

WASHOE COUNTY COMMUNITY SERVICES DEPARTMENT

RECLAIMED WATER DESIGN STANDARDS

This section of the manual contains the Washoe County Community Services Departments' (CSD) standards for:

- Designing Reclaimed Water Distribution Facilities (“Reclaim Design Standards”)

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1.1.00 GENERAL STATEMENT

Developers and Engineers are encouraged to contact the CSD at the earliest possible stage of development planning to gain an understanding of the CSD's new business processes; operational constraints of the existing reclaimed water system; the requirements of State water system regulations; facility and feeder main charges; and ultimately, the preliminary reclaim water system facility requirements for their projects. This understanding will assist the developer in obtaining adequate project financing and facilitate the project review and approval process.

All CSD Standards must be considered as minimum guidelines, and it is the engineer's responsibility to confirm adequacy of same or provide an acceptable alternative as approved by the CSD.

1.1.01 RECLAIMED WATER DISTRIBUTION SYSTEM PRESSURE ZONES

1.1.01.01 In general, the CSD's pressure zones are designed to maintain a static pressure of 40 – 125 pounds per square inch (psi). On sites where both potable and reclaimed water are present, the on-site reclaimed water system static pressure should be 5-10 psi lower than the on-site potable water system static pressure.

1.1.01.02 In areas where a static pressure less than 40 psi is anticipated, individual booster pumps are required to be installed and maintained by the owner/developer in accordance with the current Uniform Plumbing Code (UPC) adopted by Washoe County. The Engineer will identify on the reclaim plans the services requiring individual booster pumps.

In areas where a static pressure more than 80 psi is anticipated, individual pressure reducing valves are required to be installed and maintained by the owner/developer in accordance with the current Uniform Plumbing Code (UPC) adopted by Washoe County. The Engineer will identify on the reclaim plans the services requiring individual pressure reducing valves.

For areas with static pressures more than 125 psi, it is recommended to install individual pressure reducing valves in series to step down pressure and reduce the potential to see excessive pressures. In addition, step down regulators may be required to avoid valve cavitation, which must be evaluated by the Engineer.

1.1.01.03 New reclaimed water system facilities and pressure zones and additions to the existing system must be designed to provide the following minimum residual reclaim pressures at the point of service connection under the various demand/flow conditions noted below:

- A. Peak Hour 30 psi
- B. Average Day 40 psi

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Minimum water pressure requirements should be evaluated at the highest ground elevation within the parcel. Minimum reclaim residual pressure requirements must be strictly adhered to since additional pressure losses will occur through the meter, backflow devices and customer's service line. Property owners are responsible for ensuring the pressure on their property is adequate to properly run their reclaimed water systems. In some cases, irrigation booster pumps privately owned/maintained may be required to meet on-site pressure needs.

1.1.02 RECLAIMED WATER DISTRIBUTION MAIN SIZES

General Requirements

- A. All water mains must be sized based on flow/demands and pressure requirements. All main sizes must result in velocities less than six (6) feet per second (fps) under maximum day demand conditions, and eight (8) feet per second (fps) under peak hour demands. Allowable pipe velocities/sizes are subject to site specific constraints and CSD approval to meet residual pressures and/or water quality considerations.

The minimum water main size to be installed in the CSD's system must be six (6) inches in diameter .

1.1.02.01 Oversizing

The CSD may require the Developer to oversize some, or all, of the proposed reclaim water mains. For details regarding CSD oversizing please contact CSD.

1.1.03 RECLAIM WATER MAIN LOCATION

1.1.03.01 Main extensions should be located within a dedicated right-of-way or dedicated easements. Refer to section 1.1.18 for easement requirements.

1.1.03.02 Where street curbs are present, reclaim water mains will be designed to the extent possible with center of pipe horizontal alignment located three (3) feet from the gutter lip. In areas without curb and gutter, the reclaim water mains will be designed to the extent with center of pipe horizontal alignment located seven (7) feet from the edge of asphalt unless established otherwise by the CSD.

1.1.03.03 Reclaim water main designs must comply with the separation requirements per details W-206A, W-206B, and W-206C. Location of other utilities in the easements should be coordinated with the CSD on an individual basis. Separation must meet the requirements within NAC 445A.

