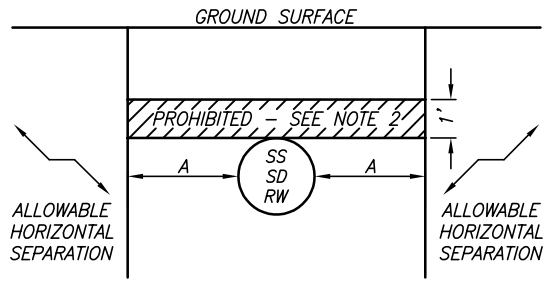


PERPENDICULAR CROSSING

SANITARY SEWERS, STORM DRAINS, OR RECYCLED WATER LINES AND UTILITY WATER LINES



PARALLEL CONSTRUCTION

SANITARY SEWERS, STORM DRAINS, OR RECYCLED WATER LINES AND UTILITY WATER LINES

- IF EXISTING PIPELINE IS UNTREATED SEWAGE, PRIMARY OR SECONDARY TREATED SEWAGE, DISINFECTED SECONDARY-2.2 RECYCLED WATER, DISINFECTED SECONDARY-2.3 RECYCLED WATER, OR A HAZARDOUS FLUID:

$A = 10'$

- IF EXISTING PIPELINE IS DISINFECTED TERTIARY RECYCLED WATER OR STORM DRAINAGE:

$A = 4'$

NOTES

1. STATE BOARD APPROVAL REQUIRED FOR EXEMPTION OF SEPARATION DISTANCES. NEW WATER MAINS SEEKING EXEMPTION SHALL BE INSTALLED IN A MANNER THAT MINIMIZES CONTAMINATION, INCLUDING BUT NOT LIMITED TO:
 - SLEEVING THE NEWLY INSTALLED MAIN (OR OTHER APPROVED PROTECTIVE MEASURE)
 - UTILIZING UPGRADED PIPING MATERIAL
2. VERTICAL SEPARATION OF 1' ABOVE EXISTING SEWER, STORM DRAIN, AND RECYCLED WATER MAINS IS ONLY REQUIRED WHEN THE HORIZONTAL DISTANCE BETWEEN THE NEW WATER MAIN AND EXISTING PIPELINE IS LESS THAN 10'.

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

PROTECTION OF UTILITY WATER LINES
FROM SANITARY SEWERS AND STORM DRAINS

APPROVED

DISTRICT ENGINEER

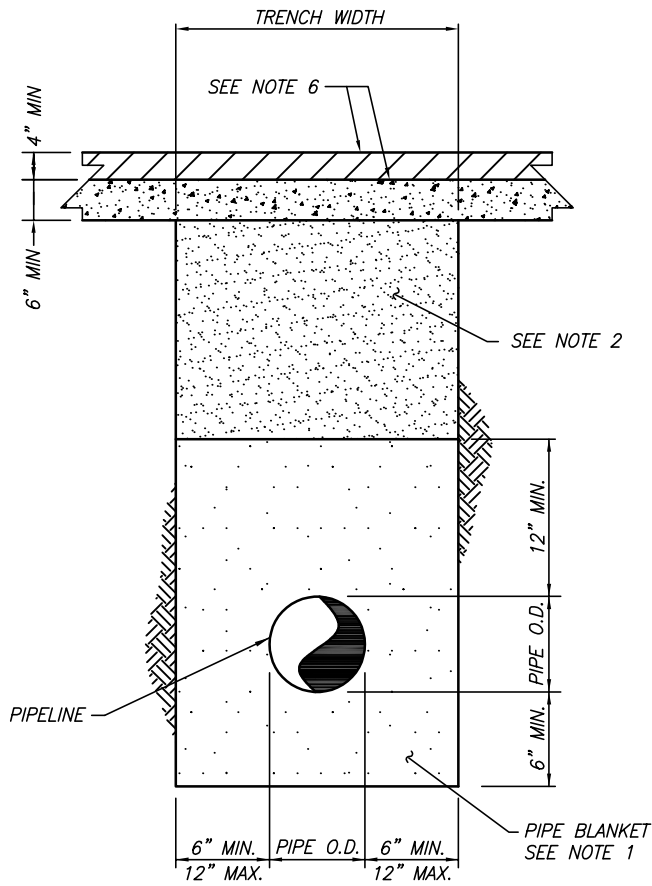
12/05/2024

DATE

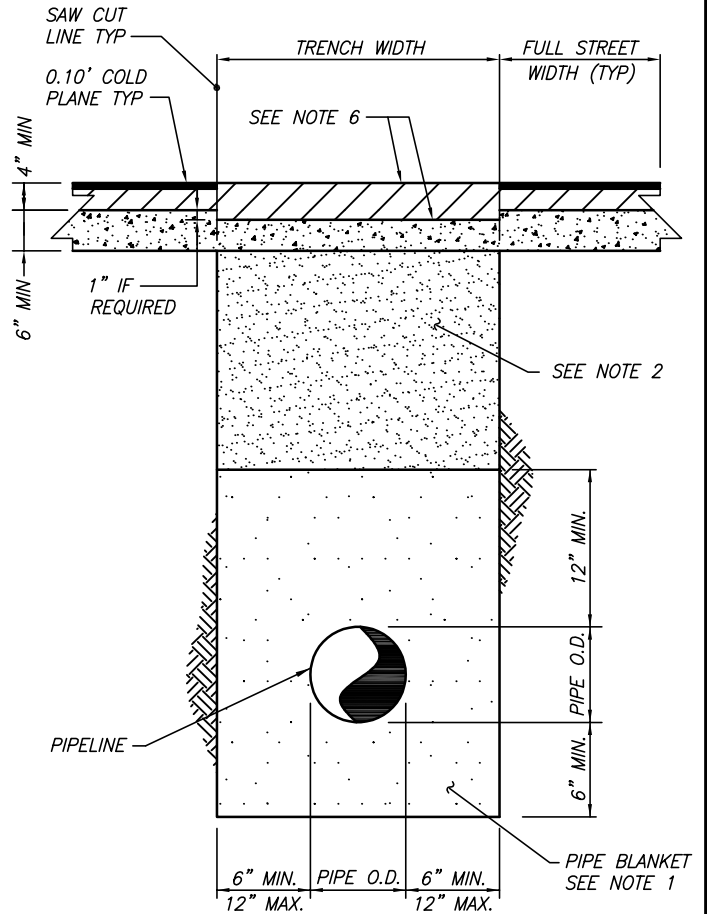
STANDARD
DRAWING No.

1

REV.	REVISION DESCRIPTION	BY	DATE



TYPE A — NEW CONSTRUCTION



TYPE B — EXISTING PAVEMENT

NOTES

1. BACKFILL WITHIN PIPE BLANKET SHALL BE IMPORTED SAND WITH S.E. 60 (90% RELATIVE COMPACTION).
2. BACKFILL ABOVE PIPE BLANKET MAY BE APPROVED MATERIAL FROM TRENCH EXCAVATION WITH 95% RELATIVE COMPACTION IN PAVED AREAS OR 90% OUTSIDE OF PAVED AREAS. IN PAVED AREAS, THE REPLACEMENT SECTION SHALL BE THE EXISTING PLUS 1" A.C. OR 4" A.C., WHICHEVER IS GREATER.
3. THE CONTRACTOR HAS THE OPTION OF REPLACING CRUSHED AGGREGATE BASE WITH A.C. AT THE RATIO OF 1" A.C. FOR 2" CLASS II BASE. P.C.C. PAVEMENT SHALL BE REPLACED IN KIND PLUS 1".
4. IF UNSUITABLE MATERIAL IS ENCOUNTERED, ADDITIONAL BEDDING MAY BE REQUIRED BY DWP INSPECTOR.
5. MINIMUM COVER SHALL BE 42" FOR WATER MAINS.
6. MINIMUM STRUCTURAL SECTION SHALL BE 4" A.C. OVER 6" CLASS II BASE. THE REQUIRED STRUCTURAL SECTION MAY BE GREATER IF REQUIRED BY THE CITY OF BIG BEAR LAKE ENGINEERING DEPARTMENT, OR BY THE COUNTY OF SAN BERNARDINO.
7. COMPACTION TESTS SHALL BE IN COMPLIANCE WITH THE CITY OF BIG BEAR LAKE ENGINEERING DEPARTMENT, OR THE COUNTY OF SAN BERNARDINO, AND AASHTO T180 AND T265.
8. ALL NEW ASPHALT SHALL BE 3/4" HMA, PG 64-16, UNLESS OTHERWISE APPROVED BY DWP, THE CITY ENGINEERING DEPARTMENT, OR THE COUNTY OF SAN BERNARDINO.

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

PIPE BACKFILL IN TRENCHES

REV.	REVISION DESCRIPTION	BY	DATE
3	INCLUDE ASPHALT MIX DESIGNATION	DB	11/2024
2	REVISED FULL WIDTH COLD PLANING	WSC	12/2020
1	REVISED COMPACTION AND NOTES	WSC	5/2020

APPROVED

DISTRICT ENGINEER

12/05/2024

DATE

STANDARD DRAWING No.

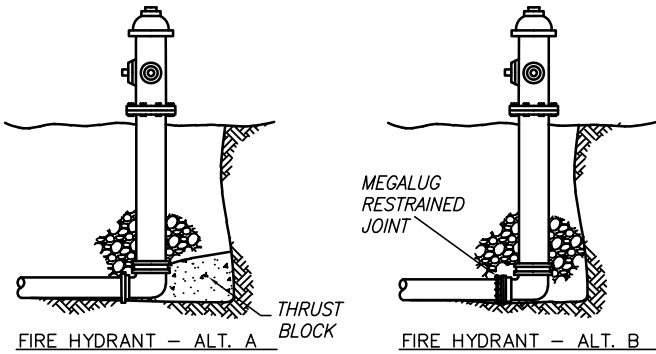
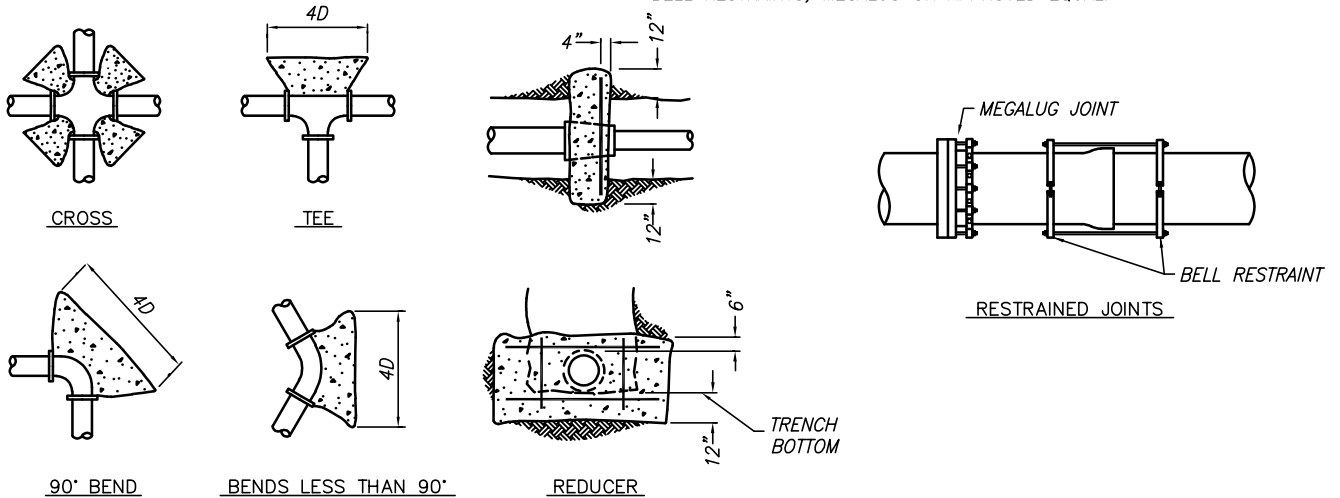
2

BEARING AREA (SQ. FT.)

