

CITY OF GRANITE FALLS

1" AND SMALLER WATER SERVICE
(1 OF 2)

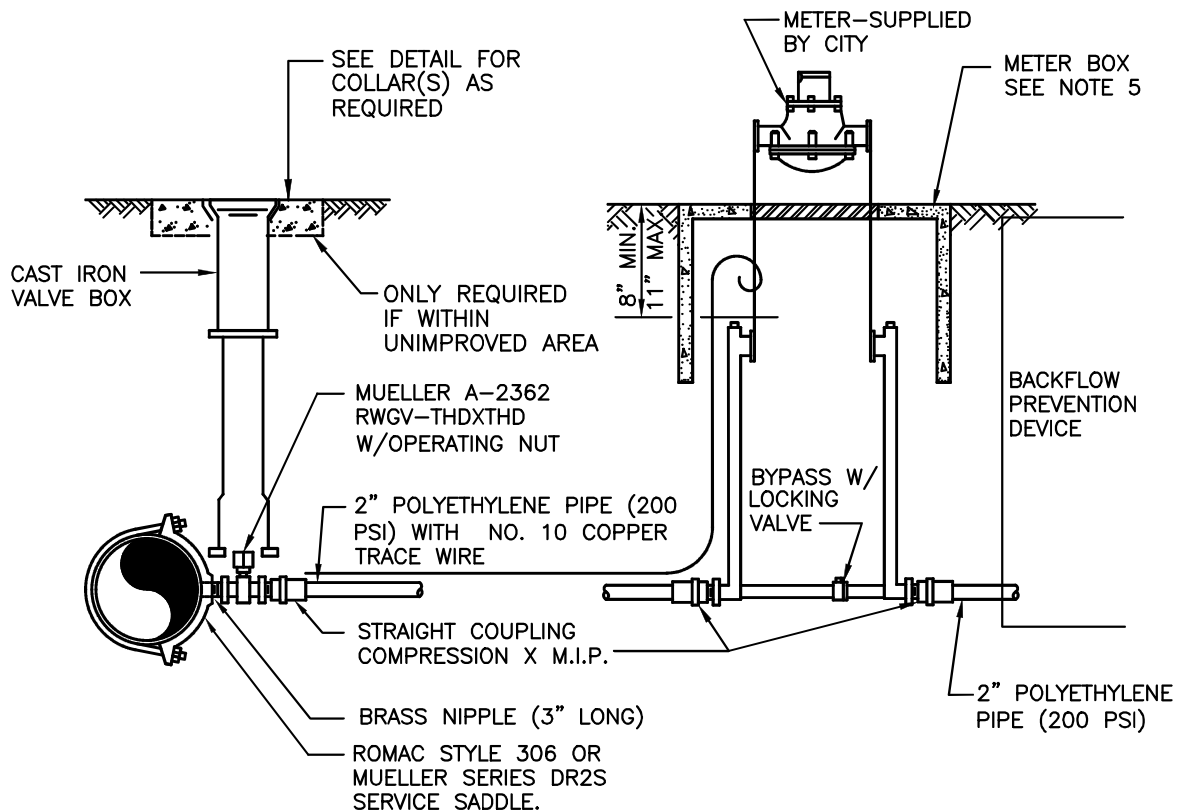
LEGEND

- ① ROMAC SADDLE SINGLE STRAP FOR PIPE DIAMETERS LESS THAN 8", OTHERWISE DOUBLE SADDLE STRAP.
- ② 1" MIP X PEP JOINT CORP STOP EQUAL TO FORD F1101 OR EQUAL
- ③ 1" HIGH MOLECULAR (200 PSI, SDR 7) IRON PIPE SIZE POLY PIPE (PEP)
- ④ INSTALL SERVICE LINE IN 2" PVC GUARD PIPE (SCH-80) WHEN BORED ACROSS ROADWAY (3' MINIMUM BEYOND AND BENEATH PAVEMENT SECTION)
- ⑤ COPPER SETTER MUELLER B-2400 SERIES OR FORD 70 SERIES INCLUDING ANGLE BALL VALVE AND CHECK VALVE.
- ⑥ 10 GAUGE WIRE FROM MAINLINE TAP TO METER BOX AND EXPOSE 12" MINIMUM IN BOX.
- ⑦ METER BOX - 13"x24"x18" OLD CASTLE 1324BCF. METER LID - 13"x24" RECTANGULAR, H-20 LOADING OLD CASTLE DUCTILE IRON MAX VIEW COVER WITH AMR OPENING. (SET FLUSH WITH FINISHED GRADE)
- ⑧ PROVIDE APPROVED WATERTIGHT PLUG UNTIL CONNECTION TO PRIVATE SYSTEM IS MADE.
- ⑨ HIGH MOLECULAR (200 PSI, SDR 7) POLY PIPE (PEP) WITH COPPER TRACE WIRE TO BUILDING. PEX PIPE ALLOWABLE WITH CITY'S APPROVAL. EXPOSE 12" MINIMUM IN BOX.



CITY OF GRANITE FALLS

1" AND SMALLER WATER SERVICE
(2 OF 2)



NOTES:

1. POLYETHYLENE PIPE SHALL HAVE NO. 10 COPPER TRACE WIRE WITH THHN BLUE PLASTIC INSULATION. WIRE SHALL BE OF SUFFICIENT LENGTH TO EXTEND 3 FEET ABOVE GROUND.
2. SERVICE FROM METER BOX TO STRUCTURE BY PROPERTY OWNER.
3. INDIVIDUAL SERVICES REQUIRED FOR EACH STRUCTURE.
4. METER SETTER MUELLER H-1423 SERIES OR FORD 70 SERIES WITH LOCKING BYPASS, GROUND KEY, AND CHECK VALVE.
5. METER BOX — SEE 1-WAT FOR METER BOX & LID EXCEPT USE METER BOX SIZE 17"x30"x18". DUCTILE IRON MAX VIEW METER LID WITH AMR OPENING.
6. EASEMENT PROVIDED TO CITY TO AND AROUND METERS LOCATED OUTSIDE R/W.
7. ALL SERVICES SHALL HAVE WASHINGTON STATE APPROVED RPBA FOR BACKFLOW PREVENTION. CONFIRM LOCATION OF ASSEMBLY WITH CITY. INITIAL AND ANNUAL TEXTING REQUIRED. MULTIFAMILY ALLOWED TO USE DCVA IN LIEU OF RPBA.

