TODD CREEK VILLAGE METROPOLITAN DISTRICT
FACILITIES CONSTRUCTION AND TECHNICAL STANDARDS

Adopted: October 13, 2022

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ARTICLE 1 - PURPOSE AND SCOPE OF FACILITIES CONSTRUCTION AND TECHNICAL STANDARDS

1.1 General Purpose and Authority

The purpose of these Facilities Construction and Technical Standards is to provide for the orderly construction, management, operation and control of the public utility systems, facilities and improvements of the Todd Creek Village Metropolitan District (the "District"), including additions, extensions, and connections thereto. The District is a governmental entity and political subdivision of the State of Colorado and a body corporate with all powers of a public or quasi-municipal corporation which are specifically granted or implied for carrying out the objectives and purposes of the District.

Any Person desiring to construct facilities in the District's Service Area shall comply with the most current version of these Facilities Construction and Technical Standards. The District shall provide copies of these Facilities Construction and Technical Standards to any Person who requests them, at cost. No Person shall be entitled to any exemption from the applicability of these Facilities Construction and Technical Standards due to the failure of that Person to become familiar with policies and standards of the District contained herein, as such policies may be amended or supplemented from time to time solely by District Board Approval.

1.2 Public Health, Safety, and Welfare

It is hereby declared that the Facilities Construction and Technical Standards hereinafter set forth serve a public interest and are necessary for the protection of the health, safety, prosperity, security, and general welfare of the public and the Customers of the District.

1.3 Scope of Facilities Construction and Technical Standards

These Facilities Construction and Technical Standards shall be treated and considered as new and comprehensive regulations, governing the operations and functions of the District and shall supersede all previous versions of Facilities Construction and Technical Standards as well as informal practices and policies of the District, which practices and policies may be in conflict with the provisions hereof.

1.4 Rules and Regulations of Other Governmental Entities

Developers, Customers, and Owners shall abide by all applicable local, state, and federal laws, policies, rules, and regulations, as the same may be amended from time to time.

1.5 Rules of Construction

These Facilities Construction and Technical Standards shall be liberally construed to affect the general purposes set forth herein, and each and every part hereof is separate and distinct from all other parts. Nothing contained herein shall be so construed as to prejudice or

affect the right of the District to secure the full benefit and protection of any law now in effect or any law which may subsequently be enacted pertaining to the affairs of the District. No omission or additional material set forth herein shall be construed to alter, waive or deviate from any grant of power, duty, responsibility, or limitation or restriction imposed or conferred upon the District by statutes now existing or amended in the future or under any contract or agreement existing between the District and any other governmental entity. The District reserves the right, now or in the future, to construe any provision hereof in its sole discretion in order to effectuate lawful purposes of the District and to attempt to ensure orderly and non-discriminatory treatment of all Persons or entities subject to these Facilities Construction and Technical Standards.

The Facilities Construction and Technical Standards constitute guidelines for the benefit of the District and its Consultants, Contractors, Customers, Developers, and Owners and must be complied with by all Customers, Developers, and Owners absent receipt of a properly written waiver from the District. No Person shall obtain, by virtue of the Facilities Construction and Technical Standards, any right or cause of action against the District or its Manager or Consultants arising as a result of the enforcement or lack of enforcement of the Facilities Construction and Technical Standards by the District. Nothing herein shall be deemed to be a waiver of any immunity granted to the District under Colorado law.

1.6 Conflicts

In case of any conflict between any provision of these Facilities Construction and Technical Standards, the District shall be entitled to resolve such conflict in its own favor at the District's sole discretion, it being the intention of the District that these Facilities Construction and Technical Standards shall be construed or interpreted by the District in such manner so as to maximize the ability of the District to govern and manage the District and its services and facilities.

To the extent that any of the Facilities Construction and Technical Standards are inconsistent with the Rules and Regulations, the District shall be entitled to resolve such conflict in its own favor at the District's sole discretion.

To the extent that any of the Facilities Construction and Technical Standards are inconsistent with any valid and applicable regulations promulgated by any state, or federal agency, the regulations of the state or federal agency shall govern.

1.7 Amendment, Modification, Waiver, or Suspension

These Facilities Construction and Technical Standards may be amended, modified, waived, or suspended, from time to time, by the District Board, as it deems appropriate. Neither notice of such amendments, modifications, waivers, or suspensions nor public hearing shall be required to be provided by the District prior to exercising its amendment, modification, waiver, or suspension powers. No refusal, failure, or omission of the District or its agents to apply or enforce these Facilities Construction and Technical Standards shall be construed as an alteration, waiver, or deviation from any grant of power, duty or responsibility, or any limitation or restriction upon the District by virtue of statutes now existing or subsequently amended, or under

any contract or agreement existing between the District and any other entity. Any express waiver shall not be deemed an amendment of these Facilities Construction and Technical Standards. However, an express waiver or variance from these Facilities Construction and Technical Standards by the District Board shall supersede these Facilities Construction and Technical Standards regarding the subject matter of the express waiver. No waiver shall be deemed a continuing waiver.

1.8 Severability

The invalidity or unenforceability of any portion or previous version of these Facilities Construction and Technical Standards shall not affect the validity or enforceability of any other portion or provision. Any invalid or unenforceable portion or provision shall be deemed severed from these Facilities Construction and Technical Standards and the balance of these Facilities Construction and Technical Standards shall be construed and enforced as if these Facilities Construction and Technical Standards did not contain such invalid or unenforceable portion or provisions.

ARTICLE 2 - DEFINITIONS

Unless the context specifically states otherwise, the meaning of the following terms when used herein shall be as set forth below:

2.1 EQR

This is an abbreviation for Equivalent Residential Unit which is that level of usage equal to an average single-family detached residence, from a system demand standpoint.

2.2 Developer

Shall have the meaning provided in the District's Rules and Regulations but for purposes of these Facilities Construction and Technical Standards shall also include any designated representative, agent, or contractor of the Developer.

2.3 Facilities Construction and Technical Standards

Shall mean the Facilities Construction and Technical Standards adopted by the District Board including all amendments, policies, and resolutions.

2.4 Owner

Shall have the meaning provided in the District's Rules and Regulations but for purposes of these Facilities Construction and Technical Standards shall also include any designated representative, agent, or contractor of the Owner.

2.5 Proposed District Facilities

Shall mean those Potable Water, Non-Potable Water and/or Sewer facilities, Mains and other System improvements and all improvements and appurtenances thereto constructed or proposed to be constructed by an Owner/Developer desiring to have Service extended beyond the limits of the District's existing System for acceptance and ownership by the District.

2.6 Any Other Term

Abbreviation not herein defined shall be defined as presented in the "Glossary – Water and Sewage Control Engineering", A.P.H.A., A.W.W.A., A.S.C.E., and F.W.S.A., latest editions.

Other capitalized terms used herein shall have the meaning provided for them in the District's Rules and Regulations.