DIA.	TEE	HYDRANT	DEAD END	90° BEND	45° BEND
6"	3	3	3	5	3
8"	7	7	7	9	7
10"	9	9	9	14	9
12"	14	14	14	18	14
14"	18	18	18	25	18
16"	23	23	23	23	23
18"	30	30	30	41	30
20"	36	36	36	50	36
22"	43	43	43	61	43
24"	52	52	52	79	52

NOTES

- THRUST BLOCK BEARING AREA BASED ON 225 PSIG. SIZE THRUST BLOCK FOR TEST PRESSURE OF PIPELINE. FOR DIFFERENT TEST PRESSURES, MODIFY SIZE OF AREA SHOWN ACCORDINGLY.
- ALL THRUST BLOCKS SHALL BE CLASS "A" CONCRETE AND PLACED AGAINST UNDISTURBED SOIL. INSPECTOR WILL DETERMINE SIZE NOT SHOWN.
- THRUST BLOCKS ON CROSSES SHALL BE USED.
- REINFORCING STEEL SHALL BE MIN. NO. 4 AND CONFORM TO A.S.T.M. SPECIFICATIONS A615 GRADE 40.
- A PLASTIC WRAP BARRIER SHALL BE PLACED BETWEEN THRUST BLOCK AND DUCTILE SURFACE.
- IF RESTRAINED JOINTS ARE CALLED OUT ON THE CONSTRUCTION DRAWINGS, THRUST BLOCKS SHALL BE DELETED.
- DWP'S INSPECTOR MAY REQUIRE THE USE OF MEGALUGS OR OTHER RESTRAINED JOINTS FOR RESTRAINING PURPOSES, INSTEAD OF, OR IN ADDITION TO, THRUST BLOCKS AT THEIR DISCRETION.
- VERTICAL BEND THRUST BLOCKS SHALL BE DESIGNED BY A CIVIL ENGINEER AND APPROVED BY DWP.
- ALL CONNECTIONS TO EXISTING WATER MAINS SHALL HAVE THRUST BLOCKS.
- ALL NEW WATER MAIN INSTALLATIONS SHALL HAVE RESTRAINED JOINTS. BELL RESTRAINTS, MEGALUG OR APPROVED EQUAL.



NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

RESTRAINT DETAIL

APPROVED

DISTRICT ENGINEER

12/05/2024

DATE

STANDARD
DRAWING No.

3



REV.

ADDED RESTRAINED JOINTS

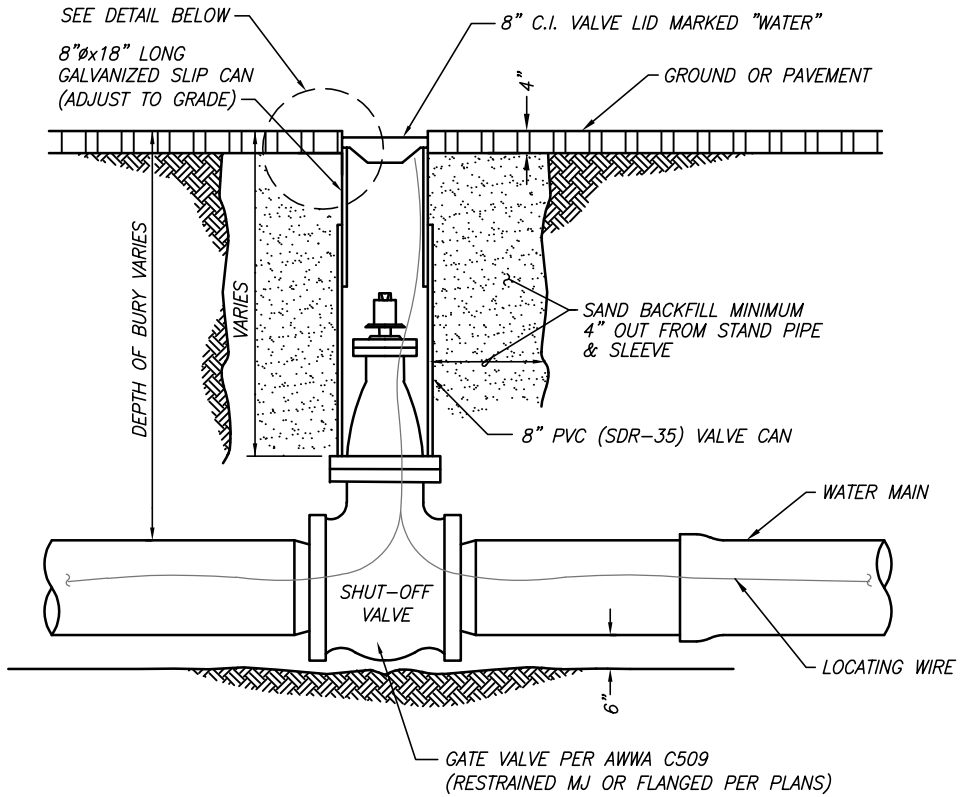
REVISION DESCRIPTION

WSC

BY

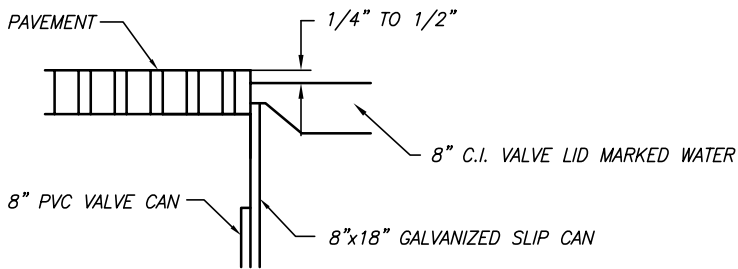
9/2013

DATE



NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RAISING VALVE CANS AFTER PROJECT COMPLETION AND/OR STREET PAVING.
2. SHUT-OFF VALVES ARE NOT TO BE INSTALLED UNLESS APPROVED BY DWP.



DETAIL

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

TYPICAL VALVE AND
VALVE BOX DETAIL

APPROVED

DISTRICT ENGINEER

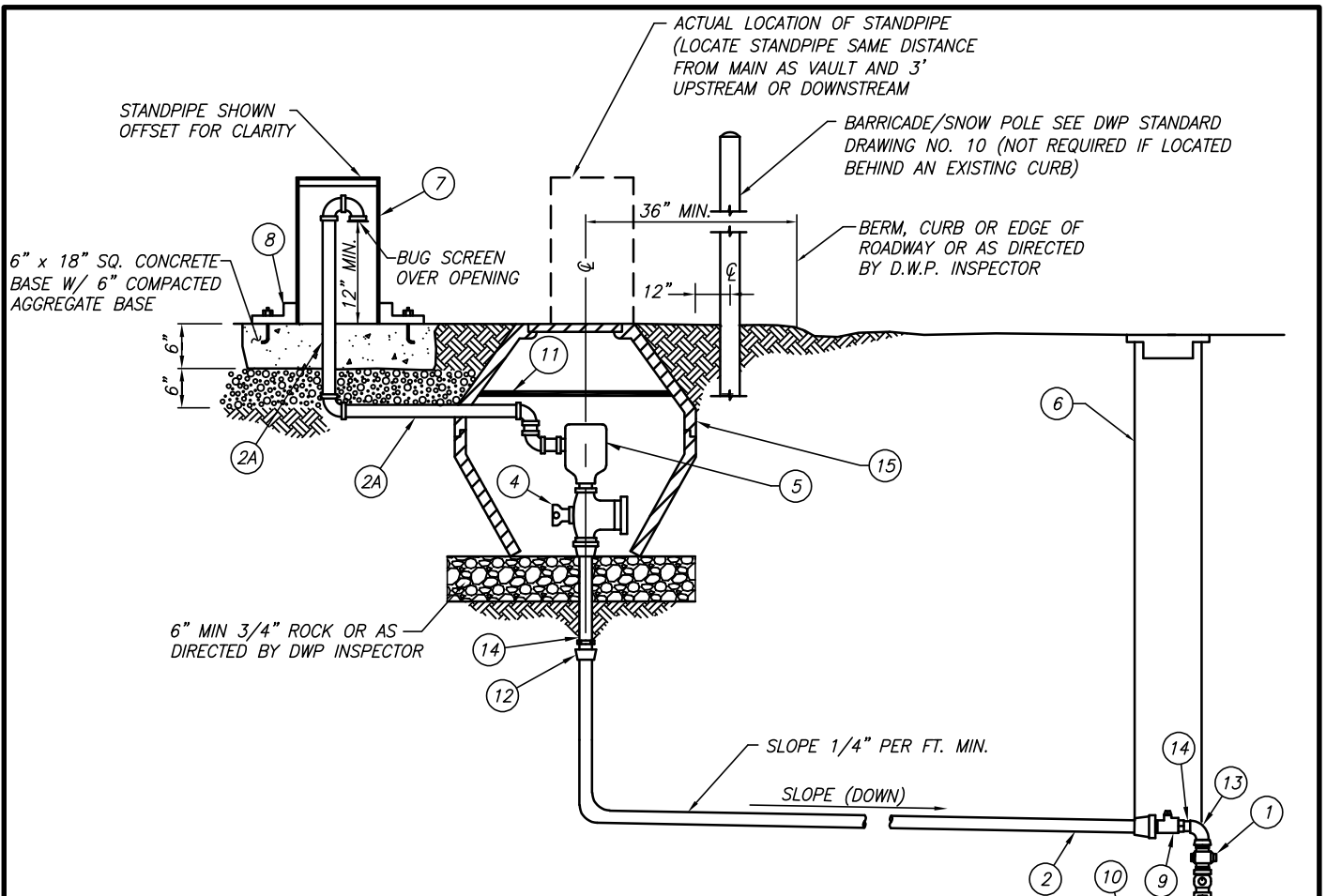
12/05/2024

DATE

STANDARD
DRAWING No.

4

△	ADD LOCATING WIRE	WSC	9/2013
REV.	REVISION DESCRIPTION	BY	DATE



- ① CORPORATION STOP, BRASS, FORD F400-4.
- ② 1" CTS PIPE OR COPPER TYPE "K", AS APPROVED BY DWP
- ②A 3/4" (OR 1") PVC SCH 80 PIPE AND SCH 80 FITTINGS AS NEEDED
- ③ 90° ELL
- ④ CURB VALVE
- ⑤ PER PLANS, 1" COMBINATION AV/AR VALVE, A.R.I. D-040 OR APPROVED EQUAL.
- ⑥ VALVE BOX AND CAP PER DWP STD. NO.4
- ⑦ 8" ID PVC STANDPIPE, 0.365" WALL, TYPE II GRADE RING, GRAY FINISH, WITH PVC CAP (SCE#UGS-758), HOLES SIZE AND LOCATION TO BE DETERMINED BY DWP INSPECTOR
- ⑧ 8" PLASTIC PVC SLIP FLANGE W/6-CONC. ANCHOR BOLTS
- ⑨ 1" FORD B41-444 BALL VALVE, OR APPROVED EQUAL.
- ⑩ SERVICE SADDLE (MAIN SIZE VARIES). FORD S-90 FOR PVC PIPE FORD 202B FOR AC PIPE (DOUBLE STRAP SADDLE)
- ⑪ FOAM FROST COVER, 1" ETHAFOAM 220 POLYETHYLENE FOAM OR DWP APPROVED EQUAL. CUT TO FIT.
- ⑫ COMPRESSION CONNECTION - BRASS (F.I.P. x COMP.)
- ⑬ BRASS 90° ELBOW
- ⑭ BRASS NIPPLE, LENGTH DETERMINED AS NEEDED
- ⑮ CARSON INDUSTRIES METER BOX; TOP HALF - 1324-15 WITH T-COVER LID, BOTTOM HALF - 1324-15

NOTES

- 1. SIZE OF PIPE, FITTINGS, & VALVES SHALL CONFORM TO THE SIZE OF THE AIR AND VACUUM VALVE.
- 2. PAINT PIPING WITH KRYLON "SCHOOL BUS YELLOW" HIGH GLOSS ENAMEL OR APPROVED EQUAL.
- 3. ALL PIPE AND FITTINGS SHALL BE COPPER, BRASS, OR PVC.

