Cross Valley

WATER DISTRICT

SPECIFICATIONS FOR
SIDE SEWER CONSTRUCTION
AND
GREASE INTERCEPTORS – OIL/WATER SEPARATORS

Revised 2022

Cross Valley
WATER DISTRICT

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SIDE SEWER CONSTRUCTION

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SIDE SEWER SPECIFICATIONS

General Construction

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SIDE SEWER SPECIFICATIONS

General Construction

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 upgrade. 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.

Cross Valley

WATER DISTRICT

SPECIFICATIONS FOR

GREASE INTERCEPTORS – OIL/WATER SEPARATORS

Revised 2022

Cross Valley
WATER DISTRICT

SPECIFICATIONS FOR GREASE INTERCEPTOR AND OIL/WATER SEPARATOR

SPECIFICATIONS

SECTION 1: GREASE INTERCEPTOR

General	FOG -1
Vault	FOG -2
Construction	FOG -3

SECTION 2: OIL/WATER SEPARATOR

General	FOG -4
Vault	FOG -5
Construction	FOG -6

SPECIFICATIONS FOR GREASE INTERCEPTORS AND OIL/WATER SEPARATORS

SECTION 1: GREASE INTERCEPTOR

1.01 GENERAL

Whenever a commercial and/or retail food preparation operation, regardless of size, generates animal/vegetable fats, oils or grease (FOG) waste, which causes a visible sheen or accumulations in the effluent, to be discharged to the sanitary sewer, pre- treatment is required. A grease interception device, if required, shall be installed by the property owner as specified herein. Selection and sizing of the grease interceptor shall be subject to the approval of the District and/or King County/METRO. Effluent discharged from any grease interceptor shall not contain a visible sheen or accumulations of FOG, and shall be in compliance with Cross Valley Water District and King County/METRO regulations for discharge to the sanitary sewer.

Before a grease interceptor is installed, the property owner shall submit all plans to Cross Valley Water District and/or King County/METRO for review and approval. The property owner will need a letter approving the design and allowing discharge of wastewater from the properly installed tank. When submitting plans, include the following information:

- Name and address of the facility, and the phone number and mailing address of the person legally responsible for operation and maintenance.
- Drawing of the grease interceptor with capacities and dimensions. See Standard Details.
- Site map detailing all drains and the interceptor location.
- Location of the water sources and maximum water flows (in gallons per minute) from all potential service areas and equipment discharging to the grease interceptor.

A. Size and design of the grease interceptor shall conform to the uniform plumbing code, appendix H standards, and shall be subject to approval by the District. Minimum capacity shall be 600 gallons and the minimum criteria for sizing shall be as follows:

Interceptor Capacity (Gallons)	=	Waste Flow Rate X Retention Time X Storage Factor
Waste Flow Rate (GPM)	=	Provided by Developer, with approved supporting documentation
Retention Time	=	150 minutes minimum
Storage Factor	=	1 for 8 hour Operation 2 for 16 hour Operation 3 for 24 hour Operation

B. Fixtures in the kitchen area which discharge wastewater containing grease are to be connected to the grease interceptor. Such fixtures include, but may not be limited to dishwashers, pot sinks, range woks, janitor's sink, floor sinks, and rotoclones. Toilets, urinals, and wash basins shall not flow through the interceptor.

C. The interceptor shall be located outside the building within twenty feet of drive for access by maintenance vehicles.

D. The interceptor shall be filled with clean water prior to start-up of system.

E. Allowable materials for construction are as follows:
   Tank – concrete
   Baffles - concrete, plastic

F. Access to the interceptor shall be maintained free for inspection and compliance determination sampling at all times.

G. When pre-treatment is no longer required, the inlet and outlet pipes shall be permanently plugged, the separation chambers pumped out, and the vault removed, or filled with compacted crushed rock or controlled density fill. The property owner will need to apply for an revision side sewer permit and pay for the District and/or King County/METRO inspection fees.

1.02 VAULT

Grease Interceptor Vaults shall be of precast concrete construction. Cement concrete shall have a minimum 28-day compressive strength of 4,500 psi.

Deformed bars for steel reinforcement shall be in accordance with ASTM A615, grade 60. Welded-wire fabric reinforcement shall be in accordance with ASTM A185, grade 65. All interior piping shall be PVC sized to match side sewer line size.

Interior baffle shall be precast reinforced concrete, 4 inches thick. Concrete baffle shall be secured in place by slotted vault walls or with stainless steel angles as shown in the Standard Detail.

Vault cover shall include 24 inch diameter bolt-locking manhole covers and frames located over inspection tees. Manhole covers shall not allow passage of air or gases. Vault cover shall be designed for AASHTO H-20 load with 30% impact factor. See the Standard Details for vault sizes and miscellaneous details.

1.03 CONSTRUCTION

Grease interceptors shall be constructed as shown in the Standard Details. Excavation for precast vault shall be sufficient to provide a minimum of 12 inches (12") between the vault and the side of the excavation.

24-inch (24") diameter manhole frame and cover shall be adjusted to the elevation required by the Engineer prior to final acceptance of the work. Adjusting rings shall be manufactured from precast reinforced concrete. Total height of rings shall be from 8 inches (8") minimum to 20 inches (20") maximum.

The grease interceptor shall be placed on firm soil. If the foundation material is inadequate, the Contractor shall use foundation gravel or bedding concrete under the normal base to support the interceptor.

Vault shall be placed and set plumb so as to provide vertical sides. The completed interceptor shall be rigid and watertight.

The outside and inside of manhole adjusting rings, joints of precast concrete sections and the perimeter of precast baffle shall be thoroughly wetted and completely filled with mortar, plastered, and troweled smooth with 3/4" of mortar in order to attain a watertight surface.

All lift holes, if any, on precast items shall be completely filled with expanding mortar, smoothed both inside and out, to ensure water-tightness. All steel loops, if any, on precast section must be removed flush with the vault wall.

The stubs shall be covered with mortar and smoothed. Rough, uneven surfaces will not be permitted.

Precast vault and baffle shall be provided with 8-inch (8") diameter knockouts at all pipe openings or have openings core-drilled prior to installation.

All rigid pipe entering or leaving the structure shall be provided with flexible joints within twelve inches (12") of the manhole structure and shall be placed on firmly compacted bedding. Special care shall be taken to see that the openings through which pipes enter the structure are completely and firmly filled with mortar from the outside to ensure water- tightness. All PVC pipe connections to vault and baffle shall be made with gasketed coupling as approved by the District.

SPECIFICATIONS FOR GREASE INTERCEPTORS AND OIL/WATER SEPARATORS

SECTION 2: OIL/WATER SEPARATOR

2.01 GENERAL

Whenever an industrial or commercial business generates mineral/petroleum oils exceeding 100 milligrams per liter to be discharged to the sanitary sewer, pre-treatment is required. Businesses that typically need oil/water separators include but are not limited to; quicklime stations, transportation fueling facilities, vehicle/heavy equipment repair shops, and businesses using steam or pressure washers. Except where otherwise specifically permitted, no wastes other than those requiring treatment or separation shall be discharged into any interceptor. An oil/water separation device, if required, shall be installed by the property owner as specified herein. Water discharged from any oil/water separator to the sanitary sewer system shall not contain in excess of 100 milligrams per liter of petroleum oil, non-biodegradable cutting oil or mineral products, and shall be in compliance with Cross Valley Water District and King County/METRO regulations for discharge to the sanitary sewer.

Before an oil/water separator is installed, the property owner shall submit all plans to Cross Valley Water District and/or King County/METRO for review and approval. The property owner will need a letter approving the design and allowing discharge of wastewater from the properly installed tank. When submitting plans, include the following information:

- Name and address of the facility, and the phone number and mailing address of the person legally responsible for operation and maintenance.
- Drawing of the oil/water separator with capacities and dimensions. The outlet to the sewer must have a sampling tee installed. See Standard Details.
- Site map detailing all drains and the separator location. Indicate if any drainage is from rain water runoff. This should be kept to a maximum of 200 square feet.
- Location of the water sources and maximum water flows (in gallons per minute) from all potential service areas and equipment discharging to the oil/water separator.

A. Sizing of a separator facility shall be based upon maximum available flow to the separator and provision of a forty-five minute retention time in the separator at that flow, with a minimum capacity of at least 100 gallons.

B. The oil/water separator shall be covered with removable sections. Access and inspection covers, weighing not more than 30 lbs. and with suitable hand holds, are to be provided directly above inspection "tee" and oil/grit collection compartments.

C. Only waste water from floor drains and covered parking areas shall drain to the separator. The following items should not be put through an oil/water separator: antifreeze, degreasers, detergents fuels, alcohols, solvents, concentrated amounts of oily products, or heavy metal bearing wastewater. The location and design shall minimize or eliminate the possibility of storm water reaching the separator - areas over two hundred square feet open to rainfall shall not drain to the separator. Sewage from restrooms and shower facilities shall not drain to the separator. See Standard Details.

D. Allowable materials for construction are as follows:
   Tank - concrete
   Baffles - concrete, steel plate

E. The separator shall be located within 20 feet of drive for access by maintenance vehicle.

F. A sampling tee shall be located on the outlet with a minimum 18 inch drop below the invert. Access to the separator shall be maintained free for inspection and compliance determination sampling at all times.

G. The effluent discharged from any oil/water separator to the sanitary sewer shall not exceed 100 parts per million total oil.

H. When pre-treatment is no longer required, the inlet and outlet pipes shall be permanently plugged, the separation chambers pumped out, and the vault removed, or filled with compacted crushed rock or controlled density fill.

2.02 VAULT

Oil/Water separator vaults shall be of precast concrete construction.

Cement concrete shall have a minimum 28-day compressive strength of 4,500 psi.

Deformed bars for steel reinforcement shall be in accordance with ASTM A615, grade 60. Welded-wire fabric reinforcement shall be in accordance with ASTM A185, grade 65. All interior piping shall be PVC sized to match side sewer line size. Baffles and weir shall be 1/2-inch-thick steel plates galvanized in accordance with ASTM A123. Vault covers shall be as shown on the Standard Details. Hatches shall be Bilco model, or equal. All covers, including hatches, clean-outs, and manhole frame and covers, shall be locking, watertight, and capable of AASHTO H-20 traffic loading. See the Standard Details for vault sizes, vault covers, and miscellaneous details required for various oil/water separator sizes.

2.03 CONSTRUCTION

Oil/water separators shall be constructed as shown in the Standard Details. Excavation for precast vault shall be sufficient to provide a minimum of 12 inches between the vault and the side of the excavations. Vault shall be placed at proper depth to set vault cover flush with finish grade. If additional depth of cover is required over inlet or outlet, piping vault riser sections shall be installed to raise vault cover a maximum of 24 inches.

The oil/water separator shall be placed on firm soil. If the foundation material is inadequate, the Contractor shall use foundation gravel or bedding concrete under the normal base to support the separator.

Vault shall be placed and set plumb so as to provide vertical sides. The completed separator shall be rigid and watertight.

