

Best Water! Best Service!



GARDNERVILLE WATER COMPANY WATER STANDARDS

UPDATED JULY 2024

GWC Water Construction Standards

NEED TO KNOW INFORMATION

GWC Codes of Enforcement:

- GWC rules and regulations
- The current approved edition of the Uniform Plumbing Code (UPC).
- Nevada Administrative Code (NAC water controls).
- Nevada Revised Statutes (NRS water controls).

Plan Review Required Information:

- Two copies of improvement plans (plans and profile, floor plan, landscaping plan, and details). Improvement plans shall be prepared, signed, and stamped by a Registered Professional Civil Engineer or Architect actively licensed in Nevada. Electronic plans are not acceptable.
- The applicant must submit legal descriptions of waterline easements when waterlines cross private property. Legal descriptions shall be completed by a Registered Land Surveyor actively licensed in Nevada.
- The applicant shall comply with GWC's specifications for construction. GWC general notes shall be included on the plans.
- The Water Plan Review Fee is non-refundable. Further fees may be assessed toward the project depending on the complexity of the design.
- All site plans must show fire hydrant detail detector check with bypass meter and all fire lines must be 6" or larger per orange book and East Fork Fire District.
- All site plans must show Mueller/McCullough meter box detail, size, and location.
- All site plans must show GWC typical trench detail.
- All site plans must show GWC service detail.
- Newly constructed water mains shall not be less than 8" in diameter.
- All site plans must show sewer crossing detail, 10' each direction of the crossing.
- All commercial building plans shall include backflow prevention provisions per GWC Backflow Policy.
- Cross-Connection-Control-Devices must be indicated on plans in a location such as a mechanical room or dedicated area approved by GWC.
- Water lines must be identified on the plans complying with all UPC requirements.
- All water meter(s) and their location(s) must be identified on the plans and located at the parcel property corner of said parcel. Unless approved by an agent of GWC.
- All water GWC easements to be identified on the plans.
- If all GWC conditions are not met, the project may be rejected.

GWC Water Construction Standards

DEFINITIONS

Backflow Device: A mechanical device designed to prevent unauthorized water from entering GWC's system. Reference is made to the GWC's Cross Connection Control Program for further information.

Building: Any structure or facility containing water consumptive fixtures.

Cross-Connection: Any physical connection or arrangement of piping or fixtures between two otherwise separate piping systems, one of which contains potable water and the other non-potable water or industrial fluids of questionable safety, through which, or because of which backflow may occur into the potable water system. All new installation of water piping greater than 2" are considered a lethal cross-connection and must be protected with an Air Gap until all approved disinfection process have been completed to all GWC approval. The contractor cannot make a physical connection to the GWC Potable water system until the contractor receives written approval from GWC inspector.

Customer Service Line: All piping between the house piping and the service connections.

Customer Service Valve on the Customers Property: The Customer shall provide a valve on their side of the service installation, as close to the meter location as practicable, to control the flow of water to the piping on his premises. The Customer shall not use the meter curb stop to turn water on and off.

GIS: Geographic Information System

GWC: Gardnerville Water Company

House Piping: All piping and fittings installed within a building up to and including the last fitting inside or outside the wall.

Inspector: That person so designated by GWC Manager to perform inspections, tests, fixture unit counts, and related work in determining compliance with GWC construction specifications, standards and ordinances.

Infrastructure: Means, without limitation, backflow devices, connections, lines, mains, meters, meter pits, pipes, pumps, tanks, valves, and any other equipment or product in any way related to the provision of water service by the GWC.

Mains:

- **Feeder Main:** a water main, regardless of size, which extends from GWC's existing water facilities to a development but excluding project mains.
- **Project Mains:** those water mains which are installed specifically to provide service to developments, and generally located within the development's boundaries.
- **Public Mains:** those water mains which are owned, operated, and maintained by GWC after completion and acceptance by GWC.
- **Private Mains:** all water mains not owned and operated by GWC.

GWC Water Construction Standards

PUE: Public GWC Easement

Main Extension: The alteration, extension or replacement of water distribution mains and necessary facilities beyond existing mains and facilities of sufficient size and capacity to serve the development exclusive of the mains within a development but excepting mains through the development designated by GWC as necessary for the improvement of GWC's existing facilities or for future developments.

Meter Installation: The facility, meter box and related accessories in which the meter is located.

Service Lateral or Pipe: The connection between GWC's main and the service connection, including all pipe, fittings, and valves necessary to make the connection.

Uniform Plumbing Code/IAPMO: The following Uniform Plumbing Code (UPC) provisions are made a part of these standards. By these standards all reference to and use of the current adopted version of the Uniform Plumbing Code and the International Association of Plumbing and Mechanical Officials (IAPMO) Installation Standards, as approved by the GWC Manager and all other ordinances or parts of ordinances in conflict with the hereafter adopted new ordinance revision are herewith and hereby repealed.

Yard Line: All piping on the Customer's Premises between the house piping and GWC's service connection.

Violation: Any person found to be violating any provision of this or any rule or regulation of GWC, shall be served by the GWC Inspector with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. Said time limit shall be ten (10) business days. The offender shall within the period of time stated in such notice, permanently cease all violations. All persons shall be held strictly responsible for all acts of their agents or employees done under the provisions of this or any other rule or regulation of GWC. Upon being notified by the Inspector of any violation of the standards, the person or persons having charge of said work shall immediately correct the same.

Article 1. General Specifications

- 1.01** GWC shall give an approximate location and size of all water lines, It's the property owner's or their agents responsibility to field locate and confirm line locations and sizes before digging or cutting any street(s). All street cut permits are approved by Douglas County not GWC.
- 1.02** These requirements are applicable within the jurisdiction of the GWC for the building of water service lines from the property or easement line to the house or building and within existing rights-of-way (ROW). Service lines on private property shall be constructed and maintained by the property owner in accordance with these requirements.
- 1.03** Building water service lines shall be constructed in accordance with the latest edition of:
 - A. The current UPC adopted by the Board of Trustees, as prepared by the International Association of Plumbing and Mechanical Officials, except for particular requirements in excess of the Codes, as stated herein.
 - B. The Nevada Administrative Code, 445A Water Operations
 - C. The GWC Rules and Regulations, as approved by the GWC Board of Directors.

GWC Water Construction Standards

- 1.04 Plans:** All impact fees must be paid before GWC inspects service lines, install water meters, or provides water to the project. The Douglas County Building Department requires evidence that GWC has examined the plans prior to building permit issuance for all water related projects within GWC. Line locations must be confirmed prior to any excavations. Any application that has been accepted by GWC shall be considered vacated if the Applicant fails to commence construction and connection to GWC's water system within 180 days of such acceptance. A new application for Water Plan Review and payment of fees will be required. Impact fees shall be charged at the rate in effect on the day of GWC approval of water plans. Connection(s) not made within 180 days will be subject to the current rates in effect at the time of connection. Previously paid impact fees shall be credited to the new impact fee rate. Payment of impact fees constitutes acceptance of a new service connection application by GWC. No fees will be refunded.
- 1.05 Fire Marshal Review:** GWC does not review a project to determine the need for fire protection or fire sprinkler lines. The applicant is advised to contact the East Fork Fire Protection District (EFFPD) to determine the availability of adequate fire protection and the potential need for a fire sprinkler system. A sprinkler system may require a separate service line tapped to GWC's water main as determined by EFFPD.
- 1.06 Inspection:** No backfilling shall be performed until GWC has inspected and approved the installation for covering. The contractor shall schedule all inspections at least twenty-four (24) hours in advance. All testing shall be performed in the presence of a GWC inspector.
- 1.07 Abandonment of Connection Points:** All existing water connection points must be completed to all GWC specifications by means of a Full Circle Repair Clamps or other means approved by the GWC inspector.
- 1.08 Water service line abandonment:** Contact GWC Manager to schedule a water service line abandonment.
- 1.09 Corrections Notice:** Written/verbal instructions to complete job(s) to all code requirements.
- 1.10 Conditional Final:** A Conditional Final may be given at the discretion of the GWC Manager. In this case, the Douglas County Building Department will sign off on the permit, and GWC will hold the contractor/owner responsible for completing all GWC requirements. A written acknowledgement from contractor/owner may be required and must be approved by the GWC Manager.
- 1.11 Final Inspection:** To obtain a Final Inspection all items must be completed including: trench inspections, bacterial testing, final fixture count, payment of all fees, backflow device test results, as-builts, public GWC easements, and other such documents.
- 1.12 GWC Connections:** All water service connections shall comply with one of the following conditions, whichever is applicable.
- 1.13 Single Family Residence:** Where a single-family residence is constructed on a single parcel,

GWC Water Construction Standards

direct connection to the public water system shall be made. The residence shall be served by an individual meter and individual shut off valve.

- 1.14 Multiple Residences:** A development with more than one residential building with common land ownership shall be served by individual meters for each building. Each building shall be served by an individual meter and individual shut off valve. GWC shall approve the number, location and size of meters. The operation and maintenance of the backflow and fire protection system as well as payment of all fees shall be the responsibility of the owner(s) of the property served or of the association having legal responsibility for buildings and grounds.
- 1.15 Commercial Developments:** Each building shall be served by an individual meter and individual shut-off valve. GWC shall approve the number, location and size of meters. The operation and maintenance of the backflow and fire protection system as well as payment of all fees shall be the responsibility of the owner(s) of the property served or of the association having legal responsibility for buildings and grounds.
- 1.16 Infrastructure Acceptance:** Replacement, repair, and maintenance of existing infrastructure not owned by GWC shall be the sole responsibility of the Owner. GWC will not accept ownership of any infrastructure unless, at the time of the proposed dedication, said infrastructure is constructed and installed consistent with current GWC specifications, and is in good condition and operating order, as determined by GWC in its sole discretion. The decision to accept ownership is also in GWC's sole discretion.
- 1.17 As-Built Plans:** As-Builts shall be kept current during construction. Contractor is responsible to submit As-Built plans to GWC upon completion of work. These GWC plans/drawing must have 2 reference points taken from each end of building(s) for all water meter and shut off valves. As-Builts must be received by GWC before a Final Inspection may occur. If a project has failed to submit As-Builts the water to project will be shut-off until plans are received.
- 1.18 GIS:** GIS shall be included with As-Builts drawings submitted to GWC at project completion.

Article 2. Extensions of Mains and Facilities

- 2.01 General:** The Applicant shall be responsible for all costs incurred by GWC to provide the required service to Applicant's Premises or development which may include the alteration, extension, construction or installation of one or a combination of: (1) storage facilities, (2) feeder mains, (3) project mains, (4) public mains, (5) regulator stations, (6) booster pumps, (7) generators, (8) facilities previously installed by GWC with capacity to serve additional customers, (9) service laterals, meter installations and meters, (10) public fire protection and (11) such other GWC related infrastructure related to the proposed service. "Cost" means GWC's actual expenditures for making such extensions and alterations by the least expensive method in accordance with GWC's engineering and construction standards and specifications and includes regulatory, environmental and other fees, engineering, legal, inspection, material, labor, transportation, cost for removal of existing facilities (less their realized salvage value), associated overhead and other charges which are related to the extension,

GWC Water Construction Standards

construction, installation or alteration, including any modification or improvement of, existing facilities.

