

CHAPTER 8. UTILITIES & INSTALLATION

8.1 Franchising Policy and Permit Procedure

- A. Utilities to be located within existing and proposed city right-of-way shall be constructed in accordance with current franchise and/or permit procedure and in compliance with these Standards. In their use of the right-of-way, utilities will be given consideration in concert with the traffic carrying requirements of the road which are, namely, to provide safe, efficient and convenient passage for motor vehicles, pedestrians, and other transportation uses. Aesthetics shall be a consideration. Underground installation of electric and telecommunication utilities will be strongly encouraged, particularly in urban development. Utilities are subject to City Codes and policies relating to drainage, erosion/sedimentation control and sensitive areas as set forth in SMC 12.10 and the Surface Water Design Manual.
- B. All permits for new placement and replacement of existing utility poles and other utility structures above grade shall be accompanied by written certification from the utility's professional engineer or from an agent authorized by the utility to certify that the installations conform to these Standards and that the proposed work is in conformity with sound engineering principles relating to highway safety.
- C. Requests for exceptions to these Standards will be processed in accordance with variance procedure as referenced in Section 1.10.

8.2 Standard Utility Locations within the Right-of-Way

Utilities within the right-of-way on new roads or on roads where existing topography, utilities or storm drains are not in conflict shall be located as shown in typical sections, figures 2-001 through 2-005, and as indicated below. Where existing utilities or storm drains are in place, new utilities shall conform to these Standards as nearly as practicable and yet be compatible with the existing installations. Above ground utilities located within intersections shall be placed so as to avoid conflict with placement of curb ramps. Mains and service connections to all lots shall be completed prior to placing of surface materials.

A. Gas and Water Lines:

- 1. Shoulder-and-Ditch Section:
In shoulder 3 feet from edge of traveled lane.
- 2. Curb and Gutter Section:
Preferable: 1.5 feet back of curb, or at distance which will clear root masses of street trees if these are present or anticipated.
Otherwise: In the street as close to the curb as practical without encroachment of the storm drainage system.
- 3. Designated Side of Centerline:
GAS: South and West. WATER: North and East.
- 4. Depth: 36 inches minimum cover from finished grade, ditch bottom or

natural ground.

- B. Individual water service lines and side sewers shall:
1. Be placed with minimum 36-inch cover from finished grade, ditch bottom or natural ground.
 2. Use road right-of-way only as necessary to make side connections.
 3. For any one connection, not extend more than 60 feet along or through the right-of-way, or the minimum width of the existing right-of-way.
 4. Water meter boxes, when placed or replaced, shall be located on the right-of-way line immediately adjacent to the property being served, unless otherwise approved by the Director or designee.
- C. Sanitary Sewers: In the general case, 5 feet south and west of centerline; depth 36-inch minimum cover from finished grade, ditch bottom or natural ground.
1. Side Sewers shall be provided to all adjacent lots or parcels.
 2. Side Sewers shall be placed within ten (10) degrees of perpendicular to road centerline.
- D. In the case of individual sanitary sewer service lines which are force mains the pipe shall:
1. Two inches minimum inside diameter, or as required by the utility to maintain internal scouring velocity.
 2. If nonmetallic, contain wire or other acceptable proximity detection features; or be placed in a cast iron or other acceptable metal casing.
 3. Be placed with minimum three-foot cover from finished grade, ditch bottom or natural ground, within 10 degrees of perpendicular to road centerline, and extend to right-of-way line.
 4. Be jacked or bored under road unless otherwise approved by the Director or designee.
- E. Sanitary and water lines shall be separated in accordance with good engineering practice such as the Criteria for Sewage Works Design, Washington Department of Ecology, current edition.
- F. Gravity systems, whether sanitary or storm drainage, shall have precedence over other systems in planning and installation except where a non-gravity system has already been installed under previous approved permit and subject to applicable provisions of such permits or franchises.
- G. Electric utilities, power, telephone, cable TV, fiber optic conduit: Preferable, underground with 36-inch minimum cover, either side of road, at plan location and depth compatible with other utilities and storm drains. All utility poles and other utility structures located above grade shall conform to the following:
1. Utility poles or other approved essential roadside obstacles may be placed within the right-of-way as follows:

- a. Poles and obstacles shall be located as far back from the traveled way or auxiliary lane as practicable.
 - b. Poles and other obstacles may not unreasonably interfere with the use of the right-of-way by the city, by the general public or other persons authorized to use or be present in or upon the right-of-way.
 - c. On shoulder type or mountable curb roads, installation of new or relocated poles or obstacles shall be located behind existing ditches and in accordance with the criteria in Section 5.10 and Drawing No. 5-1. Placement of barrier between the traveled way and the pole or obstacle shall not satisfy this requirement unless the barrier already exists for other purposes and the pole provides a minimum of 3.5-foot separation from the barrier or unless allowed by an approved variance. Variances will be considered only when other reasonable alternatives do not exist.
 - d. On vertical curb-type roads with a speed limit less than 40 mph, poles or obstacles shall be placed clear of sidewalks and at least 8.5-feet from face of curb in commercial/business areas and 5.5-feet from curb face in residential areas. On urban roads with speed limits of 40 miles per hour or greater, hazardous objects shall be placed as close to the right-of-way line as practicable and a minimum of 10 feet from the edge of the traveled way or edge line and in accordance with figure 5-1. The Director or designee must approve placement of utility poles and other essential roadside obstacles structures within planter strips.
 - e. Notwithstanding other provisions regarding pole locations described in these standards, no pole shall be located so that it poses a hazard to the general public. Utilities shall place and replace poles with primary consideration given to public safety.
2. Within **30 days**, or such longer period as may be specified by the Director or designee, following written notice from the Director or designee, a utility shall, at its own expense, temporarily or permanently remove, relocate, change or alter the position of any facilities within the right-of-way whenever the Director or designee shall have determined that such removal, relocation, change or alteration is reasonably necessary for:
 - a. The construction, repair, maintenance, or installation of any city or other public improvement in or upon the right-of-way.
 - b. The operations of the city or other governmental entity in or upon the right-of-way.
 3. Within **30 days** following written notice from the Director or designee, any utility that owns, controls or maintains any unauthorized facility or related appurtenances within the rights-of-way shall, at its own expense, remove such facilities or appurtenances from the right-of-way. If such utility fails to remove such facilities or appurtenances, the city may cause the removal and charge the utility for the costs

incurred. A facility is unauthorized and subject to removal in the following circumstances:

- a. Upon expiration or termination of the utility's franchise.
 - b. Upon abandonment of a facility within the right-of-way.
 - c. If the system or facility was constructed or installed without the prior grant of a franchise.
 - d. If the system or facility was constructed or installed without the prior issuance of a required utility right-of-way permit.
 - e. If the system of facility was constructed or installed at a location not permitted by the utility's franchise.
 - f. Any such other reasonable circumstances deemed necessary by the Director or designee.
4. Every effort shall be made to meet the standards during emergency replacement of existing utility poles and other structures. After a pole has been replaced, all utilities sharing that pole shall have a maximum of 180 days to relocate their facilities to the new pole and remove the old pole.
 5. If a utility is required to relocate, change or alter the facilities constructed, operated and/or maintained hereunder and fails to do so, the city may cause such to occur and charge the utility for the costs incurred.
 6. The city retains the right and privilege to cut or move any facilities located within the right-of-way as the city may determine to be necessary, appropriate or useful in response to any public health or safety emergency.
 7. The above provisions on pole and obstacle location will not apply to (1) locations not accessible by moving vehicles, (2) "breakaway" structures whose break-off resistance does not exceed that of a single 4 inches x 4 inches wood post or a 1.5-inch standard (hollow) iron pipe or (3) "breakaway" fire hydrants installed to manufacturer's specifications.
 8. Deviations from these pole and obstacle clearance criteria will only be allowed through an approved variance when justified by suitable engineering study considering traffic safety. For franchised utility permits, the Utility may request a variance from pole and obstacle clearance criteria.
 9. Locations of poles shall also be compatible with driveways, intersections, and other road features (i.e., they shall not interfere with sight distances, road signing, traffic signals, culverts, etc.). To the extent possible, utilities shall share facilities so that a minimum number of poles are needed.
 10. Where road uses leave insufficient overhang, anchor, and tree-trimming space for overhead utilities, additional easements and/or right-of-way may be required to accommodate the utilities. The costs associated with additional easements and/or right-of-way for this purpose shall be borne by the applicant, builder, or other party initiating the improvement. The

associated cost of relocating the utility shall not be borne by the City of SeaTac.

- H. Notwithstanding other provisions, underground systems shall be located at least 5-feet away from the road centerline. Additionally, the underground systems shall not disturb existing survey monumentation, unless there is no reasonable alternative.

8.3 Underground Installations

All hard surface roadways shall be jacked or bored. Exceptions will be on a case-by-case basis with the expressed permission of the Director or designee. The current WSDOT/APWA Standard Specifications, Sections 7-08 and 7-08.3(3) will generally apply unless otherwise stated.