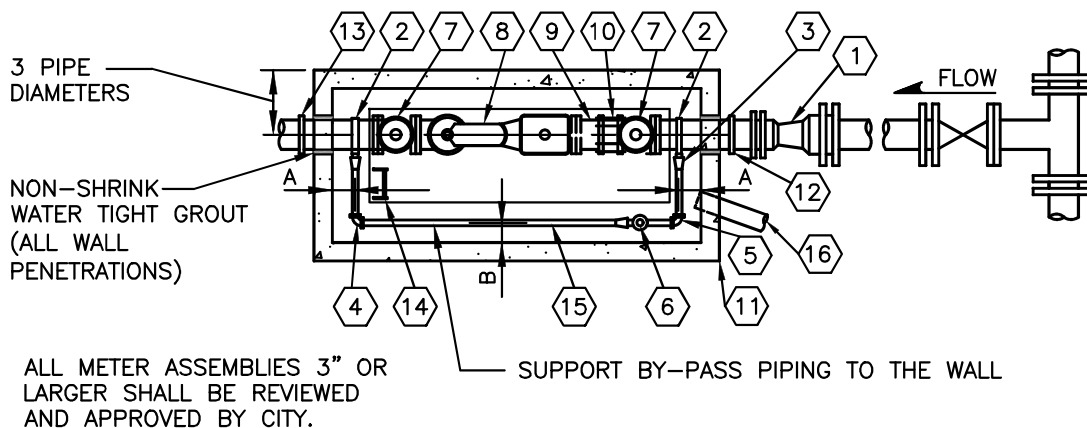


CITY OF GRANITE FALLS

1 1/2" & 2" WATER SERVICE

DATE: 1/01/2021

DWG. NO.
2-WAT



PLAN

- 1 REDUCER, M.J.
- 2 SINGLE STRAP SERVICE CLAMP, ROMAC 101 WITH IPS TAP, OR EQUAL (1 1/2" OR 2" BYPASS, 4-INCH AND LARGER BYPASS REQUIRES D.I. TEE).
- 3 FITTINGS AS REQUIRED.
- 4 BEND CPLG COPPER TO COPPER MUELLER H-15525, OR EQUAL.
- 5 BEND CPLG, COPPER TO OUTSIDE I.P. THREAD MUELLER H-15530, OR EQUAL.
- 6 BALL VALVE WITH PADLOCK WING OR LOCK CAP, FORD B21-444W OR B21-666 WITH LOCK CAP OR B21-777 WITH LOCK CAP. SIZED TO LINE.
- 7 RESILIENT SEAT GATE VALVE, FL X FL SIZED TO METER.
- 8 3" TO 10" BADGER METER FOR IRRIGATION SERVICES AND 3" TO 10" COMPOUND METER IF FOR DOMESTIC SERVICE. READ IN CUBIC FEET WITH AMR RADIO UNIT AS SPECIFIED BY CITY SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
- 9 D.I. PIPE SPOOL FL X PE LENGTH TO FIT.
- 10 ROMAC DISASSEMBLY JOINT FL CPLG. ADAPT.
- 11 PRECAST CONCRETE VAULT, UTILITY VAULT OR EQUAL, SEE PAGE 2 FOR SIZING AND REQUIREMENTS.
- 12 MEGA-LUG FOLLOWER INSTALLED ON INFLOW SIDE OF VAULT WITH CONCRETE THRUST BLOCK OR SHACKLE TO THRUST BLOCK TO PREVENT MOVEMENT IF METER IS REMOVED. (BLOCK NOT SHOWN)
- 13 DIELECTRIC CPLG. TO BUILDING SERVICE. SIZE AS REQUIRED.
- 14 GALV. STEEL OR ALUMINUM LADDER. SECURE TO VAULT LID AND FLOOR. COORDINATE LOCATION FOR ACCESS.
- 15 BY-PASS (SIZE BY TABLE BELOW).
- 16 4" PVC TO CATCH BASIN OR DAYLIGHT. WHERE GRAVITY DRAIN IS NOT FEASIBLE, PROVIDE SUMP, ELECTRICAL SERVICE AND PUMP WITH DISCHARGE TO SURFACE DRAIN. PUMP SHALL BE 1/2 HP ZOELLER M-53, WITH CHECK VALVE ON DISCHARGE LINE.
- 17 ALL PIPES AND FITTINGS 4-INCH OR LARGER SHALL BE DI., CL 52.

NOTE:

IF METER IS FOR INTERTIE WITH PUD, PUD STANDARDS APPLY, INCLUDING TELEMETRY REQUIREMENTS.

METER SIZE	MAIN-LINE	BYPASS	A	B
3"	4" DI.	2" COPPER	9"	4"
3"	4" DI.	2" COPPER	9"	4"
4"	6" DI.	4" DI.	9"	4"
6"	8" DI.	4" DI.	14"	6"
8"	10" DI.	8" DI.	16"	6"

NOTES:

SEE PAGE 2 FOR ELEVATION AND NOTES.

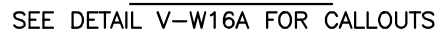


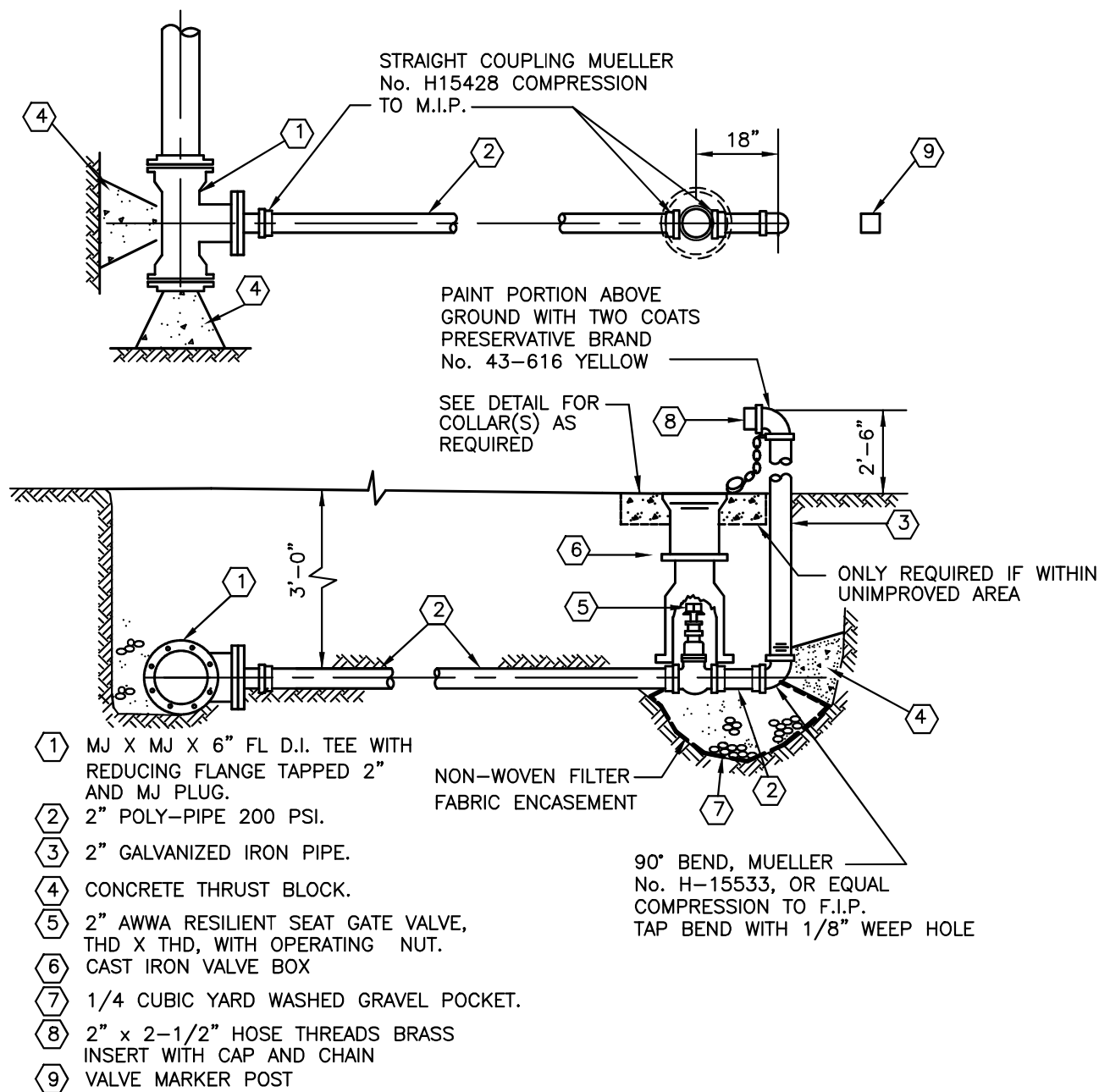
CITY OF GRANITE FALLS

METER AND METER VAULT
ASSEMBLY 3" THROUGH 10"

DATE: 1/01/2021

DWG. NO.
3MM





NOTES

1. TURN NOZZEL TOWARDS ROADSIDE DITCH
2. INSTALL DIELECTRIC COUPLINGS AT DISSIMILAR METALS.
3. TEMPORARY BLOWOFFS INSTALLED FOR FLUSHING WATERMAIN SHALL BE SIZED TO PROVIDE 2.5fps VELOCITY IN MAIN LINE.