- 2.02 Conditions for Service:** Upon approval of a written application for connection, GWC may make extensions and alterations of mains and facilities to furnish service to the Applicant's Premises or developments. Also, GWC may permit the Applicant or Applicant's designated contractor, approved by the GWC, to make such extension and alteration of mains and facilities, without cost to the GWC, and provided the Applicant shall:
- A. execute a written agreement with GWC that shall cover the terms and conditions under which the extension and alteration of mains and facilities shall be made;
 - B. obtain all required regulatory, environmental, and governmental permits for the development to the satisfaction of GWC;
 - C. obtain and dedicate to the GWC all required rights-of-way and easements for the development to the satisfaction of GWC;
 - D. engineer, design, and use of the current version of the UPC and the IAPMO Installation Standards when designing any infrastructure within the GWC service area; submit detailed engineering designs, plans, specifications of materials and estimates of cost in accordance with GWC's engineering and construction standards and specifications for the GWC's review and approval and accompanied by maps drawn to suitable scale showing street and lot layouts, contours, or other indications of relative elevations of the areas to be developed;
 - E. provide a proposed construction schedule and proposed service date to the satisfaction of GWC;
 - F. furnish all required ownership, property descriptions, plot plans or record of survey information for the development to be served to the satisfaction of GWC;
 - G. when specified by GWC, install mains and facilities of greater capacity or length than would be required to provide the requested service to the development. GWC shall reimburse the Applicant for the cost difference between the mains and related facilities to provide the required service and the cost of mains and related facilities installed;
 - H. provide a performance bond to the satisfaction of GWC;
 - I. provide and install all trench, backfilling, backfill materials, excavation, breaking of pavement and repaving to the satisfaction of GWC and any governmental agency having jurisdiction;
 - J. perform the installation of all mains and related facilities without undue delay and in an efficient manner and provide for inspection of the installation of all facilities installed to the satisfaction of GWC;
 - K. when construction is performed by GWC, provide a bond, letter of credit, or guarantee acceptable to the GWC equal to 150% of GWC's estimated total installed cost of the mains and related facilities to serve Applicant's development whenever installation of the requested extension requires firm scheduling by GWC more than thirty (30) days prior to construction. Bonds, letters of credit or guarantees provided for this purpose shall be replaced with cash thirty (30) days prior to the scheduled construction date;
 - L. construct and install all service laterals, meter installations and meters as required;
 - M. construct and install all required public fire protection devices as required;
 - N. reimburse GWC for Applicant's proportionate share of the cost of feeder mains and related facilities previously constructed at GWC's expense;
 - O. reimburse GWC for all fees, expenses and costs incurred by the GWC for plan checks, inspection fees and other essential goods or services related to the Applicant's application or development;

GWC Water Construction Standards

- P. provide the GWC with an inventory and map depicting the location of the facilities installed (as-builts) and a statement of actual construction costs, in reasonable detail, within sixty (60) days of the completion of construction and acceptance by GWC;
- Q. execute the essential documents to transfer ownership of the installed mains and related facilities to GWC within sixty (60) days of the completion of construction and acceptance by GWC; and
- R. pay to GWC, in advance of the date construction is scheduled to commence, all fees and charges in effect at the time the request or need for extensions of mains and facilities is made.
- S. In the event the Applicant, or the Applicant's designated contractor as approved by GWC, is permitted to make the extensions or alterations of mains and facilities as set forth above, the Applicant and GWC may agree that the Applicant may seek reimbursement from future Applicants who utilize the mains and facilities installed by the Applicant. Under no circumstances will GWC be responsible for reimbursement, however, GWC will undertake its best efforts to advise future Applicants of the reimbursement obligation. In no event shall the reimbursement obligation extend for more than ten (10) years from the date the new mains and facilities are accepted by GWC.

2.03 Requests for Will-Serve Letters: Applicants requesting a Will-Serve letter shall submit a Application For Will Serve Letter and appropriate fees. The request shall include the following information:

- A. It shall identify owner/applicant/engineer name, mailing address, telephone number, and email address.
- B. It shall identify by project, service address, assessor's parcel number, acres, number of units, and square feet of building.
- C. It shall indicate the proposed service connection type.

Approval of an application shall continue to be effective only if the applicant commences construction within one hundred eighty (180) days unless GWC grants an extension of time. Time extensions may be granted where the applicant shows the delay in commencement of construction has been caused by an occurrence beyond his control and which is not attributable to his fault or neglect.

Article 3. Service Line Specifications

- 3.01 Air Relief Valve:** Air relief valve shall be single-housing style, cast-iron body, stainless steel trim, one inch (1") inlet and outlet connections, and or 5/16" diameter orifice for a working maximum pressure of 300 psi.
- 3.02 Backfill:** All backfill shall meet the requirements of Class E backfill as stated in Section 200, Aggregate, of the Standard Specifications for Douglas County, with no rock larger than four inches (4"). If native material does not meet these requirements, backfill material shall be imported. The minimum allowable cover for water service lines is thirty-six inches (36").
- 3.03 Bedding:** Material used for the pipe zone shall be sand, cinder, or Class A backfill with no mineral material larger than three eighths of an inch (3/8") as stated in Section 200, aggregate, of the Standard Specifications for Douglas County. The trench bottom shall be level and smooth and excavated as needed to maintain a minimum of six inches (6") of bedding below

GWC Water Construction Standards

the grade required by the underside of the pipe barrel, with twelve inches (12") above the pipe. The minimum allowable cover for water service lines is thirty-six inches (36").

- 3.04 Caution Tape:** Warning Tape shall be blue in color, three inches (3") in width, 5 mil in thickness, permanently printed "CAUTION: BURIED WATER LINE BELOW," installed twelve inches (12") above the pipe from the water main to the house or building.
- 3.05 Chlorine Test:** $\geq 50\text{ppm}/24\text{hr}$ $\geq 10\text{ppm}/\text{Flushing/residual}/\text{BACT-T- Testing}$. 2nd Option Test: $\geq 200\text{ppm}/3\text{hrs}$ $\geq 200\text{ppm}/\text{Flushing/residual}/\text{BACT-T Testing}$. Note: All BACT-T-Testing is a 24 Hr. testing timeline. (No Friday samples). Refer to AWWA Rule C651-05 and C651-14 regarding disinfection and dechlorination of new and repaired potable water mains.
- 3.06 Curb Stops:** Shall be non-stop and waste type and be approved by UL Listed and FM approved lead-free curb stops shall be installed no more than two feet (2') downstream of the water meter box/pit with an approved G-5 round concrete box with a steel lid marked water.
- 3.07 Line Flex:** No line will be flexed to form a curve. Fittings or flex couplings shall be used to correct the line.
- 3.08 Main Line Tapping:** When making a new service connection to GWC main line, all taps shall maintain a minimum of two feet (2') separation between all fittings, joints, and appurtenances. This applies to all main line pipe. Any other installation must be approved by GWC.
- 3.09 Pipe Materials:** Water service lines down stream of meter pit shall conform to the UPC and applicable AWWA standards and be 200-250 PSI PE 4710 tubing. PVC C-900 DR14 Class 305 are allowable for services four inches (4") or larger. Customer service valve boxes must be Christy G-5 or equivalent concrete box with a steel lid marked "Water." Line sizes are to be commensurate with health standards to ensure that no stagnant water will accumulate. All service line fittings shall be mechanical compression type or soldered with lead free UPC approved solder. Solder spools shall be available for inspection.
- From GWC's main line to the meter, only mechanical joints will be allowed. Under no circumstances will pipe crimping or soldering be accepted by GWC.
- 3.10 Pressure Regulator and Isolation Valve:** At all service locations, property owners are required to furnish individual lead-free pressure regulators. All pressure regulators must be installed under the house within ten feet (10') of the access door, readily accessible, and approved by GWC. If a house is slab- built, the pressure regulator must be located in a readily accessible and GWC approved location. An isolation valve is required directly upstream of the pressure regulator for service of the regulator and isolation of the structure's plumbing. All pressure regulators shall be a customer owned device.
- 3.11 Sample Stations:** Sample stations shall either Eclipse stainless steel or 3/4" meter pit in a high traffic area with customer side coil removed. A concrete collar shall be placed around the meter pit. Sample stations must be located within a PUE.

GWC Water Construction Standards

- 3.12 Service Line Requirements for Two Inch (2") and Smaller:** For each service line upgrade required per the UPC, each lot shall be serviced by a separate service connection of required size from GWC main water line to the water meter. Fire service and domestic water service shall use separate line water taps. The fire line shall continue through an iron body gate valve with a two inch (2") operating nut with an epoxy coated body and terminate at structure. The domestic water line shall be connected off a tee fitting downstream of water meter. The domestic line shall continue through an iron body gate valve with a two inch (2") operating nut with an epoxy coated body and then through a curb stop and terminate at structure. GWC requires that all approved piping must be installed through the foundation and capped for pressure testing. Domestic water and fire water piping must be cored through the foundation utilizing link seals.
- A. GWC jurisdiction extends up to and through the foundation on all water and fire services.
 - B. Four-inch (4") stainless steel ductile iron risers shall be installed on all 4" and above lines, entering through the foundation of building need to be cord and link sealed. Other means of installation can be approved by the agent/inspector of GWC.
- 3.13 Service Line Test:** After the meter is set, the water will be turned on and the line tested for leaks and proper installation between the water main to the meter pit. The service line shall be exposed at this time and all visible leaks shall be repaired. Once approved, the water service line may then be backfilled.
- 3.14 Stub-Outs:** No dry or wet stub-outs. Existing stub-outs shall have a valve installed to test. Existing stub-outs not intended to be utilized shall be abandoned at the main by use of a blind flange. All valves and services shall be removed.
- 3.15 Shut-Off Valve:** A shut-off valve, a ball valve type, shall be installed 2" down-stream of the customer side of the meter pit. Key-way or stop and waste valves are not allowed.
- 3.16 Tapping Saddles and Tapping Sleeves:**
- **Tapping Saddles:** For water services shall be epoxy coated ductile iron body with two stainless steel straps. Saddles shall be suitable for 250-psi service and torqued to manufacturers specifications.
 - **Tapping Sleeves:** Shall be stainless steel and shall be or equivalent for all taps larger than two inches (2") in size. Shall be torqued to all manufacturers specifications by means of a torque wrench.
 - **All Tapping Sleeves:** Shall be hydrostatically tested. The hydrostatic test pressure (No air testing permitted) shall not exceed 1.25 psi times the pressure inside of the pipe being tapped at the time of the test. The testing time shall last for 15 minutes with no loss. air testing of any tapping sleeve is prohibited. Torque all bolts to manufacturers specifications.
- 3.17 Trenching:** All trenching for water and sewer lines must meet OSHA requirements.
- 3.18 Tracer Wire:** All pipe materials require an approved #10 tracer wire made accessible at the meter yoke. GWC recommends all service lines to the house or building.

