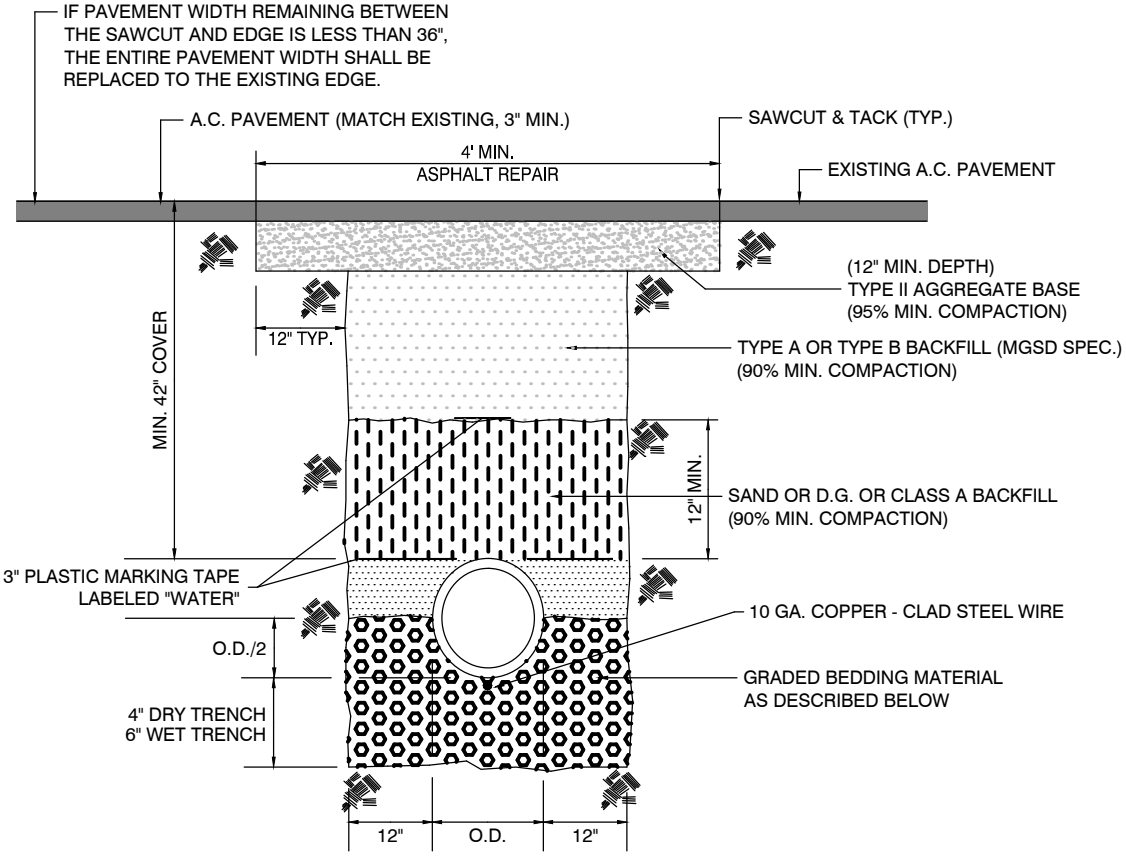
# GARDNERVILLE WATER COMPANY - TYPICAL TRENCH (G-1)




## SEWER LINE ONLY

THE FOLLOWING GRADED BEDDING MATERIAL SHALL BE USED IN WET TRENCH ONLY:

| U.S. STANDARD SIEVE SIZE | PERCENT BY WEIGHT PASSING |
|---|---|
| 1 - 1/2 INCH | 100% |
| 1 INCH | 50-80% |
| 3/4 INCH | 30-60% |
| 3/8 INCH | 20-40% |
| NO. 4 | 20-25% |
| NO. 200 | 0-10% |

## WATER LINE ONLY

THE FOLLOWING GRADED BEDDING MATERIAL SHALL BE USED IN WET TRENCH ONLY:

| U.S. STANDARD SIEVE SIZE | PERCENT BY WEIGHT PASSING |
|---|---|
| 3/4 INCH | 90-100% |
| 3/8 INCH | 0-5% |

## WATER & SEWER LINE ONLY

THE FOLLOWING GRADED BEDDING MATERIAL SHALL BE USED IN DRY TRENCH ONLY:

| U.S. STANDARD SIEVE SIZE | PERCENT BY WEIGHT PASSING |
|---|---|
| 1/2 INCH | 100% |
| NO. 4 | 90-100% |
| NO. 16 | 30-75% |
| NO. 200 | 0-10% |

| NO. | REVISION | DATE |
|---|---|---|
| 1 | MISC. REVISIONS | 09/12 |
| 2 | WIRE GAGE REVS | 05/19 |
| 3 | 2022 UPDATES | 09/22 |
| | | |

GARDNERVILLE WATER COMPANY - STANDARD DETAIL

# TYPICAL TRENCH

DRAWING NO.

G-1

| DATE: | PAGE: |
|---|---|
| 09/22 | 1 |

# GARDNERVILLE WATER COMPANY - GENERAL NOTES (G-2)

1. THE CONTRACTOR SHALL CONDUCT A PRECONSTRUCTION CONFERENCE WITH ALL UTILITIES INCLUDING DOUGLAS COUNTY AND TOWN OF GARDNERVILLE WITH GARDNERVILLE WATER PRESENT PLUS CONTRACTOR SHALL HOLD SUCH MEETING 48 HOURS PRIOR TO CONSTRUCTION BEGINNING.

2. CONTRACTOR SHALL NOTIFY GARDNERVILLE WATER COMPANY AND THE TOWN OF GARDNERVILLE AND ALL EFFECTED PROPERTY OWNER'S 24 HOURS IN ADVANCE AND PRIOR TO MAKING A CONNECTION TO EXISTING WATER LINES. ALL PARTS AND CONNECTING HARDWARE SHALL BE DISINFECTED WITH GWC PERSONAL WITNESSING.

3. ALL WATER MAINS AND SERVICES SHALL BE DISINFECTED, AND BACTERIAL SAMPLES SHALL BE TAKEN IN CONFORMANCE WITH **AWWA C-651-14 SECTION 5.1 (NAC 445.67145 (6)). DECHLORINATION AND DISPOSAL** MUST FOLLOW **AWWA C651-14 & AWWA C655** ON CHLORINATED WATER. COLIFORM TESTS SHALL BE SUBMITTED TO **BUREAU OF SAFE DRINKING WATER** AND **GARDNERVILLE WATER COMPANY** FOR REVIEW AND APPROVAL PRIOR TO PLACING THE WATER MAIN INTO SERVICE. THE DISCHARGE OF CHLORINATED WATER SHALL BE PERMITTED BY THE **BUREAU OF WATER POLLUTION CONTROL.**

4. ALL WATER MIANS, FIRE LINES, HYDRANTS AND SERVICES SHALL BE TESTED AT **200 PSI FOR TWO (2) HOURS** WITH GWC INSPECTOR ON SITE AND WITNESSING TEXT. PVC WATER MAIN SHALL BE TESTED AT NO LESS THAN **AWWA C605.**

5. ALL HYDRANT SHALL BE YELLOW, AND FLOW TESTED. GWC PERSONNEL WILL TEST AND DETERMINE TOP COLOR DESIGNATION ACCORDING TO FLOW.

6. ALL BOLTS, TEES, VALVES AND SADDLES PLUS, WILL BE COVERED AND TAPED WITH PLASTIC PRIOR TO CONCRETE THRUST BLOCKS OR CONCRETE ENCASEMENT. ALL THRUST BLOCKS SHALL INCLUDE 1/4 INCH MINIMUM SIZE GALVANIZED OR ZINC CHAIN STRAPS OR REINFORCING STEEL SECURED AROUND ALL FITTINGS RECEIVING A CONCRETE THRUST BLOCK OR SUPPORT WITH CHAIN OR REINFORCING STEEL IMBEDDED IN THE CONCRETE. SEE DETAILS FOR THRUST BLOCK SIZING.

7. ALL FITTINGS ARE MECHANICAL JOINT. ALL WORKMANSHIP AND PARTS OF THE POTABLE WATER SYSTEM SHALL MEET OR EXCEED CURRENT AMERICAN WATER WORKS ASSOCIATION **(AWWA)** AND NATIONAL SANITATION FOUNDATION **(NSF-61)** STANDARDS AND BE CONSTRUCTED TO THE **UNIFORM PLUMBING CODE AND GARDNERVILLE WATER COMPANY STANDARDS AND DETAILS.**

8. MATERIALS THAT ENCOUNTERS POTABLE WATER MUST BE **NSF 61** CERTIFIED AS COMPATIBLE WITH DRINKING WATER AND LEAD-FREE PER **NAC 445A.65825 & 445A.66085.**

9. GWC INSPECTOR SHALL INSPECT ALL WATER MAIN JOINTS, SERVICE TAPS, VALVES, TEES, FITTINGS AND END CAPS PRIOR TO BACKFILL. IF NOT INSPECTED, WILL RESULT IN UNEARTHING AT EACH JOINT AND FITTING AND OR NOT EXCEPTED AND WILL NOT BE FILLED WITH WATER.

10. ALL MAINS, SERVICES, FIRE LINES, AND HYDRANT LINES WILL HAVE TRACER WIRE (APPROVED BY GWC) INSTALLED AT BOTTOM OF TRENCH AND BROUGHT UP OUTSIDE OF 6-INCH RIDER PIPE AND ENDS INSIDE G5 VALVE CAN MARKED WATER OR AS DETERMINED BY GWC INSPECTOR.

11. ALL SERVICES, IRRIGATION SERVICES, AND FIRE SERVICES SHALL HAVE TESTABLE BACKFLOW DEVICES OR AS DETERMINED BY GWC WILL BE INSTALLED AS CLOSE AS POSSIBLE TO GWC WATER METER PITS AND MUST MEET **NSF-61** AND **AWWA.** ALL PLANS AND SPECIFICATION AND CONSTRUCTION SHALL INCLUDE PROVISIONS FOR BACKFLOW PREVNETION. **NAC 445A.67185 TO 445A.67255, NAC 445A.6663.**

12. METERS 3/4 INCH AND UP TO 2 INCH ARE PROVIDED BY AND INSTALLED BY GWC PERSONNEL. LARGER METERS ARE INSTALLED BY CONTRACTORS WITH GWC PERSONNEL ON SITE AND ACCORDING TO PLANS. LARGER METERS MUST COMPLY WITH AND ARE DETERMINED BY GWC.