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- 1.1.03.04 Dead-end mains must be minimized by looping mains whenever practical or where required by the CSD. Preliminary design and layout of subdivision streets and lots should contribute to elimination of dead-end mains. All dead-end mains must terminate with a flushing device that is sufficient to provide a flushing velocity of at least 2.5 feet per second within the main per the maximum day pressure condition.
- 1.1.03.05 Temporary dead-ended mains that will be extended with subsequent phases of development must be stubbed at least twenty feet beyond the edge of pavement or 40 feet beyond last mainline valve whichever is greatest and must be terminated with a flush valve assembly.

1.1.04 FULL FRONTAGE EXTENSION

At the CSD's discretion, the developer may be required to install the reclaim water main along the entire length of at least one property line frontage of the property to be developed whenever future line extension is possible. The property line frontage is that portion of the property along the public right-of-way. If a parcel to be developed has more than one property line frontage, the CSD may require a water line to be installed along the other frontage(s). The minimum pipe diameter required in the frontage street must be in accordance with Section 1.1.02, or as required by the CSD.

1.1.05 RECLAIM WATER MAIN JOINT DEFLECTION (UP TO 12-INCHES IN DIAMETER)

Designs for the maximum allowable water main joint deflection and bending radius for reclaim water mains are described below.

PVC pipe must only be deflected at joints. The maximum joint deflection must be one (1) degree, which equates to four (4) inches for a twenty (20) foot pipe section (subject to being within Manufactures recommendations). Requirements more than the deflections identified must require installation of fittings Bending of PVC pipe is not permitted by CSD.

Ductile iron pipe (DIP) must only be deflected 3 degrees (restrained or unrestrained) subject to being within Manufactures recommendations, which equates to eleven (11) inches for an eighteen (18) foot pipe section.

1.1.06 DEPTH OF COVER

Designs must call for a minimum depth of cover to be maintained for all pipe unless otherwise specified and approved by the CSD. The installation of mains in locations where there is not an established final grade must only be allowed with the prior approval of and at the sole discretion of the CSD. Design drawings must specify a pipe cover that results in forty two (42) inches minimum depth of cover upon completion of final grading.. The Engineer must consider possible and probable future development and grading to avoid reclaim main relocations. Unless approved by CSD, cover in excess of sixty (60) inches

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from final grade must not be allowed.

Where there is an established street grade, the minimum depth of cover of thirty-six (36) inches from final grade to top of pipe must be specified and included in the design drawings. Depth of cover must be 42-inches for elevations higher than 5000 ft.

Designs within NDOT Right-of-Way must meet NDOT requirements unless stipulated otherwise and have a minimum cover of forty-eight (48) inches.

1.1.07 PIPE CASING

1.1.07.01 Steel Casing:

Design drawings must call for steel casings to be required on all pipe installed using jack and boring and micro-tunneling methods, where approved by the CSD and required to meet specific Railroad and/or NDOT requirements, to provide structural support, or as required under other special conditions. The pipe casing must be designed to be laid true to line and grade with no bends or changes in grade for the full casing length. The casing material used must be a minimum of one-quarter ($\frac{1}{4}$) inch thick steel. Design calculations must be submitted by the developer's engineer and include a twenty-five (25) percent wall thickness allowance for corrosion and conform to ASTM A283, Grade B, C, or D. All joints must be welded. Interior joints must be ground to a smooth finish. All welding must be performed in accordance with AWWA C206, "AWWA Standard for Field Welding of Steel Water Pipe". Coatings for steel casings are not required. Other casing materials may be utilized for applications other than boring when approved by the CSD.

1.1.07.02 Pipe Spacers:

The design drawings must include details specifying the pipe to be symmetrically supported about its centerline inside the casing at each joint end with a CSD approved polyethylene spacer with stainless steel hardware, sized and designed per manufacturer recommendations.

1.1.07.03 Casing End Caps:

Design drawings of the reclaim water main casing must call for the ends to be sealed. If the end seals need to be watertight, link-seal or approved equal must be required.

1.1.07.04 Annular Space:

The annular space must be left open and not backfilled with any material unless blow sand or grout is required by CSD.

1.1.07.05 Carrier Pipe Material:

All pipes must be restrained joint ductile iron pipe. PVC must not be allowed as a carrier pipe.