GWC Water Construction Standards

- 3.19 Water Pressure Testing:** The Contractor shall provide all labor, tools, and equipment necessary to perform required tests. Any faulty equipment shall be replaced before any test is accepted. Water lines four inches (4") and greater shall be tested/disinfected per the following: at 200 PSI for 2 hours
- 3.20 Water Pressure Testing time:** Minimum time frame of 2 hours, GWC may require a longer testing time, based on scope of work.

Article 4. Water Meter Specifications

- 4.01 Meters:** All water meters ¾" to 2" are provided by GWC. Water meters for 3" and higher service lines, are purchased and installed by contractor; meters must be a new Sensus Omni Meter.
- 4.02 Meter Concrete Boxes:** G-5 Traffic Rated Boxes, F-8 Non-Traffic Rated Boxes B-12, 16, 36 all can be approved with the approval of GWC Inspector.
- 4.03 Meter Pit Location:** Contractor must survey said parcel property corner and install water meter and stake at the approved property corner. Other locations of the water meter can be approved GWC. Meter pits must be located 5 feet from the house or building and installed at curb or behind sidewalk. Meter pits cannot be located under overhangs. No landscaping including trees and shrubs shall be planted within 3 feet of a meter pit. If located in the lawn, meter pits must be flush with grass, pits will be 2-tenths above grade of decorative rock.
- 4.04 Meter Setters:** Meter setters are required and, for ¾" and 1-inch services, shall be the Mueller Easy Setter Meter Pit or comparable with bypass. All commercial and irrigation 1.5" and 2" services shall use a concrete, fiberglass, or comparable meter box with bypass. No coils will be permitted.
- 4.05 Meter Size Changes:** If the Project Plan Review has been approved, all meter size or locations changes requires resubmittal of Application for Water Plan Review, revised plans prepared, signed, and stamped by a Registered Professional Civil Engineer or Architect actively licensed in Nevada, and payment of all fees. All changes must be reviewed and approved by the Nevada Division of Water Resources, Bureau of Safe Drinking Water, Douglas County, EFFPD, and GWC. Plan changes may result in shipping and restocking fees for the originally ordered meters and/or other materials and may result in extraordinary delay due to backordering of meters and/or other materials and supply-chain issues.
- 4.06 Meter Pits:** Meter pits for ¾" and 1" services shall be the Mueller EZ Setter Meter pit with no bypass; for 1.5" and 2" services shall use the Mueller EZ Vault Meter Setter or comparable with bypass. No coiled Pits are permitted. The meter lid shall be a DFW18MUE-1MQF shall have a modified lid hook be non-locking and be marked "Water." Meter vaults for larger than two-inch (2") services must be approved by GWC and accommodate all appurtenances and provide a 12" clearance on all sides within the boxes. The lid must be a steel spring-loaded bolt-down type. Meter installations shall be made at the property line, in the right-of-way (ROW) or within a PUE. Meter locations to be marked

GWC Water Construction Standards

with a BLUE stake.

- 4.07 Meter Pit Extensions:** Maximum meter pit extensions shall be no more than 2 inches. All meter pits above 2 inches must be reset.
- 4.08 Damaged Materials:** Any materials, including meter pits, water meters, sample stations, or fire hydrants, damaged during building process will be replaced with new materials and not repaired.

Article 5. Fire Service Specifications

- 5.01 Fire Service Requirements:** The EFFPD will determine the size of connection required for fire service and adequacy of system for fire protection. Fire service taps will be made using the same materials and methods as stated herein for service taps. GWC recognizes that the beginning point of the fire system shall be on the downstream side of the backflow prevention device. All backflow devices must be approved by GWC, and all discharges lines must be installed by the contractor and approved by GWC.
- A. **Service Line Requirements, 2” and Smaller:** For each service line upgrade required per the UPC, each lot shall be serviced by a separate service connection of required size from GWC main water line to the water meter. Fire service and domestic water service shall use a separate line water tap. The fire line shall continue through an iron body gate valve with a two inch (2”) operating nut with an epoxy coated body and terminate at structure. GWC requires that all approved piping must be installed to within five feet (5’) of foundation and capped for pressure testing.
- B. **Fire Service Line Requirements, 4” and Larger:** All fire systems requiring a 4” or larger pipe size must install a check detector, GWC approved 250 PSI piping and one-piece stainless-steel riser with anchorage. All 4” or larger fire systems must be chlorinated/disinfected to GWC specifications and/or Nevada state codes and regulations. All chlorination/disinfection must be witnessed, and lab tested by GWC before any physical water connection point(s) can be made to the GWC potable water system.
- 5.02 Fire Hydrants:** No landscaping including trees and shrubs shall be planted within 5 feet of a Fire Hydrant. All Fire Hydrants shall have a 2ft cement collar below bury line.
- 5.03 Fire Hydrants Location:** Fire Hydrants must be located within a PUE. Fire Hydrants must be located at proper distances; Fire Hydrants may be relocated as necessary to meet fire codes. No more than 12” extension shall be allowed on any fire hydrant. New Fire Hydrants shall be installed at proper grade. If the contractor fails to install the Fire Hydrant at proper grade, GWC will require it to be replaced.
- 5.04 Separation:** All fire sprinkler systems must be separated from GWC water system with an approved backflow prevention device. This device must be approved by GWC and in compliance with all State and Local codes.
- A. Double Check backflow prevention devices shall be approved for class one (1), two (2),

GWC Water Construction Standards

- three (3) or four (4) fire systems when chemical additives are not being used. When a Double Check backflow prevention device has approval from GWC to be installed on class one (1), two (2), three (3), or four (4) fire systems the installation must meet all State and local codes. GWC also requires a sign to be placed in an approved location, with two inch (2") red letters on a white background stating the class of system, water only, absolutely no additives of any kind.
- B. Reduced pressure backflow prevention devices shall be approved for class four (4), five (5) or six (6) fire systems when chemical additives are being used. The installation must meet all State and local codes.

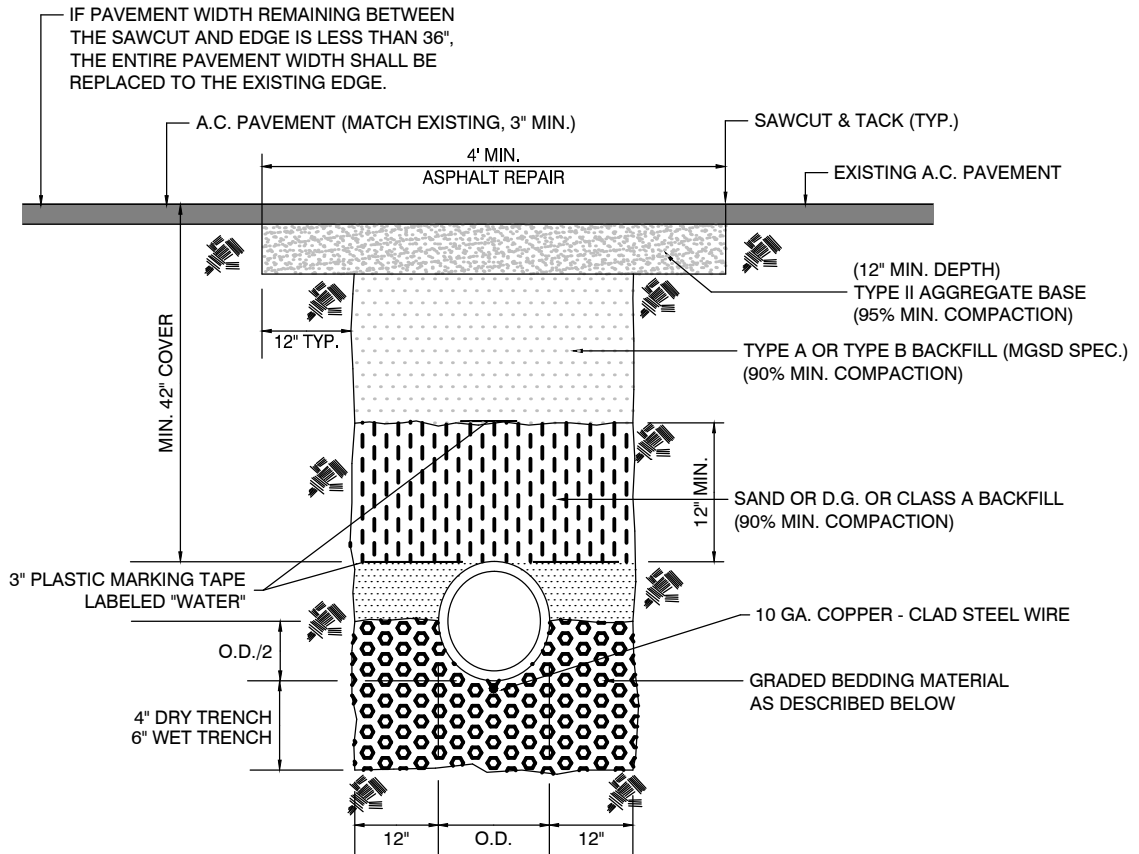
Article 6. Regulations for Backflow Testing

- 6.01 Forms:** All GWC backflow-testing forms must be properly filled out. The Backflow Test Form is available at www.gardnervillewater.org. All testing forms must be submitted to GWC within two (2) business days from the date of the test. These may be emailed to water@Gardnervillewater.org.
- 6.02 Device Certification:** Any backflow device that does not pass the initial certification test must be repaired and retested. If repairs require delay due to parts, etc., GWC will allow ten (10) additional business days for such repairs and retests. If a repair & retest require longer than the ten (10) business days, an additional extension must be approved by GWC.
- 6.03 License/Calibration:** Proof of current AWWA license and approved annual gauge calibration must be submitted to GWC with every test or group of tests. These may be emailed to water@Gardnervillewater.org.
- 6.04 Regulations:** GWC Backflow Policy, list of approved devices, NAC requirements, and detail drawings are available at www.gardnervillewater.org.
- 6.05 Testers:** All testers must be licensed with the American Water Works Association (AWWA).

Best Water! Best Service!