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

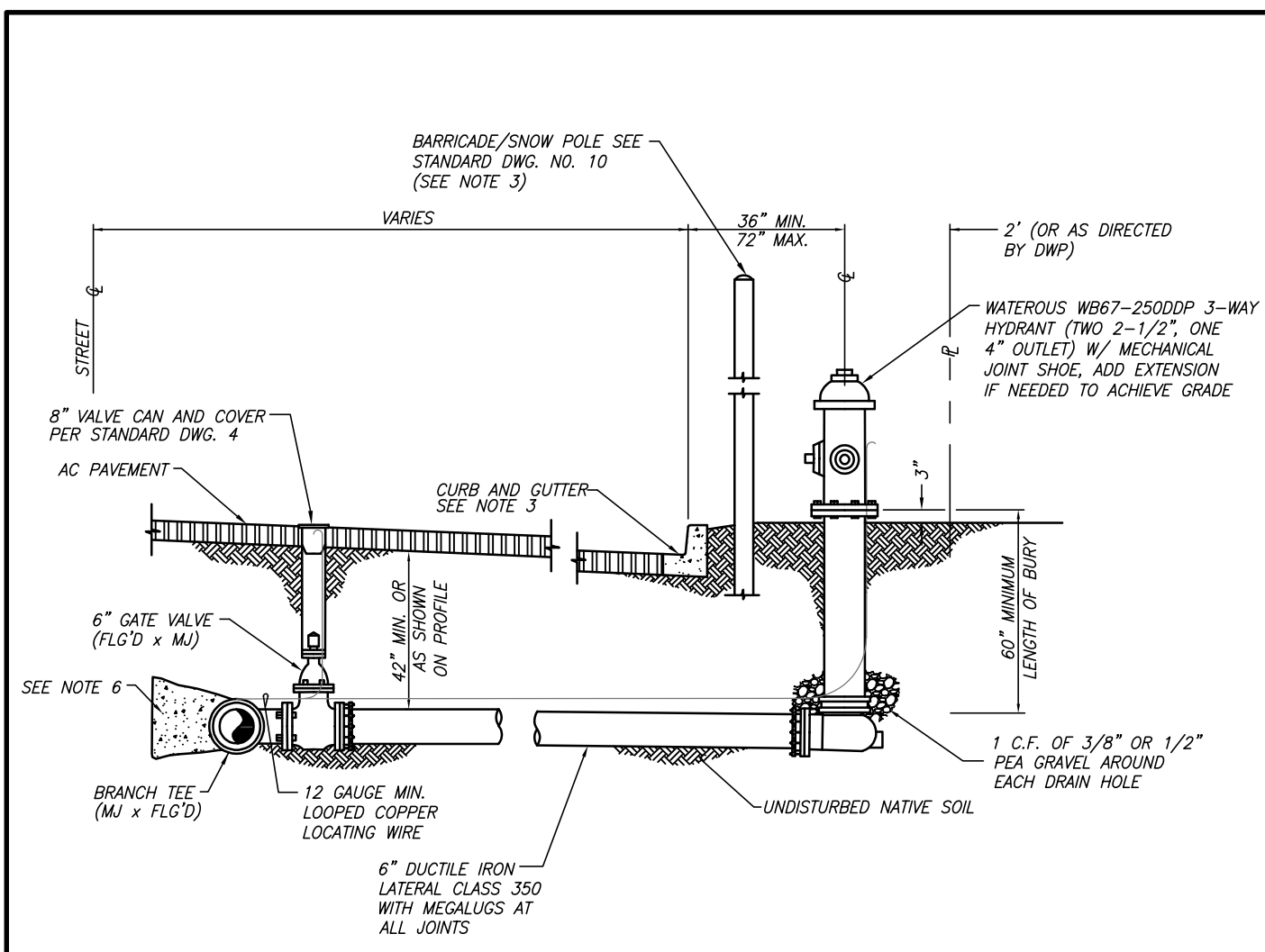
1" COMBINATION AIR AND VACUUM VALVE
ASSEMBLY

REV.	REVISION DESCRIPTION	BY	DATE
④	MINOR REVISIONS TO CALLOUTS	DB	11/2024
③	REVISED ENCLOSURE TO 1324 BOX	WSC	12/2019
②	SPRING ASSISTED LID MODEL NUMBER	WSC	6/2014
①	SPRING ASSISTED VAULT LID	WSC	9/2013

APPROVED
[Signature]
DISTRICT ENGINEER

12/05/2024
DATE

STANDARD
DRAWING No.
5



NOTES:

1. WRAP PLASTIC AROUND PARTS REQUIRING THRUST BLOCKS OR PIERS.
2. WEEP HOLE ON HYDRANT BARREL MUST BE CLEAR OF OBSTRUCTIONS.
3. ON ROADS WITHOUT CURBS, FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY, AT A MINIMUM THREE FEET FROM THE EDGE OF ASPHALT AND TWO FEET CLEAR FROM THE PROPERTY LINE, UNLESS OTHERWISE DIRECTED BY THE DWP INSPECTOR. UNDER LIMITED RIGHT-OF-WAY CONDITIONS INSTALL PER DWP INSPECTOR. PROVIDE BARRICADE POST AS SHOWN ON STANDARD DRAWING NO. 10.
4. THE HYDRANT SHALL BE PAINTED KRYLON "SCHOOL BUS YELLOW" HIGH GLOSS ENAMEL OR APPROVED EQUAL.
5. BARRICADE SHALL BE PAINTED IDENTICAL COLOR OF HYDRANT.
6. THRUST BLOCK REQUIRED ON EXISTING MAINS ONLY.
7. IF FIRE HYDRANT IS LOCATED AT END OF MAIN, USE MJ x FLG 90° FITTING IN PLACE OF BRANCH TEE.

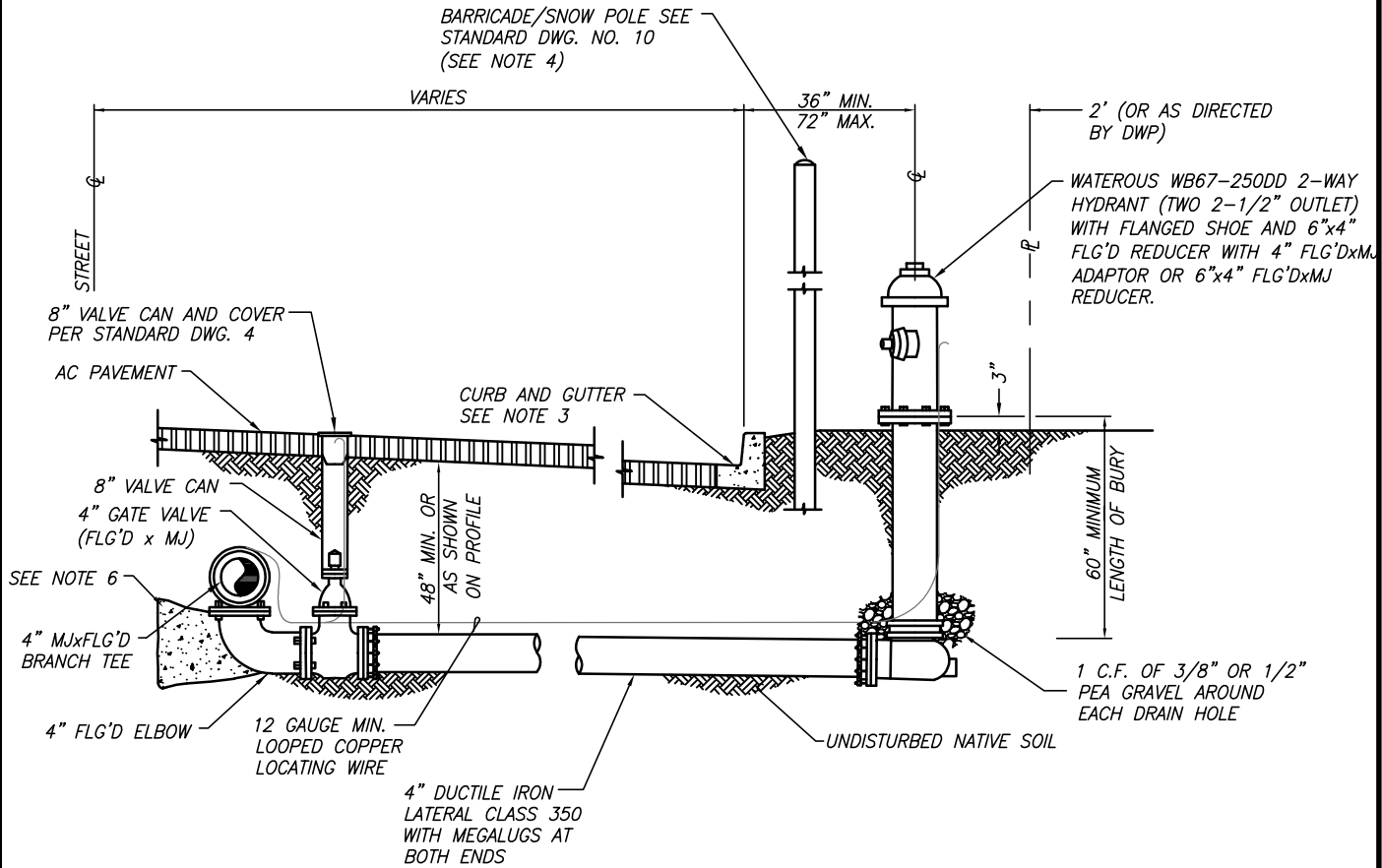
NOT TO SCALE

**DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE**

FIRE HYDRANT ASSEMBLY

APPROVED DISTRICT ENGINEER	12/05/2024 DATE
STANDARD DRAWING No.	
6	

REV.	REVISION DESCRIPTION	BY	DATE
3	MINOR REVISIONS TO CALLOUTS	DB	11/2024
2	REVISED TO ADD EXTENSION TO GRADE	WSC	8/2021
1	REMOVED SNOW POST, CONCRETE COLLAR, ABS SLEEVE, AND REVISED LOCATING WIRE	WSC	12/2020



NOTES:

1. WRAP PLASTIC AROUND PARTS REQUIRING THRUST BLOCKS OR PIERS.
2. WEEP HOLE ON HYDRANT BARREL MUST BE CLEAR OF OBSTRUCTIONS.
3. ON ROADS WITHOUT CURBS, FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY, AT A MINIMUM THREE FEET FROM THE EDGE OF ASPHALT AND TWO FEET CLEAR FROM THE PROPERTY LINE, UNLESS OTHERWISE DIRECTED BY THE DWP INSPECTOR. UNDER LIMITED RIGHT-OF-WAY CONDITIONS INSTALL PER DWP INSPECTOR. PROVIDE BARRICADE POST AS SHOWN ON STANDARD DRAWING NO. 10.
4. THE HYDRANT SHALL BE PAINTED KRYLON "SCHOOL BUS YELLOW" HIGH GLOSS ENAMEL OR APPROVED EQUAL.
5. BARRICADE SHALL BE PAINTED IDENTICAL COLOR OF HYDRANT.
6. THRUST BLOCK REQUIRED ON EXISTING MAINS ONLY.