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1.1.08 VALVES

1.1.08.01

Valve Location:

Design drawings must include valves to be placed on reclaimed water mains and service lines to minimize inconvenience, and sanitary hazards during repairs. Valves must be generally located as follows, unless otherwise approved by the CSD:

- 1.) At intervals not greater than five hundred (500) feet and preferably attached to a flanged fitting (i.e. elbow, cross, tee, etc). Valves connected to a flanged fitting must be flange by mechanical joint (restrained if required per the application) unless dictated otherwise by the application. In-line valves must be mechanical joint (restrained if required per the application).
- 2.) Valves must not be in street gutters, valley gutters, or in driveways, unless approved by CSD.
- 3.) A valve is required at the end of all temporarily dead-end mains. The valve location is to be a minimum of twenty (20) feet upstream of the cap or blow off assembly and at least 5 feet downstream of the last service line connection.
- 4.) An isolation valve immediately downstream of the meter must be provided for all service laterals.
- 5.) A minimum of three (3) valves must be installed at all branch tees. A minimum of four (4) valves must be installed at all crosses.

1.1.08.02

Gate Valves:

- 1.) Designs will provide for gate valves to be installed on all water mains up to, and including, twelve (12) inches in diameter. Gate valves up to twelve inches must have a minimum working pressure rating of 250 psi.
- 2.) Gate valves must be installed in the vertical position with non-rising stems in all locations per detail W-303
- 3.) All gate valves must have resilient seats and meet the requirements of AWWA C509, AWWA C550, CSD standards and installed per detail W-303.

1.1.08.03

Butterfly Valves:

Butterfly valves must only be used for valves greater than twelve (12) inches in size and pressures more than 150 psi subject to CSD approval. For high pressure applications high performance (ANSI) butterfly valves may be required subject to CSD's approval.

1.1.08.04

Valve Stem Extensions:

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Design drawings must specify steel valve stem extensions (1-inch steel bar diameter) to within two (2) feet of finished grade where the distance from the top of the valve box to the top of the operating nut exceeds four (4) feet. Fiberglass extensions shall not be allowed.

1.1.08.05 Valve Boxes:

Adjustable valve boxes must be included on design drawings for all buried valves per detail W-303. Valve boxes must be installed in accordance with CSD's Construction Standards.

1.1.08.06 Special Valves

- 1.) Air release and/or combination air release valves will be required on pipelines' high points and changes in grade. Air valves must be sized and detailed by the design engineer and installed per CSD details W-304A, W-304B, and W-304C. Above grade, screened riser vent pipes must be located within the PUE or right-of-way and protected by pipe bollards.
- 2.) Pressure regulating valves (PRV) will be required where it is necessary to reduce pressure to a maximum value as defined in Section 1.1.01. Individual pressure reducing valves will be required on service lines in a pressure zone served by a single pressure regulating station or where the static service pressure is more than eighty (80) psi in unregulated pressure zones. Individual pressure reducing valves will be owned and maintained by the property owner and be in conformance with the Uniform Plumbing Code (latest edition).
- 3.) Flush valve assemblies are required on all permanent dead-end pipe runs and may be required at stub-out locations. Flush valves must be sized to provide a minimum velocity of 2.5 feet per second (fps) in the main. Flush valve assemblies for these locations must be installed in accordance with CSD's Construction Standards and details W-305A and W-305B.
- 4.) Check valves are to be used at pressure zone boundaries, or as required by CSD. Check valves must be enclosed within a vault per CSD standards, unless prior approval for a direct bury valve is obtained. Check valves must be installed with isolation valves and a separate valved bypass line to facilitate maintenance or emergencies, if required by CSD. A flushing device must be installed on the checked side of the valve if required by CSD. Materials, trim, seats, coating, lining and options must be in accordance with AWWA Standards and site-specific requirements as determined by CSD.

1.08.07 Valve Retirement

- 1.) For valve retirement, the following methods must be utilized and the following note must appear on the design drawing:

RETIRED VALVES

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All valves to be retired must be abandoned in the closed position, filling the bottom of the box with a minimum of eight (8) inches of sand, the remaining portion of the valve box must be filled with concrete.

