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# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

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## SINGLE FAMILY SIDE SEWER STANDARDS

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### INTRODUCTION

This guideline is a summary of the City of Mercer Island's regulations on construction of sanitary side sewers for single family residences. A side sewer connects the home/structure with the main sewer line. Any connection or disconnection, revision, extension or change to a side sewer requires a permit. In this Development guideline, references are made to the Mercer Island Sewer District Administrative Code and the Mercer Island City Code.

### SIDE SEWER CONSTRUCTION REQUIREMENTS

1. Four-inch (4") pipe must be laid at a minimum 2% grade. Six-inch (6") pipe must be laid at a minimum 1.2% grade.
2. Side sewers must not be closer than 30" to any foundation wall or outer line of any footings, pilings, or building supports. A clean-out must be installed at the connection, and must be 36" from the foundation.
3. Minimum cover must be 42" in the public right-of-way, 30" in private roadways and under ditches, and 18" on private property.
4. Side sewers to a single house must be at least 4". All side sewers serving two single family houses, multiple dwellings, commercial establishments, schools, or any building other than single family must be at least 6".
5. Side sewers installed under future walls or rockeries shall be sleeved with D.I.P. with ends grouted in.
6. Sewer mains may be cored or a "T" installed in the main line where no sewer stub exists.
7. Side sewers when using open cut construction methods must be bedded with imported material to 4" below and 6" above the installed pipe. The broad, "bell" ends of pipe must be laid uphill.
8. Imported backfill material will be required in all paved areas and must be compacted to 95% of maximum density in 1 ft. lifts. In public right of way, only select material (5/8" minus C.R.) will be allowed for bedding and backfill.
9. Parallel sewer and water service lines must be at least 4 feet apart when laid horizontally, and at least 2 feet apart when laid vertically, with the sewer the deeper of the two lines. If the lines must cross, they must cross at 90 degrees to one another and have at least 2 feet of vertical clearance.
10. All changes in direction must be made with 1/8 bends (45 degrees), 1/16 bends (22 ½ degrees), or "Y" branches with the straight-through opening plugged for clean-out. No more than two bends are permitted between clean-outs, which must be placed at least every 100 feet. Clean-outs must extend to within 12" of the finished grade and capped with a water-tight plug. Clean-outs in paved areas, patios, or sidewalks must have cast iron frames and covers with locking lids set to finished paved grade.
11. Houses that connect directly to the lake sewer line require a backflow check valve. (Submit copy of manufacturer's specifications for approval prior to installation.)
12. Grinder pump systems are approved on a case by case basis. Plans and calculations shall be submitted for review and approval prior to construction.

- Houses may not be built below the sewer hydraulic gradient without an approved grinder pump design. Audible and visual alarms are required for pump failure and high water level in the wet well. Wet well shall be located outside the building.

**ALLOWABLE MATERIALS:**

- All materials, equipment and construction techniques must meet with the approval and pass all requirements of the City Engineer. The materials listed below conform to these standards.
- ASTM 3034 SDR 35 PVC pipe, fused solid wall HDPE, schedule 40 ABS, DIP or CIP (up to 8 ft. depth). Over 8 ft. depth and slopes more than 20%, DIP, CIP, or fused solid wall HDPE are required.
- Bedding material for open cut construction must be pea gravel, sand, control density fill (CDF), or 5/8" minus C.R.
- Select backfill material shall be 5/8" minus C.R. or control density fill (CDF).
- Imported backfill material shall be bank run gravel or pit run gravel from an approved supplier meeting APWA/WSDOT gradation specifications. Not allowed in right-of-way.
- Rubber gaskets must be used when appropriate.
- Rigid couplings must be used for connections to existing stubs in right-of-way.
- A stainless steel strap and saddle (Romac) must be used for coring.

**TESTING & INSPECTION REQUIREMENTS:**

The rate of leakage must not exceed the following amounts per 100 ft. of pipe:

4" pipe	1.6 gal/hr
6" pipe	2.4 gal/hr

Inspection is required prior to backfilling. The City requires at least 24 hours' notice prior to inspections.

***This guideline is intended for informational use only.*** It cannot be used as a substitute for the Mercer Island Sewer District Administrative Code or City Zoning Code. For more information about the regulations that may apply to your project, please consult with the Community Planning & Development staff.

