



SIDE SEWER SPECIFICATIONS

General Construction

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7.10.010 DEFINITION OF TERMS.

Words and phrases used herein, unless the same shall be contrary to or inconsistent with the context, shall be defined as follows:

- a. "B.O.D." (denoting biochemical oxygen demand) means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five days at 20 degrees centigrade, expressed in parts per million by weight.
- b. "Cover" means the depth of the material lying between the top of the sewer pipe and the finished grade immediately above it.
- c. "District" means Cross Valley Water District of Snohomish County, Washington.
- d. "Down spout" means the leader of pipe above ground which is installed to conduct water from the roof gutter.
- e. "Drain" means any conduction of waste or surplus liquids.
- f. "Garbage" means solid waste from the preparation, cooking, and dispensing of food and from the handling, sale, and storing of produce.
- g. "General manager" means the general manager of the Cross Valley Water District or their authorized agent representative.
- h. "Gravity side sewer" is a pipe or conduit that carries sewage because the upstream end of the pipe or conduit is always equal to or above the District sewer line. The gravity side sewer must not have any pockets between the house or building drain and the District sewer line and must have the minimum slope specified herein.
- i. "Health officer" means the official responsible for the public health or their authorized representative.
- j. "House drain" or "building drain" means the pipe used for conveying sewage from the building to a point two and one-half feet outside the foundation wall and, if there be no foundation wall, to a point two and one-half feet beyond the outer line of any footing, piling, building support or porch under which it may run; whether such drain consists of one line extending from the building or of two or more such lines.
- k. "Industrial waste" means the wastes from industrial process as distinguished from sanitary sewage.
- l. "Inside side sewer" shall mean a conduit extending from the plumbing system of a structure to and connecting with a public or private sewer.

- m. "Licensed side sewer contractor" means a person qualified and competent to do work incidental to the construction or repair of side sewers under a permit issued under this chapter and licensed and bonded by the state of Washington under the provisions of Chapter 18.27 RCW.
- n. "Occupant" means any person or owner in physical possession of the building or structure to which sewer service is available.
- o. "Outside side sewer" (stub) means the extension from the public sewer to the property line.
- p. "Permit card" means a card issued in conjunction with any permit and such card shall be posted on the premises and shall be readily and safely accessible to the general manager.
- q. "Person" or "owner" means any individual, firm, company, association, society, corporation or group.
- r. "pH" means the logarithm of the reciprocal weight of hydrogen ions in grams per liter of solution.
- s. "Pressure side sewer" is a pipe or conduit that carries sewage under pressure from a sewage pump to the outside side sewer. The pressure side sewer must not have any high points (humps) between the pump and the outside side sewer.
- t. "Private sewer" means the sewer line and disposal system constructed, installed or maintained where connection with the public sewer system is not required herein.
- u. "Properly shredded garbage" means garbage that has been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particles greater than three-eighths inch in any dimension.
- v. "Public place" or "public area" means any space dedicated to or acquired for the use of the general public.
- w. "Public sewer" means a sewer in which all owners of abutting properties have equal rights and is controlled by public authority.
- x. "Sanitary sewer stubs" means the gravity flow section of pipe that is between the public sewer line and the property line or the edge of easement. This section is typically owned and operated by the District.
- y. "Secretary" means the secretary of the Board of Commissioners of the Cross Valley Water District.
- z. "Sewage" means the combination of the water-carried wastes from residences, business buildings, institutions, and industrial establishments, which wastes contain polluted matter subject to treatment at the sewage treatment plant; i.e., sanitary sewage.
- aa. "Sewer" means a pipe or conduit for carrying sewage.
- bb. "Sewer plat" means a plat issued by the District in conjunction with any permit and the plat shall serve as its record of all matters pertaining to said permit.

- cc. "Side sewer" means a gravity flow pipe connecting a building's wastewater system to the public sewer. For example, the section between the building and the property line or the edge of the easement. This section is typically owned and operated by the property owner.
- dd. "Suspended solids" means solids that either float on the surface of or are in suspension in water, sewage, or other liquids, and which are removable by filtering.

7.10.020 USE OF PUBLIC SEWER.

(1) It shall be unlawful for any person to place, deposit, or permit to be deposited in an unsanitary manner upon public or private property within the District, or in any area under the jurisdiction of the District, any human or animal excrement, garbage or other objectionable waste.

(2) The owner of each lot or parcel of real property within the District, upon which lot or parcel there is situated any building or structure for human occupancy or use of any other purpose, and whenever there is a public sewer line within 300 feet of the property line of such lot or parcel and said public sewer line is capable of serving the property, shall install suitable toilet facilities therein and shall connect such facilities, together with all other facilities therein the use of which results in the existence of sewage as defined herein, with the public sewer system at their own expense within 60 days of notice by the District that the public sewer line is available for serving such lot or parcel.

All property shall be deemed capable of being served by a gravity side sewer into the sewer lines of the District if the first floor plumbing of any building or structure located thereon can be served into the District sewer lines by gravity flow or by pumping provided the property served shall have direct access to the District's sewer line.