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

FLUSH-OUT DETAIL

APPROVED

[Signature]
DISTRICT ENGINEER

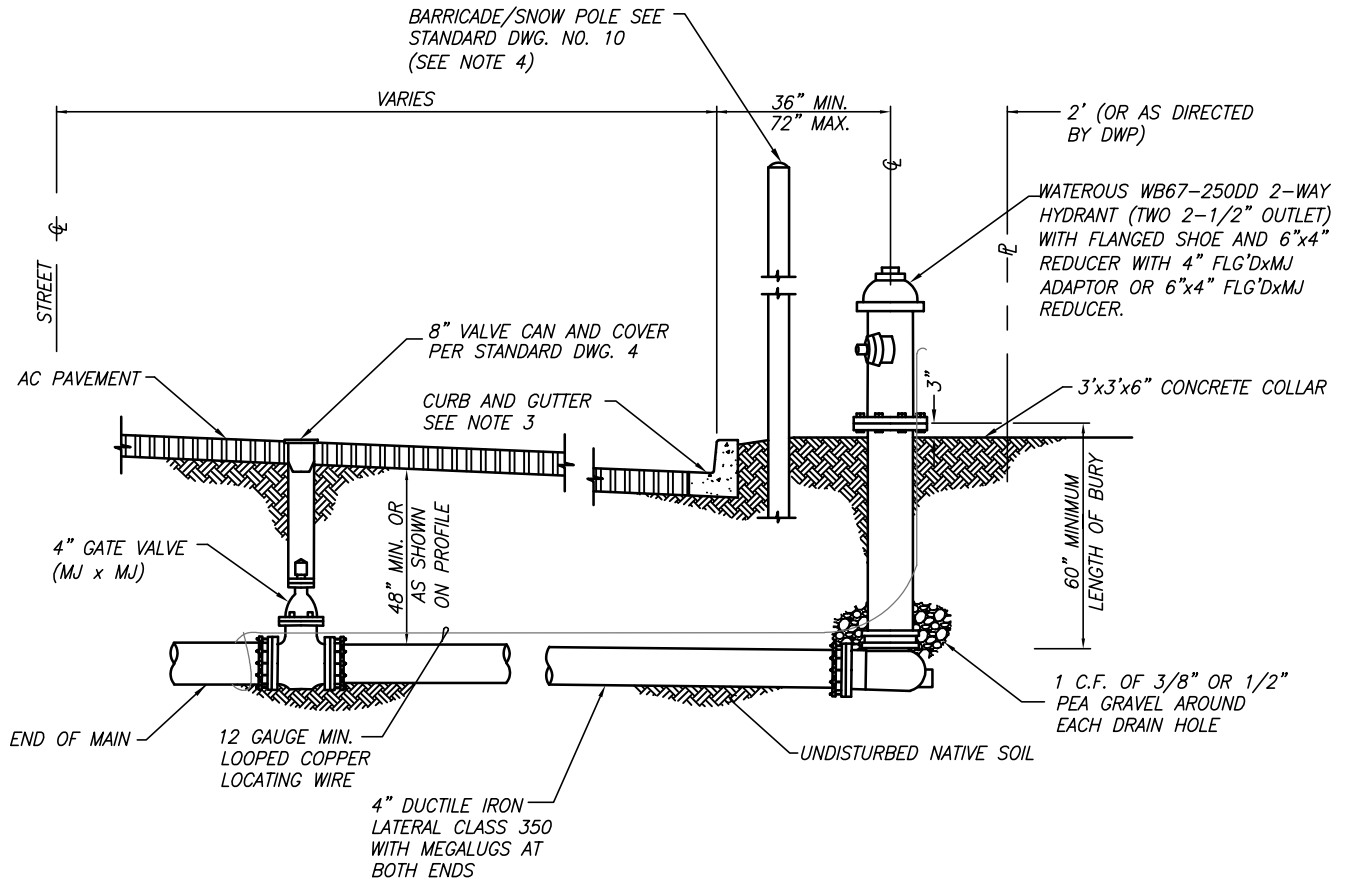
12/05/2024

DATE

STANDARD
DRAWING No.

7

REV.	REVISION DESCRIPTION	BY	DATE
1	REMOVED SNOW POST, CONCRETE COLLAR, ABS SLEEVE, AND REVISED LOCATING WIRE. MINOR REVISIONS TO CALLOUTS AND NOTES.	DB	11/2024



NOTES:

1. WRAP PLASTIC AROUND PARTS REQUIRING THRUST BLOCKS OR PIERS.
2. WEEP HOLE ON HYDRANT BARREL MUST BE CLEAR OF OBSTRUCTIONS.
3. ON ROADS WITHOUT CURBS, FIRE HYDRANTS SHALL BE LOCATED WITHIN THE RIGHT-OF-WAY, AT A MINIMUM THREE FEET FROM THE EDGE OF ASPHALT AND TWO FEET CLEAR FROM THE PROPERTY LINE, UNLESS OTHERWISE DIRECTED BY THE DWP INSPECTOR. UNDER LIMITED RIGHT OF WAY CONDITIONS INSTALL PER DWP INSPECTOR. PROVIDE BARRICADE POSTS AS SHOWN ON STANDARD DRAWING NO. 10.
4. THE HYDRANT SHALL BE PAINTED KRYLON "SCHOOL BUS YELLOW" HIGH GLOSS ENAMEL OR APPROVED EQUAL.
5. BARRICADE SHALL BE PAINTED IDENTICAL COLOR OF HYDRANT.

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

BLOW-OUT DETAIL

APPROVED

[Signature]
DISTRICT ENGINEER

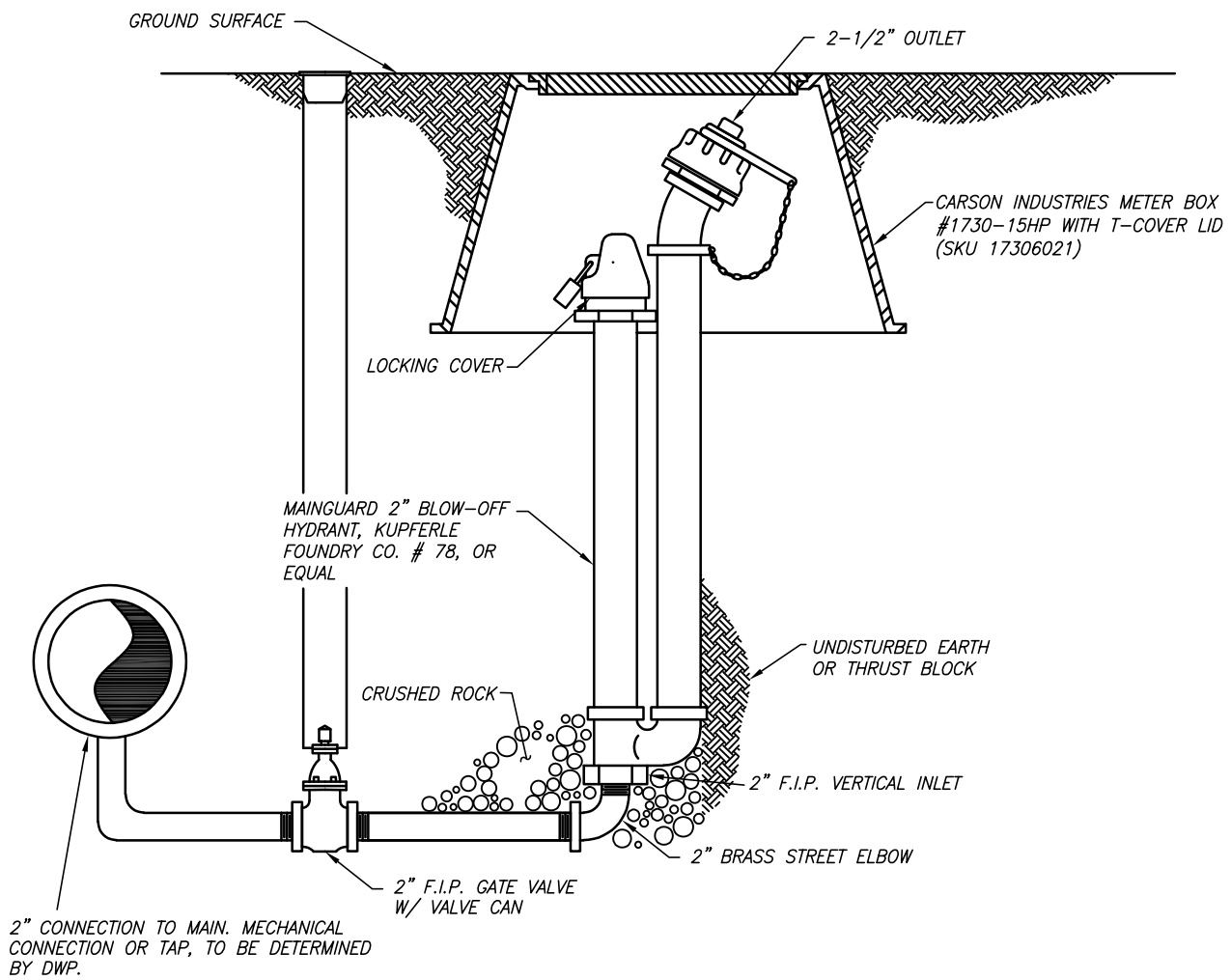
12/05/2024

DATE

STANDARD
DRAWING No.

8

REV.	REVISION DESCRIPTION	BY	DATE
1	REMOVED SNOW POST, CONCRETE COLLAR, ABS SLEEVE, AND REVISED LOCATING WIRE. MINOR REVISIONS TO CALLOUTS AND NOTES.	DB	11/2024



NOTES:

1. LOCATION TO BE FIELD DETERMINED BY DWP INSPECTOR.

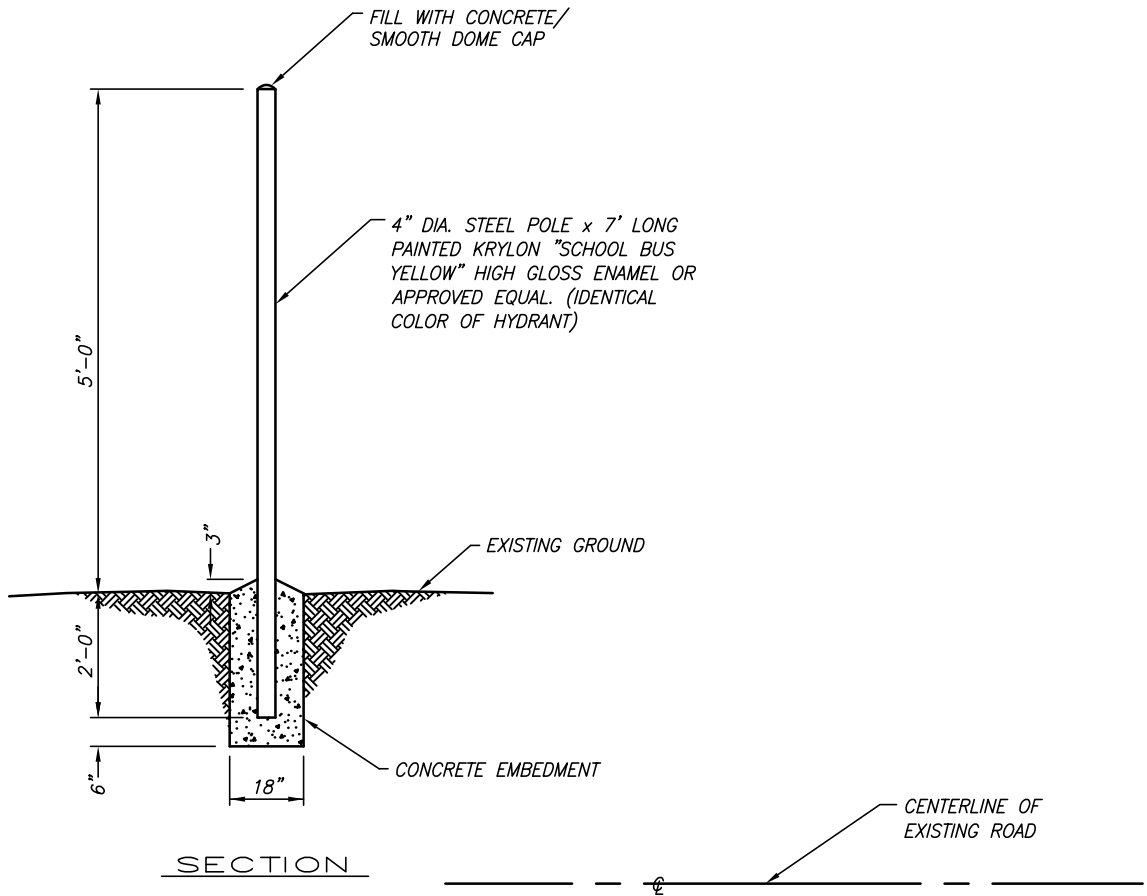
NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

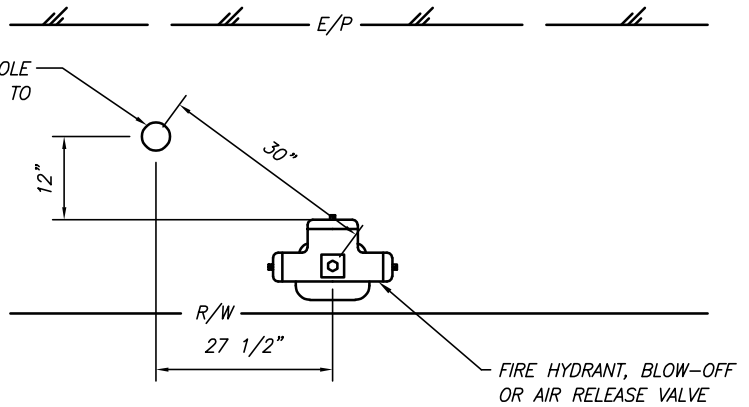
2" BLOW OFF DETAIL

REV.	REVISION DESCRIPTION	BY	DATE
1	MINOR REVISIONS TO CALLOUTS AND NOTES PER MANUFACTURER SPEC SHEET. SPECIFY DEPTH OF BURY	DB	11/2024