STANDARD DETAILS

SIDE SEWER STANDARD DETAILS

Including

GREASE INTERCEPTOR AND OIL / WATER SEPARATOR DETAILS

Cross Valley

WATER DISTRICT

SEWER DETAILS

SHEET #	SHEET TITLE
SD-1	STANDARD PRECAST MANHOLE
SD-2	SHALLOW MANHOLE
SD-3	DROP MANHOLE CONNECTION
SD-4	MANHOLE FRAME AND COVER
SD-4A	LOCKING FRAME AND COVER
SD-4B	WATERTIGHT LOCKING MANHOLE FRAME AND COVER
SD-5	LAMPHOLE (CLEANOUT)
SD-6	LOCKING C.O. FRAME & COVER
SD-7	CASTING ADJUSTMENTS
SD-8	SEWER LATERAL NEW CONSTRUCTION
SD-8A	SEWER LATERAL EXISTING MAINS
SD-8B	SEWER LATERAL PLAN VIEW
SD-9	POLYETHYLENE PIPE – MANHOLE CONNECTION AND ANCHORAGE DETAIL
SD-10	CROSSING AC PIPE
SD-11	PIPE ANCHOR

TRENCH BACKFILL & RESTORATION DETAILS

SHEET #	SHEET TITLE
TBR-1	TRENCH SECTION – PIPE BEDDING AND TRENCH BACKFILL
TBR-2	TRENCH SURFACE RESTORATION
TBR-3	UNSUITABLE FOUNDATION EXCAVATION
TBR-4	TRENCH DAMS
TBR-5	TIMBER BACKFILL SUPPORTS
TBR-6	EROSION CONTROL BLANKET
TBR-7	ZONE OF INFLUENCE
TBR-8	GALVANIC ANODE INSTALLATION

SIDE SEWER DETAILS

SHEET #	SHEET TITLE
SS-1	STANDARD SIDE SEWER
SS-2	PRIVATE SIDE SEWER INSTALLATION
SS-3	ALTERNATE SIDE SEWER INSTALLATION
SS-4	GREASE INTERCEPTOR
SS-5	OIL WATER SEPARATOR
SS-5A	OIL WATER SEAPARATOR COVER OPTION DETAILS
SS-6	SINGLE RESIDENTIAL CONNECTION GRINDER PUMP
SS-7	PRIVATE BACKWATER VALVE INSTALLATION TO SANITARY SEWER
SS-7A	PRIVATE BACKWATER VALVE ASSEMBLY OUTSIDE INSTALLATION
SS-8	PRIVATE COMMERCIAL DUPLEX GRINDER PUMP STATION
SS-8A	PRIVATE COMMERCIAL DUPLEX GRINDER PUMP STATION
SS-9	PRIVATE PRESSURE LINE CONNECTION TO GRAVITY SEWER

WATER DETAILS

SHEET #	SHEET TITLE
WD-1	TYPICAL 1-INCH WATER SERVICE
WD-2	WATER SERVICE INSTALLATION
WD-3	3 INCH AND 4 INCH WATER SERVICE
WD-3A	3 INCH SERVICE MATERIALS LIST
WD-4	6 INCH WATER SERVICE
WD-5	METER BOXES AND LIDS
WD-5A	BLOCK OUT FOR METER BOXES IN CONCRETE DRIVEWAYS
WD-6	RESIDENTIAL DOMESTIC AND FIRE SPRINKLER SYSTEMS
WD-7	FIRE HYDRANT ASSEMBLY
WD-7A	FIRE HYDRANT GUARD POSTS
WD-7B	FIRE HYDRANT REQUIREMENTS
WD-8	THRUST BLOCKING
WD-8A	CONCRETE BLOCKING FOR VERTICAL BENDS
WD-9	MINIMUM STANDARD DEPTH REQUIREMENTS
WD-9A	MINIMUM SEPARATION STANDARDS
WD-9B	WATER AND SEPTIC LINE CROSSING DETAIL
WD-9C	WATER OR SEWER MAIN CASING DETAIL
WD-10	TAPPING TEE AND VALVE
WD-11	CAST IRON VALVE AND BOX
WD-11A	VALVE BOX COVER
WD-11B	VALVE BOX ADJUSTMENT
WD-11C	BYPASS VALVE
WD-11D	VALVE BOX PROTECTIVE PAD
WD-11E	VALVE STEM EXTENSION
WD-12	2 INCH BLOWOFFASSEMBLY
WD-13	1 INCH AIR AND VACUUM RELEASE VALVE ASSEMBLY
WD-14	2 INCH AIR AND VACUUM RELEASE VALVE ASSEMBLY
WD-15	3 INCH – 8 INCH DOUBLE CHECK DETECTOR ASSEMBLY
WD-15A	3 INCH – 8 INCH DOUBLE CHECK DETECTOR ASSEMBLY
WD-16	DOUBLE CHECK VALVE ASSEMBLY
WD-17	REDUCED PRESSURE BACKFLOW ASSEMBLY
WD-18	REDUCED PRESSURE BACKFLOW ASSEMBLY
WD-19	PRESSURE REDUCING VALVE

CROSS VALLEY WATER DISTRICT
STANDARD DETAILS

SHEET INDEX

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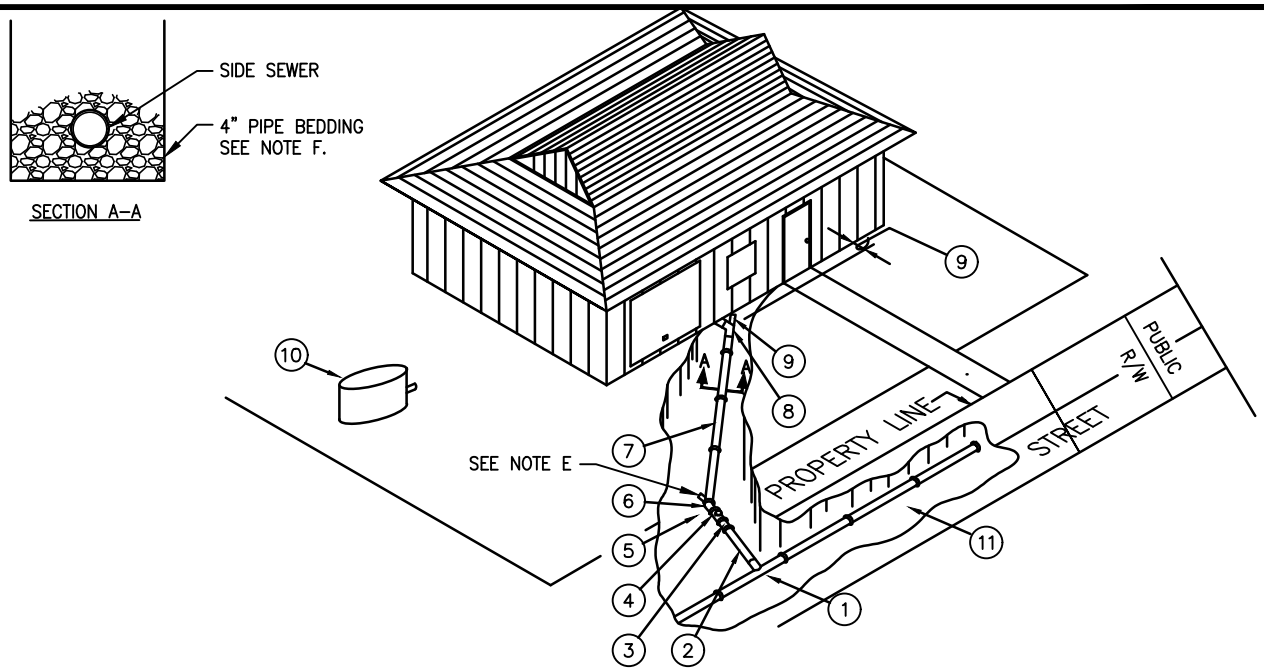


GENERAL INFORMATION ONLY. REFER TO DISTRICT STANDARDS FOR MORE DETAILED INFORMATION.

GENERAL NOTES:

A. A DISTRICT PERMIT IS REQUIRED FOR ALL SIDE SEWER INSTALLATIONS. MAIN LINE SEWER SHALL BE IN USE AND OPERATION.

B. LEGAL DESCRIPTION AND ADDRESS REQUIRED TO OBTAIN PERMIT.

C. NO DOWNSPOUTS, FOOTING DRAINS, OUTSIDE DRAINS OR ANY SOURCE OF GROUND OR SURFACE WATERS ARE ALLOWED TO CONNECT TO SIDE SEWER.

D. SIDE SEWER IS INSTALLED BY A CONTRACTOR, A CURRENT STATE LICENSE NUMBER IS REQUIRED ON PERMIT. THE PROPERTY OWNER INSTALLING THE SIDE SEWER SHALL INDICATE SO ON THE PERMIT. ALL WORK WITHIN PUBLIC RIGHT-OF-WAY WILL REQUIRE A STATE LICENSED CONTRACTOR TO INSTALL.

E. MAXIMUM OF 100 FEET BETWEEN CLEANOUTS. CLEANOUTS REQUIRED AT CONNECTIONS TO BUILDINGS AND FOR AGGREGATE BENDS GREATER THAN 45°, (AGGREGATE BENDS BEING A COMBINATION OF BENDS GREATER THAN 45° WITH WITH LESS THAN 4' OF STRAIGHT PIPE BETWEEN BENDS.) SEE DEVELOPMENT GUIDELINES FOR INFORMATION ON CLEANOUTS. CLEANOUT SHALL BE A WYE LATERAL AND SHALL BE BROUGHT TO WITHIN 18" OF SURFACE IN LANDSCAPED AREAS. IN PAVED & CONCRETE AREAS CLEANOUTS SHALL BE BROUGHT TO SURFACE WITH A LOCKING FRAME AND COVER IN ACCORDANCE WITH DISTRICT STANDARDS.

F. PIPE SHALL BE BEDDED WITH PEA GRAVEL OR 5/8 MINUS, CRUSHED ROCK IF APPROVED BY THE DISTRICT. OVER-EXCAVATION SHALL BE BROUGHT TO GRADE WITH SELECT BACKFILL AS DIRECTED BY THE DISTRICT.

G. ALL JOINTS SHALL BE RUBBER GASKET TYPE, EXCEPT ABS & PVC SCHEDULE 40 MAY BE SOLVENT WELDED TYPE.

H. PARALLEL WATER AND SEWER LINES SHALL BE 10 FEET APART HORIZONTALLY WHEREVER POSSIBLE.

I. SIDE SEWER SHALL BE VISUALLY INSPECTED AND TEST WITNESSED BY DISTRICT. SIDE SEWER SHALL BE PLUGGED AND TESTED IN PRESENCE OF DISTRICT. AFTER BEDDING, PRIOR TO BACKFILLING. AFTER 15 MINUTES THERE SHALL BE NO VISIBLE OR MEASURABLE LEAKAGE. THE SYSTEM SHALL BE WATERTIGHT. AIR TESTING AFTER PIPE IS SECURED, AT 4 PSI FOR 5 MINUTES WITH NO PRESSURE LOSS IS ACCEPTABLE IN LIEU OF WATER TEST.

J. ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH UNIFORM PLUMBING CODE AND APPLICABLE DISTRICT DEVELOPMENT GUIDELINES AND STANDARDS. CONTACT THE DISTRICT FOR MORE INFORMATION.

K. A PRE-CONSTRUCTION MEETING IS REQUIRED FOR ALL WORK OCCURRING IN PUBLIC RIGHT-OF-WAY, AND/OR WHEN A TAP ON THE EXISTING MAIN IS REQUIRED.

L. SEE CVWD SIDE SEWER SPECIFICATIONS FOR ADDITIONAL INFORMATION.

M. SLOPE FOR SIDE SEWERS SHALL BE 2% MIN. TO (45°,100%) MAX.

(1) IF APPLICABLE, TAPPING SADDLES SHALL BE: ON DUCTILE IRON MAIN: ROMAC, FORD OR SMITH-BLAIR SST. ON CONCRETE OR PVC; ROMAC CB OR APPROVED EQUAL.

(2) CONNECTION TO MAIN LINE TO BE OF LIKE MATERIALS, EXCEPT WHEN MAIN IS CONCRETE. CONSULT THE DISTRICT. ALL SEWER LATERALS LOCATED WITHIN EASEMENTS & RIGHT OF WAY, SHALL BE 6" OR LARGER. FOR MATERIALS SEE CVWD SIDE SEWER SPECIFICATIONS, SECTION 7. OUTSIDE OF RIGHT-OF-WAY OR EASEMENT, SIDE SEWER PIPE SHALL BE 4" OR LARGER FOR SINGLE FAMILY AND 6" OR LARGER FOR ALL OTHER USES.

(3) TRANSITIONS OF DIFFERENT MATERIAL TYPES SHALL BE WITH ROMAC STYLE 501 COUPLING OR EQUAL.

(4) TEST TEE REQUIRED AT PROPERTY LINE. INSTALL SAME SIZE AS SEWER STUB.

(5) 6" BY 4" OR 8" BY 6" REDUCER, WHERE REQ'D.

(6) 45° BEND, IF NEEDED (TYP).

(7) ON PRIVATE PROPERTY, MINIMUM COVER SHALL BE 18".

(8) CLEANOUT (SEE NOTE "E")

(9) CONNECT WASTE-LINE TO SIDE SEWER CONNECTION WITH APPROVED ADAPTORS. CONNECTION WITH CLEANOUT TO BE 2.5'-5' OUT FROM STRUCTURE.

(10) IF AN EXISTING SEPTIC TANK IS PRESENT, CAP AND PLUG PIPE AND ABANDON TANK PER APPLICABLE COUNTY/CITY HEALTH DEPARTMENT.

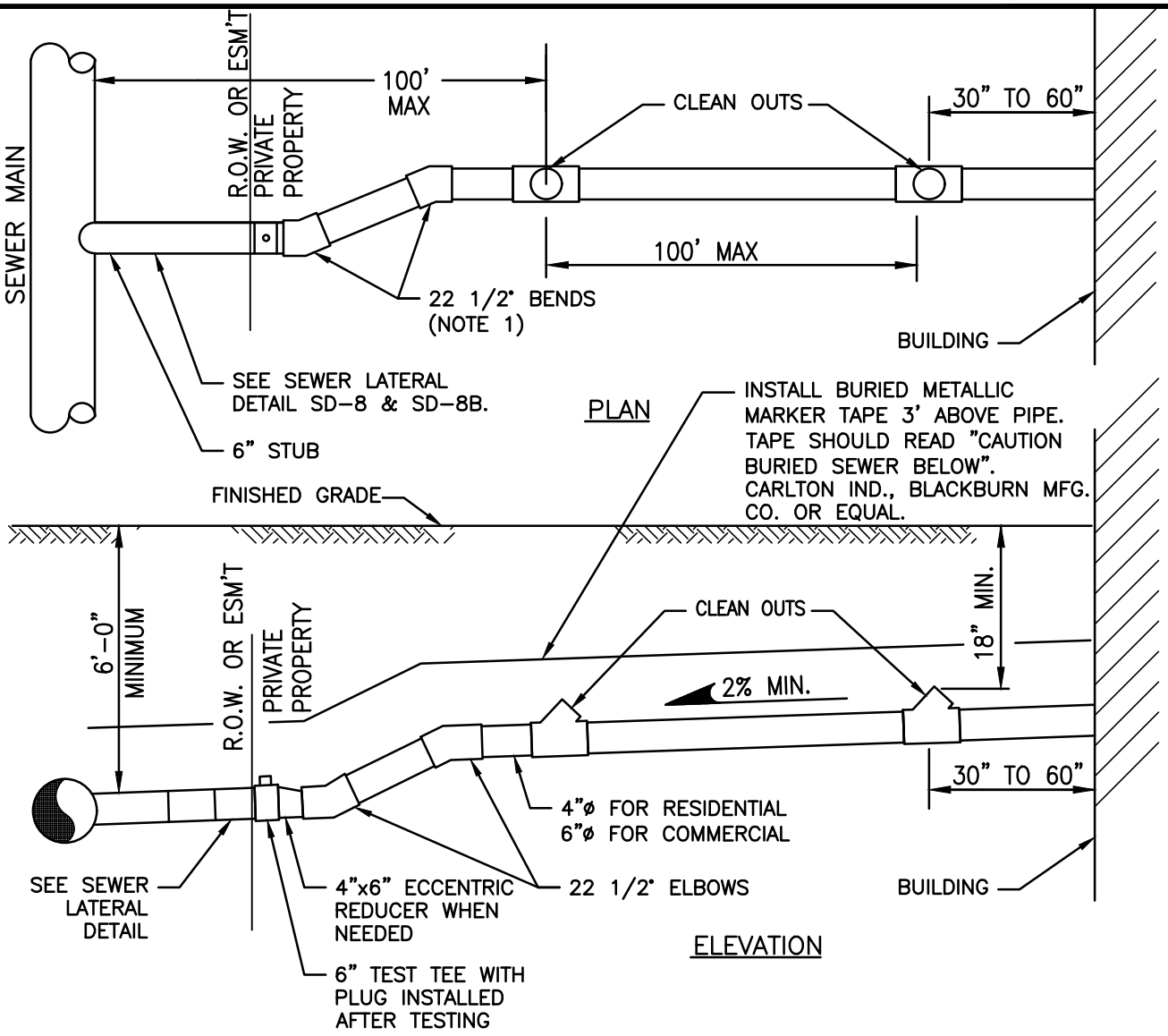
(11) COMPLY WITH RESTORATION REQUIREMENTS SET FORTH IN RIGHT-OF-WAY PERMIT AND/OR DISTRICT DEVELOPMENT GUIDELINES.

CROSS VALLEY WATER DISTRICT
SIDE SEWER DETAILS

STANDARD SIDE SEWER

SS-1	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-1.DWG



NOTES:

1. BENDS SHALL NOT BE GREATER THAN 45°.
2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90° ACCUMULATED BEND.
3. RIGHT-OF-WAY RESTORATION SHALL MATCH OR EXCEED THE ORIGINAL CONDITION.
4. ONLY PLUMBING OUTLETS SHALL BE CONNECTED TO THE SEWER. NO DOWNSPOUTS, FOOTING DRAINS OR STORM DRAINAGE MAY BE CONNECTED TO THE SEWER SYSTEM.
5. 18" MINIMUM COVER OF PIPE.
6. 6' MINIMUM COVER AT PROPERTY LINE.
7. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH A BEND OR WYE. 90° CHANGE WITH A BEND AND WYE.
8. 6" SEWER PIPE MINIMUM SIZE IN R/W & EASEMENTS.
9. 2% MINIMUM SLOPE. 45° (100%) MAXIMUM SLOPE. IF SLOPE EXCEEDS 45° FOR MORE THAN 3', SEE CVWD DETAIL SD-8.
10. CONSTRUCTION IN RIGHT-OF-WAY SHALL BE PERFORMED BY A REGISTERED LICENSED CONTRACTOR.
11. ALL CONSTRUCTION REQUIRES A PERMIT AND PAYMENT OF FEE. COMPLETE LEGAL DESCRIPTION OF PROPERTY AND DIMENSIONS.
12. RECORD DRAWING SHOWING LOCATION OF SIDE SEWER IN RELATION TO THE HOUSE IS REQUIRED AFTER INSTALLATION. PREPARED BY DISTRICT'S INSPECTOR.
13. SIDE SEWER MAINTENANCE FROM BUILDING TO PROPERTY LINE OR ESM'T, SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.

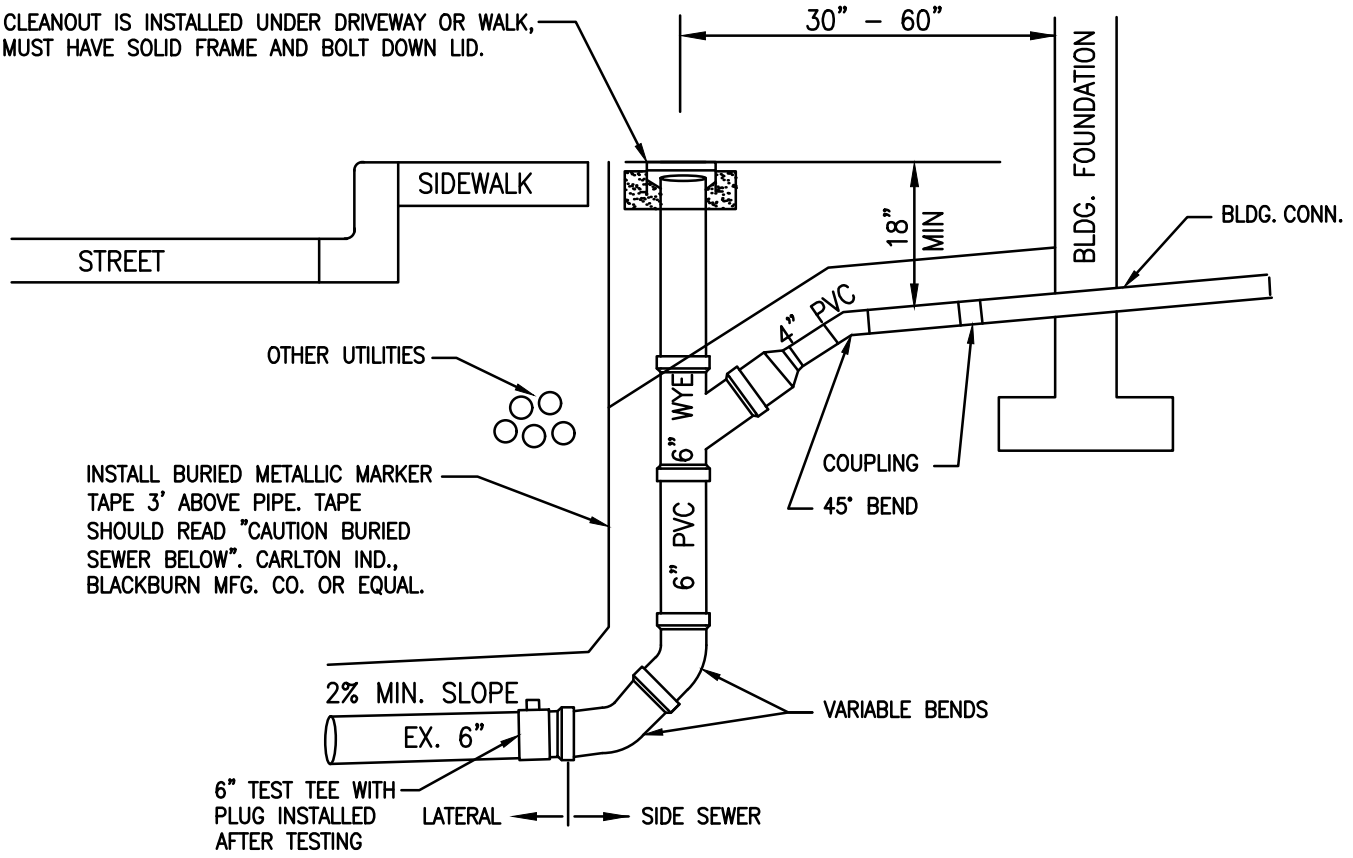
CROSS VALLEY WATER DISTRICT
SIDE SEWER DETAILS