ARTICLE 3 - CONSTRUCTION OF PROPOSED DISTRICT FACILITIES

3.1 General

3.1.1 Request for Extension of District Facilities

An Owner/Developer desiring to have Service extended beyond the limits of the District's existing System shall file a written facilities extension request and plan at the District's business office. Upon receipt of such request the District shall conduct a preliminary review of the proposed extension, and, if such extension is found to be in the best interests of the District, will provide comments and requirements to be incorporated into the design and construction of the facilities. The District shall have continuing authority to review the extension planning and construction and require such changes as deemed necessary for the protection and benefit of the District. Normally, during the preliminary review phase the pipeline sizing will be reviewed and oversize requirements, if any, established. After preliminary review, the Developer may proceed with the final design. It is noted that Potable and Non-Potable Water System extension and planning may also require approval by the relevant fire protection district; the Owner/Developer is responsible for obtaining these approvals as well as resolving any differences in design requirements imposed by the District.

3.1.2 Design/Installation/Construction

All Proposed District Facilities shall be designed, constructed, and installed in conformance with the standards set forth below and the applicable appended detail drawing(s).

All Proposed District Facilities are to be designed, constructed, and installed in accordance with all applicable local, state, and federal laws, policies, codes, rules, and regulations, as the same may be amended from time to time, generally accepted good construction practices and the minimum standards and details contained in these Facilities Construction and Technical Standards and the applicable appended detail drawing(s). The standards and details are provided for standardization purposes only, and represent minimum design standards and details which may require upgrading for specific applications.

3.1.3 Preliminary Design Procedures

Preliminary designs for Proposed District Facilities may be accomplished by the District or by a professional engineer registered in the State of Colorado, at the Developer's sole expense, as directed by the District. All preliminary plans and final designs must be prepared by or reviewed by the District's Engineer and approved by the

District's Manager or authorized representative. The District shall perform all inspections required by the District.

3.1.3.1 Drawings

Unless otherwise approved by the District, all design drawings shall be on 24" x 36" mylar, using ink for all background information and permanent pipeline work. The drawing scale for area plans shall be 1" = 50'. The cover sheet for each drawing set shall have an approval block as required by the District. Additionally, a digital file of the same must be provided in PDF format.

Prior to the construction or installation of any Proposed District Facilities, the Developer shall submit design documents to the District for review and approval. Each construction drawing set shall have an "approval block" affixed thereto which provides for the signatures of the Manager or authorized representatives of the District, the District's Engineer, and the applicable fire protection district. Project review and approval by the applicable fire protection district are required only for water facilities.

3.1.4 Pipeline Sizing

Non-Potable Water, Potable Water distribution pipelines, sewer collection pipelines, and all related facilities shall be sized adequately to serve the property or properties for which they are designed. Where the distribution or collection lines also have a transmission function serving areas outside of the subject tract, as determined by the District, then the District may require that the lines be oversized to accommodate the anticipated needs of the District.

3.1.5 Location of District Facilities

All District Facilities shall be located within rights-of-way, parcels, easements, or other property interests approved by the District. Developer/Owner shall obtain and provide to the District, at no charge to the District, right-of-way, parcels, easements, or other property interests for the location of all Proposed District Facilities in a form acceptable to the District. Rights-of-way, parcels, easements, or other property interests shall be noted on all plans and submittals. No construction related to the Proposed District Facilities shall take place until the rights-of-way, parcels, easements, or other property interests required by this Section have been approved and accepted by the District.

Preliminary and final planning shall be such that adequate space and reservations for right-of-way, parcels, easements, or other property interests shall be made to allow for

the construction and maintenance of the Proposed District Facilities, as approved by the District in its sole discretion.

3.1.6 Final Design Procedures

Final design documents for Non-Potable Water, Potable Water, and Sewer System extension and planning may be accomplished by the District or by a professional engineer registered in the State of Colorado, at the Developer's sole expense, as directed by the District. Final design documents will be furnished to the District by the Owner/Developer for review and approval prior to any construction activities taking place. Final design drawings shall conform to the standards set forth in Section 3.1.3.1 of these Facilities Construction and Technical Standards.

The final design submittal shall include construction drawings, specifications, and other contract documents as required by the District. These documents shall be prepared by the Owner/Developer in a manner acceptable to the District. In all cases, the contract documents must be reviewed and approved by the District. Plan and profile drawings shall be on a horizontal scale of 1" = 50' (other scales may be accepted, as determined by the District Engineer). All elevations must be North American Vertical Datum 1988 (NAVD88) datum. Elevations of existing District Facilities shall be field verified in the final design.

All Mains must be installed in trenches containing no other utility conduits, except that the Owner/Developer may install subsurface drain lines in conjunction with the Sewer Mains when approved in advance by the District. The line type and depth of such installations shall be as determined by the District's Engineer. The topography and alignment of such rights-of-way shall be suitable for Main installation as determined by the District's Engineer.

Designs for Proposed District Facilities shall be submitted for review at least forty-five (45) days before approval is expected. Plans, specifications, and easements submitted for District approval must be complete and meet with the approval of the District. Design approvals are valid for 12 months from the date of District approval unless otherwise specifically noted in the approval. If construction is not substantially complete by that time, resubmittal of the plans may be required by the District and construction may not be continued without the District's approval.

3.1.7 Construction Phase

After all necessary approvals have been granted by the District, the Owner/Developer must have all Proposed District Facilities constructed in strict accordance with the District's approved design and inspected by the District.

The District will inspect to assure quality construction, installation, materials and practices, and conformity with the approved plans and specifications. The District will not perform or be responsible for other construction-related services (e.g., staking easement and/or line locations, measuring quantities, preparing pay estimates, and administrative or management-type relations with the contractor).

The Owner/Developer shall schedule a pre-construction conference on the job site with the District Engineer and/or Manager prior to construction. The Owner/Developer shall notify the District five (5) working days prior to beginning construction and thereafter keep the District informed of the construction schedule. No work may be covered, completed, or made inaccessible without the presence and approval of the District.

Construction staking shall be completed prior to the installation of the Potable Water, Non-Portable Water, and/or Sewer lines. All staking shall be kept in place throughout the installation of such lines. Staking shall include easement or right-of-way stakes and cut/offset stakes (50' max. spacing unless otherwise approved).

3.1.8 Costs

All Actual Costs, including, but not limited to, District costs and expenses related to Proposed District Facilities, including, but not limited to, Engineer/Inspector/Manager time or expenses, attorneys' fees, costs related to review and processing of a written facilities extension request and plan, costs related to review of preliminary and final designs and any costs for uncovering or accessing work that was not inspected and approved by the District prior to being covered shall be the sole responsibility of the Owner/ Developer.

3.1.9 As-Built Drawings

Accurate "as-built" drawings (sealed by a professional engineer) showing adequate dimensioned ties to surface features for all buried facilities to allow for future locating must be provided at the completion of work by the Owner/Developer. "As-built" drawings shall furnish information in a manner similar to the applicable appended detail drawing(s). The District or its Engineer shall be provided with three sets of "as-built" drawings, one set of "as-built" drawings as CAD files on flash drive, one set of GIS shapefiles on flash drive, and one set of printed drawings on 24" x 36" mylar, using ink for all background information and permanent pipeline work. The drawing scale for area plans shall be 1" = 50'.