APPROVED	STANDARD DRAWING No.
<i>[Signature]</i>	9
DISTRICT ENGINEER	DATE
	12/05/2024



BARRICADE/SNOW POLE
(TYP.) SEE SECTION TO
LEFT



NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

BARRICADE / SNOW POLE DETAIL

APPROVED

DISTRICT ENGINEER

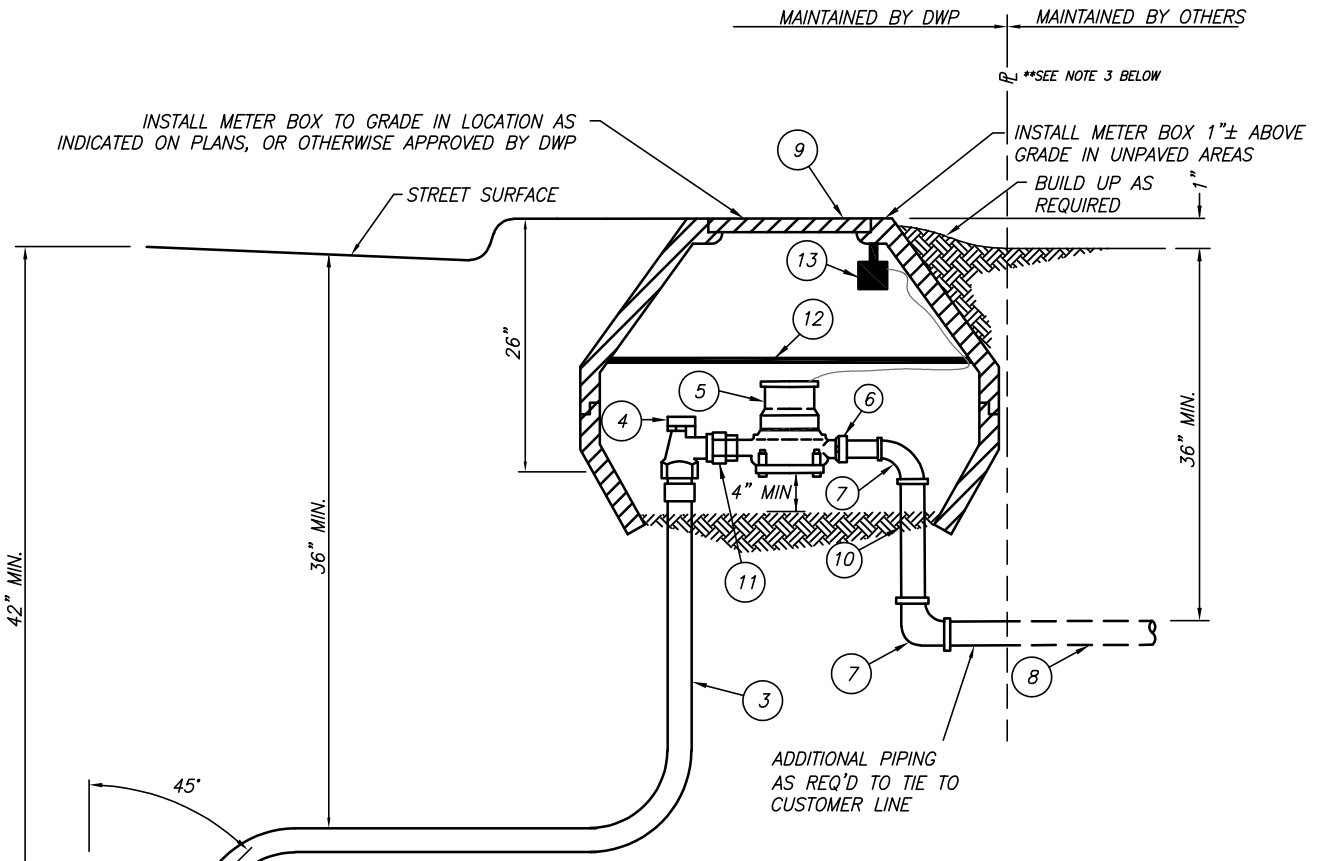
12/05/2024

DATE

STANDARD
DRAWING No.

10

REV.	REVISION DESCRIPTION	BY	DATE



MATERIALS:

- ① SERVICE SADDLE WATER MAIN SIZE x 1" TAP FORD F202B FOR A.C., FORD S90 FOR P.V.C. (JONES ACCEPTABLE)
- ② 1" CORPORATION STOP x PACK JOINT FOR COPPER TUBING, FORD F-1000-4
- ③ 1" COPPER PIPE, TYPE K SOFT
- ④ 1" ANGLE INVERTED KEY METER VALVE x PACK JOINT FOR COPPER TUBING, FORD KV 43-444W
- ⑤ METER FURNISHED BY DWP
- ⑥ 1" STRAIGHT METER COUPLING, FORD C31-44-NL, OR DWP APPROVED EQUAL
- ⑦ 1" BRASS F.I.P. 90° ELBOW
- ⑧ CUSTOMER PIPE
- ⑨ CARSON INDUSTRIES METER BOX TOP HALF - 1324-15 WITH T-COVER LID (SKU 13246007) BOTTOM HALF - 1324-15 (SKU 13242002)
- ⑩ 1" BRASS NIPPLE
- ⑪ 1" x 5/8" METER ADAPTER, FORD A34-NL OR A14-NL
- ⑫ FOAM FROST COVER, 1" ETHAFOAM 220 POLYETHYLENE FOAM OR DWP APPROVED EQUAL. CUT TO FIT.
- ⑬ RADIO TRANSMITTER, FURNISHED BY DWP

NOTES:

1. FOR SERVICE RECONNECTIONS, THE CONTRACTOR SHALL FURNISH AND INSTALL MATERIAL ITEMS 1 THRU 4.
2. SERVICES SHALL BE INSTALLED A MINIMUM OF 10 FEET FROM ALL SEWER LATERALS, UNLESS OTHERWISE APPROVED BY DWP.
3. TO THE MAXIMUM EXTENT PRACTICABLE, THE METER, METER BOX AND SERVICE LATERAL MAINTAINED BY DWP SHALL BE WITHIN THE PUBLIC RIGHT OF WAY. IF LOCATED ON PRIVATE PROPERTY, DWP WILL MAINTAIN THE SERVICE UP TO THE BACK OF THE METER BOX ON THE CUSTOMER'S SIDE OF THE METER.

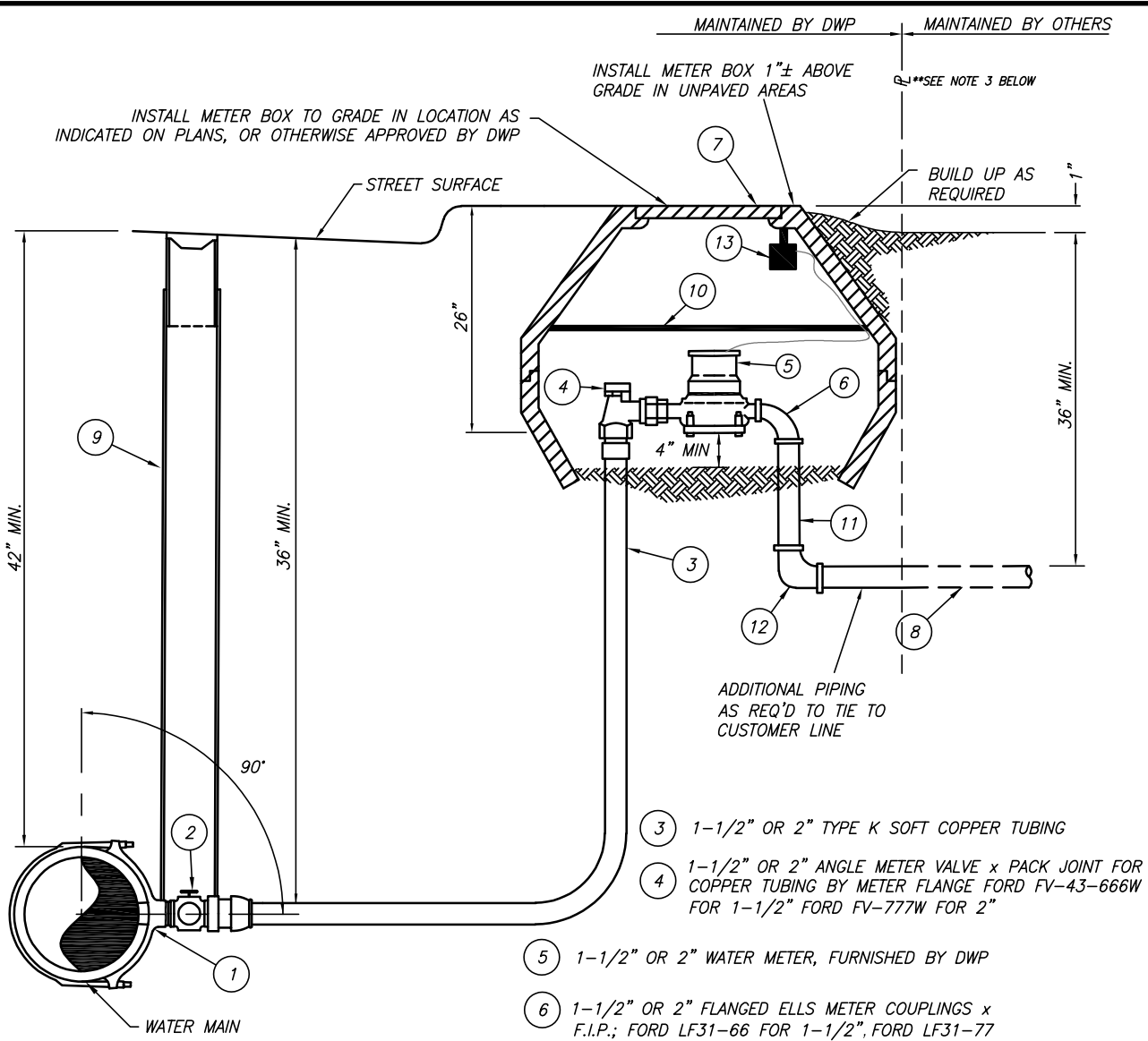
NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

TYPICAL SERVICE CONNECTION
5/8" OR 1" METERS

⑥	DELINEATE DWP RESPONSIBILITY, UPDATE DISTANCE FROM SEWER LATERAL	DB	11/2025
⑤	REVISED METER TAIL DETAIL, PIPING CONFIGURATION AND CALLOUTS, FROST MAT, RADIO TRANSMITTER	DB	11/2024
④	REVISED TO 5/8" OR 1" METER	WSC	2/2020
③	REVISED BOX AND ADDED NIPPLE	WSC	1/2020
②	REMOVED SWING CHECK VALVE	WSC	12/2019
①	METER TAIL DETAIL	WSC	9/2013
REV.	REVISION DESCRIPTION	BY	DATE

APPROVED	STANDARD DRAWING No.
<i>[Signature]</i>	11
DISTRICT ENGINEER	DATE
	11/20/2025



MATERIALS:

- 1 SERVICE SADDLE WATER MAIN SIZE x 1-1/2" OR 2" TAP FORD F202B FOR A.C. FORD S90 FOR C900 PVC (JONES ACCEPTABLE)
- 2 1-1/2" OR 2" BALLCORP CORPORATION STOP x PACK JOINT FOR COPPER TUBING; FORD FB-1000-6 FOR 1-1/2", FORD FG-1000-7 FOR 2"

NOTES:

- 1. FOR SERVICE RECONNECTIONS, THE CONTRACTOR SHALL FURNISH AND INSTALL MATERIAL ITEM 1 THRU 4.
- 2. SERVICES SHALL BE INSTALLED A MINIMUM OF 10 FEET FROM ALL SEWER LATERALS.
- 3. TO THE MAXIMUM EXTENT PRACTICABLE, THE METER, METER BOX AND SERVICE LATERAL MAINTAINED BY DWP SHALL BE WITHIN THE PUBLIC RIGHT OF WAY. IF LOCATED ON PRIVATE PROPERTY, DWP WILL MAINTAIN THE SERVICE UP TO THE BACK OF THE METER BOX ON THE CUSTOMER'S SIDE OF THE METER.