(3) Whenever a public sewer line shall be constructed or located within 300 feet of the property line of any lot or parcel of real property within the District upon which a building or structure for human occupation or use shall be situated, the owner thereof may be required to connect all of the sanitary plumbing facilities of such building or structure to the public sanitary sewer system of the District at such owner's expense, where in the opinion of the Board of Commissioners such connection is necessary for protection of the public health. All property shall be deemed capable of being served by a gravity side sewer into the sewer lines of the District if the first floor plumbing of any building or structure located thereon can be served into the District sewer lines by gravity flow, even though the basement drains of such building or structure cannot be served by gravity flow into the District sewer lines. All property shall be deemed capable of being served by a pressure side sewer into the sewer lines of the District if the first floor plumbing of any building or structure located thereon is less than 40 feet below the District's sewer line in front of the property. Pressure side sewer systems shall be provided in accordance with District Standards and have prior District approval.

(4) Whenever a public sewer becomes available to a lot or parcel served by a private sewage disposal system, a direct connection shall be made to the public sewer in compliance with this chapter, and any septic tanks, cesspools and similar private sewage facilities shall be abandoned, pumped and filled with suitable material per the local authority regulations or Washington State Department of Ecology and/or Health.

(5) In the event the side sewer and connection to the public sewer are not made within the time provided and in accordance with the rules and regulations of the State Board of Health, the general manager is hereby authorized and directed to cause the same to be made and file a statement of the cost thereof with the secretary of the District, and thereupon a warrant shall issue under the direction of the Board of Commissioners for the payment of such costs. Such amount, together with a penalty of 10 percent thereof, plus interest at the rate of 12 percent per annum upon the total amount of the cost and the penalty, shall be assessed against the property upon which side sewer and connection has not been placed as required and shall become a lien thereon.

(6) The type, capacities, location, and layout of a private sewage system shall comply with all recommendations and regulations of the Department of Health of the State of Washington, and of the regulations of the District. No septic tank or cesspool shall be permitted to discharge to any public sewer or natural outlet or to ground surface. The owner shall operate and maintain the private sewage disposal facilities in a sanitary manner at all times at no expense to the District.

(7) Any building hereafter constructed or made available for human occupation and use upon a lot or parcel of real estate capable of being served as defined in subsection (2) of this section shall, within 60 days after an application for a side sewer permit shall have been made, or prior to occupancy of said premises, whichever event first occurs, be connected to the sewer system of the District.

7.10.030 SIDE SEWER PERMIT REQUIRED.

(1) It shall be unlawful for any person to make any connection with any public or side sewer without complying with all of the provisions of this chapter in relation thereto and having first procured a permit to do so from the District.

(2) Application for the permit required by subsection (1) of this section shall be filed in the District office, stating the name of the owner, the correct address and proper legal description of the property to be served, dimensions and locations of any buildings on the property (scale, one inch = 200 feet – site plan), and the whole course of the side sewer from the public sewer to its connection with the building or property to be served. The application shall be submitted to the general manager for approval, who may change or modify the same and designate the manner and place in which such sewers shall be connected with the public sewer and shall endorse their approval upon the application if the same is acceptable to them. The general manager may require the owner to furnish plans pertaining to the application and issuance of the permit. Any connection charges shall be paid to the District, prior to issuance of a permit.

(3) Upon final approval of said application, the general manager shall issue for their own records an as-built drawing showing the size and location of the public sewer, the point of connection with the house or other building, the grade of such side sewer, and such other information as may be deemed pertinent.

(4) Upon approval of the application and issuance of the permit, it shall be unlawful to alter said permit or to perform any work other than is provided for in said permit.

(5) The general manager shall prepare and keep on file all records of sewer connections showing the information obtained in the course of inspection of completed work done under such permit.

(6) It shall be unlawful to construct, extend, relay, repair, fill or grade over or near, or to make connection to any side sewer without obtaining a permit from the District as hereinabove provided. The general manager may issue such permit to the owner or occupant of any property to construct, extend, relay, repair, fill or grade over or near, or make connections to any side sewer inside the property line; in such event, however, such owner or occupancy shall comply with the applicable provisions of this chapter, except that they need not employ a licensed side sewer contractor to do the work if he makes the installation themselves. The occupant or owner desiring to construct, extend, relay, repair, fill or grade over or near, or make any connections to any side sewer must execute an owner's hold harmless and license agreement provided by the District. However, should the owner or occupant employ another person to make the installation of the side sewer, it must be by a licensed side sewer contractor, and such contractor shall secure the permit but, in such event, the owner, occupant or other person shall lay no pipe pursuant to such permit.

(7) It shall be unlawful to make any connection to any public sewer, or to lay, repair, alter or connect any side sewer in any public area except by a side sewer contractor approved by the District.

(8) No licensed side sewer contractor shall break, alter, or tamper with any public sewer, except that they may connect to a wye or tee which exists for that purpose, under the supervision of the general manager, or their authorized representative.

