



# DIVISION 5

## Standards for Side Sewer Installation

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### Table of Contents

<b>5-1.000</b>	<b>SIDE SEWERS</b> .....	<b>3</b>
5-1.010	General.....	3
5-1.020	Permits.....	3
<b>5-2.000</b>	<b>CONSTRUCTION STANDARDS</b> .....	<b>4</b>
5-2.010	General.....	4
5-2.020	Materials.....	5
5-2.030	Size.....	6
<b>5-3.000</b>	<b>INSTALLATION</b> .....	<b>6</b>
5-3.010	General.....	6
5-3.015	Tapping and Abandon/Capping.....	7
5-3.020	Trench Excavation.....	7
5-3.030	Pipe Installation.....	8
5-3.040	Inspection.....	9

### DETAILS

Standard Side Sewer.....	SS-1
Private Side Sewer Installation.....	SS-2
Alternate Private Side Sewer Installation.....	SS-3
Grease Interceptor.....	SS-4
Oil/Water Separator.....	SS-5
Oil/Water Separator (Cover Options Details).....	SS-5A
Open.....	SS-6
Pumping Side Sewer Pressure Connection to Gravity Sewer.....	SS-7
Check Valve Assembly (Side Sewer Application).....	SS-8

## **5-1.000 SIDE SEWERS**

### **5-1.010 General**

All connections to public sewer shall be by a gravity connection unless approved otherwise by the District. All connections to public sewer whether by connecting to an existing lateral or by tapping an existing public sewer main shall be completed under the terms of these specifications and requirements. These standards do not relieve the property from compliance with all other jurisdictional requirements relative to other building, mechanical, and construction permits.

Applicants shall comply with all District resolutions, standards and requirements, and permit conditions. Work within public right-of-way requires a separate permit from the jurisdictional authority.

Each single family residential lot and commercial building shall be serviced by a single side sewer connection to the public main. Joint use of a single 6-inch side sewer that serves more than one single family or multi-family unit may be approved by the District if; a) the number of Equivalent Residential Units (ERU) is equal to or less than 4.0 and; b) if individual sewer pipe from the main is not possible as determined by the District. See chart below. All joint use side sewers shall be approved by the District.

<b>Type</b>	<b>Equivalent Residential Unit (ERU)</b>
Single Family	1.0
Multi-family (attached)	0.8 per unit
Motel/Hotel/Mobile Home Park	0.4 per room or space
RV Park	0.4 per space

All commercial facilities requesting service connection shall complete a Sewer Use Survey (available on the District website) and shall comply with the District's current pretreatment policy. Each non-single family building shall have its own side sewer. If it is determined by the District the facility will be preparing food or otherwise generating fats, oils and grease, the customer shall be required to install a grease interceptor. The applicant shall submit a plan indicating the type, size and location of the grease interceptor and install it as part of the buildings plumbing.

A scheduled maintenance plan is the responsibility of the property owner. If a grease trap is allowed instead of a grease interceptor, it shall be sized and installed as per the current edition of the Uniform Plumbing Code (UPC) and approved by the District prior to installation.

### **5-1.020 Permits**

Prior to any connection to an existing side sewer stub or connection to an existing sewer main, the Developer, property owner or agent shall first obtain a side sewer permit from the District. For work within the public right-of-way, District easement, or private easement, a Cash Performance Guarantee is required. Certain unusual circumstances may require additional fees.

The following types of permits are issued. Applicants shall comply with all District resolutions, standards and requirements and permit conditions.

- A. Standard Side Sewer Permit (Includes Add-on Permits). A Standard Permit is required for all new connections to the public sanitary sewer system. The Standard Permit is for that portion of the side sewer beginning 2-feet from the building or structure and continuing to the connection to the public sanitary sewer system. The building sewer which includes all interior plumbing and continues to 2-feet outside of the building or structure is considered part of the building, plumbing and/or construction permits.
- B. Dry Side Sewer Permit. A Dry Permit may be available for purchase in certain situations when a property, building or structure is not ready for construction and/or connections to the public sanitary sewer facility, but it is desirable to install a portion of the side sewer from the sewer system to a point within the property, but is not connected to any sewer user. This is called a “dry side sewer”.