3.1.10 Inspection, Approval, and Acceptance of District Facilities

Upon completion of construction of facilities constructed by the Owner/Developer, the Owner/Developer may apply to the District for initial acceptance and inspection of such facilities and later final acceptance of such facilities as provided in Section 4.2.4 of The District Rules and Regulations.

3.1.11 Operation and Maintenance

The District shall be responsible for the maintenance, operation, repair, and replacement of the District Facilities as provided in Section 4.2.5 of The District Rules and Regulations. The maintenance, operation, repair, and/or replacement of all other facilities are the sole responsibility of the Owner/Developer.

3.2 Potable Water System

3.2.1 Design/Sizing

Potable Water Mains shall be designed to meet the most stringent of the following two conditions:

- Maximum hourly demand with pressures not less than 40 psi at any point of the distribution system, or
- Maximum daily demand rate plus fire flow demand (as determined by ISO guidelines) with delivery pressures of not less than 20 psi at the hydrant.

The normal minimum size Potable Water Main shall be a minimum of 8" for short looped lines in single-family residential areas.

Potable Water Main sizing and connections shall be reviewed with the District Engineer prior to final detailing and drafting. The systems shall be designed to maximize interconnections and strengthening of the District's Potable Water System. Where certain lines may also have a transmission function, in the opinion of the District, the District may direct that such lines be oversized, and the Developer's Engineer shall so design the system.

Potable Water pipelines shall have a minimum cover of four and one-half (4.5) feet. Potable Water pipelines shall not be placed deeper than 8 feet without approval by the District.

Regulations normally require a 10-foot minimum horizontal separation between Potable Water Mains, Non-Potable Water Mains, and Sewer Mains. When located in public streets, Potable Water pipelines shall normally be located as shown in the applicable appended detail drawing(s). Whenever a crossing must occur where a Non-Potable Water Main or Sewer Main passes within 10 feet horizontally of a Potable Water Main, and where the Potable Water Main is not at least 24" vertically clear above the

Non-Potable Water Main or Sewer Main, special construction will be required in accordance with the applicable appended detail drawing(s).

3.2.2 Pipeline Material

All Potable Water Mains 16" and smaller shall be Blue C900 PVC with hub joints. Bore lines and lines over 16" will be HDPE. HDPE will be wrapped in blue wrap and tracer wire for identification purposes. All fittings will be approved by the District.

3.2.3 Buried Valves

Valves 12" and smaller shall be non-rising stem, bronze mounted gate valves with mechanical joint ends conforming to AWWA C500. Valves shall have 2" square operating nuts and open left (counterclockwise rotation). Valves shall be Muelleror approved equal. All valves on Potable Water Mains that are deeper than 4.5' from the surface shall have risers installed to bring the valve nut to within 4.5' of the surface.

3.2.4 Valve Boxes

Each buried valve shall be provided with a cast iron valve box and round cover. The box shall have a minimum inside diameter of 5¼" and be adjustable in length and of the screw type. The word "WATER" shall be cast on the cover. Valve boxes shall be Tyler, Clow, or approved equal. Valve boxes shall allow for at least 3" additional extension above the level required for the final grade at the time of installation. All valves in the system must be open-left. Open-right valves will not be allowed.

3.2.5 Pipeline Installation

Potable Water pipelines shall be installed in a thorough and workmanlike manner in accordance with the design documents that have been approved by the District. The minimum bedding and backfill requirements for pipelines and appurtenances shall be as shown on the appended detail drawing W-7 and W-8.

Tracer wire installation: direct burial #12 AWG Solid (0.0808" diameter), steel core soft drawn tracer wire, 250# average tensile break load, 30 mil high molecular-high density polyethylene jacket complying with ASTM-D-1248, 30 volt rating. Color shall be "blue" for domestic water (potable) pipelines and "purple" for raw water (non-potable) pipelines. Manufactured by Copperhead Industries part number 1230-SF, or approved equal.

All Potable Water pipeline fittings (i.e. bends, tees, plugs, and caps) shall be installed with concrete thrust blocks adequately designed for the specific application. Thrust blocks shall be cast-in-place from concrete having a minimum compressive strength of 3,000 psi. Alternate means of thrust restraint may be considered and approved for use where proven to provide similar restraint. Supplemental restraint may also be used where the Engineer believes the soil bearing pressures to be inadequate, or is concerned about subsequent movement.

3.2.6 Fire Hydrants

Fire hydrants shall be located as required by the District and as approved by the relevant fire protection district. The Owner/Developer shall be required to obtain the approval from the relevant fire protection district for fire hydrant locations. Fire hydrants shall be installed in accordance with the applicable appended detail drawing(s).

Fire hydrants shall be of the dry barrel type and conform with AWWA C502. Hydrants shall have a 5¼" main valve, two 2½" hose connections, and one 4½" pumper connection. Hydrants shall have 6" mechanical joint connections and a safety traffic flange. Fire hydrants shall be Mueller Centurion No. A-423 and painted yellow. Fire hydrants in the system must be open-left.

3.2.7 Air Relief and Vacuum Relief Valves

Air/Vac relief valve will be placed at high points in the main line as deemed necessary by the District Engineer.

3.2.8 Pressure Testing

All finished Potable Water pipelines, after reaction blocking is in place, shall be pressure and leakage tested at not less than 150 psi.

No Potable Water pipeline installation will be acceptable until the leakage is less than the amount computed by the following formula:

$$L = \frac{SD(P)^{0.5}}{133{,}200}$$

L = Allowable leakage in gallons (per hour)
S = Tested length of pipe (feet)
D = Nominal diameter of pipe, inches
P = Average Test pressure during the test, psi

3.2.9 Disinfection

All Potable Water pipeline shall be disinfected in accordance with AWWA C601 after all construction work has been completed. Chlorine shall be added to the water at the necessary locations in the amount to form a 50 ppm free chlorine residual. The Chlorine solution shall be left in the Potable Water pipelines for not less than 24 hours, during which time all valves and fire hydrants shall be operated in order to disinfect the appurtenances. After that length of time, the chlorine residual of the solution, at any place in the Potable Water System, shall not be less than 10 ppm. All chlorination work must be done under the supervision of the District. At the end of 24 hours, a bacteriological test is to be performed by the District to ensure adequate disinfection. Disinfection water will then be removed and dechlorinated prior to the final connection.

3.2.10 Sample Stations

Sample stations will be required every 3,000 feet and at each dead end.

3.2.11 Blow-offs

Blow-offs will be required at each dead end and will be a Mueller fire hydrant or an auto flush blow-off if approved by the District.

3.3 Non-Potable Water System

The minimum standards for Non-Potable Water Systems shall be similar to those given in Section 3.2 of these Facilities Construction and Technical Standards for Potable Water Systems except as otherwise provided in this Section 3.3.