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	GARDNERVILLE WATER COMPANY - STANDARD DETAIL	DRAWING NO.	
1	MISC. REVISIONS	09/12		G-1	
2	WIRE GAGE REVS	05/19			
3	2022 UPDATES	09/22		DATE:	PAGE:
			09/22	1	

TYPICAL TRENCH



GARDNERVILLE WATER COMPANY - GENERAL NOTES (G-2)

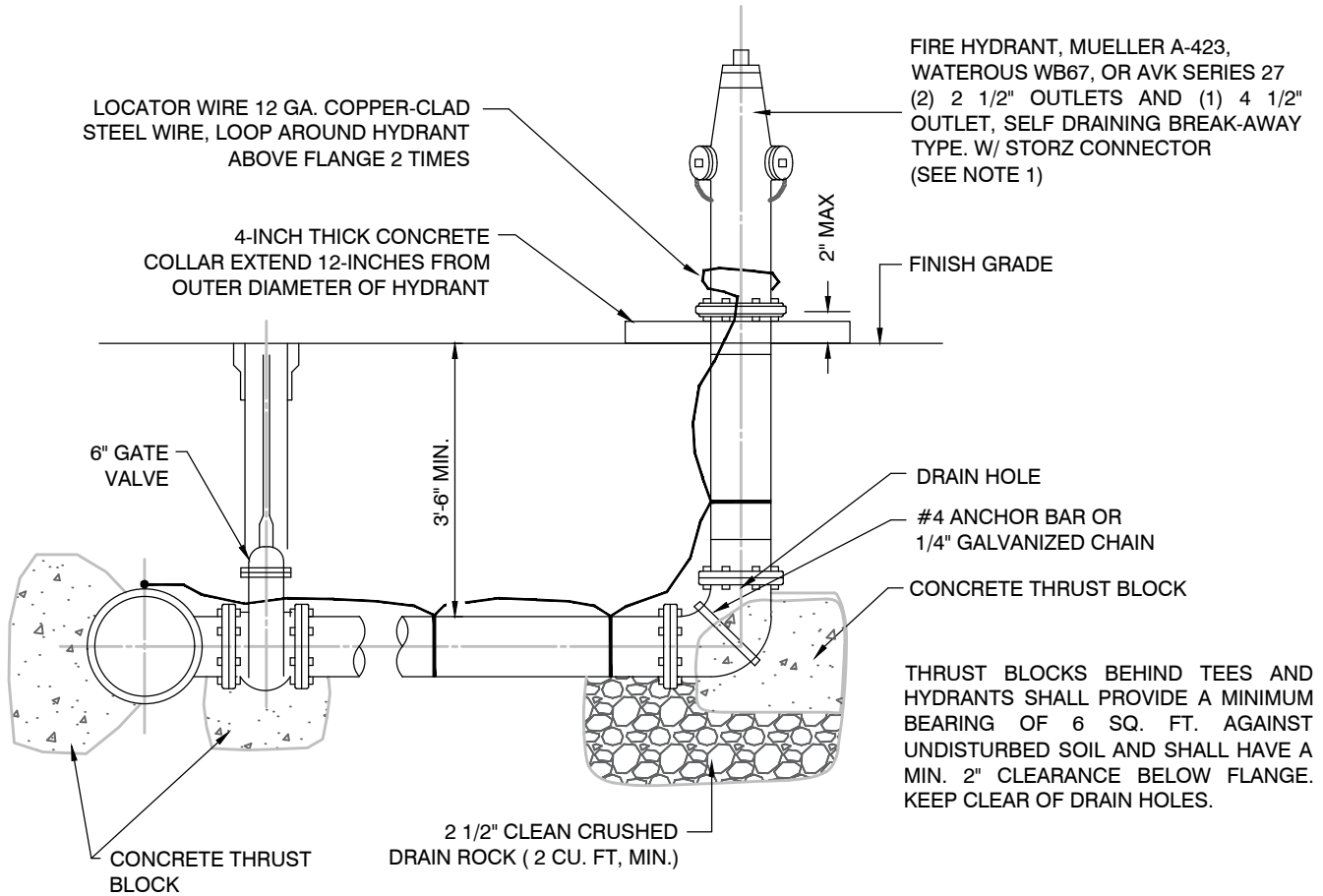
1. THE CONTRACTOR SHALL CONDUCT A PRECONSTRUCTION CONFERENCE WITH ALL UTILITIES INCLUDING DOUGLAS COUNTY AND TOWN OF GARDNERVILLE WITH GARDNERVILLE WATER PRESENT PLUS CONTRACTOR SHALL HOLD SUCH MEETING 48 HOURS PRIOR TO CONSTRUCTION BEGINNING.
2. CONTRACTOR SHALL NOTIFY GARDNERVILLE WATER COMPANY AND 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 PREVENTION. **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	GARDNERVILLE WATER COMPANY - STANDARD DETAIL	DRAWING NO.	
1	REV. 3, 4, & 11	8/2/12	<h1>GENERAL NOTES</h1>	<h2>G-2</h2>	
2	2022 UPDATES	09/22		DATE:	PAGE:
3	NDEP REVISIONS	04/24		07/24	2
4	GWC REVISIONS	07/24			

Best Water! Best Service!



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



FIRE HYDRANT, MUELLER A-423, WATEROUS WB67, OR AVK SERIES 27 (2) 2 1/2" OUTLETS AND (1) 4 1/2" OUTLET, SELF DRAINING BREAK-AWAY TYPE. W/ STORZ CONNECTOR (SEE NOTE 1)

THRUST BLOCKS BEHIND TEES AND HYDRANTS SHALL PROVIDE A MINIMUM BEARING OF 6 SQ. FT. AGAINST UNDISTURBED SOIL AND SHALL HAVE A MIN. 2" CLEARANCE BELOW FLANGE. KEEP CLEAR OF DRAIN HOLES.

NOTES:

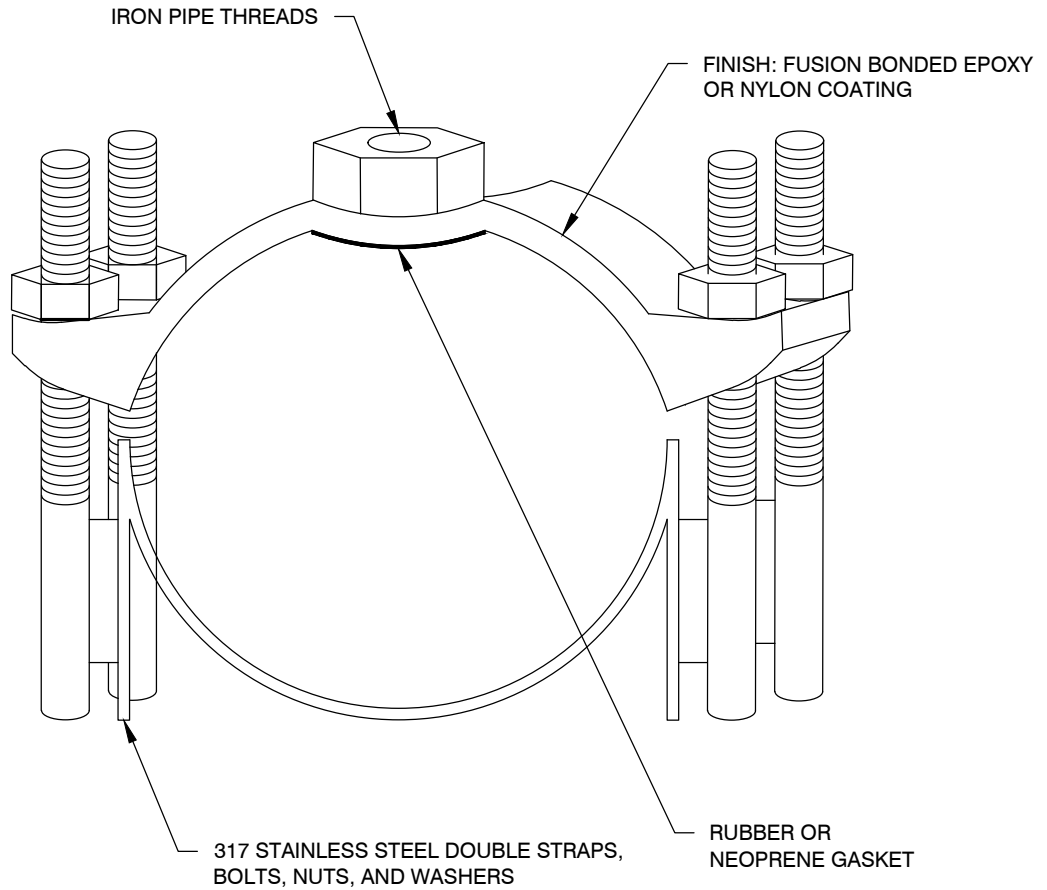
1. ALL HYDRANTS SHALL HAVE 5-INCH INTEGRAL HYDRANT STORZ, OR APPROVED EQUAL, WITH BLIND CAP & CABLE, PER NDEP BSDW REQUIREMENTS.
2. ALL HYDRANT FLANGE BOLTS TO BE CHECKED PRIOR TO BACKFILL.

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

Best Water! Best Service!



GARDNERVILLE WATER COMPANY - SERVICE SADDLE (G-4)



NOTES:

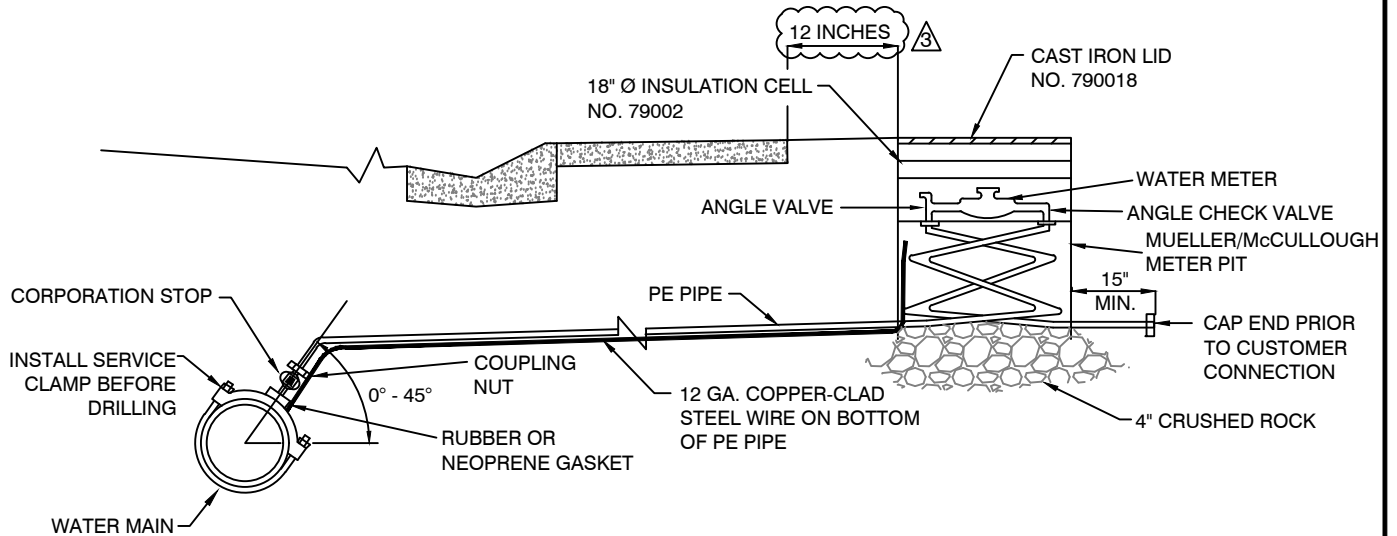
1. SEE ALSO DETAIL G-5 "WATER SERVICE CONNECTION."
2. GWC REQUIRED DOUBLE STRAP SERVICE SADDLES.
3. SERVICE CLAMP SIZE IS DEPENDENT UPON THE SIZE AND TYPE OF MAIN.
4. SERVICE SADDLES SHALL MEET AWWA C800.

