

SECTION 5

5. STORM DRAINAGE STANDARDS

5A. GENERAL CONSIDERATIONS

The standards established by this chapter are intended to represent the minimum standards for the design and construction of storm drainage facilities.

5B. DESIGN STANDARDS

5B.01 General

The design of storm drainage systems and erosion and sediment control shall conform to the Town's adopted Stormwater Technical Manual. The following design considerations shall also apply:

- (1) Maximum catch basin spacing shall be 200 feet on road grades 0.5 to 3%, 300 feet when the road grade is 3% or greater and 500 feet maximum spacing on main storm drains between access structures, whether catch basins or manholes. No surface water shall cross any roadway. In addition, catch basins shall be placed whenever the length of surface drainage exceeds 300 feet on road grade, extending either direction from crest or sag on vertical curves.
- (2) Where storm drains run outside an existing public right-of-way, easements will be required for public maintenance. Such easement shall be a minimum of 10 feet in width.
- (3) The Storm Drainage Construction General Notes, shown on Table 5B-1, shall be included on any storm drainage improvement plans.
- (4) The developer/contractor shall submit to the Town storm drainage calculations and plans, stamped by a registered Washington State Engineer.

5B.02 Conveyance

The minimum main size shall be 12 inches diameter. Minimum lateral lines shall be 8 inches diameter. Runoff shall be computed and, if the flow requires it, a larger pipe shall be used. Nothing shall preclude the Town from requiring the installation of a larger sized main if the Town determines a larger size is needed to serve adjacent areas or for future service.

5B.03 Connections

Connections of storm drain pipe leading from a street inlet may be made

into an existing main storm drain without a catch basin or manhole, subject to case-by-case approval by the Town and subject to all the following requirements:

- (1) The inlet structure shall be a catch basin and not a simple inlet lacking a catch or drop section; and
- (2) Outside diameter of inlet pipe shall not exceed one-half the inside diameter of the main storm drain; and
- (3) Length of inlet connection shall not exceed 25 feet; and
- (4) Standard shop-fabricated tees, wyes, and saddles shall be used.

5B.04 Channels

The Town allows the use of open vegetated channels to convey stormwater runoff when possible. Any open channels proposed to be located within public rights-of-way shall require special approval from the Town.

TABLE 5B-1**STORM DRAIN CONSTRUCTION GENERAL NOTES**

1. All workmanship and materials shall be in accordance with Town of Friday Harbor's standards and the most current edition of the State of Washington Standard Specifications for Road, Bridge and Municipal Construction.
2. Temporary erosion/water pollution measures shall be required in accordance with the Town's Stormwater Technical Manual.
3. Construction shall comply with all permits and other requirements by the Town or other governing authority or agency.
4. The Contractor shall arrange for a preconstruction meeting with the Town prior to the start of construction.
5. All storm mains and retention/detention areas shall be staked for grade and alignment by an engineering or surveying firm, or a contractor approved by the Town.
6. Storm drain pipe shall meet the following requirements:
 - A. Plain concrete pipe conforming to the requirements of AASHTO M 86, Class 2.
 - B. Reinforced concrete pipe conforming to the requirements of AASHTO M 170.
 - C. PVC pipe shall conform to ASTM D 3034-73 SDR 35 for 4" thru 15" diameter PVC pipe, and shall conform to ASTM F 679 for 18" thru 27" diameter PVC pipe, with joints and gaskets conforming to ASTM D 3212 and ASTM F 477.
 - D. Ductile iron pipe conforming to the requirements of ANSI A21.51, and AWWA C 151, thickness class as shown on the plans.
 - E. Polyethylene smooth wall pipe per Advanced Drainage Systems (ADS) N-12 constructed per the Standard Specifications 7-04.
7. Special structures, oil/water separators and outlet controls, shall be installed per plans and manufacturer's recommendations.
8. The Contractor shall provide traffic control plan(s) as required in accordance with MUTCD.
9. The Contractor shall call underground locate line, 1-800-424-5555, 48 hours (min.) prior to any excavations.