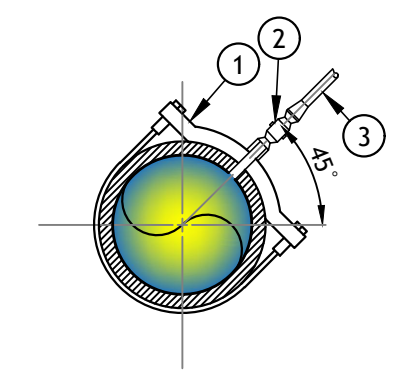
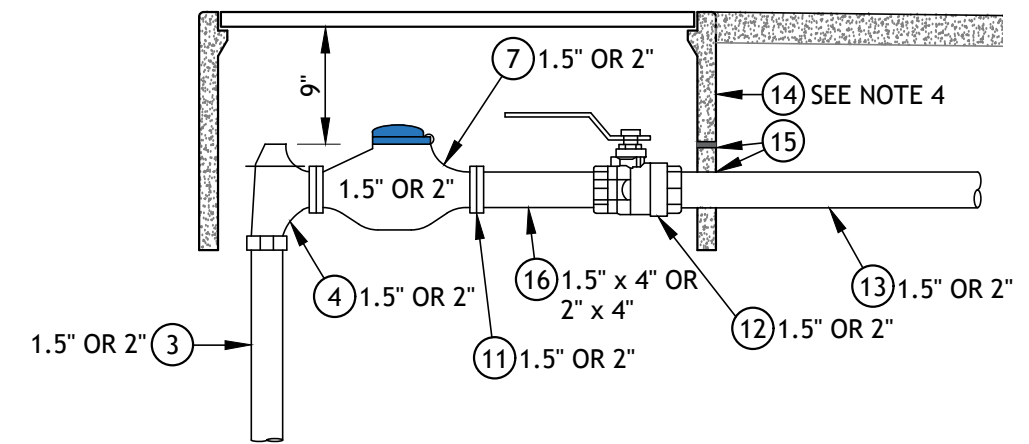
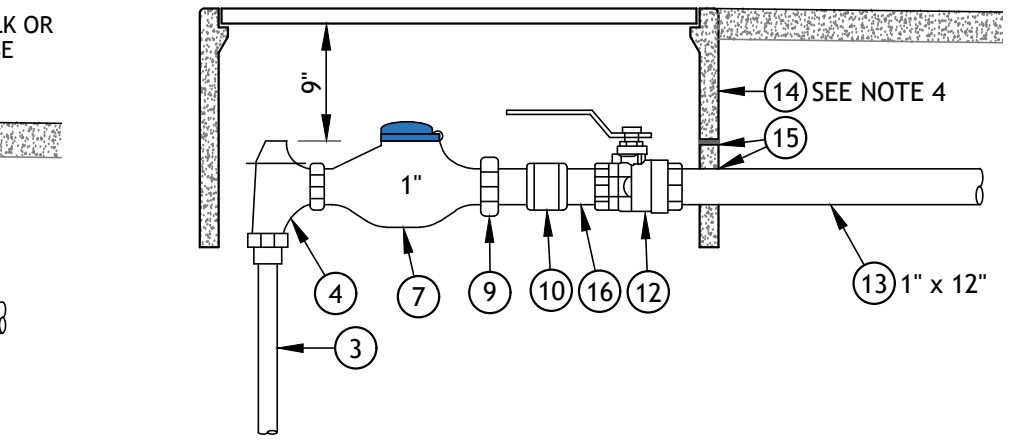
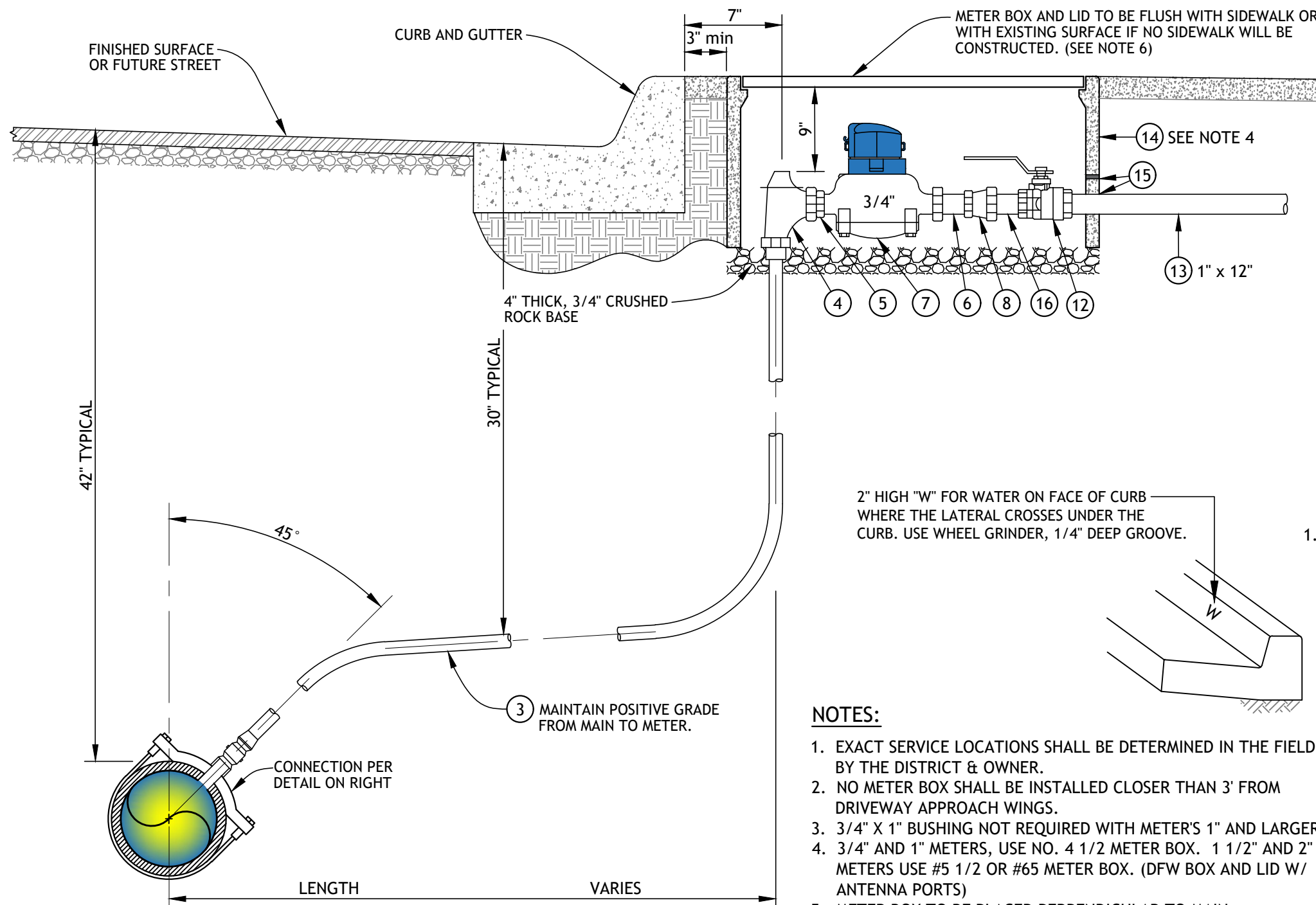
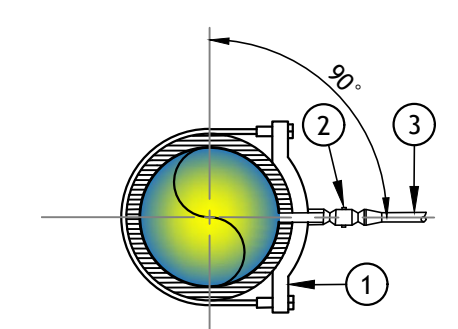


REV: 3/29/2022
 W-101A WATER SERVICE INSTALLATION (D.I.P.)_2022.DWG
 SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-101A WATER SERVICE INSTALLATION (D.I.P.)_2022.DWG



3/4" & 1" CONNECTION DETAIL
SEE NOTE 7



1.5" & 2" CONNECTION DETAIL
SEE NOTE 8 AND 9

ITEM MATERIALS:

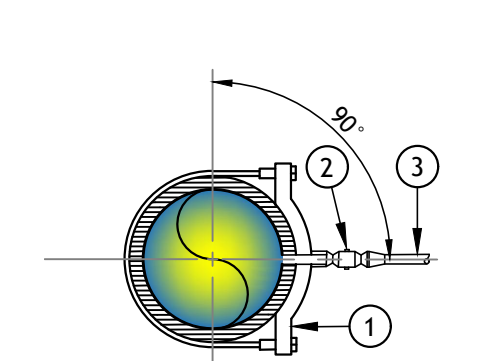
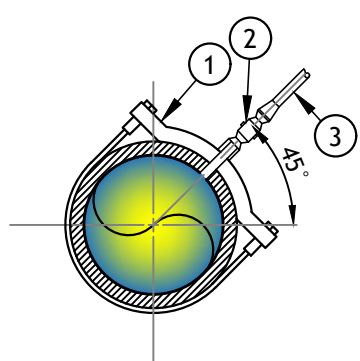
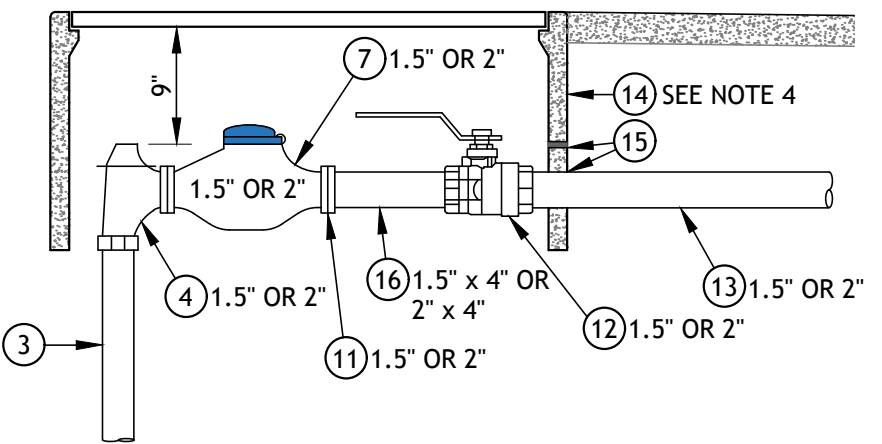
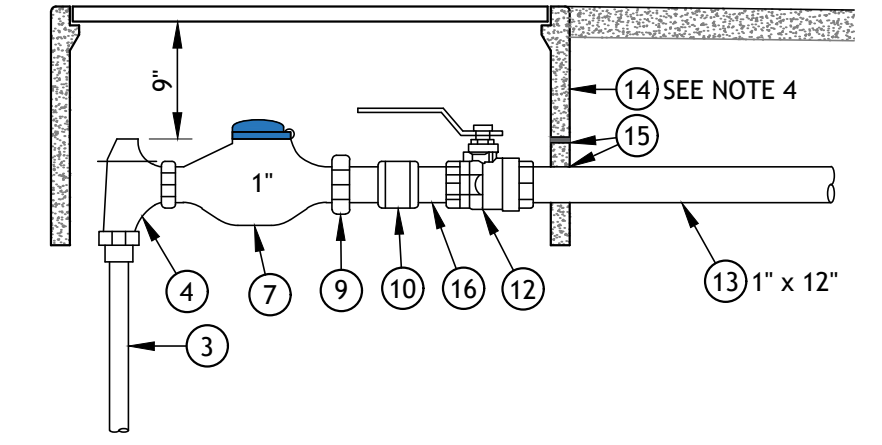
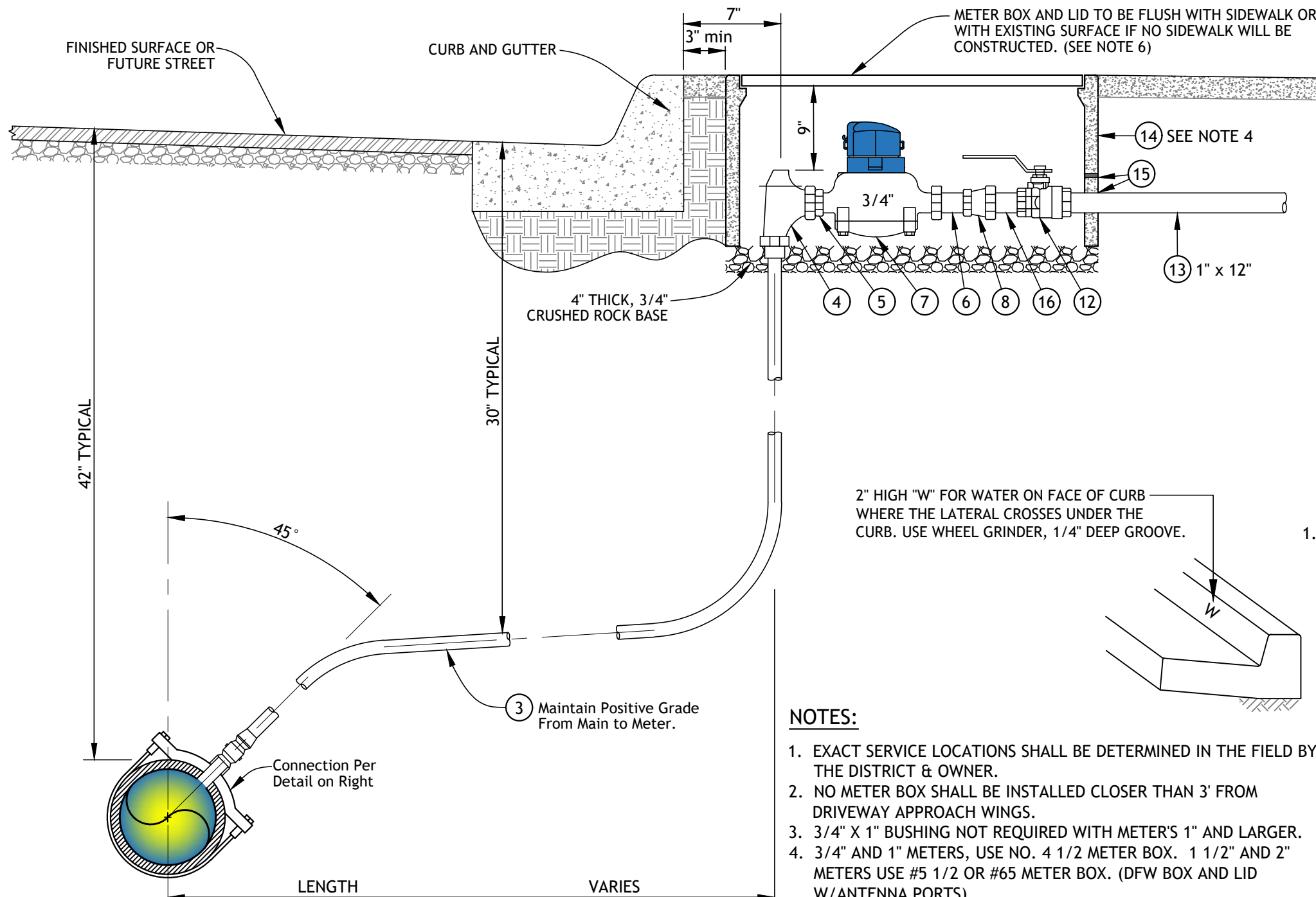
- | | |
|--|---|
| ① DOUBLE STRAP DUCTILE IRON SERVICE SADDLE (ROMAC DUCTILE PLUS OR EQUAL) (DIA. of WATER MAIN x 1" MINIMUM) | ⑧ 3/4" x 1" BELL, BRASS |
| ② CORPORATION STOP (I.P.T.) TO COPPER 1" MINIMUM | ⑨ 1" x 2-5/8" METER COUPLING |
| ③ SERVICE TUBING TYPE "K" SOFT COPPER (SEE NOTES 7 - 9 FOR INSTALLATION SIZES) | ⑩ 1" COUPLING, BRASS |
| ④ ANGLE METER STOP (CURB STOP), 1" MINIMUM | ⑪ METER FLANGE, 1.5" OR 2" |
| ⑤ 1" x 1- 1/4" METER BUSHING | ⑫ BALL VALVE, 1" MINIMUM, BRASS (CUSTOMER PRIVATE SHUTOFF) |
| ⑥ 3/4" x 2-1/2" METER COUPLING | ⑬ NIPPLE, BRASS (TAILPIPE) |
| ⑦ WATER METER (DISTRICT WILL SET METER ONCE ALL FEES HAVE BEEN PAID) | ⑭ METER BOX & LID, POLY |
| | ⑮ LEAVE MINIMUM 1" CLEARANCE BETWEEN TOP OF PIPE AND CUTOUT |
| | ⑯ 1" x 4" NIPPLE, BRASS |

NOTES:

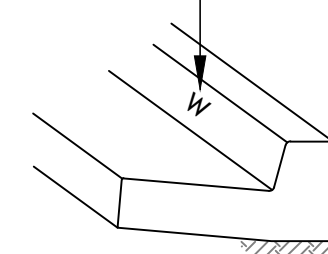
- EXACT SERVICE LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE DISTRICT & OWNER.
- NO METER BOX SHALL BE INSTALLED CLOSER THAN 3' FROM DRIVEWAY APPROACH WINGS.
- 3/4" X 1" BUSHING NOT REQUIRED WITH METER'S 1" AND LARGER.
- 3/4" AND 1" METERS, USE NO. 4 1/2 METER BOX. 1 1/2" AND 2" METERS USE #5 1/2 OR #65 METER BOX. (DFW BOX AND LID W/ ANTENNA PORTS)
- METER BOX TO BE PLACED PERPENDICULAR TO MAIN.
- IF METER BOX IS PLACED IN HIGH TRAFFIC AREA, THE METER LID SHOULD BE TRAFFIC RATED.
- 1" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 3/4" AND 1" METER INSTALLATIONS.
- 1.5" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 1.5" METER INSTALLATIONS.
- 2" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 2" METER INSTALLATIONS.

WATER SERVICE INSTALLATION 3/4" THRU 2" (D.I.P.)		
	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT	
	APPROVED BY: <i>Jeff Noelte</i> JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	
APRIL 2022 REVISION		EVWD STD. DWG. W-101A SHEET 1 OF 1

REV: 3/29/2022
 W-101B WATER SERVICE INSTALLATION FOR A.C. PIPE
 SECURED\STANDARDS\DWG\2022 UPDATE\WATER_W-101B WATER SERVICE INSTALLATION FOR A.C. PIPE_2022.DWG



2" HIGH "W" FOR WATER ON FACE OF CURB WHERE THE LATERAL CROSSES UNDER THE CURB. USE WHEEL GRINDER, 1/4" DEEP GROOVE.



NOTES:

1. EXACT SERVICE LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE DISTRICT & OWNER.
2. NO METER BOX SHALL BE INSTALLED CLOSER THAN 3' FROM DRIVEWAY APPROACH WINGS.
3. 3/4" X 1" BUSHING NOT REQUIRED WITH METER'S 1" AND LARGER.
4. 3/4" AND 1" METERS, USE NO. 4 1/2 METER BOX. 1 1/2" AND 2" METERS USE #5 1/2 OR #65 METER BOX. (DFW BOX AND LID W/ANTENNA PORTS)
5. METER BOX TO BE PLACED PERPENDICULAR TO MAIN.
6. IF METER BOX IS PLACED IN HIGH TRAFFIC AREA, THE METER LID SHOULD BE TRAFFIC RATED.
7. 1" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 3/4" AND 1" METER INSTALLATIONS.
8. 1.5" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 1.5" METER INSTALLATIONS.
9. 2" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 2" METER INSTALLATIONS.