1.1.09 CAPPING

A cap or plug installed within two (2) feet of the valve may be used with dead end thrust blocks per CSD details W-320A and W-320B, or as otherwise approved by the CSD. A flanged valve can be retired with a blind flange installed on the valve with a dead-end thrust block.

1.1.10 THRUST AND ANCHOR BLOCKS

Thrust blocks are required at all caps, valves, reducers, tees, fittings, etc. used to change the pipe direction, and must be placed in accordance with CSD Standard Details W-320A and W-320B. Thrust blocks for each location must be designed by the design engineer to account for allowable soil bearing capacity, main size, main pressure and change in direction. If the allowable soil bearing capacity is unknown, thrust block design must be based on maximum soil bearing capacity of 2000 psf; however, the design engineer must verify soil conditions at the time of construction and adjust as required. Thrust block design must provide suitable support under test pressure conditions (the greater of 150 psi or two times the working pressure of the main). Vertical (anchor) and horizontal thrust blocks must be made of concrete having a compressive strength of not less than 4000 psi after 28 days (bag concrete is not acceptable). A thrust block schedule must be included on all water main design drawings, or the plans must clearly state that the CSD's thrust block schedule, or noted portions thereof, are suitable for the project. If uncompacted or unclassified backfill material is present; then mechanical restraint joints must be required in addition to a thrust block. Vertical gravity (anchor) blocks must have corrosion resistant hardware and a field applied mastic or wax-tape coating prior to backfill.

1.1.11 MECHANICALLY RESTRAINED JOINTS

Mechanically restrained joints may be used with ductile iron pipe only in lieu of thrust blocks or as required by the CSD. The restrained pipe length distance on either side of fittings where restrained joints are required should be clearly identified on drawings and calculations must be submitted to CSD per the Ductile Iron Pipe Research (DIPRA) on-line software. Restrained joints are required on all fittings at vertical offsets; and design engineer must provide restrained pipe calculations. The CSD may also require restrained joints for pipelines installed across drainage ways, within carrier pipe, on natural grades more than 10 percent, or other conditions determined by CSD.

1.1.12 SERVICE LATERALS

Service laterals must be designed and sized to provide peak hour capacity without excessive pressure losses considering anticipated losses through the meter, setter, backflow prevention device and on-site pipe/fittings. Service lateral sizes are subject to the review and approval of the CSD. Service lateral materials must be furnished and installed in accordance with CSD details W-310A and W-310B and be high density polyethylene (HDPE) with a minimum pressure rating of two hundred (200) psi (HDPE SDR 9), unless

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higher pressure class is required by CSD

1.1.12.01 Location

- 1.) All service laterals must be installed in the public right-of-way or public utility easement unless other provisions have been approved by the CSD.
- 2.) The full service lateral length between a reclaim water main and reclaim meter must be installed at ninety (90) degrees to the reclaim water main horizontal alignment unless otherwise approved by the CSD.
- 3.) For service laterals two (2) inches in diameter and smaller, service saddles must not be closer than twenty-four (24) inches from the end of the main or any pipe joint, nor closer than eighteen (18) inches to an adjacent service saddle when the service taps are on opposite sides of the main, nor closer than twenty-four (24) inches to adjacent service saddles when the service taps are located on the same side of the main.
- 4.) The reclaim service line and domestic water service lateral leading into the property must be separated horizontally by a minimum of four (4) feet, the reclaim service line must be a minimum of one (1) foot lower than the water lateral and the laterals must be in separate trenches, per NAC 445A requirements.
- 5.) All service laterals must be located a minimum of ten (10) feet from septic tanks, and a minimum of twenty-five (25) feet from leach beds and/or seepage pits.

1.1.12.02 Reclaim Water Service Lateral Installation

- 1.) Reclaim water service laterals must be installed per CSD details W-310A and W-310B.
- 2.) Minimum service lateral diameters for meter sizes up to four (4) inches must be as follows:

| Required Meter Size (in.) | Minimum Lateral Size (in.) |
|---------------------------|----------------------------|
| ¾ | 1 |
| 1 | 1-1/4 |
| 1-1/2 | 1-1/2 |
| 2 | 2 |

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1. All service laterals four (4) inches and larger will require a tee and gate valve at the source main and the lateral must be a material approved by, and in accordance with, the CSD's Standards. Distribution taps (hot tap) are acceptable.
2. Service laterals will not be allowed or installed for future lots unless otherwise approved by the CSD.