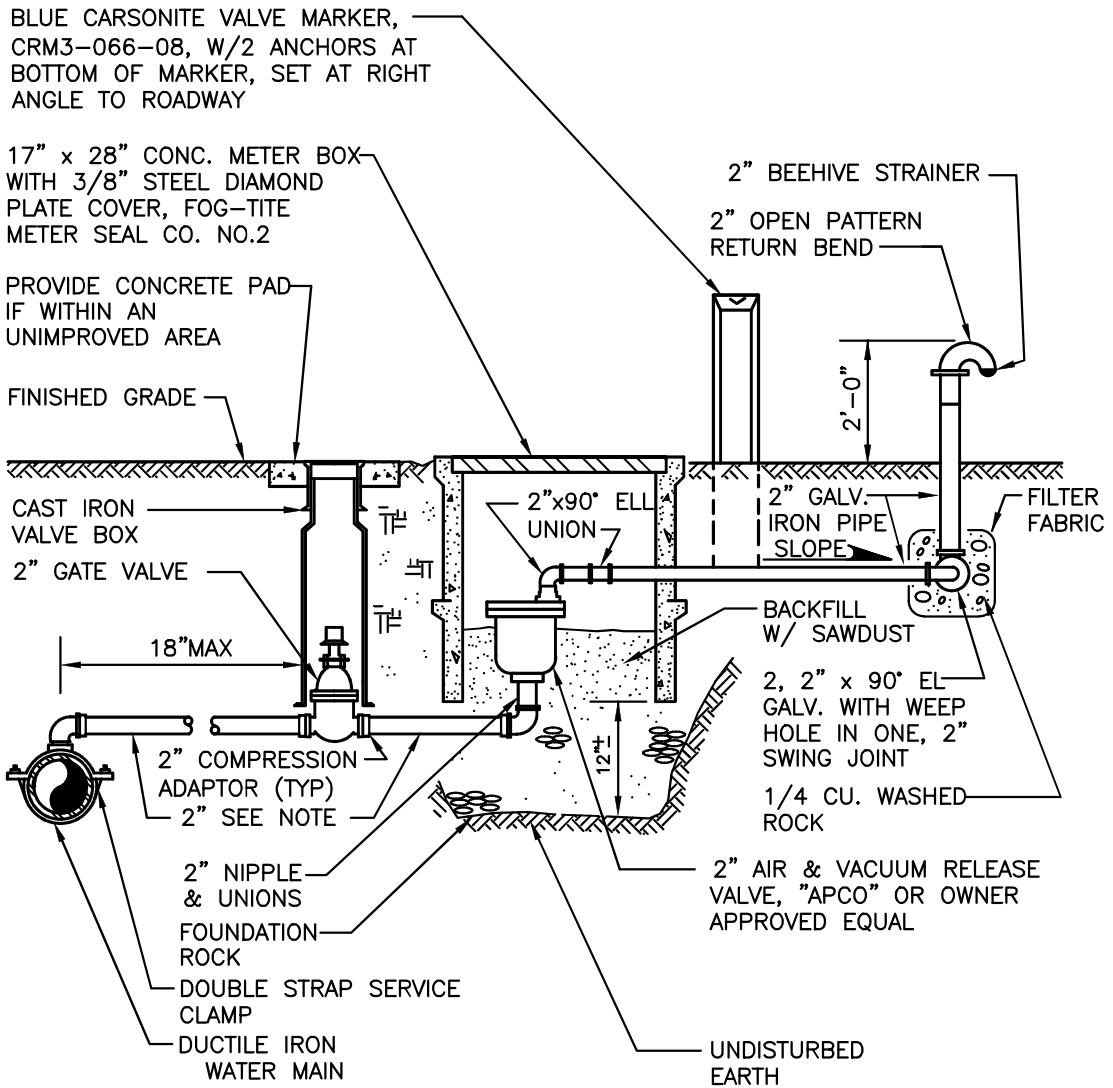


CITY OF GRANITE FALLS

PERMANENT END-LINE BLOW OFF
ASSEMBLY

DATE: 1/01/2021

DWG. NO.
BLOW-OFF2



NOTES:

1. GATE VALVE: AWWA RESILIENT SEAL, THRD x THRD WITH OPERATING NUT
2. ALL PIPING BETWEEN DOUBLE STRAP SADDLE AND INLET SIDE OF COMBINATION AIR & VAC ASSEMBLY SHALL BE POLY PIPE 200 PSI OR BRASS
3. TAP MAIN AT SYSTEM HIGH POINT. LOCATION TO BE APPROVED BY THE CITY
4. PAINT PORTION ABOVE GROUND WITH TWO COATS RUSTOLEUM 31-144 CATERPILLAR YELLOW, ENAMEL GLOSS.