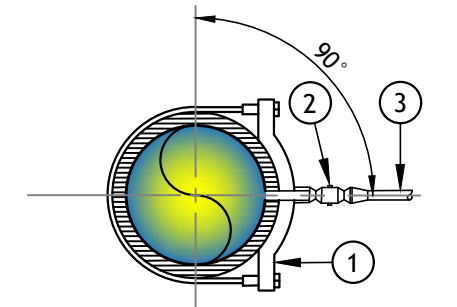
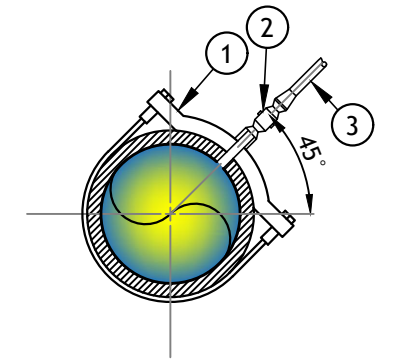
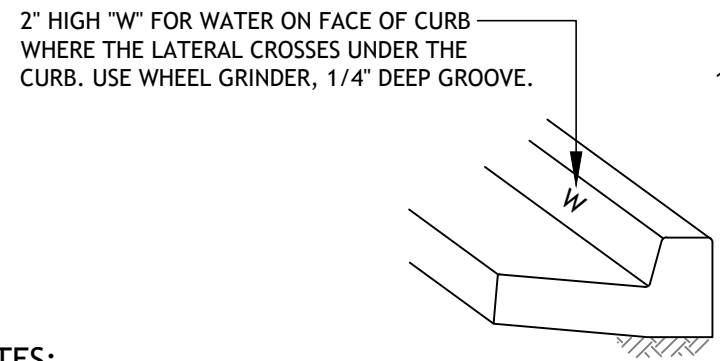
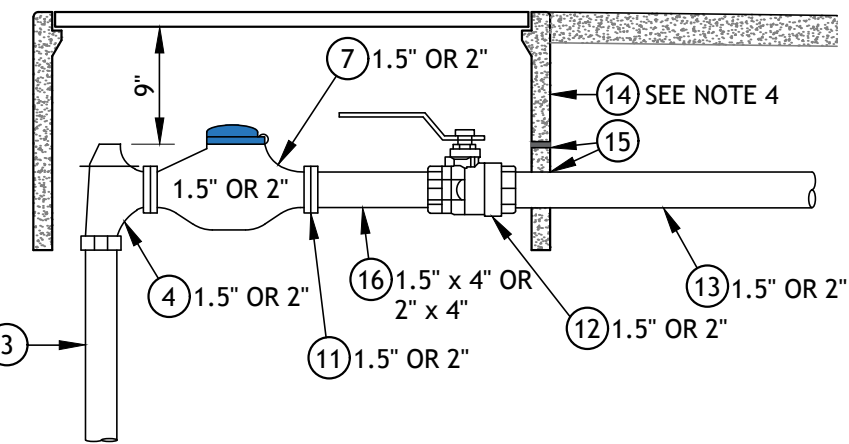
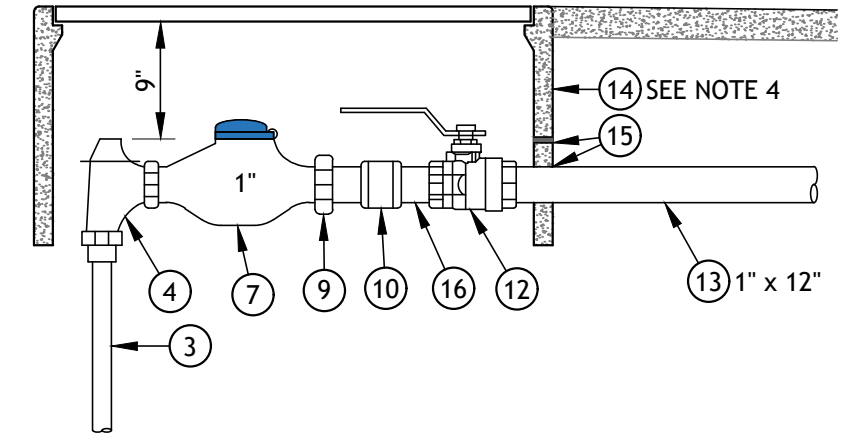
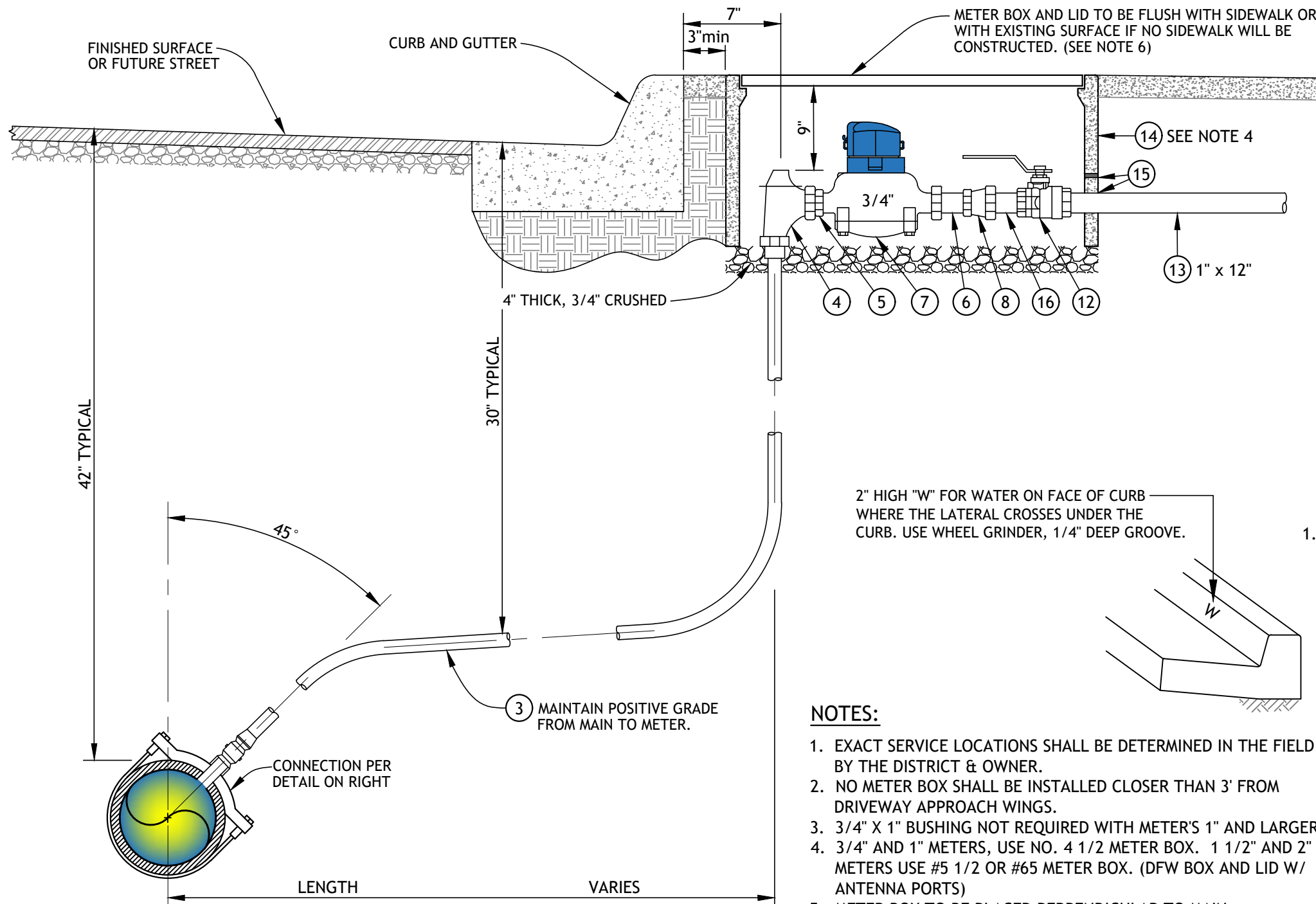
ITEM MATERIALS:

- | | |
|--|---|
| ① DOUBLE STRAP SERVICE SADDLE, BRONZE (DIA. of WATER MAIN X 1" MINIMUM) | ⑧ 3/4" x 1" BELL, BRASS |
| ② CORPORATION STOP (I.P.T.) TO COPPER 1" MINIMUM | ⑨ 1" x 2-5/8" METER COUPLING |
| ③ SERVICE TUBING TYPE "K" SOFT COPPER (SEE NOTES 7 - 9 FOR INSTALLATION SIZES) | ⑩ 1" COUPLING, BRASS |
| ④ ANGLE METER STOP (CURB STOP), 1" MINIMUM | ⑪ METER FLANGE, 1.5" OR 2" |
| ⑤ 1" x 1- 1/4" METER BUSHING | ⑫ BALL VALVE, 1" MINIMUM, BRASS (CUSTOMER PRIVATE SHUTOFF) |
| ⑥ 3/4" x 2-1/2" METER COUPLING | ⑬ NIPPLE, BRASS (TAILPIPE) |
| ⑦ WATER METER (DISTRICT WILL SET METER ONCE ALL FEES ARE PAID) | ⑭ METER BOX & LID, POLY |
| | ⑮ LEAVE MINIMUM 1" CLEARANCE BETWEEN TOP OF PIPE AND CUTOUT |
| | ⑯ 1" x 4" NIPPLE, BRASS |

WATER SERVICE INSTALLATION 3/4" THRU 2" (A.C. PIPE)

	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT	EVWD STD. DWG. W-101B SHEET 1 OF 1
	APPROVED BY: JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	

REV: 3/29/2022 - J. WOLF
 M. ENGINEERING - SECURED STANDARDS.DWG. 2022 UPDATE WATER W-101C WATER SERVICE INSTALLATION FOR DIPPED & WRAPPED PIPE_2022.DWG



ITEM MATERIALS:

- | | |
|--|---|
| ① DOUBLE STRAP MALLEABLE SERVICE SADDLE (DIA. of WATER MAIN X 1" MINIMUM) | ⑧ 3/4" x 1" BELL, BRASS |
| ② CORPORATION STOP (I.P.T.) TO COPPER 1" MINIMUM | ⑨ 1" x 2-5/8" METER COUPLING |
| ③ SERVICE TUBING TYPE "K" SOFT COPPER (SEE NOTES 7 - 9 FOR INSTALLATION SIZES) | ⑩ 1" COUPLING, BRASS |
| ④ ANGLE METER STOP (CURB STOP), 1" MINIMUM | ⑪ METER FLANGE, 1.5" OR 2" |
| ⑤ 1" x 1- 1/4" METER BUSHING | ⑫ BALL VALVE, 1" MINIMUM, BRASS (CUSTOMER PRIVATE SHUTOFF) |
| ⑥ 3/4" x 2-1/2" METER COUPLING | ⑬ NIPPLE, BRASS (TAILPIPE) |
| ⑦ WATER METER (DISTRICT WILL SET METERS ONCE ALL FEES ARE PAID) | ⑭ METER BOX & LID, POLY |
| | ⑮ LEAVE MINIMUM 1" CLEARANCE BETWEEN TOP OF PIPE AND CUTOUT |
| | ⑯ 1" x 4" NIPPLE, BRASS |

NOTES:

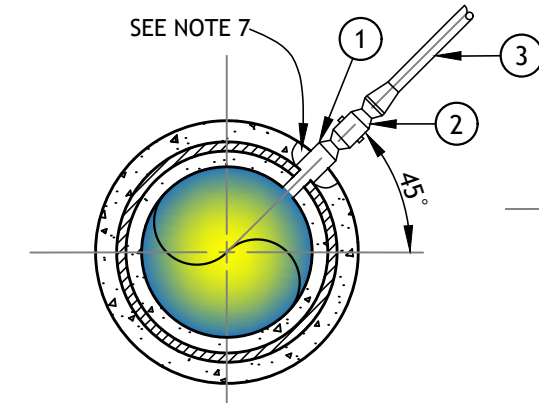
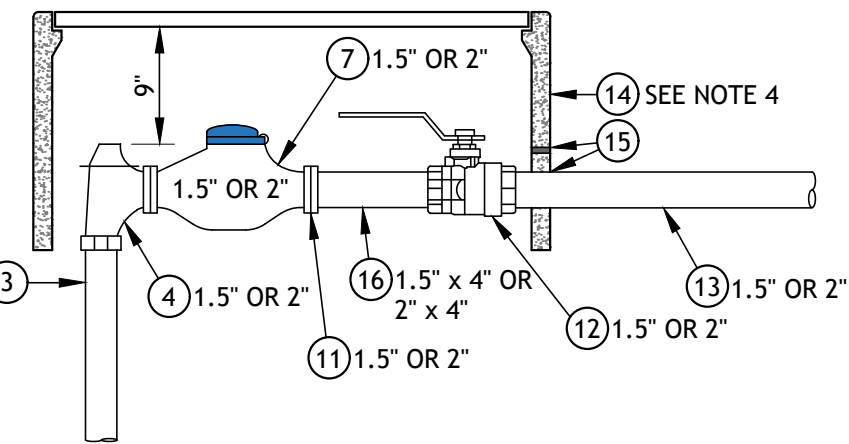
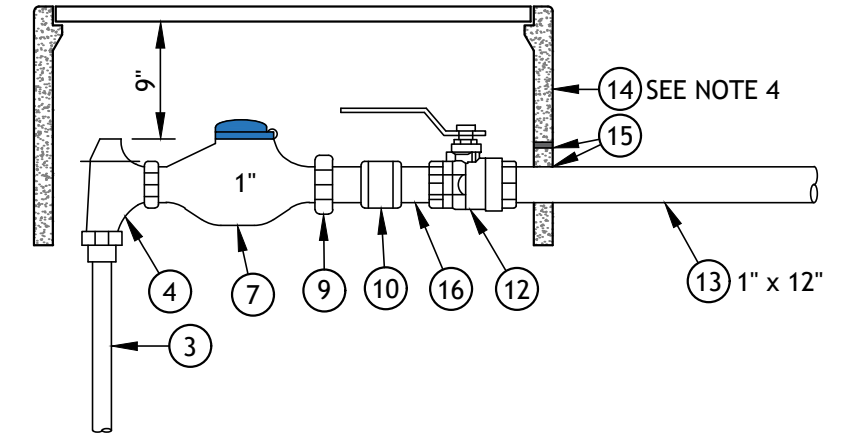
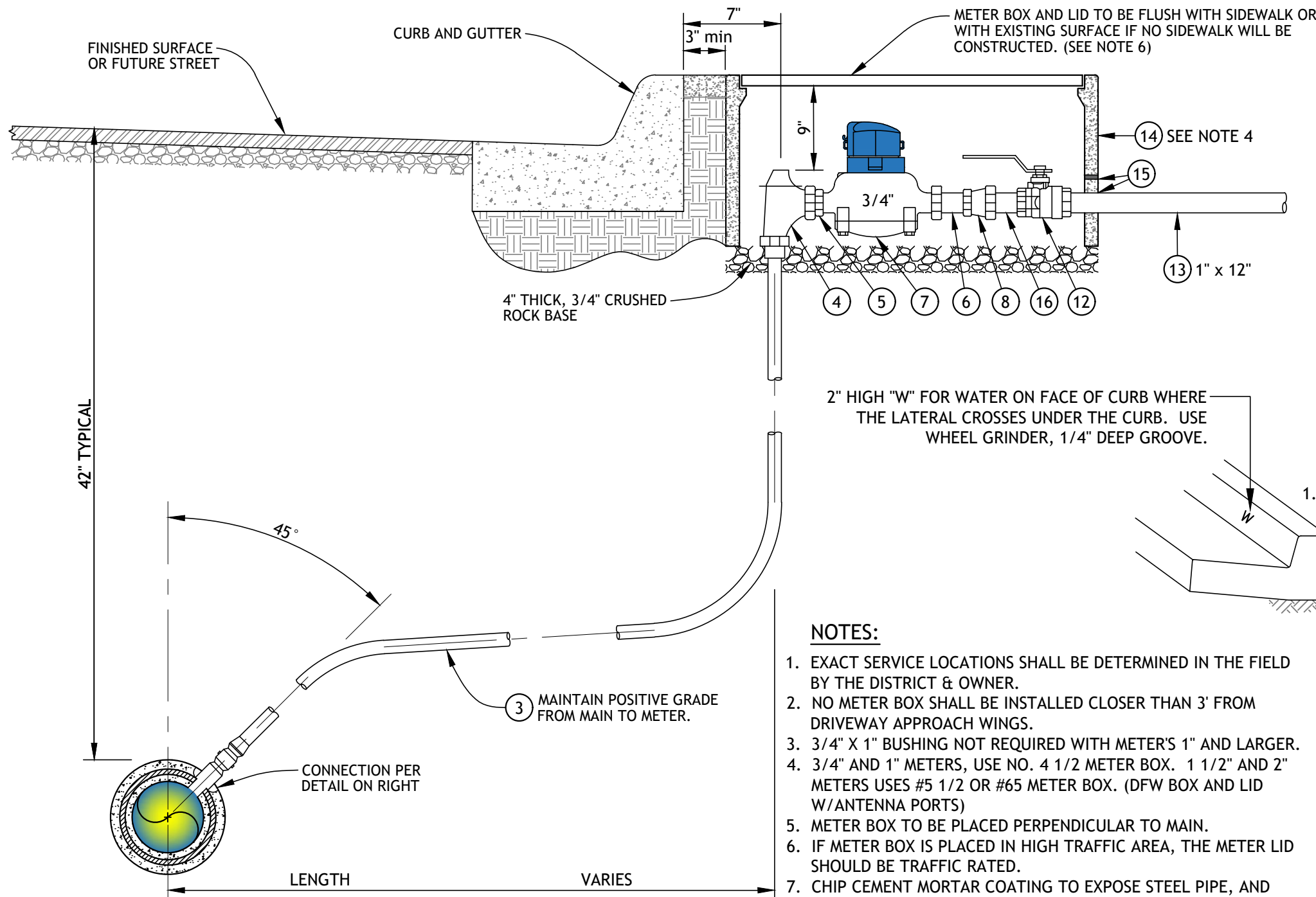
- EXACT SERVICE LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE DISTRICT & OWNER.
- NO METER BOX SHALL BE INSTALLED CLOSER THAN 3' FROM DRIVEWAY APPROACH WINGS.
- 3/4" X 1" BUSHING NOT REQUIRED WITH METER'S 1" AND LARGER.
- 3/4" AND 1" METERS, USE NO. 4 1/2 METER BOX. 1 1/2" AND 2" METERS USE #5 1/2 OR #65 METER BOX. (DFW BOX AND LID W/ ANTENNA PORTS)
- METER BOX TO BE PLACED PERPENDICULAR TO MAIN.
- IF METER BOX IS PLACED IN HIGH TRAFFIC AREA, THE METER LID SHOULD BE TRAFFIC RATED.
- 1" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 3/4" AND 1" METER INSTALLATIONS.
- 1.5" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 1.5" METER INSTALLATIONS.
- 2" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 2" METER INSTALLATIONS.

3/4" & 1" CONNECTION DETAIL
SEE NOTE 7

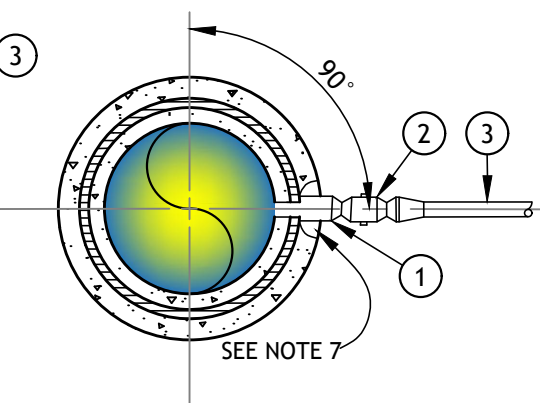
1.5" & 2" CONNECTION DETAIL
SEE NOTE 8 AND 9

WATER SERVICE INSTALLATION 3/4" THRU 2" (D. & W. PIPE)		
	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT	EVWD STD. DWG. W-101C
	APPROVED BY: JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	
APRIL 2022 REVISION		SHEET 1 OF 1

REV: 3/29/2022 J.WOLF
 M:\ENGINEERING - SECURED\STANDARDS\DWG_2022_UPDATE\WATER W-101D WATER SERVICE INSTALLATION FOR C.M.L. & C-STEEL PIPE_2022.DWG



3/4" & 1" CONNECTION DETAIL
 SEE NOTE 8



1.5" & 2" CONNECTION DETAIL
 SEE NOTES 9 & 10

NOTES:

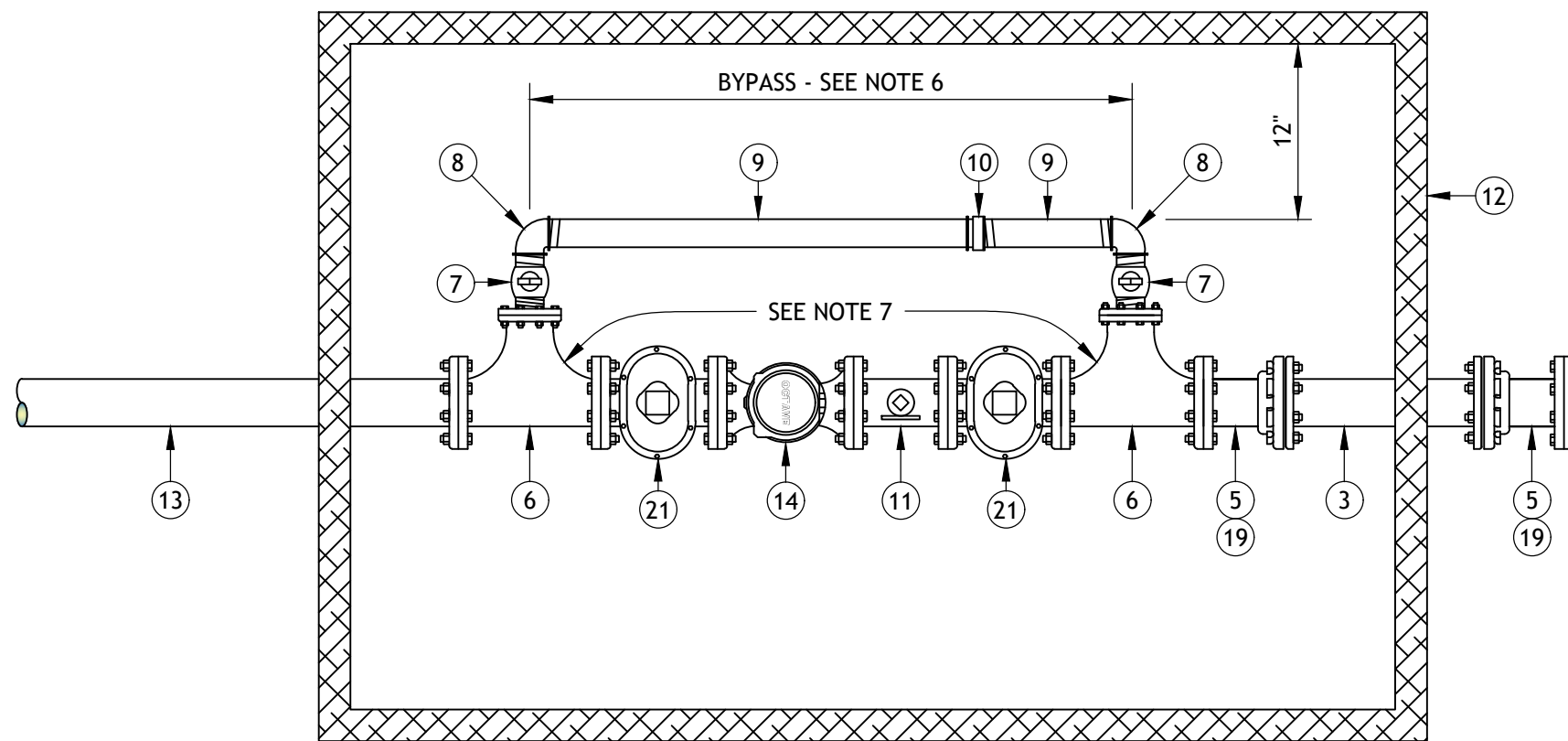
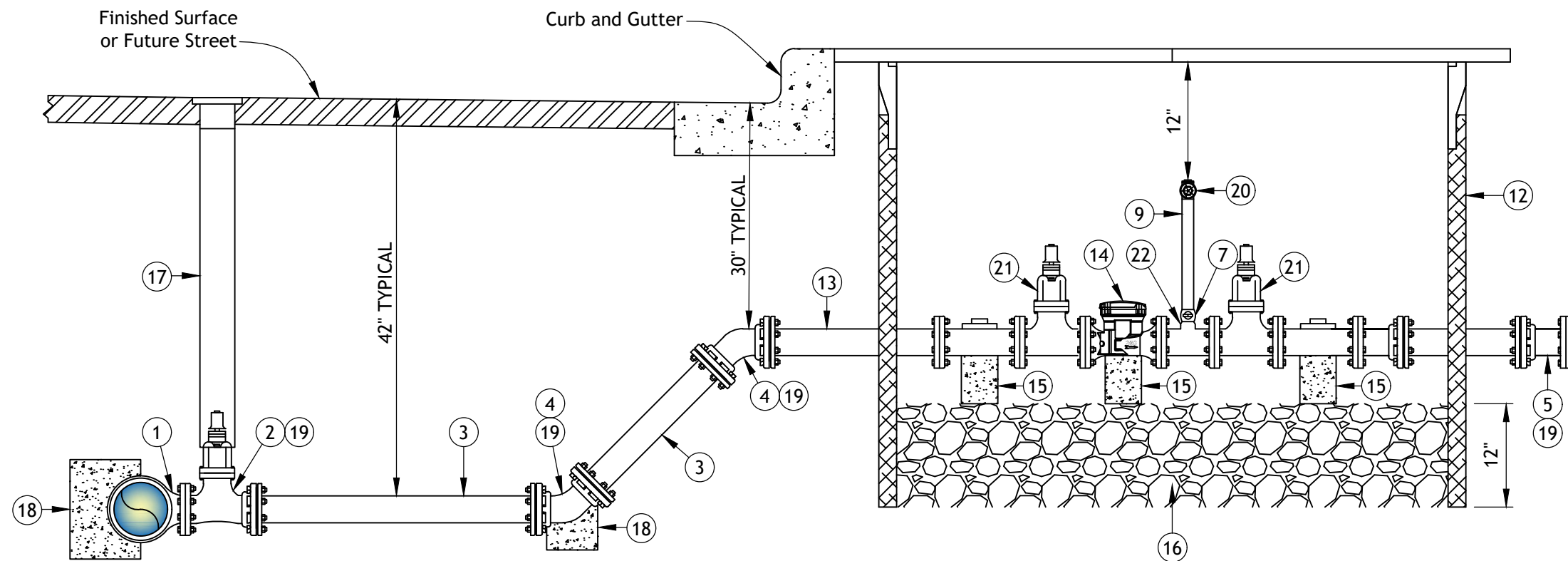
1. EXACT SERVICE LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE DISTRICT & OWNER.
2. NO METER BOX SHALL BE INSTALLED CLOSER THAN 3' FROM DRIVEWAY APPROACH WINGS.
3. 3/4" X 1" BUSHING NOT REQUIRED WITH METER'S 1" AND LARGER.
4. 3/4" AND 1" METERS, USE NO. 4 1/2" METER BOX. 1 1/2" AND 2" METERS USES #5 1/2" OR #65 METER BOX. (DFW BOX AND LID W/ANTENNA PORTS)
5. METER BOX TO BE PLACED PERPENDICULAR TO MAIN.
6. IF METER BOX IS PLACED IN HIGH TRAFFIC AREA, THE METER LID SHOULD BE TRAFFIC RATED.
7. CHIP CEMENT MORTAR COATING TO EXPOSE STEEL PIPE, AND THEN REPAIR CEMENT MORTAR COATING.
8. 1" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 3/4" AND 1" METER INSTALLATIONS.
9. 1.5" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 1.5" METER INSTALLATIONS.
10. 2" SERVICE SADDLE, CORP. STOP AND SERVICE LINE WILL BE USED FOR ALL 2" METER INSTALLATIONS.