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

Best Water! Best Service!



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. 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	<h1 style="margin: 0;">WATER SERVICE CONNECTION</h1>	<h2 style="margin: 0;">G-5</h2>	
2	2022 UPDATES	09/22		DATE:	PAGE:
3	GWC REVISIONS	07/24		07/24	5

Best Water! Best Service!



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

BEARING AREA (SQUARE FEET)				
PIPE SIZE	REDUCER			
	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.

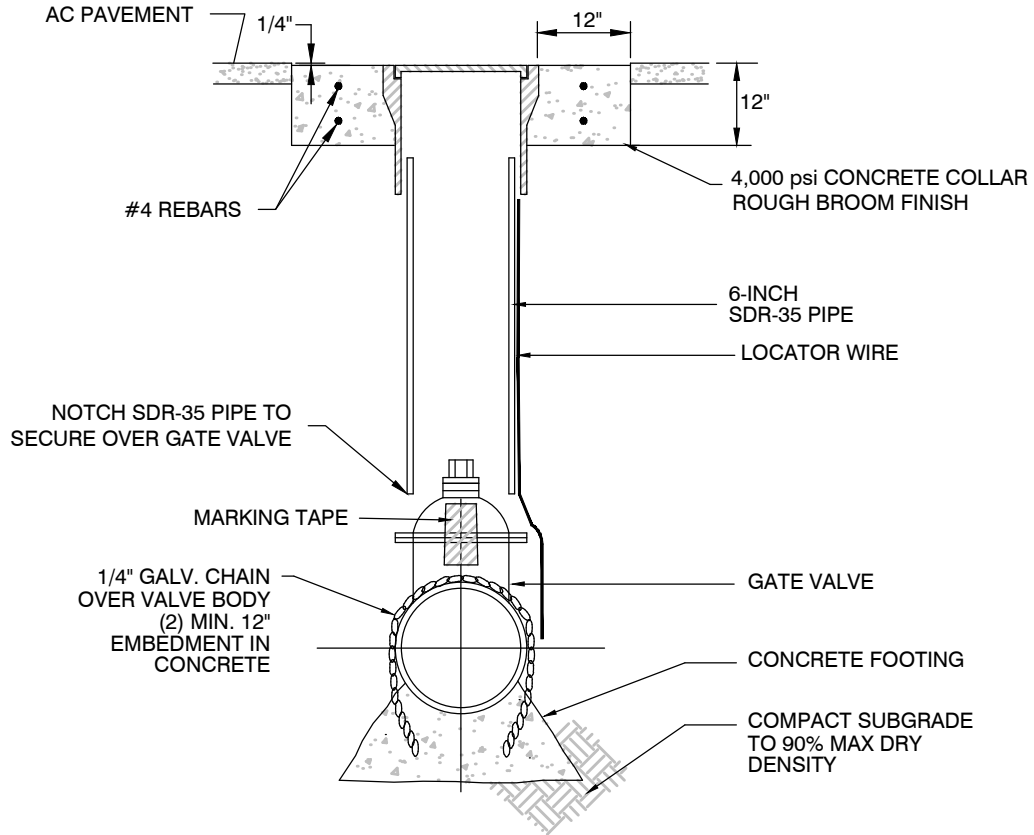
IN LIEU OF THIS SPECIFICATION THE CONTRACTOR MAY USE DRAWING NO. 307 "THRUST BLOCK BEARING AREAS", IN THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION.

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

Best Water! Best Service!



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

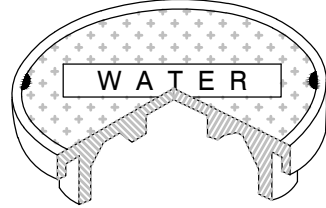


NO.	REVISION	DATE	GARDNERVILLE WATER COMPANY - STANDARD DETAIL	DRAWING NO.	
1	TRENCH ADAPTOR	02/01	<h1>GATE VALVE DETAIL</h1>	<h2>G-7</h2>	
2	MISC. REVISIONS	09/12		DATE:	PAGE:
3	2022 UPDATES	09/22		09/22	7

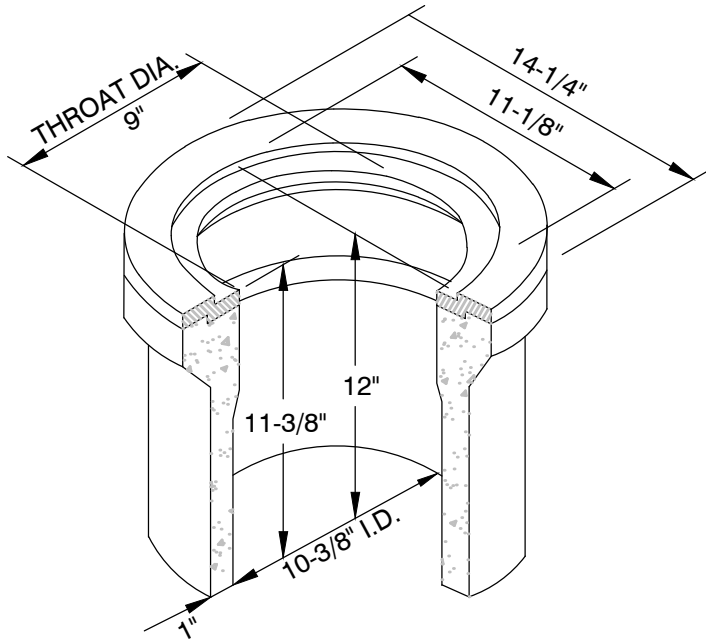
Best Water! Best Service!



GARDNERVILLE WATER COMPANY - VALVE BOX (G-8)



VALVE BOX LID



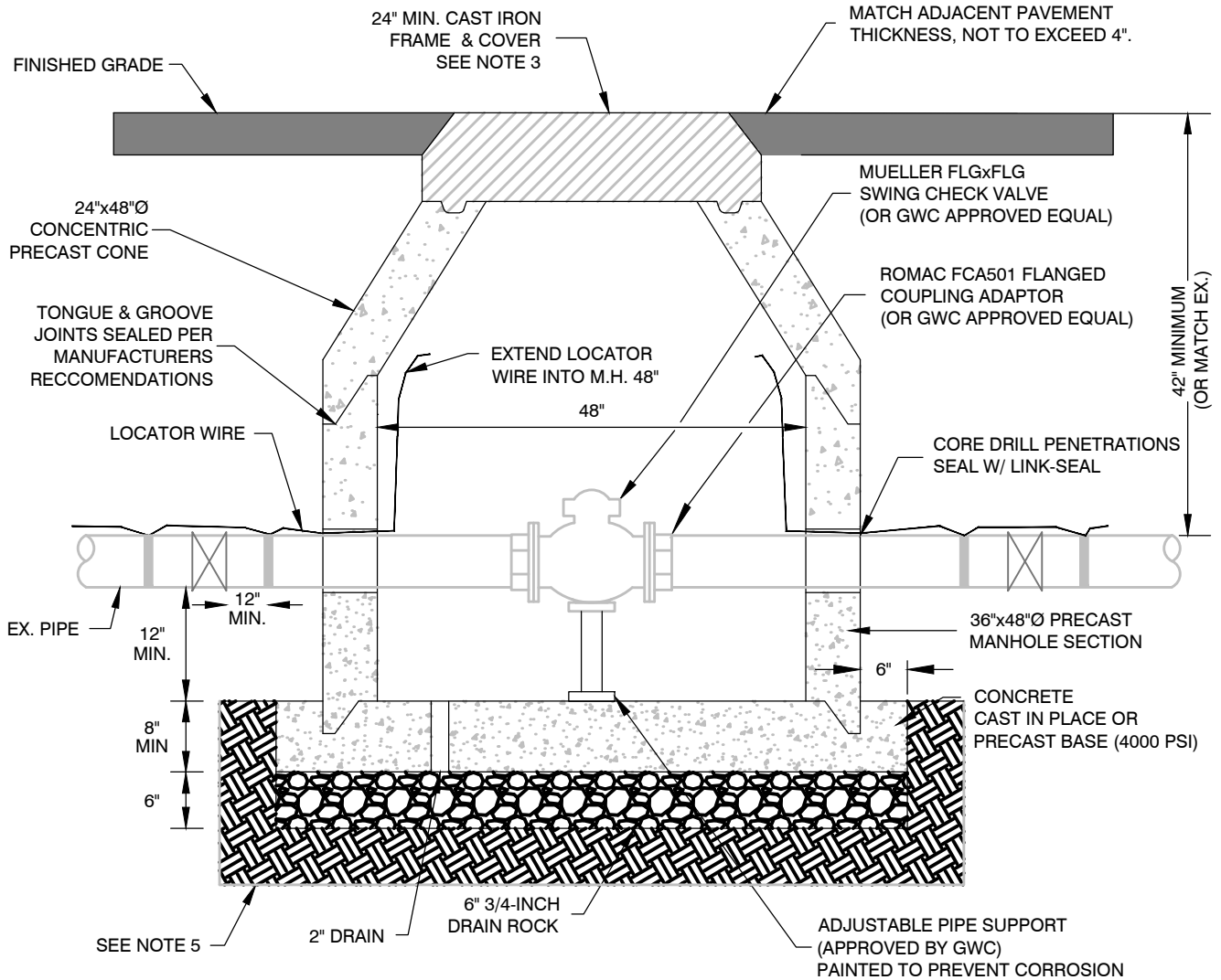
VALVE BOX

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:
				09/22	8

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 H2O 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:
				09/22	9