3.3.1 Design/Sizing

Non-Potable Water Main sizing shall be to deliver not less than 40 psi dynamic pressure and not less than 8" at the Non-Potable Water Main during peak flow rate (demand) conditions. The Non-Potable Water System will not be designed to provide any fire protection flows.

3.3.2 Pipeline Materials

Non-Potable Water pipeline shall be purple and shall conform with AWWA C900, 150 minimum pressure class (for 12" and smaller PVC mains). Bore lines and 12" or larger will be HDPE. HDPE will be wrapped in purple wrap for identification.

3.3.3 Valve Boxes

Each buried valve shall be provided with a cast iron valve box and triangular cover. The box shall have a minimum inside diameter of 5¼" and be adjustable in length and of the screw type. The word "IRRIG" shall be cast on the cover. Valve boxes shall be Tyler, Clow, or approved equal. Valve boxes shall allow for at least 3" additional extension above the level required for final grade at the time of installation.

3.3.4 Pipeline Installation

Non Potable Water pipelines shall be installed in a thorough and workmanlike manner in accordance with the design documents that have been approved by the District. The minimum bedding and backfill requirements for pipelines and appurtenances shall be as shown on the appended detail drawing W-7 and W-8.

Tracer wire installation: direct burial #12 AWG Solid (0.0808" diameter), steel core soft drawn tracer wire, 250# average tensile break load, 30 mil high molecular-high density polyethylene jacket complying with ASTM-D-1248, 30 volt rating. Color shall be "blue" for domestic water (potable) pipelines and "purple" for raw water (non-potable) pipelines. Manufactured by Copperhead Industries part number 1230-SF, or approved equal.

All Non Potable Water pipeline fittings (i.e. bends, tees, plugs, and caps) shall be installed with concrete thrust blocks adequately designed for the specific application. Thrust blocks shall be cast-in-place from concrete having a minimum compressive strength of 3,000 psi. Alternate means of thrust restraint may be considered and approved for use where proven to provide similar restraint. Supplemental restraint may also be used where the Engineer believes the soil bearing pressures to be inadequate, or is concerned about subsequent movement.

3.3.5 Warning Notification

All Non-Potable Water pipelines shall be installed with warning tapes or with the warning printed directly onto the pipeline and 10GA coated copper tracer wire. Warning tapes shall be installed directly on top of the pipeline longitudinally and shall be centered. The tracer wire shall be taped to the pipeline. Acceptable tape or printing directly on the pipeline shall state: "NON-POTABLE LINE – DO NOT DRINK."

3.3.6 Fire Hydrants

Non-potable fire hydrants shall be of the dry barrel type and conform with AWWA C502. Hydrants shall have a 5¼" main valve, two 2½" hose connections, and one 4½" pumper connection. Hydrants shall have 6" mechanical joint connections and a safety traffic flange. Fire hydrants shall be Mueller Centurion No. A-423 and painted purple. These hydrants will be installed every 2,000 feet. A 3' clearance will be maintained around all hydrants. A typical fire hydrant installation is attached as appended detail drawing W-5 and W-53.

3.3.7 Air Relief and Vacuum Relief Valves

Air/Vac relief valve will be placed at high points in the main line as deemed necessary by the District Engineer.

3.3.8 Blow-offs

Blow-offs will be required at each dead end and will be a Mueller fire hydrant painted purple or an auto flush blow-off if approved by the District. A typical blow-off installation is attached as appended detail drawing W-9A.

3.4 Sewer System

3.4.1 Design/Sizing

Sewer System design is intended to provide for all gravity services as provided by the District. Sewage flows shall be directed to the Sewer Main having capacity as directed by the District. Sewage lift stations will not be permitted unless specifically authorized by the District.

Sewers Mains shall be designed to carry not less than the projected peak flow rates flowing half full (safety factor = 2.0), unless otherwise approved by the District. The minimum size Sewer Main shall be 8" in diameter.

Sewer Mains shall generally be designed with sufficient depth to serve basements by gravity. The minimum cover for a Sewer Main shall be 6" from the top of the Sewer Main to the finished grade.

Manholes shall be located at a maximum spacing of 500' center-to-center and also at changes in Sewer pipeline alignment and/or grade and at the end of each Sewer line. Sewer Mains shall be laid with a uniform slope between manholes at a minimum of .33% slope. Sewer Mains shall be so designed and constructed to give mean velocities, when flowing at its design flow rate, of not less than 2' per second.

3.4.2 Pipeline Materials

Sewer pipe and fittings shall be PVC, SDR 35 minimum thickness conforming to ASTM D3034. Joints shall be of the "slip on" type with an integrally cast bell having an elastomeric gasket. Sewer pipe shall be green in color.

3.4.3 Manholes

Manholes shall be precast concrete units conforming with ASTM C-478. Manholes shall have a minimum inside diameter of 4'. Manholes shall be constructed and installed in accordance with the applicable appended detail drawing(s). All manholes shall be coated to protect against groundwater intrusion.

3.4.4 Manhole Covers

Manhole frames and covers shall be cast iron with the word "SEWER" cast on the cover. The frame shall provide a minimum clear opening of 24".

3.4.5 Pipeline Installation

All Sewer Mains and pipelines shall be installed in a thorough, workmanlike manner in accordance with the design documents that have been approved by the District. The minimum bedding and backfill requirements shall be in accordance with the appended detail drawing S-13 and S-14.

Where required for structural reasons or to protect Potable Water pipelines, the Sewer Main and pipelines shall be encased in reinforced concrete having design characteristics not less than those shown on the appended detail drawing S-22.

3.4.6 Underdrains

The District does not permit underdrains to be installed with the Sewer lines.

3.4.7 Flushing and Testing

The following testing procedures are intended to determine if the Sewer line(s) meet the District's minimum quality standards. Alternative procedures meeting or exceeding the intent of these procedures, as determined by the District, are acceptable. In any case, however, alternative testing procedures must be included in the design plans and specifications. The Owner/Developer shall notify the District – no less than 48 hours prior to the desired test time. The District will have final say on the time and date

that the testing will be performed. The District may elect, in its sole discretion, to witness all tests and verify the accuracy and acceptability of the equipment utilized. The District will inform the Owner/Developer regarding acceptable methods of repair in the event one or more sections fail to pass any test.

3.4.7.1 Pipeline Flushing

The Owner/Developer shall flush the pipelines, as the work progresses by means that are in accordance with good practice, to ensure that earth, sand, rocks, or other foreign materials are removed from the interior of the pipeline.

3.4.7.2 Alignment and Grade

Pipelines will be checked by the District to determine whether any displacement of the pipe has occurred after the trench has been bedded. The test will be as follows:

A Camera inspection of the interior pipes must be performed by the Owner/Developer. A video copy of the inspection must be provided to the District for review. If the review shows poor alignment, displaced pipe, earth, or other debris in the pipe, or any other kinds of defects, the defects, determined by the District, shall be remedied by the Owner/Developer. The test will be repeated following completion of backfilling and any poor alignment, displaced pipe, or other defects, determined by the District, shall be corrected at the Owner/Developer's expense.