1.1.12.03 Reclaim Water Service Lateral Removal

- 1.) When retiring existing reclaim water service assemblies sized two (2) inches and smaller, the following note must appear on the drawing:

RETIREMENT OF EXISTING SERVICE LATERALS (≤2")

The Contractor must notify the CSD two (2) full business days prior to the requested removal time to allow the CSD to take the final meter reading. The Contractor may then begin removal procedures for the affected service as follows:

Existing service laterals to be retired from existing reclaim water mains must have the corporation stops turned off at the main, a minimum of twelve (12) inches of the lateral cut out near the corporation stops and a brass cap/plug installed on the corporation stop. If the corporation stop is damaged beyond repair or pulled from the existing water main, the main must be repaired at the Contractor's expense in a manner approved by the CSD. If it is discovered the corporation stop is not watertight, through no fault of the Contractor, the Contractor must notify the CSD for further direction. The existing meter(s) and all appurtenances must be removed and delivered to the CSD.

- 2.) For existing reclaim water service assemblies four (4) inches and larger that are to be retired, the following note must appear on the drawing:

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RETIREMENT OF EXISTING SERVICE LATERALS (≥3")

The Contractor must notify the CSD two (2) full business days prior to the requested removal time to allow the CSD to take the final meter reading and to notify the CSD's Inspector of the impending work. The Contractor may then begin removal procedures for the affected service as follows:

All valves to be retired must be abandoned in the closed position, unless shown otherwise, then filling the bottom of the box with a minimum of eight (8) inches of sand, the remaining portion of the valve box must be filled with concrete.

If the valve is to be abandoned in the closed position, the lateral must be cut within two (2) feet of the abandoned valve, or as shown on plans, and capped with thrust block. Where a joint or coupling in the existing pipe is uncovered at the cut and cap locations, the installation of a plug may be permitted with CSD approval. The Contractor must install a concrete thrust block in accordance with the provisions of the CSD's Standards at all cap or plug locations. If the valve to be retired has a flanged outlet, a blind flange with thrust block may be installed in lieu of cutting and capping the pipe.

The contractor must remove existing meter(s) and meter pit or vault and meter must be delivered to the CSD.

1.1.12.04 Lateral Relocation

- 1.) All existing laterals that are to be relocated must first be disconnected from the existing pipeline following retirement procedures. The relocated service installation must comply with CSD's current standards.
- 2.) Meter boxes being relocated must meet all minimum requirements of a newly installed meter box.

1.1.13 METERS

1.1.13.01 Size

The size for all reclaimed water services must be based on continuous flow

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meter capacities under Peak Hour Demand flow. Maximum meter flow capacities may be used for maximum reclaim demands, when calculated utilizing the applicable plumbing code or other applicable criteria, when associated pressure losses are accounted for in the system design.

1.1.13.02 Meters

All new services must have meters. All meters must be Sensus brand meters with OMNI™ or iPERL® registers and FlexNet® communications. Meters are to be installed by the developers' contractor and remain CSD's property.

1.1.13.03 Installation

- 1.) All meter pits for new reclaim meter installations must incorporate a single check valve at the outlet side of the meter.
- 2.) Meter must be installed on the opposite side of the gas and electrical service locations on a lot or as otherwise approved by CSD.
- 3.) All services must be installed in accordance with the CSD's Standards. Meters will not be allowed at locations not contiguous to the property served. Meters two (2) inches and smaller may be installed by the CSD upon payment of applicable fees. For meter services three (3) inches and larger, the following note(s) must appear on the drawing.

INSTALLATION OF METER AND VAULT

The meter(s) and vault(s) with traffic/non-traffic bearing cover(s) must be installed in accordance with the CSD's Standards. Precast vaults approved by the CSD may be used in lieu of cast-in-place vaults. The designation of pre-cast or cast-in-place must be made prior to plan approval.

Any block wall or other fence material must be designed and constructed around the outside of the easement(s), to allow the CSD direct access to the vault(s) and inlet piping from the adjacent right-of-way.

Easements must be clearly marked or staked prior to the start of construction.