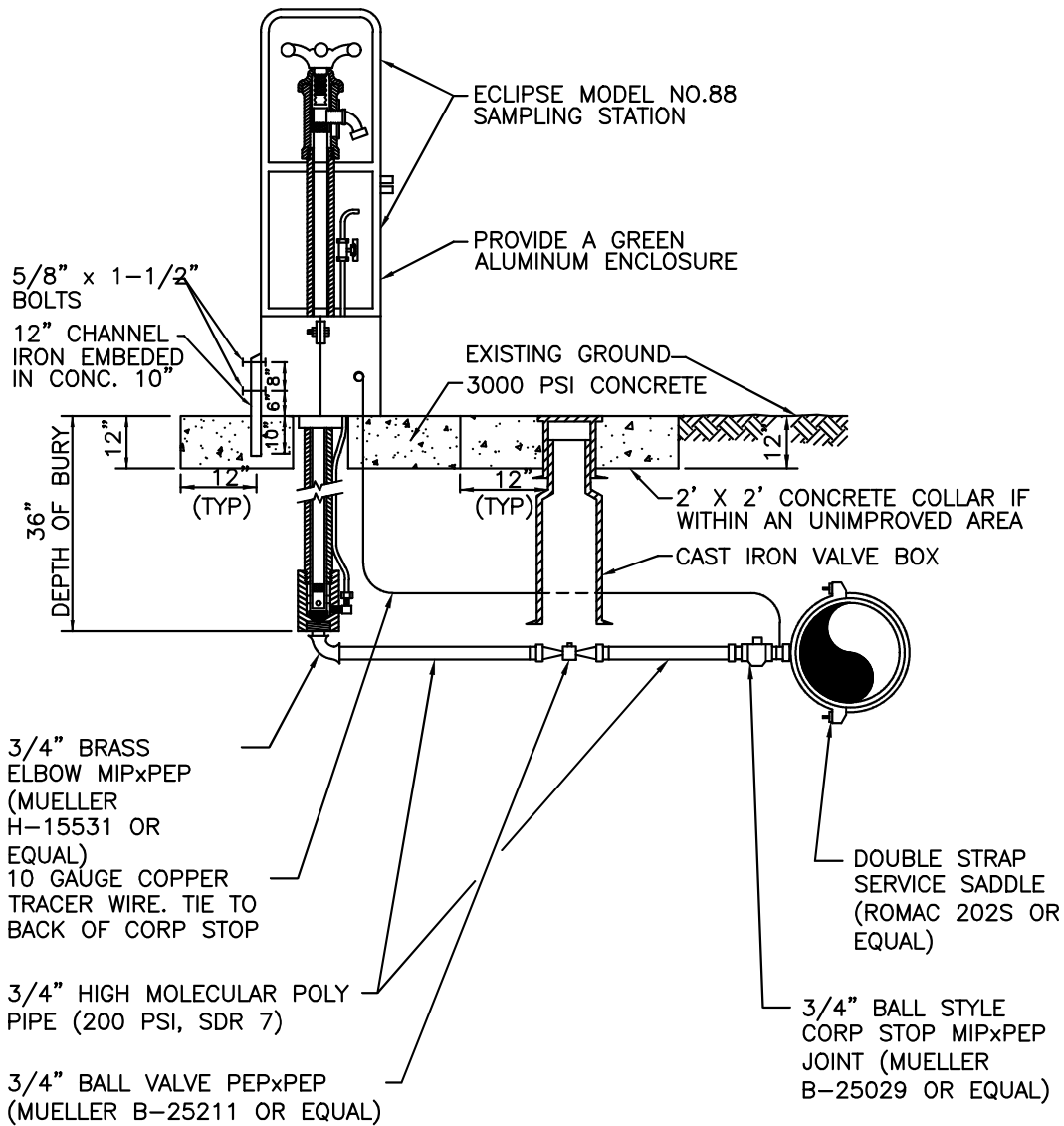


CITY OF GRANITE FALLS

AIR & VACUUM RELEASE
ASSEMBLY

DATE: 1/01/2021

DWG. NO.
AIR-RLS

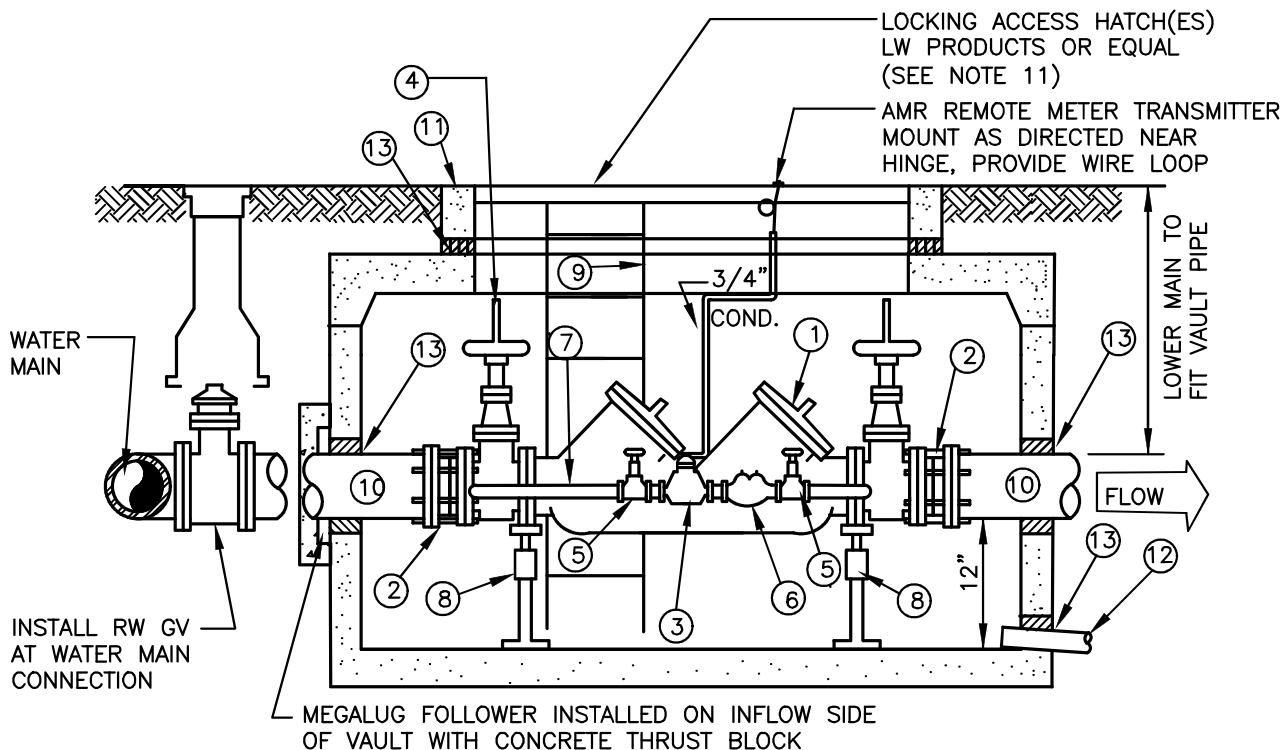


CITY OF GRANITE FALLS

WATER SAMPLING STATION

DATE: 1/01/2021

DWG. NO.
WAT-SAMP



NO.	DESCRIPTION
1	STATE APPROVED DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) BACKFLOW PREVENTION ASSEMBLY WITH O.S.&Y. R.W. GATE VALVE
2	ROMAC STYLE 'FCA 501' FLANGED COUPLING ADAPTER
3	5/8" x 3/4" BADGER HR-E RADIO READ IN CF READING METER COMPLETE WITH SPUD NUT
4	LOCATE CENTER OF VALVE 15" FROM CENTER OF VAULT TO ALLOW STEMS TO EXTEND INTO ACCESS OPENING WHEN APPLICABLE
5	3/4" SHUTOFF VALVE; BRASS GATE VALVE
6	STATE APPROVED 3/4" DOUBLE CHECK VALVE ASSEMBLY (DCVA)
7	BRASS OR TYPE K COPPER, DETECTOR CHECK PIPING (BY PASS LINE)
8	2 EA. GALVANIZED ADJUSTABLE STANCHIONS (LOCATE AT ENDS OF DOUBLE CHECK ASSEMBLY)
9	GALVANIZED STEEL LADDER, LOCATE AS DIRECTED BY CITY, SECURE TO VAULT.
10	PIPE SPOOL, CL. 52 D.I., PLAIN END
11	"UTILITY VAULT" OR APPROVED EQUAL 4" DCDC, USE 575 LA (4'-2" x 6'-6" x 4'-0" INSIDE) 6" DCDC, 4484 LA (4'-4" x 8'-4" x 6'-2" INSIDE) 6" DCDC, 5106 LA (5'-0" x 10'-6" x 4'-4" INSIDE) 8" DCDC, 5106 LA (5'-0" x 10'-6" x 6'-2" OR 4'-4" INSIDE) 10" DCDC, 5106 LA (3 HATCH) (5'-0" x 10'-6" x 6'-2" OR 4'-4") ORIENTATION AND LOCATION OF HATCHES TO PROVIDE CLEAR ACCESS TO VALVES AND DETECTOR CHECK ASSEMBLY
12	6" PVC DRAIN, DISCHARGE TO DAYLIGHT OR TO CATCH BASIN. MINIMUM SLOPE 1% UNLESS OTHERWISE APPROVED BY THE CITY. ADD SCREENS AT BOTH ENDS.
13	WATERTIGHT GROUT, INLET AND OUTLET PIPE, DRAIN PIPE AND ACCESS OPENING

NOTE:

AFTER PRESSURE TEST AND PURITY SAMPLES ARE RECEIVED, A CERTIFIED BACKFLOW TECHNICIAN SHALL SUPPLY DISTRICT WITH A WRITTEN TEST REPORT ON EACH BACKFLOW ASSEMBLY.