13. A 4-INCH THICK COLLAR SHALL EXTEND 12-INCHES FROM OUTER BARREL DIAMETER OF THE FIRE HYDRANT AS A MINIMUM.

14. A PERMANENT MARK DESIGNATING THE WATER LATERAL STUB LOCATION SHALL BE PLACED IN THE CURB. A MARKER SHALL BE INSTALLED AT THE END OF THE STUB AND MARKED IN BLUE.

15. PURSUANT TO **NAC 445A.67145 ITEM 8,** DURING CONSTRUCTION, ANY OPENING IN UNFINISHED PIPING OR APPURTENANCES MUST BE SEALED AT THE END OF EACH WORKING DAY SUCH AS A MANY TO PREVENT THE ENTRY OF BIRDS OR OTHER MAMMALS, DIRT, TRENCH WATER AND OTHER SOURCES OF POLLUTION OR CONTAMINATION.

16. WATER MAINS ARE TO BE INSTALLED PER MANUFACTURER. TRAINING CAN BE PROVIDED BY SUPPLIER, MANUFACTURER, AND OR THE GARDNERVILLE WATER COMPANY AS NEEDED.

17. A SET OF RECORD DRAWINGS SHALL BE SUBMITTED TO GWC FOR THEIR REVIEW AND APPROVAL. AFTER CORRECTIONS ARE MADE, A EPRODUCIBLE SET OF PLANS SHALL BE SUBMITTED TO GWC. THE ENGINEER SHALL SUBMIT AN AUTOCAD FILE OF THE AS-BUILT INFORMATION TO GWC OF WATERLINE LOCATIONS, SERVICES, DATE OF INSTALLATION, AND ANY OTHER HARDWARE INSTALLED AS A PART OF THE CONSTRUCTION. THE ENGINEER SHALL VERIFY THE AND MAKE ANY CORRECTIONS NECESSARY FOR THE TRUE LOCATIONS OF THE IMPROVEMENTS PRIOR TO SUBMITTING THE SET REPRODUCIBLE PLANS AND AUTOCAD FILE.

| NO. | REVISION | DATE |
|---|---|---|
| 1 | REV. 3, 4, & 11 | 8/2/12 |
| 2 | 2022 UPDATES | 09/22 |
| 3 | NDEP REVISIONS | 04/24 |
| 4 | GWC REVISIONS | 07/24 |

GARDNERVILLE WATER COMPANY - STANDARD DETAIL

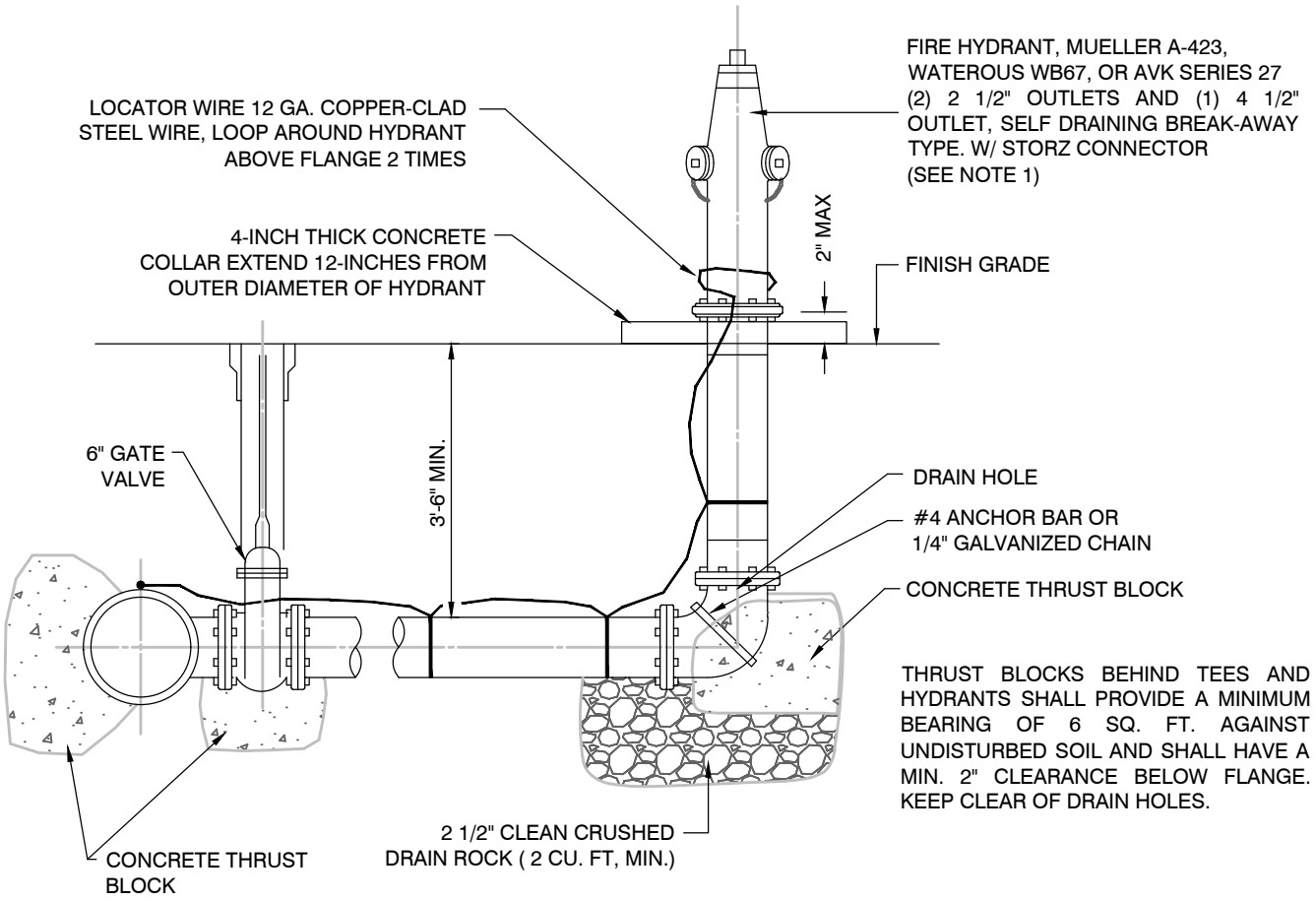
GENERAL NOTES

DRAWING NO.

G-2

| DATE: | PAGE: |
|---|---|
| 07/24 | 2 |

# GARDNERVILLE WATER COMPANY - FIRE HYDRANT DETAIL (G-3)



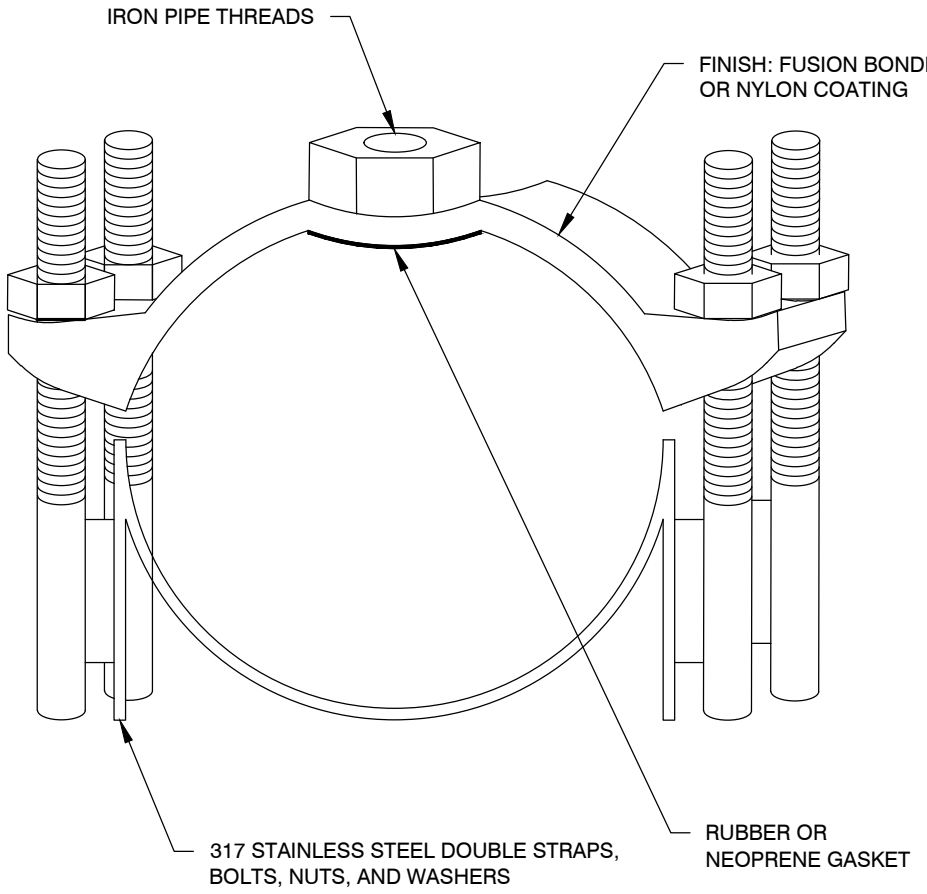

NOTES:

1. ALL HYDRANTS SHALL HAVE 5-INCH INTEGRAL HYDRANT STORZ, OR APPROVED EQUAL, WITH BLIND CAP & CABLE, PER NDEP BSDW REQUIREMENTS.

