

## **CHAPTER 5      SANITARY SEWER**

### **5.1 GENERAL REQUIREMENTS AND POLICIES**

The City of Sedro-Woolley is committed to providing quality sanitary sewer service to all its citizens. However, extensions of the public sanitary sewer system shall not be made into critical areas, hazard areas, or the Skagit River Floodway for the purpose of providing services within critical areas, hazard areas, or the Skagit River Floodway.

#### **5.1.1 Sanitary Sewer Requirements**

- A. All sanitary sewers shall be designed to City of Sedro-Woolley standards.
- B. All sanitary sewer systems shall be designed using the Department of Ecology's most recent "Criteria for Sewage Works Design" as modified by the SWPWDS.
- C. All projects must receive a "Certificate of Sewer Availability" from the City of Sedro-Woolley Sewer Department.
- D. All public sewers shall have Manholes at each end. All new sanitary sewers with manholes at each end are to be public.
- E. All pipe and fittings will be rubber gasketed PVC, and shall meet ASTM3034 – SDR 35 specifications. Glued joints are not acceptable. 6-inch minimum diameter for residential connections, and 6-inch minimum diameter for commercial connections.
- F. A licensed bonded contractor must be employed for work in the public right-of-way.
- G. Pipe will be bedded 6 inches under and 6 inches over with pea gravel or buckshot only.
- H. All ditches within the public right-of-way will be safe guarded with barricades and must not be left open overnight.
- I. Backfill all trenches after inspection and clean up street, including pavement restoration.
- J. Any portion of the installation covered or backfilled without approval by the inspector will be uncovered. NO EXCEPTIONS.
- K. Fixtures below street elevation will be equipped with backflow preventer.
- L. Installation will not be approved without satisfactory as-built drawing.
- M. Requests for inspection will be made at least 24 hours in advance by call to the Inspection line (360) 855-0139.
- N. Sewer pipe must have at least 30 inches cover at the property line and 18 inches on private property.
- O. Side Sewers:

All sanitary sewer side sewer services:

1. Shall utilize a 'sweep-tee' or sanitary wye connection into the sanitary sewer main;
  2. Shall be 6" diameter;
  3. Shall be laid at minimum 2% slope;
  4. Shall be rubber gasketed PVC, and shall meet ASTM3034 – SDR 35 specifications. Glued joints within the right-of-way are not acceptable.
  5. Shall consist of a separate 'tap' for each lot;
  6. May not serve more than two (2) residential buildings or one (1) commercial building;
  7. Shall not serve more than one (1) building when directly fronting the right-of-way (ROW) which contains the sanitary sewer main.
  8. Shall not connect to a sanitary sewer manhole.
  9. May only be reduced to 4" diameter on private property upstream of the right-of-way cleanout on single family dwellings;
  10. All side sewer installations shall include a cleanout at the foundation, a cleanout at the property line and a cleanout every 100 feet in long pipe runs;
  11. Shall contain NO bend sharper than 1/8 (45°) without a cleanout. All cleanouts shall be brought to the surface and capped. Cleanouts within sidewalks, driveways, or other areas subject to vehicle loading shall be located within an H-20 load rated cast iron cleanout frame and cover;
  12. Shall have minimum 30" cover in the ROW.;
  13. Shall have minimum 18" cover on private property;
  14. Shall be bedded 6" under and 6" over with pea gravel or buckshot only;
  15. Shall be pressure tested for 15 minutes with 10' minimum static head above the ground surface at the foundation cleanout;
  16. Will not be approved without a satisfactory as-built drawing.
- P. All sanitary sewers shall have minimum 36" cover unless Ductile Iron (D.I) is used, where 18" minimum cover is allowed.
- Q. A sanitary sewer manhole shall be placed at all horizontal angle points, at all changes in slope, at all changes in pipe diameter, at all changes in pipe material, and at all public sewer termini.
- R. Easements shall provide a minimum 10' from the center of all pipes and structures, on all sides. Minimum twenty-foot (20') wide easement shall be provided when sewer mains are located on private property. Easement width shall conform to the following:

<u>Pipe Size</u>	<u>Pipe Depth</u>	<u>Easement Width</u>
12" and less	Less than 20'	20'
12" and less	Greater than 20'	30'
Greater than 12", up to 24"	Less than 20'	30'

Greater than 12", up to 24"	Greater than 20'	40'
Greater than 24"	All depths	City Engineer Specified