- 3 1-1/2" OR 2" TYPE K SOFT COPPER TUBING
- 4 1-1/2" OR 2" ANGLE METER VALVE x PACK JOINT FOR COPPER TUBING BY METER FLANGE FORD FV-43-666W FOR 1-1/2" FORD FV-777W FOR 2"
- 5 1-1/2" OR 2" WATER METER, FURNISHED BY DWP
- 6 1-1/2" OR 2" FLANGED ELLS METER COUPLINGS x F.I.P.; FORD LF31-66 FOR 1-1/2", FORD LF31-77 FOR 2"
- 7 CARSON INDUSTRIES METER BOX; TOP HALF - 1730-15 WITH T-COVER LID (SKU 17306021), BOTTOM HALF - 1730-15 (SKU 17302002)
- 8 CUSTOMER PIPE
- 9 VALVE BOX AND LID PER DWP STD. NO. 4
- 10 FOAM FROST COVER, 1" ETHAFOAM 220 POLYETHYLENE FOAM OR DWP APPROVED EQUAL. CUT TO FIT.
- 11 1-1/2" OR 2" x 12" (LENGTH) BRASS NIPPLE
- 12 1-1/2" OR 2" BRASS F.I.P. X COMP. 90° ELBOW
- 13 RADIO TRANSMITTER, FURNISHED BY DWP

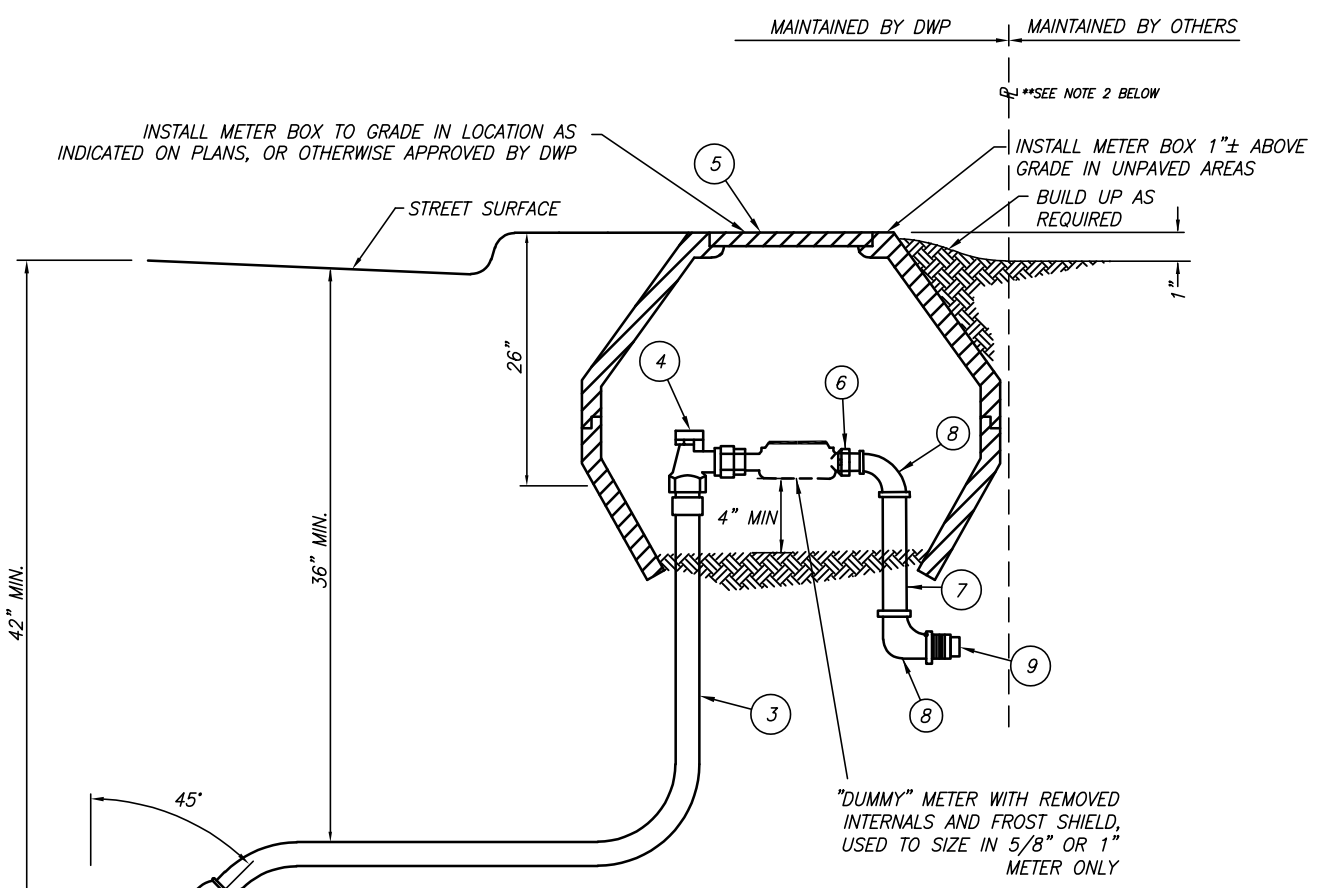
NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

1-1/2" AND 2" SERVICE

4	DELINEATE DWP RESPONSIBILITY, UPDATE DISTANCE FROM SEWER LATERAL	DB	11/2025
3	REVISED METER TAIL DETAIL, PIPING CONFIGURATION AND CALLOUTS, FROST MAT, RADIO TRANSMITTER	DB	11/2024
2	REVISED METER BOX	WSC	1/2020
1	ADD VALVE CAN	WSC	9/2013
REV.	REVISION DESCRIPTION	BY	DATE

APPROVED	STANDARD DRAWING No.
<i>[Signature]</i>	12
DISTRICT ENGINEER	DATE
	11/20/2025



NOTES:

1. SERVICES SHALL BE INSTALLED A MINIMUM OF 10 FEET FROM ALL SEWER LATERALS.
2. TO THE MAXIMUM EXTENT PRACTICABLE, THE METER, METER BOX AND SERVICE LATERAL MAINTAINED BY DWP SHALL BE WITHIN THE PUBLIC RIGHT OF WAY. IF LOCATED ON PRIVATE PROPERTY, DWP WILL MAINTAIN THE SERVICE UP TO THE BACK OF THE METER BOX ON THE CUSTOMER'S SIDE OF THE METER.

MATERIALS:

- 1 SERVICE SADDLE WATER MAIN SIZE x 1" FORD F202B FOR A.C., FORD S90 FOR P.V.C. (JONES ACCEPTABLE)
- 2 1" CORPORATION STOP x PACK JOINT FOR COPPER TUBING, FORD F-1000-4
- 3 1" COPPER PIPE, TYPE K SOFT
- 4 1" ANGLE INVERTED KEY METER VALVE x PACK JOINT FOR COPPER TUBING, FORD KV 43-444W
- 5 CARSON INDUSTRIES METER BOX TOP HALF - 1324-15 WITH T-COVER LID (SKU 13246007) BOTTOM HALF - 1324-15 (SKU 13242002)
- 6 1" STRAIGHT METER COUPLING, FORD C31-44-NL, OR DWP APPROVED EQUAL
- 7 1" BRASS NIPPLE
- 8 1" BRASS F.I.P. 90° ELBOW
- 9 PVC PLUG OR TAPED COVER, AS DIRECTED/APPROVED BY DWP

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

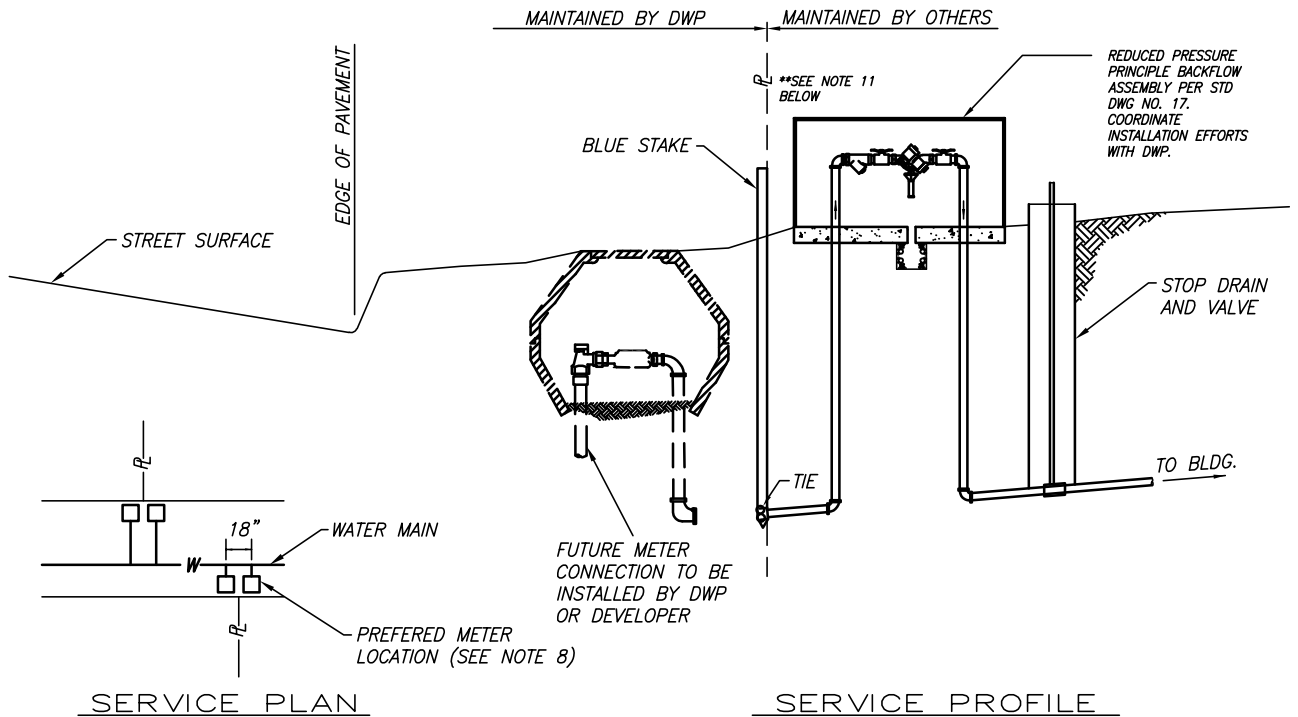
TYPICAL SERVICE PRESET
FOR 1" METERS (NEW DEVELOPMENT)

⚠	DELINEATE DWP RESPONSIBILITY, UPDATE DISTANCE FROM SEWER LATERAL	DB	11/2025
⚠	REVISED PIPING CONFIGURATION, NOTES, AND CALLOUTS	DB	11/2024
REV.	REVISION DESCRIPTION	BY	DATE

APPROVED
[Signature]
DISTRICT ENGINEER

11/20/2025
DATE

STANDARD DRAWING No.
13



INSTALLATION NOTES

THE DWP WILL CONNECT TO THE OWNER'S WATER LINES WHEN THE DWP INSTALLS THE SERVICE PROVIDING THE PROPERTY OWNER'S WATER LINES AND CONNECTIONS ARE ALREADY IN PLACE ACCORDING TO THE SPECIFICATIONS LISTED BELOW.