2. ALL HYDRANT FLANGE BOLTS TO BE CHECKED PRIOR TO BACKFILL.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| 1 | MISC. REVISIONS | 09/12 | FIRE HYDRANT DETAIL | G-3 | |
| 2 | 2022 UPDATES | 09/22 | | DATE: | PAGE: |
| | | | | 09/22 | 3 |
| | | | | | |

# GARDNERVILLE WATER COMPANY - SERVICE SADDLE (G-4)

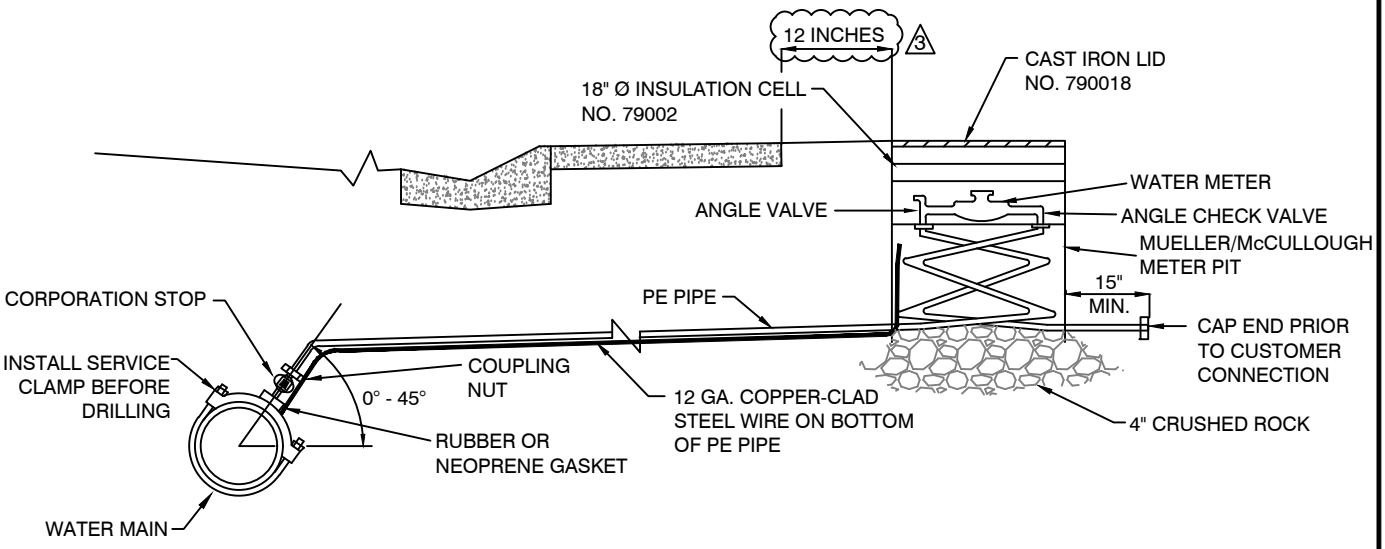



NOTES:

1. SEE ALSO DETAIL G-5 "WATER SERVICE CONNECTION."
2. GWC REQUIRED DOUBLE STRAP SERVICE SADDLES.
3. SERVICE CLAMP SIZE IS DEPENDENT UPON THE SIZE AND TYPE OF MAIN.
4. SERVICE SADDLES SHALL MEET AWWA C800.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| | | | SERVICE SADDLE | G-4 | |
| | | | | DATE: | PAGE: |
| | | | | 09/22 | 4 |

# GARDNERVILLE WATER COMPANY -
# WATER SERVICE CONNECTION (G-5)




NOTES:

1. CORPORATION STOP, CURB STOP, AND SERVICE LINE SHALL BE THE SAME SIZE.
2. COMPRESSION FITTINGS SHALL BE USED AT ALL CONNECTIONS . 3
3. SERVICE CLAMPS SHALL BE DOUBLE STRAP 1" TO 2" SERVICES.
4. NO EXTENSIONS ARE ALLOWED ON METER PIT.
5. TOP OF METER PIT SHALL BE SET AT 0.2 FEET ABOVE ADJACENT GRADE.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| 1 | MISC. REVISIONS | 09/12 | WATER SERVICE CONNECTION | G-5 | |
| 2 | 2022 UPDATES | 09/22 | | DATE: | PAGE: |
| 3 | GWC REVISIONS | 07/24 | | 07/24 | 5 |
| | | | | | |

GARDNERVILLE WATER COMPANY - THRUST BLOCK TABLE (G-6)

| BEARING AREA (SQUARE FEET) | | | | |
|---|---|---|---|---|
| | REDUCER | | | |
| PIPE SIZE | 6" | 8" | 10" | 12" |
| 6" | ——— | 3.5 | 8.0 | 15.6 |
| 8" | | ——— | 4.5 | 10.1 |
| 10" | | | ——— | 5.5 |
| 12" | | | | ——— |

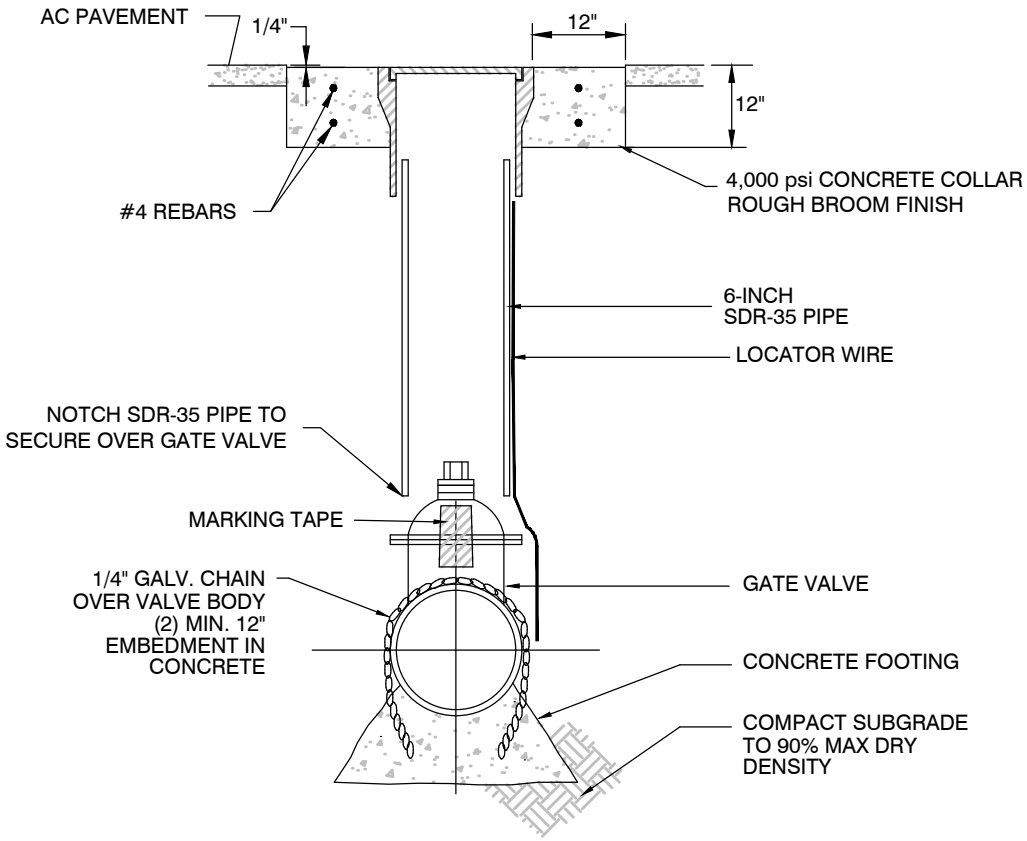
| BEARING AREA (SQUARE FEET) | | | | | |
|---|---|---|---|---|---|
| PIPE SIZE | BENDS - DEFLECTION | | | TEE SIDE OUTLET SIZE | DEADEND |
| | | 23° TO 45° | 46° TO 90° | | |
| 6" | 1.8 | 3.5 | 6.4 | 4.5 | 4.5 |
| 8" | 3.1 | 6.2 | 11.4 | 8.0 | 8.0 |
| 10" | 4.9 | 9.6 | 17.8 | 12.6 | 12.6 |
| 12" | 7.1 | 13.9 | 25.6 | 18.1 | 18.1 |

THRUST BLOCKS ARE BASED ON 200 PSI TEST PRESSURE 1500 PSF BEARING, PRESSURE AND 1.5 SAFETY FACTOR. ENCASEMENT OF PIPELINE SHALL BE REQUIRED WHERE BEARING AREA IS TOO LARGE FOR CONVENTIONAL THRUST BLOCKS.

IN LIEU OF THIS SPECIFICATION THE CONTRACTOR MAY USE DRAWING NO. 307 "THRUST BLOCK BEARING AREAS", IN THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION.

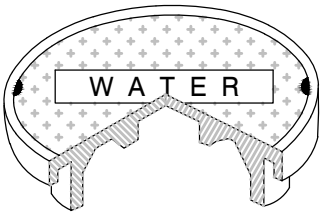
| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| 1 | 2022 UPDATES | 09/22 | THRUST BLOCK TABLE | G-6 | |
| | | | | DATE: | PAGE: |
| | | | | 09/22 | 6 |

# GARDNERVILLE WATER COMPANY - GATE VALVE DETAIL (G-7)

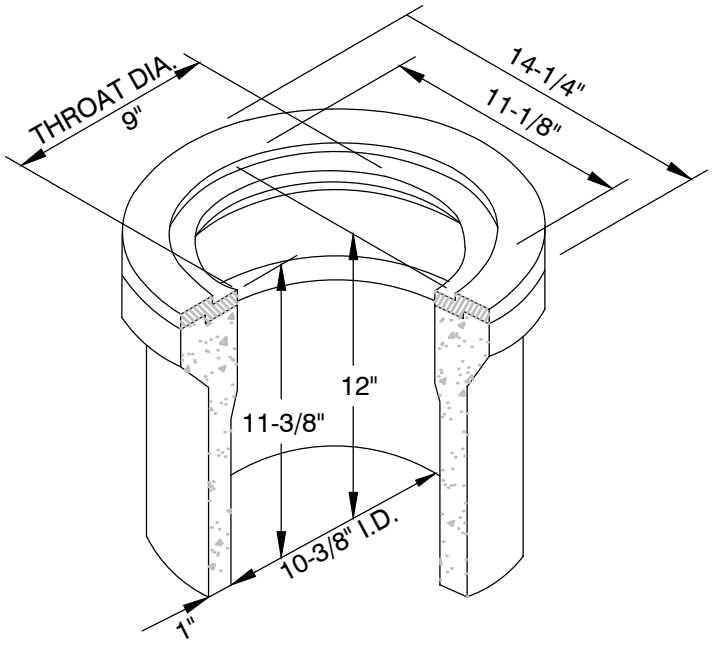



| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| 1 | TRENCH ADAPTOR | 02/01 | GATE VALVE DETAIL | G-7 | |
| 2 | MISC. REVISIONS | 09/12 | | DATE: | PAGE: |
| 3 | 2022 UPDATES | 09/22 | | 09/22 | 7 |
| | | | | | |

GARDNERVILLE WATER COMPANY - VALVE BOX (G-8)




VALVE BOX LID




VALVE BOX

NOTES:

1. VALVE BOX MUST BE H20 TRAFFIC RATED WITH CAST IRON LID (CHRISTY G5, OR EQUAL APPROVED BY GARDNERVILLE WATER COMPANY).
2. MINIMUM OF 10" INSIDE DIAMETER.
3. CAST IRON LID MARKED "WATER" FOR WATER LINE APPLICATIONS.
4. RISER OF 8" PVC EXTENDED IN VALVE CAN A MINIMUM OF 6-INCHES.
5. ALL NEW VALVE BOXES TO BE SET TO FINISHED GRADE. GRADE RINGS NOT ALLOWED FOR NEW VALVE BOX INSTALLATIONS. ADJUSTED VALVE BOXES DUE TO OVERLAY, SHALL BE COORDINATED WITH AND APPROVED BY GARDNERVILLE WATER COMPANY.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| | | | VALVE BOX | G-8 | |
| | | | | DATE: | PAGE: |
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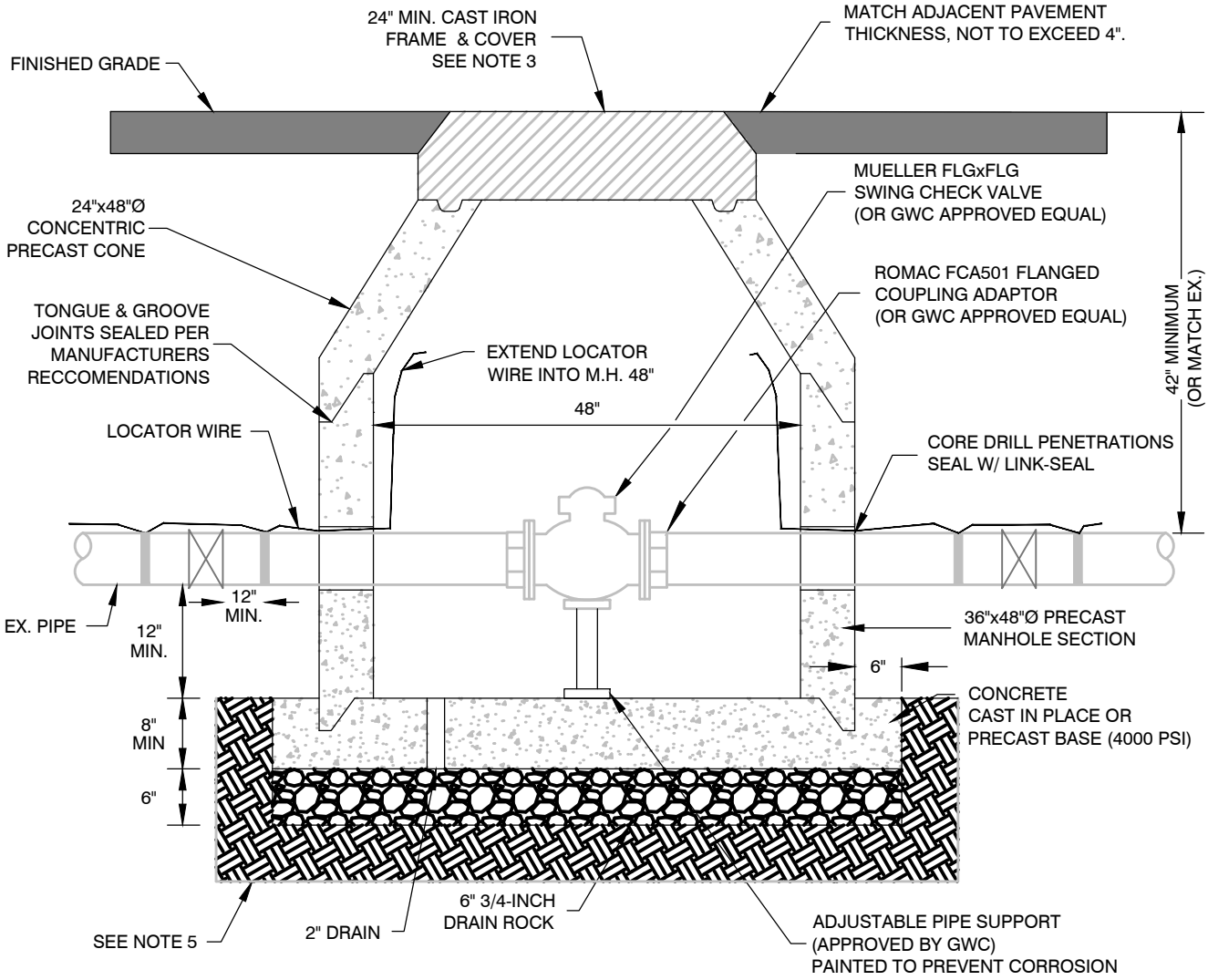
# GARDNERVILLE WATER COMPANY - CHECK VALVE (G-9)




TYPICAL SECTION

NOT TO SCALE

NOTES:

1. CHECK VALVE TO BE CENTERED IN VAULT.
2. MANHOLE FRAME AND COVER TO BE SOUTH BAY FOUNDRY (SBF 1900) - CLOSED PICK HOLE, OR GWC APPROVED EQUAL.
3. MANHOLE COVER TO BE MARKED "WATER" & SET TO GRADE. MANHOLE MUST BE WATER-TIGHT.
4. CHECK VALVES 12-INCHES OR LARGER REQUIRE SPECIAL DESIGN AND APPROVAL FROM GWC. CHECK VALVES 4-INCHES AND LARGER SHALL BE INSTALLED IN A VAULT WITH H20 TRAFFIC RATED LID AND LADDER.
5. COMPACT TOP 6" OF NATIVE SUBGRADE TO 90% M.D.D. PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION PRIOR TO PLACING DRAIN ROCK.
6. CONCRETE SHALL CONFORM TO SECTION 202 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
7. CHECK VALVES INSTALLED ON PRIVATE FIRE HYDRANT LINES ARE OWNED, OPERATED, AND MAINTAINED BY PROPERTY OWNER.
8. SINGLE CHECK VALVES USED FOR ZONE SEPARATION, SHALL BE LOCATED IN THE RIGHT OF WAY AS DIRECTED BY GWC. THERE SHALL BE A VALVED BYPASS LINE SIZED BY THE DESIGN ENGINEER, AND MAY REQUIRE UPSTREAM AND/OR DOWNSTREAM ISOLATION VALVES FOR MAINTENANCE AND REPAIR.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| | | | CHECK VALVE | G-9 | |
| | | | | DATE: | PAGE: |
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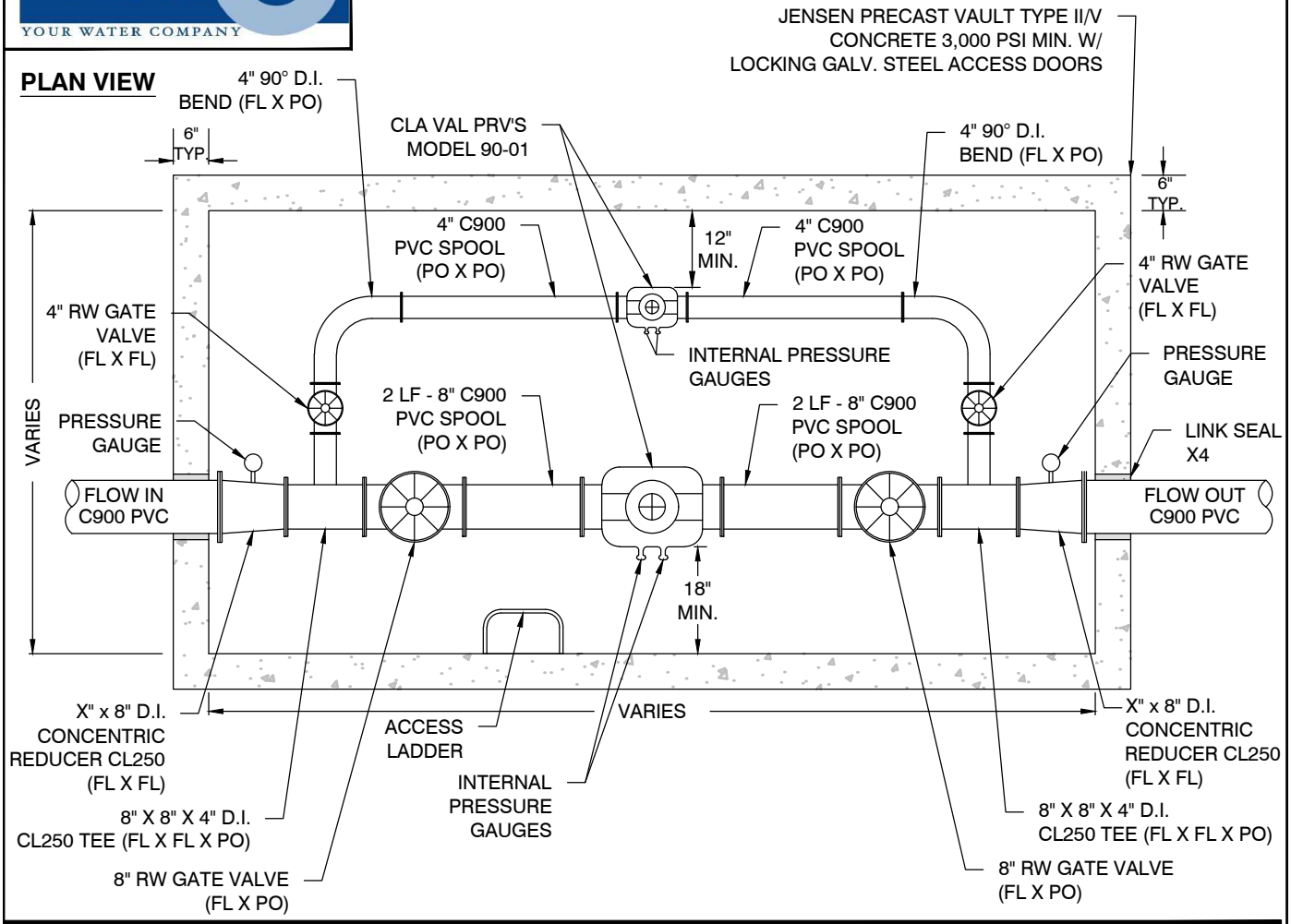
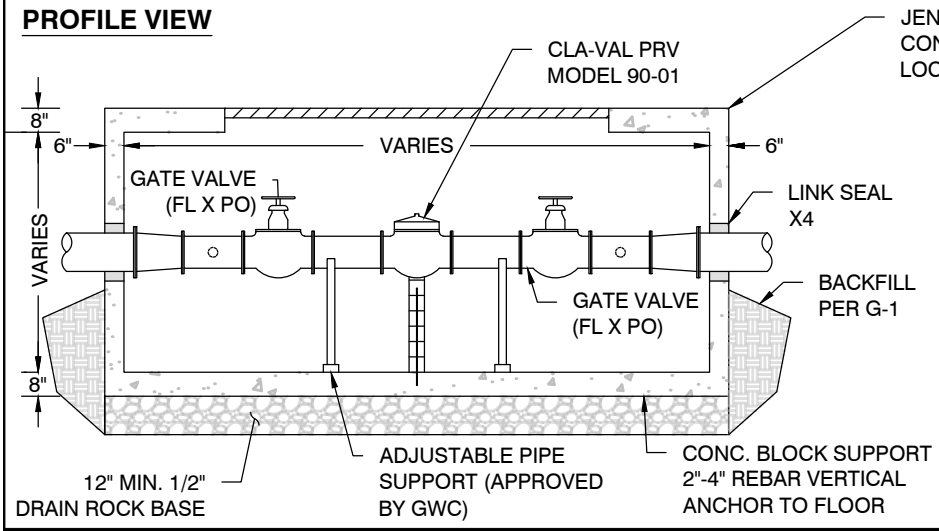
# GARDNERVILLE WATER COMPANY - PRESSURE REDUCING VALVE (G-10)