PRIVATE SIDE SEWER INSTALLATION

SS-2	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-2.DWG

NOTE:
IF CLEANOUT IS INSTALLED UNDER DRIVEWAY OR WALK, IT MUST HAVE SOLID FRAME AND BOLT DOWN LID.



NOTES:
THIS METHOD MAY ONLY BE USED WITH PRIOR APPROVAL FROM THE DISTRICT AND ONLY WHEN STANDARD SIDE SEWER INSTALLATION PER DWG SS–1, OR SS–2 ARE NOT POSSIBLE BY EITHER:

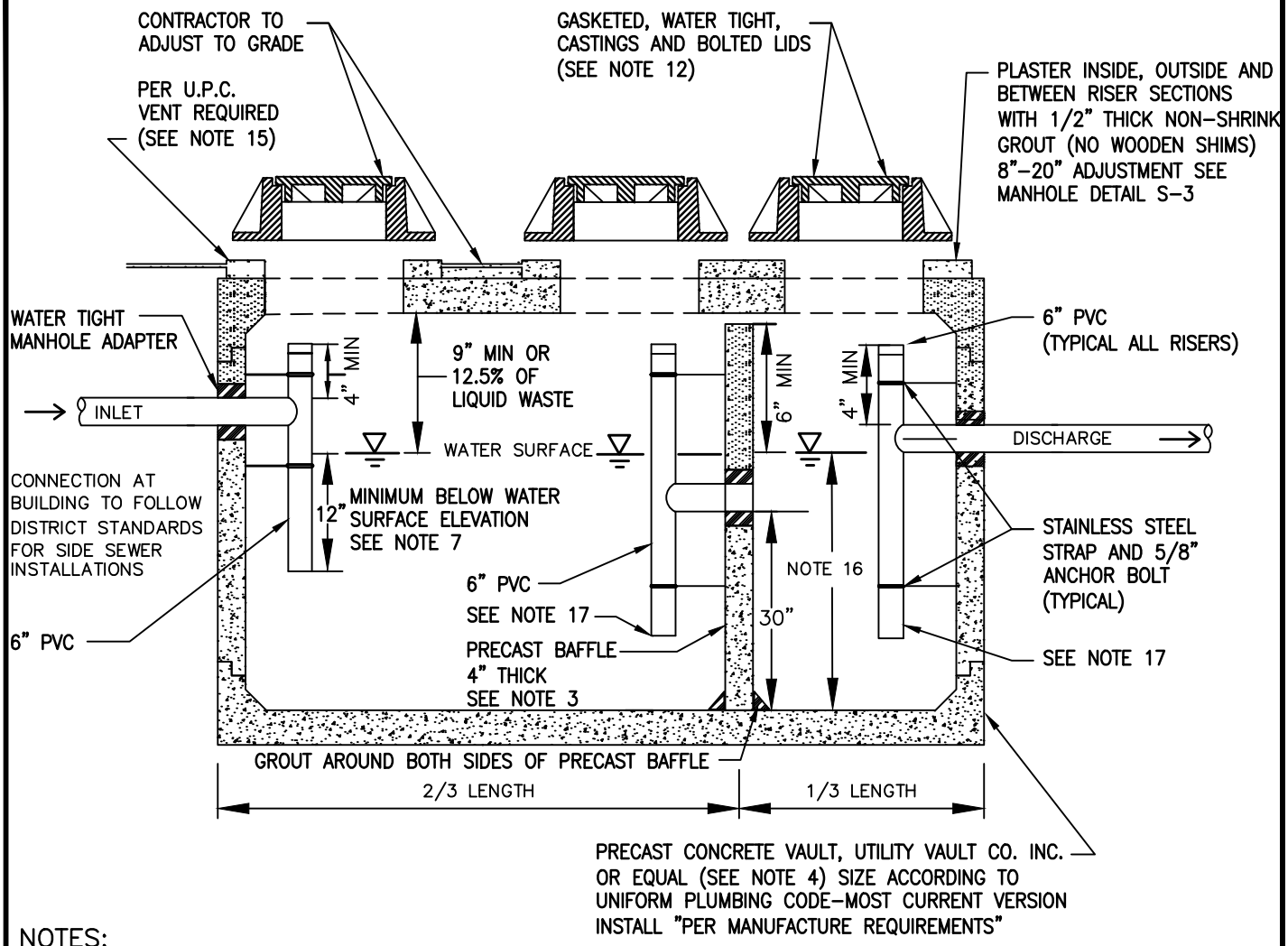
1. CUTTING THE SIDE SEWER STUB BACK, ENABLING THE PIPE TO BE INSTALLED AT 100%, (45°, 1:1), OR LESS SLOPE (2% MIN) TO THE BLDG. CONNECTION
—OR— LOCATED 30" FROM FOUNDATION AT MINIMUM OF 18" DEEP.
2. ROUTING THE SIDE SEWER PIPE TO EXTEND ALONG THE SIDE OF THE BUILDING TO DECREASE SLOPE.

CROSS VALLEY WATER DISTRICT
SIDE SEWER DETAILS

ALTERNATE SIDE SEWER INSTALLATION

SS–3	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-3.DWG



NOTES:

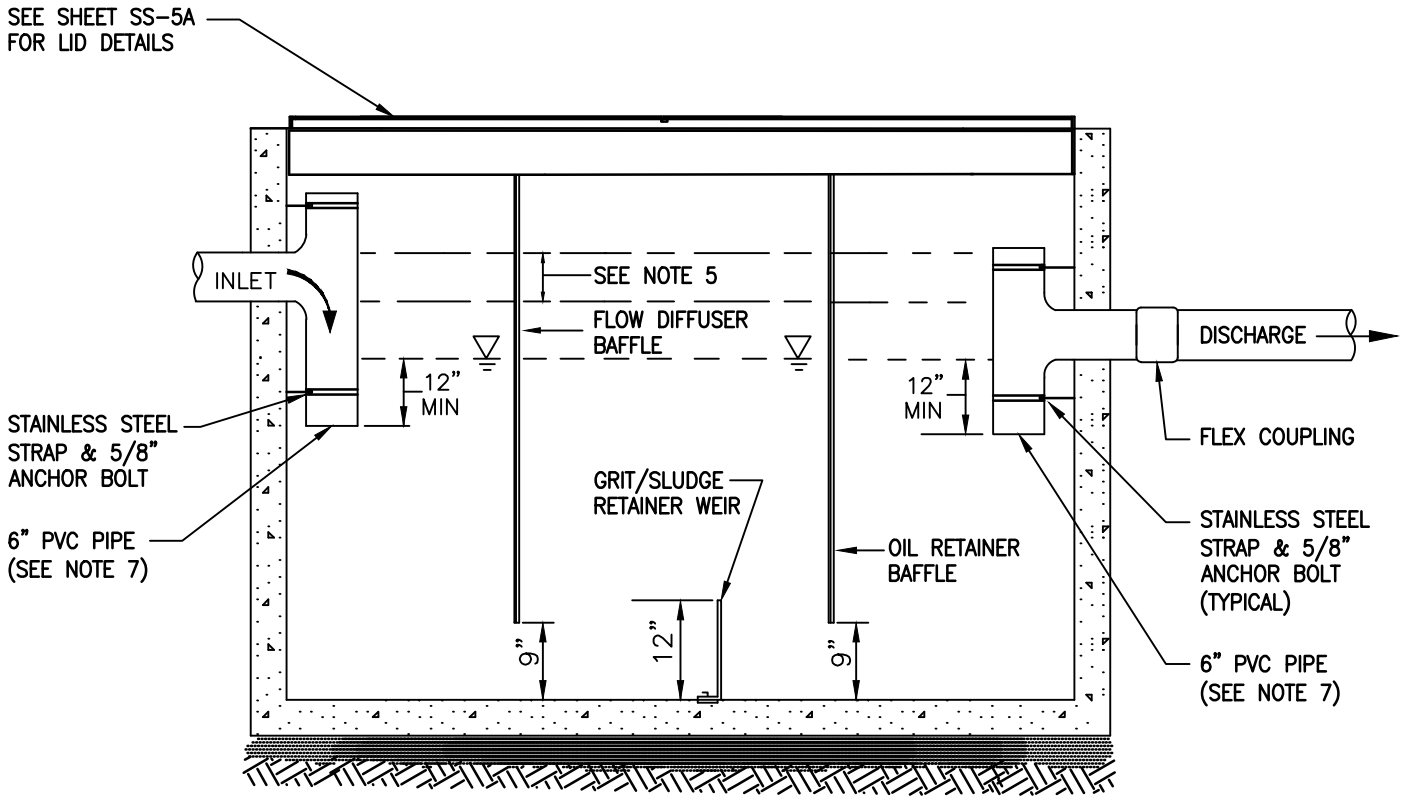
1. GRAY-WATER ONLY. BLACK-WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER.
2. LOCATE INTERCEPTOR WITHIN CLOSE PROXIMITY OF DRIVE FOR ACCESS BY A MAINTENANCE VEHICLE.
3. IF VAULT IS NOT SLOTTED TO ACCEPT PRECAST CONC. BAFFLE THEN PRECAST CONC. SHALL BE HELD IN PLACE BY (2) 3"X3"X3/8" ANGLE (4FT. LONG) ATTACHED TO VAULT WALL WITH (4 EA) 1/2" BOLTS AND NUTS (WITH WASHERS) SPACED 14" O.C. ANGLE AND FASTENERS SHALL BE STAINLESS STEEL.
4. PRECAST VAULT AND BAFFLE SHALL HAVE KNOCKOUTS AT ALL PIPE OPENINGS. IF KNOCKOUTS ARE NOT PRESENT THEN PIPE OPENINGS SHALL BE 2" LARGER THAN PIPE DIAMETER.
5. POSITION PIPE RISERS BELOW ACCESS OPENINGS TO ALLOW CLEAR ACCESS TO RISER AND VAULT CHAMBER FOR SAMPLING AND INSPECTION.
6. TOP OF INLET PIPE SHALL BE ONE PIPE DIAMETER HIGHER THAN THE TOP OF THE DISCHARGE PIPE.
7. INLET INSPECTION TEE/RISER MUST EXTEND A MINIMUM OF 12" BELOW THE DESIGNED WATER LEVEL.
8. ALL INTERNAL PIPING (RISER/INSPECTION TEE) SHALL BE A MINIMUM OF 6" PVC PIPE. EACH RISER SHALL BE CONNECTED TO THE WALL OF THE VAULT IN TWO (2) PLACES USING STAINLESS STEEL OR ALUMINUM STRAPS.
9. ALL FITTINGS SHALL BE DESIGNED TOR GREASE RETENTION.
10. CONNECTIONS THROUGH CONCRETE WALLS REQUIRE WATER TIGHT MANHOLE ADAPTERS. SEAL ALL PIPE CONNECTIONS WITH MATERIALS APPROVED BY CVWD.
11. VAULT AND FITTINGS SHALL BE WATERTIGHT.
12. LIDS, FRAMES AND BOLTS SHALL MEET DISTRICT STANDARDS. MANHOLE ACCESS REQUIRED TO ALL VAULT CHAMBERS.
13. FILL WITH CLEAN WATER PRIOR TO STARTUP OF SYSTEM.
14. DISCHARGE MUST COMPLY WITH DISTRICT STANDARDS.
15. INTERCEPTORS SHALL BE VENTED PER UNIFORM PLUMBING CODE.
16. LIQUID DEPTH SHALL MEET THE UNIFORM PLUMBING CODE.
17. DISCHARGE AND TRANSITION TEES/RISERS SHALL EXTEND TO WITHIN 12-18" OF VAULT BOTTOM.