3.4.7.3 Leakage

Tests for water tightness shall be made by the Owner/Developer in the presence of the District representative. The Owner/Developer shall provide assistance to the District in the development of a detailed record of the testing program. The sewer and connections shall not leak in excess of the following rate for a 24-hour test period:

MAXIMUM ALLOWABLE SEWER LEAKAGE

Pipe Size Inches	Leakage Gal/Foot/24 Hours
18	0.68
15	0.57
12	0.45
10	0.38

8	0.30

Each reach of pipeline between manholes shall be tested individually. Any individual reach that leaks in excess of the amount allowed in the previous paragraph shall be considered as failing, and shall be repaired and retested.

At the discretion of the District, the time for the leakage rate test may be shortened to four (4) hours.

The tests and measurement of infiltration or exfiltration shall be conducted in a manner as approved by the District. The Owner/Developer shall repair the sewer in a manner that is satisfactory to the District and re-test until satisfactory tightness is obtained.

Infiltration tests in addition to a low-pressure air test will be used if the groundwater table is 1' or more above the finished sewer. Otherwise, exfiltration tests will be used. The minimum head for the exfiltration tests shall be 2' above the top of the pipe at its highest point in the test section. Sections shall be bulk-headed so that during any test the head on the sewer at its lowest elevation will not be more than 10'.

3.4.7.4 Low-Pressure Air Test

At the option of the Owner/Developer, low-pressure air testing of the installed Sewer pipe may be used instead of the leakage exfiltration test. The following criteria and procedure shall be utilized otherwise approved by the District:

- Plug Restraint. It is extremely important and essential that all plugs be installed and braced in such a way that blowouts are prevented. It is recommended that every plug be positively braced and that no one be allowed in the manhole adjoining a line being tested so long as pressure is maintained in the line.

- Relief Valve. All pressurizing equipment used for low-pressure air testing shall include a regulator or relief valve set no higher than 9 psig to avoid over-pressurizing and displacing temporary or permanent plugs. As an added safety precaution, the pressure in the test section should be continuously monitored to make certain that it does not at any time exceed 9 psig.

- Plug Design. Either mechanical or pneumatic plugs may be used. All plugs shall be designed to resist internal testing pressures without the aid of external bracing or blocking. However, the Owner/Developer should internally restrain or externally brace the plugs to the manhole wall as an added safety precaution throughout the test.

- Singular Control Panel. To facilitate test verification by the inspecting Engineer, all air used shall pass through a single, above-ground control panel.

- Equipment Controls. The above-ground air control equipment shall include a shut-off valve, pressure regulating valve, pressure relief valve, input pressure gauge, and a continuous monitoring pressure gauge having a pressure range from 0 to at least 10 psi. The continuous monitoring gauge shall be no less than 4" in diameter with minimum divisions of 0.10 psi and an accuracy of ±0.04 psi.

- Separate Hoses. Two separate hoses shall be used to: (1) connect the control panel to the sealed line for introducing low-pressure air, and (2) a separate hose connection for constant monitoring of air pressure build-up in the line. This requirement greatly diminishes any chance of over-pressurizing the line.

- Pneumatic Plugs. If pneumatic plugs are utilized, a separate hose shall also be required to inflate the pneumatic plugs from the above-ground control panel.

- Laterals, Stubs, and Fittings. During Sewer construction, all service laterals, stubs, and fittings into the sewer test section shall be properly capped or plugged so as not to allow for air loss that could cause an erroneous air test result. It may be necessary and is always advisable to restrain gasketed caps, plus or short pipe lengths with bracing stakes, clamps and tierods, or wire harnesses over the pipe bells.

- Plug Installation and Testing. After manholes have been tested for alignment and grade, and a manhole-to-manhole reach of pipe has been backfilled to final grade and prepared for testing, the plugs shall be placed in the line at both manholes and secured. It is advisable to seal test all plugs before use. Seal testing may be accomplished by laying one length of pipe on the ground and sealing it at both ends with the plugs to be checked. The sealed pipe should be pressurized to 9 psig. The plugs shall hold against this pressure without bracing and without any movement of the plugs out of the pipe. No persons shall be allowed in the alignment of the pipe during plug testing. The upstream end of the line shall be plugged first to prevent any upstream water from collecting in the test line.

- Line Pressurization. Low-pressure air shall be slowly introduced into the sealed line until the internal air pressure reaches 4.0 psig.

- Pressure Stabilization. After constant pressure of 4.0 psig is reached, the air supply shall be throttled to maintain that internal pressure for at least 2 minutes. This time permits the temperature of the entering air to equalize with the temperature of the pipe wall.

- Timing Pressure Loss. When temperatures have been equalized and the pressure stabilized at 4.0 psig, the air hose from the control panel to the air supply shall be shut off or disconnected. The continuous monitoring pressure gauge shall then be observed while the pressure is decreased to no less than 3.5 psig. The timing pressure loss test shall ten commence at a pressure reading of 3.5 psig, or any convenient observed pressure reading between 3.5 psig and 4.0 psig (except as adjusted for groundwater as follows).

- Air Pressure Adjustment. An air pressure correction, which must be added to the 3.5 psig normal test starting pressure, shall be calculated by dividing the average vertical height, in feet of groundwater above the invert of the sewer pipe to be tested, by 2.31. The result gives the air pressure correction in pounds per square inch to be added. (For example, if the average vertical height of groundwater above the pipe invert is 2.8', the additional air pressure above the pipe invert is 2.8 divided by 2.31 or 1.2 psig. This would require a minimum starting pressure of 3.5 plus 1.2 or 4.7 psig). The allowable pressure drop of 1.0 psig and the timing in Table I are not affected and shall remain the same. In no case, however, should the starting test pressure exceed 9.0 psig.

- Determination of Success. If the time shown in Table I for the designated pipe size and length elapses before the air pressure drops 1.0 psig, the section undergoing the test shall have passed.

TABLE I

SPECIFICATION TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q = 0.0015

1 Pipe Diameter (in)	2 Minimum Time (min) (sec)	3 Length For Minimum Time (ft)	4 Time For Longer Length (sec)	100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
4	3:46	597	.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41

3.4.7.5 Deflection

All PVC Sewer pipelines shall be tested for vertical deflection after placement and compaction of backfill unless testing is specifically excepted by

the District. Method testing shall be by deflectometer of the rigid GO/No-GO type device. An alternative method will be permitted only by the written permission of the District. Maximum allowable deflection shall be five (5) percent of the pipe diameter. Any and all pipe with vertical deflection greater than the allowable shall be excavated, removed from the pipeline, replaced, backfilled, and compacted as specified and retested.