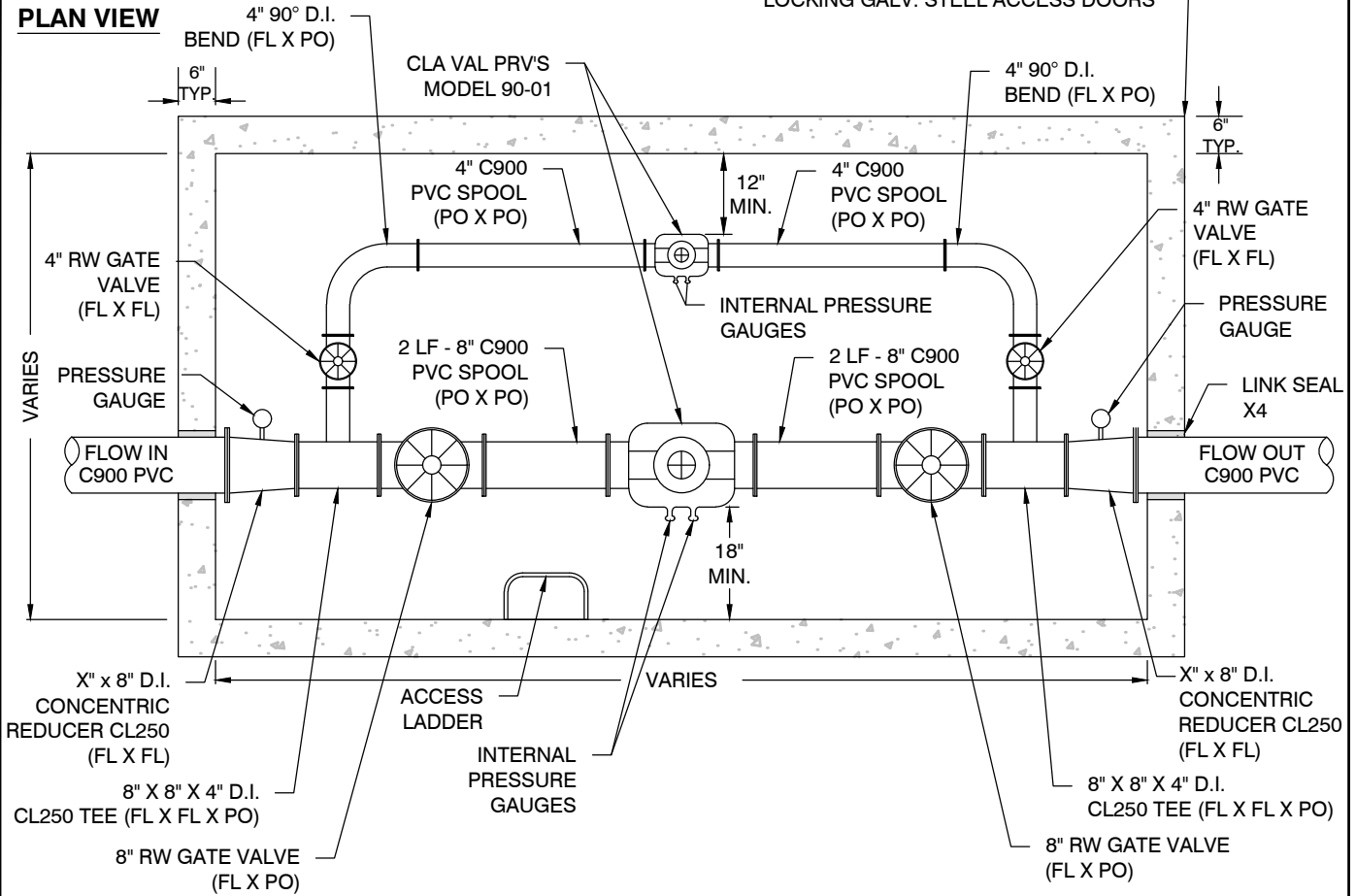
Best Water! Best Service!



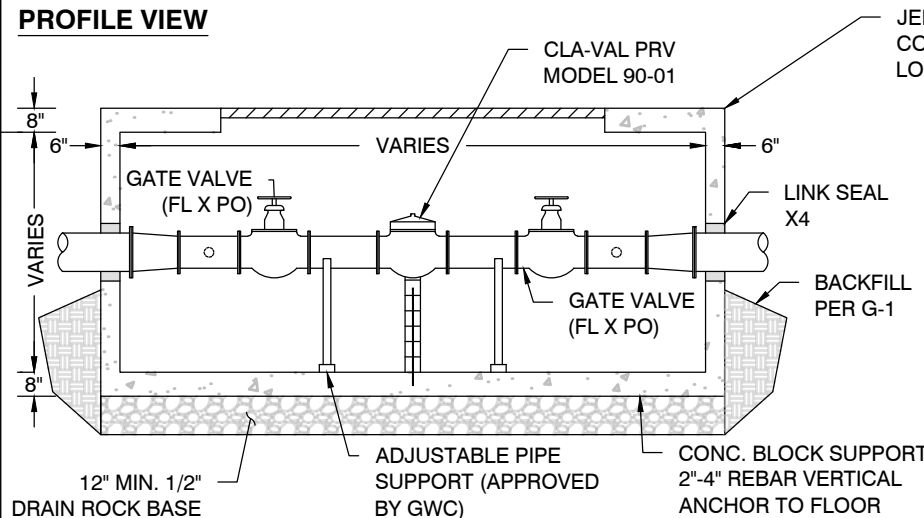
GARDNERVILLE WATER COMPANY - PRESSURE REDUCING VALVE (G-10)

JENSEN PRECAST VAULT TYPE II/V
CONCRETE 3,000 PSI MIN. W/
LOCKING GALV. STEEL ACCESS DOORS

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.

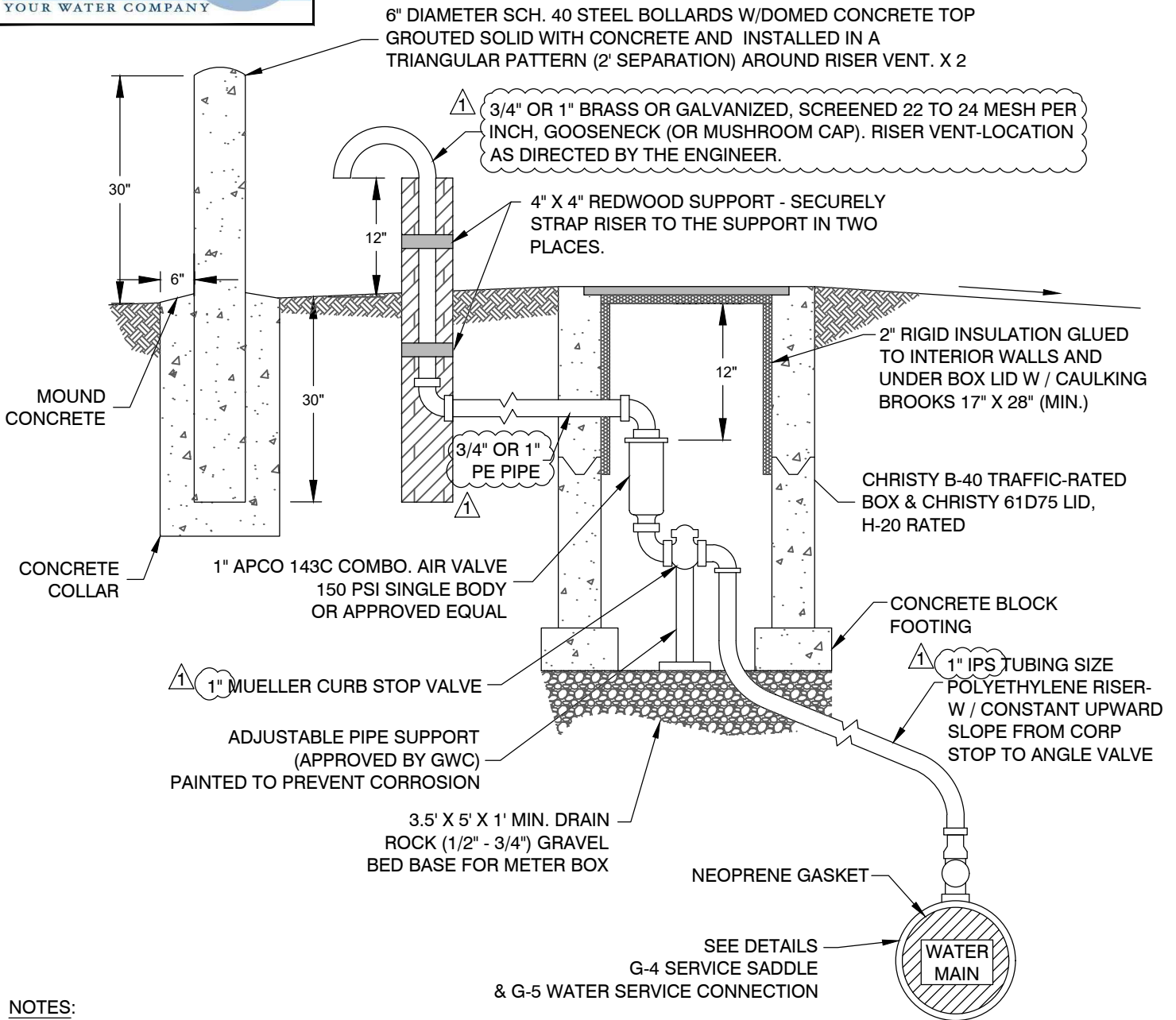
NO.	REVISION	DATE	GARDNERVILLE WATER COMPANY - STANDARD DETAIL	DRAWING NO.	
			<h1 style="margin: 0;">PRESSURE REDUCING VALVE</h1>	<h2 style="margin: 0;">G-10</h2>	
				DATE:	PAGE:
				09/22	10

Best Water! Best Service!

Gardnerville
WATER
COMPANY

YOUR WATER COMPANY

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



NOTES:

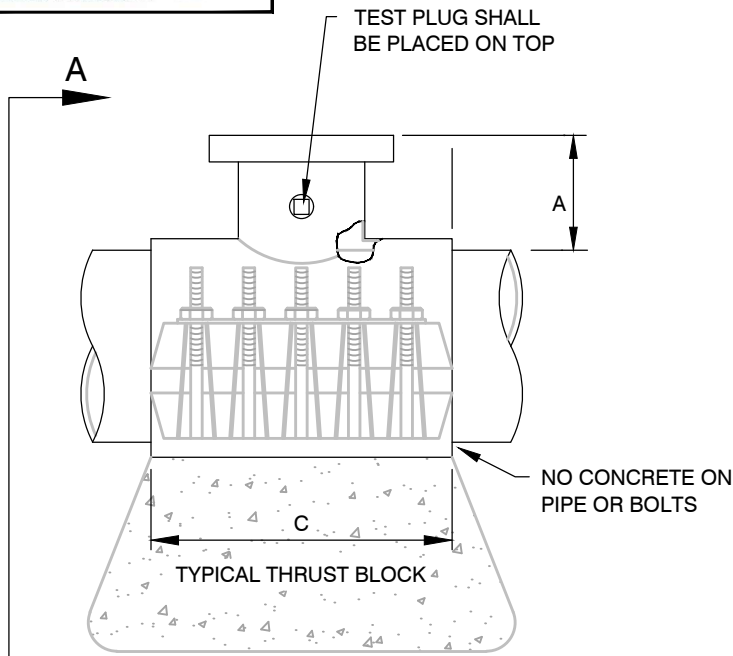
1. AIR RELEASE VALVES SHALL BE BETWEEN 2-4 FEET BEHIND SIDEWALK.
2. COORDINATE WITH GARDNERVILLE WATER COMPANY FOR ASSEMBLY LOCATION TO ALLOW FOR REMOVAL AND REPAIR.
3. ALL PIPES SHALL BE SLOPED UP TO AIR RELEASE VALVE. FINISHED GRADE SHALL SLOPE AWAY FROM THE BOX IN ALL DIRECTIONS.
4. ALL VALVES SHALL 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

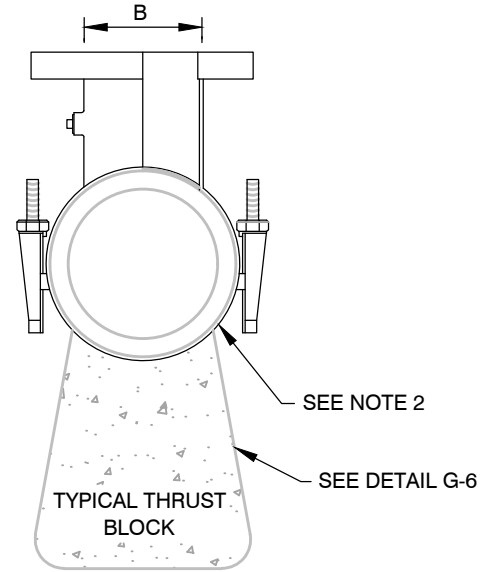
Best Water! Best Service!



