
①	BUTTERFLY VALVE	----	----
②	8" PVC SDR35 PIPE	----	----
③ ④	10 1/4" BODY AND COVER (BOX LID)	BROOKS	4-TT
⑤	CONCRETE RING, CLASS 560-C-3250	----	----
⑥	VALVE STEM EXTENSION PER STANDARD DRAWING RW8 (SEE NOTE 2)	----	----
⑦	ANCHOR BLOCK PER STANDARD DRAWING RW19 (SEE NOTE 3)	----	----

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

BUTTERFLY VALVE VALVE BOX AND COVER

STANDARD DRAWING
RW7



NOTES:

1. ALL CONTRACTOR PROVIDED BURIED BOLTS AND NUTS SHALL BE 316 STAINLESS STEEL AND COATED WITH 80 MILS OF COLD-APPLIED BITUMASTIC WATER-PROOFING COMPOUND.
2. PROVIDE VALVE STEM EXTENSION IF DEPTH TO VALVE NUT EXCEEDS 4 FEET.
3. ANCHOR BLOCK REQUIRED AT ALL TIMES. ANCHOR BLOCK SHALL BE TRENCH WIDTH PLUS TWO PIPE DIAMETERS WIDE AND SHALL EXTEND VALVE SIZE PLUS SIX INCHES BELOW BOTTOM OF TRENCH.

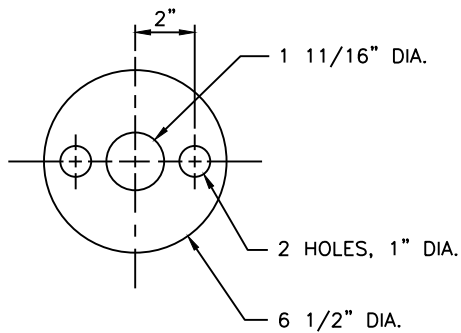
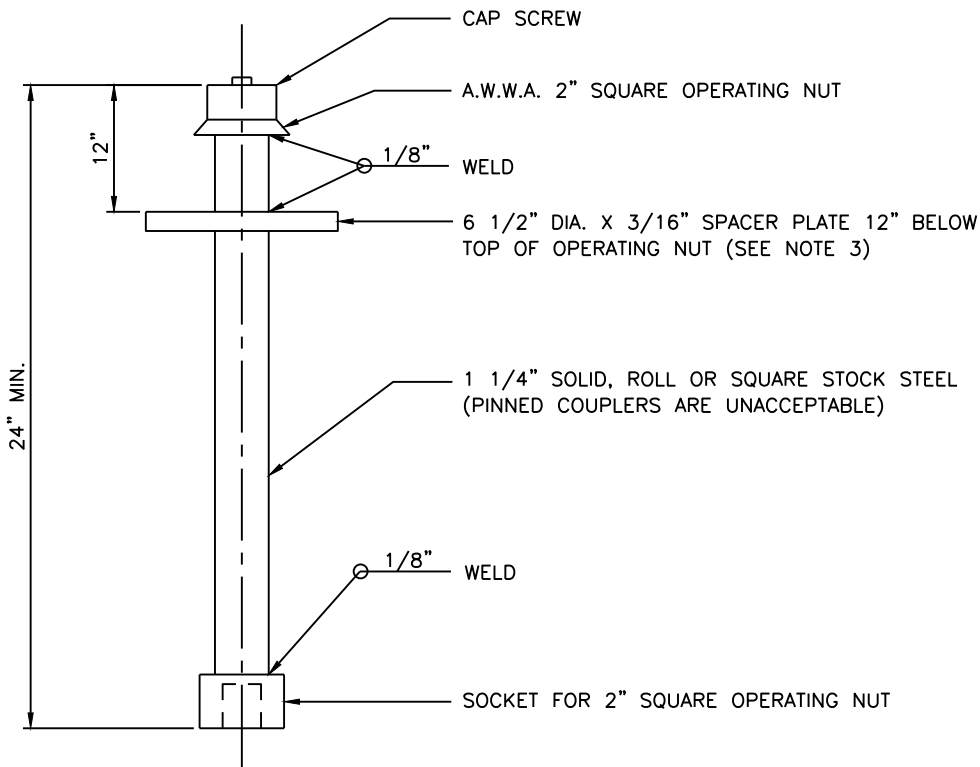
CONSTRUCTION ITEMS / MATERIALS LIST			
ITEM NO.	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC.
①	RESILIENT WEDGE GATE VALVE	----	----
②	8" PVC SDR35 PIPE	----	----
③ ④	10 1/4" BODY AND COVER (BOX LID)	BROOKS	4-TT
⑤	CONCRETE RING, CLASS 560-C-3250	----	----
⑥	VALVE STEM EXTENSION PER STANDARD DRAWING RW8 (SEE NOTE 2)	----	----
⑦	ANCHOR BLOCK PER STANDARD DRAWING RW19 (SEE NOTE 3)	----	----

REVISION	DRAWN	APP'D.	DATE
NEW 2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

GATE VALVE
VALVE BOX AND COVER

STANDARD
DRAWING
RW7A



SPACER PLATE
PLAN

NOTES:

1. PROVIDE VALVE STEM EXTENSION WHEN DEPTH TO OPERATING NUT EXCEEDS 48" (FABRICATE EXTENSION TO FIELD MEASUREMENT - SEE NOTE 2).
2. NO VALVE STEM EXTENSION SHALL BE LESS THAN 2 FEET IN LENGTH. TERMINATE EXTENSION 24" TO 36" FROM FINISHED GRADE.
3. PROVIDE ADDITIONAL SPACER PLATE WHEN DISTANCE TO BOTTOM SOCKET EXCEEDS 5 FEET.
4. HOT DIP GALVANIZE EXTENSION AFTER FABRICATION.

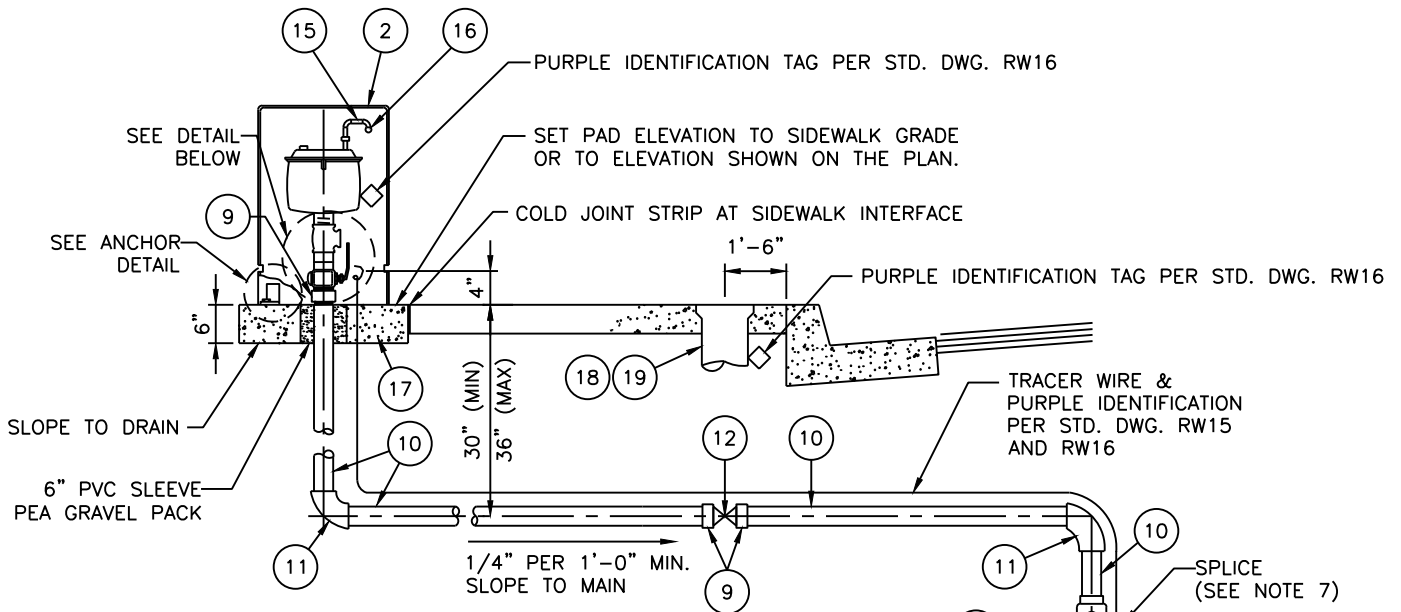
O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-8.dwg 10/05/2021 10:58

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

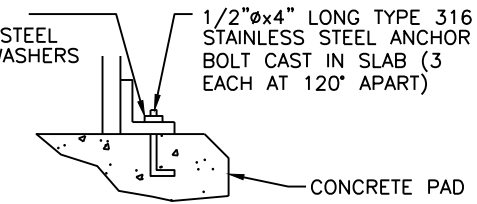
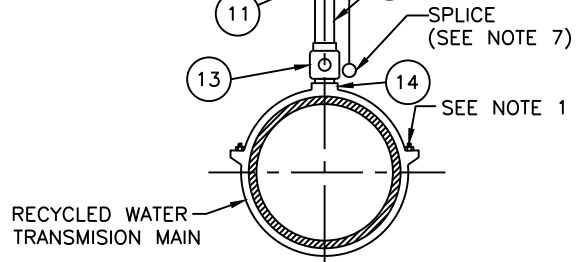
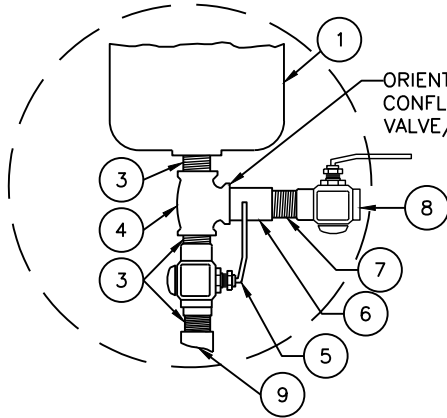
WEST BASIN MUNICIPAL WATER DISTRICT

VALVE STEM EXTENSION

STANDARD
DRAWING
RW8



ELEVATION



ANCHOR DETAIL

NOTES:

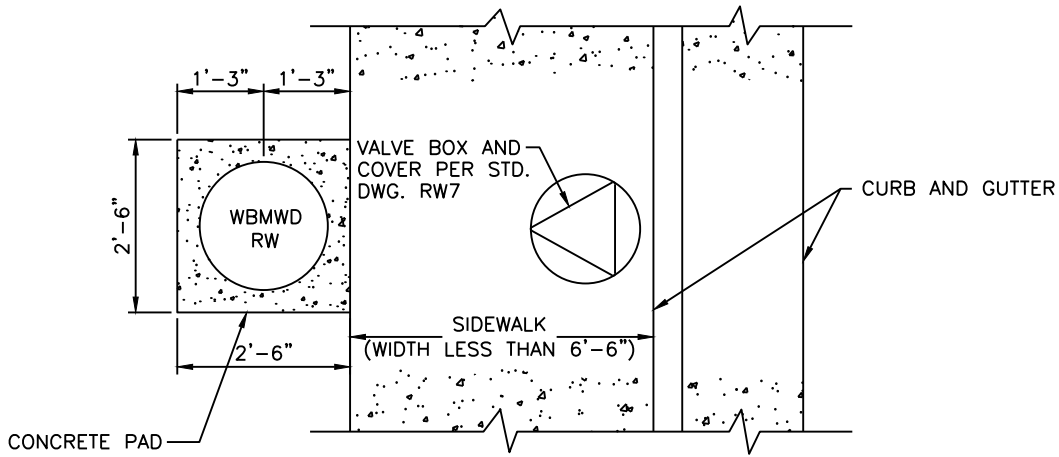
1. ALL BURIED BOLTS AND NUTS SHALL BE TYPE 316 STAINLESS STEEL AND COATED WITH 80 MILS OF COLD-APPLIED BITUMASTIC WATER PROOFING COMPOUND.
2. PROVIDE VALVE STEM EXTENSION TO WITHIN 24 INCHES OF FINISHED SURFACE PER STANDARD DRAWING RW8.
3. IN AREAS WHERE NO CURB OR BERM EXISTS, OR WHERE THERE IS ONLY ROLLED CURB AND GUTTER, INSTALL ONE (1) GUARD POST PER STANDARD DRAWING RW26 AT EACH CORNER OF CONCRETE PAD.
4. FOR A/V ASSEMBLIES IN SLOPES, SEE STANDARD DRAWING RW14.
5. PAINT VALVE AND PIPING WITH ONE COAT PRIMER AND TWO COATS OF FINISH PAINT PER THE STANDARD SPECIFICATIONS. PURPLE COLOR SHALL BE APPROVED BY THE DISTRICT.
6. COORDINATE LOCATION OF VENTED COVER AND COLOR OF COVER WITH DISTRICT AND JURISDICTIONAL AGENCY REPRESENTATIVE. COLOR OF COVER: SANDSTONE UNLESS JURISDICTION AGENCY REQUESTS SPECIFIC COLOR. INSTALL WEST BASIN LOGO DECAL ON EXTERIOR OF VENTED COVER.
7. FOR PVC TRANSMISSION MAIN, CONNECT TRACER WIRES FROM MAIN AND A/V VALVE WITH A SILICONE FILLED DIRECT BURIAL WIRE NUT AT CORP STOP. FOR METALLIC TRANSMISSION MAIN, CONNECT A/V VALVE TRACER WIRE DIRECTLY TO PIPE WITH WELD. EXTEND TRACER WIRE TO VALVE BOX AND COVER.

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER	RCE		DATE

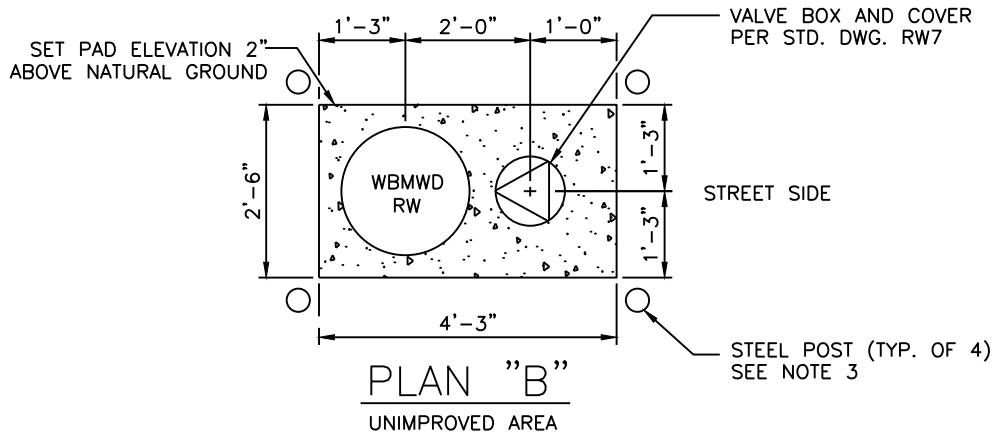
WEST BASIN MUNICIPAL WATER DISTRICT

1" AND 2" COMBINATION AIR VALVES

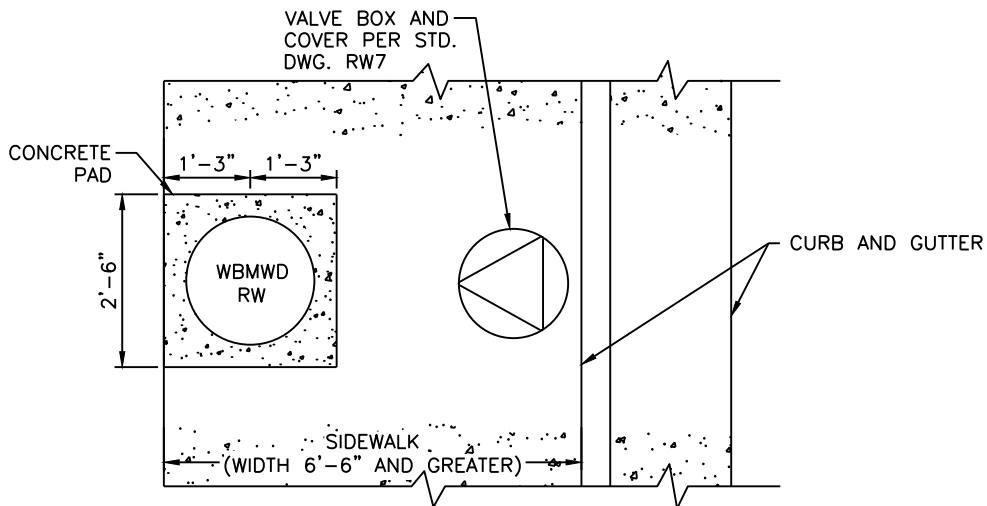
STANDARD
DRAWING
RW9
SHEET 1 OF 3



PLAN "A" (SIDEWALK WIDTH
IMPROVED AREA LESS THAN 6'-6'')



PLAN "B"
UNIMPROVED AREA



PLAN "C" (SIDEWALK WIDTH
IMPROVED AREA 6'-6" OR GREATER)

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-9-2.dwg 10/05/2021 10:58

REVISION	DRAWN	APP'D.	DATE
JUNE 2010			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

1" AND 2" COMBINATION AIR VALVES

STANDARD
DRAWING
RW9
SHEET 2 OF 3

CONSTRUCTION ITEMS / MATERIALS LIST

ITEM NO.	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC
①	1" (2") COMBINATION AIR VALVES	A.R.I APCO CRISPIN VALMATIC	D-040 ST 143C (145C) UL10 (UL20) 201C (202C)
②	LINEAR LOW DENSITY POLYETHYLENE VENTED PIPE COVER: 18" DIA. X 30" HIGH	AMORCAST PRODUCTS OR PIPELINE PRODUCTS	----
③	1"/2" BRASS THREADED CLOSE NIPPLE	----	----
④	1"/2" BRASS TEE	----	----
⑤	1"/2" BRASS BALL VALVE (FIPTXFIPT) WITH LEVER HANDLE	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	B-20283N E-1900W B11-444-NL (B11-777-NL) 76101
⑥	1"/2" X 3/8" STAINLESS STEEL BUSHING	----	----
⑦	3/8" DIA. X 2" LONG SS NIPPLE	----	----
⑧	3/8" SS VALVE WITH HANDLE	----	----
⑨	1"/2" BRASS ADAPTER (FIPT X SWEAT)	----	----
⑩	1"/2" COPPER TUBING	----	----
⑪	QUATER BEND SILVER SOLDER (LONG RADIUS)	----	----
⑫	1"/2" BRASS BALL VALVE (FIPTXFIPT) WITH 2" SQUARE OPERATING NUT ADAPTER ATTACHED WITH STAINLESS STEEL NUTS AND BOLTS	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	B-20283N E-1900W B11-444-NL (B11-777-NL) 76101
⑬	1"/2" BRASS BALL STYLE CORPORATION STOP	SEE RW1 AND RW3	----
⑭	SERVICE SADDLE WITH IP THR'D	SEE RW1 AND RW3	----
⑮	1"/2" SCH 80 PVC SHORT NIPPLES AND 90° BENDS	----	----
⑯	1"/2" PRE-FABRICATED PVC OUTLET WITH RIGID STAINLESS STEEL SCREEN	----	----
⑰	30-INCH SQUARE CONCRETE PAD, CLASS 560-C-3250	----	----
⑱	VALVE BOX AND COVER	SEE RW17	----
⑲	VALVE STEM EXTENSION (SEE NOTE 2)	----	----

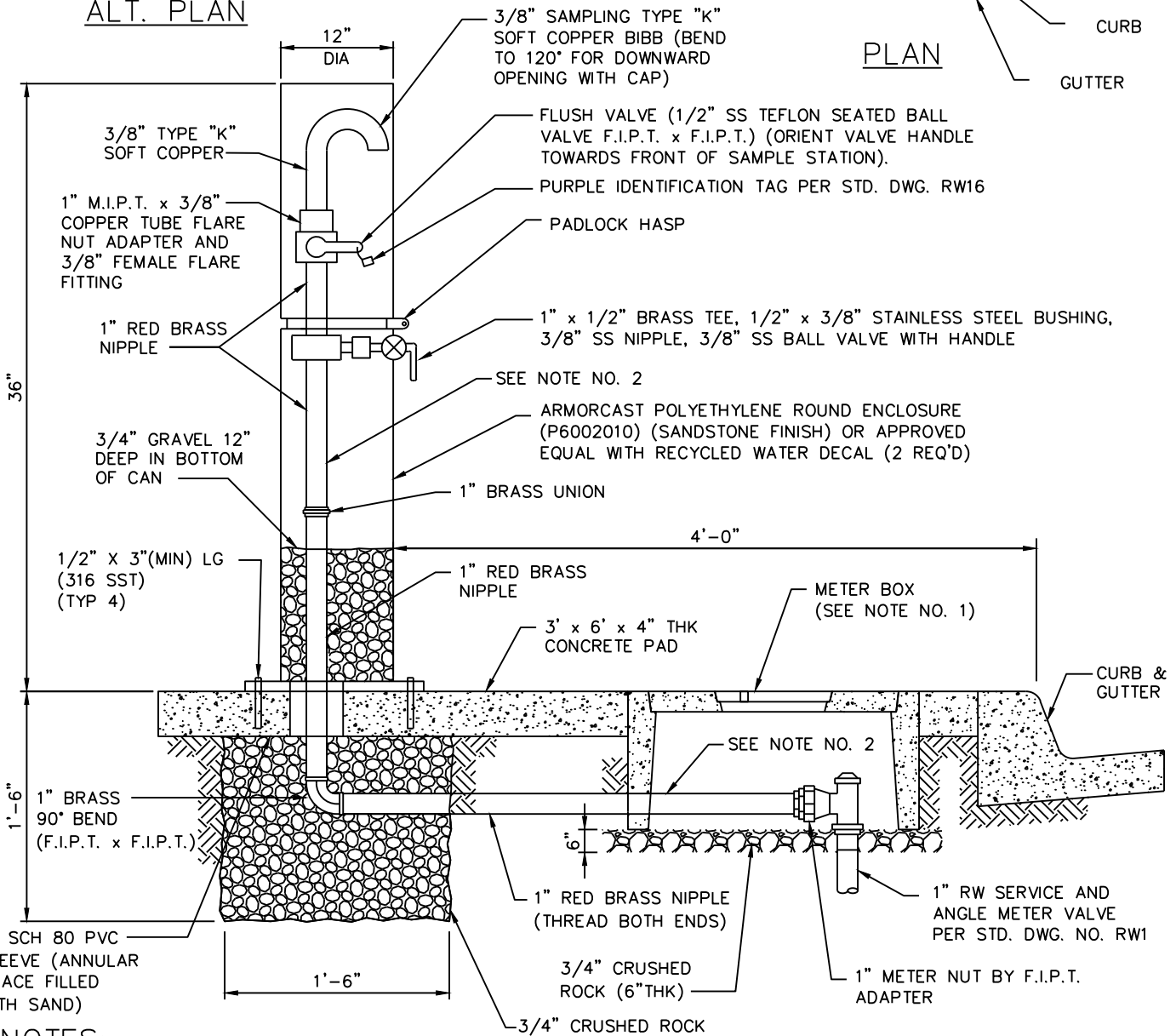
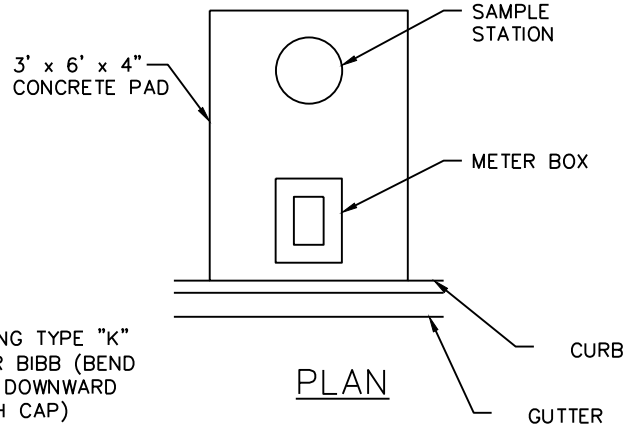
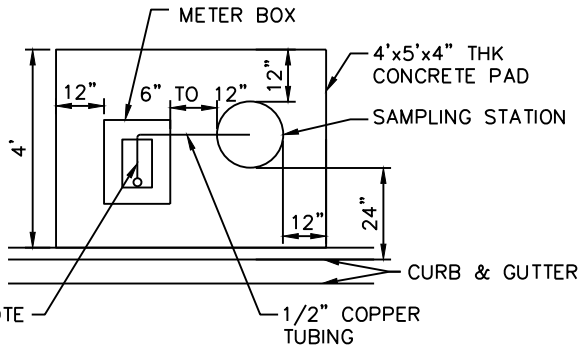
O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-9-3.dwg 10/05/2021 15:06