ITEM MATERIALS:

- | | |
|--|--|
| ① WELD COUPLING, NO SADDLE
1" MINIMUM | ⑧ 3/4" x 1" BELL, BRASS |
| ② CORPORATION STOP (I.P.T.) TO COPPER
1" MINIMUM | ⑨ 1" x 2-5/8" METER COUPLING |
| ③ SERVICE TUBING TYPE "K" SOFT COPPER
(SEE NOTES 8 - 10 FOR INSTALLATION SIZES) | ⑩ 1" COUPLING, BRASS |
| ④ ANGLE METER STOP (CURB STOP),
1" MINIMUM | ⑪ METER FLANGE, 1.5" OR 2" |
| ⑤ 1" x 1- 1/4" METER BUSHING | ⑫ BALL VALVE, 1" MINIMUM, BRASS
(CUSTOMER PRIVATE SHUTOFF) |
| ⑥ 3/4" x 2-1/2" METER COUPLING | ⑬ NIPPLE, BRASS (TAILPIPE) |
| ⑦ WATER METER (DISTRICT WILL SET METER
ONCE FEES HAVE BEEN PAID) | ⑭ METER BOX & LID, POLY |
| | ⑮ LEAVE A MINIMUM 1" CLEARANCE
BETWEEN TOP OF PIPE AND CUTOUT |
| | ⑯ 1" X 4" NIPPLE, BRASS |

WATER SERVICE INSTALLATION 3/4" THRU 2" (C.M.L. & C.)		
	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT	EVWD STD. DWG. W-101D
	APPROVED BY: JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	
		SHEET 1 OF 1

REV: 5/3/2021 J.WOLF
 M: ENGINEERING - SECURED STANDARDS.DWG\2022 UPDATE\WATER\W-102 WATER SERVICE INSTALLATION 3 INCH AND LARGER_2022



ITEM MATERIALS:

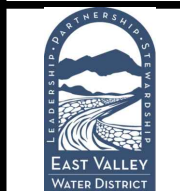
- ① MAIN CONNECTION, PER EVWD STD. DWG. W-104
- ② GATE VALVE, FLG. x M.J.
- ③ DUCTILE IRON PIPE (D.I.P.), P.E x P.E.
- ④ 45° BEND, M.J.
- ⑤ ADAPTOR, FLG. x M.J.
- ⑥ REDUCING TEE, FLG.
- ⑦ CORPORATION STOP, IRON TO IRON OR BALL VALVE
- ⑧ 90° ELL, BRASS
- ⑨ NIPPLE, BRASS (TAILPIPE)
- ⑩ UNION, BRASS
- ⑪ STANDARD STEEL SPOOL, FLG. (ONE (1) PIECE)
- ⑫ PRE-FAB VAULT AND LID, 3' x 5'
- ⑬ D.I.P., FLG x P.E.
- ⑭ OCTAVE METER
- ⑮ BLOCK SUPPORT
- ⑯ 3/4" CRUSHED ROCK x 6" THICK
- ⑰ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-119
- ⑱ THRUST BLOCK, PER EVWD STD. DWG. W-108 (OPTIONAL IF USING PIPE RESTRAINING JOINTS)
- ⑲ MEGALUG RESTRAINT
- ⑳ GATE VALVE, BRASS, THREADED (TEST PORT)
- ㉑ GATE VALVE, FLG.
- ㉒ WELD COUPLING

NOTES:

1. EXACT LOCATIONS SHALL BE DETERMINED IN THE FIELD BY THE DEVELOPER.
2. SERVICE SIZE SHALL BE DESIGNATED ON PLAN.
3. NO METER SHALL BE INSTALLED CLOSER THAN THREE (3) FEET FROM DRIVEWAY APRONS. 4. ALL STEEL THREADS TO BE COATED WITH BITUMASTIC BEFORE BACKFILLING.
5. INSTALLATION SHALL BE TESTED AT 150% OF WORKING PRESSURE TO ASSURE NO LEAKS.
6. BYPASS IS HALF (1/2) SIZE OF METER FOR DOMESTIC AND COMMERCIAL.
7. USE REDUCING TEE WITH LOCKING DEVICE IN LIEU OF COMPANION FLANGE.
8. OCTAVE METERS WILL BE USED FOR DOMESTIC AND IRRIGATION PURPOSES.

* BYPASS SHALL ONLY BE INSTALLED FOR SINGLE SOURCE CONNECTIONS. IF THE PROPERTY IS ON A LOOPED SYSTEM, TWO (2) CONNECTION POINTS, A BYPASS IS NOT NEEDED.

WATER SERVICE INSTALLATION 3" AND LARGER



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

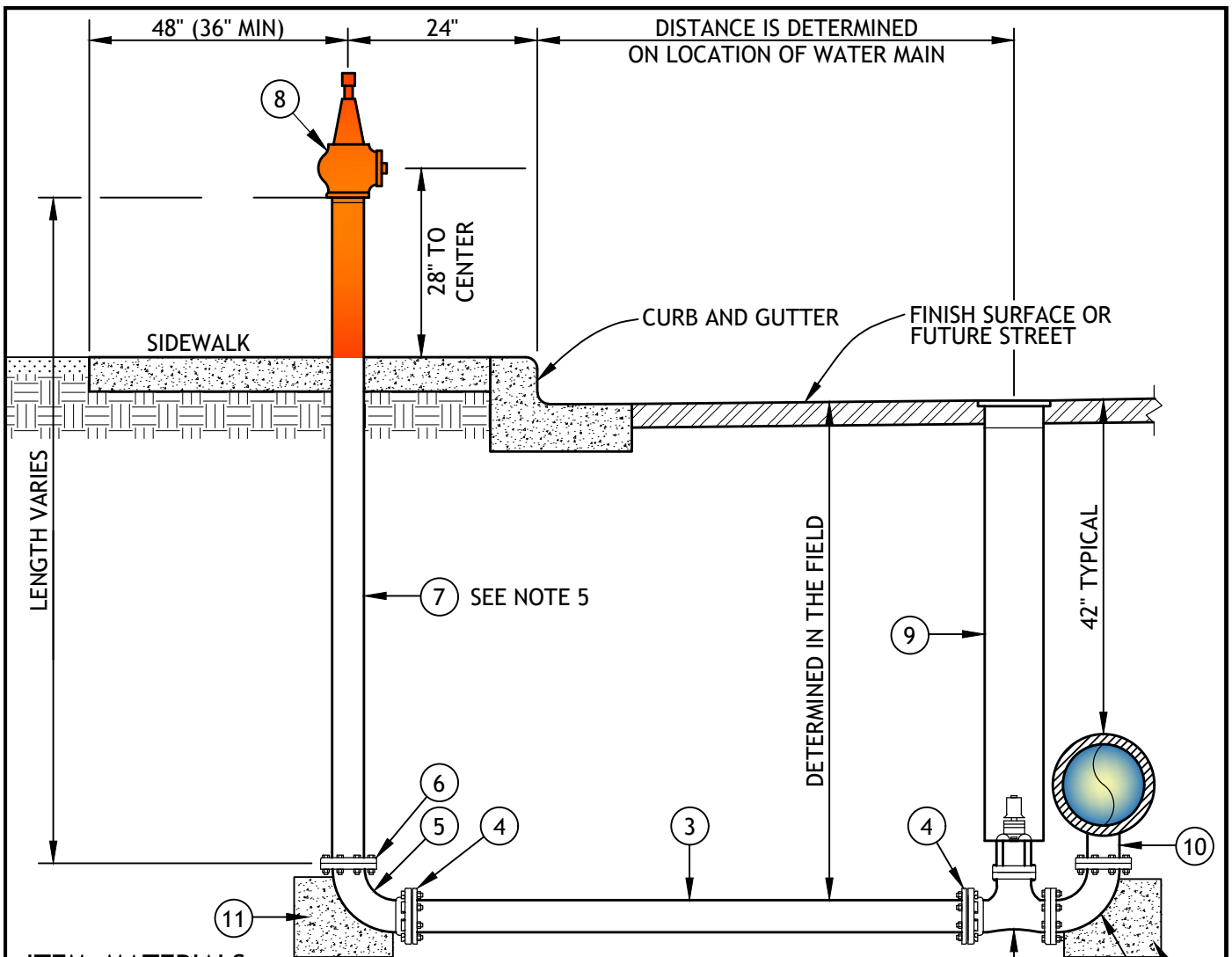
Jeff Noelte

JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
 REVISION

EVWD
 STD. DWG.
 W-102

SHEET 1 OF 1



ITEM MATERIALS:

- ① 4" x 90° BEND, FLG., D.I.P.
- ② 4" GATE VALVE, FLG. x M.J.
- ③ 4" DUCTILE IRON PIPE (D.I.P.), P.E. x P.E.
- ④ 4" MEGALUG RESTRAINT
- ⑤ 4" x 90° BEND, FLG. x M.J., D.I.P.
- ⑥ 4" SLIP ON WELDING FLANGE
- ⑦ 4" STEEL PIPE, T.O.E.
- ⑧ 4" x 2-1/2" FIRE HYDRANT HEAD
- ⑨ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-119
- ⑩ WATER MAIN CONNECTION, PER EVWD STD. DWG. W-104.
- ⑪ CONCRETE THRUST BLOCK, PER EVWD STD. DWG. W-108. (OPTIONAL IF USING PIPE RESTRAINING JOINTS)

NOTES:

- 1. T.O.E. - THREAD ONE END
- 2. TO BE USED AT DEAD-ENDS AND LOW POINTS. LOCATIONS SHOULD BE IDENTIFIED AS A FLUSHING POINT ON THE DRAWINGS.
- 3. THIS STANDARD TO BE USED UNLESS SPECIFIED PIPE LOCATION IS DEEPER THAN 42". THEN EVWD STANDARD DRAWING W-103B OR W-103C WILL BE PREFERRED LAYOUT DEPENDING ON MAIN SIZE.
- 4. THE CONTRACTOR SHALL PAINT ALL EXPOSED MATERIAL OF THE BLOW-OFF WITH TWO (2) COATS OF "SAFETY ORANGE" PRIMER/ENAMEL PAINT.
- 5. STANDARD STEEL PIPE TO BE WRAPPED WITH 10 MIL PIPE TAPE (OR EQUAL). TAPE WRAP SHOULD STOP 12" BEFORE FINISH GRADE.
- 6. WHERE NO CURB EXISTS OR BLOW-OFF IS INSTALLED IN DIRT, CONTRACTOR SHALL LAY 18" X 18" X 3" CONCRETE PAD AROUND THE BLOW-OFF AND INSTALL TWO (2) PIPE BOLLARDS PER DISTRICT STANDARD DRAWING, W-111. THE LOCATION OF THE BLOW-OFF AND BOLLARDS SHALL BE DIRECTED BY THE DISTRICT.

4" BLOW-OFF ASSEMBLY FOR MAINS 6" - 10"



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

Jeff Noelte

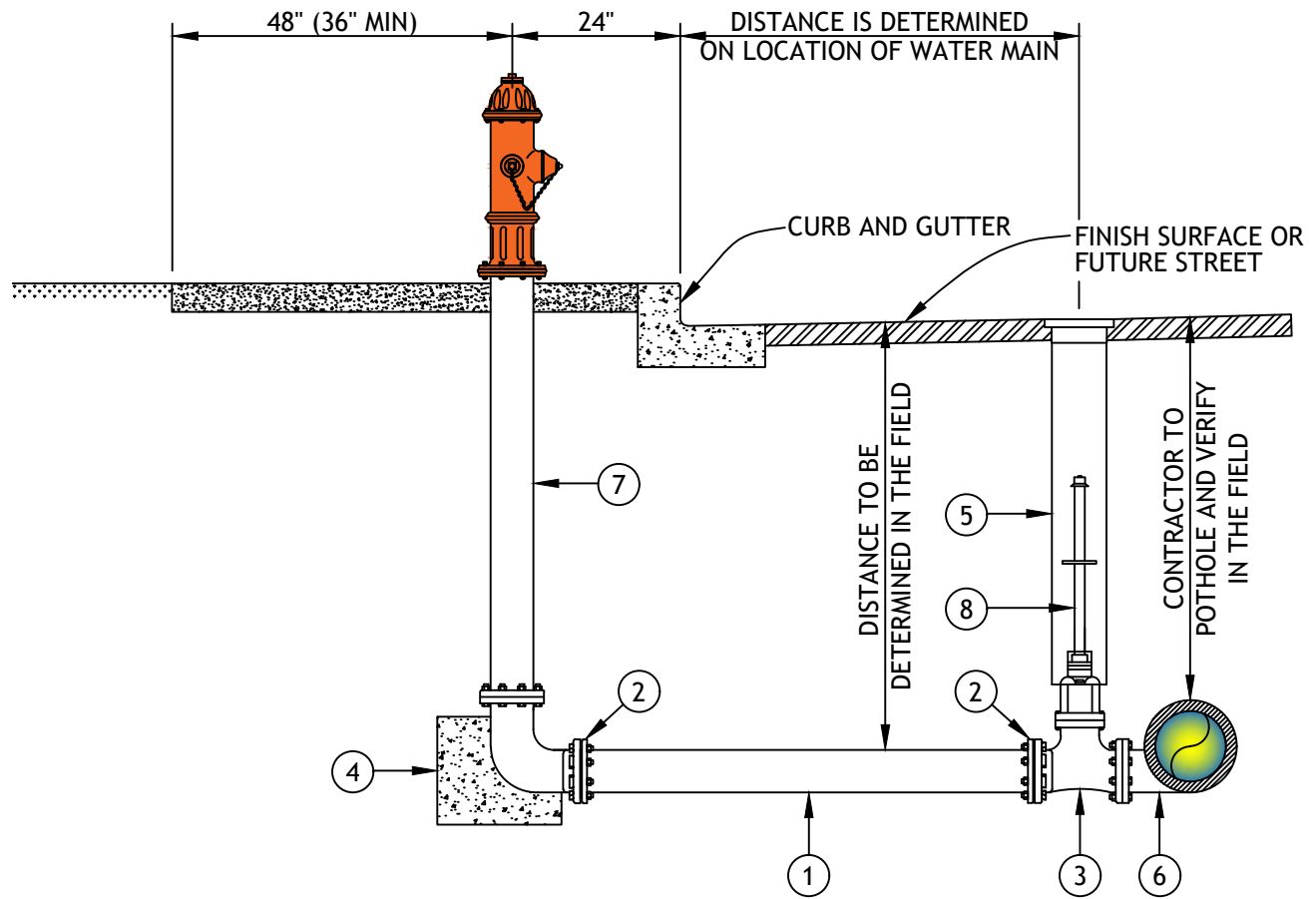
JEFF NOELTE, P.E. 67924
DIRECTOR OF ENGINEERING & OPERATIONS

JUNE 2022
REVISION

EVWD
STD. DWG.
W-103A

SHEET 1 OF 1

REV: 6/13/2022
 J.WOLF
 M: \ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-103B 6-INCH BLOW-OFF ASSEMBLY - 12 INCH - 16 INCH_20220613.DWG



ITEM MATERIALS:

- ① 6" DUCTILE IRON PIPE (D.I.P.)
- ② 6" MEGALUG RESTRAINT
- ③ 6" GATE VALVE, FLG. x M.J.
- ④ THRUST BLOCK, PER EVWD STD. DWG. W-108 (OPTIONAL IF USING PIPE RESTRAINING JOINTS)
- ⑤ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-119
- ⑥ WATER MAIN CONNECTION, PER EVWD STD. DWG. W-104
- ⑦ FIRE HYDRANT ASSEMBLY, PER EVWD STD. DWG. W-112
- ⑧ VALVE STEM EXTENSION, PER EVWD STD. DWG. W-118 (WHERE REQUIRED)

NOTES:

- 1. TO BE USED AT DEAD-ENDS AND LOW POINTS. LOCATIONS SHOULD BE IDENTIFIED AS A FLUSHING POINT ON THE DRAWINGS.
- 2. THIS STANDARD TO BE USED UNLESS SPECIFIED PIPE LOCATION IS DEEPER THAN 48". THEN EVWD STANDARD DRAWING W-103C WILL BE PREFERRED LAYOUT.
- 3. WHERE NO CURB EXISTS OR BLOW-OFF IS INSTALLED IN DIRT, CONTRACTOR SHALL LAY 24" X 24" X 4" CONCRETE PAD AROUND THE BLOW-OFF AND INSTALL TWO (2) PIPE BOLLARDS PER DISTRICT STANDARD DRAWING, W-18. THE LOCATION OF THE BLOW-OFF AND BOLLARDS SHALL BE DIRECTED BY THE DISTRICT.
- 4. THE EXTERIOR OF THE FIRE HYDRANT ASSEMBLY SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER FROM ONE FOOT BELOW GROUND SURFACE TO THE UPPER MOST PART OF THE ASSEMBLY, THEN PAINTED TWO (2) COATS OF "SAFETY ORANGE" PRIMER/ENAMEL.

6" BLOW-OFF FOR MAINS 12"-16" (WET BARREL FH)



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

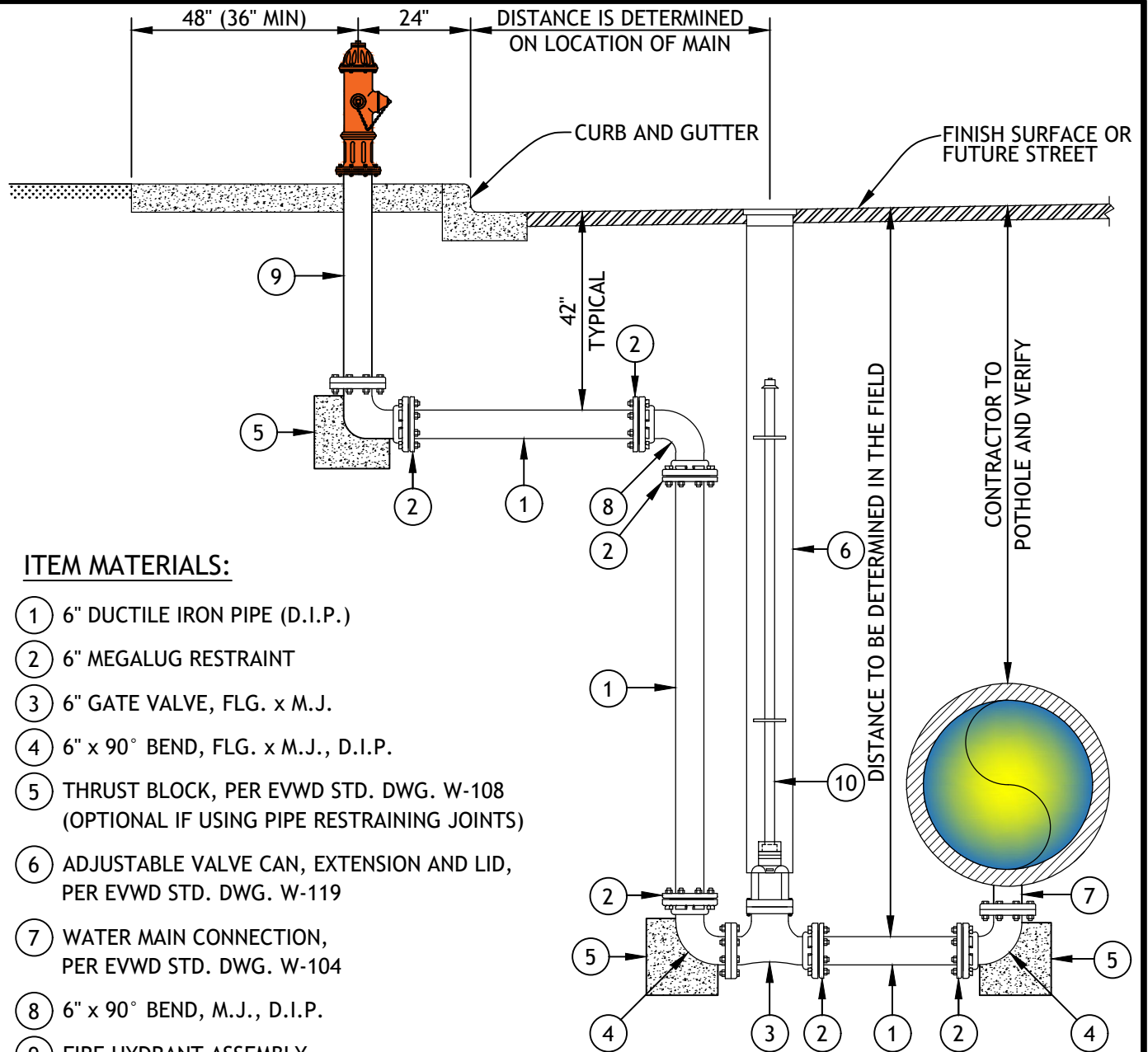
APPROVED BY:

Jeff Noelte
 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

JUNE 2022
 REVISION

EVWD
 STD. DWG.
W-103B

SHEET 1 OF 1



ITEM MATERIALS:

- ① 6" DUCTILE IRON PIPE (D.I.P.)
- ② 6" MEGALUG RESTRAINT
- ③ 6" GATE VALVE, FLG. x M.J.
- ④ 6" x 90° BEND, FLG. x M.J., D.I.P.
- ⑤ THRUST BLOCK, PER EVWD STD. DWG. W-108 (OPTIONAL IF USING PIPE RESTRAINING JOINTS)
- ⑥ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-119
- ⑦ WATER MAIN CONNECTION, PER EVWD STD. DWG. W-104
- ⑧ 6" x 90° BEND, M.J., D.I.P.
- ⑨ FIRE HYDRANT ASSEMBLY, PER EVWD STD. DWG. W-112
- ⑩ VALVE STEM EXTENSION, EVWD STD. DWG. W-118

NOTES:

1. TO BE USED AT DEAD-ENDS AND LOW POINTS. LOCATIONS SHOULD BE IDENTIFIED AS A FLUSHING POINT ON THE DRAWINGS.
2. WHERE NO CURB EXISTS OR A BLOW-OFF IS INSTALLED IN DIRT, CONTRACTOR SHALL LAY 24"X 24" X 4" CONCRETE PAD AROUND THE BLOW-OFF AND INSTALL TWO (2) PIPE BOLLARDS PER DISTRICT STANDARD DRAWING, W-111. THE LOCATION OF THE BLOW-OFF AND BOLLARDS SHALL BE DIRECTED BY THE DISTRICT.
3. THE EXTERIOR OF THE FIRE HYDRANT ASSEMBLY SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER FROM ONE FOOT BELOW GROUND SERVICE TO THE UPPER MOST PART OF THE ASSEMBLY. THEN PAINTED TWO (2) COATS OF "SAFETY ORANGE" PRIMER/ENAMEL.