GARDNERVILLE WATER COMPANY - TAPPING SLEEVE (G-12)



TOP VIEW
NOT TO SCALE



SECTION A-A
NOT TO SCALE

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.

NOM. FLANGE	A	B	C	# BOLTS
4	4	5 ¹ / ₃₂	16	10
6*	4 ¹ / ₂	7 ¹ / ₃₂	16	10
8*	4	9 ¹ / ₃₂	20	14
10	5 ¹ / ₂	11 ¹ / ₃₂	24	16
12**	6 ¹ / ₂	13 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

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

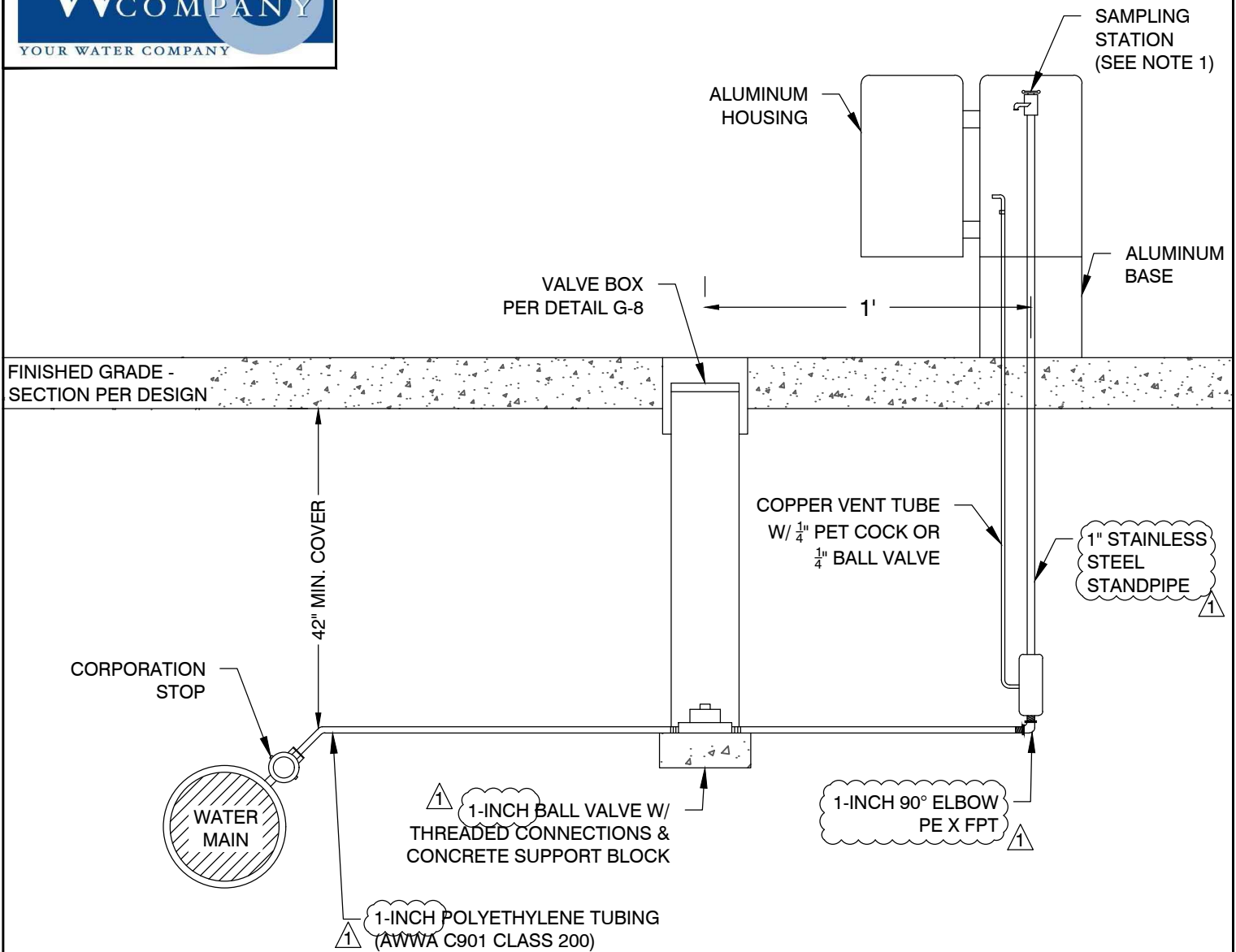
8" THROUGH 24" - 175 PSI

NO.	REVISION	DATE	GARDNERVILLE WATER COMPANY - STANDARD DETAIL	DRAWING NO.	
			<h1 style="margin: 0;">TAPPING SLEEVE</h1>	<h2 style="margin: 0;">G-12</h2>	
				DATE:	PAGE:
				09/22	12

Best Water! Best Service!



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
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.

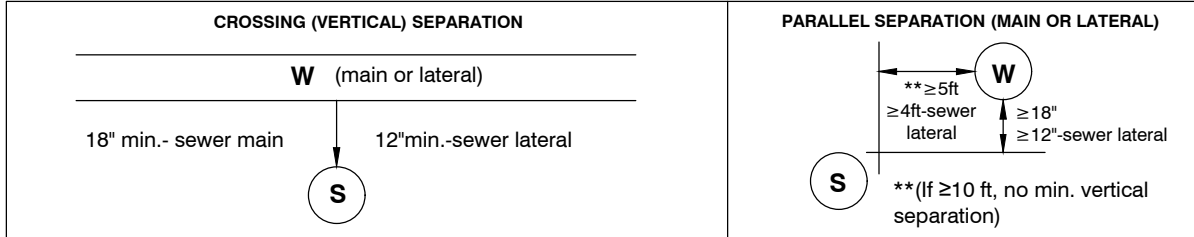
GARDNERVILLE WATER COMPANY - STANDARD DETAIL			DRAWING NO.	
NO.	REVISION	DATE	SAMPLING STATION	
1	GWC REVISIONS	07/24		
			G-13	
			DATE:	PAGE:
			07/24	13

Best Water! Best Service!



GARDNERVILLE WATER COMPANY WATER WATER - SEWER SEPARATION (G-14)

PREFERRED DESIGN / NO MITIGATION REQUIRED



MITIGATED DESIGN / CONSTRUCTION CONFIGURATION

	CROSSING SEPARATION (MAIN OR LATERAL)	PARALLEL SEPARATION (MAIN OR LATERAL)
Water (W)	Mechanically restrain waterline joints on both sides of the crossing & any other joints within 10 feet; or Jointless pipe or BSDW approved alternative.	Mechanically restrain all waterline joints; or Jointless pipe or BSDW approved alternative.
Sewer (S) (Gravity)	SDR35 PVC pipe (ASTM D3212 joints); or Non SDR35 pipe (RCP, etc.) - external joint sealant (watertight)* or jointless pipe or BSDW appr'v'd alt.	SDR35 PVC pipe (ASTM D3212 joints); or Non SDR35 pipe (RCP, etc.) - external joint sealant (watertight)* or jointless pipe or BSDW appr'v'd alt.
Sewer (S) (Pressurized)	Mechanically restrain sewer joints on both sides of the crossing & any other joints within 10 feet; or Jointless pipe or BSDW approved alternative.	Mechanically restrain all sewer joints; or 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 methods listed 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 be at the discretion of the Bureau of Safe Drinking Water.

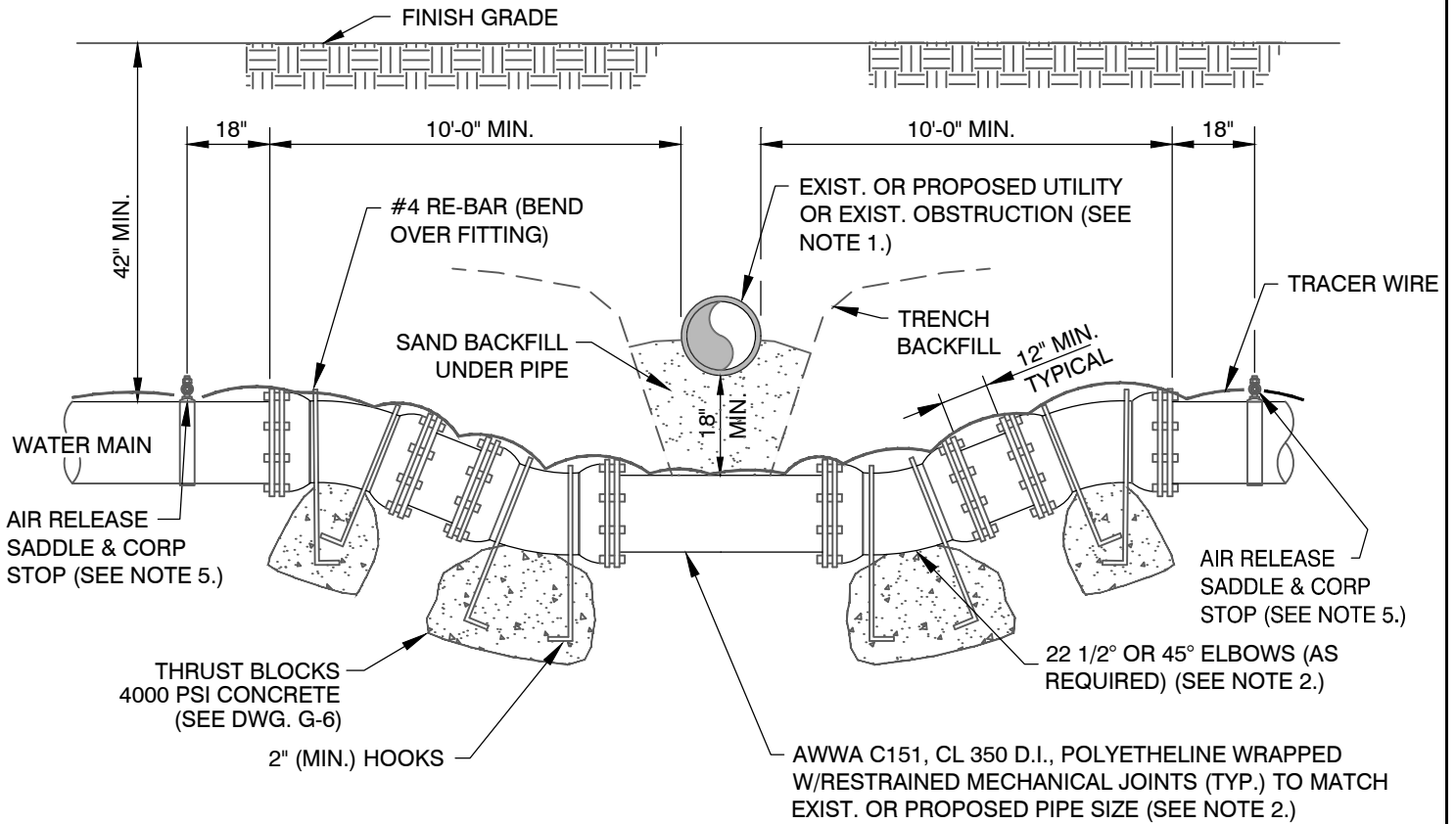
(REV'D November 2013)