NOTES:

1. A DWP FIELD REPRESENTATIVE WILL MEET THE PROPERTY OWNER AT THE SERVICE ADDRESS TO INSPECT THE AREA WHERE THE METER WILL BE SET AND MARK THE AREA WITH A BLUE STAKE.
2. PROPERTY MUST HAVE SURVEY STAKES TO VERIFY THE PROPERTY LINES.
3. THE FINISHED GRADE AT THE METER LOCATION MUST BE AT A LEVEL NOT TO EXCEED 10% UP OR DOWN. ALL METERS ON SLOPES GREATER THAN 10% SHALL BE INSTALLED PER DRAWING NO. 15.
4. THE METER WILL BE INSTALLED PERPENDICULAR (AT A RIGHT ANGLE) TO THE EDGE OF THE STREET.
5. CUSTOMER'S CONNECTION POINT MUST BE 36 INCHES BELOW FINISHED GRADE, AT THE PROPERTY LINE OR OTHERWISE APPROVED BY DWP, AND HAVE A PLUGGED FEMALE THREADED PIPE FITTING (HORIZONTAL TO THE GROUND AND LOOKING AT A PERPENDICULAR <AT A RIGHT ANGLE> TO THE STREET).
6. A WOODEN STAKE SHALL BE DRIVEN INTO THE GROUND, EXTENDED 2 FEET ABOVE GROUND, PAINTED BLUE, AND TIED TO THE CONNECTION POINT OF THE METER.
7. CUSTOMER MUST HAVE AN OPERABLE STOP AND DRAIN VALVE BETWEEN THE METER AND THE BUILDING BEING SERVED.
8. PREFERRED METER BOX LOCATION IS AT PROPERTY CORNER, 1 FOOT OFF PROPERTY LINE
9. SERVICE LATERALS SHALL BE INSTALLED NO LESS THAN 18" APART.
10. SERVICES SHALL BE INSTALLED A MINIMUM OF 10 FEET FROM ALL SEWER LATERALS
11. TO THE MAXIMUM EXTENT PRACTICABLE, THE METER, METER BOX AND SERVICE LATERAL MAINTAINED BY DWP SHALL BE WITHIN THE PUBLIC RIGHT OF WAY. IF LOCATED ON PRIVATE PROPERTY, DWP WILL MAINTAIN THE SERVICE UP TO THE BACK OF THE METER BOX ON THE CUSTOMER'S SIDE OF THE METER.

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

WATER SERVICE LOCATION DETAIL

3	DELINEATE DWP RESPONSIBILITY, UPDATE DISTANCE FROM SEWER LATERAL	DB	11/2025
2	REVISED STAKE AND TIE LOCATION BASED ON REVISED SERVICE CONNECTION DETAIL. CONNECTION POINT 36" BELOW GRADE	DB	11/2024
1	CONNECTION POINT 26" BELOW GRADE	WSC	9/2013
REV.	REVISION DESCRIPTION	BY	DATE

APPROVED

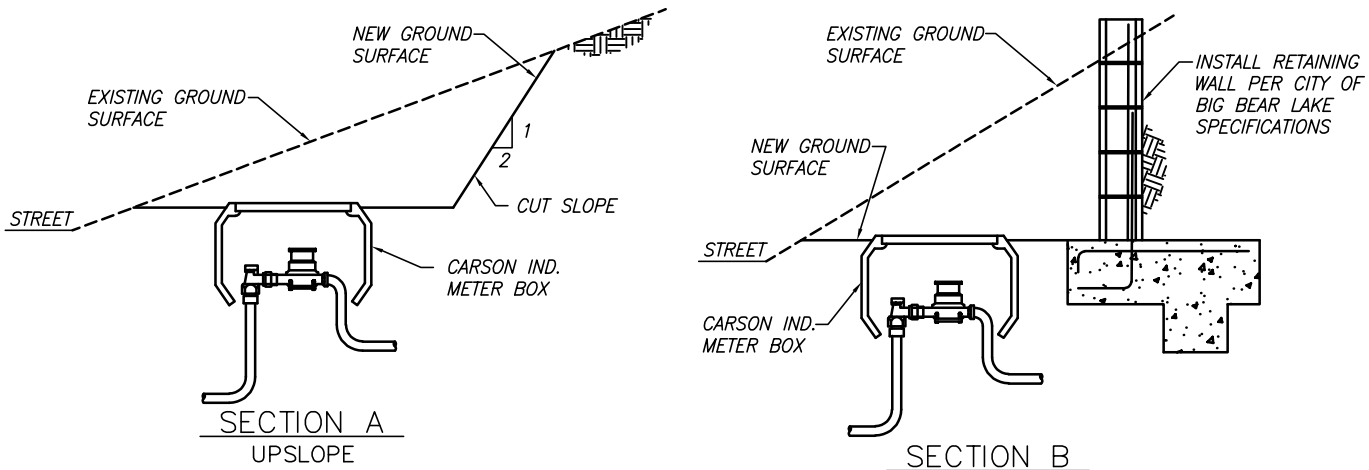
DISTRICT ENGINEER

11/20/2025

DATE

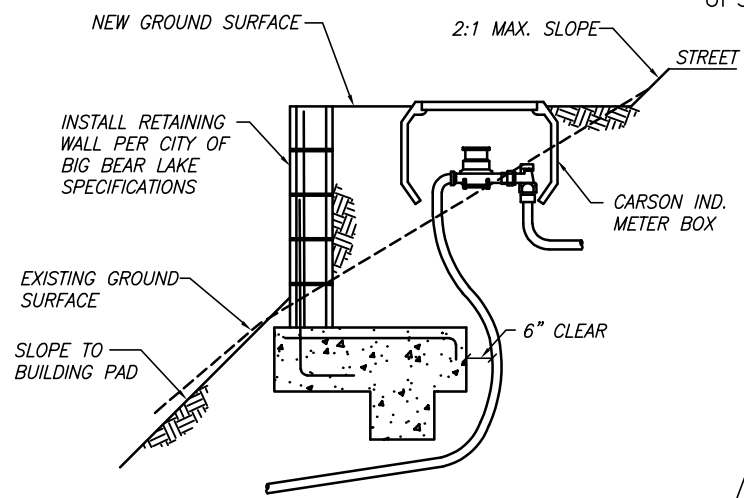
STANDARD DRAWING No.

14

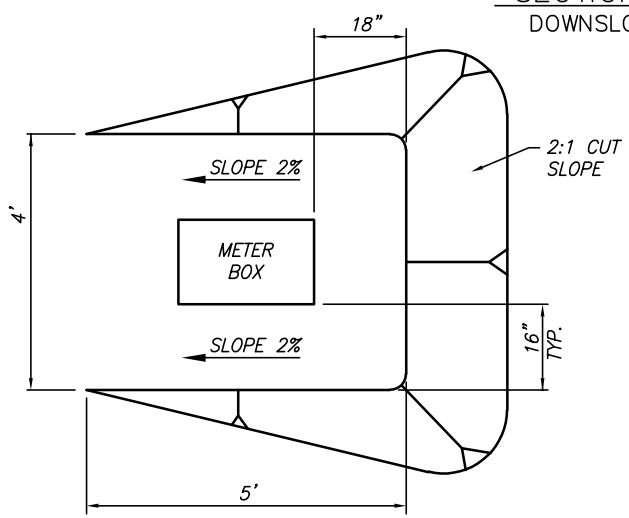


SECTION A
UPSLOPE

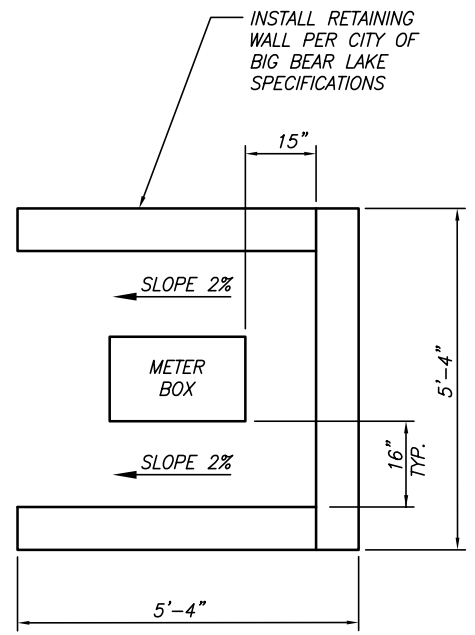
SECTION B
UPSLOPE



SECTION C
DOWNSLOPE



PLAN A (UPSLOPE)



PLAN B (UPSLOPE)
(REVERSE FIGURE FOR DOWNSLOPE)

NOTES:

1. INSTALL METER PER THIS DETAIL ON ALL SLOPES GREATER THAN 10%
2. INSTALL METER BOX IN CENTER OF PAD

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

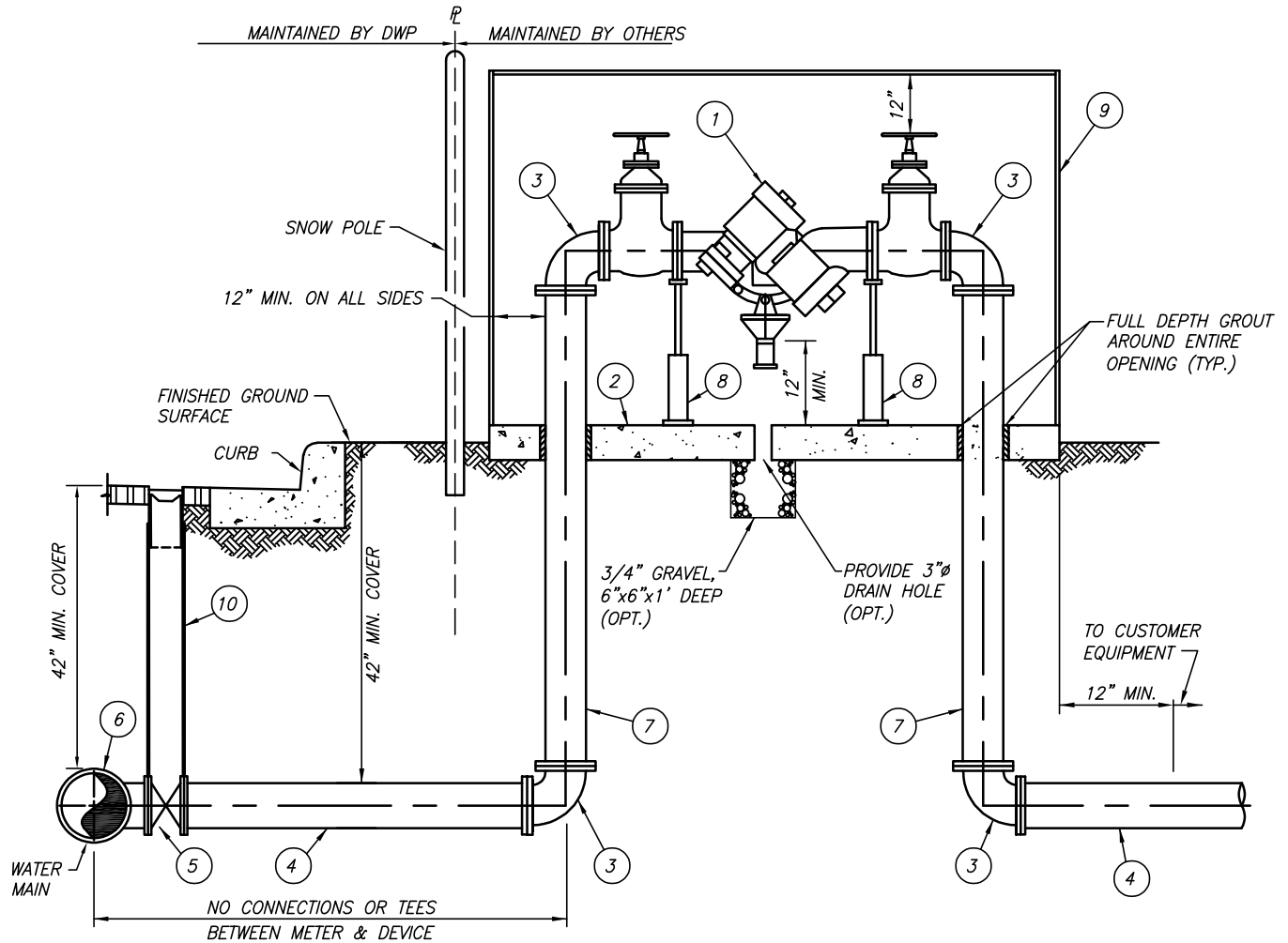
HILLSIDE WATER METER INSTALLATION DETAIL
UPSLOPE AND DOWNSLOPE

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12/05/2024
DATE

STANDARD
DRAWING No.
15

REV.	REVISION DESCRIPTION	BY	DATE



MATERIALS

- 1 4"-10" REDUCED PRESSURE PRINCIPAL (RPP) BACKFLOW DEVICE OR REDUCED PRESSURE PRINCIPAL DETECTOR ASSEMBLY (RPPDA) WITH THE CURRENT DWP APPROVED 5/8" METER.
- 2 6" THICK, 2500 PSI CONCRETE PAD
- 3 DUCTILE IRON 90° BEND
- 4 DUCTILE IRON OR C.M.L. PIPE
- 5 FLANGE x FLANGE OR FLANGE x MJ GATE VALVE
- 6 CUT IN TEE AS APPROVED BY DWP
- 7 DUCTILE IRON PIPE, CML, VARIABLE LENGTH
- 8 ADJUSTABLE PIPE SUPPORT WITH BASE PLATE (12"x12" MINIMUM - 1/4" THICK)
- 9 HEATED PROTECTIVE ENCLOSURE
- 10 VALVE BOX AND LID PER DWP STD. NO. 4

NOTES:

- 1. CUSTOMER SHALL OWN, PURCHASE, INSTALL, AND MAINTAIN BACKFLOW DEVICE. THE DEVICE MUST BE INSPECTED AND TESTED IMMEDIATELY AFTER INSTALLATION AND ONCE A YEAR THEREAFTER. DWP SHALL VERIFY ANNUAL TESTING.
- 2. PIV/FDC DOES NOT BELONG TO DWP. CHECK WITH LOCAL FIRE DEPARTMENT AND BUILDING & SAFETY FOR REQUIREMENTS.
- 3. THE "APPROVED" RPP BACKFLOW DEVICE AND RPPDA (AS APPROVED BY THE DWP AND USC FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH) SHALL BE LOCATED AND INSTALLED SUBJECT TO THE APPROVAL OF THE DWP.
- 4. MINIMUM CLEARANCES PERTAIN TO ENCLOSURES THAT ARE PERMANENTLY INSTALLED AND HAVE SERVICE ACCESS DOORS. A VARIANCE OF THE MINIMUM CLEARANCES MAY BE GRANTED FOR ENCLOSURES THAT ARE REMOVABLE. ENCLOSURES MUST BE INSULATED TO A MINIMUM OF R-38.