3.4.8 Testing Manholes

During the construction of the manholes, the Owner/Developer shall, in accordance with good practice, ensure that no earth, sand, rocks, or other foreign material exists on the joint surface during the assembly of the sections. The District shall check each manhole to determine whether the manhole fulfills the requirements of the District approved detail drawing S-11.

3.4.8.1 Visual Examination

The District shall visually check each manhole, both exterior, and interior, for flaws, cracks, holes, or other inadequacies which might affect the operation or watertight integrity of the manhole. Should any inadequacies be found, the Owner/Developer shall make any repairs deemed necessary by the District.

3.4.8.2 Leakage Test

All manholes shall be tested for leakage and all tests shall be witnessed by the District. The leakage test shall be conducted prior to backfilling around the manhole and shall be carried out in the following manner:

- All lines leading into or out of the manhole shall be tightly plugged.

- The manhole shall be filled with water to a level at least 2" above the uppermost step. The water shall be allowed to stand for two hours to allow for normal water absorption into the manhole material. At the end of the two-hour stabilization period, if the water level in the manhole has dropped below the top step, additional water will be added to bring the level above the step as before. Any visible external leakage or drop in water level noted within the one-hour test period shall constitute failure and the Owner/Developer shall repair or replace the defective work and retest.

ARTICLE 4 - CONSTRUCTION OF SERVICE LINES

4.1 General

4.1.1 Design/Installation/Construction

All Service Lines shall be designed, constructed, and installed in conformance with the standards set forth below and the applicable appended detail drawing(s).

All Service Lines are to be constructed in accordance with all applicable local, state, and federal laws, policies, codes, rules, and regulations, as the same may be amended from time to time, generally accepted good construction practices, and the minimum standards and details contained in these Facilities Construction and Technical Standards and the applicable appended detail drawing(s). The standards and details are provided for standardization purposes only, and represent minimum design standards and details which may require upgrading for specific applications.

The District may, at its sole discretion, oversee the installation of Service Lines prior to the commencement of Service.

4.1.2 Sizing

All Service Lines and all related facilities shall be sized adequately to serve the structure or structures for which they are designed. The sizing of Service Lines shall be the responsibility of the Owner/Developer. When requested by the District, the Owner/Developer shall, at the Owner/Developer's expense, furnish data, plans calculations, or other information as required by the District for the evaluation of the Service Line size.

4.1.3 Location

All Service Lines shall be primarily located on property owned by the Owner or Developer with the portion (near and at the point where the connection is made with the Main) located within rights-of-way, parcels, easements, or other property interests owned by the District.

All Service Lines shall be located in areas suitable for the type of Service Line to be installed.

Where Service Lines will be parallel or approximately parallel to a structural wall, the Service Line shall be at least 5' from such wall. Penetrations through structures shall

be approximately at right angles and shall provide flexibility such that the Service Line will not be damaged by the settlement of the structures.

Service Lines shall have a 10' minimum of horizontal separation. Where this separation is impractical, the District may permit other separation requirements, in accordance with the Colorado Department of Health Standards.

4.1.4 Excavation, Bedding, and Backfill

All excavations for Service Line installations shall be adequately guarded with barricades and lights so as to protect the public from hazards per existing governmental requirements. Street, sidewalks, parkways, and other public or private property disturbed in the course of work shall be restored to their original condition in a manner satisfactory to the District.

The pipelines shall be bedded and backfilled in accordance with the applicable appended detail drawing(s).

All excavations required for the installations of Service Line shall be open-trench work unless otherwise approved by the District.

4.1.5 Costs

All Actual Costs, including, but not limited to, District Engineer/Inspector/Manager time or expenses related to inspection and review, attorneys' fees, and any costs for uncovering or accessing work that was not inspected and approved by the District prior to being covered shall be the sole responsibility of the Owner/ Developer. Time spent on infrastructure approval by the District and its consultants will be billed at $95 per hour to the developer.

4.1.5.1 Construction Deposit

A deposit of $10,000 will be paid to the District prior to construction and after design approval. This will be returned after all requirements are met and final acceptance is approved.

4.1.5.2 Water Costs

Water needed as part of the construction process shall be metered and will be charged at the current rate for bulk water. A District meter shall be rented from the District with a $2,000 deposit paid.

4.1.6 Inspection

Upon completion of the construction of Service Lines and prior connection to the Main, the Owner/Developer shall notify the District and allow for District inspection as provided in Section 3.1.10 of these Facilities Construction and Technical Standards. Service Lines shall not be connected to the Main until after the District's inspection and approval. The District may, at its sole discretion, oversee the connection of the Service Line to the Main.

4.1.7 Operation and Maintenance

The Owner shall be responsible for maintaining the Service Line and related appurtenances from the Main to the structure to which the Service Line is attached as provided in Section 4.4.1 of the District Rules and Regulations.

4.2 Potable Water Service Lines

4.2.1 Sizing

Sizing for Potable Water Service Lines shall be made in general conformance with AWWA Manual M11, "Sizing Water Service Lines and Meters".

4.2.2 Location

All Potable Water Service Lines shall be laid at uniform grade and in straight alignment so as to have a minimum cover of 4½ feet from the final finish grade. A reference mark shall be placed on the curb above the Potable Water Service Line.

4.2.3 Pressure Regulating and Relief Valves

All Potable Water Service Lines shall be equipped with a line-pressure regulating valve – except in areas specifically exempted by the District's Engineer. Pressure regulating valves shall be upstream of all connections to the Potable Water Service Line. Installation of the pressure regulating valves must be located inside of the home and be the first item on the service line as it enters the home. The pressure regulating valve shall be set as directed by the Owner/Developer.

A water pressure relief valve shall be installed in the internal water system of every property served by the District. The water pressure relief valve shall be provided with a discharge outlet line to a drain in any areas where unregulated water discharge could cause damage.

4.2.4 Pipeline Material

4.2.4.1 Potable Water Service Line Pipeline

The Potable Water Service Line pipeline shall be ADS Potable Water Service Tubing (CTS) pipe SDR 9 and meet the requirements of ASTM D2737, AWWA C901, and NSF Standards 14 and 61. Pipe dimensions shall meet Copper Tubing Size (CTS) standards, unless otherwise specifically approved by the District. Fittings shall be brass or copper alloy. Stiffener fitting McDonald 6133T or similar must be used at all connections. No more than one coupling shall be installed in service lines.

4.2.4.2 Corporation Stops

Corporation stops shall be used for the connection of the Potable Water Service Line (2" and smaller) to the Potable Water Main. Corporation stops shall be brass and conform with AWWA C800. The inlet shall be standard AWWA corporation stop inlet thread and the outlet shall be compatible with SDR 9 service line. Corporation stop must be produced by McDonald or Ford, or an approved equivalent.

4.2.4.3 Curb Stops

Curb stops shall be placed on the inlet side of the meter pit for all Potable Water Service Lines 2" and smaller. Curb stops shall be brass and conform with AWWA C800. Curb stops shall be McDonald 76100-22 or approved equal. A reinforcement brick or concrete block must be installed at the base of the curb stop for reinforcement. The minimum depth is 4.5 ft. Curb stops may never be located in a drive-way.