CROSS VALLEY WATER DISTRICT
SIDE SEWER DETAILS

GREASE INTERCEPTOR

SS-4	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-4.DWG

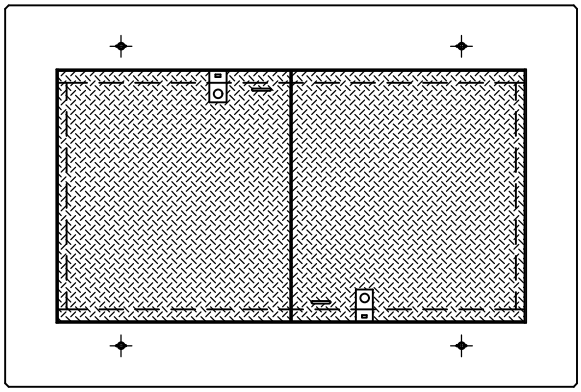


NOTES:

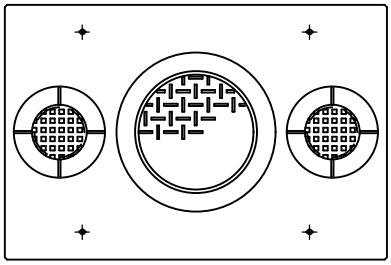
1. GRAY-WATER ONLY. BLACK-WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER.
2. LOCATE INTERCEPTOR WITHIN CLOSE PROXIMITY OF DRIVE FOR ACCESS BY A MAINTENANCE VEHICLE.
3. PRECAST VAULT AND BAFFLE SHALL HAVE KNOCKOUTS AT ALL PIPE OPENINGS. IF KNOCKOUTS ARE NOT PRESENT THEN PIPE OPENINGS SHALL BE LARGER THAN THE PIPE DIAMETER.
4. POSITION PIPE RISERS/INSPECTION TEES BELOW ACCESS OPENINGS TO ALLOW CLEAR ACCESS TO RISER AND VAULT CHAMBER FOR SAMPLING AND INSPECTION.
5. TOP OF INLET PIPE SHALL BE ONE PIPE DIAMETER HIGHER THAN THE TOP OF THE DISCHARGE PIPE.
6. INLET AND DISCHARGE INSPECTION TEE/RISER MUST EXTEND A MINIMUM OF 12" BELOW THE DESIGNED WATER LEVEL.
7. ALL INTERNAL PIPING (RISER/INSPECTION TEE) SHALL BE A MINIMUM OF 6" PVC PIPE. EACH RISER SHALL BE CONNECTED TO THE WALL OF THE VAULT IN TWO (2) PLACES USING STAINLESS STEEL OR ALUMINUM STRAPS.
8. ALL FITTINGS SHALL BE DESIGNED TOR OIL RETENTION.
9. CONNECTIONS THROUGH CONCRETE WALLS REQUIRE WATER TIGHT MANHOLE ADAPTERS. SEAL ALL PIPE CONNECTIONS WITH WATERTIGHT GROUT (MATERIALS TO BE APPROVED BY CVWD).
10. VAULT AND FITTINGS SHALL BE WATERTIGHT.
11. LIDS, FRAMES AND BOLTS SHALL MEET DISTRICT STANDARDS FOR MANHOLE LIDS AND/OR CLEANOUTS AS APPLICABLE.
12. FILL WITH CLEAN WATER PRIOR TO STARTUP OF SYSTEM.
13. DISCHARGE MUST COMPLY WITH DISTRICT STANDARDS.
14. INTERCEPTORS SHALL BE VENTED PER UNIFORM PLUMBING CODE.
15. LIQUID DEPTH SHALL MEET THE UNIFORM PLUMBING CODE.

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-5.DWG

CROSS VALLEY WATER DISTRICT SIDE SEWER DETAILS	OIL/WATER SEPARATOR		
	SS-5	NOT TO SCALE	FEB 2022



REQUIRED



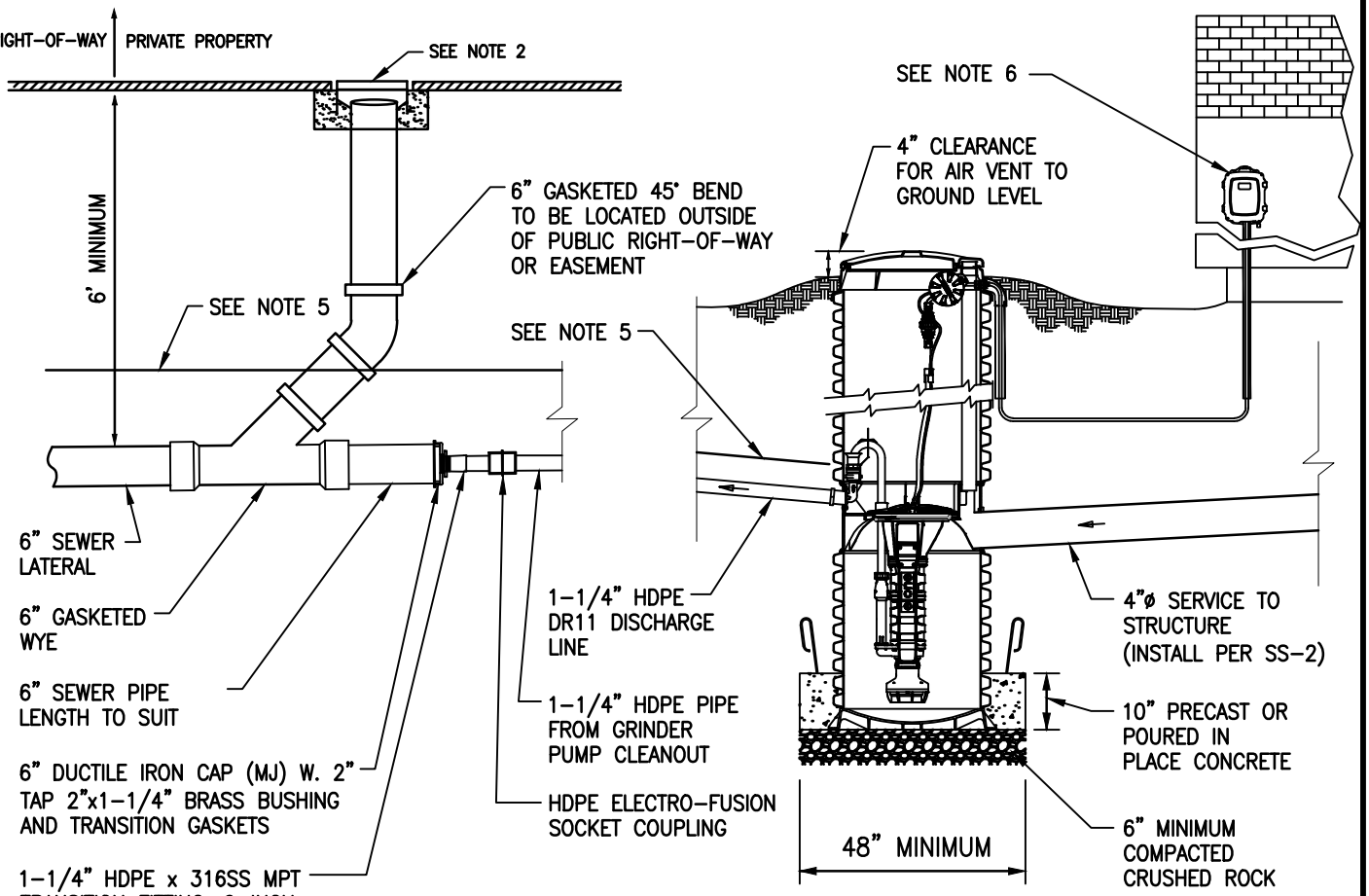
ALTERNATE (DISTRICT APPROVAL REQUIRED)

NOTES:

1. COVERS TO HAVE SPRING ASSISTED AND FULL 180° OPENING DOORS, LOCKING LATCH & HOT DIPPED GALVANIZED DIAMOND PLATING. USE LW PRODUCTS HD ACCESS HATCH (H-20) RATED COVER OR EQUAL.
2. LID MUST BE RATED FOR LOAD REQUIREMENTS AND BE WATER TIGHT.