- 4.) All meter and meter vaults for meters three (3) inches and larger must be located within the Public Utility Easement (PUE) or within reclaim water facility and access easement even if there is adequate space for the vault within the right-of-way, unless otherwise specified by the CSD.
- 5.) All meters must have their own dedicated reclaim lateral. Looping of meters, or more than one meter for any service lateral will not be permitted.

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1.1.13.04 Meter Enclosures

- 1.) Designs must provide for meter enclosures to be in landscaped area, or within a designated easement in accordance with the CSD's Standards. No meter enclosures must be in a potential traffic area. Meters located within three (3) feet of a driveway edge must be within a traffic rated enclosure (H-20).
- 2.) All meters two (2) inches and smaller must be installed in an approved meter enclosure, per the CSD's Standard details.
- 3.) All meters three (3) inches and larger must be housed in a vault. Refer to the CSD's Standard details for dimension and construction details.
- 4.) Provisions for remote reading devices per CSD Standard Details for all vaults and boxes are required.

1.1.14 BACKFLOW AND POTABLE WATER SYSTEM PROTECTION

Any connection to the CSD's reclaimed water distribution system must be made in a manner that protects the public potable water supply from contamination or pollution.

1.1.14.01 Application

No reclaim water service connection to any premises may be approved, installed, or maintained by the CSD unless the potable water supply is protected as required by State laws, State regulations, Potable Water Purveyor and CSD Standards. Reclaim water service to any premises must not be activated (or service terminated) by the CSD if the CSD determines the potable water service requires a backflow assembly and any of the following conditions exist:

- 1.) The backflow assembly is not installed or has been removed after installation.
- 2.) The backflow assembly has been by-passed.
- 3.) The backflow assembly is in any way altered.
- 4.) Any cross-connection or possibility of cross-connection exists.
- 5.) The backflow assembly is not being tested and maintained in accordance with State Requirements.

1.1.14.02 The required backflow prevention assembly type must be determined by facility use. The CSD or potable water purveyor may require all domestic services to a facility or parcel have an equal level of backflow protection. Facilities must be evaluated by CSD for backflow prevention requirements on a case-by-case basis.

1.1.14.03 Any backflow prevention assembly required herein must be a model and size approved by the potable water purveyor, State and CSD. Backflow assemblies must be on the USC approved backflow device list. The term "Approved Backflow Prevention Assembly" must mean an

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assembly meeting the potable water purveyor, State and CSD's specifications.

1.1.15 TAPS 4 INCHES AND LARGER

1.1.15.01. Materials

Full circle, stainless steel tapping sleeves with flanged tapping valves must be included in designs for hot/wet taps where the tap diameter is at least one nominal pipe size smaller than the nominal pipe diameter being tapped. All tapping materials and methods are subject to the review and approval of the CSD.

The steel cylinder thickness, as well as the mortar lining and coating thickness, must be noted on all project plans where the mains to be tapped are Concrete Steel Cylinder Pipe or Mortar Lined and Coated Steel Pipe (MLCP). Tapping outlets/nozzles must be design in accordance with AWWA M11.

1.1.15.02. Installation

- 1.) Hot/wet taps must be in accordance with the CSD 's requirements and per CSD details W-314A and W-314B

1.1.16 LINE STOPS

Line stops may be required by the CSD, with or without by-pass, to ensure continuous operation of the reclaim water system. Line stops are used to temporarily shut down a pipeline system to complete modifications or repairs and allow a system to operate without any interruption of service. Line stops performed for the purpose of subsequently cutting and removing a section of main must not be allowed without first installing adequate temporary thrust restraint on the section of pipe to remain pressurized. All thrust blocking for the line stop must be designed for the soil bearing capacity.

1.1.17 EASEMENTS

1.1.17.01 General Requirements

- A. Easements, where identified and allowed by the CSD, are required whenever a reclaimed water main, service lateral, meter, or any associated appurtenances are not located in a public right-of-way. All easement locations must be identified on the reclaim water plans, as well as any area(s) dedicated as public utility easements to be occupied by reclaim water facilities, to facilitate field verification. All easements will need to be recorded by a separate document with an exhibit.
- B. Trees, shrubs, or decorative rocks, and any block wall or other fence material, must be designed and constructed around the easement(s) to allow the CSD direct access to the vault(s) and piping from the adjacent right-of-way.