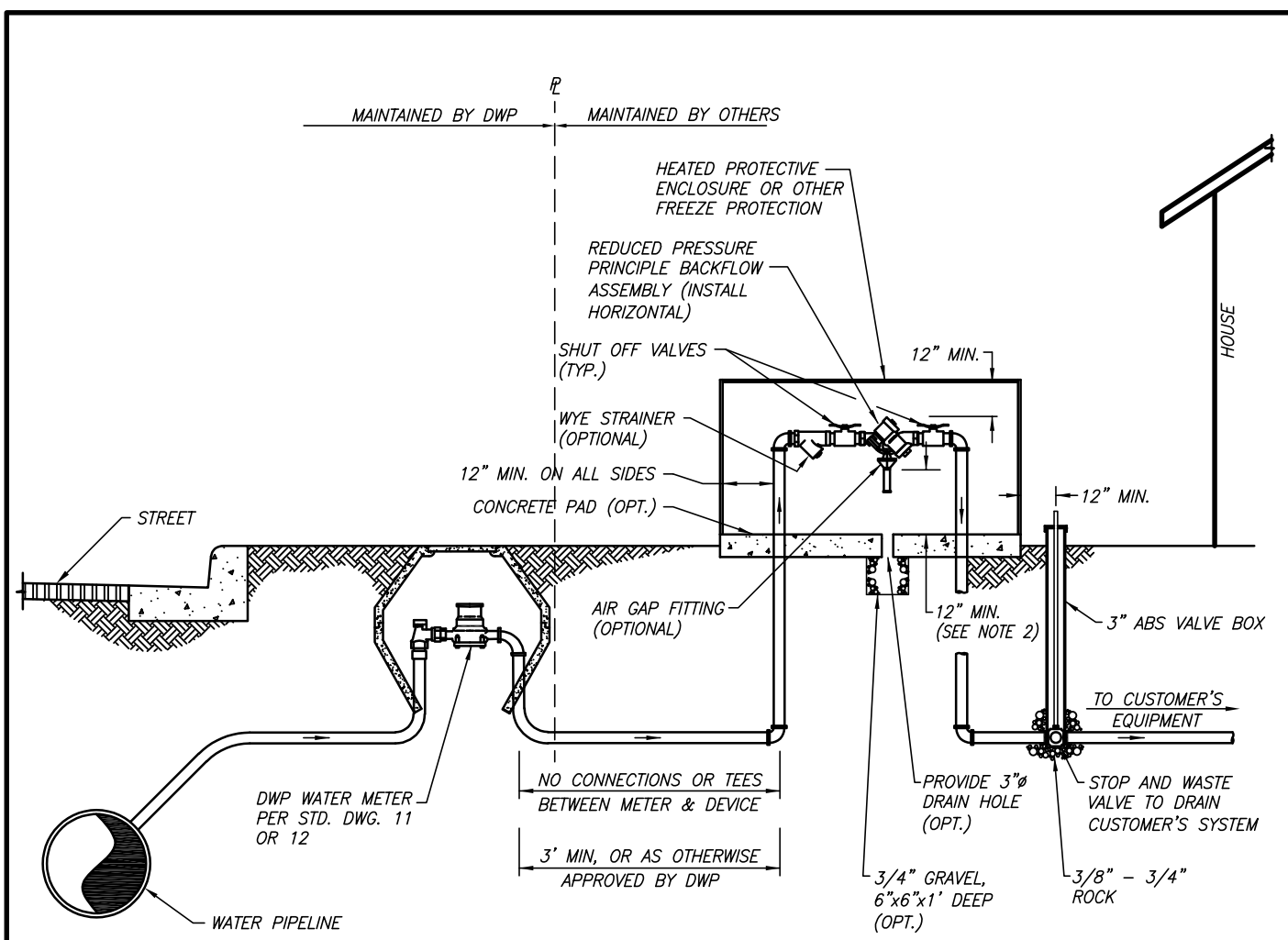
NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

4"-10" RPP & 4"-10" RPPDA

△	DELINEATE DWP RESPONSIBILITY	DB	11/2025
△	REVISED STANDARD DRAWING NUMBER, PREVIOUSLY DRAWING NO. 16RP. OLD STANDARD DRAWING NO. 16 (2012) REMOVED.	DB	11/2024
REV.	REVISION DESCRIPTION	BY	DATE

APPROVED	STANDARD DRAWING No.
<i>[Signature]</i>	16
DISTRICT ENGINEER	DATE
	11/20/2025



NOTES:

1. THE "APPROVED" REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY (AS APPROVED BY THE DWP AND USC FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH) SHALL BE LOCATED AND INSTALLED SUBJECT TO THE APPROVAL OF THE DWP.
2. A PRESSURE RELIEF VALVE SHALL BE INSTALLED PER UNIFORM PLUMBING CODE.
3. THE DEVICE MUST BE INSPECTED AND TESTED IMMEDIATELY AFTER INSTALLATION AND ONCE A YEAR THEREAFTER.
4. MINIMUM CLEARANCES PERTAIN TO ENCLOSURES THAT ARE PERMANENTLY INSTALLED; IN THIS CASE, SERVICE ACCESS DOOR MUST BE PROVIDED. A VARIANCE OF THE MINIMUM CLEARANCES MAY BE GRANTED FOR ENCLOSURES THAT ARE REMOVABLE. ENCLOSURES MUST BE INSULATED TO A MINIMUM OF R-38.
5. HEAT TAPE ALL ABOVE GROUND PIPING.
6. DEVICE SHALL BE INSTALLED IN A DWP APPROVED LOCATION.
7. TO THE MAXIMUM EXTENT PRACTICABLE, THE METER, METER BOX AND SERVICE LATERAL MAINTAINED BY DWP SHALL BE WITHIN THE PUBLIC RIGHT OF WAY. IF LOCATED ON PRIVATE PROPERTY, DWP WILL MAINTAIN THE SERVICE UP TO THE BACK OF THE METER BOX ON THE CUSTOMER'S SIDE OF THE METER.

NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

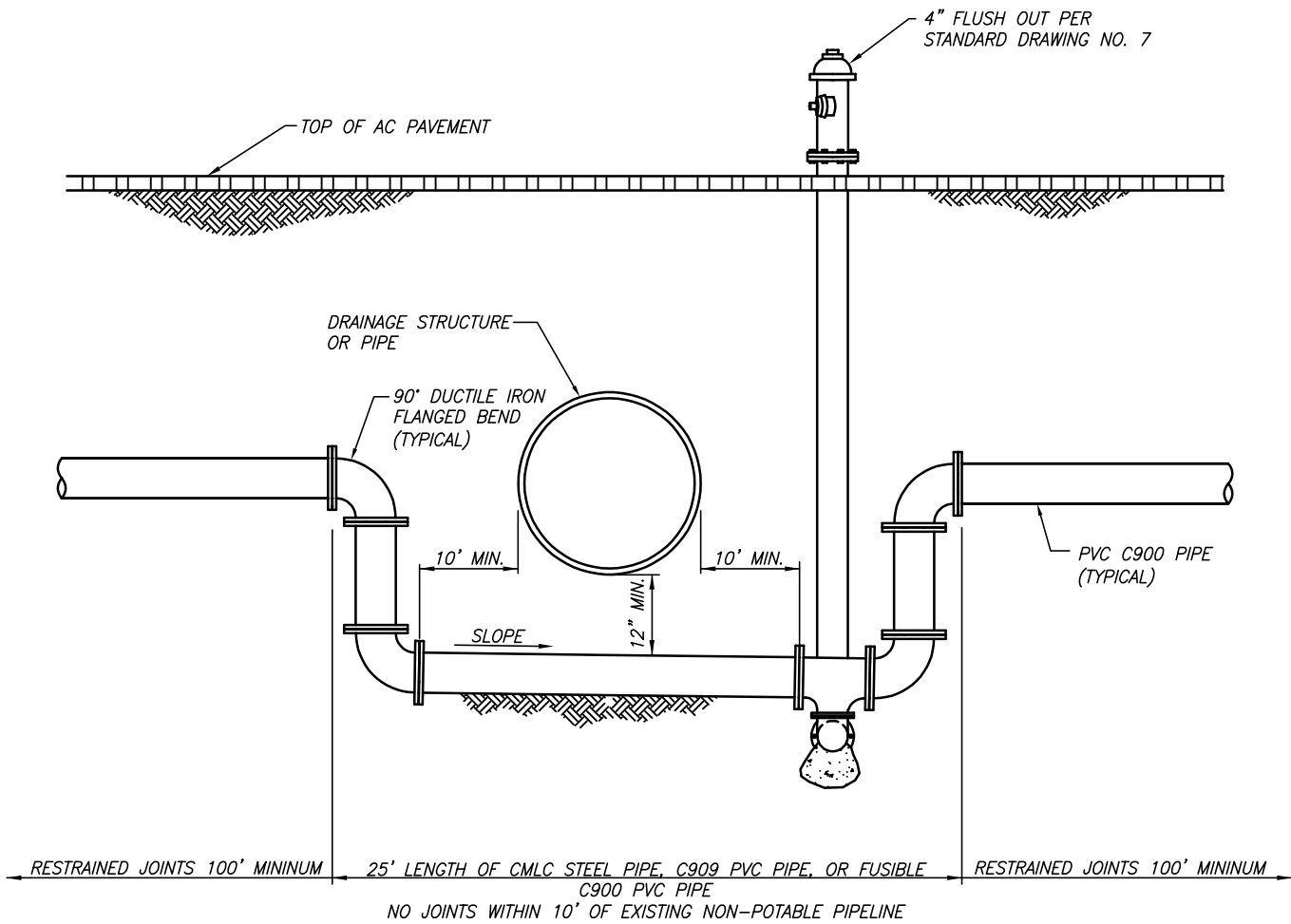
3/4" - 2" REDUCED PRESSURE
PRINCIPLE BACKFLOW ASSEMBLY

5	DELINEATE DWP RESPONSIBILITY	DB	11/2025
4	HORIZONTAL DISTANCE FROM METER TO BACKFLOW	DB	11/2024
3	NOTE 6	WSC	12/2017
2	STOP AND WASTE VALVE	WSC	1/2015
1	HEATED ENCLOSURE AND NOTE 6	WSC	3/2014
REV.	REVISION DESCRIPTION	BY	DATE

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DISTRICT ENGINEER

11/20/2025
DATE

STANDARD
DRAWING No.
17




NOT TO SCALE

DEPARTMENT OF WATER AND POWER
CITY OF BIG BEAR LAKE

TYPICAL DROP SECTION

REV.	REVISION DESCRIPTION	BY	DATE
△	REVISED MATERIAL SPECIFICATION IN DROP SECTION BENEATH NON-POTABLE PIPELINE	DB	11/2024

APPROVED

 DISTRICT ENGINEER

12/05/2024
 DATE

STANDARD DRAWING No.
 19