REVISION	DRAWN	APP'D.	DATE
JUNE 2010			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

1" AND 2" COMBINATION AIR VALVES

STANDARD
DRAWING
RW9
SHEET 3 OF 3



NOTES:

- METER BOX AND COVER SHALL BE MANUFACTURED OF REINFORCED POLYMER PLASTIC MORTAR. SIZE: 12"W x 20"L x 12"D MANUFACTURER'S: J&R INC, ARMORCAST PRODUCTS CO., OR APPROVED EQUAL
- ALL ABOVE GROUND PIPING AND PIPING WITHIN METER BOX SHALL BE PAINTED PURPLE PER WBMWD STANDARD SPECIFICATIONS

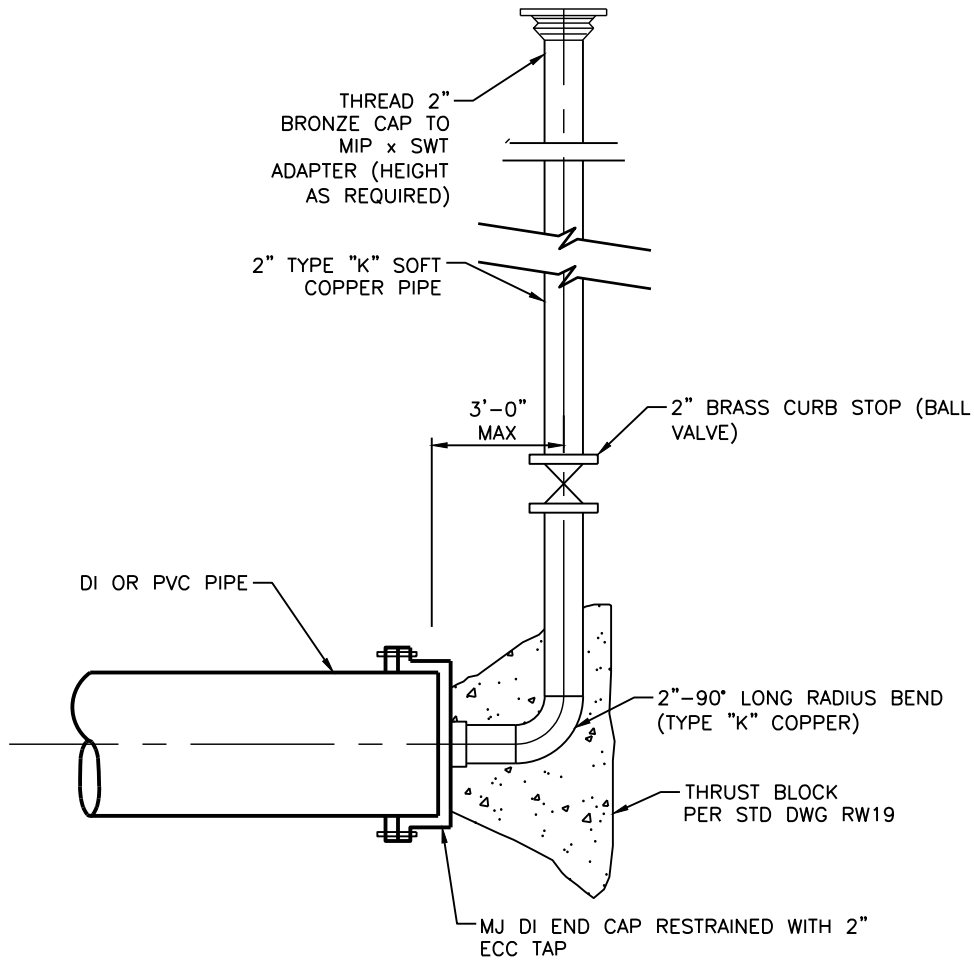
O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-10.dwg 10/05/2021 12:23

REVISION	DRAWN	APP'D.	DATE
NEW 2021			
APPROVED			
DISTRICT ENGINEER	RCE		DATE

WEST BASIN MUNICIPAL WATER DISTRICT

RECYCLED WATER SAMPLING STATION

STANDARD DRAWING
RW10



NOTES:

1. TEST BULK HEAD IS TO BE REMOVED AFTER SUCCESSFUL PRESSURE TEST.
2. THRUST BLOCK REQUIRED UNLESS PIPE IS FULLY RESTRAINED. THRUST BLOCK PER STANDARD DWG RW19.

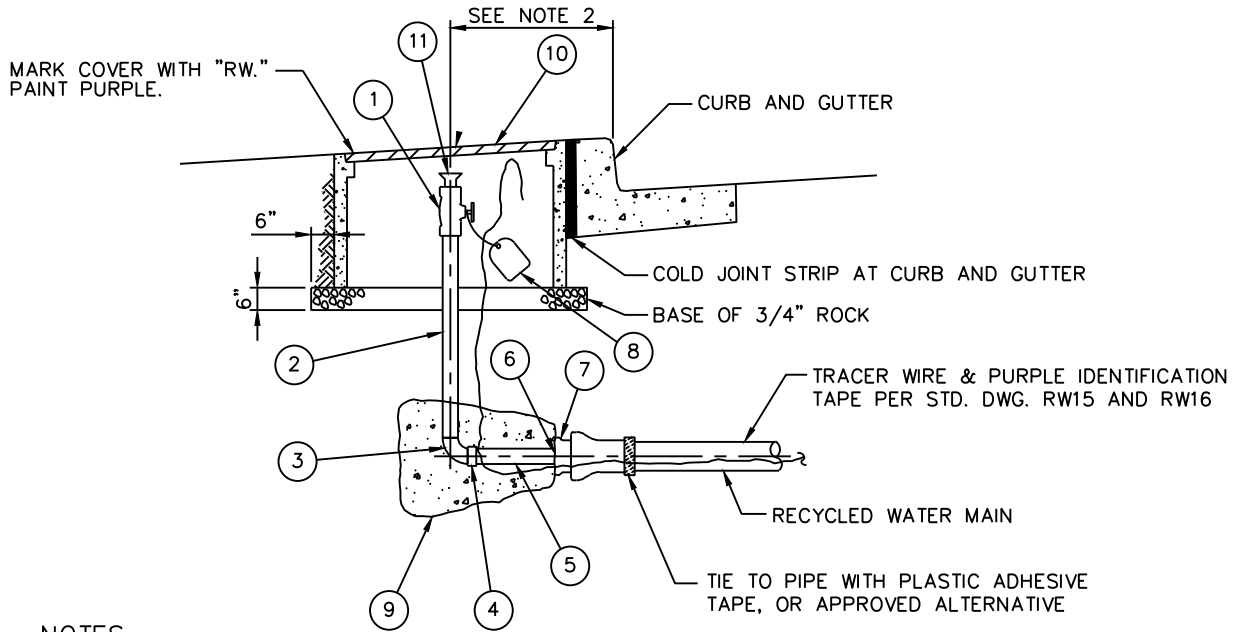
O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-11.dwg 10/05/2021 10:59

REVISION	DRAWN	APP'D.	DATE
NEW 2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

TEMPORARY TEST
BULKHEAD DETAIL (DIP/PVC)

STANDARD
DRAWING
RW11



NOTES:

1. WHEN BLOW OFF VALVE IS PLACED BEHIND CURB USE BROOKS 66T OR EISEL 6T METER BOX WITH STEEL LID OR APPROVED EQUAL. WHEN BLOW OFF VALVE IS PLACED IN THE STREET USE 24" PRECAST CONCRETE MANHOLE WITH ALHAMBRA A-1254B COVER OR APPROVED EQUAL.
2. EXACT LOCATION OF BLOWOFF TO BE AS PROVIDED ON CONSTRUCTION PLANS AND AS APPROVED BY THE DISTRICT.

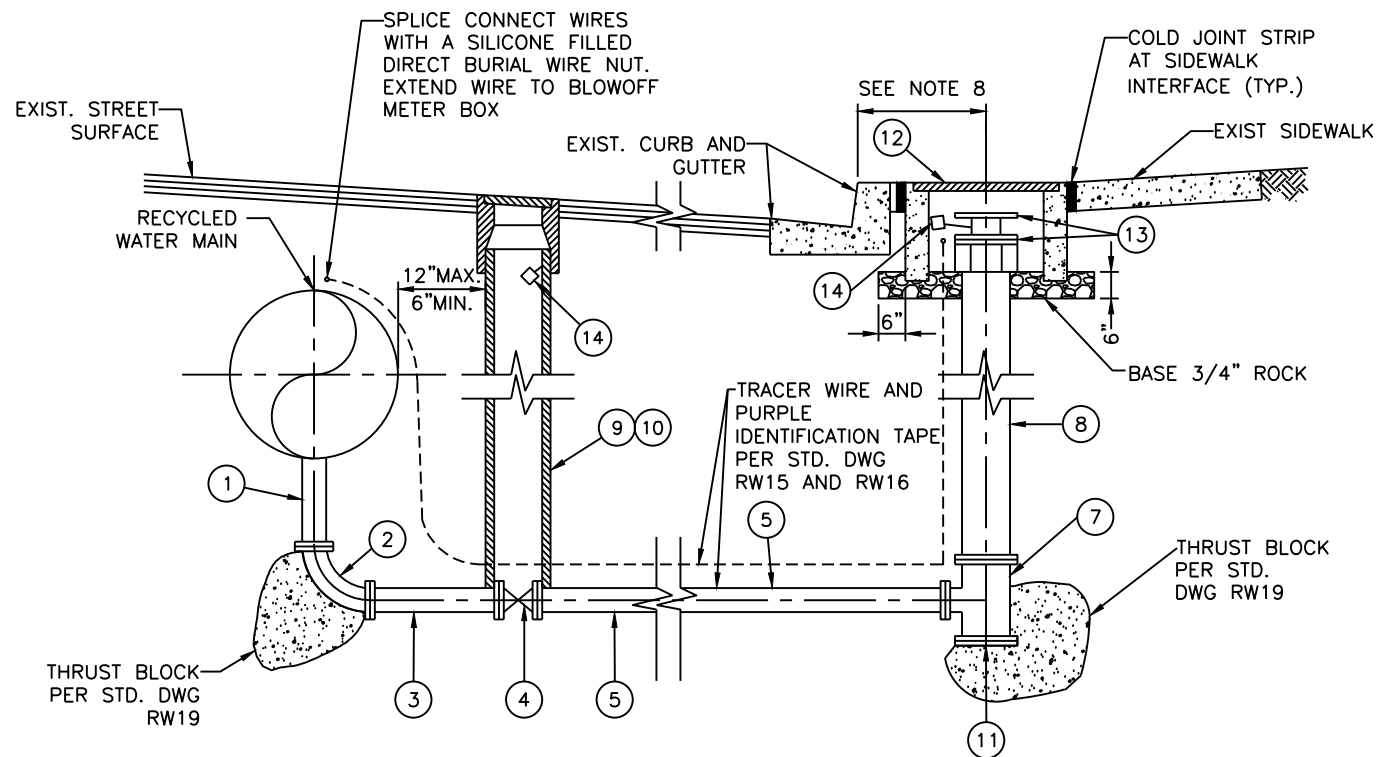
CONSTRUCTION ITEMS / MATERIALS LIST			
ITEM NO.	SIZE AND DESCRIPTION	MANUFACTURER	MFR. CAT. NO. OR SPEC.
①	2" BRASS BALL VALVE	MUELLER JAMES JONES FORD METER BOX AY MCDONALD	B-20283N E-1900W B11-777-NL 76101
②	2" COPPER TUBING	----	TYPE "K" SOFT
③	2" COPPER 90° SWEAT ELBOW (LONG RADIUS) (SILVER SOLDER)	----	----
④	2" BRASS COUPLING - COPPER SWEAT TO IP THREAD	----	----
⑤	2" BRASS NIPPLE, IP THREAD x IP THREAD	----	----
⑥	RIGID STAINLESS STEEL REDUCING BUSHING (2-1/2" x 2")	----	----
⑦	DUCTILE IRON PLUG, PIPE SIZE x 2-1/2" IP. THREAD TAP	----	----
⑧	WARNING TAG PER STANDARD DRAWING RW16	----	----
⑨	THRUST BLOCK, PER STANDARD DRAWING RW19	----	----
⑩	PRECAST CONCRETE VAULT WITH COVER (SEE NOTE 1)	----	----
⑪	2" BRASS THREADED PLUG	----	----

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

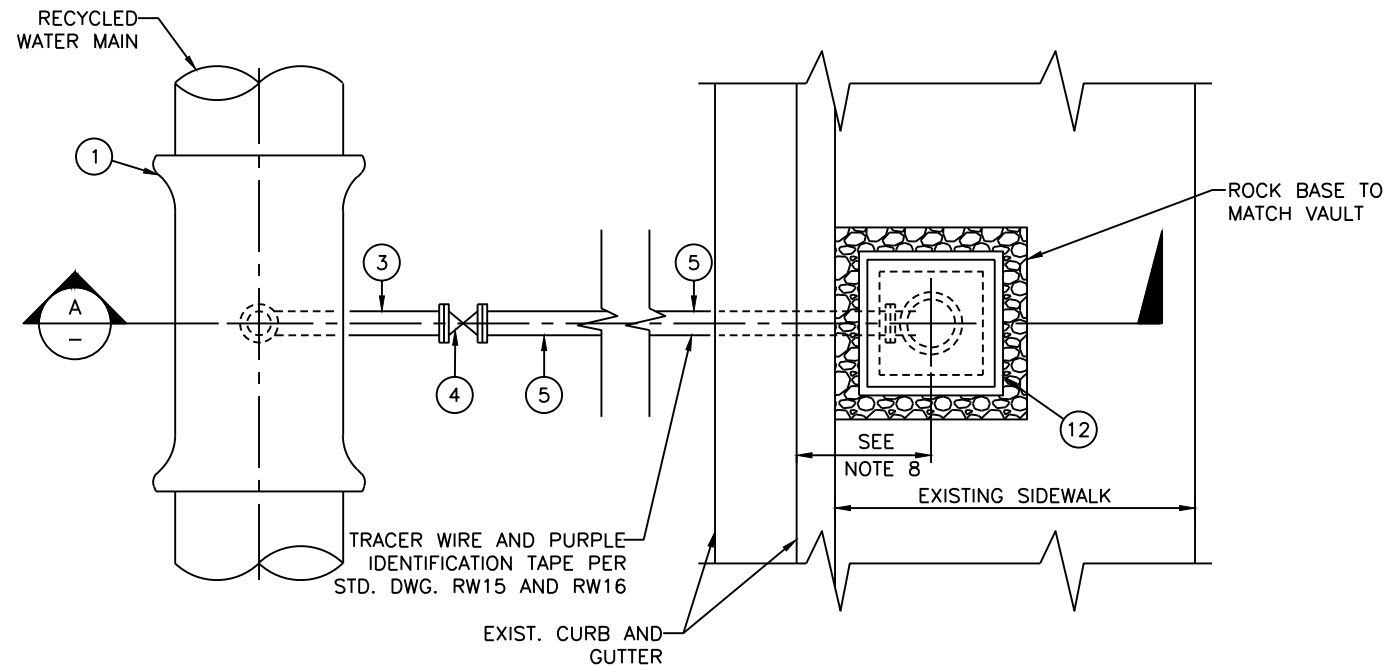
WEST BASIN MUNICIPAL WATER DISTRICT

**DEAD END WITH PERMANENT
2-INCH BLOW OFF**

STANDARD
DRAWING
RW12



SECTION A-A
N.T.S.



PLAN
N.T.S.

CONSTRUCTION ITEMS / MATERIALS LIST	
ITEM NO.	SIZE AND DESCRIPTION
①	MAIN SIZE x 4" DUCTILE IRON TEE (FLG).
②	4" DI 90° ELBOW (FLG x FLG) (LONG RADIUS).
③	4" DI SPOOL (FLG x FLG) (LENGTH AS REQUIRED).
④	4" RESILIENT WEDGE GATE VALVE (FLG x FLG).
⑤	4" DI SPOOL (FLG x FLG) (LENGTH AS REQUIRED).
⑥	8" DI FLGxMJ ADAPTER (WITH MJ RESTRAINT)
⑦	8"x4" DI TEE (FLG x FLG).
⑧	8" DI PIPE (FLG x FLG) (LENGTH AS REQUIRED).
⑨	VALVE BOX ASSEMBLY, PER STD DWG RW7.
⑩	VALVE STEM EXTENSION (SEE NOTE 2).
⑪	8" BLIND FLANGE
⑫	REINFORCED POLYMER/PLASTIC MORTAR METER BOX (SEE NOTE 1 AND NOTE 9)
⑬	8" BLIND FLANGE WITH 3" THREADED TAP, 3" x 2 1/2" REDUCING INSULATING BUSHING, BRASS HOSE ADAPTER (POTTER ROMA 2830 OR APPROVED EQUAL) AND 2 1/2" BRASS FIRE NOZZLE WITH CAP AND CHAIN.
⑭	WARNING TAG PER STANDARD DRAWING RW16.

NOTES:

- WHEN BLOWOFF ASSEMBLY IS PLACED BEHIND CURB USE 17"W x 30"L x 12"D REINFORCED POLYMER/PLASTIC MORTAR METER BOX. WHEN BLOWOFF ASSEMBLY IS PLACED IN STREET USE 24" DIAMETER PRECAST CONCRETE MANHOLE WITH ALHAMBRA A-1254B COVER OR APPROVED EQUAL.
- PROVIDE VALVE STEM EXTENSION IF DEPTH TO VALVE NUT EXCEEDS 4 FEET, PER STANDARD DRAWING RW8.
- VAULT COVER TO BE SET TO CONFORM TO PARKWAY GRADE.
- COVER SHALL BE MARKED "WBMWD RW" AND PAINTED PURPLE.
- WARNING TAG SHALL BE INSTALLED WITHIN THE VAULT.
- ALL BURIED BOLTS AND NUTS SHALL BE TYPE 316 STAINLESS STEEL AND COATED WITH 80 MILS OF COLD-APPLIED BITUMASTIC WATER-PROOFING COMPOUND.
- BACKFILL SHALL BE ONE SACK CEMENT SLURRY.
- EXACT LOCATION OF BLOWOFF TO BE AS PROVIDED ON CONSTRUCTION PLANS AND AS APPROVED BY THE DISTRICT AND THE JURISDICTIONAL AUTHORITY.
- IN AREAS WHERE NO CURB OR BERM EXISTS, OR WHERE THERE IS ONLY ROLLED CURB AND GUTTER, INSTALL TRAFFIC RATED BOX AND COVER.
- AT NO POINT SHALL THE BLOW-OFF METER BOX BE CLOSER THAN 36" AWAY FROM ANY HARDSCAPE STRUCTURE, ABOVE GROUND UTILITY OR TREES/SHRUBS.

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER	RCE		DATE

WEST BASIN MUNICIPAL WATER DISTRICT

4-INCH BLOW-OFF

STANDARD
DRAWING
RW13

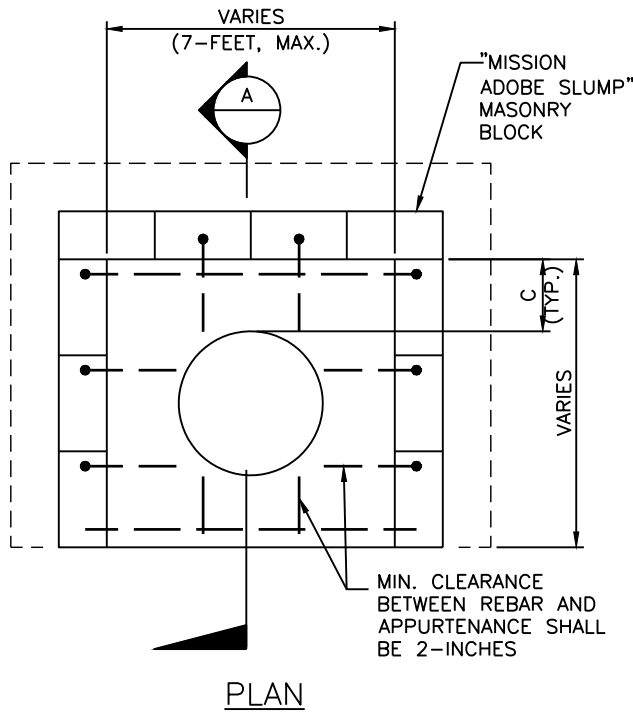
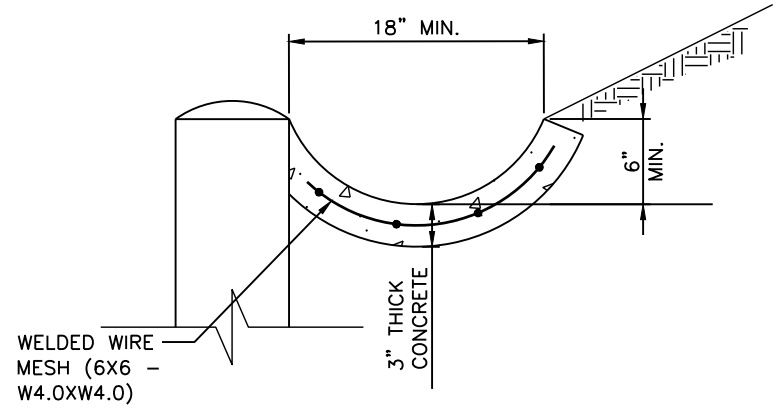


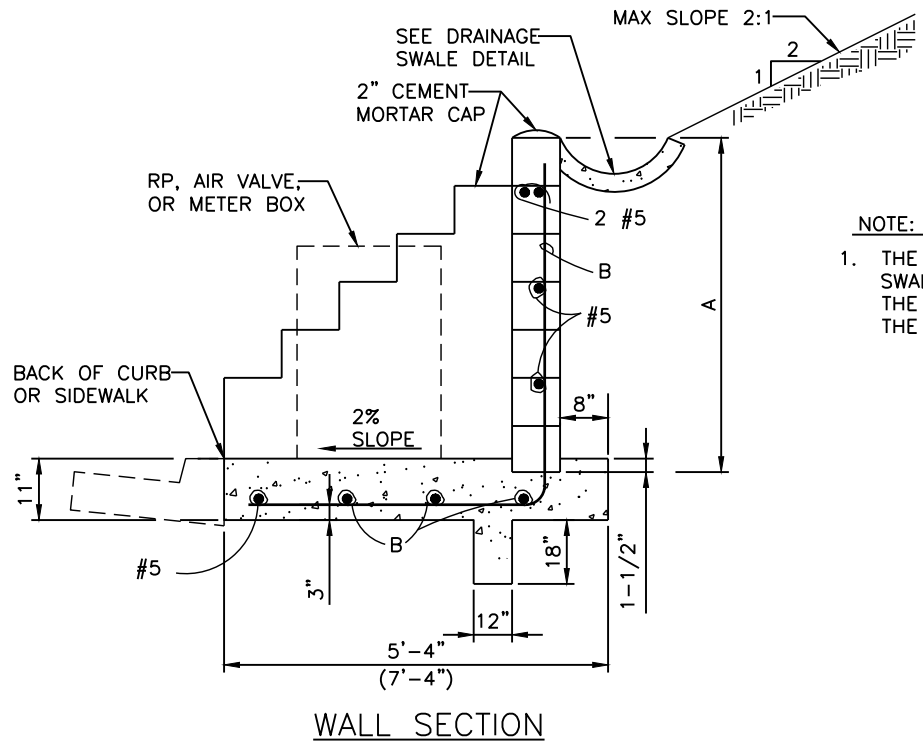
TABLE 1 - WALL DIMENSIONS

A	UP TO 2'-8" (MAXIMUM)	UP TO 5'-4" (SEE NOTE 14)
B	#5@16"	CONSTRUCT REINFORCED CONCRETE RETAINING WALL PER SPPWC "GREENBOOK" STANDARD DRAWING NO.613-3 (TYPE 4).
C	2-FOOT MIN. CLEARANCE TYPICAL (SEE NOTE 6)	2-FOOT MIN. CLEARANCE TYPICAL (SEE NOTE 6)



DRAINAGE SWALE DETAIL

TO BE CONSTRUCTED WITH AIR/VAC, BLOW OFF, METER, TEST STATION, RP BACKFLOW ASSEMBLY, WHEN A SLOPE EXISTS AT THE LOCATION OF THESE APPURTENANCES.