4.2.4.4 Service Saddles

All Potable Water service taps shall be made with a Ford double strap all brass or approved equal.

4.2.5 Meters

4.2.5.1 Location

The water meter shall be placed in accordance with the applicable appended detail drawing(s). Unless otherwise approved by the District, all water meters shall be housed in an exterior meter pit in accordance with the applicable appended detail drawing(s). Meters pits are required to be located within the owner's property line.

4.2.5.2 Meter Material

All potable meters 2" and smaller shall be bronze case Sensus. Meters larger than 2" size shall be as approved by the District Engineer; normally Sensus compound type meters will be selected. All meters shall be provided by the District at the Owner/Developer's expense.

4.2.5.3 Meter Pits

For ¾" and 1" meters, pits shall have a circular reinforced barrel, as approved in advance by the District. The setting shall consist of a lower bell section with opening at the bottom to allow for entrance/exit of the service line. Barrel sections shall fit together allowing no visible gaps and the top section shall be shaped for placement of the meter box cover. Adjustable grade rings shall be of reinforced concrete or cast iron.

For 1½" and 2" meters, 48" or larger precast concrete manhole sections (conforming to ASTM C478) may be used per the applicable appended detail drawing(s). Larger size meter vaults shall be as approved by the District Engineer.

4.2.5.4 Meter Pit Covers

For ¾" and 1" meters, covers shall be constructed of cast iron with rubber or plastic inner frost lid. The top lid shall be of cast iron with a worm type lock operated by a pentagon head. The lid and cover shall be Ford Wabash No. W3 or approved equal.

For larger meter installations, the meter cover shall be Cast Iron 24X20 with a recessed port for meter transmitter.

4.2.5.5 Meter Settings

All ¾" and 1" meters shall be set with a copper setter having an internal angle curb valve on the inlet side. Yokes shall be Ford 80 series or approved equal. Meters larger than 1" shall have (sealed) valved bypasses and be set in accordance with the detail given or as approved by the District.

4.2.6 Installation

Potable Service Lines shall be buried with an average cover of 4.5 feet and an absolute minimum cover of 4.0 feet. The Potable Water Service Lines shall not be installed closer than 10" horizontally to the Non-Potable Water Service Lines or Sewer Service Line. Tracer line is required from the main to the curb stop and from the curb stop to the house and will be acessable into a locate box located by the curb stop. Warning tape must be installed 18" above service line from main to home.

4.3 Non-Potable Water Service Lines

4.3.1 Sizing

Sizing for Non-Potable Water Service Lines shall be made in general conformance with AWWA Manual M11, "Sizing Water Service Lines and Meters".

4.3.2 Location

All Non-Potable Water Service Lines shall be laid at uniform grade and in straight alignment so as to have a minimum cover of 4½ feet from the final finish grade. A reference mark shall be placed on the curb above the Non-Potable Water Service Line.

4.3.3 Pressure Regulating and Relief Valves

All Non-Potable Water Service Lines shall be equipped with a line-pressure regulating valve – except in areas specifically exempted by the District's Engineer. Pressure regulating valves shall be upstream of all connections to the Non-Potable Water Service Line. Installation of the pressure regulating valve in the meter pit is acceptable if the pit and piping are designed to permit convenient servicing of the meter. The pressure regulating valve shall be set as directed by the Owner/Developer. A water pressure relief valve shall be installed in the internal water system of every property served by the District. The valve shall be provided with a discharge outlet line to a drain in any areas where unregulated water discharge could cause damage.

4.3.4 Pipeline Material

All Non-Potable Water Service Lines shall be of Purple plastic materials, as follows:

Three-fourths inch through 2" size shall be Purple polyethylene, non-jointed, conforming to AWWA C901, minimum Class 160 psi, using PE 2306, 3306, and 3406 material.

Pipes larger than 2" shall be Purple PVC. Three inch size shall be Purple ASTM D2241 SDR 21, Class 200 psi. Larger sizes shall be Purple AWWA Class 150 AT\STM C900.

4.3.5 Warning Notification

All Non-Potable Water Service Lines shall be installed with warning tapes or with the warning printed directly onto the pipe. Warning tapes shall be installed directly on top of the pipe longitudinally and shall be centered. Acceptable tape or printing directly on the pipe shall state: "NON-POTABLE LINE – DO NOT DRINK."

4.3.6 Meters

Three-fourths inch and 1" non-potable water meters shall be installed as shown on the applicable appended detail drawing(s).

All non-potable water meters shall be provided by the District at the Owner/Developer's expense.

The non-potable water meter pit cover shall have a large embossed triangle and the words "NON-POTABLE – DO NOT DRINK" cast integrally.

4.3.7 Yard Hydrants and Irrigation Connection

A yard hydrant or hose connection is required to be installed in the front of the home to be used for irrigation with a hose.

4.3.8 Installation

Non-Potable Water Service Lines shall be buried with an average cover of 4.5 feet and an absolute minimum cover of 4.0 feet. The Non-Potable Water Service Lines shall not be installed closer than 10" horizontally to the Potable Water Service Lines or Sewer Service Line. No Non-Potable Water Service Lines shall be installed inside a building or within 5 feet of a building foundation or in the driveway. A marking tape with the words 'NON-POTABLE LINE – DO NOT DRINK" shall be installed just above the pipe. If

the non-potable water meter is not installed at the time of Non-Potable Water Service Lines installation in the right-of-way, a 1½" black PVC or ABS marker pipe, 6 feet long, shall be installed vertically at the end of the Non-Potable Water Service Lines as a marker. Tracer line is required from the main to the curb stop and from the curb stop to the first valve box and will be accessible in a locate box next to the Stop-And-Waste.

4.4 Sewer Service Lines

4.4.1 Sizing/Capacity

The size and slope of the Sewer Service Lines shall be subject to the approval of the District, but in no event shall the diameter be less than 4". Minimum grade and slopes shall be as follows:

4"	2.00%
6"	1.00%
8"	0.60%

4.4.2 Connection to the Sewer Main

Unless otherwise approved by the District, pre-installed wye fittings shall be used for the connection of the Sewer Service Line to the Sewer Main. If approved by the District, the connection of the Sewer Service Line to the Sewer Main shall be made as follows: If the Sewer main is 12" in diameter or less, the Owner/Developer shall, at his expense, install a saddle on up to 8" branches in the Sewer Main. Where the Sewer Main is greater than 12" in diameter, a neat hole may be cut into the Sewer Main, with an entry in the downstream direction at an angle of 45 degrees. The use of saddles is mandatory.

4.4.3 Location

All Sewer Service Lines shall be laid horizontally as desired by the Owner/Developer, and approved in advance by the District, at grade to accommodate a 2 feet/second flow and so as to have a minimum separation of 10' between the Sewer Service Line and the Potable Water Service Line and Non-Potable Water Service Line. A reference mark shall be placed on the curb above the Sewer Service Line.