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- C. The area within the easement must be graded to provide drainage away from the vault to prevent vault flooding and provide access for maintenance.
- D. The area within the easement must not contain any grades or materials such as large rocks (greater than two inches) that would hinder or restrict maintenance of the facilities.
- E. The final grade within the easement must match back of sidewalk or right-of-way to allow safe ingress/egress to facilities. Retaining walls must be provided when required, and a minimum clearance of five (5) feet must be provided from the edge of the pad(s) or vault to any fence or wall.
- F. Where the CSD has approved a main extension in an easement, the easement must be a minimum of thirty (30) feet in width, free of all obstructions, landscaping, fences, and other improvements and must be provided with a 15-foot-wide all-weather surface to allow vehicular and equipment access to the full length of the easement. Grass must not be utilized for an all-weather surface unless grass pavements blocks are utilized and have prior approval from CSD. If road grade exceeds eight percent, the road surface must be paved. In no case should road grades exceed ten percent unless specifically approved by the CSD. Reclaim water lines must be located five (5) feet from the property line or easement edge or as specified by the CSD for the entire reclaim water main length. Such easements must terminate at public right-of-ways with gated vehicle/equipment access provided on each end.
- G. The CSD may identify other specific requirements or limitations for easements.

1.1.17.02 Size

- A. The minimum easement dimensions for various size meter configurations will be as specified by the CSD based on facility requirements, and service lateral configuration as required for maintenance and access.

1.1.18 PIPE MATERIAL

Materials used for identification of all recycled water pipe; appurtenances, equipment, and approved use areas must be in accordance with the latest edition of the American Water Works Association (AWWA) guidelines. Main pipeline materials for nominal pipe diameters 6-inch through 18-inch must be either polyvinyl chloride (PVC), high density polyethylene (HDPE), or ductile iron pipe (DIP) or as otherwise directed by the CSD. Main pipeline materials for nominal pipe diameters larger than 18-inches must be either steel or ductile iron pipe (DIP) as described in this section or as otherwise directed by the CSD.

1.1.19 IDENTIFICATION AND SIGNAGE

1.1.19.01 Reclaimed Water Mains

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All new PVC or HDPE distribution piping in the reclaimed water system must either be colored purple (Pantone Color #512) and embossed or be integrally stamped/marked “CAUTION: RECLAIMED WATER – DO NOT DRINK,” or be installed with purple identification tape. Identification tape should be installed on the top of the distribution piping longitudinally and should be centered over the pipe at intervals of no more than five (5) feet. Identification tape must be at least three (3) inches wide, be purple in color, and have either black or white lettering. All new DIP distribution piping in the reclaimed water system must have a purple polyethylene vinyl wrap or be installed with purple identification tape.

1.1.19.02 Service Laterals

Pipe locator ribbon and tracer wire will be required on all service laterals.

1.1.19.03 Above Ground Piping

All above ground piping must be epoxy coated purple (Pantone Color #512) and have a purple weather-resistant tag attached with the wording “WARNING RECYCLED/RECLAIMED WATER DO NOT DRINK” or similar in both English and Spanish.

1.1.19.04 Vaults and Boxes

All covers for meter boxes, valve boxes, flush valves, pressure reducing vaults, air/vac release assemblies, and all other appurtenances requiring vaults or boxes must be purple in color (Pantone Color #512), labeled “RECLAIMED WATER,” “TREATED EFFLUENT”, or similar in both English and Spanish, and have secured or locking lids. Purple coloration must be obtained from the manufacturer or be applied by powder coating or epoxy paint.

All appurtenances must have a purple weather-resistant tag attached with the wording “WARNING RECYCLED/RECLAIMED WATER DO NOT DRINK” or similar in both English and Spanish. A debris cap with purple coloration must be installed inside all round boxes.

1.1.19.05 Signage on Property

Signs should be installed in accordance with CSD standard detail W-340. Signs must be in both English and Spanish. Signs at all entrances must be a minimum of 28”x17”. Smaller signs must be placed no more than 500 ft apart identifying areas where reclaimed water is being used. Signs must also be placed in areas where contact with the public is likely, such as planter boxes, employee break areas, and playgrounds. All irrigation controller units must have a purple sticker wording “ATTENTION: CONTROLLER UNIT FOR RECYCLED WATER” in both English and Spanish and is provided by Washoe County.

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