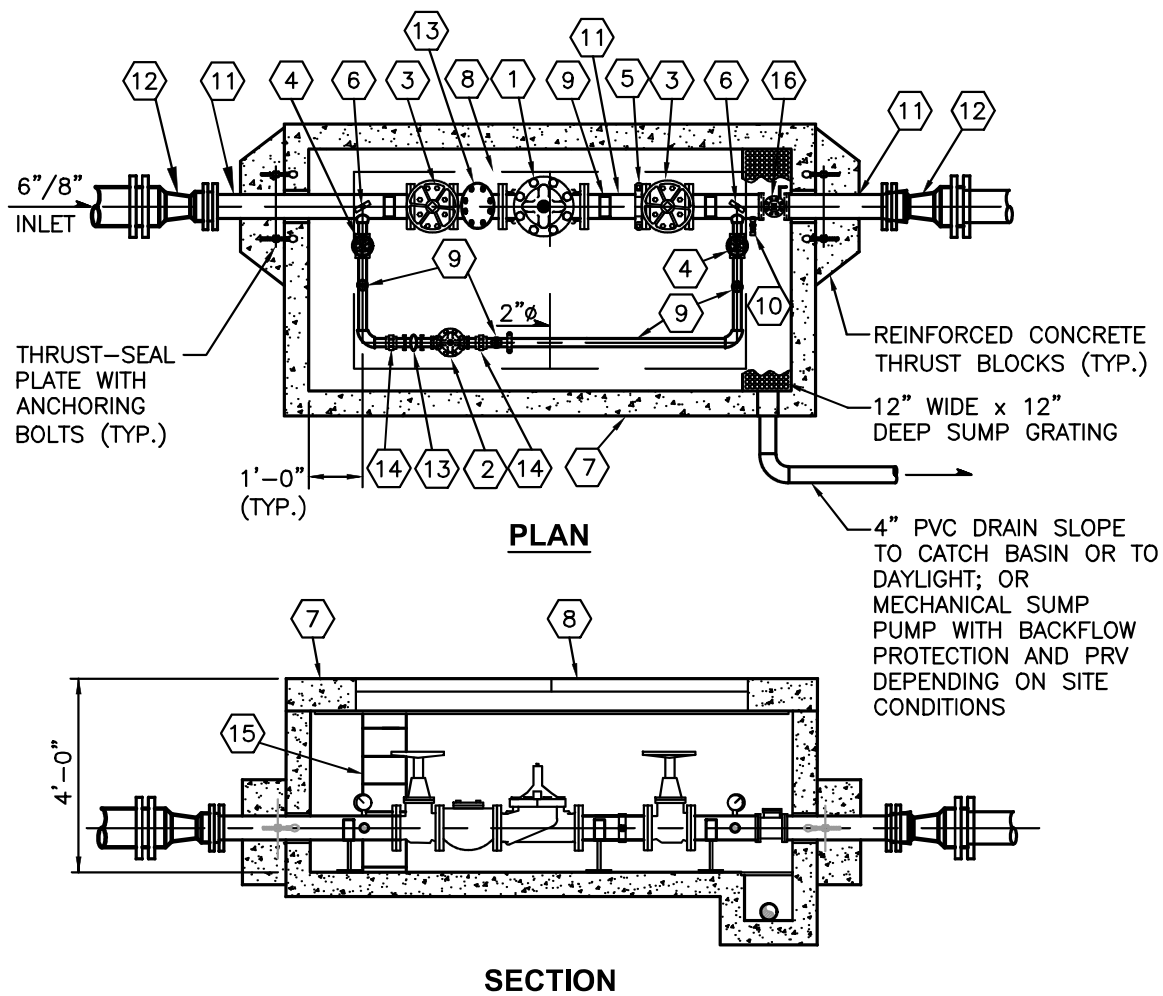


CITY OF GRANITE FALLS

DOUBLE-CHECK DETECTOR
BACKFLOW PREVENTION ASSEMBLY

DATE: 1/01/2021

DWG. NO.
DCD-BPA



NOTE:

ALTERNATE TO FIELD ASSEMBLED PRV AND VAULT IS SYSTEM AS MANUFACTURED BY GC SYSTEMS.

SEE PAGE 2 FOR CALLOUTS AND NOTES



CITY OF GRANITE FALLS

PRESSURE REDUCING STATION
(1 OF 2)

DATE: 1/01/2021

DWG. NO.
PRSD

PRESSURE REDUCING STATION

(TO BE SIZED BY CITY)

LEGEND – SEE PAGE 1 FOR PLAN AND SECTION

- ① 6" CLA-VAL 90-01 PRESSURE REDUCING VALVE WITH X101 POSITION INDICATOR DI BODY, S.S. TRIM, #150 FL. EPOXY COATING.
- ② 2" CLA-VAL 90-01 PRESSURE REDUCING VALVE WITH X101 POSITION INDICATOR DI BODY, BRONZE TRIM – THREADED. EPOXY COATING.
- ③ 6" D.I. RW NRS GATE VALVE WITH HANDWHEEL, #150 FL.
- ④ 2" MUELLER A2360-6W41 W55 RW NRS GATE VALVE WITH HANDWHEEL, THD.
- ⑤ UNIFLANGE
- ⑥ 4" 0-300 PSI PRESSURE GAUGE WITH SNUBBER AND GAUGE COCK; TOP OF PIPE.
- ⑦ PRECAST CONCRETE VAULT 10'L x 5'W x 3'-7"H INSIDE, SOLID WALL WITH WHITE INTERIOR & BLACK EXTERIOR SEALANT
- ⑧ 48" X 96" DOUBLE DOOR ALUMINUM HATCH, LW PRODUCTS OR EQUAL. H-20 RATED. DRAIN HATCH TO VAULT FLOOR.
- ⑨ ADJUSTABLE PIPE SUPPORTS
- ⑩ 3/4" HOSE BIB ASSEMBLY
- ⑪ PIPE SPOOL (FLxPE) LENGTH AS REQUIRED.
- ⑫ REDUCER (AS REQUIRED), MJ WITH MEGA-LUGS
- ⑬ WATER METER STRAINER, INVENSYS CLA-VAL H-STRAINER OR EQUAL, (FL)
- ⑭ UNIONS
- ⑮ LADDER W/LADDER-UP SAFETY POST
- ⑯ 3" CLA-VAL PRESSURE RELIEF VALVE, PLUMBED TO THE SURFACE

NOTES:

1. 6" x 2" PRV ASSEMBLY SHOWN. SIZES TO BE DETERMINED BY THE CITY BASED ON DOWNSTREAM DEMANDS.
2. ALL 3" AND LARGER PIPE INSIDE WETTED SURFACES SHALL BE MORTAR LINED DUCTILE IRON OR SHALL BE SANDBLASTED, EPOXY LINED AND COATED TO AWWA C210 AND NSF-61 SPECIFICATION. EXTERIOR COATING SHALL BE BLUE ENAMEL.
3. ALL PIPE 2" AND SMALLER TO BE BRASS.
4. ADDITIONAL FEATURES MAY BE REQUIRED BY CITY.