(9) It shall be unlawful for any person, whether owner, occupant, or side sewer contractor, to leave unguarded any excavation made in connection with the construction or repair of any side sewer within 10 feet of any public place or fail to maintain the lateral support of any public place in connection with the construction, alteration, or repair of any side sewer.

(10) When a permit has been issued for a side sewer as herein provided, no work other than that covered by the permit shall be done without the approval of the general manager and may, if deems the additional work of sufficient consequence, require a new permit to cover the same.

(11) It shall be unlawful to disconnect any side sewer or remove any portion of a side sewer without securing a permit from the general manager to do so. The disconnected service shall be plugged at the property line to the satisfaction of the general manager. There will be no charge made for a permit to disconnect the side sewer.

7.10.040 OBTAINING SIDE SEWER PERMITS.

(1) Application for such permit shall be made on a printed form furnished by the District and the applicable permit fee and connection charge shall be paid by each applicant, which shall include one inspection, not to exceed one hour in length.

(2) The permit fee payable by each property owner seeking to connect to the District system of sewers shall be as follows:

Multiple dwelling, apartments	See Chapter 9.15 CVWDC
Trailer courts	See Chapter 9.15 CVWDC
Single-family residences	See Chapter 9.15 CVWDC

Commercial buildings, including schools, churches and all other nonresidential, nonindustrial use structures See Chapter 9.15 CVWDC

Industrial uses See Chapter 9.15 CVWDC

Revision permit (for extension or modification of existing side sewer) See Chapter 9.15 CVWDC

The District will charge for inspection time that is over the one-hour standard side sewer inspection. Additional inspection time resulting from, but not limited to, the following shall be paid for by the owner at the rate set forth in Chapter 9.15 CVWDC, or as thereafter amended.

(a) Connection inspections on side sewers installed under pre-service inspection permit.

(b) Inspection Standby Time. Inspections that the contractor or owner requests inspector to be present for, specifically during installation of side sewer in deep cuts or extremely wet soil condition where backfill is placed on pipe prior to test.

(c) Additional inspection or call back resulting from poor workmanship or due to failure of compliance with the provisions of this chapter.

(3) No permit issued under this chapter shall be valid for a period longer than 180 days unless extended or renewed by the general manager upon application thereafter prior to the expiration of same. Failure to renew said permit prior to the expiration thereof shall require the payment of a new permit fee.

(4) The permit card must be in hand prior to the start of construction. The permit card required by this chapter must at all times during the performance of the work, and until the completion thereof, and approval by the general manager, be posted in some conspicuous place at or near the work and must be readily and safely accessible to the general manager.

7.10.050 INSPECTION.

(1) No side sewer trench shall be filled or any sewer covered until the work shall have been inspected and approved by the general manager and/or their authorized representative.

(2) Any person performing work under permit pursuant to the provisions of this chapter shall notify the general manager when the work will be ready for inspection and shall specify in such notification the location of the premises by address and the file number of the permit. The general manager or a member of their staff shall make such inspection within 48 hours after receipt of notice, excluding Saturday, Sunday, or holidays.

(3) In the case of a licensed side sewer contractor, either the contractor or a competent representative shall be available to meet the general manager and/or their authorized representative on the premises at time of inspection.

(4) If the general manager finds the work or material used is not in accordance with this chapter, they shall notify the person doing the work and also the owner or occupant of the premises by posting a written notice

on the permit card and such posted notice shall be all the notice required to be given of the defects in the work or material found in such inspection.

(5) All work within the limits of any public area shall be prosecuted to completion with due diligence and, if an excavation is left open beyond a time reasonably necessary to fill the same, the general manager may cause the same to be backfilled and the public area restored forthwith, and the cost shall be charged to the property owner.

(6) If any work done under a permit granted, as provided herein, is not done in accordance with the provisions of this chapter and the plans and specifications, as approved by the general manager, or when any side sewer is constructed, laid, connected or required and does not comply with the provisions of this chapter, or where it is determined by the health officer or the general manager that a side sewer is obstructed, broken, or inadequate and is a menace to health or is liable to cause damage to either public or private property, or subsection (5) of this section is violated, then if after notice by the health officer or the general manager, the contractor, owner or person doing the work, as the case may be, refuses to properly construct, repair or complete such work within the time specified in such notice, the general manager may perform such work as may be necessary to comply with this chapter and the cost of such work so done shall be charged to the property owner, and shall become immediately payable to the District upon written notice of such amount being delivered to such owner, or posted upon such premises.

7.10.060 SIDE SEWER CONSTRUCTION.

(1) All gravity flow side sewers shall be laid on not less than two percent grade. No side sewer shall be allowed to exceed 200 feet in length, measured from the public sewer to the structure served. All side sewers within a public right-of-way shall be gravity flow. No side sewers are to be installed after normal District working hours, unless waived by the general manager.

In cases where an existing building or property which is not to be subdivided cannot be served by a six-inch extension at a two percent grade, the District may allow extension of an interim eight-inch side sewer connection. Property subdivision at a later date, or more than one connection to the eight-inch side sewer, will require that a main line be extended to replace the eight-inch side sewer. Eight-inch main line extensions onto private property will require construction to meet District standards, an easement for operation and maintenance and transferring the ownership of the main line to the District.