The District will determine when a Dry Side Sewer Permit is used.

A separate permit shall be required to make the final connection to the building or sewer user.

- C. Revision Side Sewer Permit. A Revision Permit is required when a property has existing sanitary sewer service but is proposing a revision to the service outside of the building or structure. This may be the result of adding additional buildings or structures, or remodeling existing buildings or structures.

The District will determine when a Side Sewer Revision Side Sewer Permit is applicable.

- D. Capping Side Sewer Permit. A Capping Permit is required when side sewer service is being discontinued or is abandoned. The sewer lateral shall be cut and capped at the main line unless otherwise determined by the District.

## **5-2.000 CONSTRUCTION STANDARDS**

### **5-2.010 General**

Side sewer installation shall be in accordance with the latest edition of the Uniform Plumbing Code as modified by these standards.

The intent of these District Side Sewer Standards is to reasonably ensure that properties connecting to the District's system have a good quality private sewer service connection to the District's public sewer system.

While the District has established standards and conducts installation inspections, the ultimate responsibility for all private side sewers rests with the property owner.

For work within public right-of-way, all requirements of the right-of-way permit shall be met.

**5-2.020 Materials**

- A. Pipe: All materials shall be manufactured of premium quality materials and shall conform to all approved applicable standards, shall be free of all defects and shall pass all required testing.

The following materials are approved for side sewer installation:

Sewer Material	Standard
Ductile Iron	ANSI/AWWA C151/A21.51, ceramic epoxy lined, Class 50 for 6-inch, Class 50 for 4-inch minimum
Type PSM, Polyvinyl Chloride (PVC) Sewer Pipe	SDR 35 ASTM D 3034
Polyvinyl Chloride (PVC) Pressure Pipe AWWA C-900, C-905	ANSI/AWWA C-900 & C-905, DR 18
Polyvinyl Chloride (PVC) Schedule 40 Plastic Pipe	ASTM D 1785
High Density Polyethylene Pipe (HDPE)	ASTM D3350 SDR 11
Acrylonitrile Butadiene Styrene (ABS) Plastic Drain and Vent Pipe (with prior approval)	ASTM Spec D 2661 or F 628
Cast in Place Pipe (CIPP) (with prior approval)	ASTM F1216 or ASTM F1743

Ductile iron shall be furnished with flexible gasket joints. Both ABS and PVC Schedule 40 pipe may be installed using solvent welded type fittings or rubber gasket joints conforming to their respective ASTM Specifications. Type PSM PVC sewer pipe shall be installed using elastomeric gasket joints and fittings in accordance with manufacturer's recommendations. C-900, C-905 and HDPE are considered on a case by case basis. Other materials may be approved by the District.

- B. Tapping Saddles: For ductile iron pipe: stainless steel tapping tee is required and shall be Romac, Smith-Blair, or Ford.

For PVC, concrete, or HDPE pipe: Romac Style "CB" Sewer Saddle (or approved equal) shall be used.

- C. Transition Couplings: Approved couplings such as Romac 501, Smith Blair, or Ford shall be used when transitioning from one pipe type to another. For instance, from ductile iron

to PVC, or from concrete to PVC. Couplings for C-900 to SDR -35 can be Specified Products gasket joint PVC adaptors or approved equal. Transitioning to SDR 35 is allowed if depth at transition is less than 16 feet

D. Capping Materials: Approved material for capping sewer laterals and side sewer pipe by pipe type are:

- Concrete pipe: a mechanical pressure plugs manufactured by Taylor Made Plastics or approved equal shall be sized to fit in the bell of the existing tee, larger than the 6-inch I.D.
- PVC pipe: a PVC cap or spigot plug with rubber gasket.
- Ductile iron pipe: a MJ plug.

### **5-2.030 Size**

The portions of sewer laterals in right-of-way and easements shall be 6-inches minimum. The side sewer may be 4-inches for single family residences once outside of right-of-ways or easements.

Side sewer for single family residences shall be no less than 4-inches.

Side sewers for commercial and multi-family shall be no less than 6-inch. All commercial buildings shall have a separate sewer stub for each separate building.