6" BLOW-OFF FOR MAINS 20"-36" MAINS (WET BARREL FH)

REV: 6/13/2022 J.WOLF
M: ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-103C 6-INCH BLOW-OFF ASSEMBLY - 20 INCH - 36 INCH_20220613.DWG



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

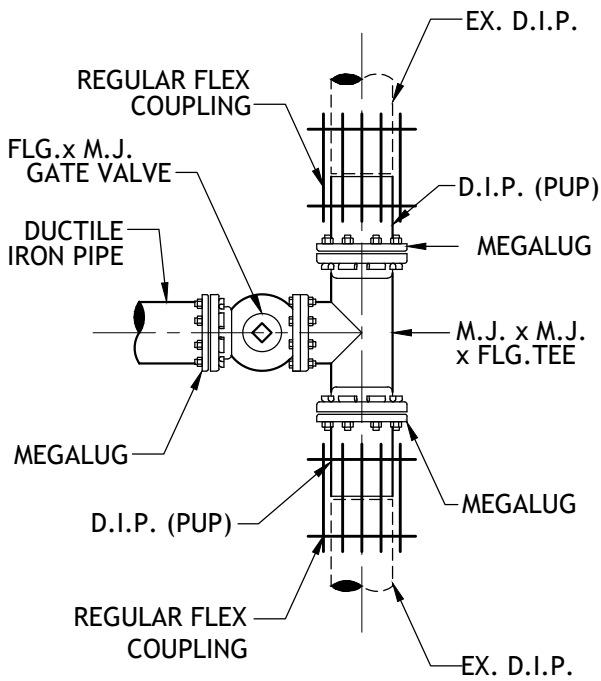
APPROVED BY:

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JUNE 2022
REVISION

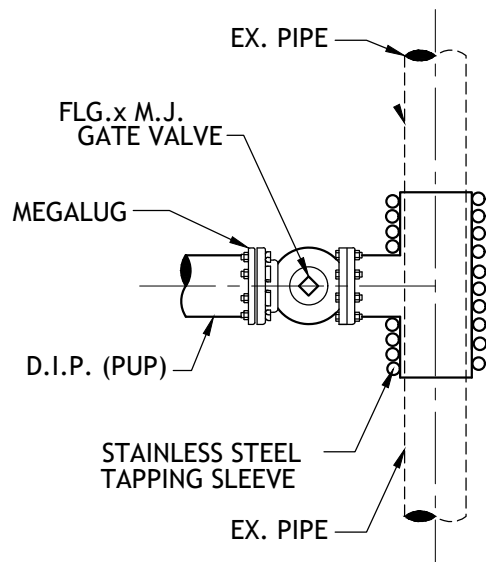
EVWD
STD. DWG.
W-103C

SHEET 1 OF 1

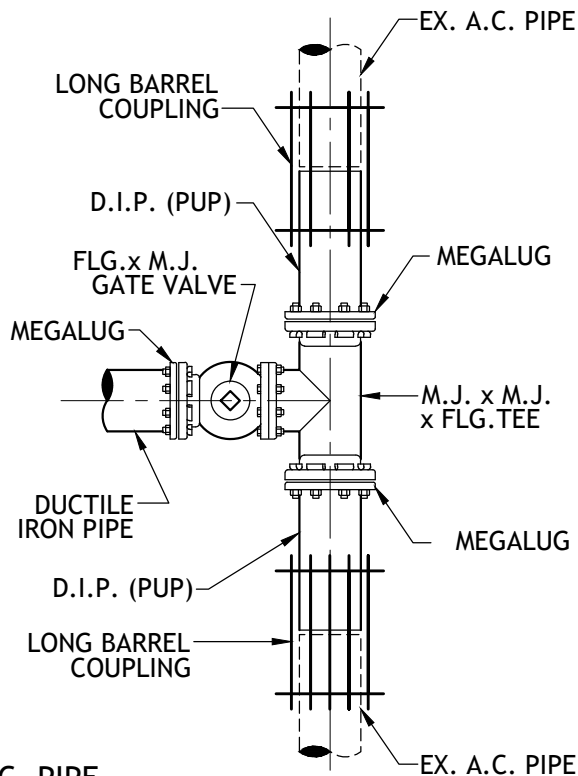


DUCTILE IRON PIPE

*USE ONLY WHEN CUTTING IN A TEE

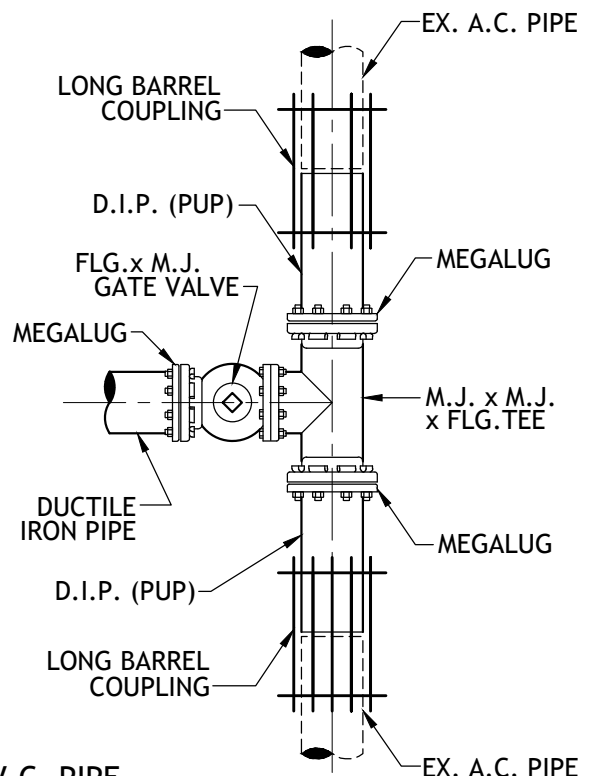


TAPPING SLEEVE



A.C. PIPE

*USE ONLY WHEN CUTTING IN A TEE



P.V.C. PIPE

*USE ONLY WHEN CUTTING IN A TEE

TYPICAL MAIN CONNECTION DETAILS



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

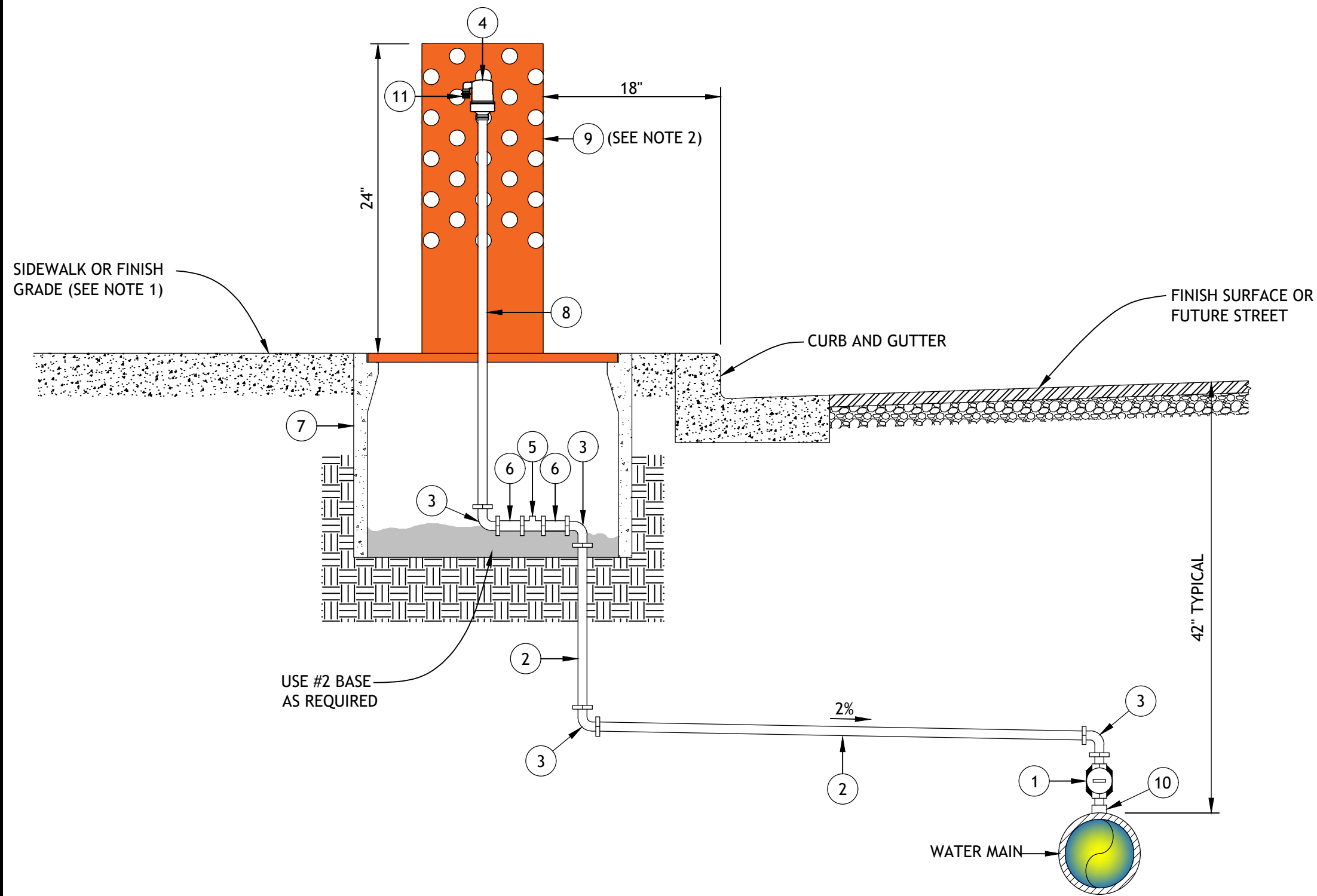
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 JEFF NOELTE, P.E. 67924
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APRIL 2022
 REVISION

EVWD
 STD. DWG.
 W-104

SHEET 1 OF 1

REV: 6/13/22 BY: JWOLF
 M:\ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-105A 1- INCH COMBINATION AIR AND VACUUM VALVE ASSEMBLY_20220613.DWG


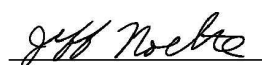


ITEM MATERIALS:

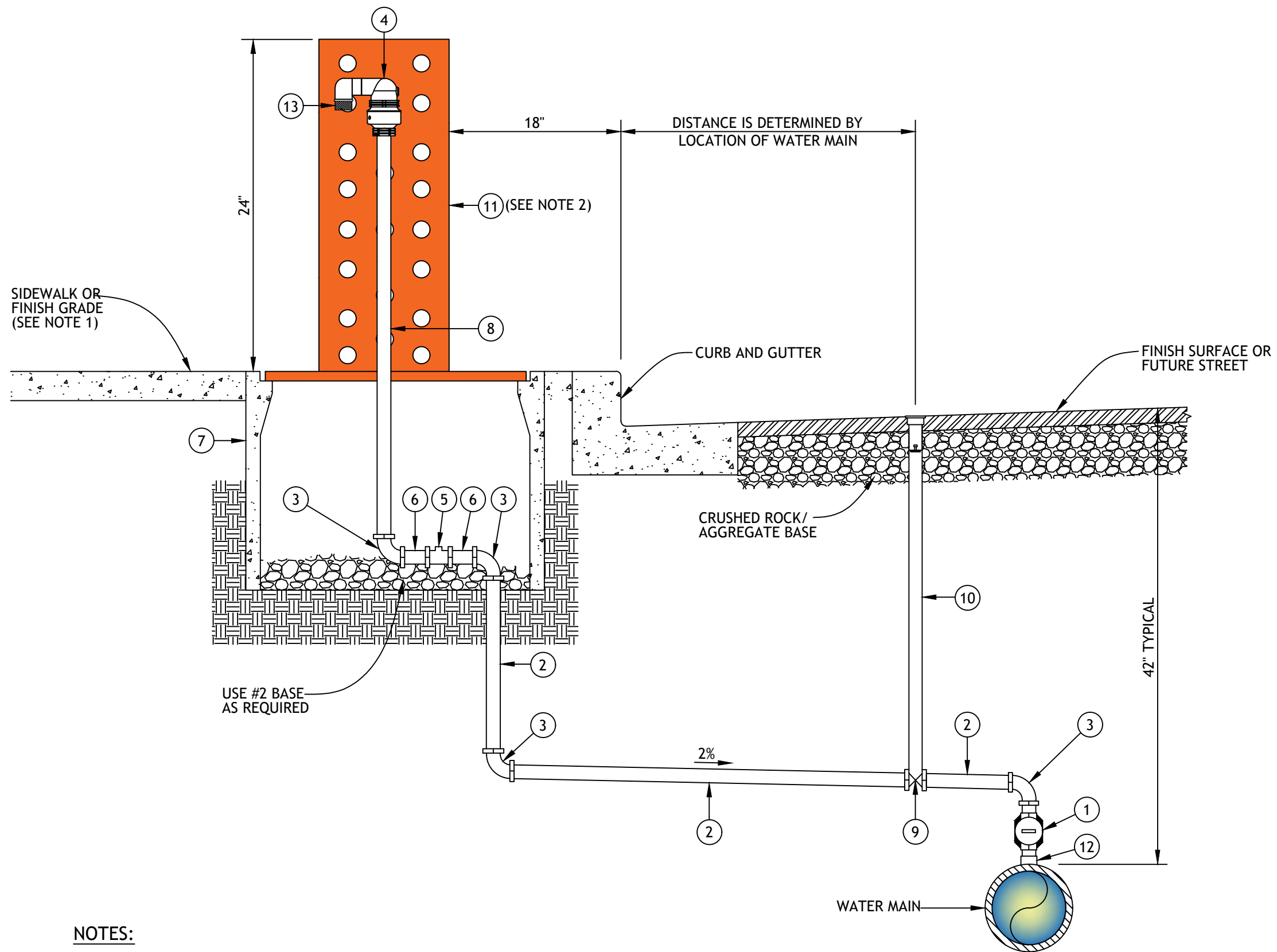
- ① CORPORATION STOP, BRONZE
- ② THREADED RED BRASS PIPE (SCH. 40)
- ③ 90° BEND, THREADED, BRASS (SCH. 40)
- ④ AIR VACUUM RELIEF VALVE, D-040 NS, A.R.I.
- ⑤ BALL VALVE, BRASS
- ⑥ NIPPLE, BRASS (THREADED BOTH ENDS)
- ⑦ #5-1/2 METER BOX OR #65, TWO (2)
- ⑧ STEEL PIPE, GALVINIZED
- ⑨ LID AND VENT PIPE, STEEL
- ⑩ SERVICE CLAMP, PER EVWD STD. DWG. W-101A TO W-101D
- ⑪ BUG SCREEN

NOTES:

1. WHERE NO CURB EXISTS OR AIR-VAC IS INSTALLED IN DIRT, CONTRACTOR SHALL LAY AN 4' X 4' X 2" CONCRETE PAD AROUND THE AIR-VAC AND INSTALL TWO (2) PIPE BOLLARDS, PER EVWD STD. DWG. W-111. THE LOCATION OF THE AIR-VAC AND BOLLARDS SHALL BE DIRECTED BY THE DISTRICT.
2. THE EXTERIOR OF THE AIR-VAC AND LID SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER. THEN PAINTED WITH TWO (2) COATS OF "SAFETY ORANGE" PRIMER/ENAMEL PAINT.
3. THIS DETAIL IS TO BE USED FOR MAINS THAT ARE LESS THAN 12" DIAMETER. THE CONNECTION TO THE PIPE WILL COME FROM THE TOP OR HIGHEST POINT.

1" COMBINATION AIR & VACUUM VALVE ASSEMBLY		
	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT APPROVED BY:  JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	EVWD STD. DWG. W-105A SHEET 1 OF 1
JUNE 2022 REVISION		

REV: 6/13/2022 J.WOLF
 M: ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-105B 2 IN COMB AIR AND VAC VALVE (ARI)_20220613.DWG


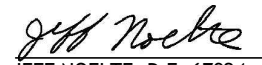


ITEM MATERIALS:

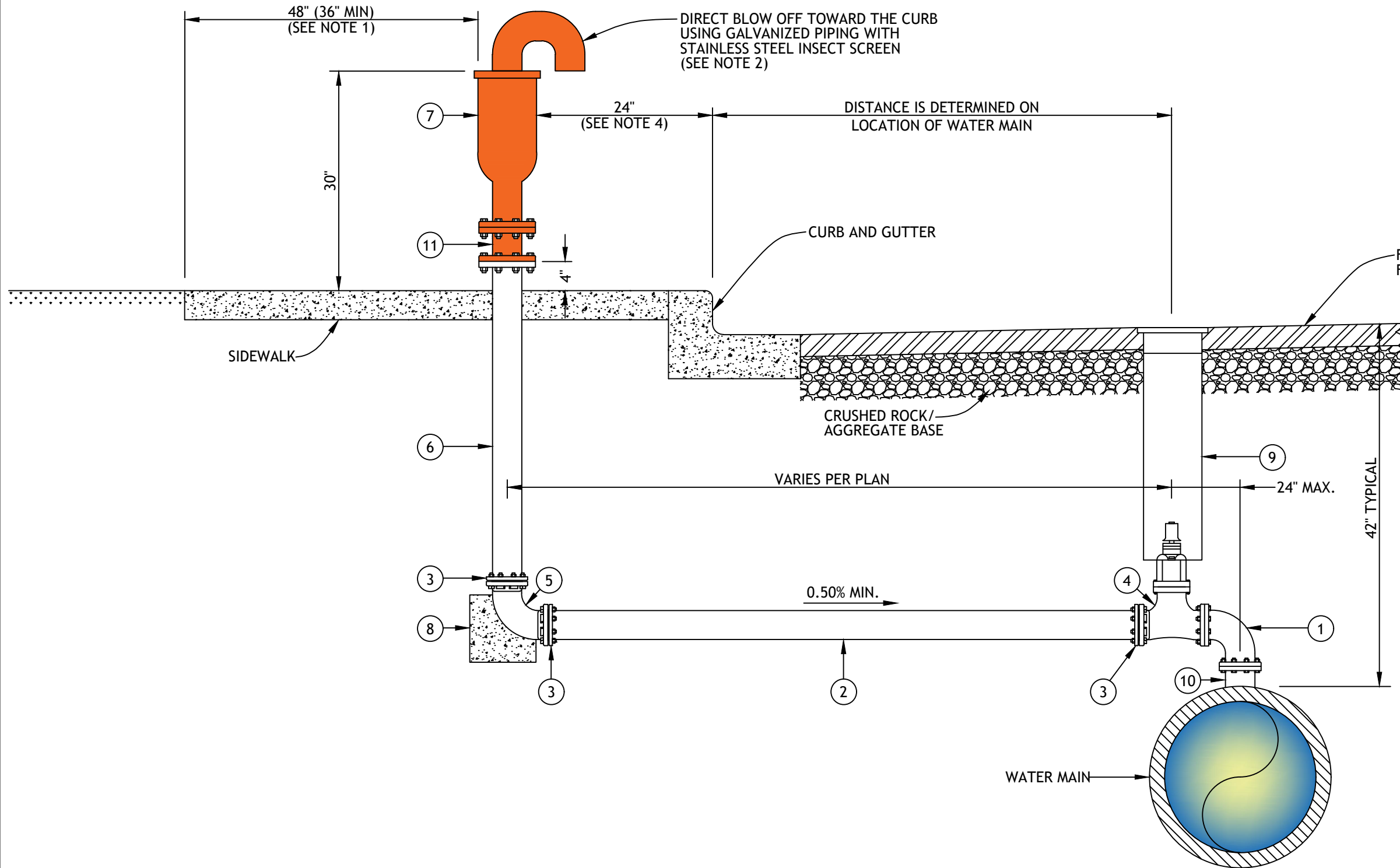
- ① CORPORATION STOP, BRONZE
- ② THREADED RED BRASS PIPE (SCH. 40)
- ③ 90° THREADED BEND, BRASS
- ④ AIR VACUUM RELIEF VALVE, D-040 NS, A.R.I.
- ⑤ BALL VALVE, BRASS
- ⑥ NIPPLE, BRASS (TBE.)
- ⑦ #5-1/2 METER BOX OR #65, TWO (2)
- ⑧ STEEL PIPE, GALVINIZED
- ⑨ GATE VALVE, THREADED
- ⑩ ADJUSTABLE VALVE CAN AND COVER, PER EVWD STD. DWG. 119
- ⑪ LID AND VENT PIPE, STEEL
- ⑫ SERVICE CLAMP, PER EVWD STD. DWG. W-101A TO W-101D
- ⑬ BUG SCREEN

NOTES:

1. WHERE NO CURB EXISTS OR AIR-VAC IS INSTALLED IN DIRT, CONTRACTOR SHALL LAY AN 4' X 4' X 2" CONCRETE PAD AROUND THE AIR-VAC AND INSTALL TWO (2) PIPE BOLLARDS PER EVWD STD. DWG. W-111. THE LOCATION OF THE AIR-VAC AND BOLLARDS SHALL BE DIRECTED BY THE DISTRICT.
2. THE EXTERIOR OF THE AIR-VAC AND LID SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER. THEN PAINTED WITH TWO (2) COATS OF "SAFETY ORANGE" PRIMER/ENAMEL PAINT.
3. THIS DETAIL TO BE USED FOR WATER MAINS OF A DIAMETER OF 18" OR LESS. THE CONNECTION TO THE PIPE WILL COME FROM THE TOP OR HIGHEST POINT.