NOTE:

1. THE DESIGN AND SIZE OF THE DRAINAGE SWALE SHALL BE DETERMINED BASED ON THE SITE SPECIFIC DRAINAGE AREA AND THE CORRESPONDING HYDROLOGY.

O:\Projects\Irvine\09265-2000-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-14.dwg 10/05/2021 10:59

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER	RCE	DATE	

WEST BASIN MUNICIPAL WATER DISTRICT

RETAINING WALL DETAIL

STANDARD DRAWING
RW14
SHEET 1 OF 2

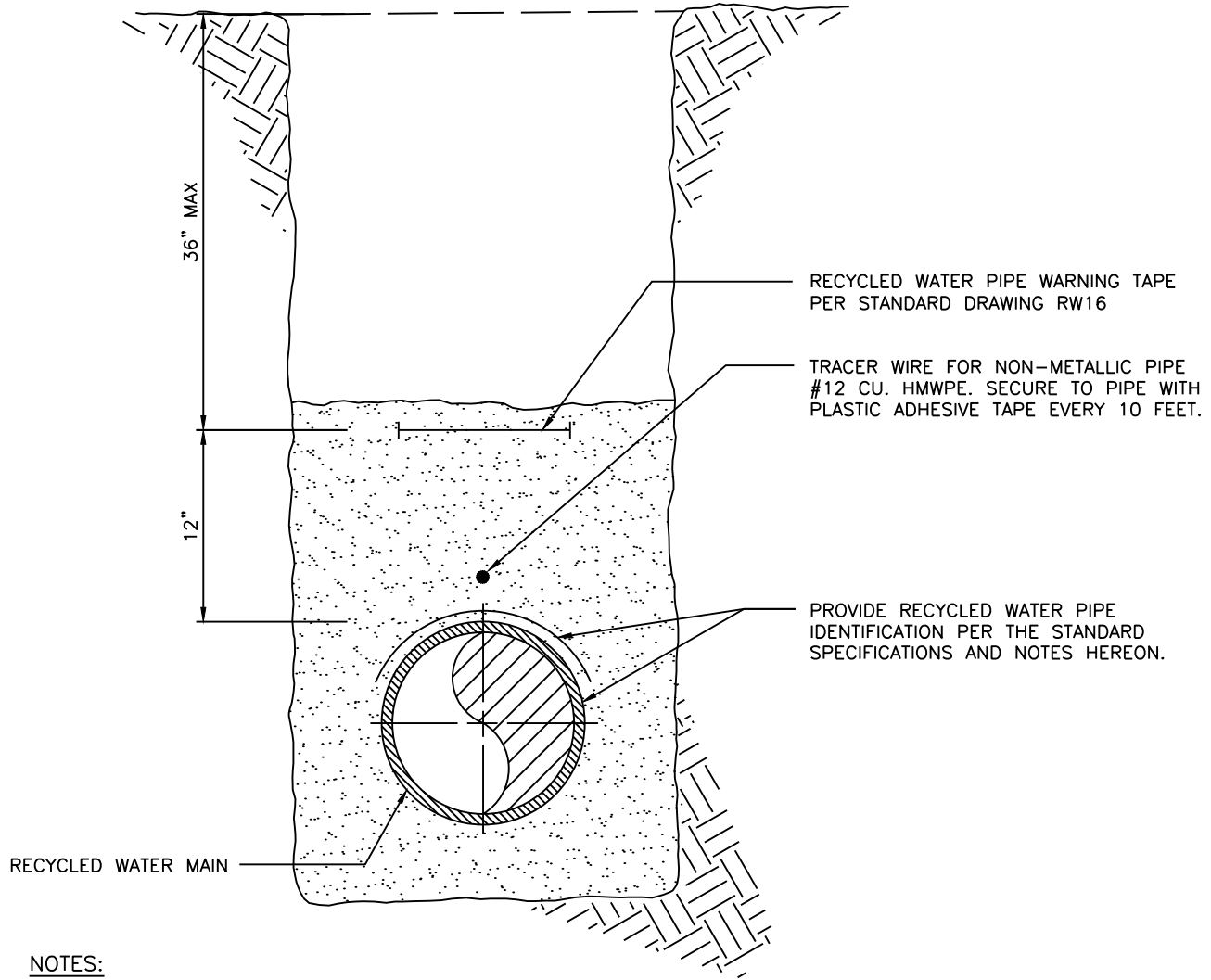
NOTES:

1. MASONRY BLOCK SHALL BE 8"x 8"x 16" UNITS CONFORMING TO ASTM C-90 CLASS S AND CONCRETE MASONRY ASSOC. STANDARDS.
2. MORTAR AND GROUT SHALL MATCH BLOCKWORK AND BE IN CONFORMANCE WITH SECTION 202-2 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK).
3. FILL ALL CELLS WITH GROUT.
4. OMIT MORTAR FROM FIRST COURSE ABOVE FINISHED GRADE AT 32" CENTERS.
5. ALL CONCRETE SHALL BE CLASS 560-C-3250.
6. MINIMUM 2-FOOT CLEARANCE SHALL BE MEASURED FROM SLAB PENETRATION(S) TO WALL FACE. CLEARANCE FROM WALL FACE TO PROTECTIVE ENCLOSURE SHALL BE A MINIMUM OF 12-INCHES AND ALLOW FOR REMOVAL OF ENCLOSURE FOR APPURTENANCE MAINTENANCE.
7. NO SPLICES ALLOWED IN REINFORCING BARS.
8. CONTRACTOR SHALL CONSTRUCT RETAINING WALL A MINIMUM OF 8- FEET CLEARANCE FROM STREET CURB FACE.
9. CONTRACTOR SHALL VERIFY EXISTING SLOPES IN THE FIELD. WHERE SLOPE EXCEEDS 2:1 MAXIMUM, BUT LESS THAN 1.5:1 SLOPE, CONTRACTOR SHALL CONSTRUCT REINFORCED CONCRETE RETAINING WALL PER STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (GREENBOOK) - STANDARD PLAN NO. 613-3, TYPE 4. WALL SHALL BE CONSTRUCTED CONSISTENT WITH GENERAL DETAIL DIMENSIONS AND CLEARANCES SHOWN IN DETAIL ABOVE.
10. USE WITH GREENBOOK STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION DETAIL 618-2, CASE 2
11. INSTALL DRAIN THROUGH WALL PER GREENBOOK STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION DETAIL 617. SLOPE SWALE (1% MIN.) TO DIRECT WATER TO DRAIN THROUGH WALL.
12. PROVISIONS SHALL BE MADE FOR CONTRIBUTORY DRAINAGE AT ALL TIMES.
13. AN EXCAVATION/ENCROACHMENT PERMIT IS REQUIRED FOR CONSTRUCTION AND/OR DISCHARGE OF DRAINAGE WITHIN PUBLIC ROAD RIGHT OF WAY.
14. DESIGN HEIGHT OF REINFORCED CONCRETE RETAINING WALL PER SPPWC "GREENBOOK" DETAIL 613-3, TYPE 4 INCLUDES 18-INCHES DEEP FORESLOPE OVER WALL FOUNDATION. RETAINED SOIL HEIGHT "A" PER ABOVE TABLE 1 EQUATES TO 3'-10" RETAINED HEIGHT PER DETAIL (CALCULATION: 5'-4" ("A") - 18" FORESLOPE = 3'-10" RETAINED SOIL).

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-14-1.dwg 10/05/2021 10:59

REVISION	DRAWN	APP'D.	DATE	WEST BASIN MUNICIPAL WATER DISTRICT			
JUNE 2003						RETAINING WALL DETAIL	
2021							
APPROVED							
DISTRICT ENGINEER		RCE	DATE				

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-15.dwg 10/05/2021 10:59



NOTES:

ALL RECYCLED WATER PIPELINES, INCLUDING SERVICE LINES AND ATTACHED APPURTENANCES SHALL BE PROVIDED WITH IDENTIFICATION PER ONE OF THE FOLLOWING ALTERNATIVES:

PVC PIPE ALTERNATIVE:

1. PIPE SHALL BE COLORED PURPLE AND INTEGRALLY STAMPED/MARKED WITH CONTINUOUS WORDING "CAUTION: RECYCLED WATER, DO NOT DRINK" PRINTED IN A MINIMUM OF 1/2 INCH HIGH BLACK LETTERING ON OPPOSITE SIDES OF THE PIPE AND SHALL BE REPEATED EVERY 12 INCHES.
2. AS AN OPTION TO PURPLE PIPE, PURPLE COLORED POLYETHYLENE IDENTIFICATION TAPE WITH CONTINUOUS WORDING "CAUTION: RECYCLED WATER, DO NOT DRINK" MAY BE ATTACHED TO THE TOP OF PIPE PER STANDARD DRAWING RW16.
3. AS AN OPTION TO EITHER OF THE ABOVE ALTERNATIVES, PURPLE COLORED POLYETHYLENE WRAP WITH CONTINUOUS WORDING "CAUTION: RECYCLED WATER, DO NOT DRINK" MAY BE USED TO ENCASE THE PIPE PER STANDARD DRAWING RW16.

DUCTILE IRON PIPE ALTERNATIVE:

1. PURPLE COLORED POLYETHYLENE IDENTIFICATION TAPE WITH CONTINUOUS WORDING "CAUTION: RECYCLED WATER, DO NOT DRINK" SHALL BE ATTACHED TO THE TOP OF PIPE PER STANDARD DRAWING RW16.
2. AS AN OPTION TO THE ABOVE ALTERNATIVE, PURPLE COLORED POLYETHYLENE WRAP WITH CONTINUOUS WORDING "CAUTION: RECYCLED WATER, DO NOT DRINK" MAY BE USED TO ENCASE THE PIPE PER STANDARD DRAWING RW16. PURPLE POLYETHYLENE ENCASEMENT SHALL BE USED AS THE SECOND LAYER OF ENCASEMENT FOR DUCTILE IRON PIPE CONSTRUCTION PER THE STANDARD SPECIFICATIONS.

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

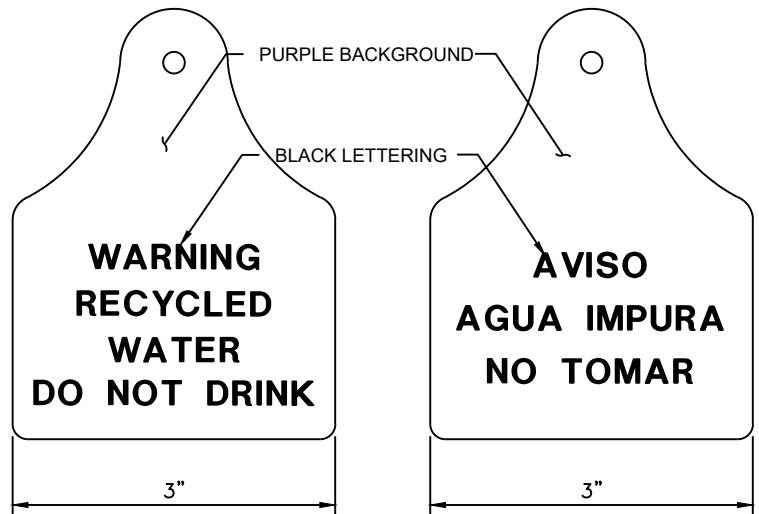
RECYCLED WATER PIPE IDENTIFICATION

STANDARD
DRAWING

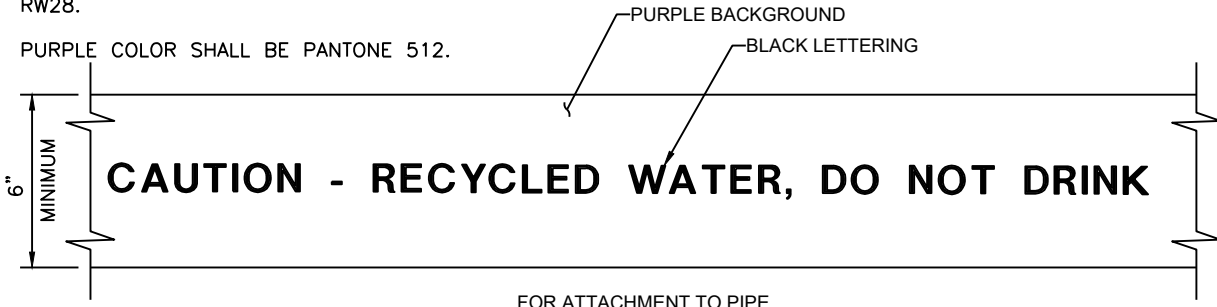
RW15

NOTES:

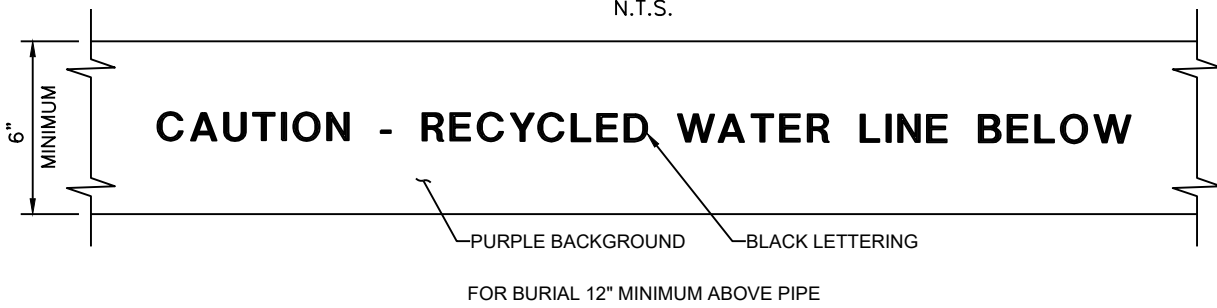
1. RECYCLED WATER WARNING TAGS SHALL CONSIST OF WEATHERPROOF PLASTIC, 3-INCH BY 4-INCH, WITH PURPLE BACKGROUND AND BLACK LETTERING. WARNING TAGS SHALL BE ATTACHED TO EACH RECYCLED WATER DEVICE WITH A NYLON TIE WRAP.
2. RECYCLED WATER IDENTIFICATION TAPE SHALL CONSIST OF A MINIMUM 4 MIL. POLYETHYLENE WITH METALLIC BACKING, WITH PURPLE BACKGROUND AND BLACK LETTERING. TAPE WIDTH SHALL BE 6-INCHES FOR PIPE 6-INCH AND SMALLER AND 12-INCHES FOR PIPE 8-INCH AND LARGER. LETTERING SHALL BE 2-INCHES HIGH AND THE MESSAGE SHALL REPEAT EVERY 36-INCHES. IDENTIFICATION TAPE SHALL BE FASTENED TO THE PIPE WITH PLASTIC ADHESIVE TAPE BANDED AROUND THE PIPE AT NO MORE THAN 5-FOOT INTERVALS, OR AS APPROVED THE DISTRICT.
3. PURPLE COLORED POLYETHYLENE ENCASEMENT WITH A MINIMUM THICKNESS OF 8 MILS MAY BE SUBSTITUTED FOR IDENTIFICATION TAPE SPECIFIED IN NOTE 2 ABOVE. MESSAGE SHALL CONTAIN 1-INCH HIGH LETTERING REPEATING EVERY 24-INCHES.
4. RECYCLED WATER WARNING TAPE MEETING THE SAME SPECIFICATIONS AS NOTE 2 ABOVE SHALL BE BURIED ABOVE THE PIPE ZONE BEDDING A MINIMUM OF 12-INCHES ABOVE THE PIPE.
5. WARNING TAGS, IDENTIFICATION/WARNING TAPE AND POLYETHYLENE ENCASEMENT SHALL BE AS MANUFACTURED BY T. CHRISTY ENTERPRISES, TERRA TAPE (DIVISION OF REEF INDUSTRIES) OR APPROVED EQUAL.
6. RECYCLED WATER PIPELINES LOCATED IN NON-PAVED AREAS OUTSIDE STREET RIGHT-OF-WAY SHALL ALSO BE IDENTIFIED WITH MARKER POSTS PER STD. DWG. RW28.
7. PURPLE COLOR SHALL BE PANTONE 512.



FRONT
BACK
RECYCLED WATER WARNING TAGS
 N.T.S.



RECYCLED WATER PIPE IDENTIFICATION TAPE
 N.T.S.



RECYCLED WATER PIPE WARNING TAPE
 N.T.S.

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-16.dwg 10/05/2021 10:59

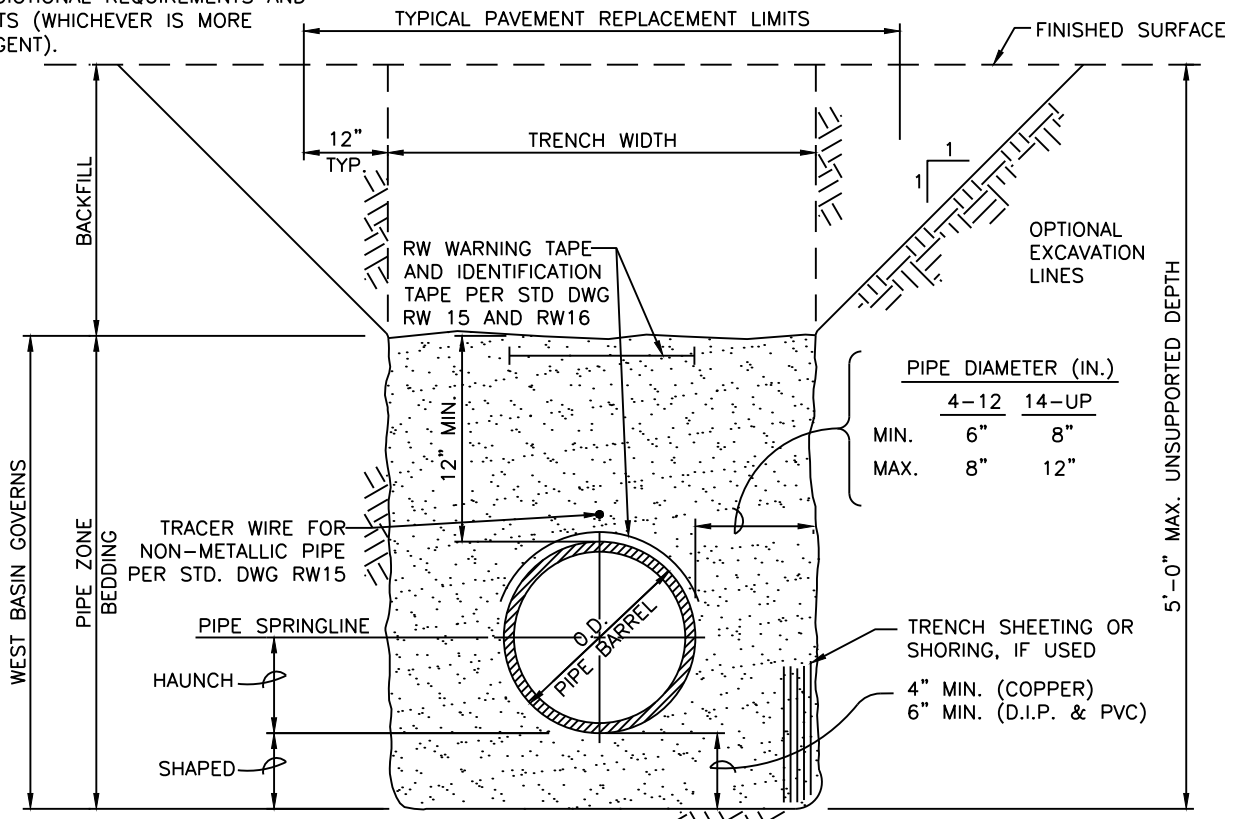
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

WARNING TAGS AND TAPE

STANDARD
DRAWING
RW16

REPLACE PAVED STRUCTURAL SECTION AND TRENCH BACKFILL PER RW18 OR JURISDICTIONAL REQUIREMENTS AND PERMITS (WHICHEVER IS MORE STRINGENT).



NOTE:

1. SHOULD LARGE GRAVEL OR COBBLES BE ENCOUNTERED AT THE TRENCH BOTTOM, THEY SHALL BE REMOVED AND REPLACED WITH GRANULAR MATERIAL WHICH SHALL BE COMPACTED TO PROVIDE UNIFORM SUPPORT AND A FIRM FOUNDATION.
2. IF EXCESSIVELY WET, SOFT, SPONGY, UNSTABLE, OR SIMILARLY UNSUITABLE MATERIAL IS ENCOUNTERED AT THE TRENCH BOTTOM, IT SHALL BE REMOVED AND REPLACED BY CRUSHED ROCK OR GRAVEL OF SUFFICIENT THICKNESS TO FORM A FIRM FOUNDATION.
3. WHERE WET, UNSTABLE OR RUNNING SOIL IS ENCOUNTERED, SOLID SHEETING IS REQUIRED FOR ALL VERTICAL TRENCH WALLS.
4. TRENCH SHEETING OR SHORING SHALL BE A MINIMUM OF 6 INCHES FROM THE PIPE BARREL AT SPRINGLINE.
5. VERTICAL TRENCH WALLS
 - a. FOR DEPTHS UP TO 5'-0", NO TRENCH SUPPORT IS REQUIRED UNLESS UNSTABLE OR RUNNING SOIL IS ENCOUNTERED.
 - b. FOR DEPTHS EXCEEDING 5'-0", SHEETING, SHORING OR OTHER EQUIVALENT BRACING SHALL BE PROVIDED IN ACCORDANCE WITH THE CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS (CAL/OSHA) CODE OF REGULATIONS TITLE 8, SUB CHAPTER 4 "CONSTRUCTION SAFETY ORDERS".
6. OPTIONAL COMBINATION OF VERTICAL AND SLOPING TRENCH WALLS
 - a. TRENCH DEPTHS EXCEEDING 5'-0" SHALL HAVE VERTICAL WALLS IN PIPE ZONE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
 - b. FOR TRENCHES WITH COMBINED WALLS AND ANY DEPTH EXCEEDING 3'-6", THE CONTRACTOR SHALL PROTECT IN ACCORDANCE WITH THE CALIFORNIA DEPARTMENT OF INDUSTRIAL RELATIONS (CAL/OSHA) CODE OF REGULATIONS TITLE 8, SUB CHAPTER 4 "CONSTRUCTION SAFETY ORDERS".
7. BEDDING:
 - a. ALL PIPE SHALL HAVE A BEDDING WITH AN SE OF 30 MINIMUM.
 - b. SE OF 30 AND HAUNCH BEDDING SHALL BE HAND TAMPED TO 90% RELATIVE COMPACTION MIN. FOR PVC AND ALL OTHER FLEXIBLE PIPE INSTALLATIONS, WHEREUPON BEDDING ABOVE SPRINGLINE SHALL BE COMPACTED CONCURRENTLY WITH THE BACKFILL.
 - c. PROVIDE HAND EXCAVATED "BELL HOLE" FOR EACH PIPE JOINT SO THAT THE WEIGHT OF PIPE DOES NOT BEAR ON THE BELL. CONTRACTOR SHALL RE-FILL AND HAND-TAMP EACH "BELL HOLE" PRIOR TO COMPLETING THE PLACEMENT OF PIPE BEDDING.