4.4.4 Pipeline Material

The Sewer Service Line pipe shall be PVC, with a thickness not less than SDR 35. Sewer Service Line pipe shall be green.

4.4.5 Installation

The Sewer Service Line shall be water tight and on a constant grade in a straight line, and not closer than 5’ from any bearing wall.

Sewer Service Line cleanouts are required, and shall conform to the applicable appended detail drawing(s). Cleanouts are required for any significant change in Sewer Service Line direction and at intervals no greater than 100’.

ARTICLE 5 - OTHER FACILITIES

5.1 Construction of Grease and Other Interceptors

Plans for grease and other interceptors shall be submitted to the District and must be approved prior to interceptor installation. The cost of reviewing and approving such plans, and inspection and approval of the installation shall be charged to the Developer, Owner, or Customer.

All grease and other interceptors and pre-treatment facilities shall be located as to be readily available and accessible for cleaning, maintenance, and inspection and shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They shall be watertight, and, if necessary as determined by the District, gastight and vented.

5.2 Subsurface Drain Lines

Subsurface drains, where constructed around building foundations, shall be of white color PVC or black High Density Polyethylene (HDPE). Any subsurface drains installed in the same trench as the sanitary sewer shall be white color PVC.

ARTICLE 6 - EQUIVALENT RESIDENTIAL UNIT (EQR) SCHEDULES

6.1 EQR Schedules

Certain rates, fees, tolls, charges, and/or penalties of the District may be based on the EQR value assigned to the users of the District's System. The base for EQR schedules is an average detached single-family residence, or its equivalent.

TABLE 6.1
EQUIVALENT RESIDENTIAL UNIT (EQR) SCHEDULE –
WATER AND SEWER UTILITIES

Class of User	EQR
A. RESIDENTIAL CLASSIFICATIONS	
1. Single-family Residential Units (per each)	1.0
Single-family Homes, individually billed mobile homes, mobile homes on single lots, mobile homes established for permanent residences.	
Note: Subrental privileges of all kinds are prohibited.	
2. Multi-family Residential Units	
Apartments, condominiums, townhouses, and similar facilities in the same complex; all units intended for long-term rental or ownership.	
• Small sized unit. Shall not have more than one bedroom and one bathroom.	0.5
• Medium sized unit. Shall not have more than 2 bedrooms or 2 bathrooms.	0.75
• Large sized unit. Shall not have more than 3 bedrooms and 2½ bathrooms.	0.90
• Any larger single unit.	1.0

Class of User	EQR

3. Transient Residential Units

Hotels, motels, mobile home parks, dormitories and similar facilities.

Note: Includes: laundry facilities in mobile homes; swimming pools and laundry facilities (except those in mobile homes) are additive; room counts shall include rooms furnished to employees; each billing unit shall have a minimum of one Manager's unit.

a.	Manager's Unit (per each)	0.80
b.	Motels, hotels and rooming houses without kitchen facilities	
	- with not more than 2 bed spaces per room (per each rental room)	0.20
	- with more than 2 bed spaces per room (per each room)	0.35
c.	Motels with kitchen facilities	
	- with not more than 2 bed spaces per unit (per each rental unit)	0.3
	- with more than 2 bed spaces per unit (per each rental unit)	0.4
d.	Dormitories (per each rental bed space)	0.1
e.	Add for laundry facilities (or available hookup) in each building, % of total EQR served	20%
f.	Mobile Homes in Park – with laundry	0.80/space

B. COMMERCIAL CLASSIFICATION

- Minimum of one EQR for all restaurants, food counters, snack bars, coffee stands.

1. Restaurants and Bars
Restaurants, bars, lounges, banquet rooms, and drive-ins

a.	Restaurants and bars (per 10 seats)	1.0
b.	Banquet Rooms (per 10 seats)	.4

Class of User	EQR
c. Drive-ins (per car stall)	.3
d. Drive through take out service window	0.5

2. Commercial Buildings
   Office buildings, retail sales buildings, multiple use buildings, laundromats, service stations, shops, garages and similar facilities.

   Note: No process water will be allowed to enter the sewer.

a. Offices and office buildings (per 1,000 s.f. of gross floor area)	0.50
b. Retail sales area (per 1,000 s.f. of gross sales, display, storage and support areas)	0.30
c. Laundromats (per washing machine)	1.20
d. Service stations (a set of pumps is defined as 2 pumps regardless of the number of hoses)	
- first set of pumps	1.2
- each additional set of pumps (per set)	0.8
- add for each bay/rack where cars can be washed	1.4
e. Non-retail work areas such as garages, machine shops (per each 10 employees)	0.7
f. Movie theaters (per each 50 seats) and conference centers	1.0

C. CHURCH AND SCHOOL CLASSIFICATIONS

1. Churches (per 100 seats) 1.0
   Note: Rectories, social areas with kitchen facilities are additive

2. Schools
   Day care centers, public and private day schools
   Note: Includes teachers, librarians, custodians and administrative personnel associated with the school function; administrative centers, warehouses, equipment (such as buses) repair and/or storage centers, swimming pools and similar facilities are additive.

Class of User	EQR
a. Without gym and without cafeteria (per 50 students)	1.40
b. Without gym and with cafeteria or with gym and without cafeteria (per 50 students)	1.75
c. With gym and cafeteria (per 50 students)	2.10

D. MISCELLANEOUS CLASSIFICATIONS

1. Swimming pools and wading pools

Note: A permanent sign must be placed prominently at all pool filter installations stating that pools are not to be drained without permission from the District Manager, that pool draining rates will be subject to approval of the District, and that draining shall be limited to the hours determined by the District.

a. Private pools associated with single-family residential units (per 40,000 gallons of pool volume)	0.40
b. Pools associated with multi-family and transient residential units (per 40,000 gallons of pool volume)	0.80
c. Commercial and public pools. Total EQR to be computed from pool volume and per capita capacity as follows:	
• first 40,000 gallons of pool volume	1.05
• each additional 40,000 gallon capacity	0.75

2. Recreational Vehicle Waste Disposal Stations

The operator of the disposal facility shall provide a means acceptable to the District of counting the number of times the disposal facilities are used.

The District shall review and approve charges made to users of dumping facilities by facility owners; no Tap fees will be assessed for camper dump facilities, and the District reserves the right to cease service to such facilities at any time.

Class of User	EQR
3. Medical Hospital	
Note: Includes staff and administrative personnel associated with the hospital function.	
• per bed	0.60
4. Public Restrooms (per toilet or urinal)	0.20

E. OTHER CLASSIFICATIONS

Equivalents shall be established on an individual basis for all users other than those identified in Classifications A, B, C, and D above. Industrial users will be subject to the requirements of the Environmental Protection Agency as those requirements pertain to assessment of users charges and cost recovery (refer to 40 C.F.R., Section 25 (1987)).

F. GENERAL NOTES

1. Each Customer of the system will be charged a minimum of 1 EQR for purposes of establishing fixed costs.