2" COMBINATION AIR & VACUUM VALVE ASSEMBLY		
	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT	
	APPROVED BY:  JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	
JUNE 2022 REVISION		EVWD STD. DWG. W-105B SHEET 1 OF 1


REV: 6/13/2022 J.WOLF
 M:\ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-105C 4 IN COMB AIR VAC VALVE_20220613.DWG



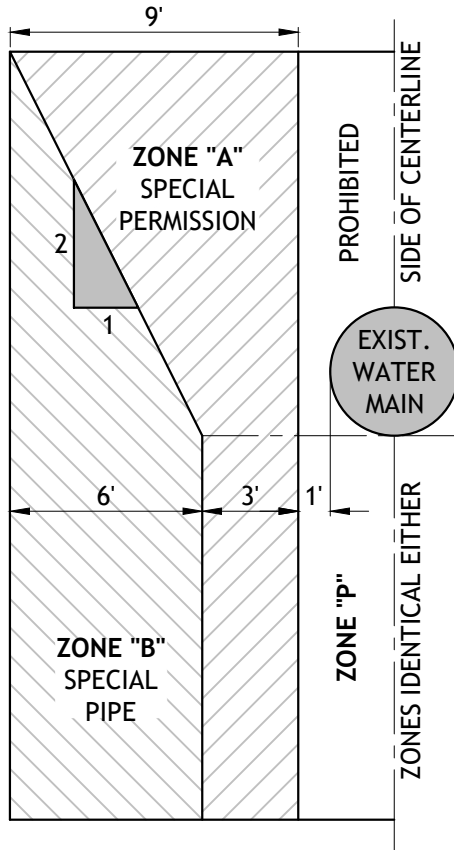
- ITEM MATERIALS:**
- ① 90° BEND, FLG., D.I.P.
 - ② DUCTILE IRON PIPE (D.I.P.)
 - ③ MEGALUG RESTRAINT
 - ④ GATE VALVE, FLG. x M.J.
 - ⑤ 90° BEND, M.J., D.I.P.
 - ⑥ DUCTILE IRON PIPE, FLG. x P.E.
 - ⑦ AV/AR DEVICE
 - ⑧ THRUST BLOCK, PER EVWD STD. DWG. W-108 (OPTIONAL IF USING PIPE RESTRAINING JOINTS)
 - ⑨ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-119
 - ⑩ MAIN CONNECTION
 - ⑪ FLANGED BREAKAWAY EXTENSION SPOOL, MORTAR LINED AND PAINTED TO MATCH AIR-VAC (INCLUDE HOLLOW BREAKAWAY BOLTS)

NOTES:

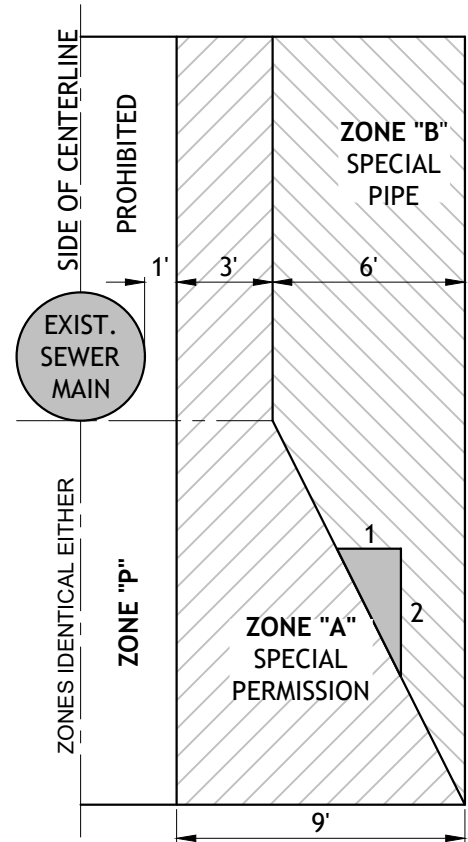
1. IF FOUR (4) FEET IS NOT POSSIBLE, PLACE AIR-VAC BEHIND SIDEWALK IN PARKWAY.
2. SIZE OF PIPING AND APPURTENANCES SHALL MATCH AV/AR VALVE. SEE PLANS FOR SIZE.
3. THE EXTERIOR OF THE AIR-VAC AND APPURTENANCES SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN MATTER FROM THE FLANGED BREAKAWAY SPOOL TO THE UPPER MOST PART OF THE ASSEMBLY. THEN PAINTED WITH TWO (2) COATS OF "SAFETY ORANGE" PRIMER/ENAMEL PAINT.
4. WHERE NO CURB EXISTS OR AIR-VAC IS INSTALLED IN DIRT, CONTRACTOR SHALL PROVIDE ADEQUATE DRAINAGE FOR AIR-VAC. IF ADEQUATE SURFACE DRAINAGE IS NOT PRACTICAL, USE OF TWO (2) CUBIC FOOT GRAVEL FILLED SEEPAGE PIT TO AVOID POSSIBLE DAMAGE CAUSED BY SURFACE WATER RUNOFF. TWO (2) BOLLARDS PER EVWD STD. DWG. W-111. THE LOCATION OF THE AIR-VAC AND BOLLARDS SHALL BE DIRECTED BY THE DISTRICT.
5. THIS DETAIL TO BE USED FOR WATER MAINS OF A DIAMETER GREATER THAN OR EQUAL TO 20 INCHES.

4" COMBINATION AIR & VACUUM ASSEMBLY		
 <p>EAST VALLEY WATER DISTRICT</p>	<p>EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT</p> <p>APPROVED BY:</p> <p style="text-align: center;"><i>Jeff Noelte</i></p> <p>JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS</p>	<p>EVWD STD. DWG. W-105C</p>
<p>JUNE 2022 REVISION</p>		<p>SHEET 1 OF 1</p>

CASE 1 - NEW SEWER MAIN



CASE 2 - NEW WATER MAIN



SPECIAL CONSTRUCTION REQUIRED FOR NEW SANITARY SEWER MAIN: CASE 1

ZONE "A"

SANITARY SEWER MAINS PARALLEL TO WATER MAINS SHALL NOT BE PERMITTED IN THIS ZONE WITHOUT PRIOR WRITTEN APPROVAL FROM THE DEPARTMENT AND PUBLIC WATER SYSTEM.

ZONE "B"

IF THE WATER MAIN PARALLELING THE SANITARY SEWER MAIN DOES NOT MEET THE CASE 2 ZONE "B" REQUIREMENTS, THE SANITARY SEWER MAIN SHOULD BE CONSTRUCTED OF ONE OF THE FOLLOWING:

1. HIGH-DENSITY-POLYETHYLENE (HDPE) PIPE WITH FUSION WELDED JOINTS (PER AWWA C906-99);
2. EXTRA STRENGTH VITRIFIED CLAY PIPE (VCP) WITH COMPRESSION JOINTS;
3. CLASS 4000, TYPE II, ASBESTOS-CEMENT (A.C.) PIPE WITH RUBBER GASKET JOINTS;
4. PVC SEWER PIPE WITH RUBBER RING JOINTS (PER ASTM D3034) OR EQUIVALENT;
5. CAST OR DUCTILE IRON PIPE WITH COMPRESSION JOINTS; OR
6. REINFORCED CONCRETE PRESSURE PIPE WITH COMPRESSION JOINTS (PER AWWA C302-95).

SPECIAL CONSTRUCTION REQUIRED FOR NEW WATER MAIN: CASE 2

ZONE "A"

NO WATER MAINS PARALLEL TO SANITARY SEWER MAINS SHALL BE CONSTRUCTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE DEPARTMENT.

ZONE "B"

IF THE SANITARY SEWER MAIN PARALLELING THE WATER MAIN DOES NOT MEET THE CASE 1, ZONE "B" REQUIREMENTS, THE WATER MAIN SHOULD BE CONSTRUCTED OF ONE OF THE FOLLOWING:

1. HDPE PIPE WITH FUSION WELDED JOINTS (PER AWWA C906-99);
2. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING;
3. DIPPED AND WRAPPED ONE-FOURTH INCH (1/4") THICK WELDED STEEL PIPE;
4. CLASS 200, TYPE II, ASBESTOS-CEMENT (A.C.) PRESSURE PIPE;
5. CLASS 200 PRESSURE RATED PVC WATER PIPE (DR 14 PER AWWA C900-97) OR EQUIVALENT; OR
6. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300-97 OR C302-99 OR C303-95).

HORIZONTAL PROTECTION ZONES FOR SEWER AND WATER



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

Jeff Noelte

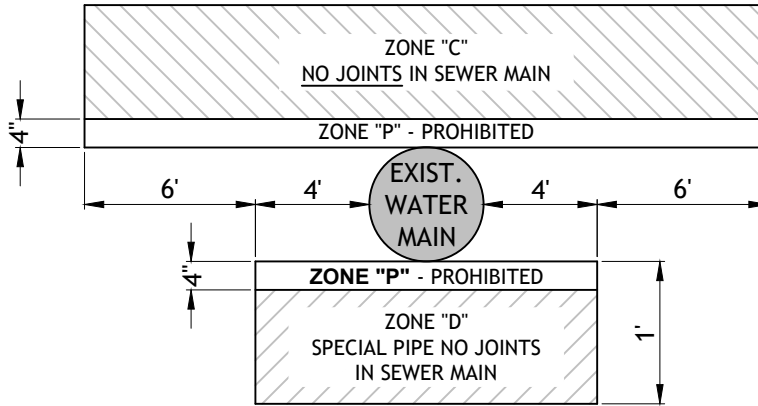
JEFF NOELTE, P.E. 67924
DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
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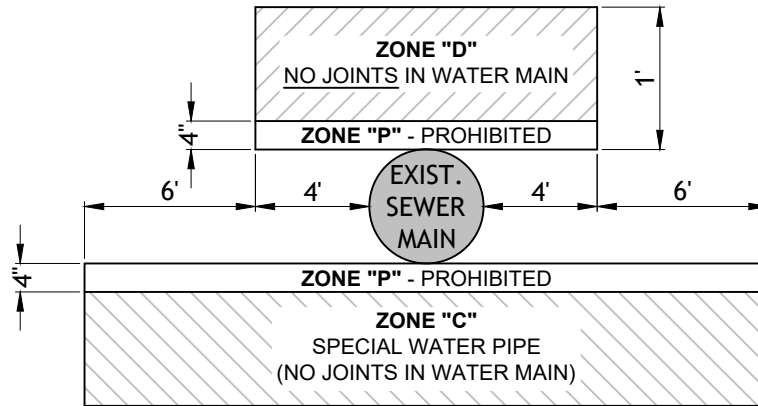
EVWD
STD. DWG.
W-106

SHEET 1 OF 1

CASE 1 - NEW SEWER MAIN



CASE 2 - NEW WATER MAIN



SPECIAL CONSTRUCTION REQUIRED FOR NEW SANITARY SEWER MAIN: CASE 1

ZONE "C"

IF THE WATER MAIN CROSSING ABOVE THE SANITARY SEWER MAIN DOES NOT MEET THE CASE 2, ZONE "C" REQUIREMENTS, THE SANITARY SEWER MAIN SHOULD HAVE NO JOINTS IN ZONE "C" AND BE CONSTRUCTED OF ONE OF THE FOLLOWING:

1. HDPE PIPE WITH FUSION-WELDED JOINTS (PER AWWA C906-99);
2. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING AND MECHANICAL JOINTS (GASKETED, BOLTED JOINTS);
3. A CONTINUOUS SECTION OF CLASS 200 (DR 14 PER AWWA C900-97) PVC PIPE OR EQUIVALENT, CENTERED OVER THE PIPE CROSSED;
4. A CONTINUOUS SECTION OF REINFORCED CONCRETE PRESSURE PIPE (PER AWWA C302-95) CENTERED OVER THE PIPE BEING CROSSED; OR
5. ANY SANITARY SEWER MAIN WITHIN A CONTINUOUS SLEEVE.

ZONE "D"

IF THE WATER MAIN CROSSING BELOW THE SANITARY SEWER MAIN DOES NOT MEET THE REQUIREMENTS FOR CASE 2, ZONE "D" THE SANITARY SEWER MAIN SHOULD HAVE NO JOINTS WITHIN FOUR (4) FEET FROM EITHER SIDE OF THE WATER MAIN AND SHOULD BE CONSTRUCTED OF ONE OF THE FOLLOWING:

1. A CONTINUOUS SECTION OF DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING;
2. ONE OF ZONE "C" OPTIONS 1,3,4, OR 5 ABOVE.

SPECIAL CONSTRUCTION REQUIRED FOR NEW WATER MAIN: CASE 2

ZONE "C"

IF THE SANITARY SEWER MAIN CROSSING ABOVE THE WATER MAIN DOES NOT MEET THE CASE 1, ZONE "C" REQUIREMENTS, THE WATER MAIN SHOULD HAVE NO JOINTS IN ZONE "C" AND BE CONSTRUCTED OF ONE OF THE FOLLOWING:

1. HDPE PIPE WITH FUSION WELDED JOINTS (PER AWWA C906-99);
2. DUCTILE IRON PIPE WITH HOT DIP BITUMINOUS COATING;
3. DIPPED AND WRAPPED ONE-FOURTH INCH (1/4") THICK WELDED STEEL PIPE;
4. CLASS 200, TYPE II, ASBESTOS-CEMENT (A.C.) PRESSURE PIPE;
5. CLASS 200 PRESSURE RATED PVC WATER PIPE (DR 14 PER AWWA C900-97) OR EQUIVALENT; OR
6. REINFORCED CONCRETE PRESSURE PIPE, STEEL CYLINDER TYPE, PER AWWA (C300-97 OR C302-99 OR C303-95).

ZONE "D"

IF THE SANITARY SEWER MAIN CROSSING BELOW THE WATER MAIN DOES NOT MEET THE REQUIREMENTS FOR ZONE "D", CASE 1, THE WATER MAIN SHOULD HAVE NO JOINTS WITHIN FOUR (4) FEET FROM EITHER SIDE OF THE SANITARY SEWER MAIN AND SHOULD BE CONSTRUCTED AS FOR ZONE "C".

VERTICAL PROTECTION ZONES FOR SEWER AND WATER



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

Jeff Noelte
 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
 REVISION

EVWD
 STD. DWG.
 W-107

SHEET 1 OF 1

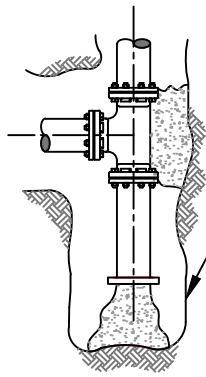
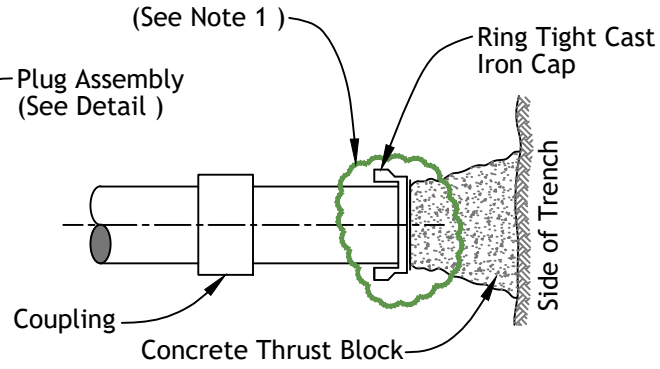


FIG. 1
PLAN VIEW



PLUG ASSEMBLY DETAIL

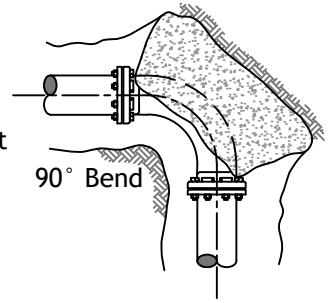


FIG. 3
PLAN VIEW

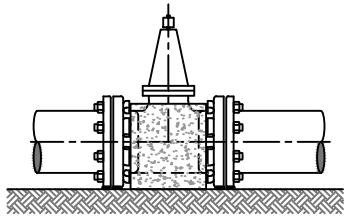


FIG. 2
ELEV. VIEW

SIZE OF PIPE	BEARING AREA - SQ. FEET		VOL. - CUBIC FEET
	CLASS 350		CLASS 350
	FIG. 1	FIG. 3	FIG. 2
4"	3	3	AS DIRECTED BY ENGINEER
6"	5	6	
8"	8	10	
10"	12	16	
12"	17	22	
>12"	TO BE CALC'D BY REG'D ENGINEER		

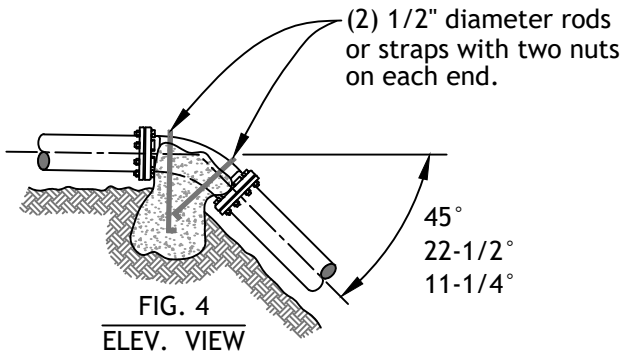


FIG. 4
ELEV. VIEW

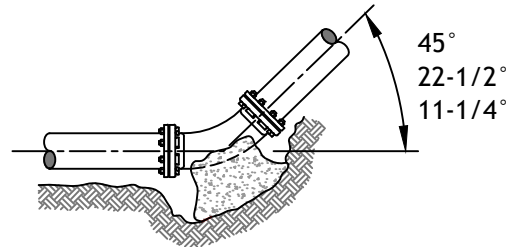


FIG. 5
ELEV. VIEW

SIZE OF PIPE	BEARING AREA - SQUARE FEET					
	CLASS 350					
	FIG. 4			FIG. 5		
	45	22 1/2°	11 1/4°	45	22 1/2°	11 1/4°
4"	8	3	3	2	1	1
6"	22	5	3	4	2	1
8"		14	3	6	3	1
10"		29	3	9	5	2
12"			6	13	7	3
>12"	TO BE CALCULATED BY REGISTERED ENGINEER					

NOTES:

1. Use plastic wrap (15# bldg. felt) around all fittings and couplings to keep cement off connections (Typical)
2. Special design required for bearing areas for class of pipe higher than 150.

THRUST BLOCK DETAILS

REV: 3/29/2022
J.WOLF
M:\ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-108 THRUST BLOCKS_2022.DWG



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

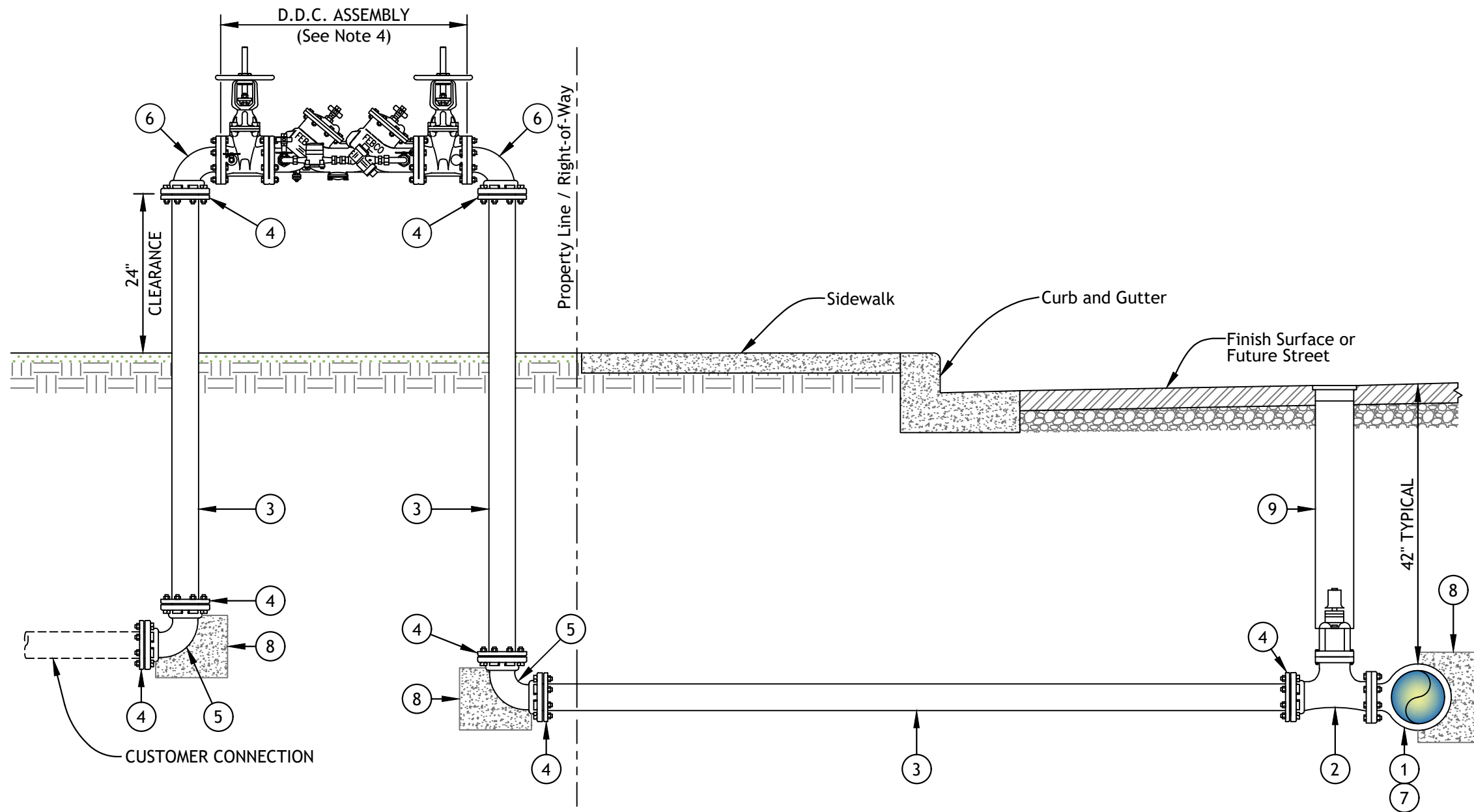
Jeff Noelte
JEFF NOELTE, P.E. 67924
DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
REVISION

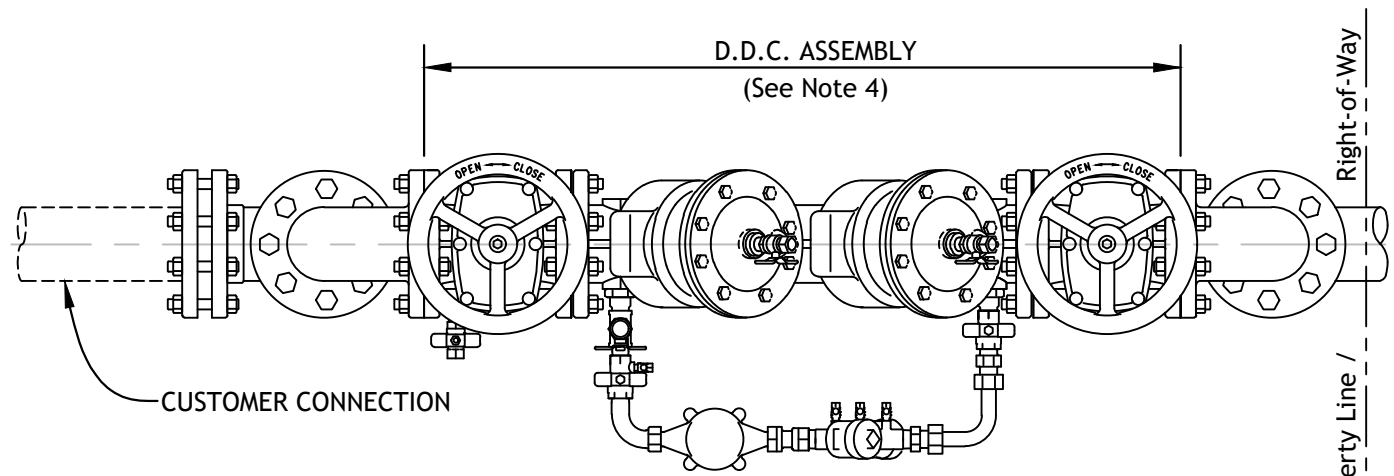
EVWD
STD. DWG.
W-108

SHEET 1 OF 1

REV: 3/29/2022 J.WOLF
 M:\ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-109 D.D.C. ASSEMBLY (IN-LINE)_2022.DWG



ELEVATION



PLAN

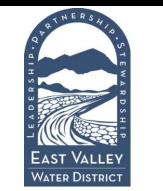
NOTES:

1. Double Detector Check (D.D.C.) needs to have five (5) feet clearance around the device to install and maintain the unit.
2. All D.D.C.'s will be placed behind the public right-of-way. If the D.D.C. cannot be placed behind sidewalk, ADA requirements will need to be met.
3. If the D.D.C. is being placed where there is no curb, gutter and sidewalk, the device should be placed where future development will not interfere with current location. Bollards will be placed around the device, see EVWD Std. Dwg. W-111.
4. Four inch (4") fire service is the minimum on all commercial and/or multi-family developments. Size of all parts needed for construction will be determined by the size of the Double Detector Check (D.D.C.) being installed.