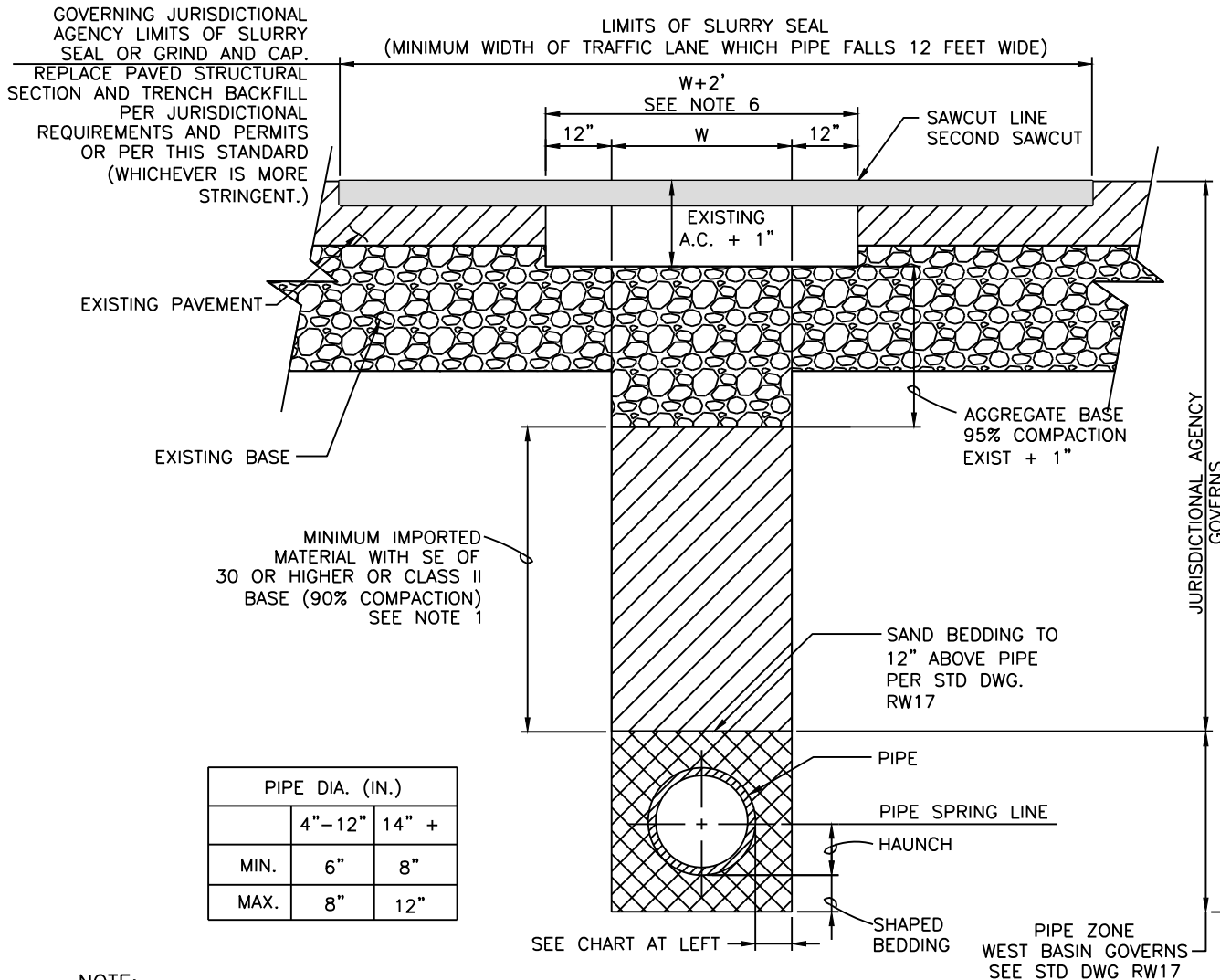
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

PIPE ZONE AND BEDDING

STANDARD DRAWING
RW17

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-17.dwg 10/05/2021 10:59



NOTE:

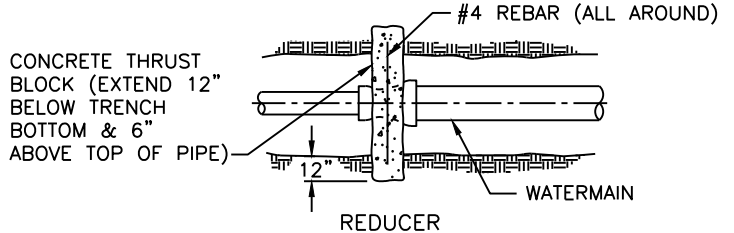
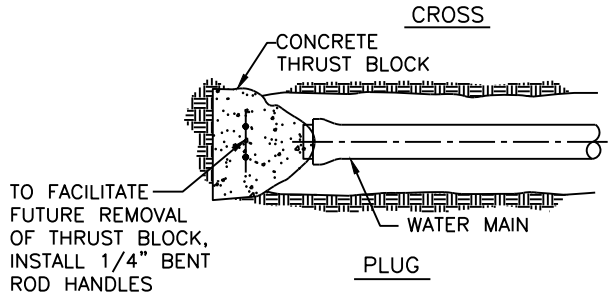
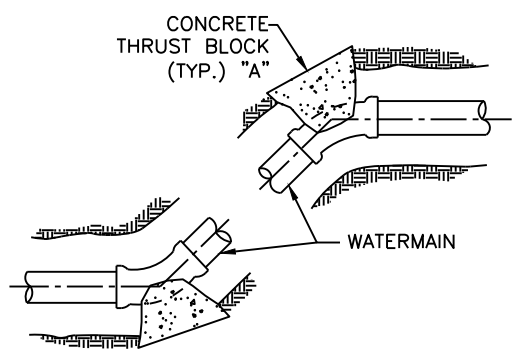
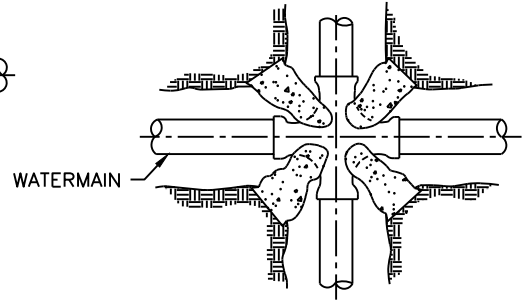
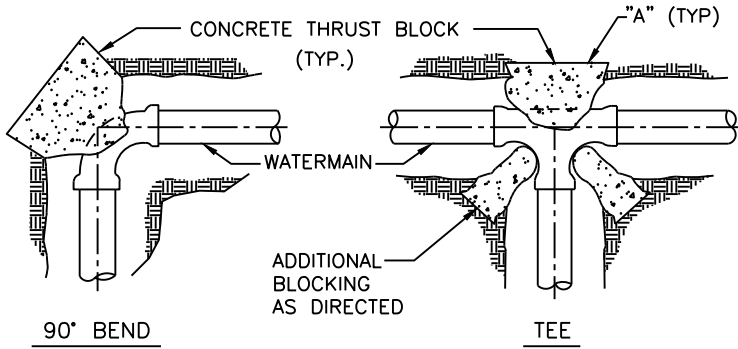
- TRENCH BACKFILL SHALL BE AS A MINIMUM IMPORTED MATERIAL WITH A S.E OF 30 OR HIGHER OR CLASS II BASE COMPACTED TO 90% UNLESS OTHERWISE NOTED. IF JURISDICTIONAL AGENCY'S PERMIT OR STANDARDS ARE MORE STRINGENT (ONE-SACK SURVEY FOR EXAMPLE), THEN THE JURISDICTIONAL AGENCY'S PERMIT OR STANDARDS SHALL GOVERN.
- PAVEMENT AND BASE REPLACEMENT THICKNESS SHALL BE 1-INCH MORE THAN EXISTING, UNLESS OTHERWISE NOTED. MINIMUM AC AND BASE REQUIREMENTS ARE 4" AC OVER 8" AB. IF JURISDICTIONAL AGENCY'S PERMIT OR STANDARDS ARE MORE STRINGENT, THEN THE JURISDICTIONAL AGENCY'S PERMIT OR STANDARDS SHALL GOVERN.
- PIPE ZONE BEDDING SHALL BE PER STANDARD DWG RW17:
- FOR TRENCHES TRAVERSING A MAJOR STREET AT 90° AND/OR IN INTERSECTIONS OF MAJOR STREETS. TRENCH BACKFILL FROM TOP OF PIPE ZONE TO SUBBASE WITH ONE SACK SAND SLURRY.
- ALL TRAFFIC SIGNAL LOOPS, TRAFFIC DOTS, TRAFFIC LINES, PEDESTRIAN LINES, AND OTHER PAINTED MARKINGS ARE TO BE REPLACED BY THE CONTRACTOR.
- IF NOTED ON PLANS, EXISTING PAVING MAY BE REQUIRED TO BE MECHANICALLY GROUND DOWN A MINIMUM OF 2" BY AN ADDITIONAL 24" WIDTH. THE PERMANENT PAVING SHALL THAN BE EXTENDED AS AN OVERLAY INTO THIS AREA. ALL EXISTING PAVEMENT EDGES ARE TO BE TACK COATED BEFORE APPLICATION OF PERMANENT PAVEMENT. IF THERE IS LESS THAN 2" OF PAVEMENT AFTER GRINDING, THAN THE GROUND AREA SHALL BE REMOVED BY SAW CUTTING AND PERMANENT PAVEMENT PLACED.

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

TRENCH AND PAVING SECTION

STANDARD
DRAWING
RW18



NOTES:

1. ALL CONCRETE FOR THRUST BLOCK TO BE CLASS 560-C-3250.
2. CONCRETE TO BE KEPT CLEAR OF ALL PIPE, NUTS, BOLTS, AND ENDS OF FITTINGS.
3. ALL BEARING AREAS TO BE AGAINST UNDISTURBED SOIL.
4. BEARING AREAS ARE BASED ON A TEST OF 200 PSI AND SOIL BEARING CAPACITY OF 1500 PSF AND SAFETY FACTOR OF 1.5. THE RATIO OF WIDTH TO HEIGHT CANNOT EXCEED 1:1/2.
5. DISTRICT'S FIELD REPRESENTATIVE MAY INCREASE THE SIZE OF THRUST BLOCK, IF IN HIS OPINION, THE SOIL BEARING VALUE IS LESS THAN THE ASSUMED VALUE.
6. TIE BARS NOT EMBEDDED IN CONCRETE SHALL BE CLEANED AND COATED WITH 80MILS OF COLD-APPLIED BITUMASTIC WATER PROOFING COMPOUND.
7. THRUST BLOCK ON CROSSES SHALL ONLY BE USED WHEN THERE IS A STUB-OUT ON ONE OR MORE SIDES.
8. PROVIDE POLYETHYLENE (8 MIL MIN) BETWEEN FITTING AND CONCRETE.

PIPE SIZE	HORIZONTAL/VERTICAL ANCHOR AND THRUST BLOCK								
	90°		45°		22 1/2°		11 1/4°		TEE/PLUG
	"A"	"V"	"A"	"V"	"A"	"V"	"A"	"V"	"A"
3"/4"	3.6	1.4	2.0	0.8	1.0	0.5	0.5	0.3	2.5
6"	8.0	3.0	4.3	1.6	2.2	0.9	1.1	0.5	5.7
8"	14.2	5.3	7.7	2.9	4.0	1.5	2.0	0.8	10.0
10"	22.2	8.2	12.0	4.5	6.2	2.3	3.1	1.2	15.8
12"	32.0	11.9	17.4	6.5	8.8	3.3	4.5	1.7	22.6

FOR OVER 12" PIPE SEE PLANS.

"A" DESIGNATES AREA IN SQ. FT. OF HORIZONTAL THRUST BLOCK.
 "V" DESIGNATES VOLUME IN C.Y. OF VERTICAL ANCHOR BLOCK.

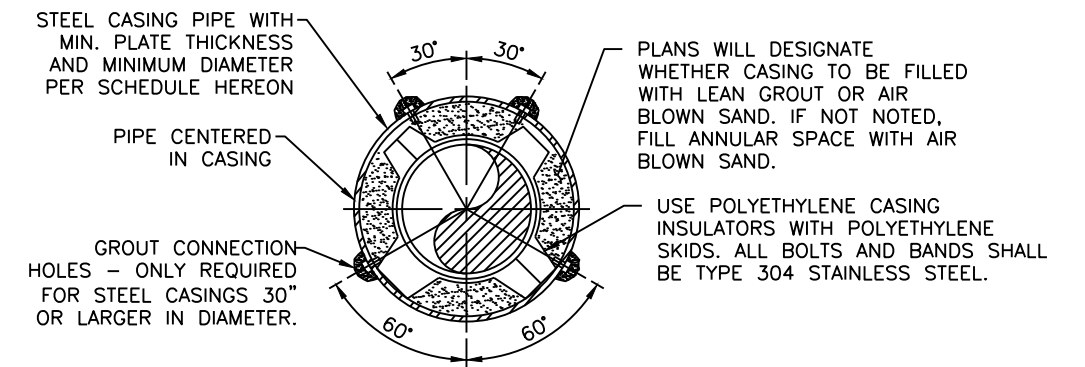
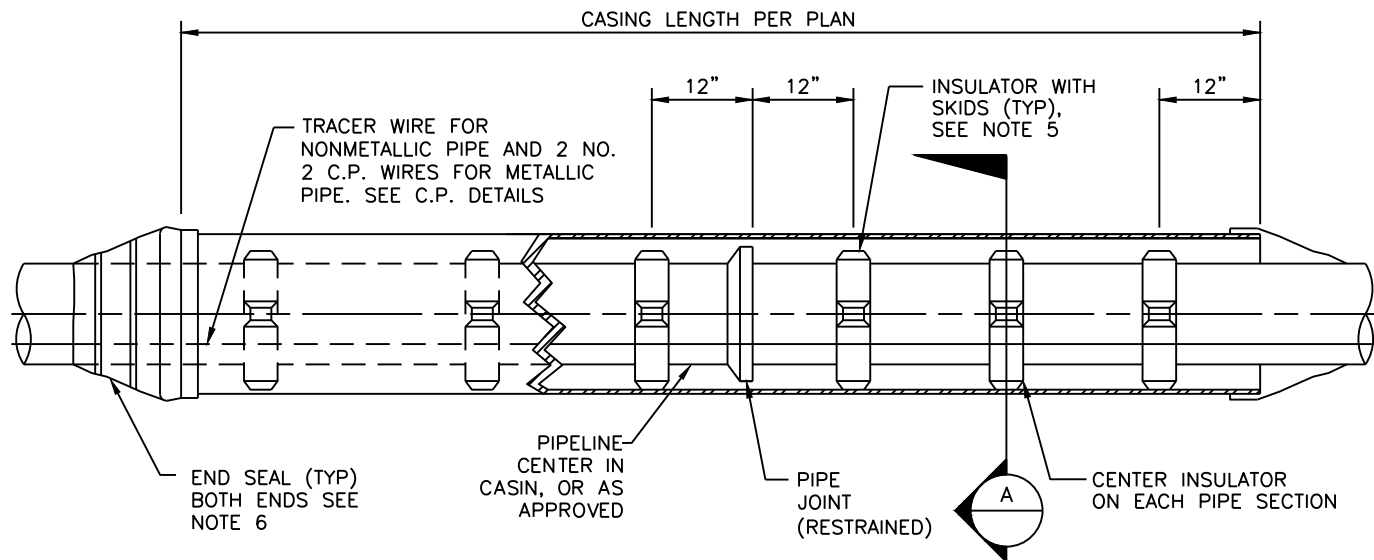
O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-19.dwg 10/05/2021 11:00

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
APPROVED			
DISTRICT ENGINEER	RCE	DATE	

WEST BASIN MUNICIPAL WATER DISTRICT

TYPICAL THRUST BLOCKS

STANDARD DRAWING
RW19



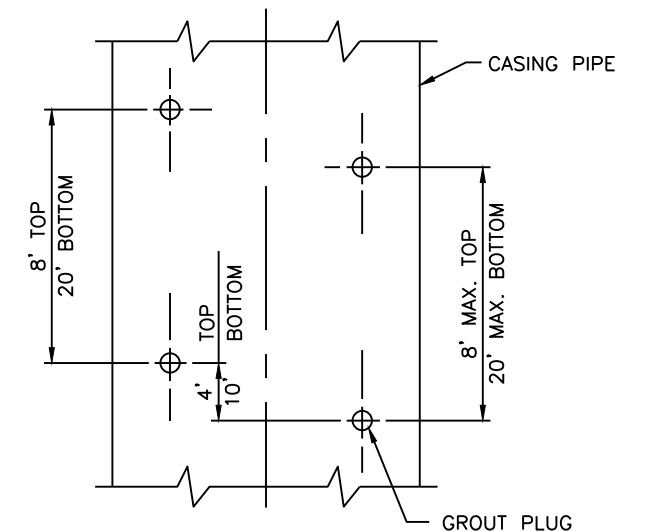
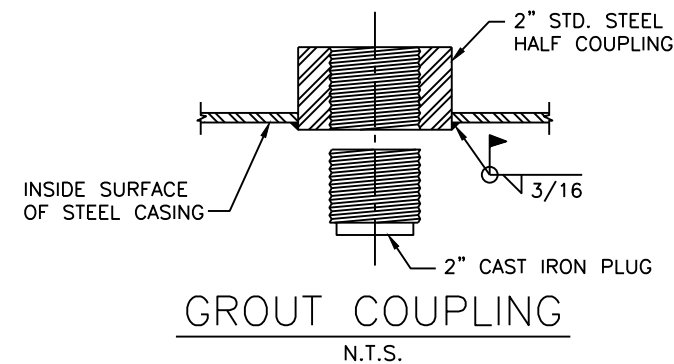
SECTION A-A

DIP CARRIER PIPE SIZE	STEEL CASING PIPE	
	MIN. SIZE (NOMINAL)	MIN. WALL THK.
4"	12 3/4" (16")	1/4" (5/16")
6"	16" (18")	5/16"
8"	18" (20")	5/16" (3/8")
10"	20" (24")	3/8"
12"	24"	3/8"

CASING FOR OTHER SIZES SUBJECT TO APPROVAL OF DISTRICT.
 *MIN. SIZE STEEL CASING BASED ON RESTRAINING DIP BY LOCKING GASKET (NO THRUST RESTRAINT)
 *MIN. SIZE STEEL CASING IN () REQUIRED IF DIP NEEDS TO BE RESTRAINED ALSO FOR THRUST RESTRAINT AND ASSUMES RESTRAINT BY MECHANICAL JOINT RESTRAINT

PVC CARRIER PIPE SIZE	STEEL CASING PIPE	
	MIN. SIZE* (NOMINAL)	MIN. WALL THK.
4"	16"	5/16"
6"	18"	5/16"
8"	20"	3/8"
10"	24"	3/8"
12"	24"	3/8"

CASING FOR OTHER SIZES SUBJECT TO APPROVAL OF DISTRICT
 *MIN. SIZE STEEL CASING BASED ON RESTRAINING PVC PIPE WITH BELL RESTRAINT HARNESS



NOTES:

- ALL STEEL CASING PIPE JOINTS SHALL BE WELDED FULL CIRCUMFERENCE.
- PERIPHERY OF CASING FOR CASINGS 30" OR LARGER IN DIAMETER TO BE PRESSURE GROUTED. CONTRACTOR SHALL AVOID "FLOATING" PIPE DURING GROUTING.
- WATER MAIN PIPE TO BE PRESSURE TESTED PER STANDARD SPECIFICATIONS PRIOR TO FILLING CASING PIPE WITH GROUT OR SAND.
- CASING SHALL BE INSTALLED BY THE BORE, JACK AND/OR TUNNEL METHOD.
- SPACING BETWEEN THE CASING INSULATORS SHALL BE PER THE MANUFACTURERS RECOMMENDATIONS EXCEPT THAT THERE SHALL BE AT LEAST 3 CASING INSULATORS PER PIPE SECTION, ONE 12" FROM EACH JOINT AND ONE CENTERED. ADDITIONALLY, ONE INSULATOR SHALL BE INSTALLED 12" FROM EACH END OF THE CASING.
- BOTH ENDS OF THE CASING BETWEEN THE CASING AND CARRIER PIPE SHALL BE SEALED WATERTIGHT USING AN APPROVED RUBBER CASING END SEAL. BANDS SHALL BE TYPE 304 STAINLESS STEEL.
- PLACE RECYCLED WATER IDENTIFICATION TAPE ON PIPE PRIOR TO STRAPPING ON SKIDS.
- ALL PIPE JOINTS WITHIN THE CASING SHALL BE RESTRAINED. CONTRACTOR SHALL FURNISH ALL NECESSARY THRUST RESTRAINT DEVICES.
- ALL CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE APPLICABLE PERMITTING AGENCY.
- MINIMUM SIZE AND THICKNESS OF STEEL CASING PIPE SHALL BE AS SHOWN IN ABOVE TABLES. FOR LONG BORES OR SPECIAL SITUATIONS (RAILROAD CROSSING, ETC) GREATER WALL THICKNESS THAN SHOWN MAYBE REQUIRED.

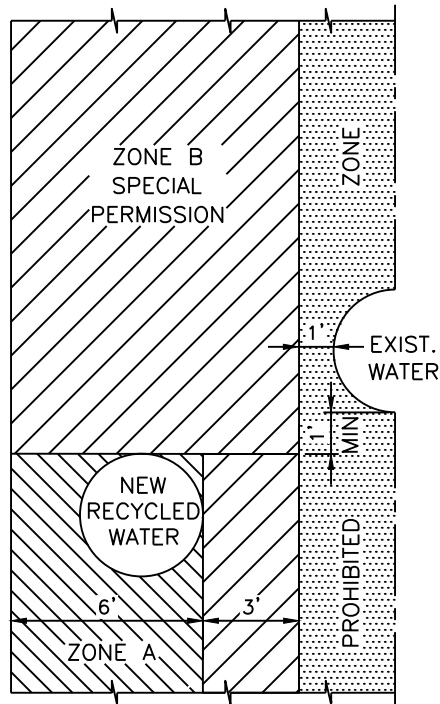
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER	RCE	DATE	

WEST BASIN MUNICIPAL WATER DISTRICT

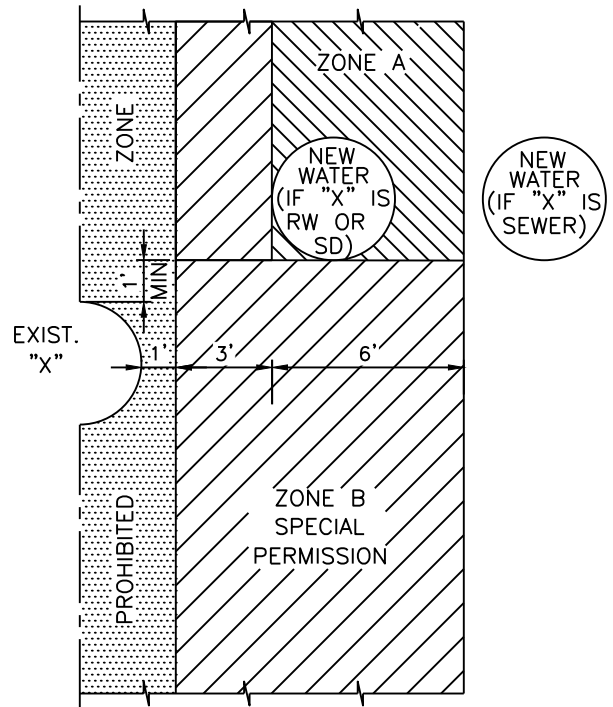
STEEL CASING PIPE

STANDARD DRAWING
RW20

CASE 1
NEW RECYCLED WATER



CASE 2
NEW WATER MAIN



GENERAL NOTES:

1. ZONES IDENTICAL ON EITHER SIDE OF CENTER LINES.
2. ZONE "A" CONSTRUCTION IS ALLOWED ONLY FOR THE INDICATED CONVEYANCE; OTHERWISE SPECIAL PERMISSION. NO PIPES SHALL BE INSTALLED WITHIN THE PROHIBITED ZONE.
3. SPECIAL PERMISSION WILL BE REQUIRED TO CONSTRUCT WITHIN THE ZONE "B", WITH STATE DEPARTMENT OF PUBLIC HEALTH APPROVAL, NEWLY INSTALLED MAINS MAY BE EXEMPTED FROM THE SEPARATION DISTANCES IF THE WATER MAIN CAN BE ADEQUATELY PROTECTED AS SET FORTH IN CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 22, SECTION 64572, SUB-SECTION (H). PROPOSED PROTECTIVE MEASURE(S) SHALL BE SUBMITTED TO DISTRICT FOR CONSTRUCTION BEFORE REQUESTING APPROVAL FROM THE STATE HEALTH DEPARTMENT.