(2) The applicant for permit shall be responsible for determining the available grade and topography between the building drain and sewer tee or stub.

(3) In any case where the house or building drain is too low to permit gravity flow to the public sewer, the same shall be lifted by artificial means and discharged into the public sewer. The owner must enter into an interim lift station agreement between the owner and the District. An acceptable means of artificially lifting sewage flow to the District's sewer lines is with a sanitary sewer grinder pump. All pumping equipment and accessories shall be standard manufactured items and those coming in direct contact with sewage shall be specifically manufactured for sewage use. The pump station must be located outside the building. The pump shall be submersible grinder pump capable of delivering a minimum of 30 gallons per minute against the total system head (static head plus dynamic head). A minimum of one pump per station is required for single-family residential buildings. Grinder station details are shown on the sewer District standard detail drawing.

All nonresidential facilities shall require a dual pump station configuration.

The electric motor shall be a submersible motor to be constructed with open winding and to operate in clean dielectric oil for cooling, winding and lubricating bearings. Motor shaft and housing shall be sealed with two mechanical shaft seals with an oil chamber between seals. Seals shall have carbon and ceramic seal faces. Integral motor and pump shaft shall be of stainless steel supported by an upper ball radial and thrust bearing and a lower bronze sleeve bearing.

Pump and motor housing shall be of high-quality cast iron. Impeller to be of bronze. All fasteners shall be of 18-8 stainless steel. The grinder stationary and rotary cutters shall be of hardened and ground stainless steel.

Sump level control shall be a sealed mercury switch in float ball that is pivotally attached to the pump. Switch shall be sealed for life and shall have a heavy neoprene jacket control cord permanently attached.

A high-water alarm shall be supplied. An alarm jewel light for mounting inside home or building shall be furnished. Red light shall glow in overflow condition.

Control panel shall have a NEMA 4 J enclosure for inside mounting and NEMA 4 J for outside mounting. All panels shall have a running light. Panels shall have magnetic contactor, overload protection (one or two legs for three-phase and in one leg for single-phase), manual reset button, on-off switch, and a transformer to supply 24 volts for the control circuit.

Discharge lines shall be laid with a positive grade along their entire length. There are to be no dips or depressions in the discharge line.

For single pump configuration, see Standard Side Sewer Detail SS-6 for single residential grinder pump; for dual pump configurations, dual private commercial duplex grinder pump station shall be required. See Standard Side Sewer Details SS-8 and SS-8A.

The owner or side sewer contractor shall submit to the District a plan showing the location and specifications of the grinder pump, station, detail of the piping and a pump performance curve. A drawing showing an acceptable pump station installation, titled "Standard Sanitary Sewer Grinder Pump Station," is available from the District. A backwater valve shall be installed on discharge line (force main). See Standard Side Sewer Detail SS-7A.

(4) A backwater valve shall be installed on all side sewers below minimum grade as above prescribed, see standard details and local plumbing code.

The effective operation of any private backwater valve shall be the responsibility of the owner of the side sewer.

No installation of any side sewer below minimum grade as above prescribed nor any installation of any backwater valve shall be approved by the general manager until the application has been executed and a grade release signed by the owner in form prescribed by the general manager agreeing to save the District harmless from all damage resulting therefrom, together with the fee to cover the costs of recording same, have been delivered to the District.

Backwater valves shall be one of the following manufacturers, type or equal – PVC only, iron pipe not permitted:

Rectorseal Backwater Valve or equal

- (5) Side sewers shall be laid starting at 30 inches from any foundation wall, outer lines of any footings, pilings or building supports.
- (6) Except as provided in CVWDC 7.10.070(5), minimum cover for side sewers shall be six feet below road grade at the property line.
- (7) All connections shall be made to the tee, wye or stub out assigned at the time the permit is issued, and no side sewer belonging to another owner shall be used unless written permission for such use accompanies the side sewer application. A minimum length of five feet of six-inch-diameter pipe must be used where the side sewer connects to the main line.
- (8) The District's policy is one side sewer per building. If a variance is granted, the general manager may require plans prepared by a registered professional engineer to be submitted to the District for approval, showing the size of pipe and grade proposed. Upon approval of these plans by the Board of Commissioners of the District, the general manager may issue the permit.
- (9) Except as provided in CVWDC 7.10.070(4), all side sewers servicing a single house shall be a four-inch pipe or larger. All side sewers servicing multiple dwellings, commercial establishments, schools, industrial property, or any building other than single-family residences, shall be of six-inch pipe or larger. Only one nonresidential building will be allowed to connect to a six-inch line.
- (10) Any connections to a septic tank, cesspool, or privy vault will be removed and direct connection made to the house or building drain; the septic tank, cesspool or privy vault will be abandoned per the local Health Agency standards.
- (11) The use of any existing side sewer may be permitted by the general manager if it conforms to all requirements of this chapter in cases where a new or converted building or new installation replaces an old one. The side sewer shall be air tested and may require TVing to verify pipe is in good working order and is on grade.
- (12) No side sewer connection shall be made to the public sewer until that section of sewer main has been approved by the District for the side sewer connections. No building may be connected until the drain plumbing has passed the final plumbing inspection.
- (13) The side sewer contractor or other persons doing the work shall prevent any damage to the sewer main, tee or stub out, and shall so conduct their trenching operations as to prevent the possibility of damage occurring. Undercutting of sewer main and wye is prohibited.
- (14) In the event there is no suitable tee or stub out, a core drill may be made by an approved tapping company, under the direct supervision of the District. The tap shall be made with the approved rubber joint saddle on all types of sewer main except PVC, which requires a cut in tee. Grouting in a tee or wye is not permitted. Great care shall be taken in cutting a neat hole into the sewer main, and in the event of breakage of sewer main, the broken section shall be removed and replaced by the sewer contractor at no cost to the District. The method of installation shall be approved by the District.
- (15) The bottom of the trench shall be over excavated a minimum of four inches and bedding gravel installed.