## PLAN VIEW




## PROFILE VIEW




**NOTES:**

1. CONFIRM CLA-VAL MODEL WITH GWC PRIOR TO ORDERING.
2. PRECAST VAULT & CONCENTRIC REDUCER SIZE WILL BE BASED ON PROJECT PROPOSED MAIN SIZE.
3. INSTALL LINK SEAL PER MANUFACTURER'S SPECIFICATIONS.
4. BYPASS LINE HAS BEEN OMITTED FROM PROFILE VIEW FOR CLARITY.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. |
|---|---|---|---|---|
| | | | PRESSURE REDUCING VALVE | G-10 |
| | | | | DATE: 09/22 / PAGE: 10 |

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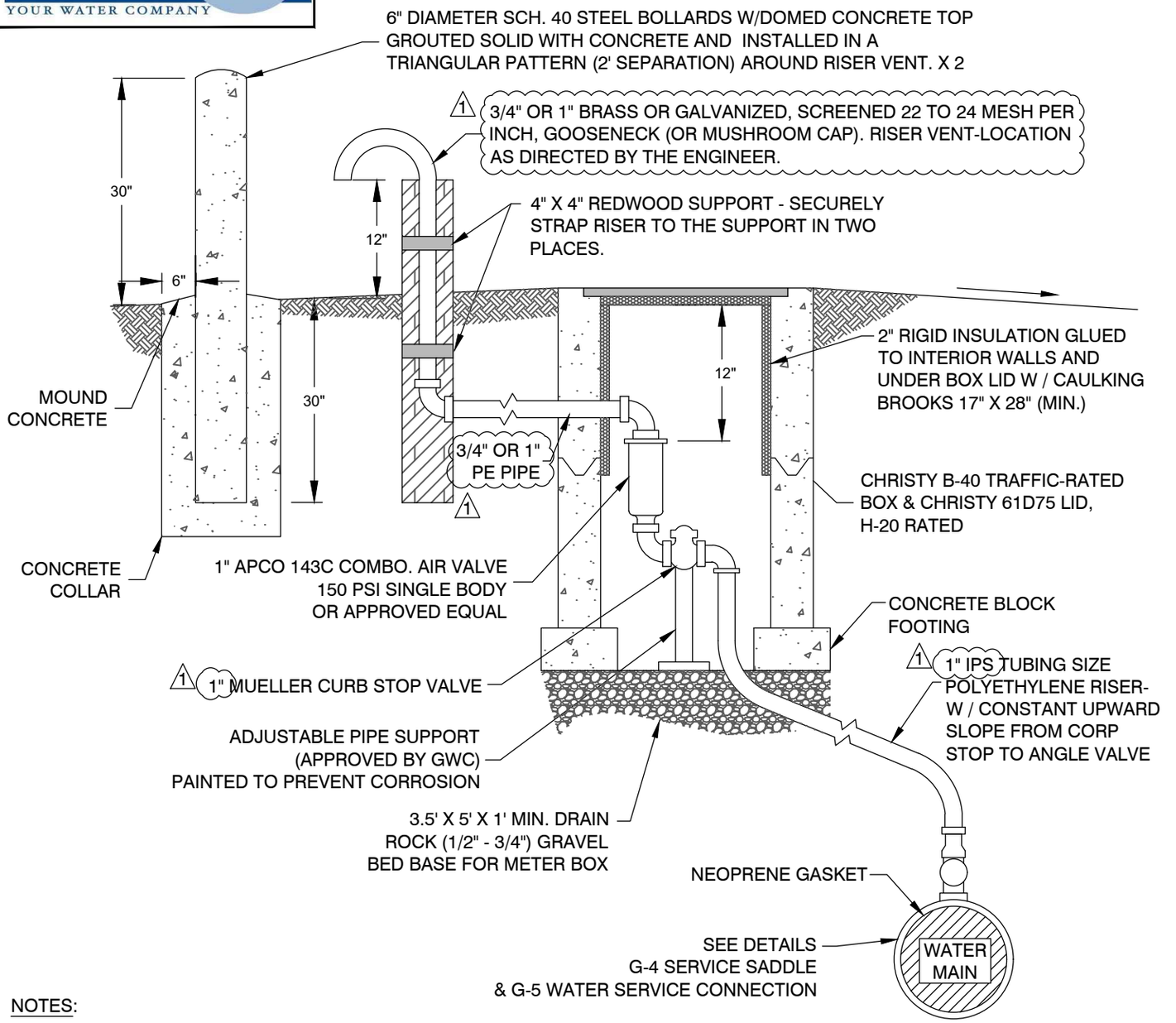
# GARDNERVILLE WATER COMPANY -
# COMBINATION AIR VALVE ASSEMBLY (G-11)




NOTES:

1. AIR RELEASE VALVES SHALL BE BETWEEN 2-4 FEET BEHIND SIDEWALK.
2. COORDINATE WITH GARDNERVILLE WATER COMPANY FOR ASSEMBLY LOCATION TO ALLOW FOR REMOVAL AND REPAIR.
3. ALL PIPES SHALL BE SLOPED UP TO AIR RELEASE VALVE. FINISHED GRADE SHALL SLOPE AWAY FROM THE BOX IN ALL DIRECTIONS.
4. ALL VALVES SHALL BE BRONZE OR BRASS. ALL PIPES AND FITTINGS SHALL BE BRASS EXCLUDING VENT PIPES.
5. STEEL PIPE PAINT SHALL BE RUST-OLEUM 7400 HIGH GLOSS SAFETY YELLOW ALKYD ENAMEL OR GARDNERVILLE WATER COMPANY APPROVED EQUAL.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. |
|---|---|---|---|---|
| 1 | GWC REVISIONS | 07/24 | COMBINATION AIR VALVE ASSEMBLY | G-11 |
| | | | | DATE: 07/24 / PAGE: 11 |
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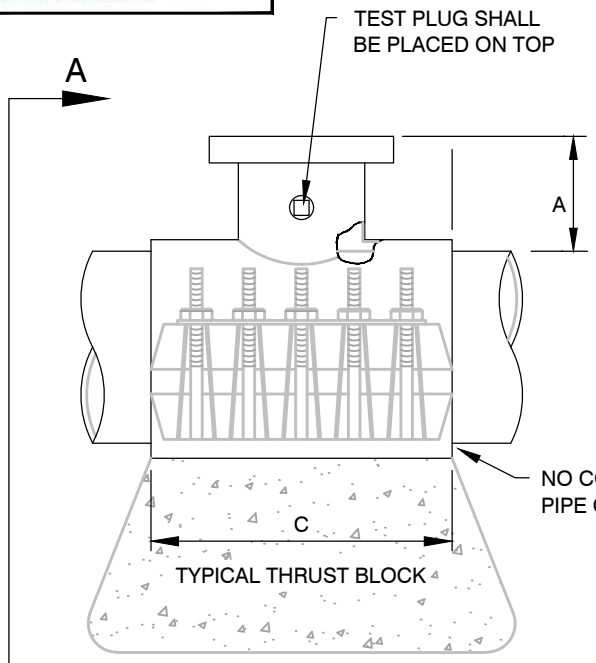
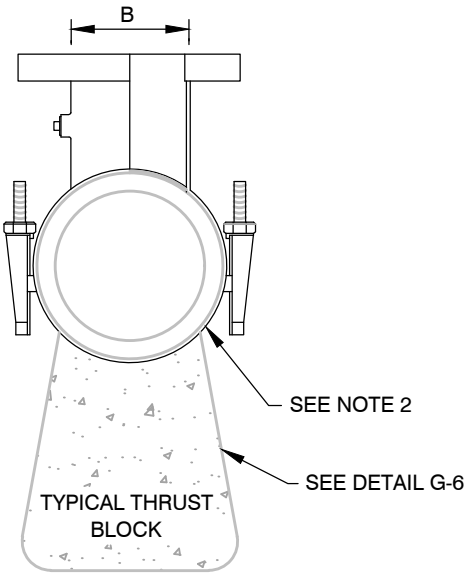
| | | | | |

# GARDNERVILLE WATER COMPANY - TAPPING SLEEVE (G-12)




TOP VIEW
NOT TO SCALE




SECTION A-A
NOT TO SCALE

| NOM. FLANGE | A | B | C | # BOLTS |
|---|---|---|---|---|
| 4 | 4 | $5\frac{1}{32}$ | 16 | 10 |
| 6* | $4\frac{1}{2}$ | $7\frac{1}{32}$ | 16 | 10 |
| 8* | 4 | $9\frac{1}{32}$ | 20 | 14 |
| 10 | $5\frac{1}{2}$ | $11\frac{1}{32}$ | 24 | 16 |
| 12** | $6\frac{1}{2}$ | $13\frac{1}{32}$ | 30 | 30 |

* TAPPING SLEEVES IN THE 24" NOM. PIPE SIZE RANGE WITH 6" OR 8" FLANGES ARE 24" LONG W/ 24" BOLTS.