CROSS VALLEY WATER DISTRICT SIDE SEWER DETAILS	OIL/WATER SEPARATOR COVER OPTION DETAILS		
	SS-5A	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-5A.DWG



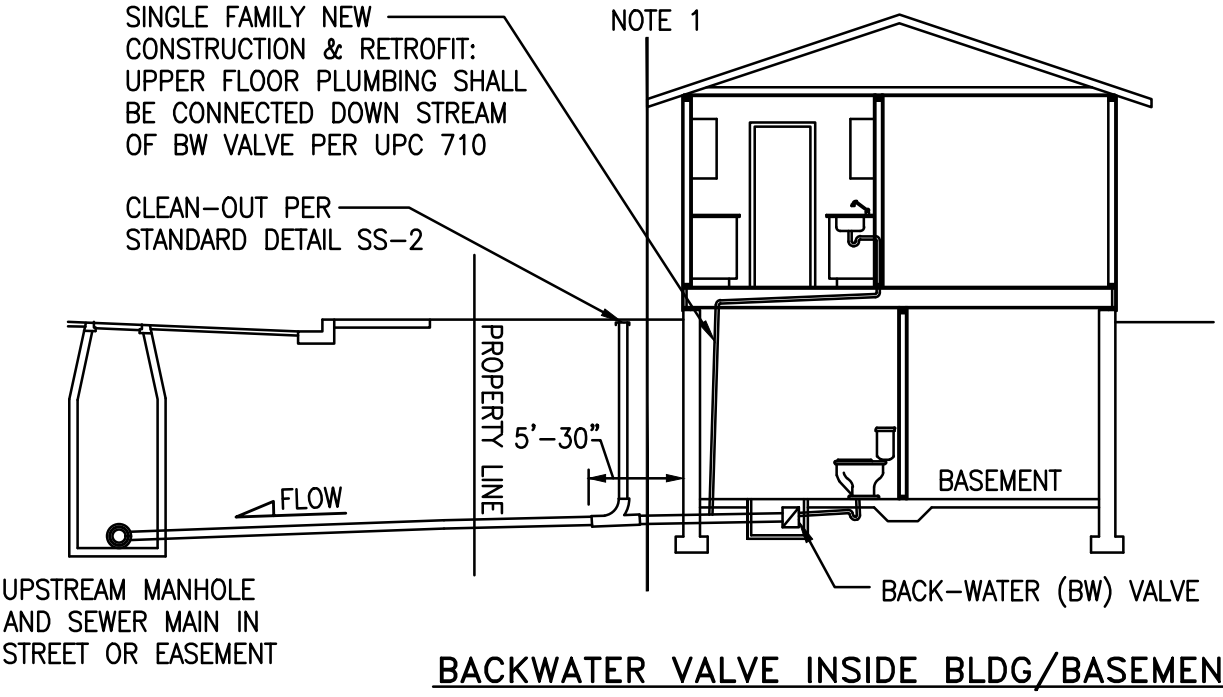
SINGLE RESIDENTIAL CONNECTION GRINDER PUMP AND PRESSURE CONNECTION TO GRAVITY SYSTEM

NOTES:

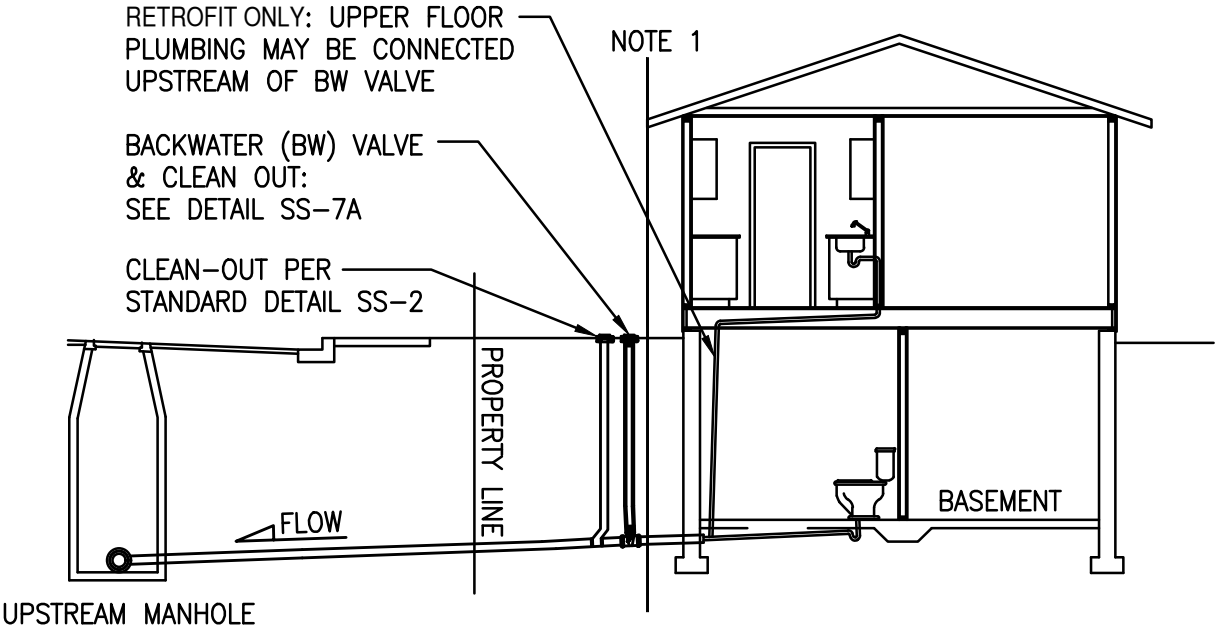
1. FOR SINGLE RESIDENTIAL/UNIT CONNECTION. ANY DEVIATION MUST BE REVIEWED AND APPROVED BY THE DISTRICT PRIOR TO INSTALLATION. ALL PIPE AND FITTINGS MUST BE INSTALLED PER DISTRICT STANDARDS.
2. 6" LAMP HOLE/CLEANOUT IS REQUIRED FOR VISUAL INSPECTION OF THE PUMP LINE FLOW AND TO AID IN CLEANING OF THE SEWER SYSTEM. THE LAMP HOLE/CLEANOUT MUST BE INSTALLED PER STANDARD SS-1 PRIOR TO TESTING OF THE PUMP SYSTEM AND PERMIT SIGN-OFF. THE LAMP HOLE/CLEANOUT TO HAVE A LOCKING RING COVER.
3. FLEXIBLE COUPLINGS ARE NOT ALLOWED ON THE CONNECTION OF THIS SYSTEM.
4. ALL HDPE PIPE AND FITTINGS SHALL BE DR11 WITH ELECTRO-FUSION WELDED SOCKET JOINTS. HDPE PIPE SHALL BE WATER TESTED TO 80 PSI FOR 5 MINS.
5. INSTALL BURIED METALLIC MARKER TAPE 1' ABOVE PRESSURE LINE. TAPE SHOULD READ "CAUTION BURIED SEWER BELOW". (CARLTON IND., BLACKBURN MFG CO. OR EQUAL.)
6. ALARM PANEL & ELECTRICAL INSPECTED BY OTHERS.
7. INSTALL E-ONE TANK ASSEMBLY AND SENTRY PANEL PER MANUFACTURERS INSTALLATION MANUAL AND FOLLOW REQUIREMENTS FOR MANUFACTURER'S WARRANTY.(DH071 OR DR071 MODELS APPROVED ONLY)

CROSS VALLEY WATER DISTRICT SIDE SEWER DETAILS	SINGLE RESIDENTIAL CONNECTION GRINDER PUMP		
	SS-6	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-6.DWG



BACKWATER VALVE INSIDE BLDG/BASEMENT



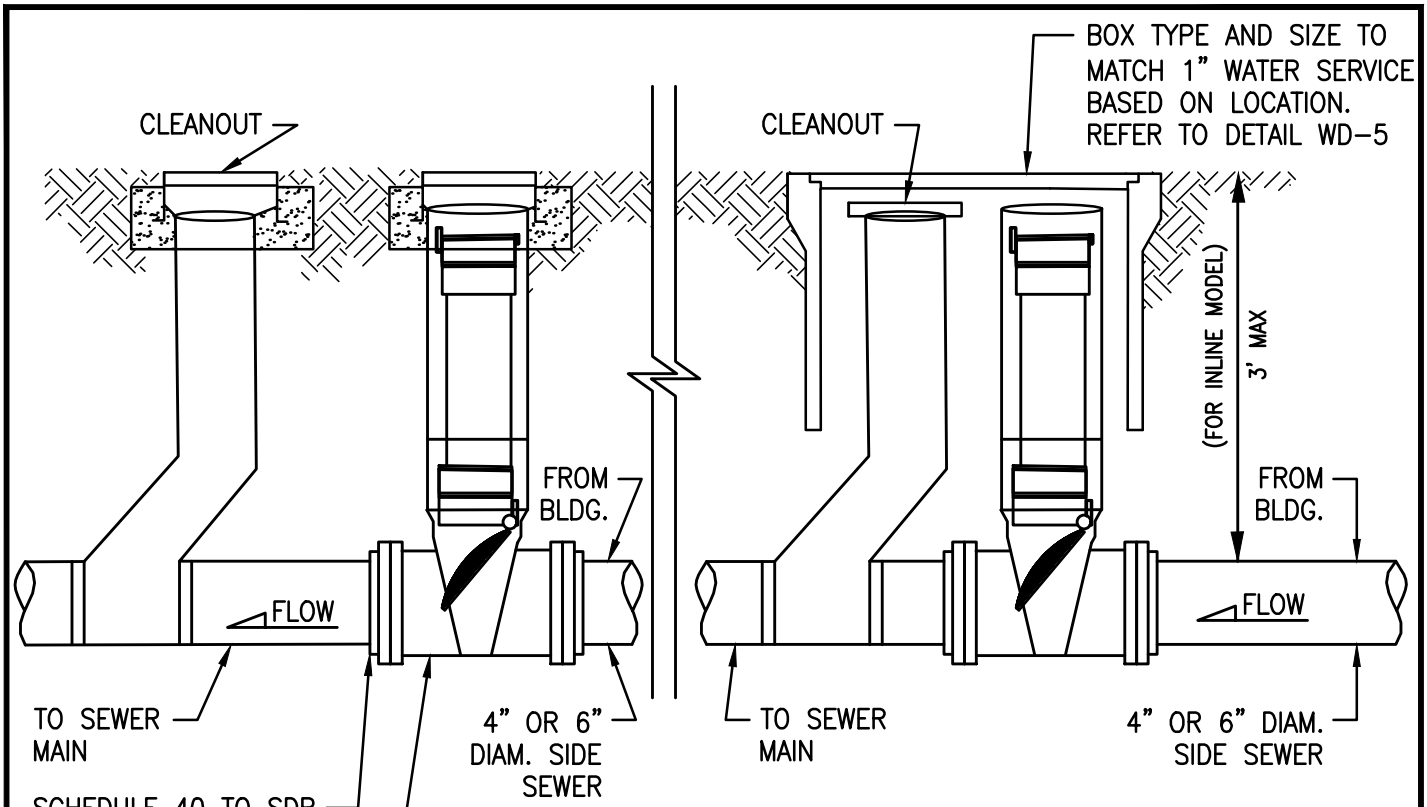
BACKWATER VALVE OUTSIDE BUILDING

NOTES:

1. PLUMBING INSPECTIONS INSIDE THE BUILDING ARE THE RESPONSIBILITY OF THE COUNTY OR CITY IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE.