Soft Foundation. Over-excavation to a firm foundation may be directed by the general manager and installation of two- and one-half-inch ballast according to current WSDOT Standard Specification,

Section 9-03.9(1), to a point four inches below the pipe. From this point to the pipe, properly graded bedding gravel shall be installed.

Bedding gravel shall be defined as properly graded top course crushed surfacing according to current WSDOT Standard Specification, Section 9-03.9(3).

(16) Any unauthorized over-excavation below the pipe grade shall be filled with foundation material as outlined in subsection (15) of this section.

(17) The side sewer contractor or other persons doing the work shall carefully remove the plug from the tee or stub out and shall prevent the entrance of all foreign material into the pipe. Where water conditions exist, water shall be pumped down and the trench shall be kept reasonably dry to prevent the entrance of water, dirt and foreign materials. Materials for connecting the side sewer pipe to the tee or stub out shall be that for which the pipe was designed. Dresser style joint adapters shall be used as required to connect pipe of different materials or joint designs. Selected bedding material as outlined in subsection (15) of this section shall be hand-tamped under and around the pipe and connection to the stub out made so as to prevent any pressure on the connection. Care should be taken to prevent the dislodging of this hand-tamped material during the balance of the backfill and water settling operation. All side sewers shall be laid true to grade with the bells up grade. Pipe shall be firmly bedded for the full length of the barrel in the prepared trench bottom. Pipe shall be carefully centered prior to the joining. Joints shall be installed in strict compliance with the manufacturer's recommendations. Spigot ends shall be thoroughly cleaned before applying rubber gaskets. The interior surface of the bell previously laid shall be thoroughly cleansed and lubricated as recommended by the manufacturer. After the section being laid has been carefully aligned, the joint shall be completed.

(18) On outside side sewers other than lakefront property, the first length of pipe inside the property line shall be a tee or wye with the branch installed upward, except where conditions exist, such as rockery, high bank or wall, etc., which would prevent excavation to the tee. These conditions existing, the tee shall be installed just inside the property line. After testing the side sewer as outlined in District's Standards, the tee shall be capped and blocked to resist internal pressure.

All side sewers within the hydraulic gradient (water table) shall include a clean-out at a joint two feet above the sewer maximum hydraulic gradient (water table). The clean-out shall consist of a wye and a sloping riser, both of the same size as the side sewer located in the hydraulic gradient area.

(19) The connection to the discharge pipe at the building shall be with an approved rubber gasket sleeve or adapter. Grout joints will not be allowed.

(20) Backfill of the trench shall be done in a manner which will prevent damage to the pipe. Hand-place the first 18 inches of material. All backfill between the sewer main and private property line shall be crushed rock, mechanically tamped in a manner approved by the general manager.

(21) Parallel water and side sewer lines shall be laid at least 10 feet apart horizontally. Wherever it is necessary for sewer and water lines to cross each other, the crossing shall be made at an angle of approximately 90 degrees, and the side sewer shall be located two (2) or more feet below the water line.

(22) Where physical conditions render compliance with the foregoing provisions of this section impracticable, the general manager may issue a permit for installation of a side sewer requiring compliance with said provisions insofar as is reasonably possible, but such permit shall be issued only upon conditions that the permittee execute and deliver to the District an instrument, in form furnished by the general manager,

agreeing to save harmless and indemnify the District from any damage or injury resulting from such substandard installation, together with fee to cover the cost of review and recording.

(23) The point of connection to the District's sewer line of any side sewer shall be as directed by the general manager.

7.10.070 PIPE MATERIALS.

(1) Types of pipe acceptable for side sewer installation are as follows:

(a) Ductile Iron. Ductile iron pipe shall be used for side sewers when an installation is considered deep, over 12 feet, or if the installation is shallow, under three feet, or in areas as directed by the District, where future repair of damaged side sewer pipe may be extremely difficult.