NO.	REVISION	DATE	GARDNERVILLE WATER COMPANY - STANDARD DETAIL	DRAWING NO.
			<h1 style="margin: 0;">WATER - SEWER SEPARATION</h1>	G-14
				DATE: PAGE:
				09/22 14

Best Water! Best Service!



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.

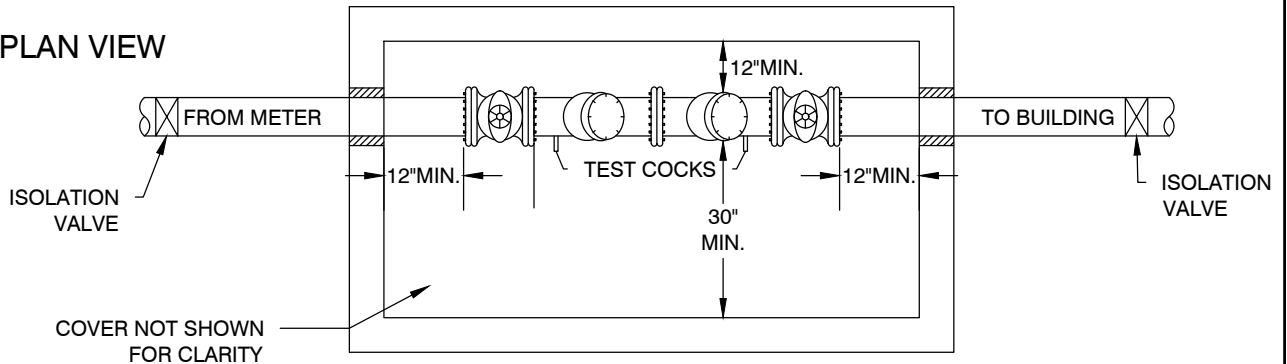
NO.	REVISION	DATE	GARDNERVILLE WATER COMPANY - STANDARD DETAIL	DRAWING NO.	
			<h1 style="margin: 0;">WATER MAIN LOWERING</h1>	G-15	
				DATE: 09/22	PAGE: 15

Best Water! Best Service!



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

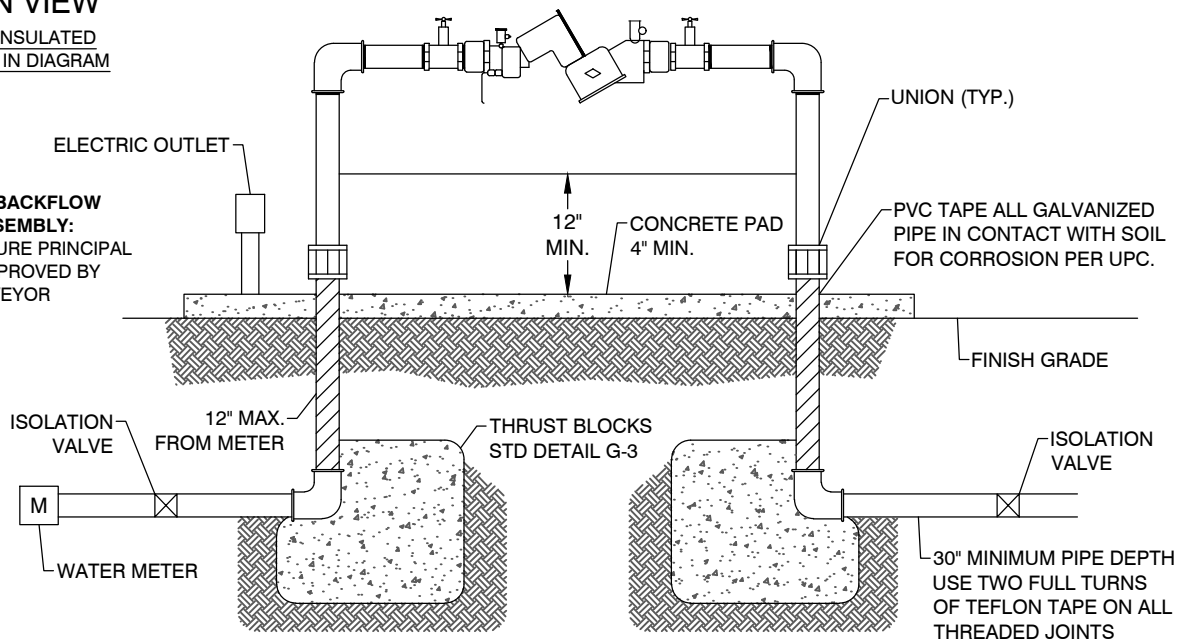
PLAN VIEW



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:

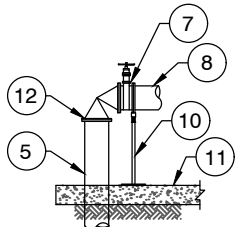
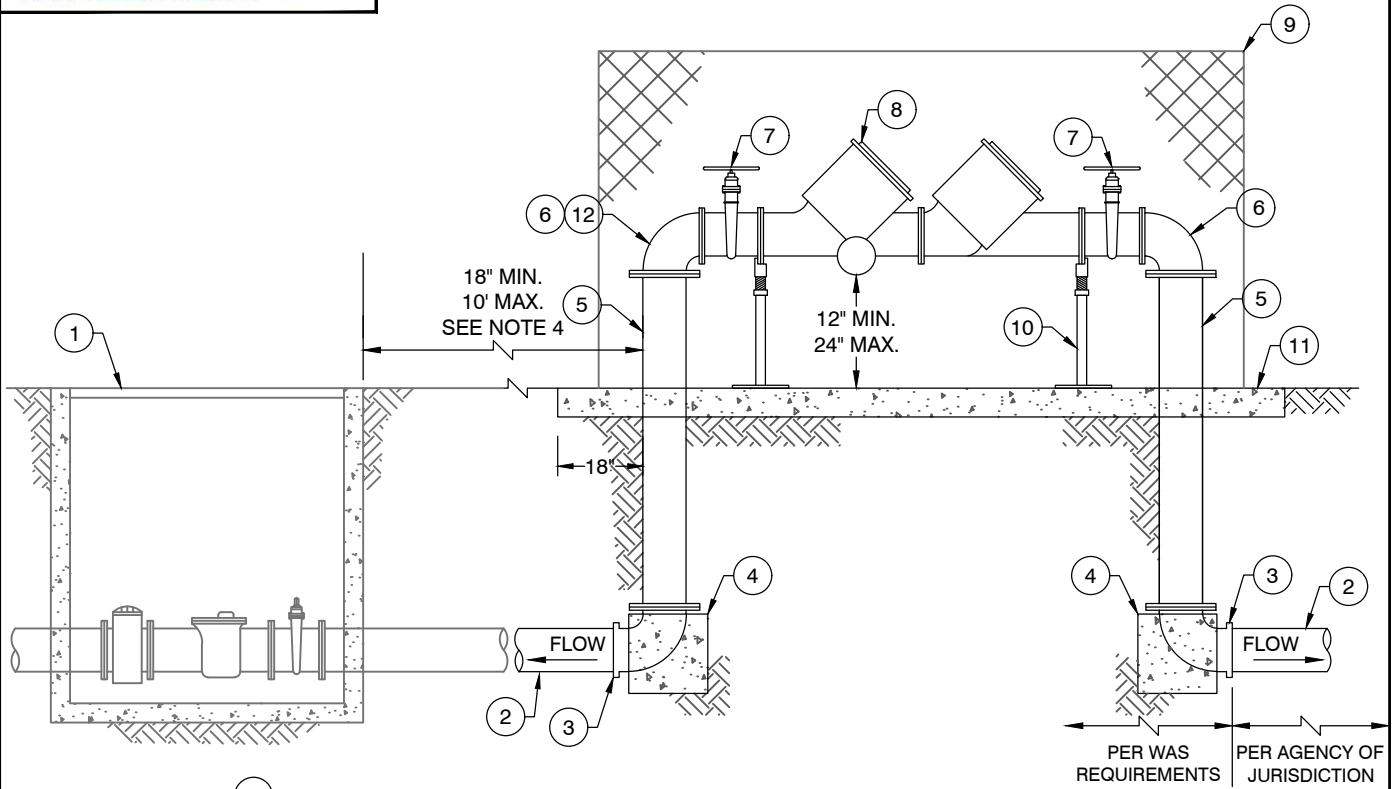
1. AN RP MUST BE ABOVE GRADE.
2. FREEZE PROTECTION (ABOVE GROUND INSULATED BOX OR ABOVE GROUND VAULT AND REDUNDANT HEAT TAPE) IS REQUIRED.
3. AN ABOVE GROUND INSULATED BOX OR ABOVE GROUND CONCRETE VAULT MUST BE SIZED TO PROVIDE CLEARANCES SHOWN IN PLAN VIEW. A SPRING LOADED LID IS REQUIRED ON LARGE VAULTS.
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

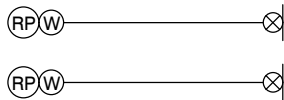
Best Water! Best Service!



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



DETAIL 'A'
SEE NOTE 5



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