S. Sanitary sewer manholes:

1. 48" minimum diameter, with channeled bottom.
  2. Within the limits of a new or redevelopment project located within the street right-of-way shall be located outside of wheel tracks and:
    - i. Removed; or, if not feasible
    - ii. Converted to a 24-inch or 30-inch round manhole cover (detail 4-18), and
    - iii. Unless used as inlet, fitted with a solid locking lid
  3. Type 1, 2, or 3 pre-cast with pre-cast riser and cone sections. The base may be cast-in-place.
  4. All joints shall be properly aligned, fastened, and sealed. No leaking is permitted. Manholes greater than 8' deep shall be sealed externally over the full-diameter segments and joints.
  5. 0.1" drop through manhole when pipe diameter does not increase unless azimuth angle 75-degrees or greater, which shall have a 0.2" drop through the manhole. If in straight line, 0.05' drop through manhole will be allowed.
  6. If pipe diameter increases through manhole, 80% full line shall be matched to set outlet invert elevation.
  7. 300-foot maximum spacing between manholes.
  8. External drop manholes will be allowed with permission from the Public Works Department only. Internal drops are not allowed.
  9. Shall be vacuum tested prior to backfill in conformance with ASTM C1244.
- T. Sanitary sewer, if running parallel to another utility, shall maintain a minimum of 10' horizontal separation, center-center when all utility pipes are 24" I.D. or smaller diameter. 10' minimum separation from outside of pipe to outside of pipe if either I.D. is greater than 24".
- U. Minimum vertical separation is 18", with sewer being below the other utility.
- V. Unless written modification is obtained from the Director or Public Works / City Engineer, all sewer pipes shall be constructed with increasing diameter downstream.
- W. As-built plans shall be submitted prior to video inspection by the City.

- X. Contractor shall provide evidence of City approved pressure testing and City video inspection prior to acceptance of sewer mains by the City.

#### 5.1.2 Gas Stations

- A. Gas station canopy drainage shall not be connected to the sanitary sewer or the storm sewer. (Dead-end sump)
- B. The canopy area shall be designed so that the fueling area is completely covered so that it is not exposed to regular rainfall.
- C. The canopy area shall be designed to safely collect and contain fuel spills.
- D. Storm drainage shall be designed so that the canopy area is separate from other site drainage, is completely self contained, and discharges to a blind sump for spill protection.

#### 5.1.3 Septic System Decommissioning

Single on-site septic systems connected to single family residences are eligible for a decommissioning credit, currently \$2,855.00, provided that they are properly decommissioned.

- A. Septic tank/vault shall be pumped prior to decommissioning.
- B. If tank/vault is not totally removed, the top of the tank/vault shall be removed.
- C. If tank/vault is not totally removed, the bottom of the tank/vault shall be perforated to provide good drainage.
- D. If tank/vault is not totally removed, it shall be filled with clean sand or pea gravel.
- E. Tank/vault decommissioning inspection by the public works department is required.
  - a. If the tank/vault is totally removed, one inspection upon removal is required.
  - b. If the tank/vault is to be decommissioned in place, inspections are required just prior to backfilling and after backfilling.
  - c. Inspections are \$36 per visit.
- F. Upon completion of the septic tank/vault decommissioning, a connection to the public sewer system is required. All City side-sewer and side-sewer lateral standards shall be followed, and a side-sewer inspection is required.

#### 5.1.4 On-Site Septic Systems

New single-lot on-site septic facilities may be allowed within the city limits when certain conditions are met:

- A. On-site septic systems are allowed only on pre-existing single lots of record which are more than 200 feet from access to the municipal sewer system.

- B. On-site septic systems are allowed only on pre-existing single lots of record which are more than 12,500 sq. ft. in size. Lot lines may be eliminated to meet this requirement.
- C. On-site septic systems shall serve single structures only.
- D. On-site septic systems shall be designed by a licensed on-site septic designer or civil engineer within their level of expertise.
- E. On-site septic systems shall be located with minimum setbacks of 20 feet from any property line or easement line to the edge of the tank or drainfield seepage area.
- F. On-site septic systems shall be located with two same-size drainfield areas identified. One of these areas shall be a 'reserve' area, with covenants and restrictions placed on both drainfield areas.
- G. On-site septic systems are not allowed to be located within the 100-foot well protection setback for any potable water well, regardless of being 'offsite.'
- H. On-site septic systems which serve multi-family structures shall incorporate O&M Manuals recorded with County Auditor's Office, and utilize drainfield areas with 30% oversizing.
- I. On-site septic systems are not allowed within the Skagit River Floodway.