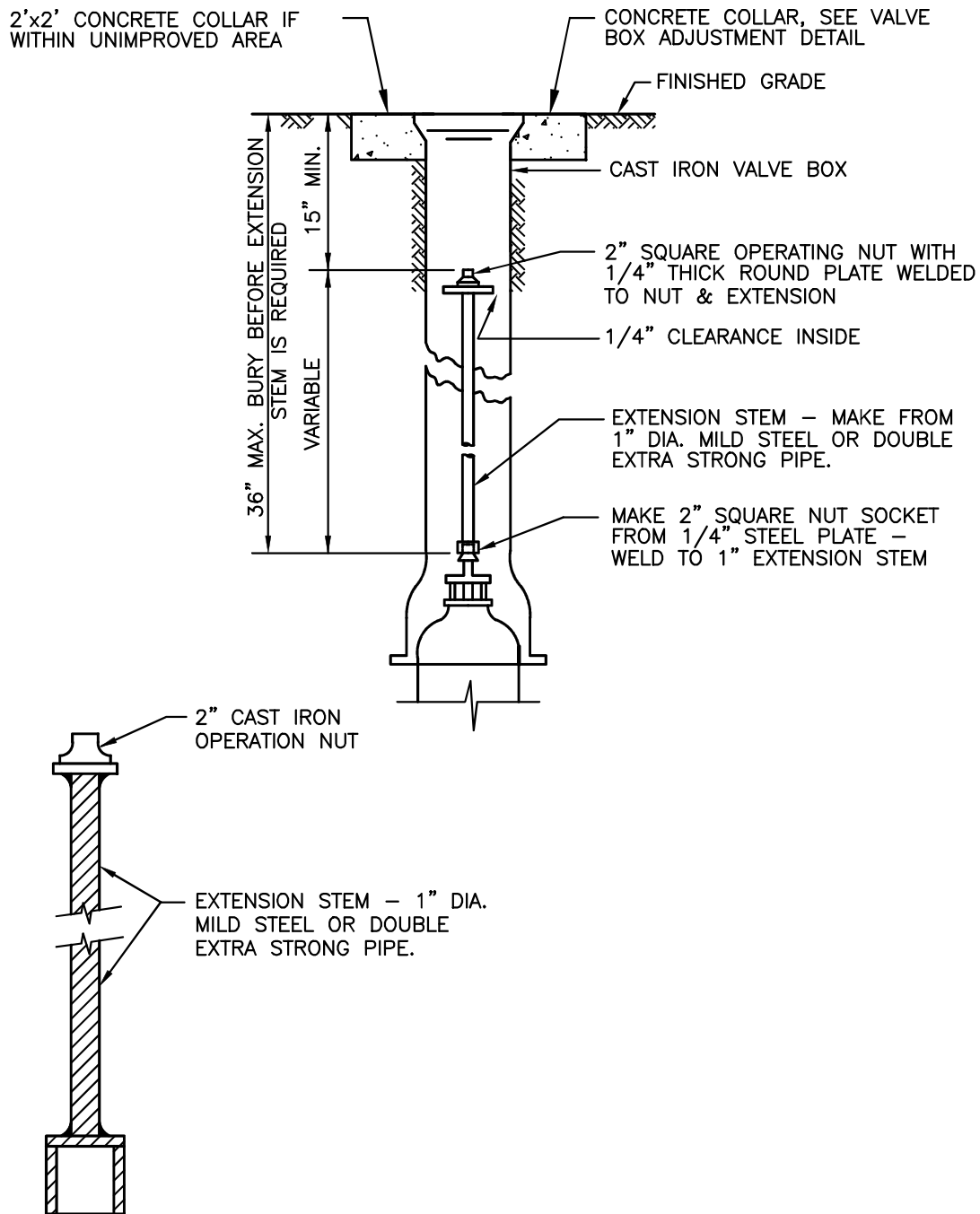


CITY OF GRANITE FALLS

PRESSURE REDUCING STATION
(2 OF 2)

DATE: 1/01/2021

DWG. NO.
PRSD

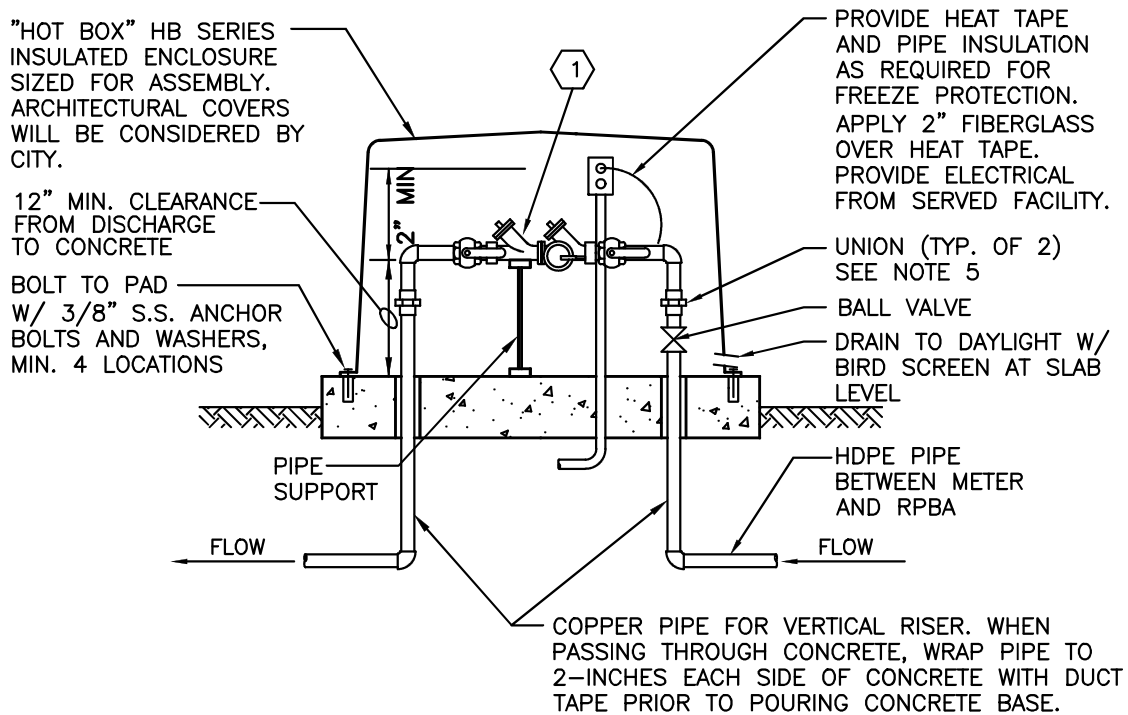


CITY OF GRANITE FALLS

WATER VALVE STEM EXTENSION

DATE: 1/01/2021

DWG. NO.
WAT-VALV



REDUCED PRESSURE BACKFLOW DEVICE (<3")

NOT TO SCALE

- 1 WASHINGTON STATE APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA) WITH TEST COCK PROTECTION AND BRONZE BODY BALL VALVE AT EACH END.

