

7. Relocating Sewer Pipelines.

a. General.

- 1) Take into account such matters as environmental impact, maintenance of pedestrian and vehicular traffic continuous service, maintenance of existing and proposed utility services, constructability, and system maintenance to produce the most cost effective design.
- 2) Consider the possible reduction in the pipeline capacity created by the sewer relocation. Alignment changes could result in a loss in capacity, including decreasing the pipe slope, adding pipe length and adding new manholes with sharply curved channels, which create head losses in the existing flow. Also, for larger diameter sewer pipelines, consider the future alignment location for a parallel relief sewer.
- 3) When relocating a Force Main, see requirements under, Part One, Section 10 (Relocating Water Pipelines).

b. Design Requirements.

- 1) When relocating existing sewer pipelines, follow the requirements for sewer pipelines stated in this manual.

c. Alignment - Horizontal and Vertical.

- 1) Take into consideration for the impact on all existing and proposed facilities before selecting the location of the relocated pipeline.
- 2) When selecting an alignment, take into consideration that the existing pipeline must be maintained and remain in service until the relocated pipeline is ready for final connection to the existing sewer.
- 3) Locate all the existing services and appurtenances (sewer house connections, sewer pipelines and manholes) that are connected to the existing pipeline.
- 4) Horizontal clearances.
 - a) Ensure acceptable horizontal clearances for relocated alignments where the existing mains are to remain in service until the relocation is complete.
 - b) For spacing between the existing and relocated sewer pipelines, see Part Three, Section 3 (Pipeline Crossings and Clearances).
 - c) For spacing between the existing and relocated force main pipelines, see requirement for water pipelines, Part One, Section 10 (Relocating Water Pipelines).
 - d) Horizontal clearances between the existing and relocated force main pipelines may have to be increased when the relocated pipeline is within the zone of influence of the existing concrete blocking. To determine if there is adequate passive soil resistance, see Passive Soil Pressure for Concrete Thrust Blocks in Part Three, Section 27 (Thrust Restraint Design for Buried Piping).



- 5) Vertical clearances for relocated alignments must maintain a minimum of one (1) foot between pipe OD's (including any portion of the existing pipeline that will be abandoned by the relocation).
- 6) Connecting to existing sewers.
 - a) When the design requires the relocated sewer to be connected to an existing sewer, design the connection using a manhole.
 - b) Maintain service until the existing pipeline is abandoned; see Part Two, Section 19 (Manholes Built Over Existing Sewers).
 - c) For other requirements, see Connections to Existing Sewer Pipelines and Manholes, under Part Two, Section 5 (General Horizontal Alignment).
- 7) Connecting to existing manholes, see Connections to Existing Sewer Pipelines and Manholes, under Part Two, Section 5 (General Horizontal Alignment).
- 8) Relocating along the same sewer alignment. When the existing pipeline must be relocated in the same location and alignment, take into account the limitations for shutdown and the constructability of the sewer. This design will require the removal of the existing pipeline, a long shutdown time and require the contractor to pump around the relocated pipeline until it is placed in service.
- 9) SHCs on existing sewers. Maintain services on the existing pipeline until the relocated pipeline is ready for service. Transfer all existing SHCs to the new relocated pipeline, then abandon the existing pipeline.
- 10) Contact WSSC for limitations on the shutdown of the existing sewer.
- 11) Locate all the existing services and appurtenances (sewer house connections, manholes, etc.,) that are connected to the existing pipeline.
- 12) For information on the design and location of structures and appurtenances, see Part Two, Section 12 (Design of Structures).

d. Thrust Restraint for Force Mains.

- 1) The design of the relocated alignment must not disturb existing blocking/thrust restraints on existing pipelines that are in service.
- 2) Provide thrust restraints for the relocated pipeline. If the shutdown time is limited, the design will require a thrust block for quick connections for restraining the relocated pipeline, so that WSSC's customers are not out of service for an extended period, see Part Three, Section 27 (Thrust Restraint Design for Buried Piping).



e. Abandonment.

- 1) Show any abandonment of existing pipelines, structures and/or appurtenances on the drawings. Indicate the limits of abandonment and provide a description of what will be abandoned. The description shall also include the abandonment that will be performed, see requirements in the Specifications, Standard Details S/3.5 and S/3.6, and Part Three, Section 5 (Pipeline Abandonment).