Ductile iron pipe shall be epoxy lined Class 52, installed with polyethylene wrap. All pipe and fittings shall meet current applicable ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11 specifications. Fittings shall be furnished with epoxy lining conforming to same specs as the pipe in ANSI/AWWA Ductile iron fitting shall be centrifugally cast in metal molds or sand-lined molds complying with the requirements of ANSI/AWWA C151/A21.51.

Ductile iron pipe shall be furnished with flexible gasket joints. Installation of all pipes shall be in accordance with manufacturer's recommendations and as further approved by the general manager.

(b) PVC Sewer Pipe. The pipe shall be integral wall bell and spigot, rubber-gasket joint, unplasticized polyvinyl chloride (PVC) pipe. All PVC pipe shall have a minimum pipe stiffness of 46 at five percent deflection and 73 degrees Fahrenheit when tested in accordance with ASTM designation and D2412 external loading properties of plastic pipe and a minimum impact strength of 150 foot-pounds based on ASTM D3034 at 73 degrees Fahrenheit using 20 pound Tup A.

All PVC sewer pipe manufacture and installation shall meet or exceed ASTM recommended specifications D3034, current revisions, and all installations shall be in strict compliance with the manufacturer's directions. There shall be no reduction in pipe wall thickness at the bell as a result of bell formation. All pipe shall be provided with a reference mark for proper spigot insertion. Joint gaskets shall be fabricated from a compound of which the basic polymer shall be a synthetic rubber consisting of styrene, butadiene, polyisoprene or any combination thereof, and shall meet the requirements of ASTM 1869, latest revisions.

Care shall be taken to properly align, clean and lubricate the spigot and ring and socket area of the pipe before joining. The pipe spigot shall be forced into the socket until the reference mark on the spigot is flush with the bell end. Forcing the pipes together beyond this point prevents proper contraction and expansion action at the joints.

Installation shall be on bedding, as defined in District specifications, four inches below the bottom of the pipe. Installation shall be limited to those situations where depth of cover is less than 12 feet. Shallow installations are considered to be three feet or less and steep installations shall be considered to have a slope of 30 percent or greater.

(2) Type of pipe acceptable for pressure side sewer installation is as follows:

- (a) SDR-21 (200 psi) PVC with solvent-weld fittings;
- (b) Schedule 80 PVC.

Connection to the outside side sewer shall be with an acceptable manufactured adapter and not by grouting.

(3) On all side sewers between the property line and the building drain, the pipe and jointing shall conform to subsection (1) of this section.

(4) Side sewers on lake front lines, or areas within the hydraulic gradient area (water table), shall be six-inch ductile iron pipe as specified in subsection (1) of this section for the area located between the lake front connection and a point two feet above the maximum hydraulic gradient as determined under emergency overflow conditions. Joints shall be rubber gasket, either mechanical joint or stab joint of the pipe manufacturer's standard. Between the point two feet above the hydraulic gradient and the house connection, the installation will be standard.

(5) On steep slopes of 45 degrees or greater, the general manager may permit installation of the line near the surface with approved materials and methods of construction, properly supported to the satisfaction of the general manager. Before any installation of this nature is made, the owner will be required to comply with the provisions of CVWDC 7.10.060(22) concerning the agreement to save the District harmless from any damage or injury.

(6) Installation of fittings within side sewers shall conform to the following spacing, arrangements and size:

All changes in direction shall be made with 1/8 long bends (45 degrees), 3/32 bends (30 degrees), 1/16 bends (22½ degrees), 1/32 bends (11¼ degrees) or wye branches with the straight-through opening plugged for a clean-out. Not more than two bends shall be installed between clean-outs. Clean-outs, including those for commercial property, shall be installed at locations designated by the District, but in no case will the distance between the clean-outs exceed 100 feet. Suitable frames and covers of a type designated by the District shall be used for all clean-outs and shall be concrete with metal lid, flush with the final paving, protected to withstand traffic. Clean-outs which shall extend to within 12 inches of the ground surface shall be plugged to prevent entrance of dirt, roots or ground water.

7.10.080 TESTING.

(1) All side sewers shall be tested for leakage in the presence of the general manager.

(2) Gravity side sewers shall be tested by plugging the line on the upstream side of tee, filling the system with water, utilizing a six-foot head at the upper end of side sewer.

(3) The test shall be continued until the rate of leakage is stabilized and then the leakage shall be measured volumetrically by adding makeup water at the fixture drain or clean-out.

(4) The rate of leakage in the side sewer shall not exceed the following amount per 100 feet of pipe:

4" pipe	0.31 gal./hr. equal to 40 oz.
6" pipe	0.47 gal./hr. equal to 60 oz.
8" pipe	0.71 gal./hr. equal to 90 oz.

Air test may be utilized providing that said air test will correspond with allowable leakage of water test.

(5) The rates of leakage given in subsection (4) of this section shall be used for a head of water at the low point of the system up to and including 15 feet. If a greater head would occur, due to the elevation of the building above the sewer, an additional tee or tees may be inserted in the line and the side sewer tested in sections. In this case, each section so tested shall meet the foregoing requirements.