ITEM MATERIALS:

- ① WATER MAIN
- ② GATE VALVE, FLG. x M.J.
- ③ DUCTILE IRON PIPE, PE x PE
- ④ MEGALUG RESTRAINTS
- ⑤ 90 DEG. BEND, M.J.
- ⑥ 90 DEG. BEND, FLG. x M.J.
- ⑦ MAIN CONNECTION, PER EVWD STD. DWG. W-104
- ⑧ THRUST BLOCK, PER EVWD STD. DWG. W-108 (OPTIONAL IF USING PIPE RESTRAINING JOINTS)
- ⑨ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-119

DOUBLE DETECTOR CHECK ASSEMBLY (In-Line)



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

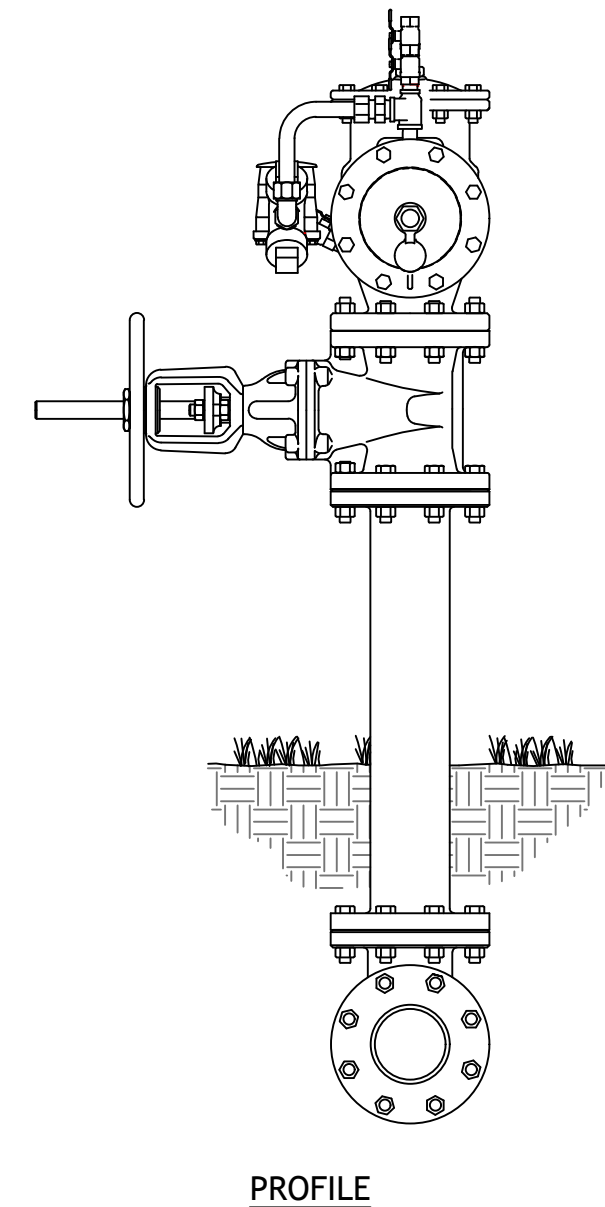
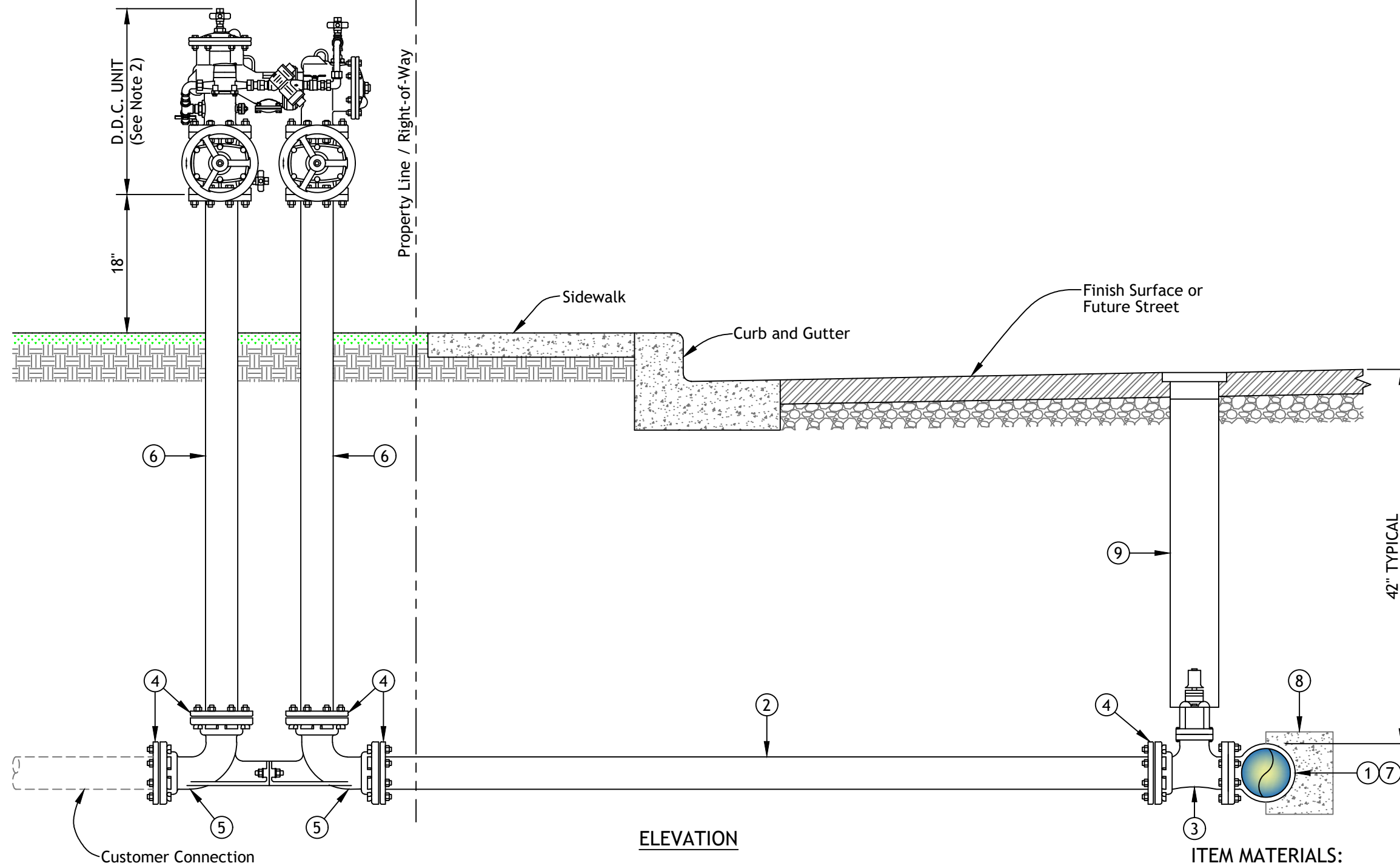
APPROVED BY:

Jeff Noelte
 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
 REVISION

EVWD
 STD. DWG.
W-109
 SHEET 1 OF 1

REV: 2/22/2017 J.WOLF
 W-ENGINEERING - SECURED\STANDARDS\DWG\2022_UPDATE\W-110_LOW_PROFILE_D.D.C.ASSEMBLY (N-SHAPE).DWG




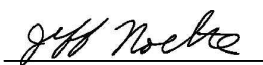
NOTES:

1. Double Detector Check (D.D.C.) needs to have a five (5) feet clearance around the device to install and maintain the unit.
2. All D.D.C.'s will be placed behind the public right-of-way, and behind the sidewalk. If the D.D.C. cannot be placed behind the sidewalk, ADA requirements will need to be met.
3. The model shown in the drawing is a FEBCO 876V. This device is recommended for projects located in the City of Highland.
4. If D.D.C. is being placed where there is no curb, gutter and sidewalk, the device should be placed where future development will not interfere with current location and bollards should be placed around the device. Refer to EVWD Std. Dwg. W-111.
5. Four inch (4") fire service is the minimum on all commercial and multi-family developments. Size of all parts needed for construction will be determined by the size of the Double Detector Check (D.D.C.) being installed.

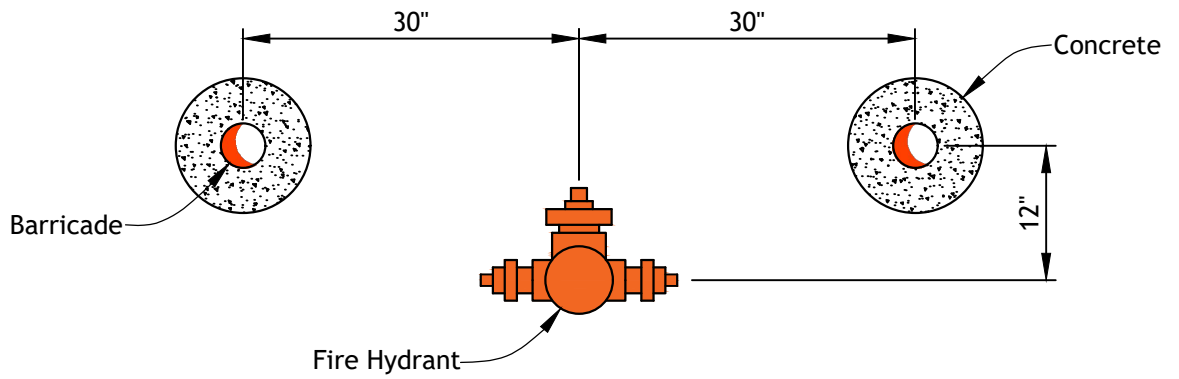
ITEM MATERIALS:

- | | |
|---|--|
| ① WATER MAIN | ⑥ D.I.P., FLG. x P.E. |
| ② DUCTILE IRON PIPE | ⑦ MAIN CONNECTION, PER EVWD STD. DWG. W-104 |
| ③ FLG. x M.J. GATE VALVE | ⑧ THRUST BLOCK, PER EVWD STD. DWG. W-108 (OPTIONAL IF USING PIPE RESTRAINING JOINTS) |
| ④ MEGALUG RESTRAINT | ⑨ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-119 |
| ⑤ M.J. x 90° BEND VALVE SETTERS (FEBCO 611 SETTER SERIES) | |

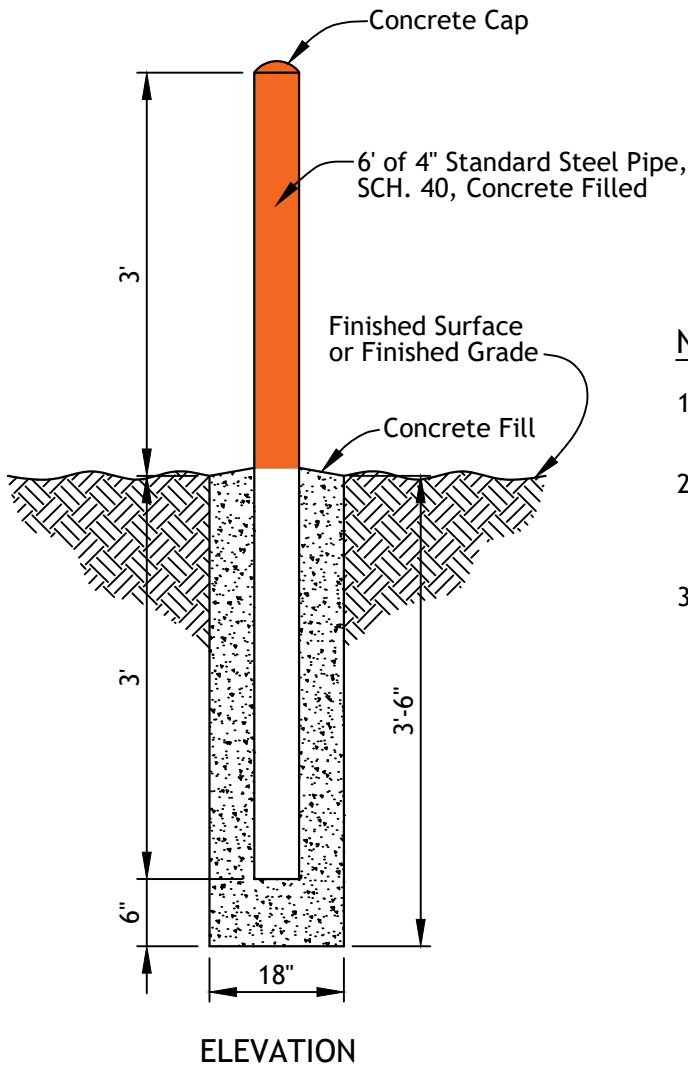
LOW PROFILE D.D.C. ASSEMBLY (N-SHAPE)

	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT APPROVED BY:		APRIL 2022 REVISION	EVWD STD. DWG. W-110 SHEET 1 OF 1
	 JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS			

STREET
(NO CONCRETE CURB)



PLAN
FIRE HYDRANT BARRICADES
(TYPICAL)



NOTES:

1. See the plans for number of bollards or guard posts to be used.
2. The exact location of the bollards or guard posts may be changed by the District, in the field.
3. The steel pipe above ground shall be painted with two (2) coats of "Safety Orange" primer/enamel paint.

GUARD POSTS OR BOLLARDS

REV: 6/13/2022 J.WOLF
M: ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-111 PIPE BOLLARDS_20220613.DWG



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

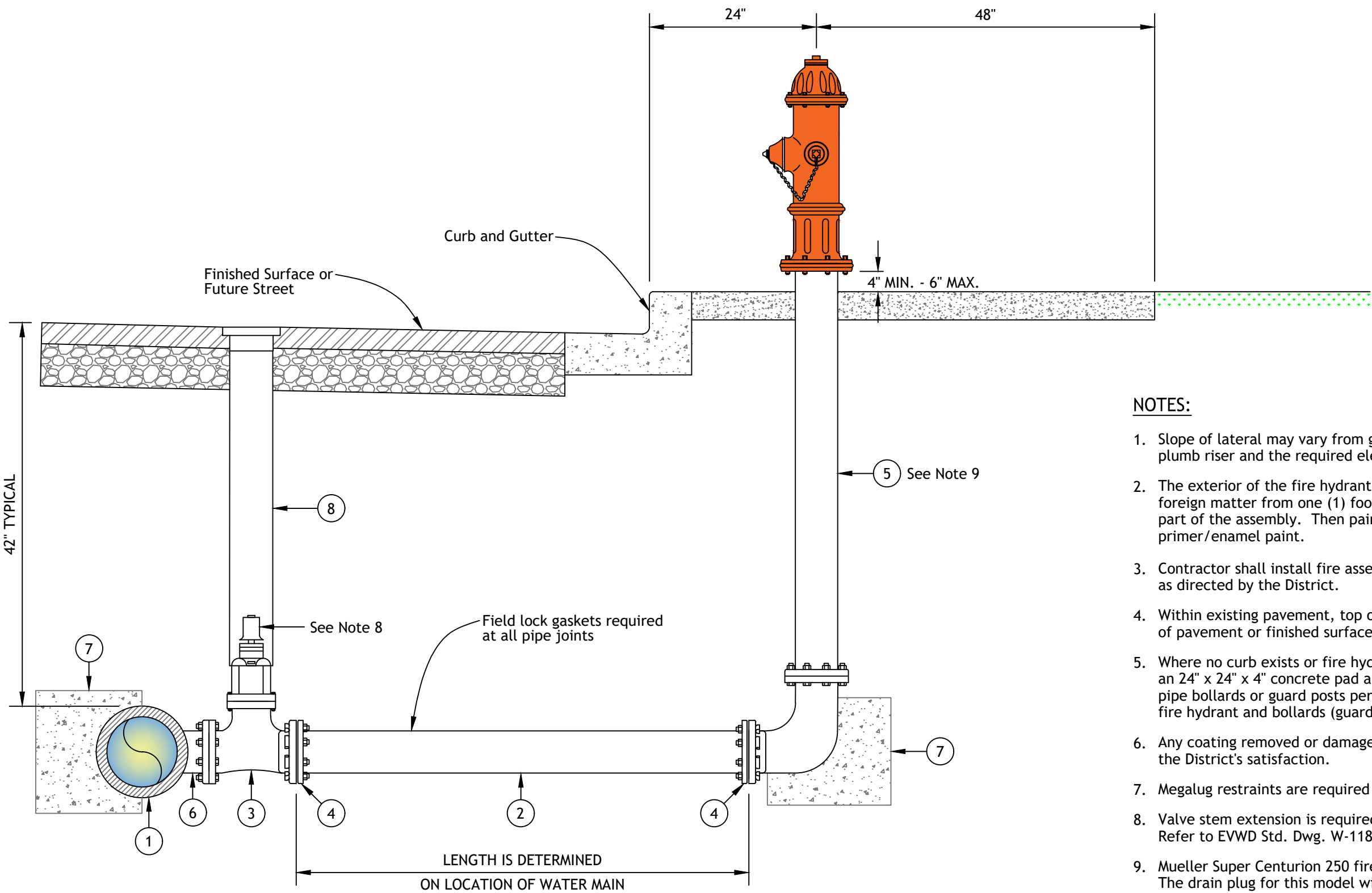
Jeff Noelte
JEFF NOELTE, P.E. 67924
DIRECTOR OF ENGINEERING & OPERATIONS

JUNE 2022
REVISION

EVWD
STD. DWG.
W-111

SHEET 1 OF 1

REV: 6/13/2022 J. WOLF
 M:\ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-112 FIRE HYDRANT ASSEMBLY 20220613.DWG




ITEM MATERIALS:

- ① WATER MAIN
- ② 6" DUCTILE IRON PIPE
- ③ 6" FLG. x M.J. GATE VALVE
- ④ 6" MEGALUG RESTRAINT
- ⑤ FIRE HYDRANT ASSEMBLY W/ M.J. BOOT (PRE-FABRICATED AS ONE PART)
- ⑥ MAIN CONNECTION, PER EVWD STD. DWG. W-104
- ⑦ THRUST BLOCK, PER EVWD STD. DWG. W-108 (OPTIONAL IF USING PIPE RESTRAINING JOINTS)
- ⑧ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-119

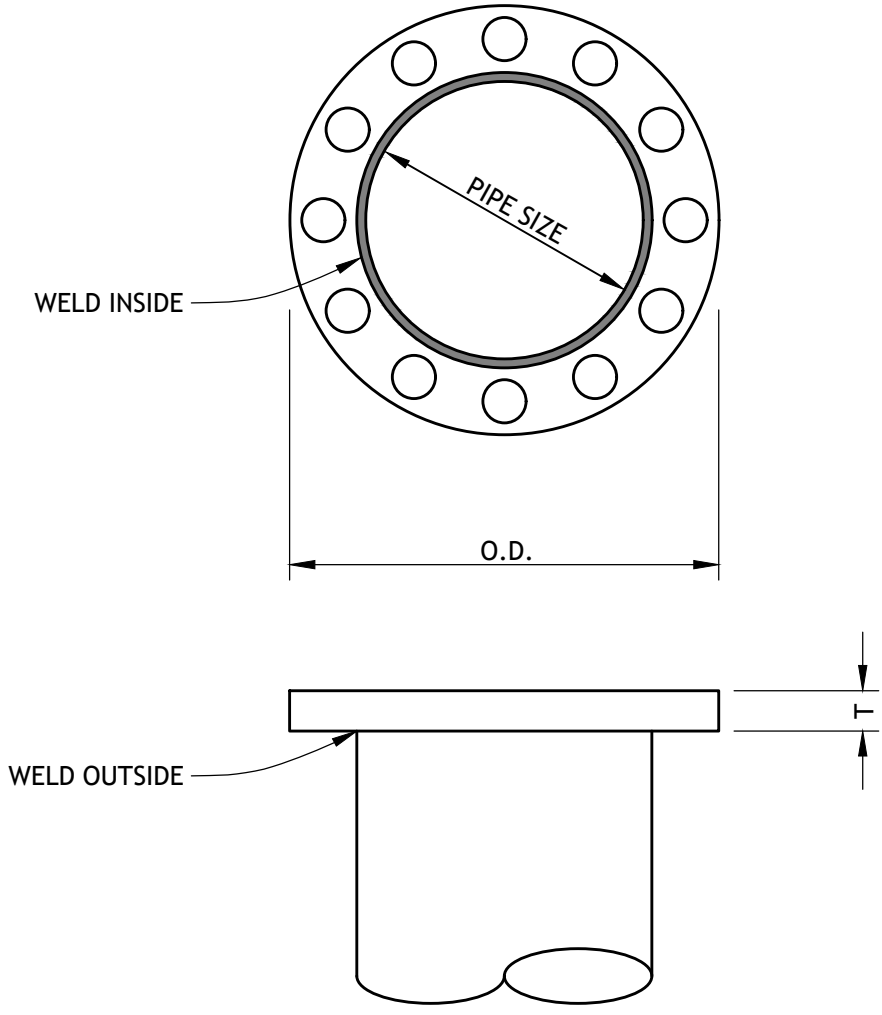
NOTES:

1. Slope of lateral may vary from gate valve to fire hydrant riser to provide a plumb riser and the required elevations and distances.
2. The exterior of the fire hydrant assembly shall be thoroughly cleaned of all foreign matter from one (1) foot below ground surface to the upper most part of the assembly. Then painted with two (2) coats of "Safety Orange" primer/enamel paint.
3. Contractor shall install fire assembly at locations shown on the plans or as directed by the District.
4. Within existing pavement, top of valve can and cover to be even with top of pavement or finished surface.
5. Where no curb exists or fire hydrant installed in dirt, contractor shall lay an 24" x 24" x 4" concrete pad around the fire hydrant and install two (2) pipe bollards or guard posts per EVWD Std. Dwg. W-111. The location of the fire hydrant and bollards (guard posts) shall be directed by the District.
6. Any coating removed or damaged shall be repaired with like material to the District's satisfaction.
7. Megalug restraints are required on all mechanical joints (M.J.).
8. Valve stem extension is required if the depth to the valve nut exceeds 84". Refer to EVWD Std. Dwg. W-118.
9. Mueller Super Centurion 250 fire hydrants will be installed within the District. The drain plug for this model will be permanently sealed prior to installation.