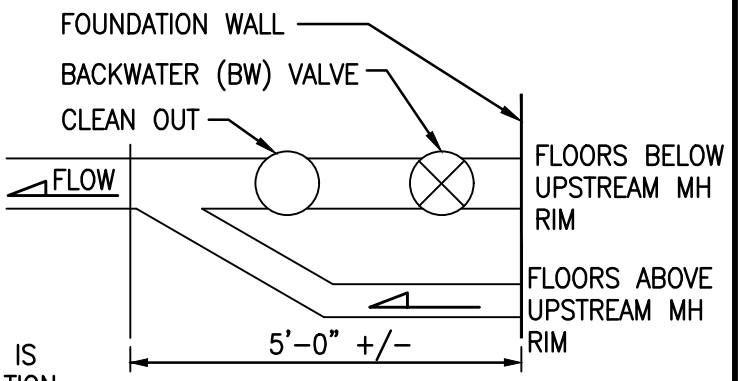
CROSS VALLEY WATER DISTRICT SIDE SEWER DETAILS	PRIVATE BACKWATER VALVE INSTALLATION TO SANITARY SEWER		
	SS-7	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-7.DWG



STANDARD APPLICATION

TRAFFIC APPLICATION



BACKWATER VALVE OUTSIDE PLAN VIEW

NOTES:

1. TO BE INSTALLED WHEN FINISH FLOOR ELEVATION IS LOWER THAN THE UPSTREAM MANHOLE RIM ELEVATION. IN ACCORDANCE WITH UPC 710.0.

A. ALL ACCESS LIDS SHALL BE BROUGHT TO FINISH GRADE. PROPERTY/BUILDING OWNER SHALL TAKE OWNERSHIP AND RESPONSIBILITY FOR CLEANING AND MAINTAINING.

B. IF PLACED IN CONCRETE, ASPHALT, OR TRAFFIC AREAS; A TRAFFIC BEARING LOCKING CASTING AND LID MARKED "SEWER" IS REQUIRED BY THE DISTRICT.

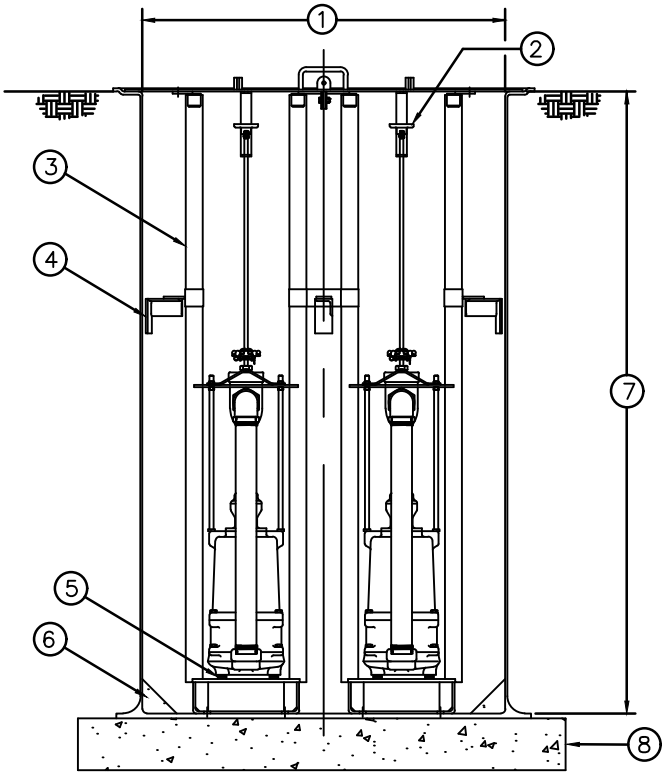
C. PLASTIC BOXES MARKED "SEWER" ARE ACCEPTABLE IN LANDSCAPE AREAS.

D. A SEPARATE BOX MAY BE USED FOR THE CLEANOUT BASED ON FIELD LOCATIONS.

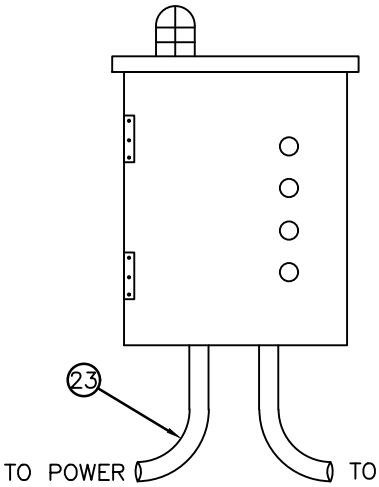
E. BACKWATER VALVE SIZE TO MATCH PLUMBING SIZE.

CROSS VALLEY WATER DISTRICT SIDE SEWER DETAILS	PRIVATE BACKWATER VALVE ASSEMBLY OUTSIDE INSTALLATION		
	SS-7A	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-7A.DWG

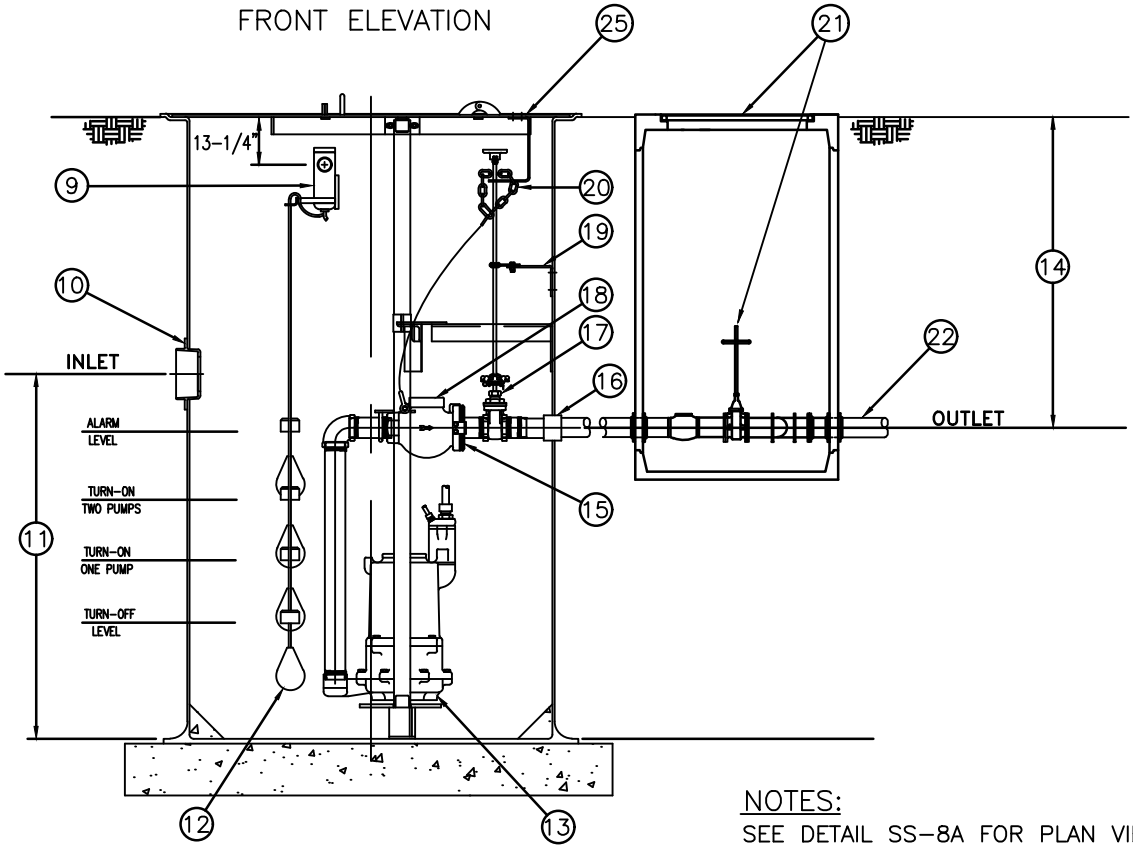


FRONT ELEVATION



REMOTE MOUNTED CONTROL PANEL

NOTE: ELECTRICAL SCHEMATIC SHALL BE PER MANUFACTURERS' RECOMMENDATION BASED ON PUMP MODEL AND POWER SOURCE.



SIDE ELEVATION

NOTES:

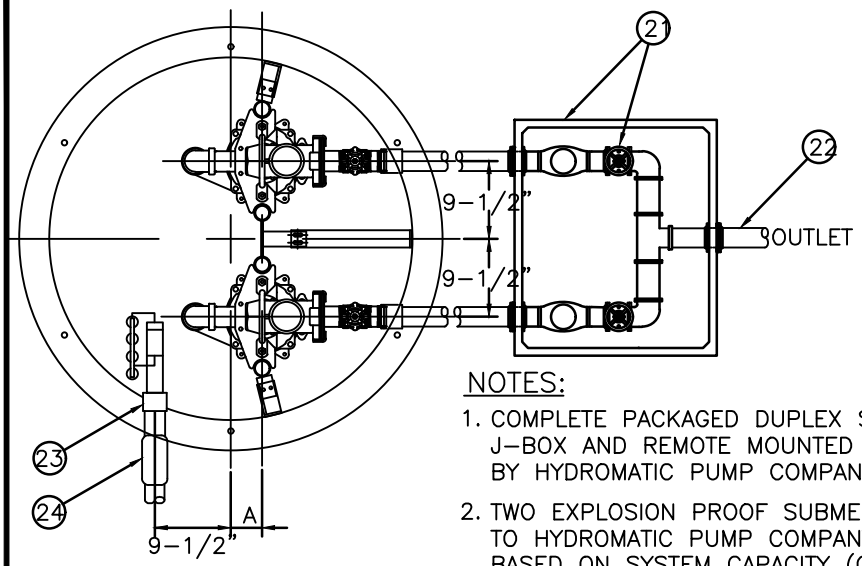
SEE DETAIL SS-8A FOR PLAN VIEW, MATERIALS LIST AND GENERAL NOTES.