NOTES:

1. CONCRETE TO BE 2500 PSI (MINIMUM) MIX WITH AIR ENTRAINMENT.
2. COMPLETE ALL WORK IN ACCORDANCE WITH STATE, CITY AND MANUFACTURER STANDARDS.
3. SYSTEM SHALL NOT BE PUT INTO SERVICE UNTIL RPBA IS APPROVED BY THE CITY AND TESTED/CERTIFIED BY A WASHINGTON STATE LICENSED TESTER.
4. RPBA IS CONSIDERED PART OF THE PRIVATE SYSTEM AND SHALL BE MAINTAINED BY THE PROPERTY OWNER WITH ANNUAL CERTIFICATION REQUIRED.
5. DIELECTRIC UNIONS SHALL BE USED TO SEPARATE DISSIMILAR MATERIALS.
6. NO BRANCH CONNECTIONS ALLOWED BETWEEN METER AND RPBA.

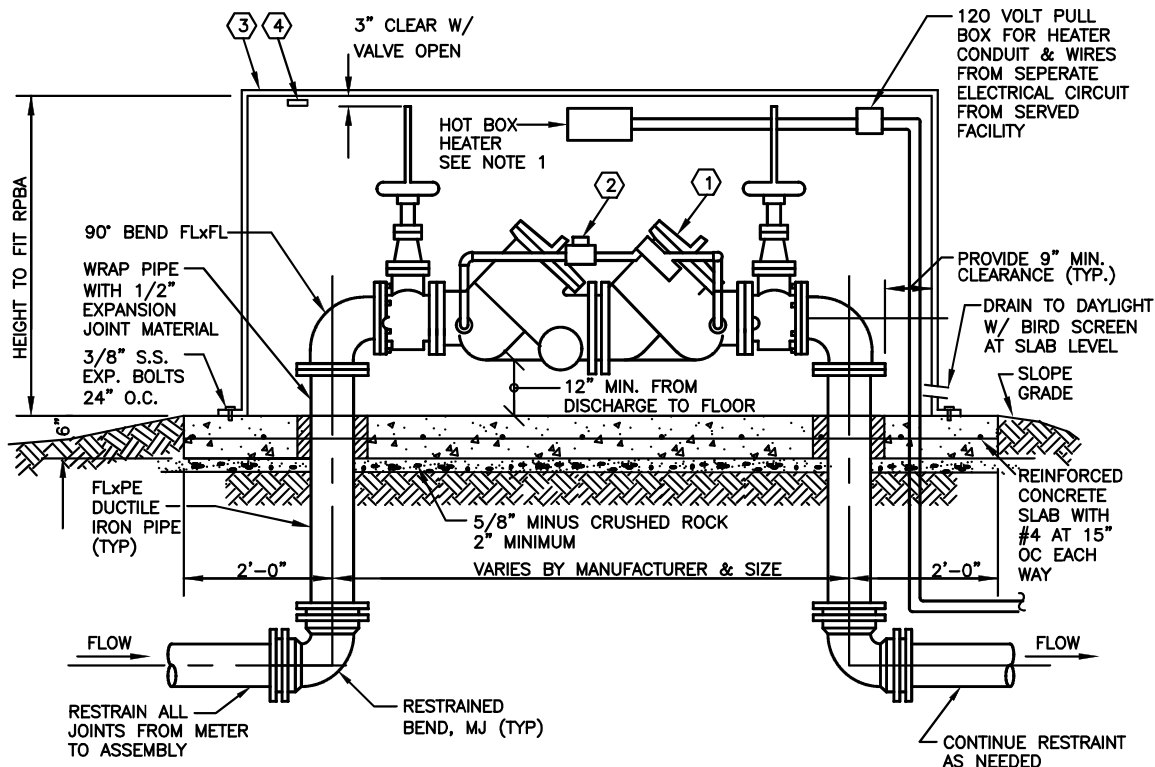


CITY OF GRANITE FALLS

REDUCED PRESSURE BACKFLOW
ASSEMBLY 3/4" TO 2"

DATE: 1/01/2021

DWG. NO.
RPBA



- ① WASHINGTON STATE APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY (RPBA) WITH OS&Y RESILIENT SEAT GATE VALVE EACH END AND LOW FLOW METER ASSEMBLY.
- ② LOW FLOW BYPASS METER, INCLUDING 5/8"x3/4" BADGER HR-E RADIO READ WATER METER IN CF, WASHINGTON STATE APPROVED DOUBLE CHECK VALVE ASSEMBLY (DCVA) AND 2 BRONZE BODY ISOLATION BALL VALVES, BRASS OR TYPE K COPPER PIPING.
- ③ ALUMINUM "HOT BOX" MODELS 4 THROUGH 10 FOR RESPECTIVE SIZE RPBA SHALL BE MODIFIED TO FIT ABOVE HEIGHT REQUIREMENTS. VALVE STEM SHALL NOT EXTEND OUTSIDE OF BOX.
- ④ AMR REMOTE METER TRANSMITTER; MOUNT AS DIRECTED NEAR HINGE; PROVIDE WIRE LOOP

NOTES:

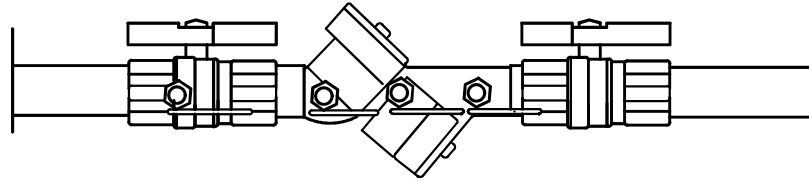
- 1. HEATERS AND WIRING SHALL BE RATED AT 2,000 WATT FOR 8" AND UNDER; 3,000 WATT FOR 10".
- 2. CONCRETE TO BE 2500 PSI (MINIMUM) MIX WITH AIR ENTRAINMENT.
- 3. COMPLETE ALL WORK IN ACCORDANCE WITH STATE, CITY AND MANUFACTURER STANDARDS.
- 4. SYSTEM SHALL NOT BE PUT INTO SERVICE UNTIL RPBA IS APPROVED BY THE CITY AND TESTED/CERTIFIED BY A WASHINGTON STATE LICENSED TESTER.
- 5. RPBA IS CONSIDERED PART OF THE PRIVATE SYSTEM AND SHALL BE MAINTAINED BY THE PROPERTY OWNER WITH ANNUAL CERTIFICATION REQUIRED.
- 6. DRAIN TO DAYLIGHT WITH BIRD SCREEN LOCATED AT SLAB LEVEL (SIZED PER MANUFACTURERS RECOMMENDATION).
- 7. NO BRANCH CONNECTIONS ALLOWED BETWEEN METER AND RPBA.