FIRE HYDRANT INSTALLATION

	<p>EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT</p> <p>APPROVED BY:</p> <p style="text-align: center;"><i>Jeff Noelte</i></p> <p style="text-align: center;">JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS</p>	<p>JUNE 2022 REVISION</p>
		<p>EVWD STD. DWG. W-112</p> <p>SHEET 1 OF 1</p>

REV: 3/30/2022 J.WOLF
 M: ENGINEERING - SECURED STANDARDS\DWG\2022 UPDATE\WATER\W-113 BOLT AND FLANGE TABLE_2022.DWG



CLASS 150 BOLT AND FLANGE TABLE						
NOMINAL PIPE SIZE INCH	FLANGE O.D.	DIA. BOLT CIRCLE	FLANGE THICKNESS	BOLT HOLE DIAMETER	NUMBER OF BOLTS	BOLT DIA. AND LENGTHS
4	9	7.5	.94	.75	8	5/8 x 3
6	11	9.5	1.00	.875	8	3/4 x 3-1/2
8	13.5	11.75	1.12	.875	8	3/4 x 3-1/2
10	16	14.25	1.19	1.00	12	7/8 x 4
12	19	17	1.25	1.00	12	7/8 x 4
14	21	18.75	1.38	1.125	12	1 x 4-1/2
16	23.5	21.25	1.44	1.125	16	1 x 4-1/2
18	25	22.75	1.56	1.25	16	1-1/8 x 5
20	27.5	25	1.69	1.25	20	1-1/8 x 5
24	32	29.5	1.88	1.375	20	1-1/4 x 5-1/2
30	38.75	36	2.12	1.375	28	1-1/4 x 6-1/2

CLASS 150 - BOLT AND FLANGE TABLE



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

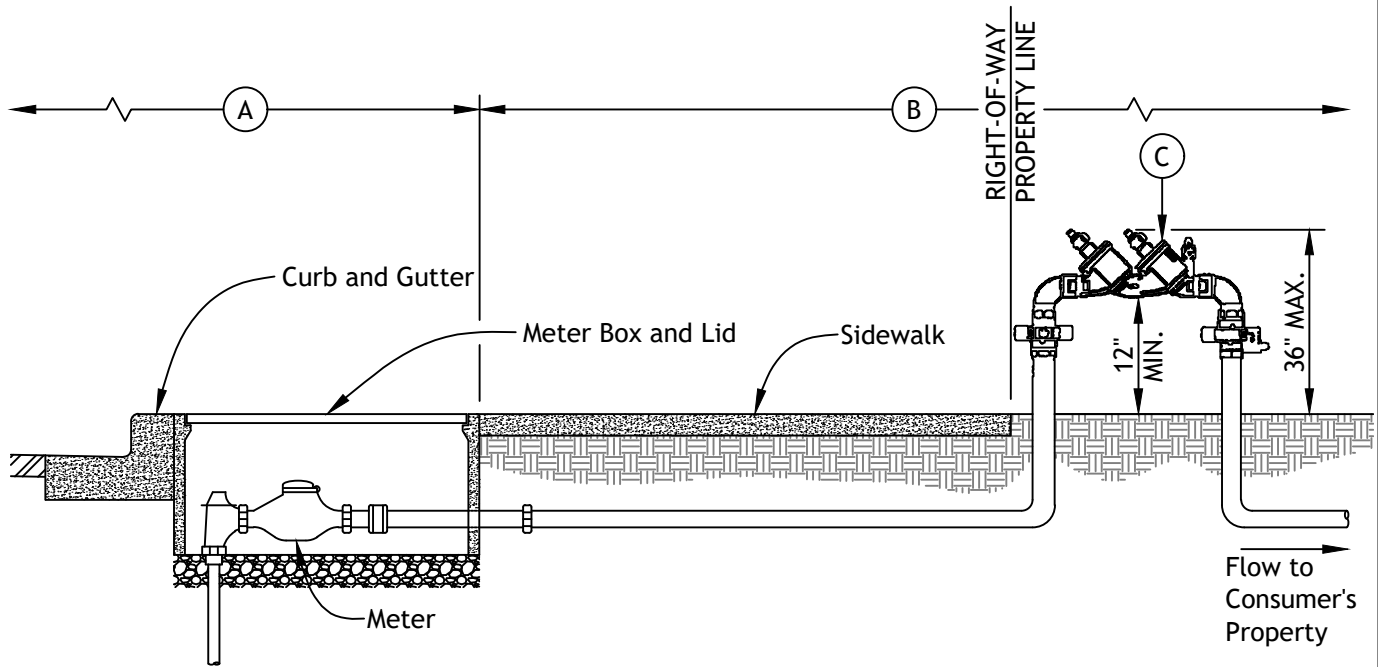
APPROVED BY:

Jeff Noelte
 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
 REVISION

EVWD
 STD. DWG.
 W-113

SHEET 1 OF 1



- Ⓐ East Valley Water District will install and maintain service from the water main to the meter box.
- Ⓑ Consumer will install and maintain the service lateral from behind the meter box to the building, including the reduced pressure principle backflow prevention assembly.
- Ⓒ Reduced pressure principle backflow prevention assembly with resilient seated shut-off valves. Location of device is to be approved by the District.

NOTES:

1. The assembly must be inspected and approved by EVWD immediately after installation. The assembly must be tested by a certified backflow tester, issued by the administrative authority having jurisdiction.
2. No connections or tees are permitted between the meter and backflow preventer. Strainers will be reviewed on an individual basis.
3. Prior to installation of assembly, the water service shall be flushed.
4. A manifold connection with duplex units should be installed if an uninterrupted supply of water is necessary.
5. If needed, a pressure relief valve shall be installed after the backflow device, per section 1007 of the Uniform Plumbing Code.
6. Backflow device shall have a 18" clearance around all sides from any obstructions that may block or prohibit any maintenance or testing.

TYPICAL INSTALLATION OF REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY

REV: 3/30/2022 J.WOLF M:\ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-114 R.P.P.BACKFLOW DEVICE_2022.DWG



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

Jeff Noelte
 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
 REVISION

EVWD
 STD. DWG.
 W-114

SHEET 1 OF 2

Last Reviewed: March 30, 2022

Guidelines for Backflow Installation and Requirements (Not Intended to be All-Inclusive)

The following guidelines were developed to assist in backflow installation:

- State of Policy: Pursuant to East Valley Water District Ordinance 9.01 the property owner will also be responsible for any testing or repair to the backflow assembly.
- All devices must be state approved and must meet University of Southern California, 9th Edition Specifications.
- All backflow assemblies installed for meter protection must be Reduced Pressure Principle (R.P.P) assemblies.
- Approval must be given by the East Valley Water District as to the location of the device to be installed prior to installation.
- East Valley Water District requires all backflow devices to be installed as close to the service meter as possible without interfering with any City right-of-ways such as sidewalks, etc.
- The relief valve must be installed with a minimum distance of twelve (12) inches to the final grade level. The height of the device must not exceed thirty-six (36) inches from final grade level. The device must be installed with a minimum distance of twenty-four (24) inches on the test cock side of the device and must have a total clearance on all sides of twelve (12) inches. The device must be accessible with easy access for testing.
- After installation, a certified backflow tester must test the backflow device. The paperwork must then be submitted to East Valley Water District prior to service being turned on.
- East Valley Water District's responsibility will be for repairs from the water main to the meter only.
- Attached to these guidelines you will receive an engineered drawing of a properly installed Reduced Pressure Principle (R.P.P.) backflow device.
- There must be a twenty-four (24) hour notice given to East Valley Water District prior to water service being turned on for backflow testing.

For questions regarding your backflow installation or testing of the device, contact East Valley Water District's Water Quality Coordinator at (909) 772-5154.

TYPICAL INSTALLATION OF REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

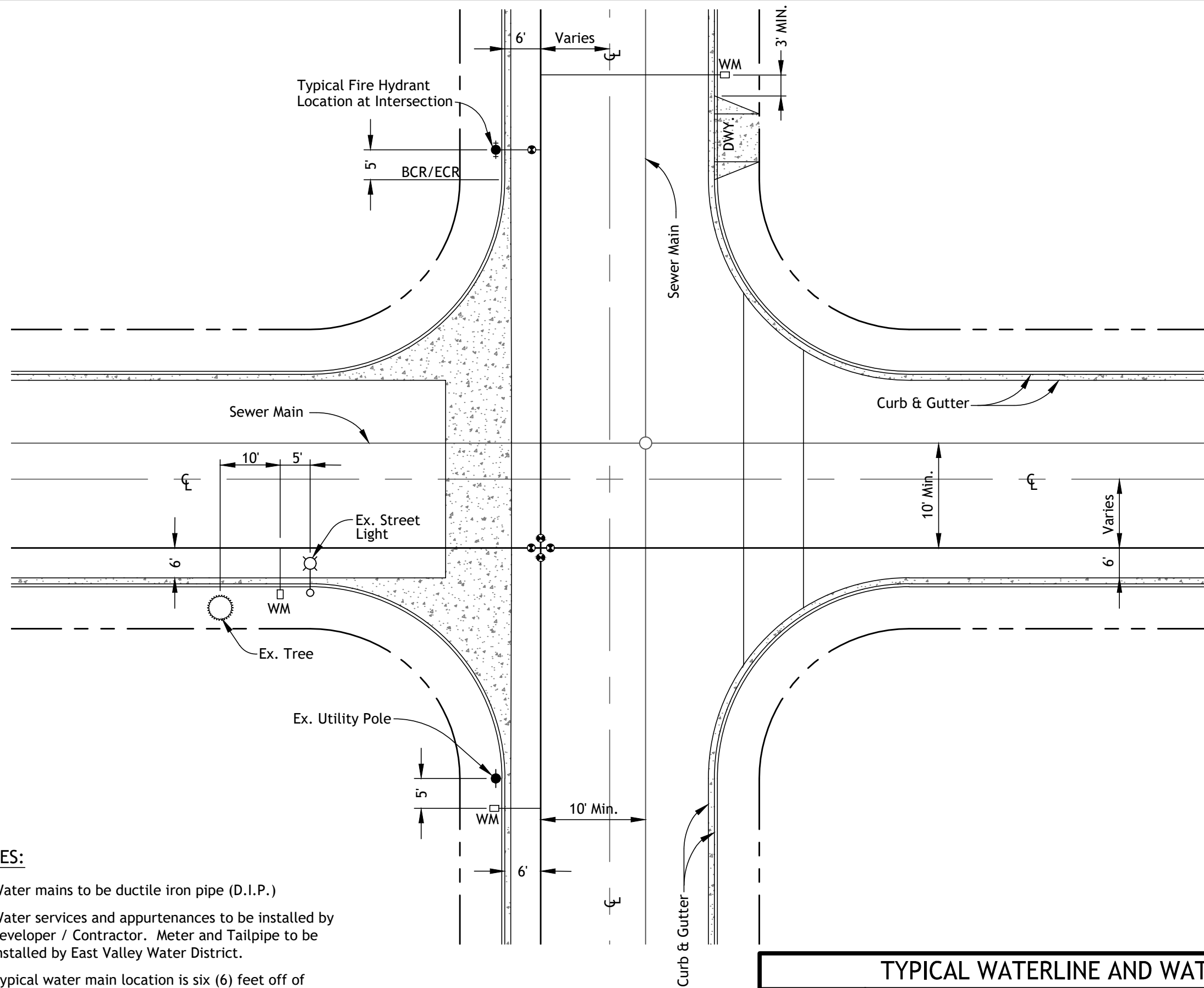

JEFF NOELTE, P.E. 67924
DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
REVISION

EVWD
STD. DWG.
W-114



SHEET 2 OF 2

REV: 3/29/2022 J.WOLF
 M: \ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-115 TYPICAL WATERLINE AND WATER METER LAYOUT_2022.DWG
















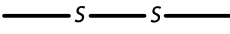
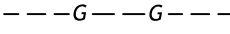
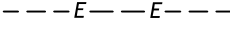
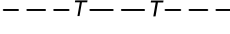
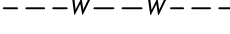
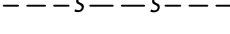



NOTES:

1. Water mains to be ductile iron pipe (D.I.P.)
2. Water services and appurtenances to be installed by Developer / Contractor. Meter and Tailpipe to be installed by East Valley Water District.
3. Typical water main location is six (6) feet off of curb face.

TYPICAL WATERLINE AND WATER METER LAYOUT		
	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT APPROVED BY:  JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	EVWD STD. DWG. W-115 SHEET 1 OF 1
APRIL 2022 REVISION		

REV: 3/30/2022 J.WOLF
 M: ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-116 STANDARD SYMBOLS_2022.DWG

	TEE
	CROSS
	PROPOSED RESILIENT GATE VALVE (G.V.)
	PROPOSED BUTTERFLY VALVE (B.F.V.)
	PROPOSED FIRE HYDRANT
	PROPOSED BLOW-OFF
	PROPOSED AIR-VAC ASSEMBLY
	PROPOSED WATER METER
	EXISTING RESILIENT GATE VALVE (G.V.)
	EXISTING BUTTERFLY VALVE (B.F.V.)
	EXISTING FIRE HYDRANT
	EXISTING BLOW-OFF
	EXISTING AIR VAC
	EXISTING WATER METER
	PROPOSED WATER
	PROPOSED SEWER
	EXISTING GAS
	EXISTING ELECTRICAL
	EXISTING TELEPHONE
	EXISTING WATER
	EXISTING SEWER
	EXISTING STORM DRAIN

STANDARD SYMBOLS AND LINETYPES



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

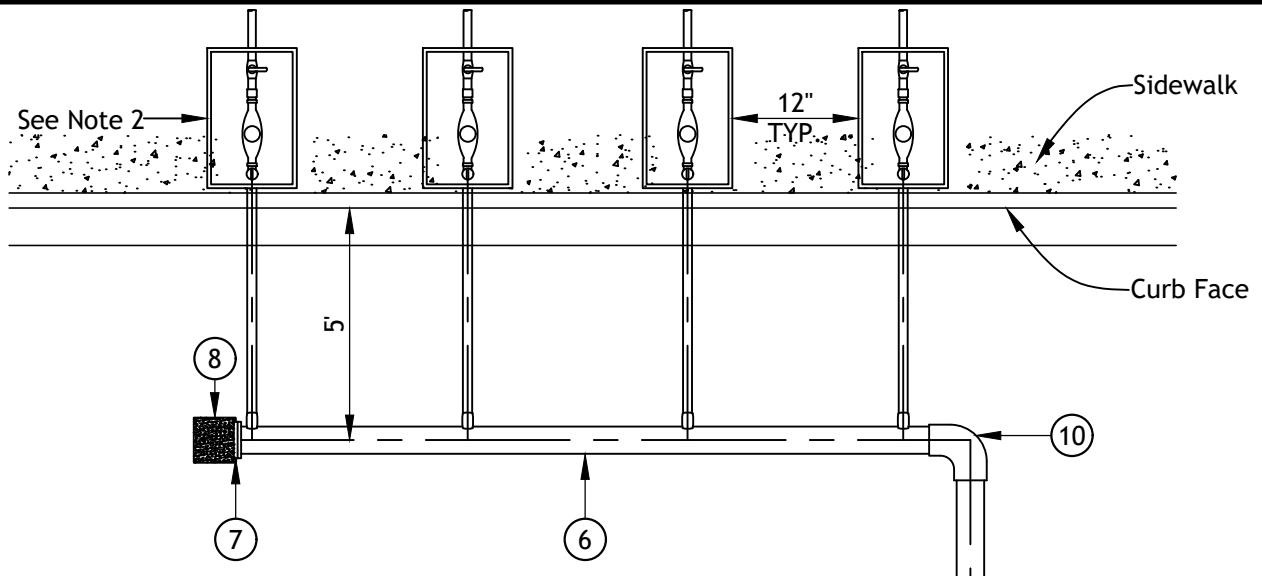
APPROVED BY:


 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
 REVISION

EVWD
 STD. DWG.
 W-116

SHEET 1 OF 1

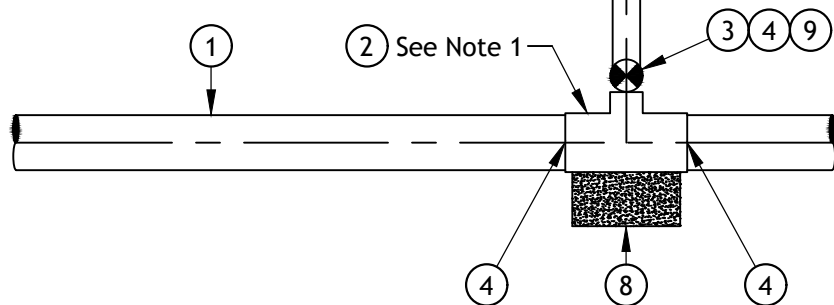


MANIFOLD DESIGN GUIDELINES (SEE NOTE 3)

Manifold Dia.	Maximum No. of 2" (or Smaller) Water Services
4"	4
6"	8

ITEM MATERIALS:

- ① DUCTILE IRON PIPE (D.I.P.)
- ② TEE, M.J. x M.J. x FLG.
- ③ GATE VALVE, FLG. x M.J.
- ④ MEGALUG RESTRAINT
- ⑤ TEE, M.J.
- ⑥ DUCTILE IRON PIPE (D.I.P.), FLG. x P.E.
- ⑦ BLIND FLANGE
- ⑧ THRUST BLOCK, PER EVWD STD. DWG. W-108
- ⑨ ADJUSTABLE VALVE CAN, EXTENSION AND LID, PER EVWD STD. DWG. W-XXX
- ⑩ 90° BEND, M..J. x M.J.



NOTES:

1. If connection being made is to an existing water main, refer to EVWD Std. Dwg. W-104.
2. Use EVWD Std. Dwg. W-101A for all installations of new water meters.
3. Sizing should be verified by the Design Engineer based upon the specific available pressures in the water main and the on-site water service pressures required.

SERVICE MANIFOLD

REV: 3/30/2022 J.WOLF M: ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-117 SERVICE MANIFOLD DETAIL_2022.DWG



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

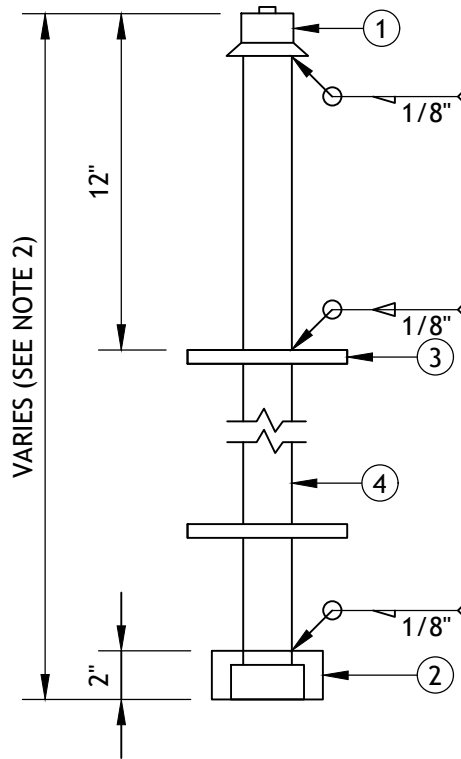
Jeff Noelte
 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
 REVISION

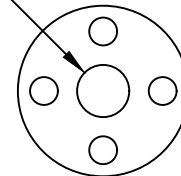
EVWD
 STD. DWG.
 W-117

SHEET 1 OF 1

REV: 3/30/2022 J.WOLF
 M: \ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-118 VALVE STEM EXTENSION_2022.DWG



Opening to be 1/4" larger than the outside dimension of the bar stock



SPACER PLATE DETAIL

ITEM MATERIALS:

- ① AWWA 2" OPERATING NUT
- ② AWWA SOCKET FOR 2" SQUARE OPERATING NUT
- ③ 6 1/2" DIA. x 3/16" SPACE PLATE
- ④ 1 1/4" SOLID, ROUND, OR SQUARE STEEL BAR STOCK (PINNED COUPLERS ARE NOT ALLOWED, HOLLOW TUBE OR PIPE ARE NOT ALLOWED)

NOTES:

1. Provide valve stem extension when depth to operating nut exceeds 84" (Fabricate extension to field measurement, see note 2).
2. Terminate extension 24" to 36" from finished grade.
3. Provide additional spacer plate(s) when distance to bottom socket exceeds 60" beyond lowest plate.

VALVE STEM EXTENSION



EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT

APPROVED BY:

Jeff Noelte
 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

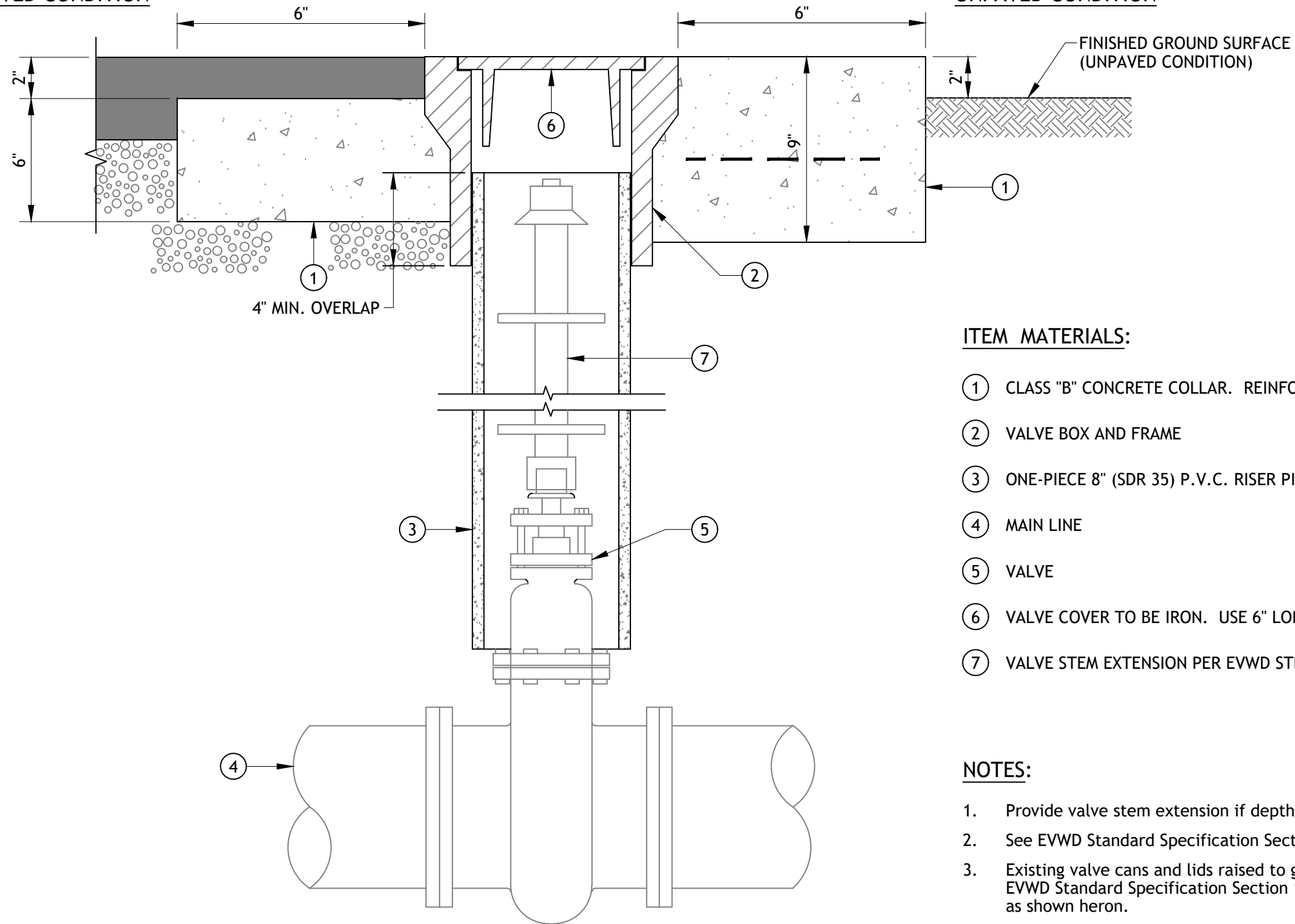
APRIL 2022
 REVISION

EVWD
 STD. DWG.
 W-118

SHEET 1 OF 1

PAVED CONDITION

UNPAVED CONDITION

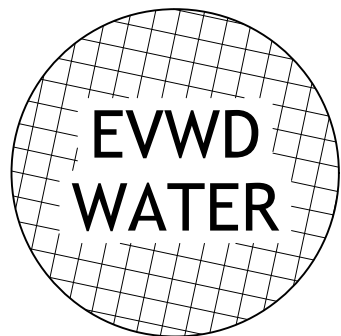


ITEM MATERIALS:

- ① CLASS "B" CONCRETE COLLAR. REINFORCE WITH W.W.F. 1.6 x 1.6 IN TURF BLOCK AND UNPAVED CONDITIONS
- ② VALVE BOX AND FRAME
- ③ ONE-PIECE 8" (SDR 35) P.V.C. RISER PIPE
- ④ MAIN LINE
- ⑤ VALVE
- ⑥ VALVE COVER TO BE IRON. USE 6" LONG-SKIRTED CAST IRON LID FOR ROUND BOXES, DETAIL HERON
- ⑦ VALVE STEM EXTENSION PER EVWD STD. DWG. W-118. (SEE NOTE 1)

NOTES:

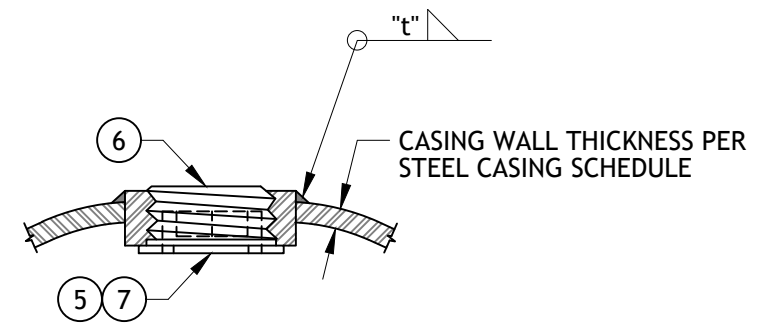
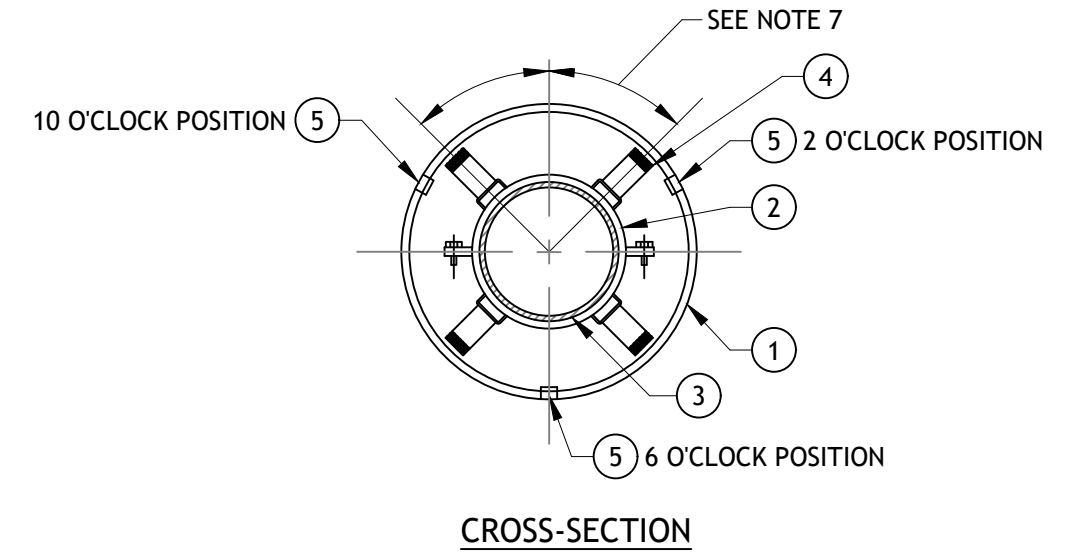
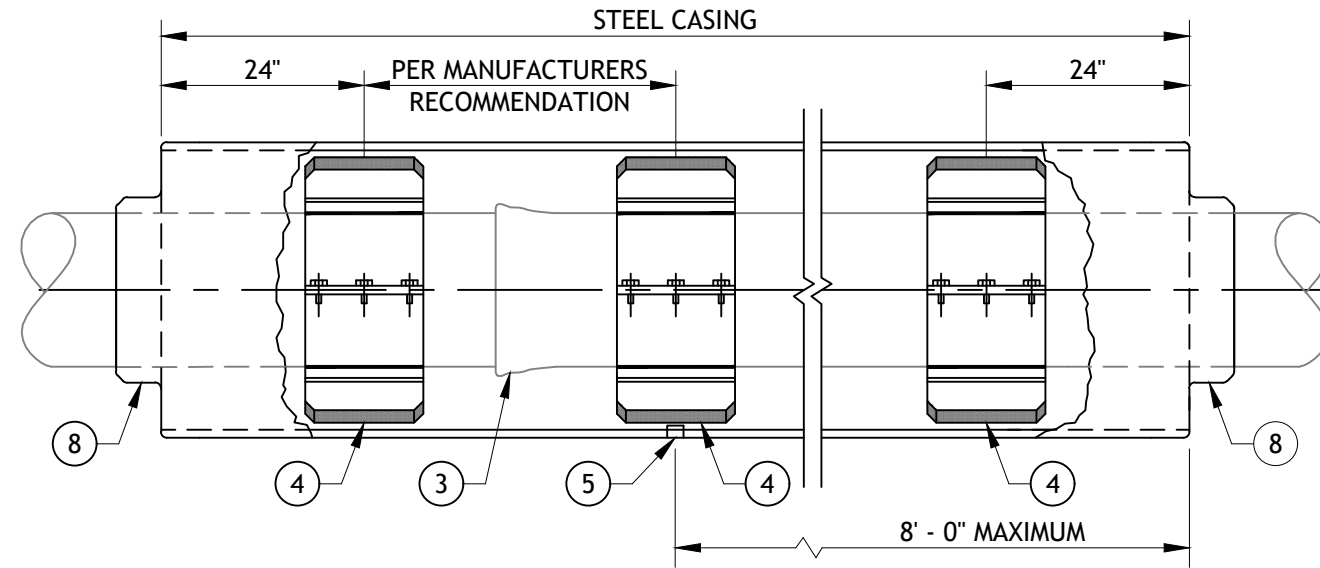
- 1. Provide valve stem extension if depth to valve nut exceeds 84". See EVWD Standard Drawing W-118.
- 2. See EVWD Standard Specification Section 15100 for valve lid cover.
- 3. Existing valve cans and lids raised to grade shall be removed and replaced with new, set, and painted per EVWD Standard Specification Section 15100. Existing valves if damaged shall be replaced with new P.V.C. as shown heron.
- 4. Valve box must be constructed as shown hereon regardless of construction phase. No interim conditions will be accepted.



VALVE COVER DETAIL

REV: 3/30/2022 J.WOLF
M: \ENGINEERING - SECURED\STANDARDS\DWG\2022 UPDATE\WATER\W-119 VALVE BOX_2022.DWG

VALVE BOX		
	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT APPROVED BY:	EVWD STD. DWG. W-119
	 JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	
		SHEET 1 OF 1



ITEM MATERIALS:



- ① STEEL CASING
- ② CARRIER PIPE JOINT BELL, BEYOND
- ③ CARRIER PIPE WITH ALL JOINTS RESTRAINED
- ④ STAINLESS STEEL CASING SPACERS WITH UHMW POLYETHYLENE RUNNERS.
- ⑤ GROUT FITTING @ 8' O.C. PER DETAIL HEREON. FOR ALL CASINGS 24" IN DIA. AND LARGER, INSTALL ONE (1) COUPLING IN 6 O'CLOCK POSITION @ 8' O.C.; STAGGER COUPLINGS BETWEEN 10 O'CLOCK AND 2 O'CLOCK POSITIONS EVERY FOUR (4) LINEAR FEET ALONG CASING AXIS
- ⑥ 2" NPT THREADED STEEL PLUG WITH RAISED HEAD
- ⑦ 2" NPT STANDARD WEIGHT STEEL PIPE HALF COUPLING
- ⑧ EPDM CASING END SEAL, WITH STAINLESS STEEL WORM-SCREW BAND CLAMPS

NOTES:

1. Casing shall be installed by the bore, jack and/or tunnel method.
2. Size and thickness of casing shall be as shown in steel casing schedule hereon. For long bores or special situations greater wall thickness than shown in schedule may be required.
3. All steel casing pipe field joints shall be welded full-circumference.
4. Carrier pipe shall be pressured tested prior to sealing ends of casing.
5. Each end of casing shall be sealed with approved rubber casing end seals.
6. Backfill for casing in open cut shall be per EVWD Std. Dwg. W-121 or local agency having jurisdiction.
7. Number and placement of spacers on carrier pipe per Manufacturer's Specifications.
8. All carrier pipe joints inside the casing and a minimum 5' outside the steel casing shall be restrained.

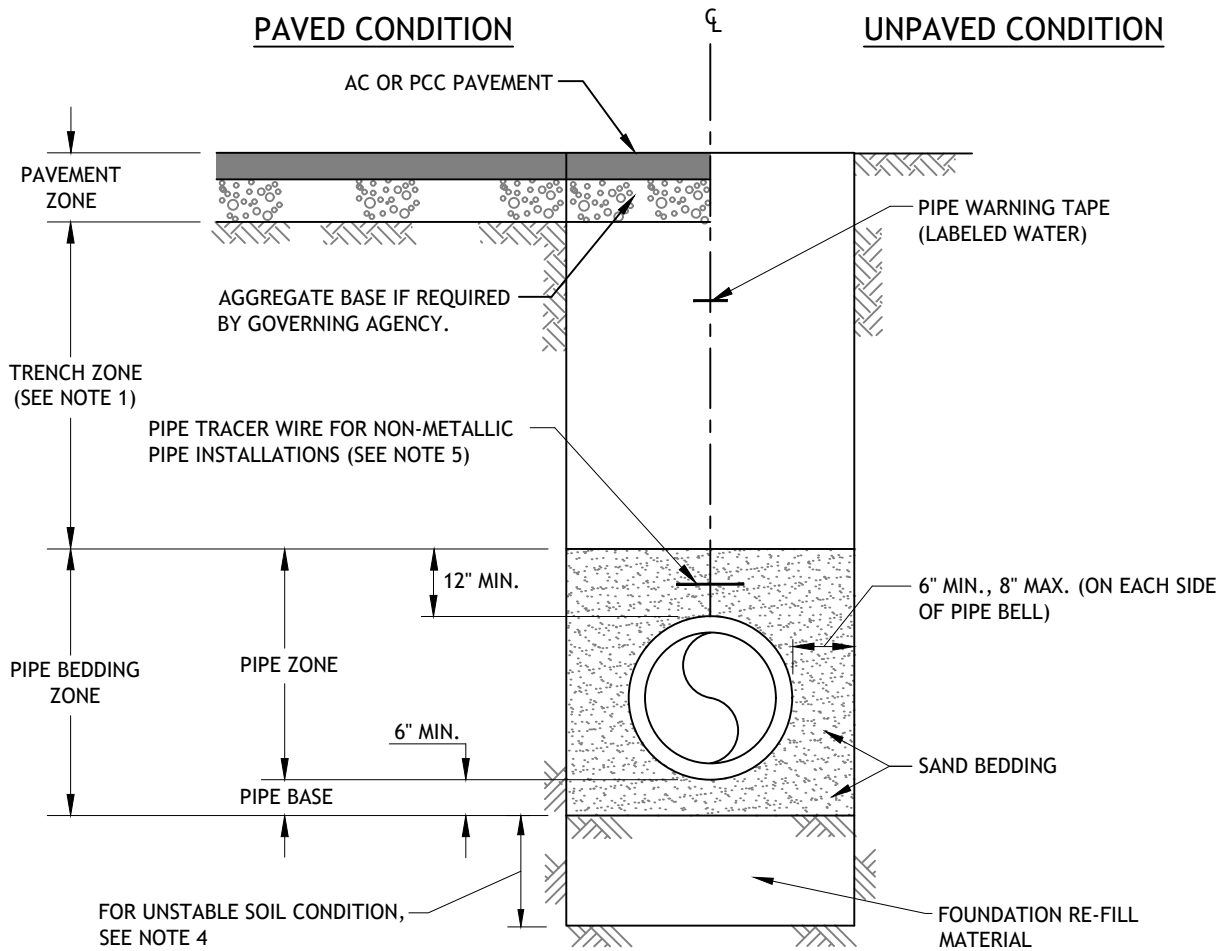
STEEL CASING SCHEDULE		
NOMINAL CARRIER PER SIZE	MINIMUM CASING SIZE	MINIMUM WALL THICKNESS
6"	16" O.D.	5/16"
8"	16" O.D.	5/16"
10"	18" O.D.	5/16"
12"	20" O.D.	3/8"
16"	24" O.D.	3/8"
18"	30" O.D.	1/2"
24"	42" O.D.	1/2"

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STEEL CASING FOR WATER PIPE		
	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT APPROVED BY:  JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	EVWD STD. DWG. W-120 SHEET 1 OF 1
APRIL 2022 REVISION		

PAVED CONDITION

UNPAVED CONDITION



NOTES:

1. Compaction for the Trench Zone shall meet the local agency having jurisdiction or whichever compaction requirement is stricter.
2. Pipe base shall be a minimum of 6" in depth. Pipe bedding material shall be per EVWD standard and shall include both pipe base and pipe bedding zone.
3. Contractor shall provide hand excavated "Bell Hole" for each pipe joint so that the weight of the 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.

If unstable soil is encountered, the District Representative shall determine over excavation depth and foundation re-fill material.
4. Where Contractor fails to maintain proper trench width limits, special backfill such as one-sack slurry and bedding shall be used as determined in the field by the District Representative.
5. 14 gauge pipe tracer wire shall be installed and fastened to the pipe and wrapped at 5' intervals around the entire circumference of the pipe.
6. The minimum depth of cover from finish grade to the top of the pipeline shall be as follows, unless otherwise approved by the District Representative:
 DOMESTIC WATER PIPELINE (1" TO 10" DIA.) = 42"
 DOMESTIC WATER PIPELINE (> 10" DIA.) = 48"

WATER TRENCH

EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT
 APPROVED BY:

Jeff Noelte
 JEFF NOELTE, P.E. 67924
 DIRECTOR OF ENGINEERING & OPERATIONS

APRIL 2022
 REVISION

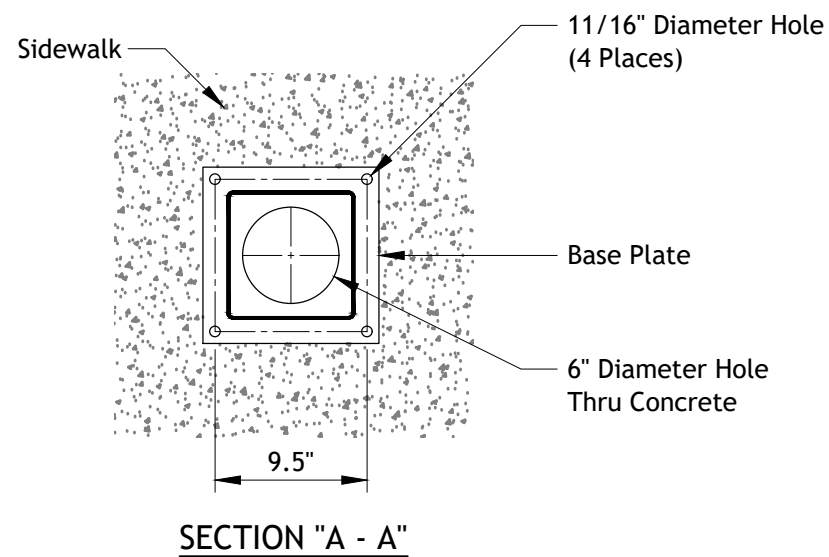
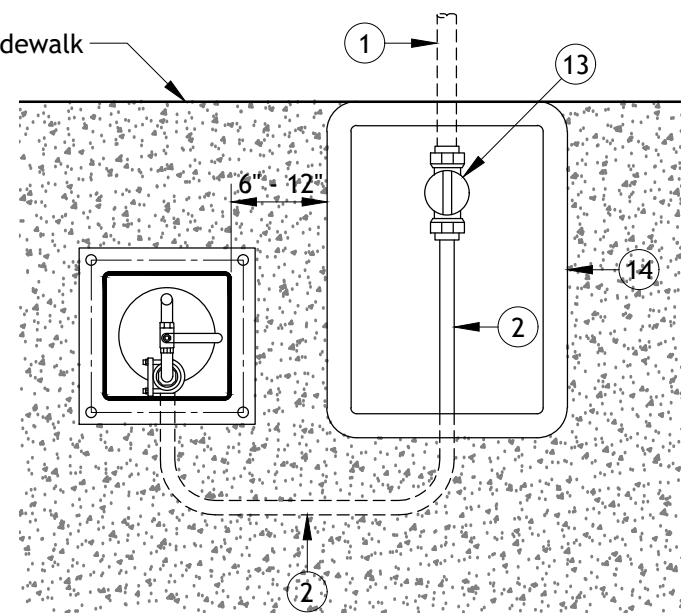
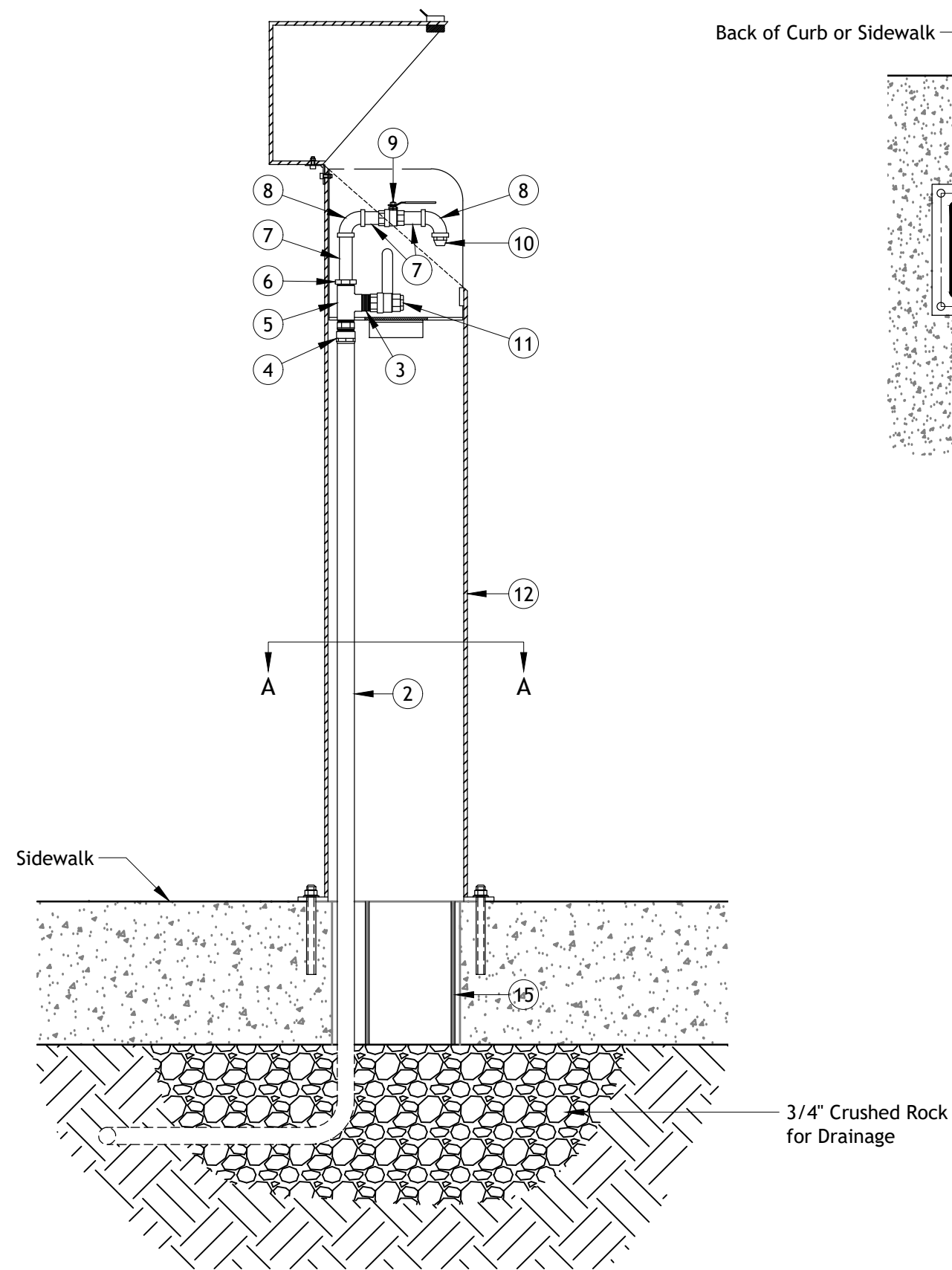
EVWD
 STD. DWG.
W-121

SHEET 1 OF 1

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REV: 3/30/2022 J.WOLF
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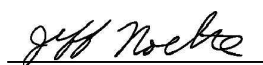
ITEM MATERIALS:

- ① SERVICE CONNECTION PER EVWD STD. DWG. W-1
- ② 3/4" SERVICE TUBING TYPE "K" SOFT COPPER
- ③ 3/4" MALE CLOSE COUPLING, BRASS
- ④ 3/4" MALE x COMPRESSION ADAPTOR, BRASS
- ⑤ 3/4" TEE, BRASS
- ⑥ 3/4" X 1/4" REDUCER, BRASS
- ⑦ 1/4" NIPPLE, BRASS
- ⑧ 1/4" 90° ELBOW, BRASS
- ⑨ 1/4" BALL VALVE, BRASS
- ⑩ 1/4" FLARE NUT, BRASS
- ⑪ 3/4" BALL VALVE, WITH 3/4" PLUG, BRASS
- ⑫ WATER SAMPLING STATION, MODEL EZ-01F
- ⑬ 1" X 3/4", COMPRESSION X COMPRESSION METER STOP
- ⑭ #4 1/2 METER BOX AND LID
- ⑮ 4" PIPE SLEEVE, P.V.C.

NOTES:

- 1. All hardware shall be Type 316 stainless steel.
- 2. Fill annular space in slab sleeve with sand.
- 3. Install EVWD Logo Decal "Domestic" or "Recycled" as directed by East Valley Water District.
- 4. Covers shall be manufactured by Armorcast products or Pipeline Products, Inc.
- 5. Unless otherwise specified: dimensions are in inches.
- 6. Tolerances: .xx ±.03 frac ±1/16
 .xxx ±.010 ang ±0' - 30'
- 7. Break sharp edges to r.010
- 8. Interpret per ANSI y14.5m
- 9. Steel welding per AWS D1.1 - 94
- 10. Aluminum welding per AWS D1.2 - 94
- 11. Machine finish $\sqrt{125}$ or better

WATER SAMPLE STATION

	EAST VALLEY WATER DISTRICT, ENGINEERING DEPARTMENT APPROVED BY:  JEFF NOELTE, P.E. 67924 DIRECTOR OF ENGINEERING & OPERATIONS	APRIL 2022 REVISION	EVWD STD. DWG. W-122
			SHEET 1 OF 1