FIGURE 1 – PARALLEL CONSTRUCTION

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER	RCE		DATE

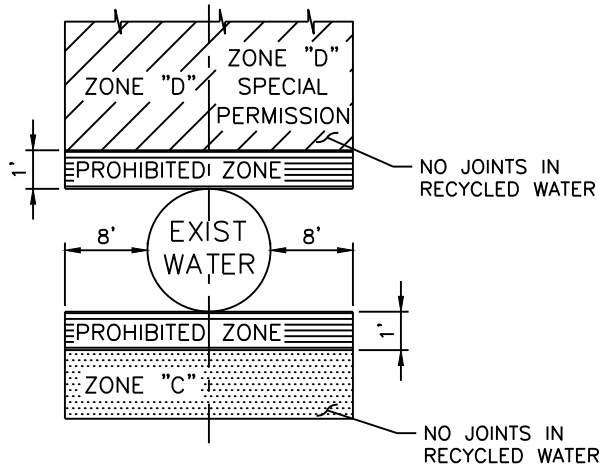
WEST BASIN MUNICIPAL WATER DISTRICT

SEPARATION OF WATERMAINS
AND SANITARY SEWERS

STANDARD
DRAWING
RW21
SHEET 1 OF 3

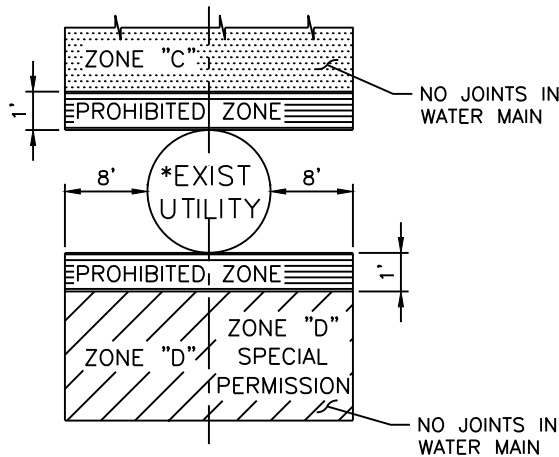
CASE 1

NEW RECYCLED WATER



CASE 2

NEW WATER MAIN



*FLUID CONVEYANCE LISTED PER CCR, TITLE 22, SECTION 64572, SUB-SECTION (A) AND (B)

GENERAL NOTES:

1. ZONE "C" CONSTRUCTION SHALL HAVE NO JOINTS. CROSSINGS SHALL BE MADE AT AN ANGLE NO LESS THAN 45° TO EXISTING PIPELINE. NO PIPES SHALL BE INSTALLED WITHIN THE PROHIBITED ZONE.
2. SPECIAL PERMISSION WILL BE REQUIRED TO CONSTRUCT WITHIN THE ZONE "D", WITH STATE DEPARTMENT OF PUBLIC HEALTH APPROVAL, NEWLY INSTALLED MAINS MAY BE EXEMPTED FROM THE SEPARATION DISTANCES IF THE WATER MAIN CAN BE ADEQUATELY PROTECTED AS SET FORTH IN CALIFORNIA CODE OF REGULATIONS (CCR), TITLE 22, SECTION 64572, SUB-SECTION (H). PROPOSED PROTECTIVE MEASURE(S) SHALL BE SUBMITTED TO DISTRICT FOR CONSTRUCTION BEFORE REQUESTING APPROVAL FROM THE STATE HEALTH DEPARTMENT.

FIGURE 2 – CROSSINGS

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-21-2.dwg 10/05/2021 11:00

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

SEPARATION OF WATERMAINS AND SANITARY SEWERS

STANDARD DRAWING
RW21
SHEET 2 OF 3

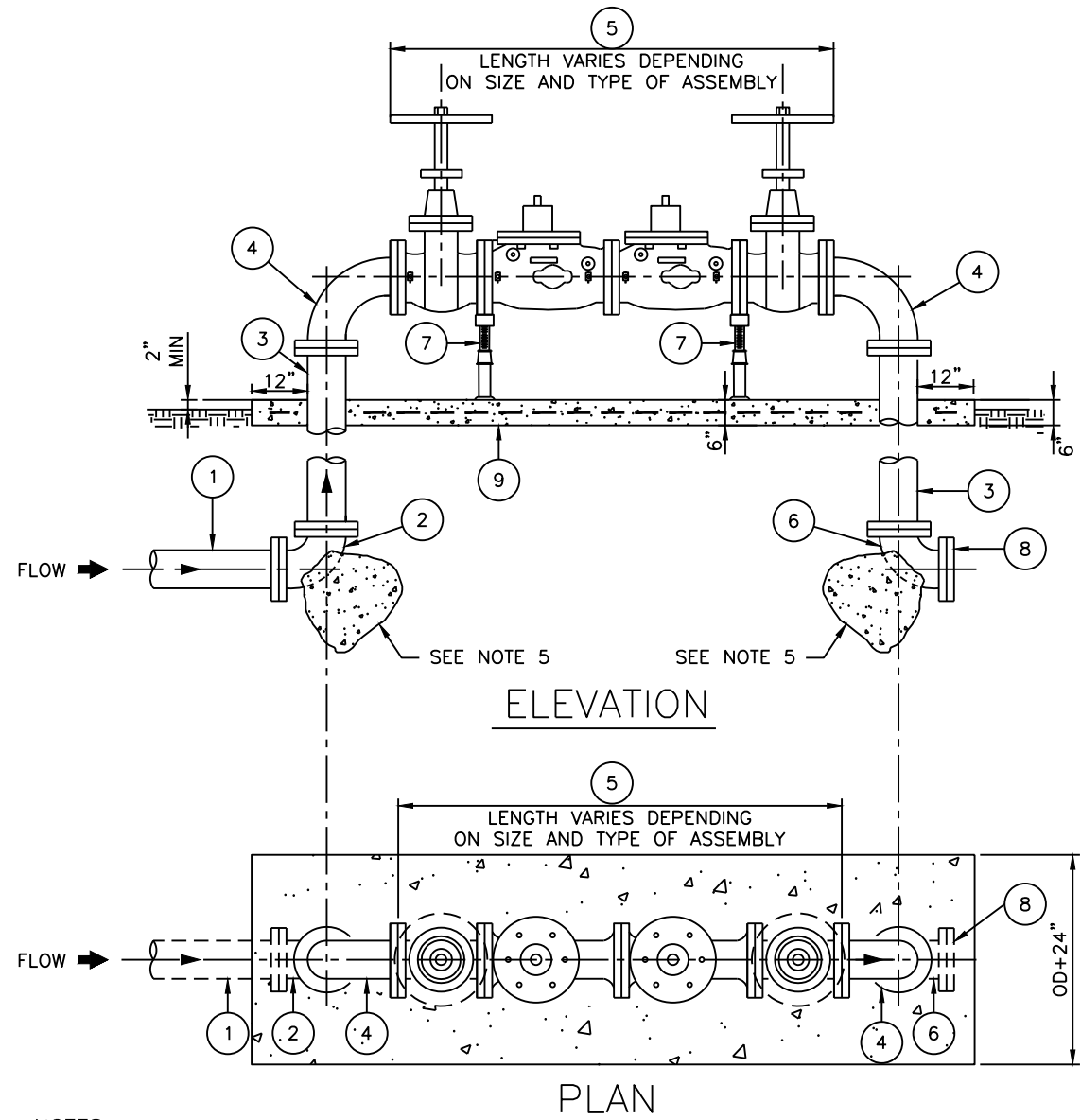
NOTES:

1. ALL NEW WATER MAINS (DOMESTIC AND RECYCLED) SHALL BE INSTALLED PER THE LATEST CALIFORNIA CODE OF REGULATIONS RELATED TO DRINKING WATER.
2. CALIFORNIA CODE OF REGULATIONS, TITLE 22, SECTION 64572 (UPDATED APRIL 2019) STATES:
 - (A) NEW WATER MAINS AND NEW SUPPLY LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH AS, AND SHALL BE AT LEAST 10 FEET HORIZONTALLY FROM AND ONE FOOT VERTICALLY ABOVE, ANY PARALLEL PIPELINE CONVEYING:
 - 1) UNTREATED SEWAGE,
 - 2) PRIMARY OR SECONDARY TREATED SEWAGE,
 - 3) DISINFECTED SECONDARY-2.2 RECYCLED WATER (DEFINED IN SECTION 60301.220),
 - 4) DISINFECTED SECONDARY-23 RECYCLED WATER (DEFINED IN SECTION 60301.225), AND
 - 5) HAZARDOUS FLUIDS SUCH AS FUELS, INDUSTRIAL WASTES, AND WASTEWATER SLUDGE.
 - (B) NEW WATER MAINS AND NEW SUPPLY LINES SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM, AND ONE FOOT VERTICALLY ABOVE, ANY PARALLEL PIPELINE CONVEYING:
 - 1) DISINFECTED TERTIARY RECYCLED WATER (DEFINED IN SECTION 60301.230), AND
 - 2) STORM DRAINAGE.
 - (C) NEW SUPPLY LINES CONVEYING RAW WATER TO BE TREATED FOR DRINKING PURPOSES SHALL BE INSTALLED AT LEAST 4 FEET HORIZONTALLY FROM, AND ONE FOOT VERTICALLY BELOW, ANY WATER MAIN.
 - (D) IF CROSSING A PIPELINE CONVEYING A FLUID LISTED IN SUBSECTION (A) OR (B), A NEW WATER MAIN SHALL BE CONSTRUCTED NO LESS THAN 45-DEGREES TO AND AT LEAST ONE FOOT ABOVE THAT PIPELINE. NO CONNECTION JOINTS SHALL BE MADE IN THE WATER MAIN WITHIN 8 HORIZONTAL FEET OF THE FLUID PIPELINE.
 - (E) THE VERTICAL SEPARATION SPECIFIED IN SUBSECTIONS (A), (B), AND (C) IS REQUIRED ONLY WHEN THE HORIZONTAL DISTANCE BETWEEN A WATER MAIN AND PIPELINE IS LESS THAN 10 FEET.
 - (F) NEW WATER MAINS SHALL NOT BE INSTALLED WITHIN 100 HORIZONTAL FEET OF THE NEAREST EDGE OF ANY SANITARY LANDFILL, WASTEWATER DISPOSAL POND, OR HAZARDOUS WASTE DISPOSAL SITE, OR WITHIN 25 HORIZONTAL FEET OF THE NEAREST EDGE OF ANY CESSPOOL, SEPTIC TANK, SEWAGE LEACH FIELD, SEEPAGE PIT, UNDERGROUND HAZARDOUS MATERIAL STORAGE TANK, OR GROUNDWATER RECHARGE PROJECT SITE.
 - (G) THE MINIMUM SEPARATION DISTANCES SET FORTH IN THIS SECTION SHALL BE MEASURED FROM THE NEAREST OUTSIDE EDGE OF EACH PIPE BARREL.
 - (H) WITH DEPARTMENT APPROVAL, NEWLY INSTALLED WATER MAINS MAY BE EXEMPT FROM THE SEPARATION DISTANCES IN THIS SECTION, EXCEPT SUBSECTION (F), IF THE NEWLY INSTALLED MAIN IS:
 - 1) LESS THAN 1320 LINEAR FEET,
 - 2) REPLACING AN EXISTING MAIN, INSTALLED IN THE SAME LOCATION, AND HAS A DIAMETER NO GREATER THAN 6 INCHES MORE THAN THE DIAMETER OF THE MAIN IT IS REPLACING, AND
 - 3) INSTALLED IN A MANNER THAT MINIMIZES THE POTENTIAL FOR CONTAMINATION, INCLUDING, BUT NOT LIMITED TO:
 - A. SLEEVING THE NEWLY INSTALLED MAIN, OR
 - B. UTILIZING UPGRADED PIPING MATERIAL

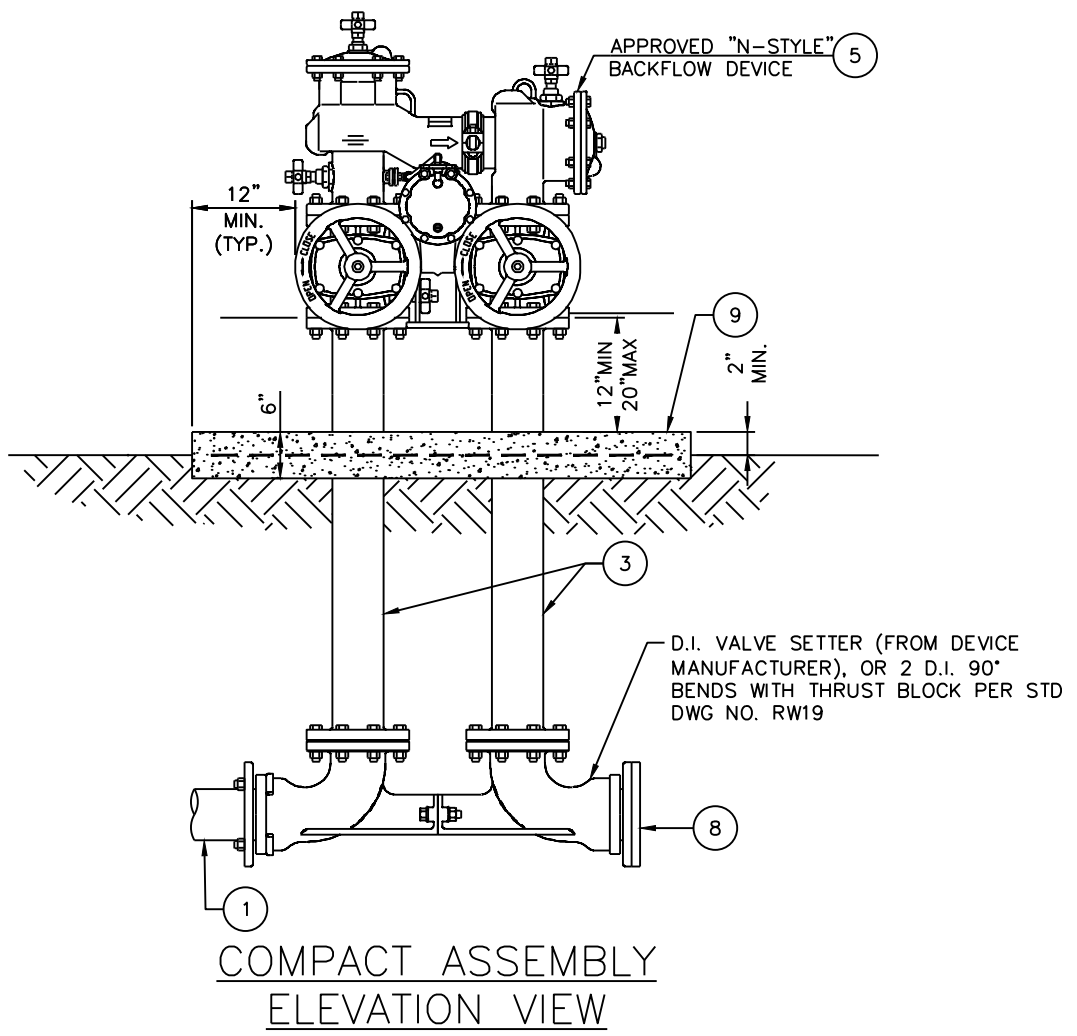
O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-21-3.dwg 10/05/2021 11:00

REVISION	DRAWN	APP'D.	DATE	WEST BASIN MUNICIPAL WATER DISTRICT	SEPARATION OF WATERMANS AND SANITARY SEWERS	STANDARD DRAWING RW21 SHEET 3 OF 3
JUNE 2003						
2021						
APPROVED						
DISTRICT ENGINEER		RCE	DATE			

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-22.dwg 10/05/2021 10:56



CONSTRUCTION ITEMS/MATERIALS LIST	
ITEM NO.	SIZE AND DESCRIPTION
①	DIP OR PVC PIPE
②	90° DI BEND FLG X P.O.
③	DIP SPOOL FLG X FLG (LENGTH AS REQUIRED)
④	90° DI BEND FLG x FLG (FOR 3" BACKFLOW ASSEMBLY USE 4"x3" D.I. 90° REDUCING BEND - FLG X FLG)
⑤	APPROVED DOUBLE CHECK OR REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY WITH APPROPRIATE RESILIENT WEDGE GATE VALVES. GATE VALVES SHALL BE PROVIDED AS INTEGRAL PART OF BACKFLOW ASSEMBLY.
⑥	90° DI BEND FLG. X FLG
⑦	ADJUSTABLE PIPE SUPPORT PER STD. DWG RW29.
⑧	BLIND FLANGE
⑨	6" THICK CONCRETE SLAB REINFORCED WITH W.W.F. 1.6x1.6



NOTES:

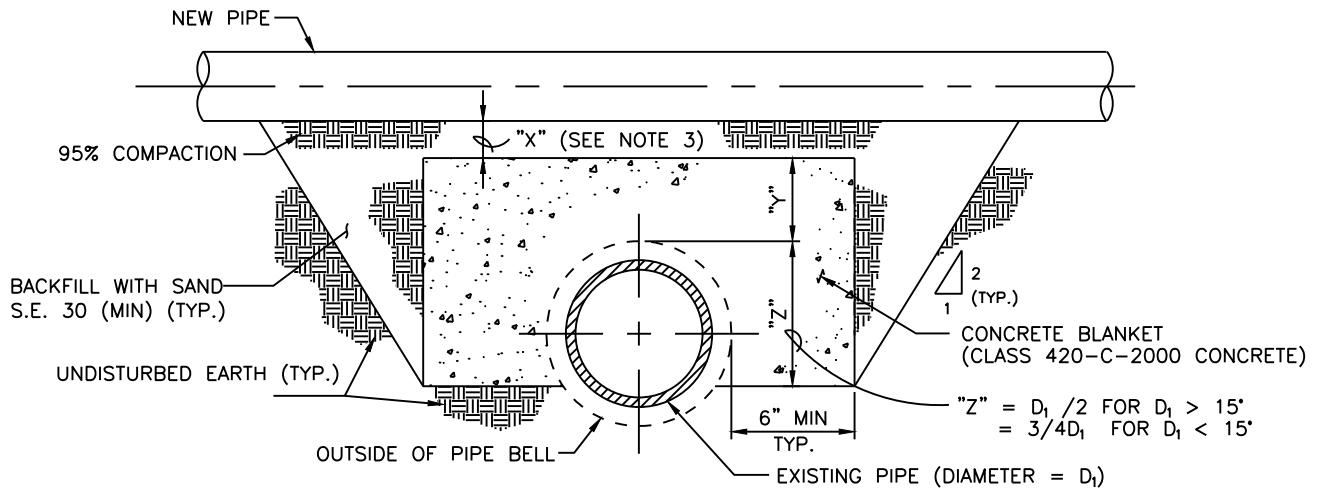
1. ALL UNITS MUST BE IN THE LATEST EDITION OF THE LIST OF APPROVED BACKFLOW PREVENTION DEVICES AS SUPPLIED BY THE "FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH" BY THE U.S.C. SCHOOL OF ENGINEERING.
2. NOTIFY DISTRICT PRIOR TO INSTALLATION OF UNIT.
3. INSTALLATION SHALL COMPLY WITH THE LATEST PLUMBING CODES AND APPLICABLE LOCAL AGENCY REQUIREMENTS.
4. UPON COMPLETION OF THE INSTALLATION OF THE DEVICE, A TEST SHALL BE PERFORMED AND A CERTIFICATE OF ADEQUACY AND OPERATIONAL COMPLIANCE SHALL BE FURNISHED TO DISTRICT. THE TEST SHALL BE PERFORMED BY A TESTING AGENCY APPROVED BY THE DISTRICT.
5. THRUST BLOCKS SHALL BE SIZED PER RW19.
6. FOR "DISTRICT'S RECOMMENDED STANDARDS" SEE LOCAL PURVEYOR FOR SPECIFIC REQUIREMENTS.
7. ALL BACKFLOW DEVICES SHALL BE USC APPROVED.
8. AT NO POINT SHALL BACKFLOW DEVICE BE CLOSER THAN 36" AWAY FROM ANY STRUCTURE, FACE OF CURB, BACK OF SIDEWALK, ABOVE GROUND UTILITY OR TREE/SHRUB.

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER	RCE	DATE	

WEST BASIN MUNICIPAL WATER DISTRICT

DOUBLE CHECK & REDUCED PRESSURE BACKFLOW ASSEMBLY (3" OR LARGER)

STANDARD DRAWING RW22

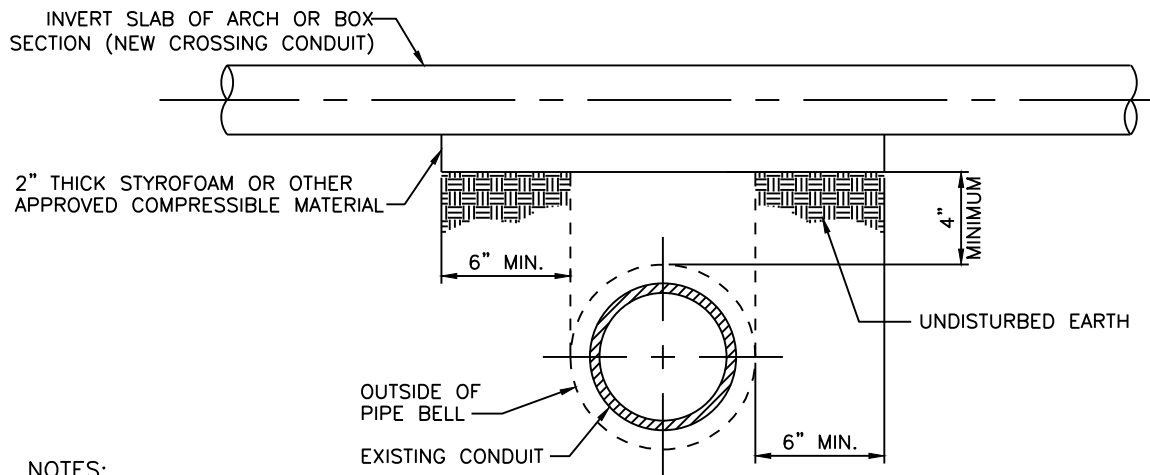


CONCRETE BLANKET

(FOR EXISTING PIPES CROSSED OVER BY A NEW PIPE)

NOTES:

1. CONCRETE BLANKET IS REQUIRED WHEN THE CLEARANCE BETWEEN THE TOP OF THE EXISTING PIPE AND THE BOTTOM OF THE CROSSING PIPE IS LESS THAN 18".
2. "Y" = $D_1/6$ (6" MIN.) WHERE THE CLEARANCE BETWEEN THE TOP OF THE EXISTING PIPE AND THE BOTTOM OF CROSSING PIPE IS LESS THAN "Y". THE CONCRETE SHALL BE PLACED BETWEEN THE PIPES AND AROUND THE SIDES OF THE CROSSING PIPE UP TO A LEVEL EQUAL TO "Y" ABOVE THE EXISTING PIPE, OR AS REQUIRED BY NOTE 3 BELOW, WHICHEVER IS HIGHER.
3. "X" = 4-INCHES, MINIMUM, TO PROVIDE BEDDING MATERIAL FOR THE CROSSING PIPE. WHEN "X" IS LESS THAN MINIMUM, THE ENTIRE SURFACE OF THE BLANKET SHALL BE RAISED TO MAKE CONTACT WITH THE LOWER 90° OF THE CROSSING PIPE.
4. THE BLANKET SHALL EXTEND LONGITUDINALLY TO THE FIRST JOINT BEYOND THE TRENCH EXCAVATION AT EACH END OF THE BLANKET, EXCEPT THAT THE BLANKET NEED NOT BE EXTENDED MORE THAN 4 FEET BEYOND THE TRENCH.
5. WHENEVER A PIPE BELL IS ENCOUNTERED WITHIN THE LIMITS OF THE BLANKET, ALL DIMENSIONS SHALL REFER TO THE BELL.
6. DUCTILE IRON PIPE SHALL BE WRAPPED WITH A DOUBLE LAYER OF 8-MIL POLYETHYLENE ENCASEMENT PRIOR TO PLACEMENT OF CONCRETE BLANKET.