Side sewers for duplex units shall be no less than 4-inches when an individual service connection is used. If served by a single stub, the stub shall be a minimum 6-inch where the line is used jointly with a separate 4-inch service to each side. If one connection to the duplex is used, a minimum 6-inch is required.

Side sewers for single family residences approved by the District for a joint use side sewer shall be a minimum 6-inch in areas of common use.

### **5-3.000 INSTALLATION**

#### **5-3.010 General**

Side sewer installation shall be in accordance with the latest edition of the Uniform Plumbing Code as modified by the District and these specifications and details. Only properly insured general contractors or utility contractors licensed and bonded with the State of Washington shall perform side sewer installations within the public right-of-way or within private easements. A copy of the license shall be provided to the District. Nothing contained in side sewer permit shall create any contractual rights between the District and any person or firm employed to do the Work.

If the property owner desires to perform the work themselves on their property, the property owner shall indicate this on the application form and shall comply with District Standards.

The pipe and jointing materials for the sewer lateral along with the manner in which they are installed, shall be of the same style and materials as the main to which they are connecting.

If not connecting to the building or structure, each sewer lateral and side sewer shall be capped and blocked in accordance with the Standard Details.

On private side sewers, cleanouts are required every 100 feet, at 90 degree bends, or combinations of bends greater than 45 degrees.

No vertical or horizontal bends shall be allowed in the public right-of-way or sewer easement without specific authorization by the District.

See Division 3 for other standards and details applicable to this section.

### **5-3.015 Tapping and Abandoning/Capping**

When excavating around existing sewer mains, great care shall be taken to not damage the existing sewer line. When the sewer lateral installation requires the tapping of an existing District sewer mainline or capping of an existing side sewer or lateral, the materials shall be provided by the Contractor. The Contractor shall be responsible to provide all equipment, staff (including certified flagger(s) if needed), excavation, approved shoring, ladder, dewatering, backfilling, compacting, restoration and materials to assist District forces in tapping existing sewer line or witnessing the capping.

- A. Tapping. The Contractor shall schedule District forces a minimum of three (3) business days in advance. Taps shall be scheduled for Tuesday, Wednesday, or Thursdays. The Contractor prepares the trench in accordance with all safety standards and provides 1-foot distance around the existing sewer main. Shoring shall not be supported by the mainline. District forces will install the tapping tee provided by the Contractor and make the tap. The Contractor shall install the pipe from the tapping tee to the property.
- B. Abandoning/Capping. The Contractor shall excavate the existing tee on the mainline and plugs or caps the existing tee.
  - 1. For existing concrete lines: A mechanical plug sized to fit the existing bell but larger than 6-inch inside diameter is used. See section 5-2.020 for type. The plug is inserted and grouted. Abandoned piping is either removed or grout plugged and filled with flowable Control Density Fill (CDF). Method to be determined by the District or jurisdictional authority, whichever is more stringent shall apply.
  - 2. For existing PVC lines, a spigot PVC plug shall be inserted into the existing tee or a PVC cap with rubber gasket placed on pipe within 1 foot of mainline. Inspection is required prior to backfill.
  - 3. For existing ductile iron lines, a MJ plug shall be installed with gasket and bolts on the tee.
  - 4. Inspection is required on capping of sewers laterals prior to backfill.

### **5-3.020 Trench Excavation**

Trench excavation shall be accomplished with suitable equipment to provide the minimum lines and grades required. All excavations shall comply with applicable Federal, State and local regulations. The Contractor shall be responsible for all trench safety requirements.

Over-excavation of trenches shall be brought back to required grade by installation of select backfill material and compacted to 95% of maximum density or as directed by the District.