(6) A preliminary test may be made by the side sewer contractor or owner prior to backfilling the trench at the time of the inspection of the pipe-laying; however, the final acceptance test for leakage shall be made following backfill of all but the inspection tee, so that the complete backfill load will be on the pipe.

(7) Pressure side sewers shall be hydrostatic tested between the pump station check valve and just before connection to the outside side sewer. The contractor or owner shall provide temporary blocking, test pump, water, and other items required to make the test. The District reserves the right to provide a test gauge. The hydrostatic test pressure shall be two times the working pressure at the pump. If there are no visible leaks and the test pressure is maintained without pumping for 15 minutes and the pressure drop is less than 15 pounds, the side sewer will be accepted.

7.10.090 ILLEGAL CONNECTIONS.

(1) It shall be unlawful to divert or cause to be diverted any storm water, surface runoff, or underground drainage to any sewer, manhole or other appurtenant structure or portion of the sewer system.

(2) No person shall discharge or cause to be discharged any storm water, surface water, ground water, roof runoff, subsurface drainage, cooling water, or unpolluted industrial process water to any portion of the sewer system, and no roof drains, yard drains, or roofing drains of any type shall be connected to the sanitary sewers in any manner.

(3) It shall be unlawful to drain large volumes of water directly into the sewer and thereby cause surcharging of sewer lines. Discharge of swimming pools into the sewer will be allowed, provided that the District is authorized to enter into agreements with owners of private and public swimming pools to provide for off-hour discharge of pool waters into District lines, where this is done under the supervision of the general manager and at such hours as he may direct. Any such connection shall include a keyed valve to be opened only by the general manager.

7.10.100 UNLAWFUL TO TAMPER WITH SYSTEM.

(1) It shall be unlawful to break, damage, deface, alter or tamper with any structure, appurtenances, or equipment which is part of the sewer system of the District, or without authority from the general manager, to break, damage, destroy or deface any public walk, curb, or pavement or to make openings or excavations in a public area for the purpose of connection to any public sewer.

(2) All excavations made by any person in any public area shall be made and backfilled in accordance with the standards and regulations promulgated by the general manager, and in accordance with all regulatory agencies.

7.10.110 SUBSTANCES PROHIBITED IN SYSTEM.

(1) It shall be unlawful to discharge or cause to be discharged any of the following described water or wastes in any public sewer, drain, ditch, or natural outlet:

- (a) Any liquid or vapor having a temperature of higher than 160 degrees Fahrenheit.
- (b) Any water or waste containing more than 100 parts per million by weight of fat, oil, or grease.
- (c) Any gasoline, benzene, naphtha oil, or other flammable or explosive liquids, solids, or gas.
- (d) Any garbage that has not been properly shredded as herein defined.
- (e) Any ashes, cinders, sand, mud, straw, hair, shavings, metal, glass, rags, feathers, tar, plastic, wood, manure, or any other solid or viscous substance capable of causing obstruction of the flow of sewers or other interference with the proper operations of the sewage works.
- (f) Any waters or wastes having a pH lower than 5.5 or higher than 8.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment, or personnel of the sewage works.
- (g) Any waters or wastes containing a toxic poisonous substance in sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to humans, animals, fish, or fowl, or create any hazard in the receiving waters of the sewage treatment plant.
- (h) Any waters or wastes containing suspended solids of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant, or in the sewage collection system.
- (i) Any noxious or malodorous gas or substance capable of creating a public nuisance.

(2) No grease, oil, sand, liquid or other waste containing grease or flammable material or other harmful ingredients in excessive amounts shall be discharged to any public sewer without the installation of interceptors of a type and capacity to be approved by the general manager and located so as to be readily accessible for cleaning and inspection. Such interceptors shall be maintained at the expense of the owner and shall be in continuously efficient operation at all times. All commercial restaurants or other facilities that may generate grease, oil, sand or other harmful ingredients shall have an approved grease interceptor or oil/sand/water separator installed per District standards unless waived by the general manager.

(3) Whenever preliminary treatment is necessary to reduce the B.O.D. to 300 parts per million by weight, or to reduce the objectionable character or constituents to within the maximum limits prescribed by subsection (1) of this section, such preliminary treatment shall be at the sole expense of the owner of the premises and shall be installed when the general manager determines that the same is necessary to comply with the standards prescribed. In such cases, all plans, specifications, and other pertinent information relating to such proposed preliminary treatment facilities shall be submitted to the general manager prior to commencement

of construction and no construction thereof shall be commenced until the general manager's approval is noted on the plan. In the event of such installations, they shall be maintained continuously in efficient operation by the owner at their own expense.

(4) Where any property served by a side sewer carries industrial waste, the owner or occupant shall install a control manhole in the side sewer to facilitate observation, sampling and measurement of the wastes when the same may be required by the general manager and/or King County/Metro. Such manhole shall be accessibly and safely located and shall be constructed and installed in accordance with plans approved, prior to installation, by the general manager, and shall be maintained and installed by the owner or occupant at their sole expense. In addition, the District may require additional appurtenances, such as pump stations and flow control devices, to control waste discharge. Requirements for additional facilities will be determined on a case-by-case basis based upon review by the District's engineer. All costs for review shall be borne by the property owner and developer.