NOTES:

1. COMPRESSIBLE BLANKET IS REQUIRED WHEN THE CLEARANCE BETWEEN THE TOP OF THE EXISTING PIPE AND THE BOTTOM OF THE CROSSING CONDUIT (BOX OR ARCH) IS LESS THAN 18".
2. THE BLANKET SHALL EXTEND LONGITUDINALLY FOR THE FULL CROSSING CONDUIT TRENCH WIDTH.

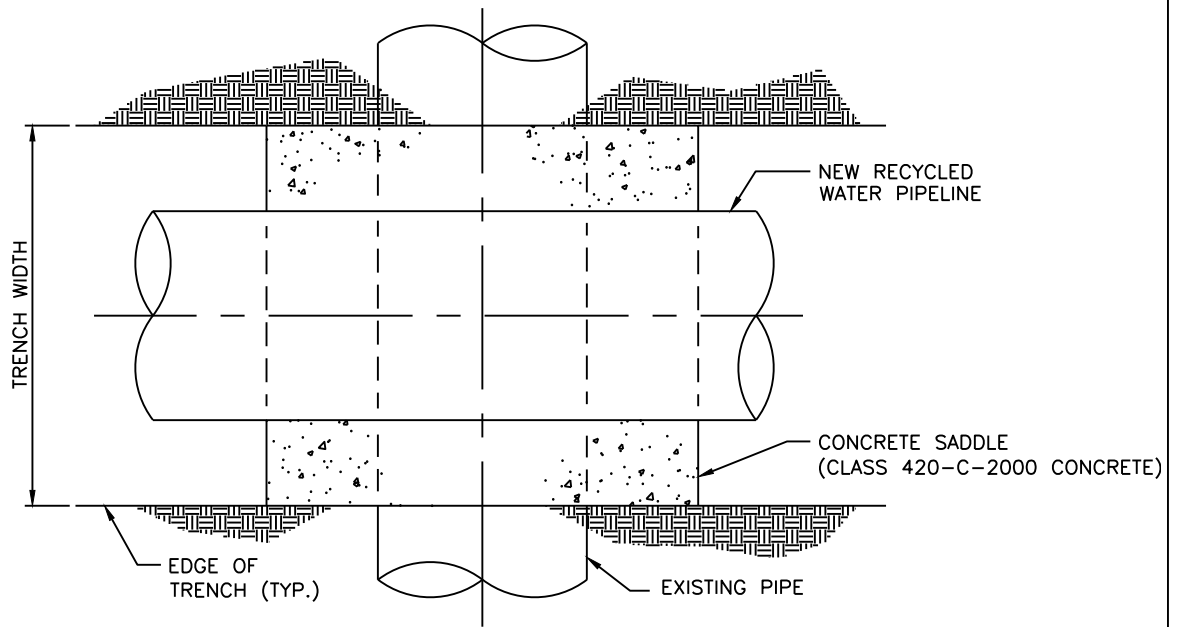
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

BLANKET PROTECTION FOR PIPES

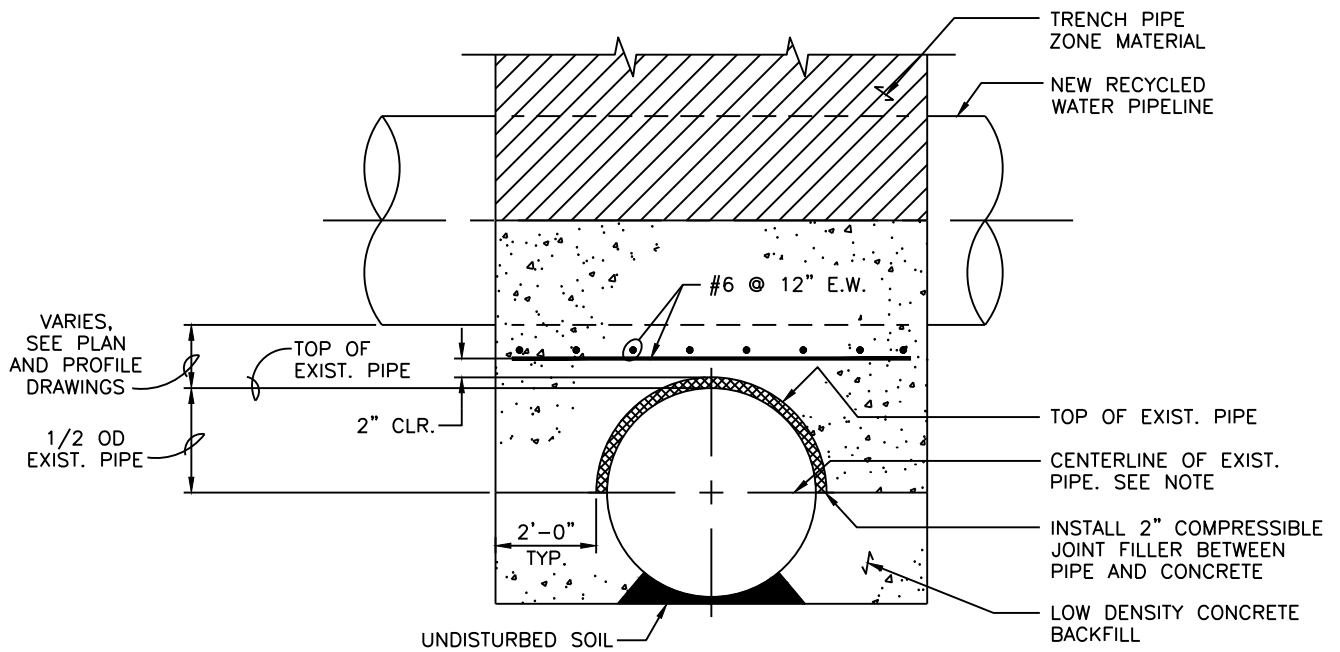
STANDARD
DRAWING

RW23



PLAN

N.T.S.



ELEVATION

N.T.S.

NOTE:

EXISTING PIPE MAY BE FRAGILE. USE EXTREME CAUTION WHEN REMOVING SOIL FROM EXTERIOR OF EXISTING PIPE TO AVOID DAMAGE.

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-24.dwg 10/05/2021 11:00

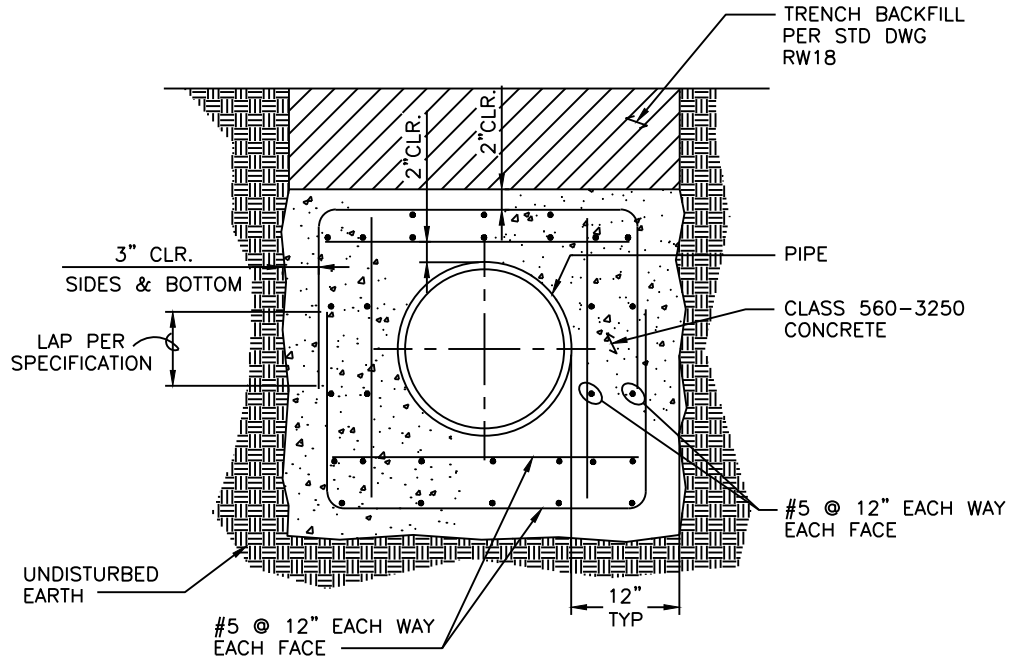
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

CONCRETE SADDLE FOR EXISTING PIPES CROSSED UNDER NEW PIPE

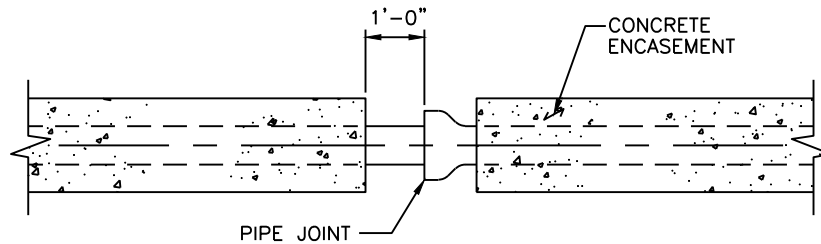
STANDARD DRAWING

RW24



NOTES:

1. SEE STANDARD DRAWING RW17 FOR TRENCH WIDTH.
2. TEMPORARY SUPPORTS SHALL BE USED TO SUPPORT PIPE WHEN PLACING CONCRETE. TO AVOID FUTURE CONCENTRATED LOADS, SUPPORTS SHALL BE REMOVED OR SHALL BE SHAPED TIMBERS WITH 1/2-INCH EXPANSION JOINT MATERIAL PADDING.
3. ABOVE DETAIL (12" THICK WITH 2 SETS OF REBAR) IS FOR CONCRETE ENCASEMENT FOR STRUCTURAL LOADING OR THRUST RESTRAINT APPLICATIONS. FOR PIPE CONCRETE ENCASEMENT ONLY, THE MINIMUM THICKNESS CAN BE REDUCED TO 6-INCHES MINIMUM AND ONLY ONE SET OF REBAR.
4. DUCTILE IRON PIPE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE ENCASEMENT PRIOR TO PLACEMENT OF CONCRETE ENCASEMENT.
5. ALL PIPE IDENTIFICATION SHALL BE ATTACHED TO PIPE PRIOR TO THE PLACEMENT OF CONCRETE ENCASEMENT.



JOINT DETAIL
N.T.S.

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-25.dwg 11/19/2021 14:53

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

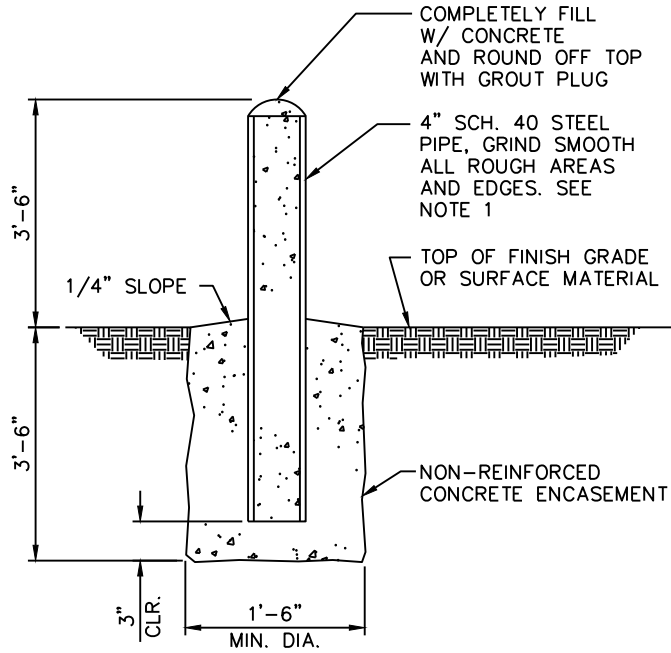
WEST BASIN MUNICIPAL WATER DISTRICT

CONCRETE ENCASEMENT

STANDARD
DRAWING

RW25

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-26.dwg 10/05/2021 11:01



NOTES:

1. PAINT WITH TWO COATS OSHA SAFETY YELLOW

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

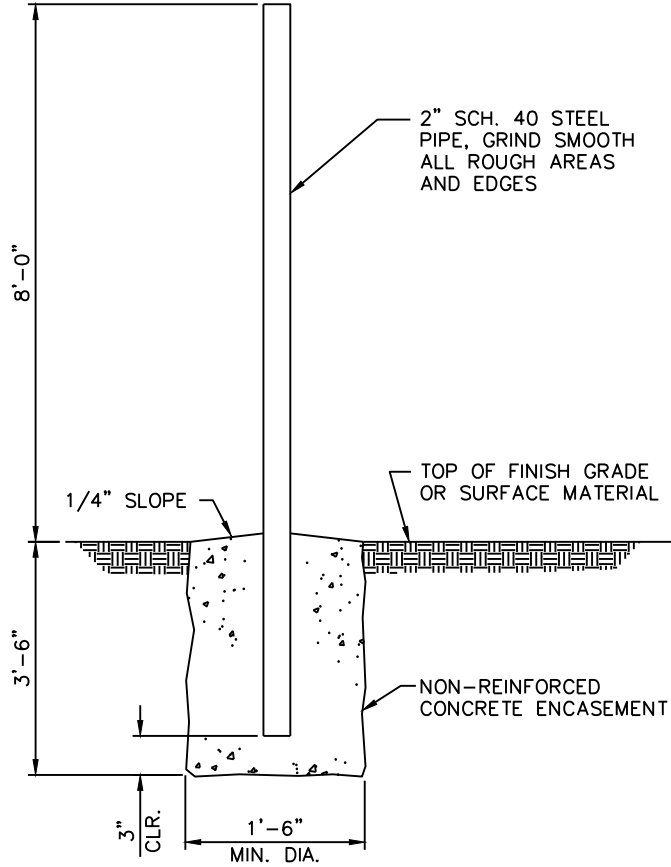
WEST BASIN MUNICIPAL WATER DISTRICT

GUARD POST

STANDARD DRAWING

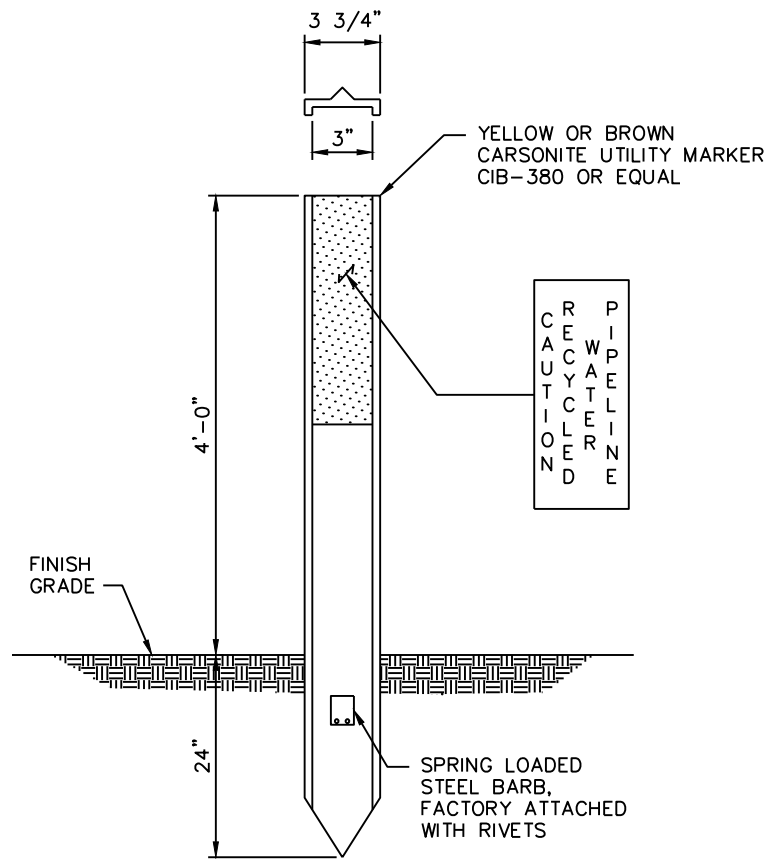
RW26

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-27.dwg 10/05/2021 11:01



REVISION	DRAWN	APP'D.	DATE	WEST BASIN MUNICIPAL WATER DISTRICT			
JUNE 2003						SIGN POST	
2021							
APPROVED							
DISTRICT ENGINEER		RCE	DATE				

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-28.dwg 10/05/2021 11:01



NOTES:

1. LOCATE MARKER POST AT EVERY HORIZONTAL ANGLE POINT, EACH BC AB EC OF HORIZONTAL CURVES, AND AT A MAXIMUM SPACING OF EVERY 300 FEET BETWEEN ANGLE POINTS AND CURVE POINTS.
2. THE ENGINEER SHALL DETERMINE WHICH SIDE AND EXACT LOCATION OF EACH MARKER POST.
3. USE ONLY OUTSIDE STREET RIGHTS-OF WAY.

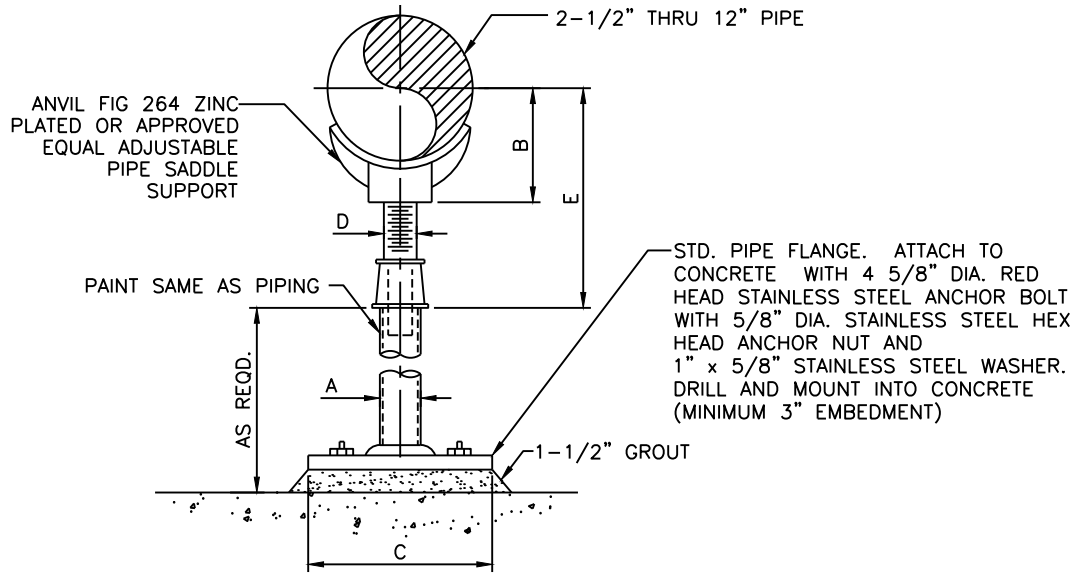
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

MARKER POST

STANDARD
DRAWING

RW28



NOTES:

1. PROVIDE NEOPRENE WAFFLE ISOLATION PAD, SIMILAR TO MASON TYPE "W" OR KORFUND KORPAD 40, UNDER SUPPORT FOOT WHEN PIPING IS ISOLATED OR SUPPORT IS ADJACENT TO MECHANICAL EQUIPMENT.
2. FOR BASE HEIGHT AND FLANGE DIMENSIONS, SEE TABLE BELOW.
3. ALL PIPE SUPPORT COMPONENTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION, WITH THE EXCEPTION OF THE SADDLE AND THREADED STAINLESS STEEL PARTS.

DIMENSION TABLE						
PIPE SIZE	A	B	C	D	E	
					MIN.	MAX.
2-1/2"	2-1/2"	3-1/2"	9"	1-1/2"	8"	13"
3"	2-1/2"	3-3/4"	9"	1-1/2"	8-1/4"	13-1/4"
3-1/2"	2-1/2"	4"	9"	1-1/2"	8-1/2"	13-1/2"
4"	3"	4-1/4"	9"	2-1/2"	9-1/4"	14"
5"	3"	4-7/8"	9"	2-1/2"	10"	14-3/4"
6"	3"	5-1/2"	9"	2-1/2"	10-1/2"	15-1/4"
8"	3"	6-7/8"	9"	2-1/2"	11-3/4"	16-1/2"
10"	3"	8-1/2"	9"	2-1/2"	13-1/2"	18-1/4"
12"	3"	9-15/16"	9"	2-1/2"	15"	19-3/4"

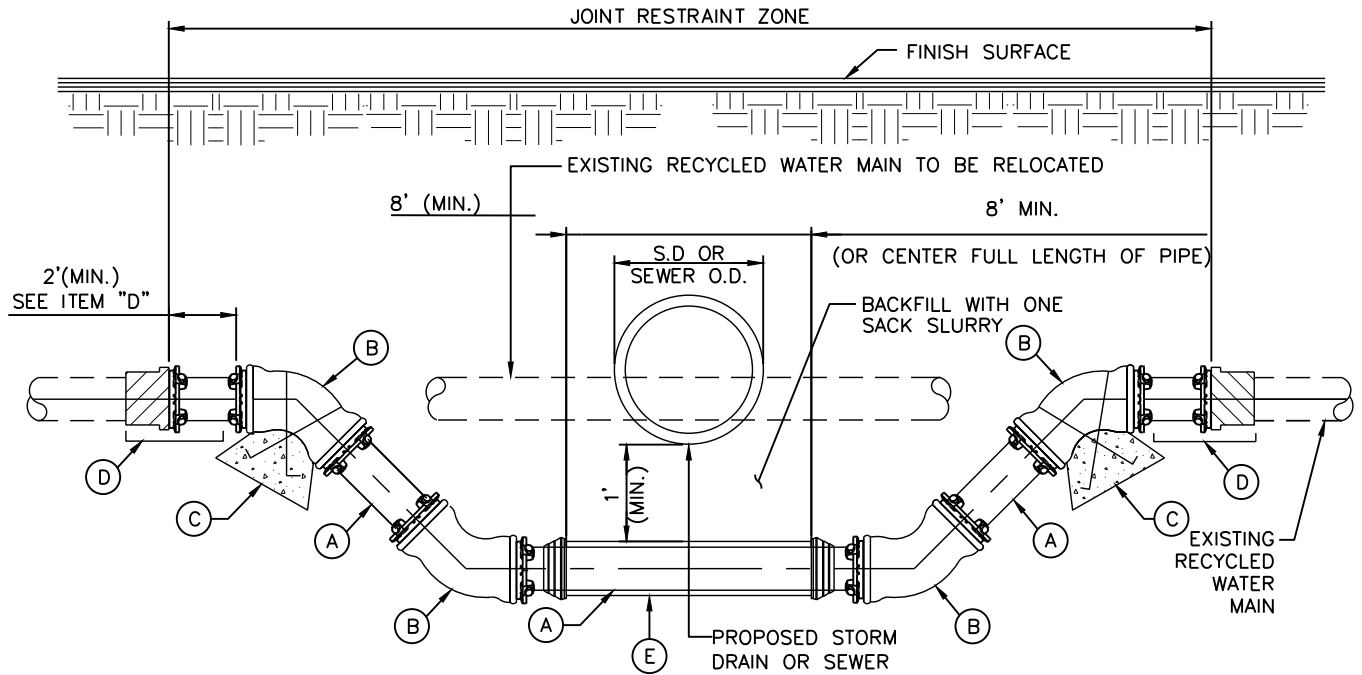
O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-29.dwg 10/05/2021 11:01

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER	RCE		DATE

WEST BASIN MUNICIPAL WATER DISTRICT

PIPE SUPPORT AND DIMENSION TABLE

**STANDARD DRAWING
RW29**



VERTICAL OFFSET PROFILE

ITEM	CONSTRUCTION NOTES
(A)	CONSTRUCT MINIMUM CLASS 350 DUCTILE IRON PIPE, SIZE AS NECESSARY TO MATCH EXISTING MAIN.
(B)	CONSTRUCT 45° BEND (MJ X MJ) WITH MEGALUG JOINT RESTRAINTS AT EACH END.
(C)	CONSTRUCT THRUST BLOCK WITH VERTICAL BEND ANCHOR PER STD. DWG RW19.
(D)	IF EXISTING MAIN IS ASBESTOS-CEMENT (A.C.) PIPE, CONNECT D.I. PIPE TO EXISTING A.C. PIPE USING AN APPROVED D.I. TO A.C. TRANSITION COUPLING, A 2 FOOT SECTION OF D.I. PIPE, AND MEGALUG RESTRAINTS. DO NOT TIE ONTO EXISTING A.C. PIPE WITH MEGALUG RESTRAINTS.
(E)	CONSTRUCT WATER PIPE CASING PER STD. DWG RW20.