** TAPPING SLEEVES IN THE 12" & 14" NOM. PIPE SIZE RANGE W/ 12" FLANGE ARE 24" LONG W/ 24" BOLTS

**NOTES:**

1. THE CONTRACTOR SHALL CONTACT GWC A MINIMUM OF 2 BUSINESS DAYS PRIOR TO SCHEDULING HOT TAP TO COORDINATE DATE AND TIME. GWC WILL SUPERVISE ALL HOT TAPS.
2. MATERIAL USED FOR THRUST BLOCKING SHALL NOT PREVENT ACCESS TO THE BOLT ASSEMBLY.
3. THRUST BLOCKS SHALL NOT BE POURED UNTIL PRESSURE TEST AND TAPPING ARE COMPLETE.
4. MINIMUM DISTANCE BETWEEN TAP, SADDLE, COLLARS, JOINTS, SERVICE TAPS, ETC. SHALL BE 3 X DIAMETER OF PIPE MIN.
5. PRIOR TO HOT TAPPING, THE SADDLE SHALL BE HYDROSTATICALLY PRESSURE TESTED. GWC PERSONNEL SHALL SUPERVISE PRESSURE TESTING, INSPECTIONS, AND DISINFECTION.
6. ANY HOT TAPS GREATER THAN 2-INCHES WILL BE BY AN APPROVED CONTRACTOR, UNLESS WAIVED BY GWC.
7. ASBESTOS CEMENT PIPE REQUIRES 2-INCH TAPPING SLEEVE AND DETAILED PER DESIGN ENGINEER.

**MATERIAL SPECIFICATIONS**

**SHELL:** 304 STAINLESS STEEL
**LUGS:** 304 STAINLESS STEEL
**BOLTS/WASHERS/NUTS:** 5/8" DIA., 304 STAINLESS STEEL
**GASKETS:** VIRGIN SBR COMPOUNDED FOR WATER SERVICE. ASTM D2000-80MA 4AA607 FULL GASKET 360° PIPE COVERAGE
**FLANGE:** 304 STAINLESS STEEL OR HIGH TENSILE DUCTILE (NODULAR) IRON, ASTM A536-80, GRADE 65-45-12.
**PRESSURE RATING:**
4" THROUGH 8" - 200 PSI
8" THROUGH 24" - 175 PSI

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| | | | TAPPING SLEEVE | G-12 | |
| | | | | DATE: | PAGE: |
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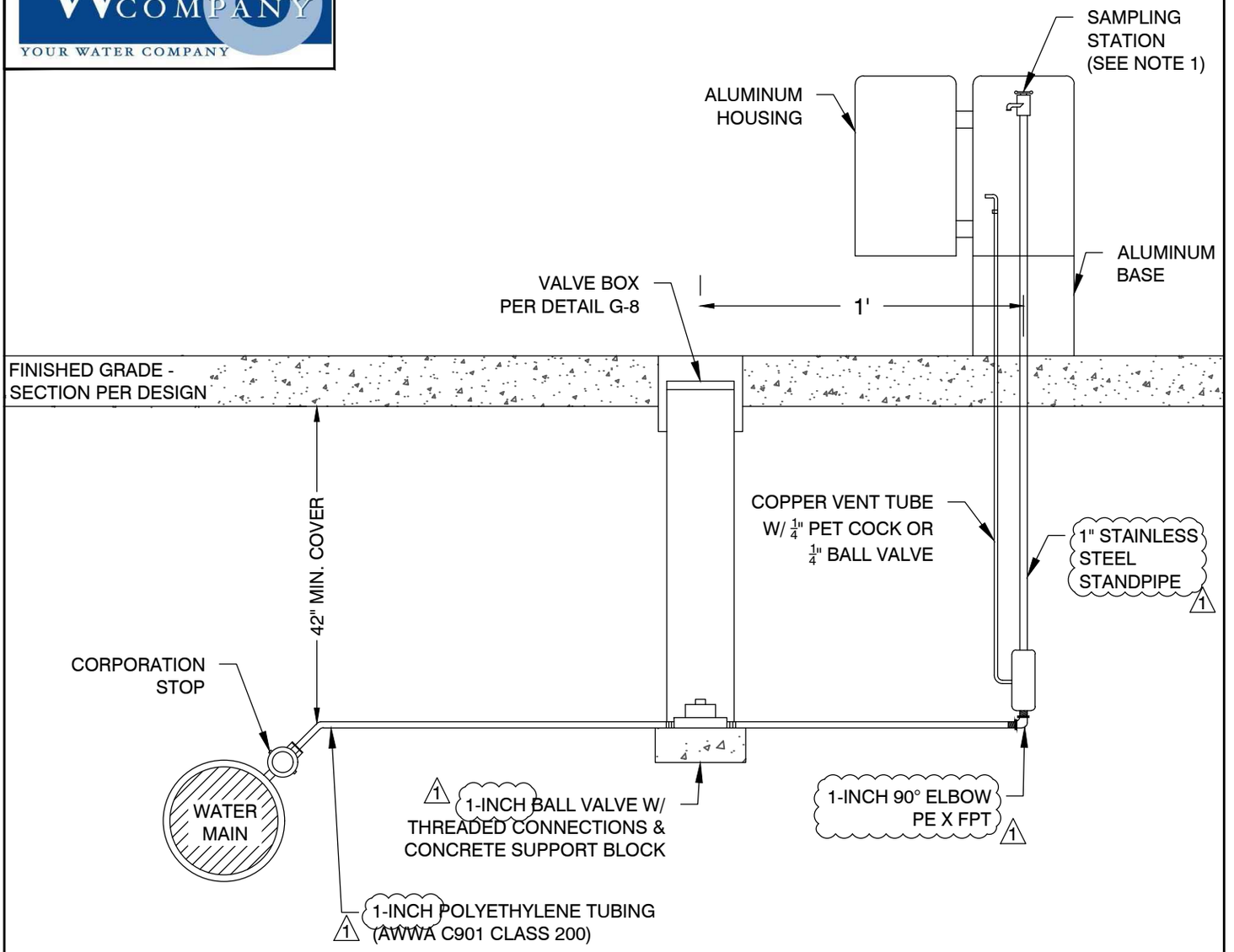
# GARDNERVILLE WATER COMPANY - SAMPLING STATION (G-13)




NOTES:

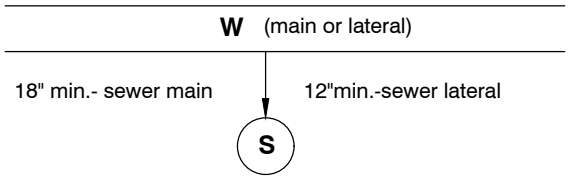
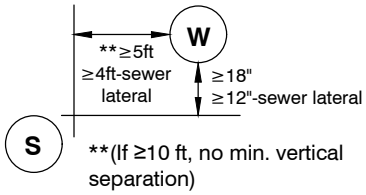
1. SAMPLING STATIONS SHALL BE ECLIPSE 88 BY KUPFERLE FOUNDRY CO. (OR GARDNERVILLE WATER COMPANY APPROVED EQUAL).
2. SAMPLING STATION SHALL HAVE 42" MINIMUM COVER, WITH 3/4-INCH FIP INLET, AND 3/4-INCH UNTHREADED NOZZLE.
3. SAMPLING STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NON-REMOVABLE, ALUMINUM CAST HOUSING.
4. WHEN OPENED, THE SAMPLING STATION SHALL NOT REQUIRE A KEY FOR OPERATION AND WATER WILL FLOW IN AN ALL BRASS WATERWAY.
5. ALL WORKING PARTS SHALL BE BRASS AND SHALL BE REMOVABLE FROM ABOVE GROUND WITHOUT DIGGING.
6. ALL EXTERIOR PIPING SHALL BE BRASS OR STAINLESS STEEL. ALL STAINLESS STEEL PIPE IN CONTACT WITH SOIL MUST BE TAPED WITH PVC TAPE FOR CORROSION 1
7. ALL SAMPLE STATIONS WILL BE EQUIPED WITH A COPPER VENT TUBE TO ENABLE STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIAL GROWTH.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| 1 | GWC REVISIONS | 07/24 | SAMPLING STATION | G-13 | |
| | | | | DATE: | PAGE: |
| | | | | 07/24 | 13 |

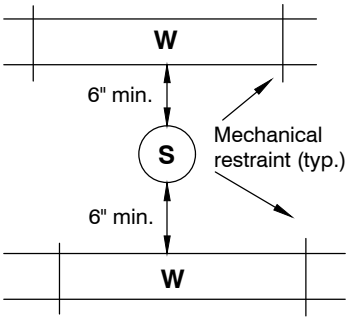
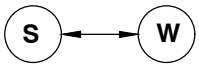
# GARDNERVILLE WATER COMPANY WATER

# WATER - SEWER SEPARATION (G-14)

**PREFERRED DESIGN / NO MITIGATION REQUIRED**

| CROSSING (VERTICAL) SEPARATION | PARALLEL SEPARATION (MAIN OR LATERAL) |
|---|---|
|  |  |

**MITIGATED DESIGN / CONSTRUCTION CONFIGURATION**

| | CROSSING SEPARATION (MAIN OR LATERAL) | PARALLEL SEPARATION (MAIN OR LATERAL) |
|---|---|---|
| |  |  <br>6 ft min. |
| Water (W) | Mechanically restrain waterline joints on both sides of the crossing & any other joints within 10 feet; or | Mechanically restrain all waterline joints; or |
| | Jointless pipe or BSDW approved alternative. | Jointless pipe or BSDW approved alternative. |
| Sewer (S) (Gravity) | SDR35 PVC pipe (ASTM D3212 joints); or | SDR35 PVC pipe (ASTM D3212 joints); or |
| | Non SDR35 pipe (RCP, etc.) - external joint sealant (watertight)* or jointless pipe or BSDW apprv'd alt. | Non SDR35 pipe (RCP, etc.) - external joint sealant (watertight)* or jointless pipe or BSDW apprv'd alt. |
| Sewer (S) (Pressurized) | Mechanically restrain sewer joints on both sides of the crossing & any other joints within 10 feet; or | Mechanically restrain all sewer joints; or |
| | Jointless pipe or BSDW approved alternative. | Jointless pipe or BSDW approved alternative. |

Sewer - (e.g. sanitary sewer mains and laterals, storm drains, and reclaimed wastewater mains and laterals.) Mechanical restraint - a mechanical coupling to restrict joint movement and separation.