(5) All measurements, tests, and analyses of the characteristics of waste and waters to which reference is made in this chapter shall be determined in accordance with the standards prescribed in "Standard Methods for the Examination of Water and Sewage," published jointly by the American Health Association and the American Waterworks Association, a copy of which publication is on file in the District's office.

(6) The general manager shall make recommendations to the Board of Commissioners in regard to entering into an agreement whereby any waste of unusual character may be accepted by the District for treatment before passage into the public sewer the payment for such treatment to be such as is fixed by the Board of Commissioners.

7.10.120 AUTHORITY OF GENERAL MANAGER.

(1) The general manager or their representatives, bearing proper credentials and identifications, shall be permitted to enter upon all and any premises at all reasonable times for the purpose of inspection, observation, measurements, samplings, testing of sewers and sewage waste, and performing all other acts or duties required of them in accordance with the provisions of this chapter, and it is unlawful for any person to prevent or attempt to prevent any such entrances or obstruct or interfere with any such officer or employee while so engaged.

(2) The Board of Commissioners of the District may make rules and regulations and amend the same from time to time, not inconsistent with the provisions of this chapter, as they shall deem necessary and convenient to carry out the provisions of this chapter.

7.10.130 APPROVAL OF SIDE SEWER CONTRACTORS.

As a condition precedent to entering into contracts with the property owners in the District for the installation of side sewers connecting with the sewers installed by the District and of soliciting said work, the contractors shall be approved as qualified side sewer contractors by the District.

7.10.140 SEWER MAINTENANCE RESPONSIBILITY AND SIDE SEWER CONTRACT WITH OWNER.

(1) All costs and expense incidental to the installation, connection, maintenance and repair or replacement of the inside and outside sewers shall be borne by the owner or occupant of the premises served by the side sewer.

(2) Contracts between property owners and side sewer contractors shall provide that the side sewer contractor will comply with all District regulations.

(3) The contractor will furnish the property owner with a release of lien from both labor and materials or an affidavit stating same has been paid before payment is accepted for side sewers.

7.10.150 SAFETY EQUIPMENT.

(1) The side sewer contractor before beginning work in a public area shall have at the site sufficient barricades to properly protect the work. The barricades shall be illuminated during the nighttime hours with flares or flashing signals as per state, city, or Snohomish County requirements.

(2) In addition to the foregoing provisions, the side sewer contractor shall comply with all laws, ordinances and regulations of state, county, or town relating to the safety and protection of the area affected. A flagman must be posted wherever work is underway within the public right-of-way.

7.10.160 RESTORATION OF ROADWAYS.

(1) It shall be the responsibility of the licensed side sewer contractor to cut the road surface, dig a trench, lay the pipe, make a connection to the main, backfill the trench and restore the roadway surfacing within the limits of any public thoroughfare or right-of-way in accordance with the requirements of the public authority having jurisdiction over the same.

(2) A right-of-way (ROW) permit must be obtained by the District for any work in the public right-of-way. The contractor/owner shall pay the District for the permit and corresponding inspection.

7.10.170 SEPARATE STUB REQUIRED WHEN.

If property is permitted to have one sewer stub to serve separate improvements on the same lot, when the lot subdivides, a separate stub will be required for each lot.

7.10.180 PENALTIES.

(1) Any person who shall violate any provision of this chapter shall be liable to the District for any expense, loss, damage, cost of inspection or cost of correction incurred by the District by reason of such violation,

including any cost to the District incurred in collecting from such person said loss, damage, expense, cost of inspection or cost of correction.

(2) Any person found to be violating any provision of this chapter shall be served by the District with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations and make all necessary corrections.

(3) Any person who shall continue any violation beyond the time limit provided for in subsection (2) of this section shall, in addition to the items of expense provided in subsection (1) of this section, become liable to the District for a penalty in the amount of 10 percent of such expense items, together with interest thereon at prime plus four percent from the date of the time limit provided in subsection (2) of this section.

(4) Any violation of this chapter and the rules and regulations set forth by the District shall pay a penalty of the actual cost to the District.

(5) Wherever any person shall make an unlawful connection, or connection without permit to the public sewer, the District may excavate and expose, and may remove all of such installation in the public right-of-way or sewer easement or plug the side sewer and refill the excavation thereof and deny sewer service until all conditions of this chapter relating to such connection are complied with and the person making the unlawful connection shall be liable for all the District's direct labor, material, supervision and inspection costs plus 50 percent thereof as indirect overhead costs, and such amount shall be a lien upon the premises served by such illegal or unlicensed connection, which may be foreclosed in the same manner as liens of the District for monthly service charges and in such foreclosure the District shall be entitled, in addition to court costs, to payment for reasonable attorney's fees for such foreclosure.