NOTES:

1. RECYCLED WATER MAIN CONSTRUCTION SHALL COMPLY WITH CALIFORNIA CODE OF REGULATIONS TITLE 22, CALIFORNIA WATER WORKS STANDARDS, CHAPTER 16 AND DDW SEPARATION REQUIREMENTS. SEE STD DWG RW21
2. ALL BURIED IRON SHALL BE WRAPPED WITH 1 LAYER OF 10 MIL POLYETHYLENE SHEETING TAPED IN PLACE.
3. ALL BURIED NUTS AND BOLTS SHALL BE TYPE 316 STAINLESS STEEL.
4. NO UNRESTRAINED JOINTS BETWEEN FITTINGS.
5. WEST BASIN CAN NOT GUARANTEE A COMPLETE SHUT DOWN OF EXISTING MAIN, WEST BASIN WILL ATTEMPT TO SHUT DOWN MAINS AS COMPLETELY AS POSSIBLE; HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND ISOLATION FOR TESTING PURPOSES.
6. THIS STANDARD DRAWING SHALL APPLY ONLY TO 12" AND SMALLER RECYCLED WATER MAINS. OFFSETS IN LARGER RECYCLED WATER MAINS MUST BE DESIGNED BY A REGISTERED CIVIL ENGINEER AND APPROVED BY THE DISTRICT.

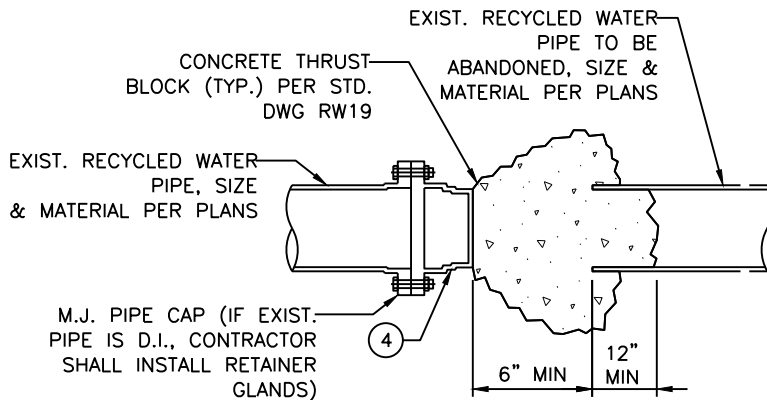
REVISION	DRAWN	APP'D.	DATE
NEW 2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

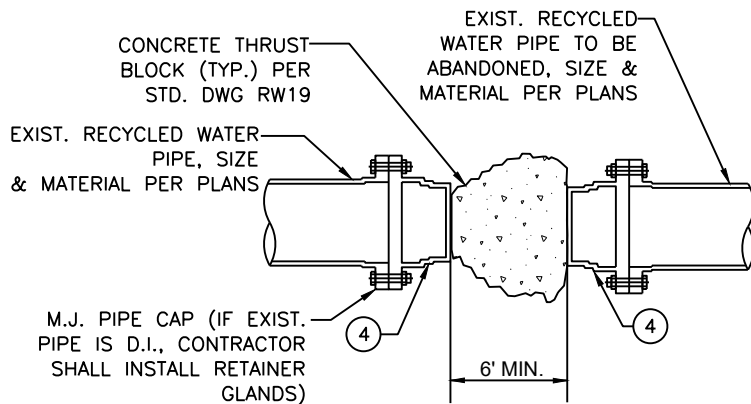
WATER MAIN VERTICAL
OFFSET

STANDARD
DRAWING
RW30

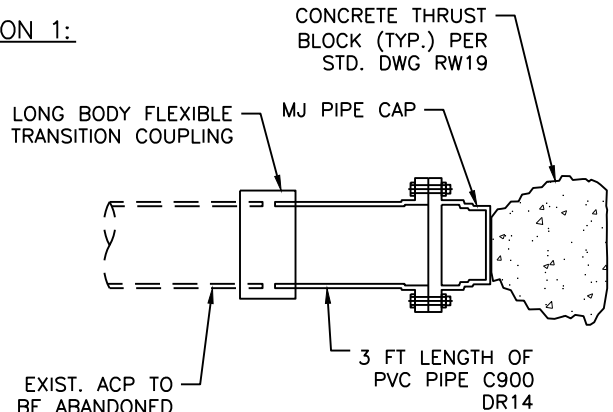
O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-31.dwg 10/05/2021 11:01



OPTION 1:



OPTION 2:



**(ABANDONMENT OF ACP)
OPTION 3:**

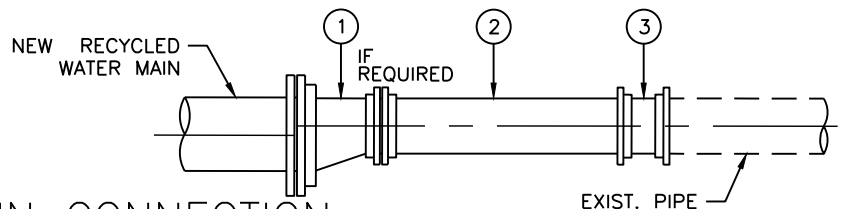
NOTES:

1. DRAIN WATERLINE COMPLETELY BEFORE PLUGGING. ALL WATER DRAINED FROM PIPELINE SHALL BE DISCHARGED INTO A SEWER SYSTEM.
2. CAP, PLUG, OR BLIND FLANGE PER FIELD CONDITIONS.
3. PIPES 10" IN DIAMETER AND LARGER TO BE ABANDONED IN PLACE SHALL BE FILLED WITH SLURRY.

CUT / CAP AND PLUG

NOTE:

IF EXISTING PIPE IS ACP, INSTALL LONG BODY FLEXIBLE TRANSITION COUPLING IN LIEU OF MJ SLEEVE



TIE-IN CONNECTION

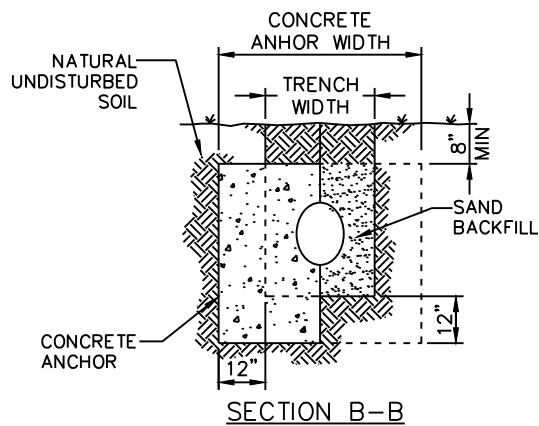
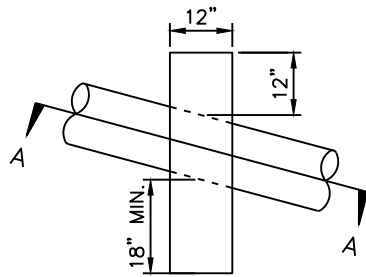
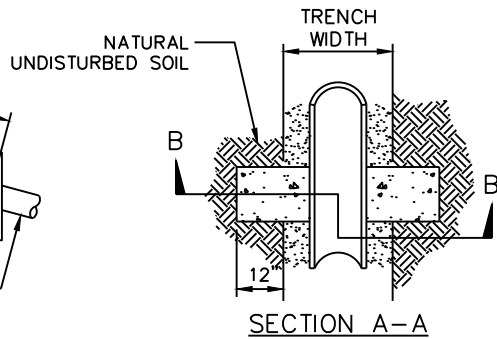
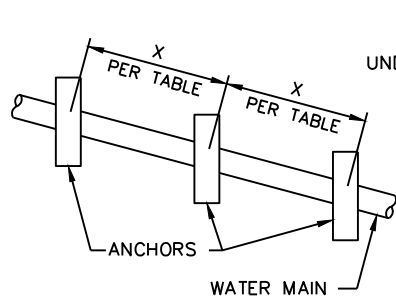
CONSTRUCTION ITEMS / MATERIALS LIST		
NO.	SIZE AND DESCRIPTION	MANUFACTURER
①	D.I. REDUCER (IF NEEDED)	---
②	SPOOL - PVC OR MATCH NEW MAIN MATERIAL	---
③	COUPLING	---
④	D.I. CAP	---

REVISION	DRAWN	APP'D.	DATE
NEW 2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

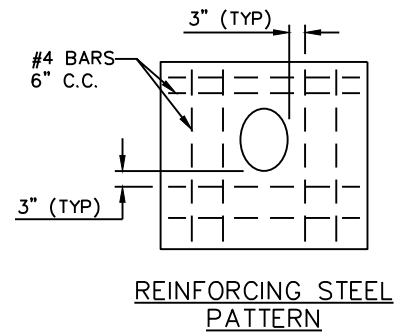
**CUT/CAP AND PLUG INSTALLATION
TIE-IN CONNECTION INSTALLATION**

STANDARD
DRAWING
RW31



NOTES:

1. PIPE ANCHORS REQUIRED ON ALL SLOPES OF 20% OR GREATER.
2. ANCHOR SHALL EXTEND 12" INTO NATURAL UNDISTURBED SOIL.
3. CONCRETE SHALL BE CLASS 560-C-3250
4. ANCHORS FOR TRAPEZOIDAL TRENCH SECTIONS WILL CONFORM TO TRENCH CROSS SECTION AND EXTEND 12" INTO UNDISTURBED SOIL.



TABLE

PIPE SLOPE	X DISTANCE
20% TO 35%	36'
35% TO 50%	24'
> 50%	16'

SLOPE ANCHORS

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-32.dwg 10/05/2021 11:01

REVISION	DRAWN	APP'D.	DATE
NEW 2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

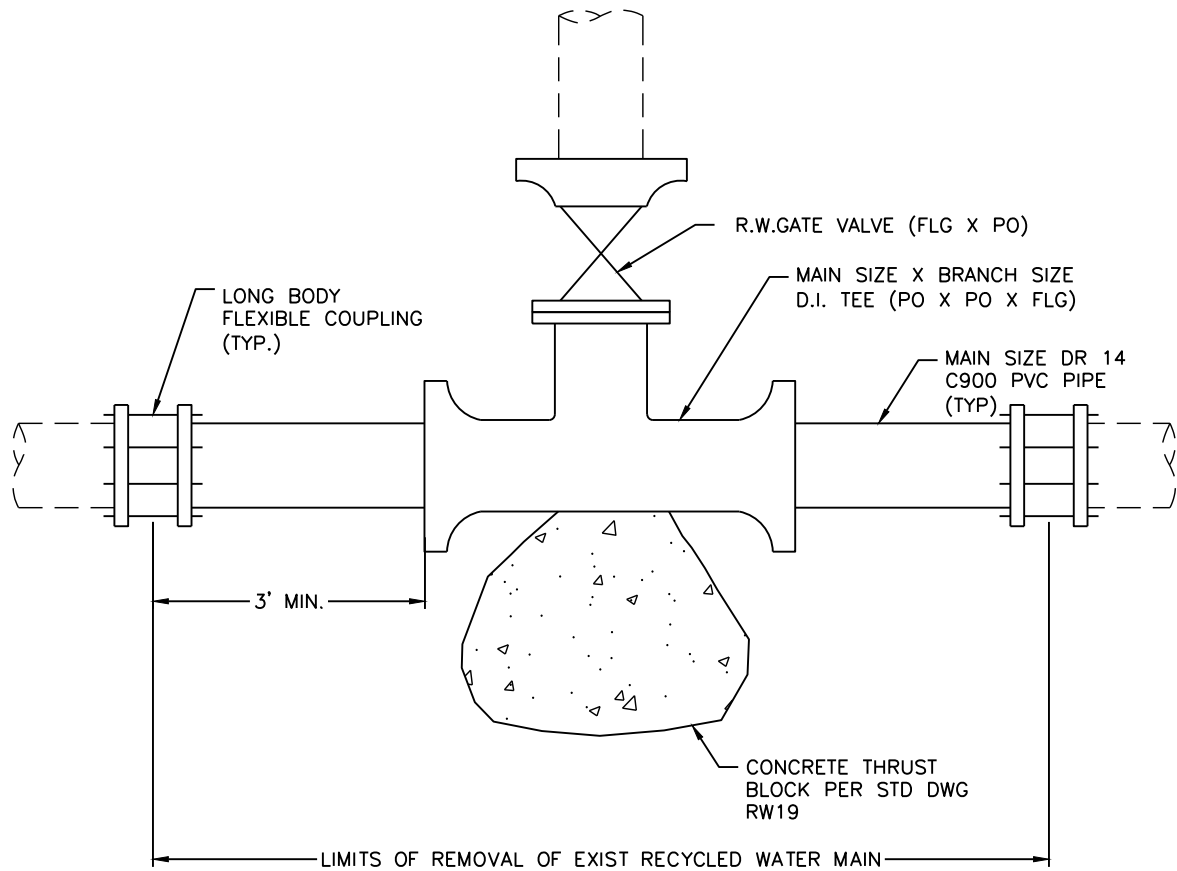
WEST BASIN MUNICIPAL WATER DISTRICT

SLOPE ANCHORS

STANDARD
DRAWING

RW32

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-33.dwg 10/05/2021 11:01



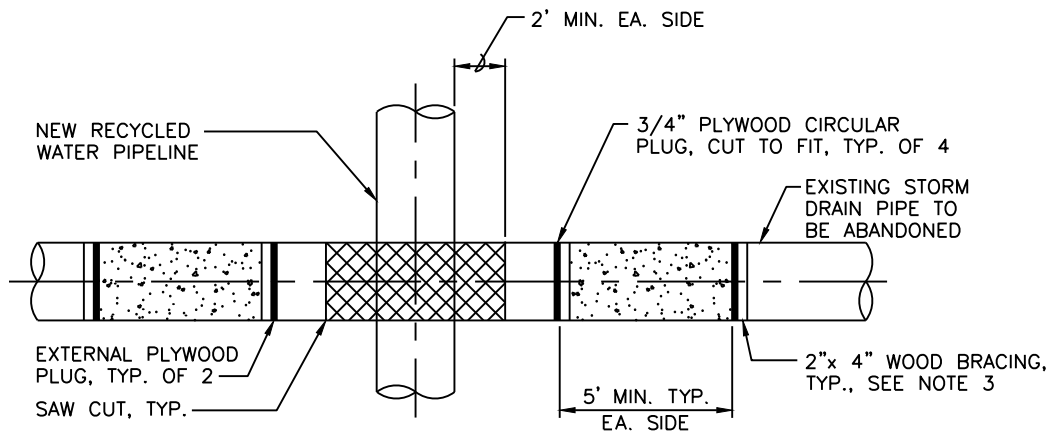
CUT-IN TEE

REVISION	DRAWN	APP'D.	DATE
NEW 2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

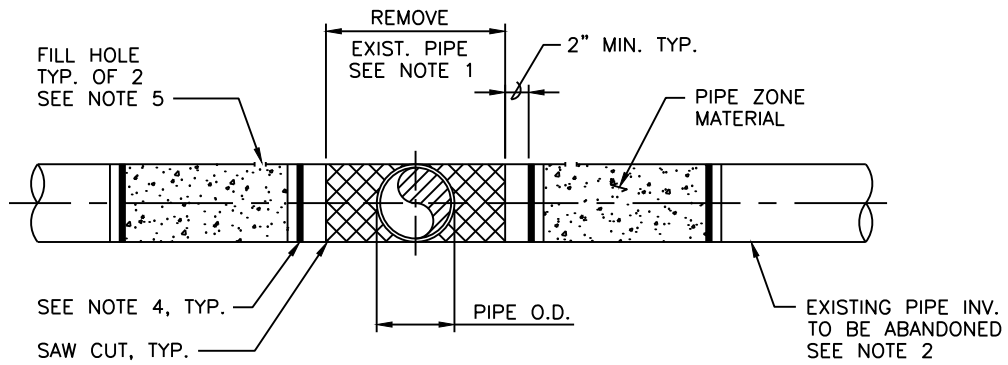
CUT-IN TEE

STANDARD
DRAWING
RW33



PLAN

N.T.S.



ELEVATION

N.T.S.

NOTES:

1. CONTRACTOR SHALL REMOVE THE SECTION OF EXISTING STORM DRAIN PIPE AS SHOWN ABOVE AND CLEAN BOTH ENDS AS REQUIRED FOR THE PLUGS.
2. THE ACTUAL INVERTS OF THE EXISTING PIPE AND THE NEW MAIN PIPELINE MAY BE DIFFERENT THAN SHOWN.
3. THE CONTRACTOR SHALL PROVIDE ADEQUATE WOOD BRACING WITH WEDGES AS REQUIRED TO WITHSTAND THE CONTROL DENSITY FILL FORCE. AT THE CONTRACTORS OPTION, A DIFFERENT BRACED PLUG SYSTEM MAY BE SUBMITTED FOR REVIEW.
4. THE EXTERNAL PLYWOOD PLUGS SHALL BE BACKFILLED TO THE CROWN OF EXISTING PIPE PRIOR TO FILLING WITH ONE SACK SLURRY.
5. THE CONTRACTOR SHALL DRILL TWO FILL HOLES AS REQUIRED AT THE TOP OF EACH EXISTING PIPE. THE EXISTING PIPE SECTION SHALL BE FILLED WITH ONE SACK SLURRY UNTIL IT COMES OUT OF THE HOLES.

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-34.dwg 10/05/2021 11:02

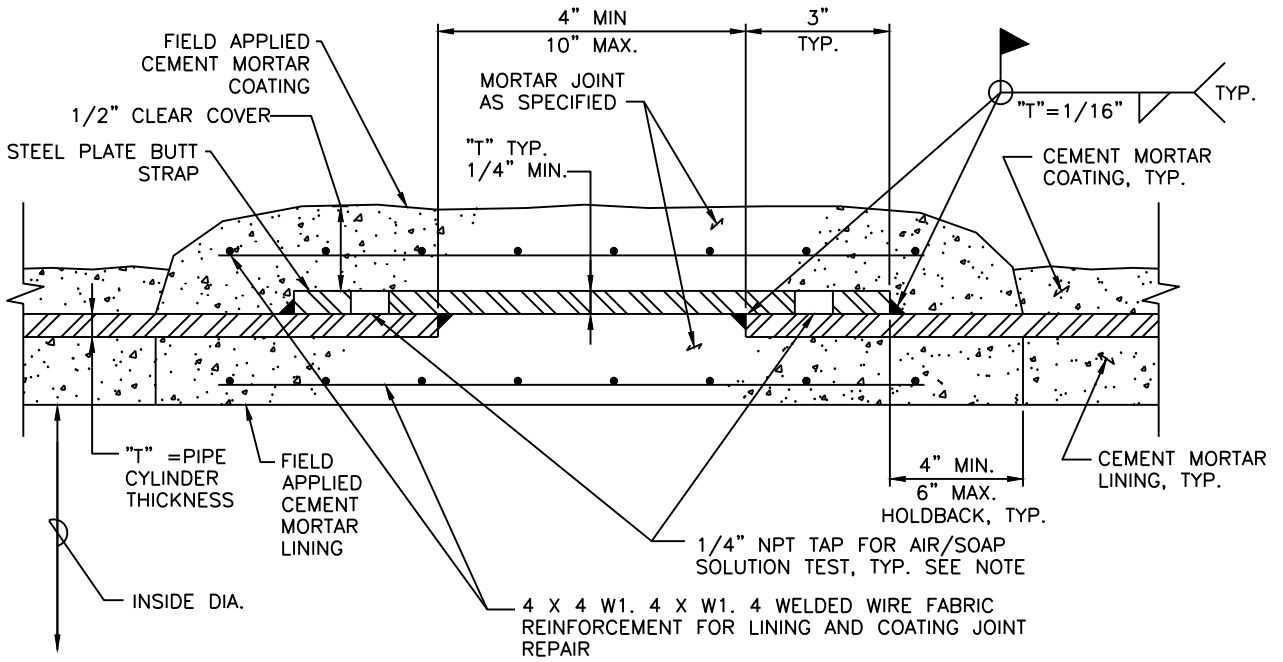
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

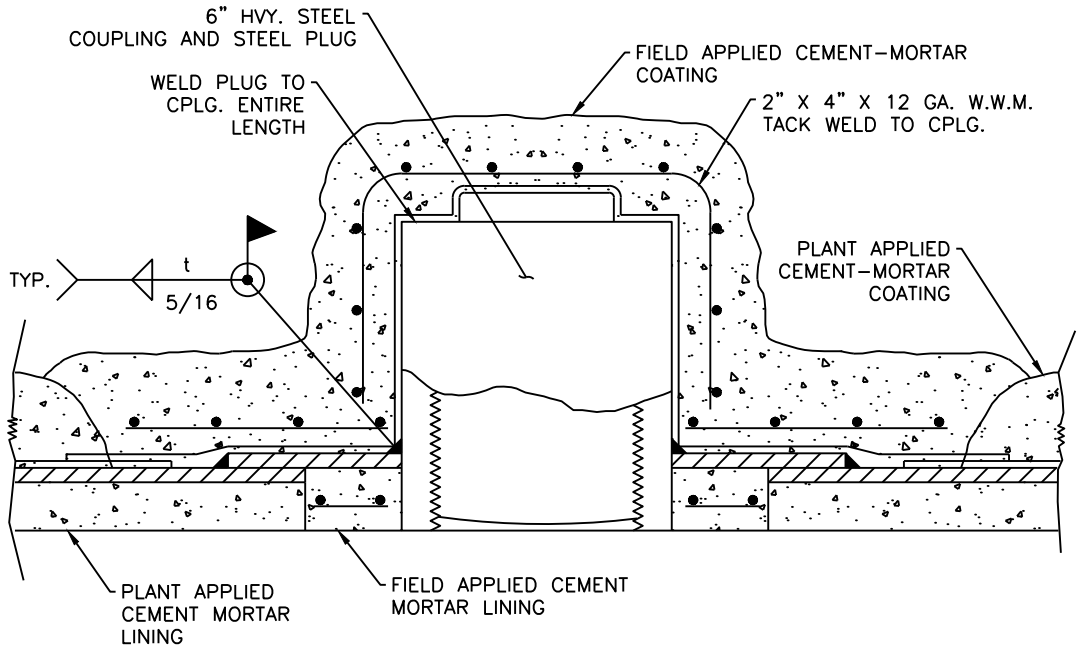
PIPE PLUG DETAIL
ABANDONED STORM DRAIN

STANDARD
DRAWING

RW34



PIPES 24-INCHES OR LARGER



HANDHOLE

NOTES:

1. CONTRACTOR SHALL CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 20 PSI AIR PRESSURE. IF LEAKS ARE DETECTED, REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS. PLUG HOLES AT COMPLETION OF TESTS AND COAT WITH BRASS PLUG OR WELD.
2. CEMENT MORTAR LINING AND COATING PER AWWA C-205
3. TYPICAL HANDHOLES REQUIRED ON PIPE SMALLER THAN 24" IN DIAMETER
4. MINIMUM OF TWO HANDHOLES REQUIRED FOR EACH BUTT STRAP