## 5.2 SANITARY SEWER PLANS

### 5.2.1 Sanitary Sewer Plan Requirements

- A. See the checklist(s) in the appendix. Each item on the checklist(s) is/are required.
- B. Sanitary sewer shall be shown on its own sheet(s) with other utilities shown, but screened back so that sanitary sewer stands out.
- C. Sanitary sewer shall be shown in "plan over profile" configuration. Utilities crossing the profile shall be shown in the profile view.
- D. If "plan over profile" is not shown, (only with specific permission for simple projects from the City Engineer or Director of Public Works) then crossing information must be shown for each crossing with invert and crown of pipes crossing over other pipes. This should be done so that at a glance, it can be seen that minimum cover and separation are being met.
- E. A box shall be shown on the plan view which shows:
  1. MH # and size (diameter).
  2. invert elevation, size, and direction of each pipe entering/exiting manhole.
- F.

### 5.2.2 Certified As-Built Plans

A. Certification:

Certified as-builts are to be provided by a State of Washington licensed Land Surveyor. Certified as-builts shall accurately reflect all field design revisions made during the construction process. All required as-built information shall be clearly shown on the original design mylar construction drawings approved for construction by the City of Sedro-Woolley. In lieu of correcting the original design mylar drawings, a new set of AutoCAD-prepared mylars may be submitted which are based upon the as-built information. In either case, each sheet of the as-built plans shall include the following statement along with the professional surveyor's stamp and date of expiration of said stamp. The stamp shall be signed and the expiration date filled in. The statement below shall be placed on every as-built plan set and should be located in the bottom left hand corner of the as-built drawing whenever possible.

"I CERTIFY THAT THE LOCATIONS, ELEVATIONS, DEPTHS, AND AS-BUILT COMMENTS REFLECTING MATERIALS ACTUALLY USED DURING CONSTRUCTION ACCURATELY REFLECT EXISTING FIELD CONDITIONS AS DETERMINED BY ME OR UNDER MY DIRECT SUPERVISION ON THIS DATE: \_\_\_\_\_."

Professional PLS Stamp,  
Expiration Date,  
Signature & Date

B. Minimum Requirements:

The following as-built requirements are intended to provide a guide as to the *minimum* criteria for Developers, Engineers of record, and Licensed Land Surveyors, and should be used along with good engineering and surveying practices for the type of project and as the situation warrants.

1. General:

Identify and show on the "As-Built Plans" all existing or abandoned utilities that were encountered during construction that were not shown on the design plans or that were shown on the design plans incorrectly.

The preferred method to show locations (both for proposed construction and as-builts) is by the use of survey lines or centerlines between existing survey monuments with suitable distances (or stations) and offsets given relative to these lines.

The next acceptable method for showing locations is by the use of City of Sedro-Woolley Coordinates for each point located. For the latter method, the surveyor must clearly show which survey points or monuments he used to begin his location work, the City of Sedro-Woolley coordinates for these survey points or monuments, the bearings and distances to all temporary control points, and the coordinates of each point located.

All elevation information shall be based upon City of Sedro-Woolley data, and the proposed construction plans and as-built drawings will identify the City of Sedro-Woolley Bench Mark used and the elevation of that Bench

Mark. The use of assumed elevations is not acceptable, although the Engineering Department may at its option accept depths measured with respect to the top of existing pavement surfaces, in lieu of actual elevations, depending on the scope of the proposed project.

In addition, the following information shall be shown/corrected on the "As-Built Plans":

2. Sanitary Sewer Projects:

**Manholes:** locations, types, rim and invert elevations.

**Sewer Lines:** locations, materials, lengths, slopes, diameters, elevations along the top of the pipe at 100 foot maximum intervals, diameter and locations of side sewer tees and stubouts, and invert elevations.

**Side Sewer Lines:** tee locations, materials, lengths, slopes, diameter, invert elevations, and depths of buried stubouts.

**Public Utility Easements:** legal descriptions, widths, and location of sanitary appurtenances within the easement.

**TV Reports:** comparison of side sewer locations shown on sewer line as-builts with the TV reports.

3. Electronic submittal of As-built information:

- a. As-builts shall be submitted in electronic form in AutoCAD 2000 format.
- b. City Datums shall be used.

## 5.3 SANITARY SEWER CONSTRUCTION

### 5.3.1 Sanitary Sewer Construction Requirements

- A. All sanitary sewers shall be constructed using modern techniques and industry standards.
- B. Construction shall conform to the most recent version of the Standard Specifications for Road, Bridge, and Municipal Construction.
- C. No sanitary sewer shall be constructed without approved engineered construction plans. Sanitary sewers shall be constructed to match the approved engineered construction plans. Deviation from the approved plans shall require specific confirmation from the City Engineer or his designee. No exceptions.
- D. All pipe shall be pressure tested.