Jointless pipe - Welded HDPE (AWWA C901 / C906), Fusible PVC (Fusible AWWA C900 / C905), etc. *NPC External Joint Seals, Aquarap, Infi-Sheild Gator Wrap, ASTM C877-08, or approved equal.

This guidance document is provided in the interest of facilitating the approval process, with respect to potable vs. nonpotable separation. It is in no way intended to replace or supercede Nevada Administrative Code (NAC) 445A.6715 through 445A.67175. The methodslisted herein are generally considered acceptable alternatives to the aforementioned NAC "Separation" subsections of the regulation. Engineers should be advised that, regardless if this guidance document is followed in whole or in part, every project is unique and, as such, approval will beat the discretion of the Bureau of Safe Drinking Water.

(REV'D November 2013)

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| | | | WATER - SEWER SEPARATION | G-14 | |
| | | | | DATE: | PAGE: |
| | | | | 09/22 | 14 |

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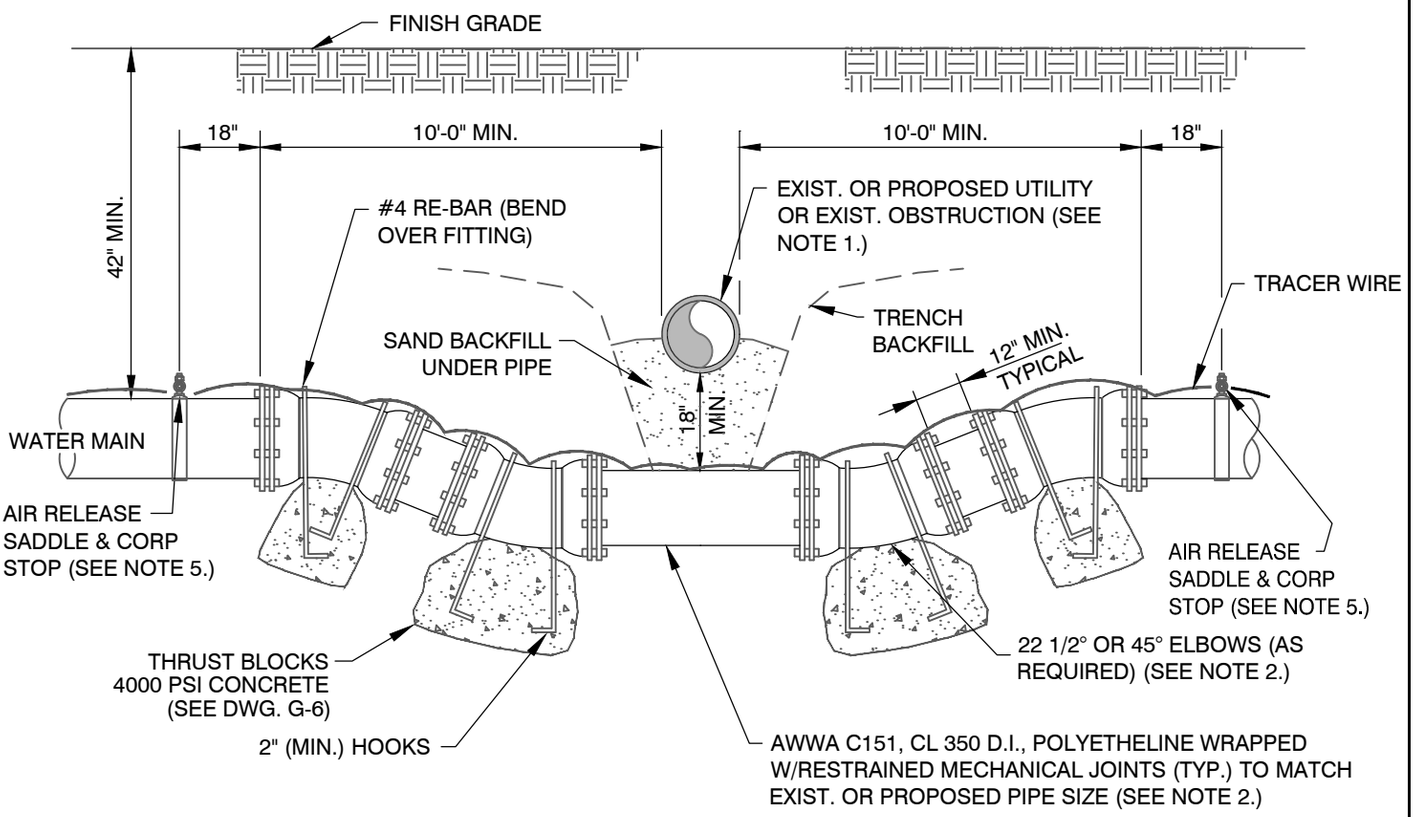
Gardnerville WATER COMPANY

YOUR WATER COMPANY

# GARDNERVILLE WATER COMPANY WATER

# WATER MAIN LOWERING (G-15)




## TYPICAL CROSSING DETAIL

NOT TO SCALE

## NOTES:

1. ALL POTABLE WATER CROSSINGS OF EXISTING OR PROPOSED UTILITIES, OR OTHER UNDERGROUND OBSTRUCTION SHALL BE DETAILED BY THE DESIGN ENGINEER, AND SHALL MEET THE CRITERIA OUTLINED BY NAC CHAPTER 445A AND GARDNERVILLE WATER COMPANY STANDARD DETAIL G-14. FOR PURPOSES OF SEPARATION AND PROTECTION OF THE WATER SUPPLY, RECLAIMED WATER SHALL BE CONSIDERED A SEWER LINE.

2. THE ENTIRE ASSEMBLY SHALL BE INSTALLED USING DUCTILE IRON RESTRAINED MECHANICAL JOINT FITTINGS.

3. UPON APPROVAL OF GARDNERVILLE WATER COMPANY, THE ABOVE ASSEMBLY MAY BE REPLACED WITH A WELDED STEEL "SPOOL" OF EQUIVALENT DIAMETER, PRIMED AND WRAPPED (10 MILS MIN.). CONNECT TO EXISTING LINES USING MECHANICAL JOINTS. STEEL SPOOL SHALL BE CONSTRUCTED BY A CERTIFIED WELDER AND PRESSURE CHECKED IN ACCORDANCE WITH SPECIFICATIONS.

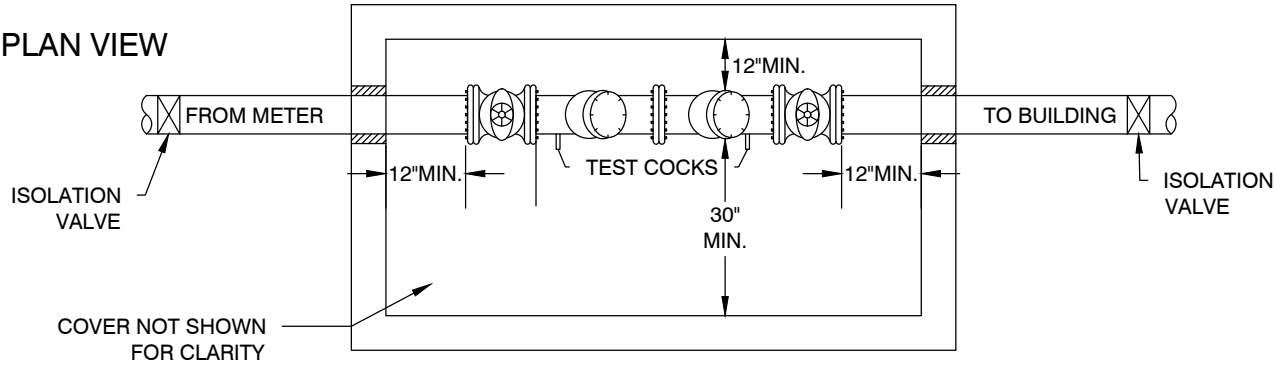
4. CONCRETE AND REBAR FOR THRUST BLOCKS SHALL NOT INTERFERE WITH THE REMOVAL OF BOLTED ASSEMBLIES.

5. AN AIR-RELEASE WITH A POSITIVE GRADE FROM MAIN TO RELEASE, SHALL BE INSTALLED ON BOTH SIDES OF CROSSING (18 INCHES MINIMUM FROM ANY FITTING) UNLESS OTHERWISE NOTED ON THE APPROVED PLANS. ONE AIR-RELEASE MAY BE USED WITH ONE LINE TO EACH SIDE OF CROSSING.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. |
|---|---|---|---|---|
| | | | WATER MAIN LOWERING | G-15 |
| | | | | DATE: 09/22 / PAGE: 15 |

# GARDNERVILLE WATER COMPANY - (RP) REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY

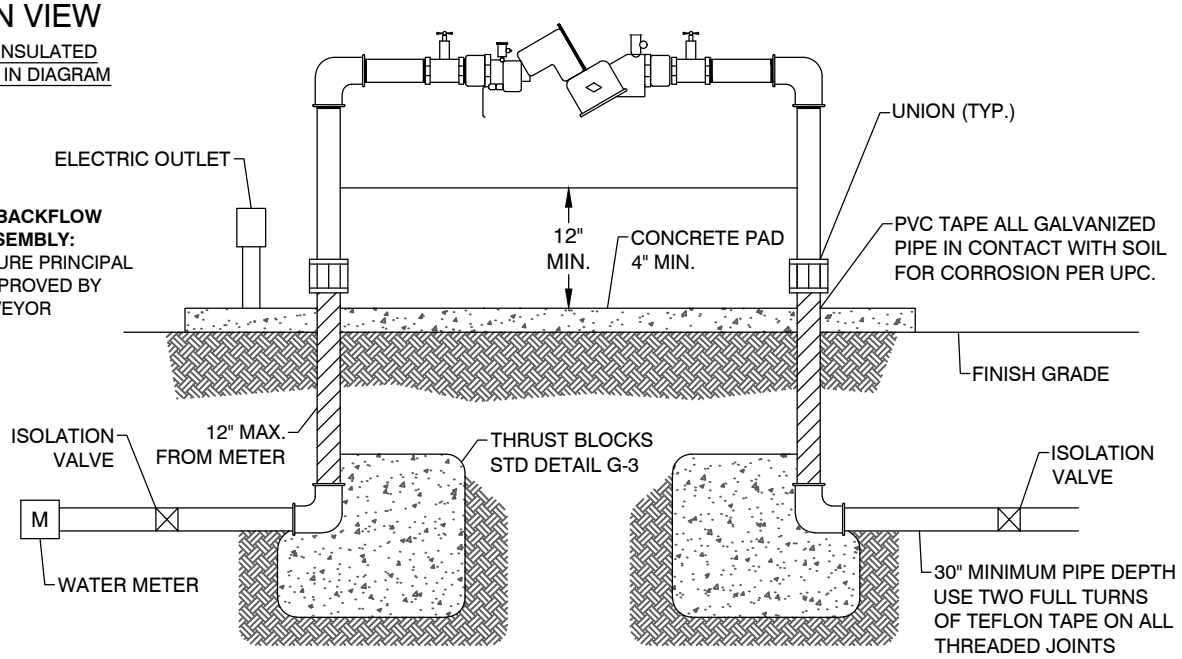
## PLAN VIEW




## ELEVATION VIEW

ABOVE GROUND INSULATED BOX NOT SHOWN IN DIAGRAM FOR CLARITY

**USC APPROVED BACKFLOW PREVENTION ASSEMBLY:** REDUCED PRESSURE PRINCIPAL ASSEMBLY AS APPROVED BY THE WATER PURVEYOR




NOTES:

1. AN RP MUST BE ABOVE GRADE.
2. FREEZE PROTECTION (ABOVE GROUND INSULATED BOX OR ABOVE GROUND VAULT AND REDUNDANT HEAT TAPE) IS REQUIRED.
3. AN ABOVE GROUND INSULATED BOX OR ABOVE GROUND CONCRETE VAULT MUST BE SIZED TO PROVIDE CLEARANCES SHOWN IN PLAN VIEW. A SPRING LOADED LID IS REQUIRED ON LARGE VAULTS.
4. INSULATED BOX LID MUST SWING CLEAR OF BACKFLOW ASSEMBLY TO PROVIDE CLEARANCES IN PLAN VIEW.
5. STOP AND WASTE VALVES ARE NOT TO BE USED BETWEEN THE METER AND THE BACKFLOW PREVENTION ASSEMBLY.
6. ABOVE GROUND VAULTS AND INSULATED BOX MUST PROVIDE ADEQUATELY SIZED DAYLIGHT DRAINS AT PAD LEVEL FOR DRAINAGE.
7. ELECTRICAL SUPPLY SOCKETS MUST BE AWAY FROM WATER RELIEF PORTS AND TESTCOCKS.
8. THIS STANDARD DETAIL APPLIES TO 3/4" - 2" REDUCED PRESSURE & DOUBLE CHECK BACKFLOW PREVENTION DEVICES.

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| 1 | REVISION | 05/19 | REDUCED PRESSURE PRINCIPAL BACKFLOW PREVENTION ASSEMBLY (RP) TYPICAL INSTALLATION STANDARD EXTERNAL BACKFLOW PREVENTER - YEAR ROUND SERVICE | RP | |
| 2 | 2022 UPDATES | 09/22 | | DATE: | PAGE: |
| | | | | 09/22 | 16 |
| | | | | | |

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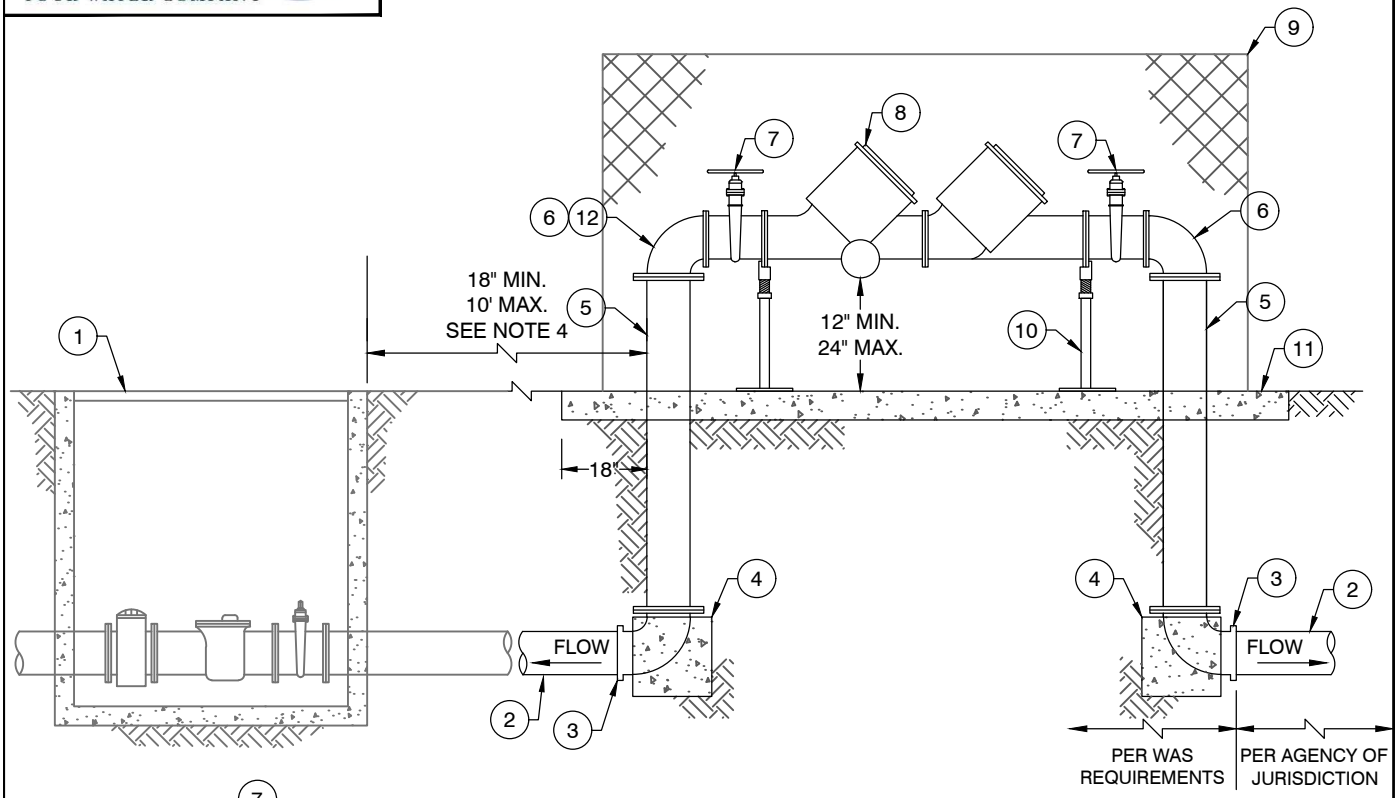
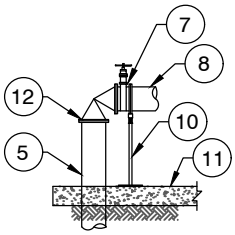
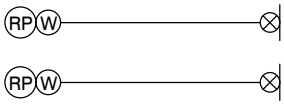
# GARDNERVILLE WATER COMPANY - 3" & LARGER RP REDUCED PRESSURE PRINCIPAL & DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY




DETAIL 'A'
SEE NOTE 5




LEGEND ON PLANS

NOTES:

1. INSTALL WARNING/IDENTIFICATION TAPE AS SHOWN ON WP-01.
2. LOCATE BACKFLOW PREVENTION DEVICE (BPD) IN SUCH A MANNER THAT WILL ALLOW THE DEVICE TO BE READILY ACCESSIBLE FOR INSPECTION & REPAIR.
3. INSTALL A CASING ENCASED IN CONCRETE WHEN THE DISTANCE BETWEEN THE METER BOX AND THE RISER TO THE BPD EXCEEDS 18". NO CONNECTIONS OF ANY KIND WILL BE PERMITTED IN THIS AREA, INSPECTION REQUIRED PRIOR TO BACKFILL.
4. INSTALL AN ANGLE PRESSURE REDUCING VALVE IN LIEU OF THE FIRST 90° ELL WHEN SYSTEM PRESSURE EXCEEDS 1.03 MPa (150 PSI) OR WHEN RECOMMENDED BY THE BACKFLOW MANUFACTURER.
5. TESTING SHALL BE CONDUCTED IN ACCORDANCE TO GWC BACKFLOW POLICY SPECIFICATIONS PRIOR TO ACCEPTANCE BY THE DISTRICT.
6. BPD & APPURTENANCES INSTALLED FOR THE USE OF RECYCLED WATER SHALL BE IDENTIFIED MATERIALS SHALL BE SELECTED FROM THE APPROVED MATERIALS LIST.
7. ELECTRICAL SUPPLY SOCKETS MUST BE AWAY FROM WATER RELIEF PORT AND TESTCOCKS.

| ITEM NO. | SIZE AND DESCRIPTION | ITEM NO. | SIZE AND DESCRIPTION |
|---|---|---|---|
| 1 | METER VAULT & METER ASSEMBLY | 7 | FLANGED RESILIENT WEDGE GATE VALVE |
| 2 | PVC OR DUCTILE IRON PIPE | 8 | REDUCED PRESSURE BACKFLOW DEVICE |
| 3 | FLG X FLG OR MJ/PO X FLG 90° BEND | 9 | ENCLOSURE (OPTIONAL) |
| 4 | CONCRETE THRUST BLOCK | 10 | ADJUSTABLE VALVE SUPPORT |
| 5 | FLANGED DUCTILE IRON PIPE | 11 | CONCRETE SLAB, MIN. 4" THICK X 36" WIDE |
| 6 | FLANGED 90° BEND, SEE NOTE 5 | 12 | FLANGED ANGLE PRESSURE REDUCING VALVE SEE NOTE 5 |

| NO. | REVISION | DATE | GARDNERVILLE WATER COMPANY - STANDARD DETAIL | DRAWING NO. | |
|---|---|---|---|---|---|
| 1 | REVISION | 05/19 | 3" & LARGER RP - REDUCED PRESSURE PRINCIPAL & DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY TYPICAL INSTALLATION STANDARD EXTERNAL BACKFLOW PREVENTER - YEAR ROUND SERVICE | RP - 3 INCH + | |
| 2 | 2022 UPDATES | 09/22 | | DATE: | PAGE: |
| | | | | 09/22 | 17 |
| | | | | | |