CROSS VALLEY WATER DISTRICT
SIDE SEWER DETAILS

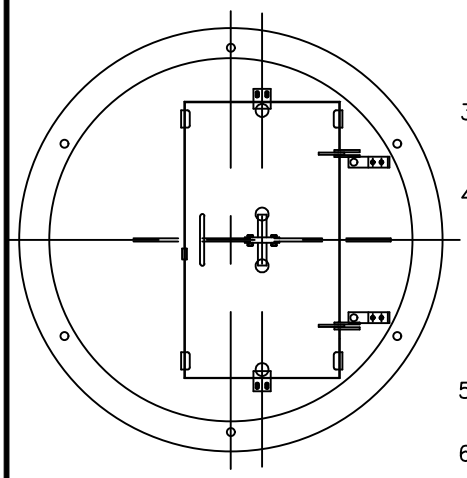
PRIVATE COMMERCIAL DUPLEX GRINDER PUMP STATION

SS-8	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-8.DWG



TANK DIA.	"A"
48"	1"
60"	8"
72"	8"



PLAN VIEW

NOTES:

1. COMPLETE PACKAGED DUPLEX SEWAGE GRINDER LIFT STATION WITH J-BOX AND REMOTE MOUNTED CONTROL PANEL AS MANUFACTURED BY HYDROMATIC PUMP COMPANY OR EQUAL.
2. TWO EXPLOSION PROOF SUBMERSIBLE SEWAGE GRINDER PUMPS EQUAL TO HYDROMATIC PUMP COMPANY OR EQUAL. PUMPS WILL BE SIZED BASED ON SYSTEM CAPACITY (GPM REQUIRED), TOTAL DYNAMIC HEAD (TDH) AND TYPE OF COMMERCIAL USE. DEVELOPER SHALL SUBMIT PUMP MODEL AND FLOW REQUIREMENTS TO CROSS VALLEY WATER DISTRICT FOR APPROVAL. SEE NOTE 6.
3. SUMP BASIN DIAMETER SHALL BE SIZED TO MEET SYSTEM CAPACITY. THE WET WELL SHOULD PROVIDE A HOLDING PERIOD NOT TO EXCEED 10 MINUTES FOR THE DESIGN AVERAGE FLOW. SEE NOTES 2 AND 6.
4. CONTROL PANEL SHALL BE CONTAINED IN A WEATHERPROOF, STEEL ENCLOSURE MEETING NEMA 3R REQUIREMENTS WITH HINGED DOOR AND NEOPRENE GASKET. CONTROL PANEL SHALL INCLUDE ALARM LIGHT, RUN LIGHT, HAND-OFF-AUTO SWITCH, TRANSFORMER RESET AND OVERLOAD RESET. THE CONTROL PANEL SHALL BE ASSEMBLED AND TESTED BY A SHOP MEETING U.L. STANDARD 508 FOR INDUSTRIAL CONTROLS. ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH ALL LOCAL CODES.
5. DEVELOPER IS RESPONSIBLE FOR OBTAINING ELECTRICAL PERMITS AND APPROVALS PRIOR TO CONSTRUCTION.
6. PROVIDE SHOP DRAWING SUBMITTALS FOR ALL MATERIALS AND SYSTEM SIZING CALCULATIONS TO CROSS VALLEY WATER DISTRICT FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

MATERIALS LIST

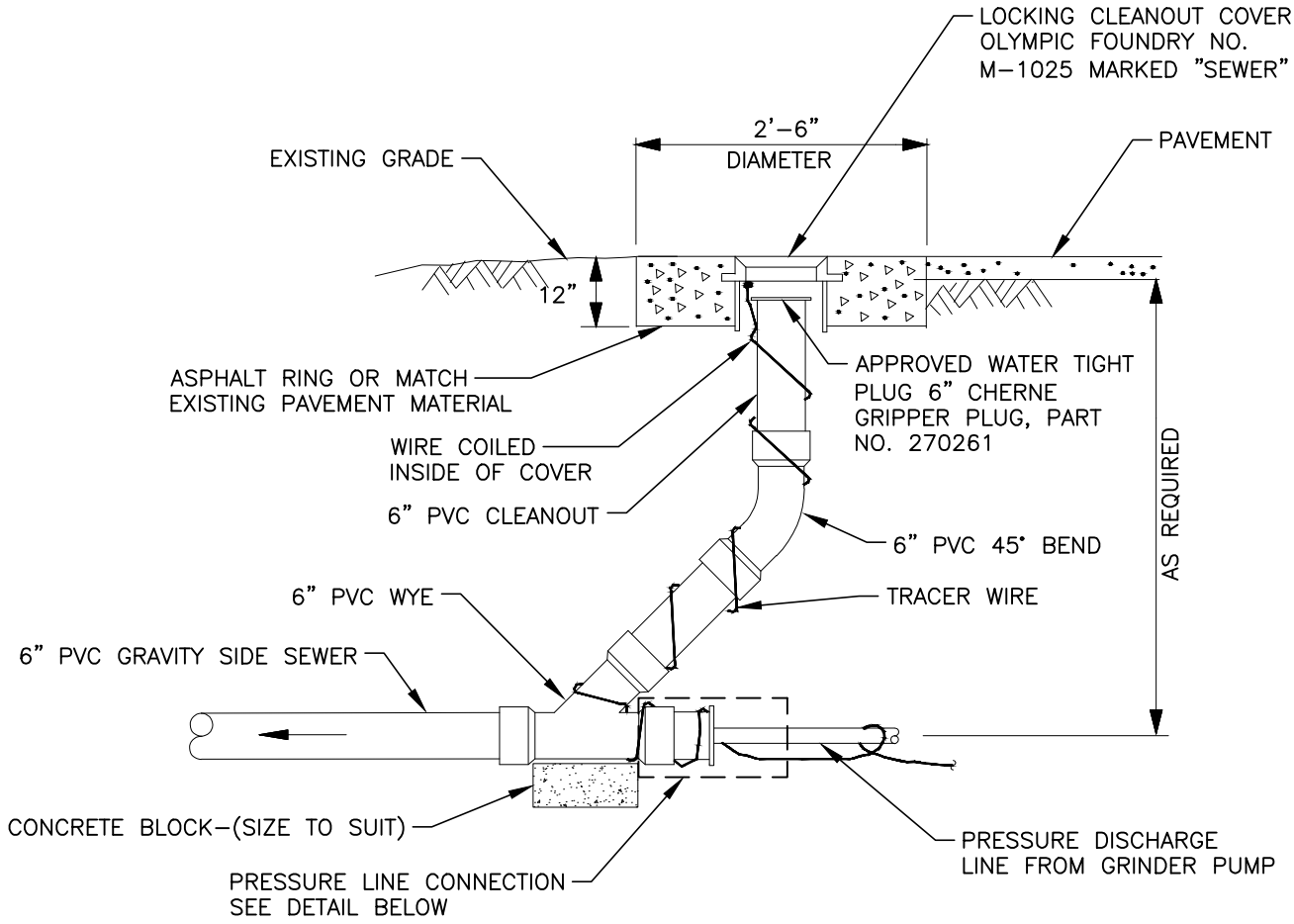
1. CONCRETE OR FIBERGLASS SUMP. SEE NOTES 3 AND 6.
2. GATE VALVE EXTENSION REQUIRED FOR DISTANCE GREATER THAN 2' FROM TOP OF BASIN.
3. GALVANIZED PIPE GUIDE RAIL.
4. INSTALL BRACE WHEN GUIDE RAIL EXCEEDS 15-0".
5. SHIMS FOR DISCHARGE FLANGE ALIGNMENT.
6. HOPPER BOTTOM BY OTHERS.
7. 4' MIN. AND 16' MAX. DEPTH. SEE NOTE 3.
8. 12" MINIMUM DEPTH FOUNDATION GRAVEL.
9. NEMA 4 J-BOX
10. 6" INLET HUB OR COLLAR.
11. 6" INLET PIPE DEPTH PER FIELD CONDITIONS.
12. SEALED MERCURY OR MECHANICAL SWITCH.
13. SUBMERSIBLE SEWAGE GRINDER PUMP. SEE NOTE 2.
14. 3'-0" STANDARD DEPTH.
15. HYDRAULICALLY SEALED DISCHARGE FLANGE.
16. 2" NPT COUPLING.
17. 2" BRASS GATE VALVE.
18. 2" CAST IRON BALL CHECK VALVE.
19. INTERMEDIATE BRACE REQUIRED FOR EXTENSION LONGER THAN 10'-0".
20. LIFTING CHAIN.
21. DISCHARGE PIPING SHALL INCLUDE 2" CHECK VALVE (2 EACH), 2" GATE VALVE (2 EACH), G.I. TEE, BENDS, UNIONS AND ALL MISC. FITTINGS REQUIRED. CONCRETE VAULT SHALL BE UTILITY VAULT MODEL 444-LA OR EQUAL, WITH DRAIN AND 3' X 3' APPROVED HS20 WATERTIGHT HATCH.
22. 2-1/2" PVC PIPE. MAINTAIN 36" MINIMUM COVER.
23. 1-1/4" NPT CONDUIT TO POWER SUPPLY.
24. CONDUIT SEAL TO MEET LOCAL CODES AND PREVENT SURFACE WATER FROM ENTERING J-BOX.
25. APPROVED HS20 WATERTIGHT HATCH.

CROSS VALLEY WATER DISTRICT
SIDE SEWER DETAILS

PRIVATE COMMERCIAL DUPLEX GRINDER PUMP STATION

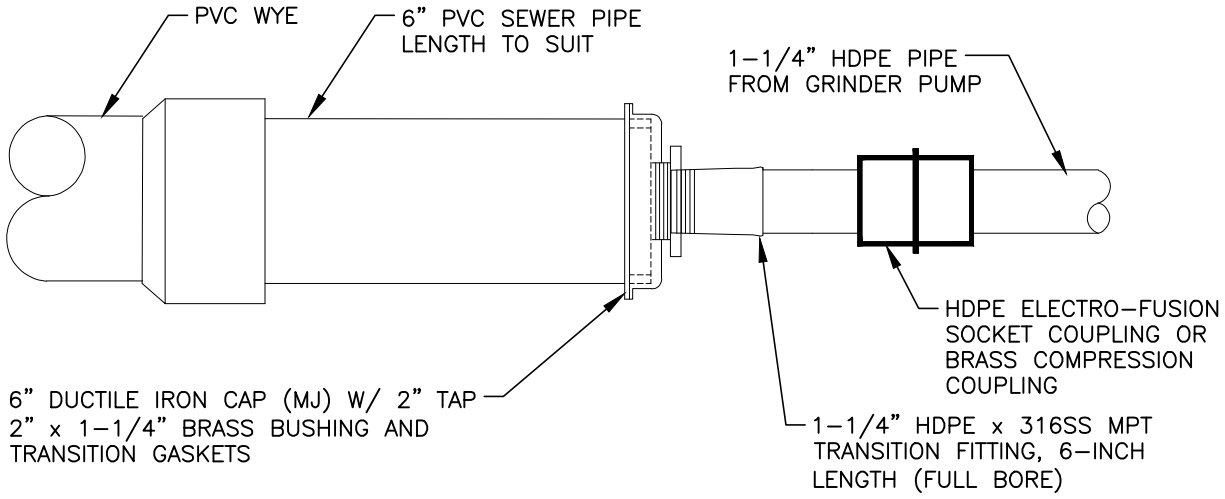
SS-8A	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-8A.DWG



NOTES:
1. ALL PVC FITTINGS SHALL BE GASKETED
2. NO COLLECTION VALVE BOX REQUIRED WHEN CONNECTING TO A GRAVITY SIDE SEWER

CONNECTION TO GRAVITY SEWER DETAIL



CROSS VALLEY WATER DISTRICT
SIDE SEWER DETAILS

PRIVATE PRESSURE LINE
CONNECTION TO GRAVITY SEWER

SS-9	NOT TO SCALE	FEB 2022

FILE NAME: \\K-FS1\LIBRARY\CAD\DETAILS\DISTRICTS\CROSS VALLEY WATER DISTRICT\SS-9.DWG