Unsuitable materials, such as peat, clay and muck, shall be removed to at least two feet below grade or as directed by the District, and replaced with select backfill material capable of being compacted to 95% maximum density as directed by the District. Trench excavations shall achieve the following results:

- Be neat, clean and straight between bends.
- Be of proper grade, minimum 2 percent and maximum 45 degrees (100 percent).
- Utilize method of pipe supporting acceptable to the District and evaluate other options, such as increasing the pipe run to allow for flatter slopes, prior to the District allowing pipe grades in excess of 45 degrees (100 percent).
- Slopes in excess of 45 degrees (100 percent) shall require special blocking and lateral supports and may require an increased standard of pipe i.e. ductile iron.
- Be constructed and left in a safe manner in accordance with appropriate regulatory authorities.
- Properly coordinated with the sewer lateral and/or side sewer installation and inspection so as to minimize the time trenches are open.
- Promptly backfilled upon approval of pipe installation.

### **5-3.030 Pipe Installation**

Pipe Installation shall proceed in conjunction with trench excavation. Pipe installation shall be in accordance with the Uniform Plumbing Code as modified by these standards.

Minimum grade is 2 percent. Special circumstances may require consideration of grades less than 2 percent, but all such cases require prior approval by the District. Maximum grade is 45 degrees (100 percent). Grades in excess of 45 degrees (100 percent) shall be considered subject to special restraining in accordance with the standard details.

All side sewers shall be bedded with pea gravel or with prior approval by the District, 1/2-5/8 minus crushed rock may be used.

Cleanouts shall be required and installed as follows:

- At the building connection, as directed by the District.
- No less than every 100 feet.
- At all changes in directions in excess of 45 degrees. If combinations of bends have straight pipe runs of 4-feet or greater between bends, that shall not be considered an aggregate change of direction.
- If directed by District, a change of direction (total of bends) exceeds a total of 135 degrees
- Installed to allow for cleaning in the direction of flow.
- Cleanouts installed in paved or concrete roads, driveways or walkways, shall have a frame and cover installed in accordance with Division 3 of these standards.

No connections from downspouts, gutters, footing drains or outside drains or any other feature receiving or exposed to rain or ground water shall be allowed to sewers.

Side sewers shall be a minimum of 18-inches deep at 2-feet from the outside foundation wall or structure. Suitable grade transitions (fittings) shall be installed between the structure and the side sewer to achieve the desired depth.

### 5-3.040 Inspection

All side sewers shall be tested and inspected by the District prior to backfilling. Any work that has been covered and which the District did not inspect shall be uncovered to allow for inspections and testing.

- A. Advance Notice. It is the responsibility of the person authorized by the permit to perform the work to provide notice to the District that the work is ready for inspection. Such notice shall be at least one business day before the desired inspection date. The District will schedule the inspection as near the desired time as possible subject to the District's availability.
- B. Responsibility. It shall be the responsibility of the person authorized by the permit to ensure the side sewer is complete and shall stand all prescribed tests prior to the desired inspection date.
- C. Tests. After pipe inspection, pipe shall be secured with backfill prior to pressure test. All tests shall be conducted in the presence of the District. The person authorized to complete the work shall be present during the inspection and testing periods.

Tests shall be made for minimum grade. Visual inspections shall be conducted on all alignment, grade, backfill, and other items the District deems relevant.

Water tests shall be completed by plugging the side sewer and filling with water to the point of overflow. The sewer shall be tested in its entirety or in sections as directed by the District. Water shall be kept in the side sewer for a minimum of 15 minutes. The system shall be water tight with no visual or measurable leakage.

An alternate to water testing is a standard air pressure test of 4 pounds per square inch of pressure for a 5-minute period with no measurable loss of pressure.

Grinder pump pressure lines shall be water tested at 80 psi for 5 minutes

- D. Corrections. Notices of corrections or deficiencies shall be given at the time of inspection or written and delivered to the permittee or their authorized representative.

All corrections and/or deficiencies noted by the District shall be corrected prior to scheduling a re-inspection.

- E. Re-testing. After all corrections and/or deficiencies noted by the District have been corrected, the permittee shall again schedule an inspection with the District. Additional corrections and/or deficiencies may be noted at this time.
- F. Additional Payment. If a side sewer does not successfully pass an initial and subsequent re-test, the applicant shall be subject to payment of an additional side sewer permit fee prior to any additional inspections.

- G. Approval. Upon the satisfactory testing and upon satisfactory evidence that all interior plumbing has been approved, the side sewer shall be approved for use and operation by the District and allowed to discharge into the District sewer system.