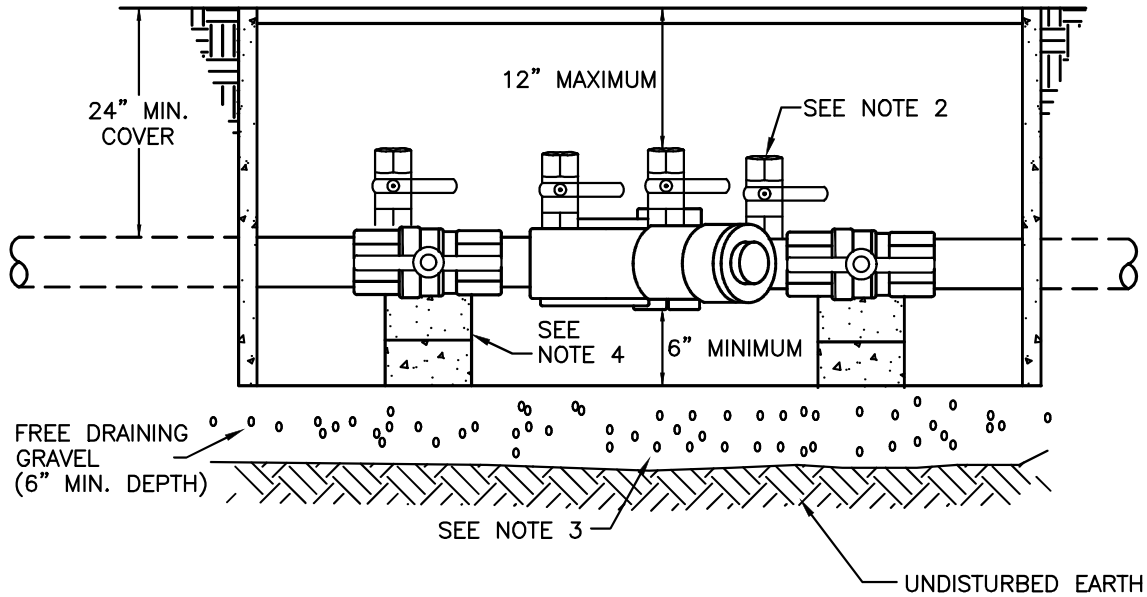
CITY OF GRANITE FALLS
REDUCED PRESSURE BACKFLOW
DETECTOR ASSEMBLY 3" AND LARGER

DATE: 1/01/2021

DWG. NO.
RPBA-2



PLAN VIEW



NOTES:

1. METER BOX W/SOLID LID
3/4"– 1" ASSEMBLIES 13"x24"x18"
1 1/4"– 2" ASSEMBLIES 17"x30"x18"
2. ASSEMBLY MUST BE INSTALLED WITH TEST COCKS FACING UP OR TO ONE SIDE. INSTALL WATERTIGHT PLUGS IN ALL TEST COCKS.
3. SUFFICIENT DRAINAGE MUST BE PROVIDED TO PREVENT ASSEMBLY FROM BEING SUBMERGED.
4. PROVIDE SUPPORT BLOCKS AS MAY BE REQUIRED.
5. PROVIDE A STRAINER WITH BLOW OUT VALVE AHEAD OF DEVICE IF REQUIRED BY CITY.
6. THOROUGHLY FLUSH THE LINE, PRIOR TO THE INSTALLATION OF THE DCVA.
7. PROTECT DEVICE FROM FREEZING BY INSTALLING IN BELOW GROUND STRUCTURE OR PER "HOT BOX" SHOWN IN REDUCED PRESSURE BACKFLOW DEVICE DETAIL.

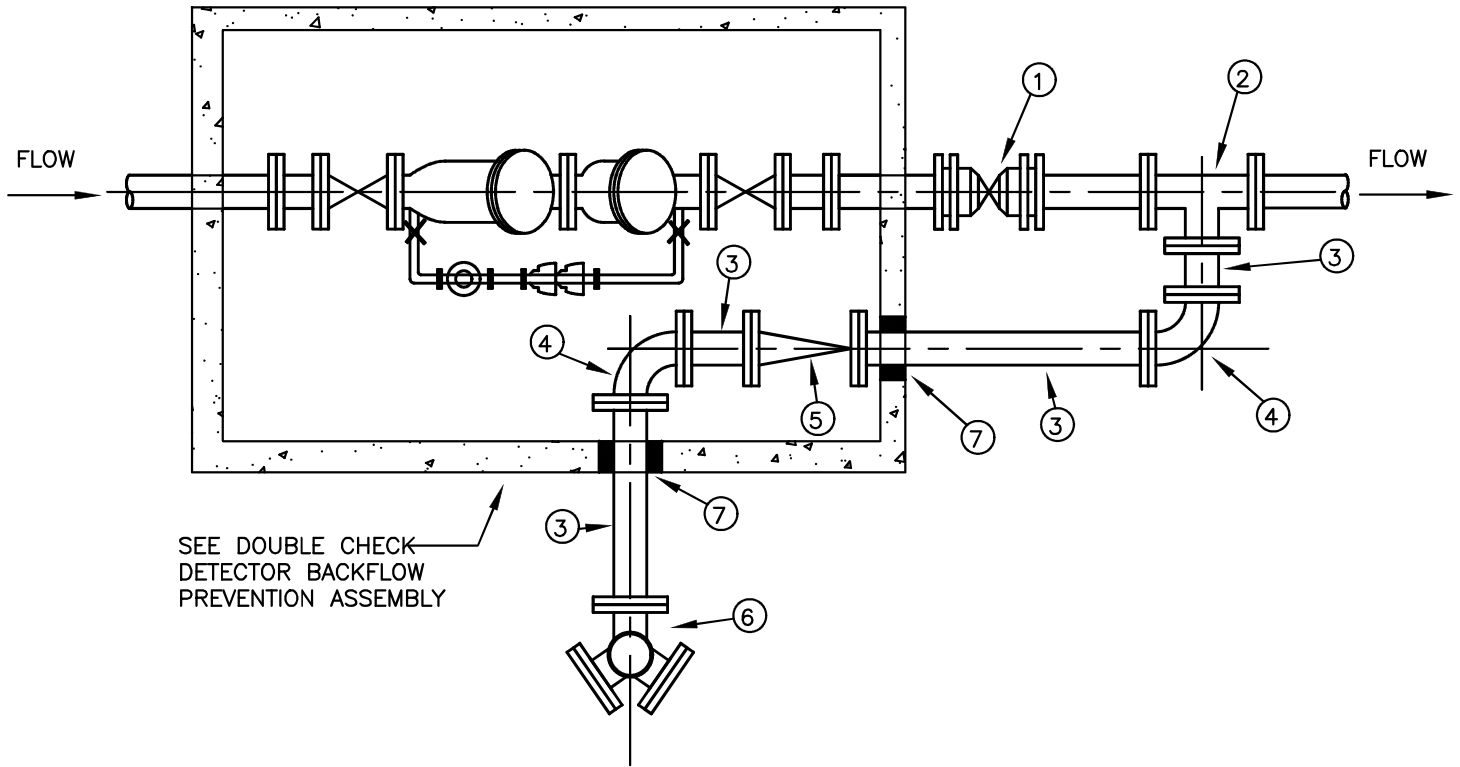


CITY OF GRANITE FALLS

"INDIVIDUAL" DOUBLE CHECK
DETECTOR ASSEMBLY

DATE: 1/01/2021

DWG. NO.
DBL-CHCK



NO.	DESCRIPTION
1	POST INDICATOR VALVE, MJ WITH MEGALUGS
2	4" TEE, MJ WITH MEGALUGS OR FLANGE
3	4" DUCTILE IRON PIPE, CLASS 52
4	4" x 90° BENDS, MJ WITH MEGALUGS OR FLANGE
5	4" FLAPPER CHECK VALVE, MJ WITH MEGALUGS OR FLANGE
6	FIRE DEPARTMENT CONNECTION, MJ WITH MEGALUGS OR FLANGE. CONNECTION TO COMPLY WITH FIRE DEPARTMENT REQUIREMENTS.
7	WATERTIGHT GROUT



CITY OF GRANITE FALLS

FIRE LINE CONNECTION

DATE: 1/01/2021

DWG. NO.
FIRELINE