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

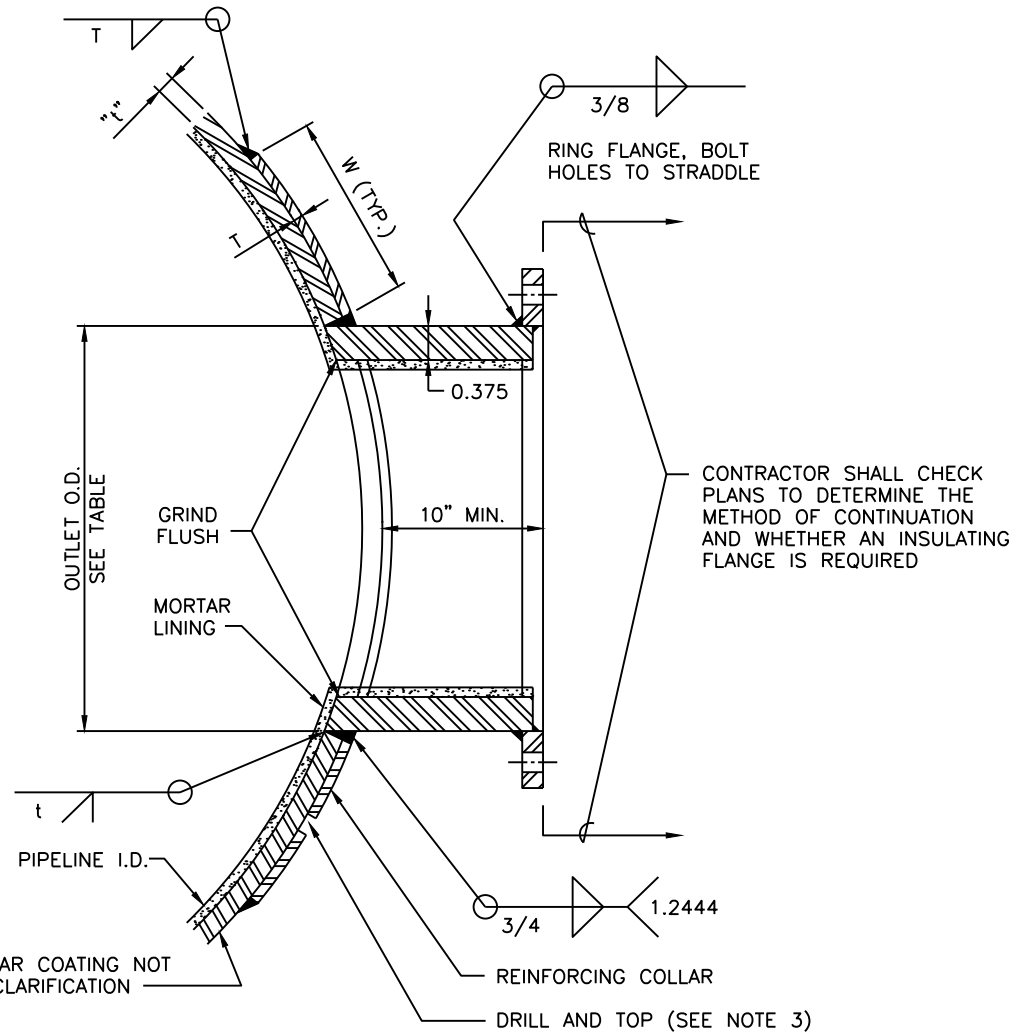
WEST BASIN MUNICIPAL WATER DISTRICT

**BUTT STRAP JOINT
FOR CML & C STEEL PIPE**

STANDARD
DRAWING

RW35

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-36.dwg 10/05/2021 11:02



NOTES:

1. MORTAR LINING AND COATING SHALL BE IN ACCORDANCE WITH AWWA C-205.
2. "t" INDICATES THE THICKNESS OF THE STEEL PIPE AT THE STATION WHERE USED.
3. PIPELINE MANUFACTURER SHALL PERFORM THE FOLLOWING COLLAR LEAK TEST PROCEDURES:
 - a. DRILL AND TAP 1/4" NPT HOLE BEFORE WELDING.
 - b. CONDUCT AN AIR/SOAP SOLUTION LEAK TEST AT 20 PSI AIR PRESSURE.
 - c. IF LEAKS ARE DETECTED REPAIR AND RETEST THE WELDS UNTIL THERE ARE NO DEFECTS.
 - d. PLUG HOLE ON COMPLETION OF TESTS AND COAT AS SPECIFIED.
4. LARGER SIZE OUTLETS REQUIRE SPECIAL DESIGN.

OUTLET NOMINAL SIZE (IN)	OUTLET O.D. (IN)	COLLAR THICKNESS T (IN)	WIDTH W (IN)
4	4-1/2	1/4	3
6	6-5/8	1/4	3
8	8-5/8	1/4	3
10	10-3/4	1/4	4
12	12-3/4	1/4	5

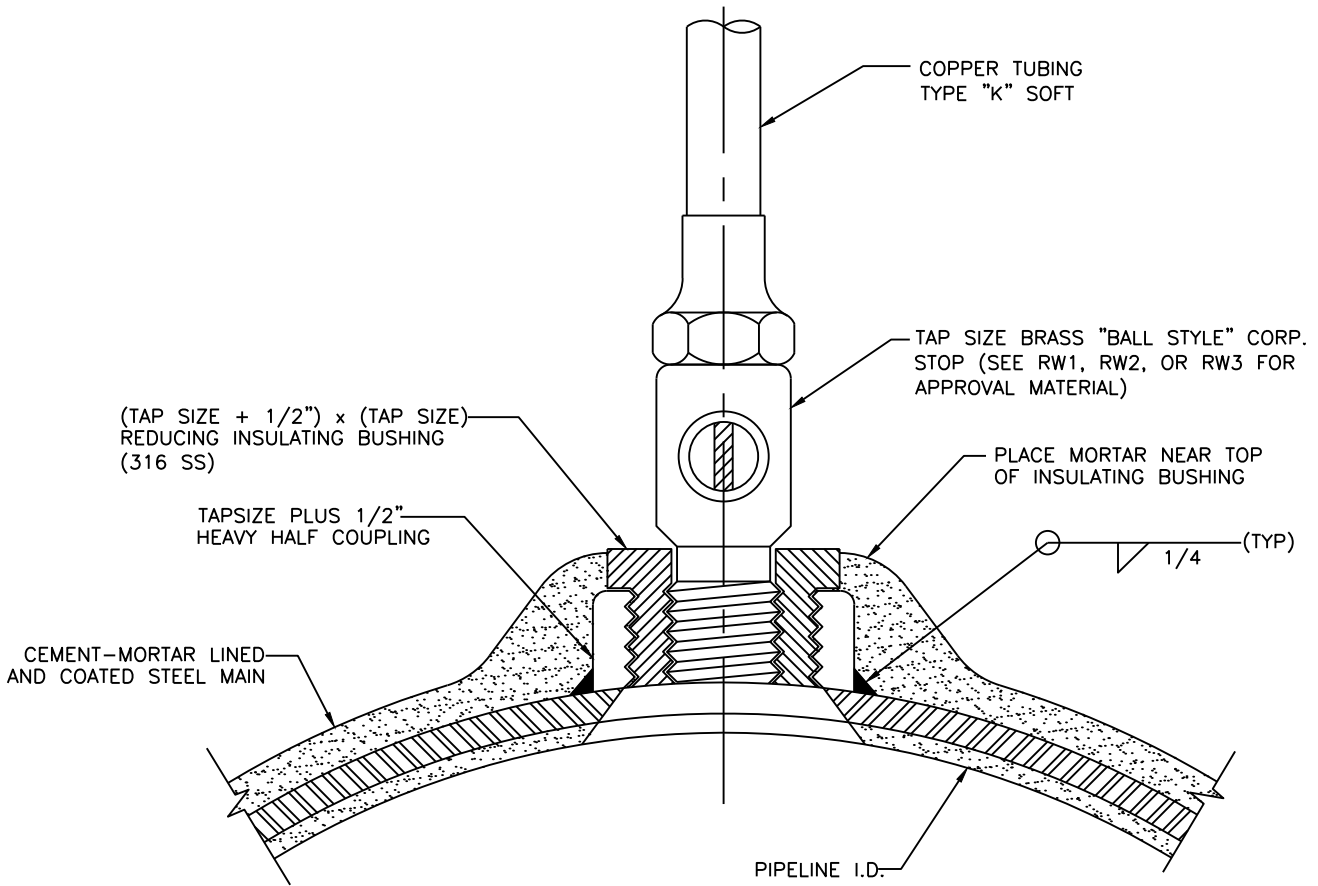
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

4- TO 12-INCH OUTLET DETAIL
CML & C STEEL PIPE

STANDARD
DRAWING

RW36



NOTES:

1. ALL COATING DAMAGED OR REMOVED FOR INSTALLATION OF THE SERVICE TAP SHALL BE REPLACED TO ITS ORIGINAL CONDITION UPON COMPLETION.
2. MORTAR COATING SHALL BE IN ACCORDANCE WITH AWWA C-205

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-37.dwg 10/05/2021 11:02

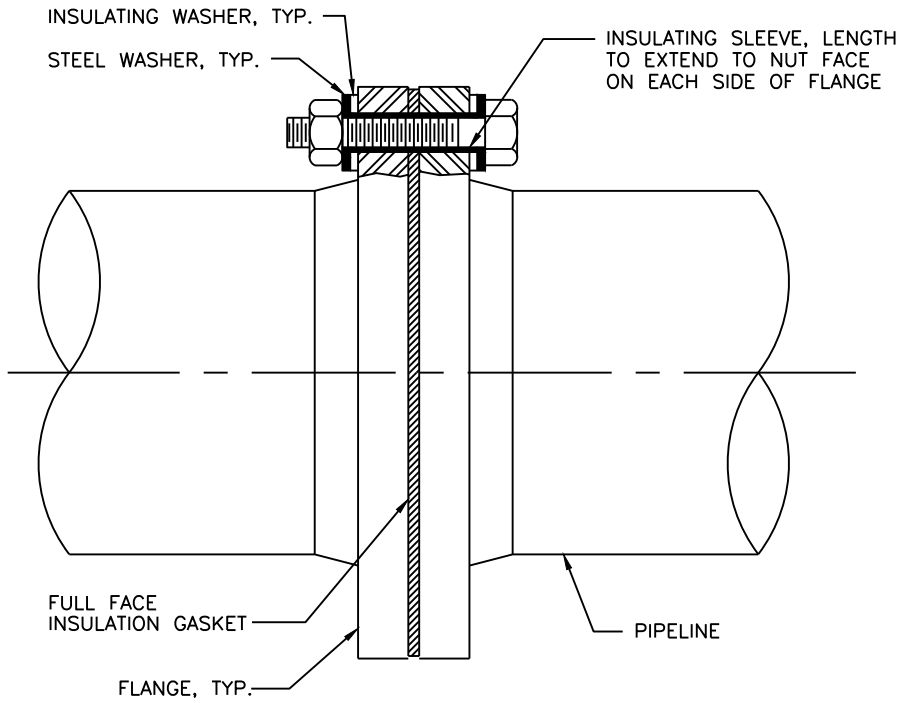
REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

STANDARD TAP TO
CML & C STEEL MAIN

STANDARD
DRAWING
RW37

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-38.dwg 10/05/2021 11:02



NOTES:

1. ABOVE GRADE INSULATING FLANGE INSTALLATION SHOWN.
2. FOR BURIED OR SUBMERGED SERVICE, DELETE INSULATING WASHER ON PROTECTED SIDE OF INSULATING FLANGE.
3. AFTER ASSEMBLY, TEST FOR INSULATION AND APPLY PROTECTIVE COATING AS SPECIFIED.
4. USE HALF WIDTH SLEEVES AT THREADED FLANGE BOLTS (I.E. AT BUTTERFLY VALVE BONNET)
5. INSULATING MATERIALS:
 GASKET - TYPE "E" NEOPRENE FACED PHENOLIC
 SLEEVE - LAMINATED G-10 GLASS
 WASHER - LAMINATED G-10 GLASS SHEET

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

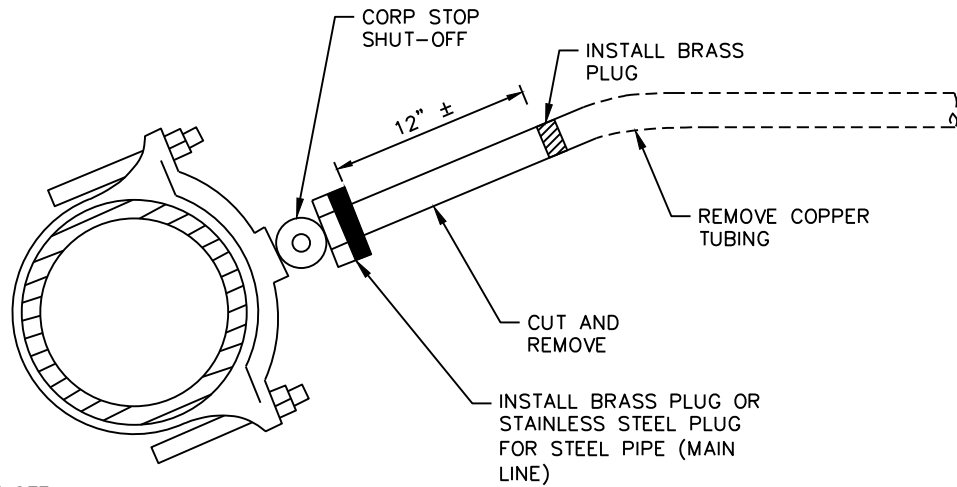
WEST BASIN MUNICIPAL WATER DISTRICT

INSULATING FLANGE

STANDARD
DRAWING

RW38

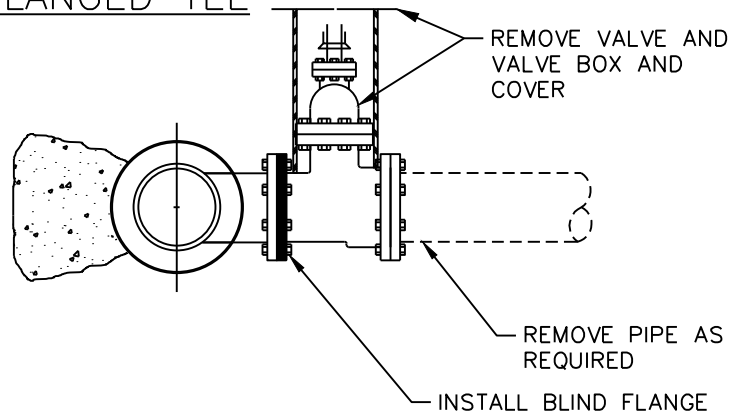
2" AND SMALLER



NOTE:
 REMOVE ABANDONED WATER METER BOX (SEE NOTE NO. 1 BELOW) AND REMOVE AND DISPOSE COPPER SERVICE PIPE TO THE 90° ELBOW OR END OF SWEEP BELOW GROUND. INSTALL BRASS PLUG ON REMAINING END OF COPPER SERVICE PIPING.

4" AND LARGER

FLANGED TEE



NOTE:
 WHEN EXISTING TEE BRANCH HAS A PUSH-ON OR MECHANICAL JOINT, INSTALL DUCTILE IRON PLUG (RESTRAINED) AND THRUST BLOCK.

NOTE:

1. REMOVE METER BOX AND RESTORE HARDSCAPE/LANDSCAPE PER PURVEYOR REQUIREMENTS

O:\Projects\Irvine\09265\200-09265-20001-01\CAD\SheetFiles\Recycled Water\RW-39.dwg 10/05/2021 15:10

REVISION	DRAWN	APP'D.	DATE
NEW 2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

SERVICE
 ABANDONMENT DETAILS

STANDARD
 DRAWING

RW39

RECYCLED WATER NOTES

1. STATIONS SHOWN ARE ALONG THE CENTERLINE OF THE PIPELINE.
2. ELEVATIONS SHOWN ON PIPELINE PROFILE APPLY TO INVERT OF PIPE OR INVERTS AT POINTS OF INTERSECTION OF SLOPE CHANGES.
3. THE CONTRACTOR SHALL ADD FITTINGS AS REQUIRED TO AVOID EXISTING UTILITIES ENCOUNTERED. ANY CHANGE IN PROFILE SHALL BE APPROVED BY THE ENGINEER.
4. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (U.S.A.) AT 1-800-442-4133 OR 811 AT LEAST 48 HOURS PRIOR TO STARTING WORK.
5. THE CONTRACTING OFFICER REPRESENTATIVE INSPECTOR SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION OR ANY INSPECTION.
6. USE THRUST BLOCKS AT ALL LOCATIONS INDICATED ON THE PLANS OR AT ALL BENDS AND REDUCERS. .
7. ALL WORK IS TO BE DONE PER "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" (GREEN BOOK) 2018 EDITION, AND THE DISTRICT'S STANDARD SPECIFICATIONS AND DRAWINGS UNLESS OTHERWISE INDICATED. THE CONTRACTOR SHALL HAVE A COPY OF THESE PLANS AND THE STANDARD SPECIFICATIONS ON THE JOB AT ALL TIMES.
8. THE TOP OF RECYCLED WATER MAINS SHALL BE A MINIMUM OF 42-INCHES BELOW STREET PAVEMENT OR FINISHED GRADE FOR 12-INCH AND SMALL DIAMETER PIPELINES AND 48-INCHES FOR PIPELINES LARGER THAN 12-INCHES. IF THE MINIMUM COVER CAN NOT BE MET, THE PIPELINE SHALL BE ENCASED IN CONCRETE. AT NO TIME SHALL THERE BE LESS THAN 36-INCHES OF COVER FROM TOP OF PIPE TO EXISTING GROUND DURING CONSTRUCTION.
9. ALL CONCRETE SHALL BE CLASS 560-C-3250 AND CONCRETE WORK SHALL BE PER PLANS AND SPECIFICATIONS UNLESS OTHERWISE INDICATED.
10. THE CONTRACTOR SHALL SUBMIT A SHORING PLAN PREPARED BY A REGISTERED CIVIL ENGINEER AS REQUIRED PER SEC. 5-7 OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," 2018 EDITION.
11. PIPELINES SHALL BE FIELD PRESSURE-TESTED IN ACCORDANCE WITH SEC. 306-8.9.2 OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," 2018 EDITION, TO THE MINIMUM TEST PRESSURE INDICATED BELOW OR AS INDICATED ON THE PLANS:

PIPE CLASS	MINIMUM TEST PRESSURE
150	200 PSI
200	250 PSI

12. CONTRACTOR SHALL MAINTAIN THE WORK AREA IN A NEAT, SAFE, CLEAN AND SANITARY CONDITION AT ALL TIMES. STREETS SHALL BE KEPT CLEAN OF DEBRIS, WITH DUST AND NUISANCE BEING CONTROLLED AT ALL TIMES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY CLEAN-UP OF ADJACENT STREETS AFFECTED BY HIS CONSTRUCTION.
13. ALL SURPLUS MATERIAL REMOVED, INCLUDING EXCAVATED MATERIALS, WHICH ARE NOT SUITABLE FOR USE IN THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AWAY FROM THE JOB SITE IN A MANNER AND AT LOCATION ACCEPTABLE TO ALL COGNIZANT AGENCIES.
14. THE CONTRACTOR SHALL POTHOLE AND LOCATE EXISTING UNDERGROUND UTILITIES PRIOR TO THE PREPARATION OF SHOP DRAWINGS IN ACCORDANCE WITH THE SPECIAL PROVISIONS. THE CONTRACTOR SHALL BE LIABLE FOR ANY ADDITIONAL COST REQUIRED IN THE EVENT THAT HE HAS NOT CORRECTLY LOCATED THE EXISTING UTILITIES.
15. ALL BURIED BOLTS AND NUTS SHALL BE TYPE 316 STAINLESS STEEL AND COATED IN ACCORDANCE WITH THE SPECIFICATIONS.
16. THE CONTRACTOR SHALL CONFINE ALL OF HIS ACTIVITIES TO THE AREAS WITHIN THE EXISTING AND PROPOSED STREET RIGHT-OF-WAY AND DISTRICT'S PROPERTY OR EASEMENTS SHOWN ON THESE PLANS UNLESS HE OBTAINS WRITTEN CONSENT FROM THE PROPERTY OWNER.
17. CONTRACTOR SHALL REPLACE ALL SURVEY MONUMENTS DISTURBED DURING CONSTRUCTION.
18. THE CONTRACTOR SHALL PROTECT IN PLACE EXISTING SEWER, GAS, WATER LATERALS AND OTHER UTILITIES OR REPLACE IN KIND. LOCATIONS OF EXISTING UTILITIES AND SUB-STRUCTURES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY. CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS, AND DIMENSIONS IN THE FIELD PRIOR TO CONSTRUCTION IN THE AREA OF THE SPECIFIC SUB-STRUCTURE.
19. ALL BURIED VALVES SHALL BE PROVIDED WITH RISERS, VALVE BOXES, AND COVERS PER DISTRICT STANDARD SPECIFICATIONS AND STANDARD DRAWINGS.
20. SHUTDOWN OF EXISTING LINES TO FACILITATE CONNECTION TO EXISTING FACILITIES SHALL BE COORDINATED WITH THE CONTRACTING OFFICER REPRESENTATIVE AND THE DISTRICT.
21. CONTRACTOR SHALL VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POINTS OF CONNECTION PRIOR TO SUBMITTING PIPE FABRICATION DRAWINGS.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ALL EXISTING UTILITIES, PAVEMENT, CURB, TRAFFIC STRIPING AND MARKINGS, TRAFFIC DETECTOR LOOPS, STRUCTURES, TREES, LANDSCAPING, AND IRRIGATION SYSTEMS AS A RESULT OF HIS OPERATIONS, AND WILL BE REQUIRED TO REPAIR OR REPLACE SAME TO THE SATISFACTION OF, AND AS DIRECTED BY, THE CONTRACTING OFFICER REPRESENTATIVE OR IMPACTED UTILITY COMPANY.
23. ALL CONSTRUCTION SURVEYS FOR THIS PROJECT SHALL BE PROVIDED BY THE CONTRACTOR AT HIS EXPENSE. SURVEY POINTS DESTROYED AS A RESULT OF THE CONTRACTOR'S NEGLIGENCE OR FAILURE TO PROVIDE PROPER PROTECTION, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
24. THE CONTRACTOR IS TO MAINTAIN AND PROVIDE THE DISTRICT WITH A "RECORD" SET OF AS-BUILT DRAWINGS AT THE COMPLETION OF ALL WORK PER THE PLANS AND SPECIFICATIONS.
25. ALL TRAFFIC SIGNAL CONDUITS AND LOOPS HAVE NOT BEEN SHOWN ON THESE PLANS. CONTRACTOR SHALL DETERMINE LOCATION OF ALL IMPACTED FACILITIES AND REPLACE ALL TRAFFIC SIGNAL CONDUITS AND LOOPS DAMAGED OR REMOVED DURING CONSTRUCTION.
26. EXISTING OVERHEAD SOUTHERN CALIFORNIA EDISON POWER LINES AND OVERHEAD STREET LIGHT POWER LINES LINES HAVE NOT BEEN SHOWN ON PLANS. CONTRACTOR SHALL IDENTIFY AND PROTECT ALL EXISTING OVERHEAD AND BELOW GRADE UTILITIES.
27. POTHOLE DATA PROVIDED IS FOR DESIGN PURPOSES AND IS SHOWN AS APPROXIMATE ELEVATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UTILITY LOCATIONS.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND ACQUIRING STAGING OR MATERIAL STOCK PILE AREAS, SUBJECT TO APPROVAL OF THE DISTRICT.

REVISION	DRAWN	APP'D.	DATE
JUNE 2003			
2021			
APPROVED			
DISTRICT ENGINEER		RCE	DATE

WEST BASIN MUNICIPAL WATER DISTRICT

STANDARD RECYCLED WATER SYSTEM NOTES

STANDARD
DRAWING
RW40