A. New Roadway Construction, Reconstruction and Widening

1. Cuts on traveled way

When approved, the open cut shall be a neat-line cut made by either saw cutting or jackhammering a continuous line. Trench sides shall be kept as nearly vertical as possible. Compaction and restoration must be done as detailed below and immediately after the trench is backfilled, so as to cause least disruption to traffic. The asphalt or cement pavement shall be cut a minimum of one foot beyond all edges of the trench. Cuts parallel and traverse to road alignment:

- a. The entire trench must meet 95 percent of the maximum density as determined by the compaction control tests described in Section 2-03.3(14)D of the WSDOT/APWA Standard Specifications

Regardless of trench depth, a contractor can use native mineral soil or can import a mineral soil as backfill, provided the material meets the requirements of Section 9-03.14(3) of the WSDOT/APWA Standard Specifications for Common Borrow. The material shall not contain more than three-percent organic material by weight. The material shall be mechanically compacted to a minimum of 95 percent of maximum density in lifts as described by Section 8.03.B.3a of these Standards. When the material remaining in the trench bottom is unsuitable, the excavation shall be continued to such additional depth and width as required by the Inspector. In any trench where compaction cannot be attained with the native or unclassified backfill, the trench must be backfilled and compacted with "Gravel Borrow" that meets the requirements of WSDOT/APWA Standard Specifications, Section 9-03.14(1). The "Gravel Borrow" shall be mechanically compacted to a minimum of 95 percent of maximum density.

After backfill and compaction an immediate cold mix patch shall be placed and maintained in a manner acceptable to the Director or designee. On asphalt pavement, a permanent hot mix patch the same thickness as the existing asphalt or a minimum of 2 inches, whichever is greater, shall be placed and sealed with a paving grade asphalt

within 30 calendar days. Cement concrete pavement shall be restored in accordance with Section 5-05.3(22) of the WSDOT/APWA Standard Specifications.

- b. Backfill used for trenches exceeding 15 feet in depth will require a soil analysis prior to plan approval.
- c. Backfill outside the roadway prism shall be excavated material free of wood waste, debris, clods and/or any rocks exceeding six-inches in any dimension and meet compaction requirements of Section 9.05 of these Standards.

Restoration of a trench within an asphalt pavement shall include a minimum of 6.5 inches of crushed surfacing material and HMA the same thickness as the existing asphalt pavement or a minimum of 2 inches, whichever is the greater. Pavement shall then be overlaid full width with a minimum of 1.5 inches compacted HMA. Prior to the overlay, transverse joints and vertical curb lines shall be planed in accordance with figure 5-021. Exceptions to this overlay requirement will be granted only through variance, subject to approval by the Director or designee, after considering the pre-existing condition, damage caused by construction, and rating of the pavement. Concrete pavement shall be restored consistent with Section 5-05 of the WSDOT/APWA Standard Specifications. Any concrete pavement traffic lane affected by the trenching shall have all affected panels replaced.

B. Existing Roadways:

1. Cuts on Traveled Way

All hard surface roadways shall be jacked or bored. Exceptions will be on a case-by-case basis with the expressed permission of the Director or designee if it can be shown that jacking or boring are not possible due to conflicts or soil conditions, or unless the utility, including drainage structures, can be installed just prior to reconstruction or overlay of the roadway.

2. Cuts Parallel to Road Alignment:

In cuts parallel to the road alignment, the entire trench shall meet the requirements of Section 8.03A(2) of these Standards. Trench restoration shall satisfy the requirements of Section 8.03A(2)(d) when cuts occur within the traveled way. All cuts outside the traveled way that are located in paved areas shall be restored. The restoration shall include but is not limited to repairing all failures and cracking of the paved surface, repairing failures caused by the construction activity, rebuilding the cross slope to uniformity, and overlaying the area where the pavement was removed.

3. Cuts Traverse to Road Alignment

- a. Without exception, the entire trench shall be backfilled with 1 ¼-inch minus crushed surfacing base course meeting the requirements of

Section 9-03.9(3) of the WSDOT/APWA Standard Specifications. Backfill shall be placed and compacted mechanically in 6- inch lifts to 95 percent of the maximum density as determined by the compaction control tests described in Section 2-03.3(14)D of the WSDOT/APWA Standard Specifications. If the capability can be demonstrated, based on compaction equipment or quality of backfill to achieve 95 percent density in thicker lifts, the depth of backfill lifts may be increased up to 1 foot. If the Inspector approves use of CDF, it shall meet the requirements of Section 8.03(C) of these Standards.

- b. After backfill and compaction, an immediate cold mix patch shall be placed and maintained in a manner acceptable to the Director or designee. On asphalt pavement, a permanent hot mix patch the same thickness as the existing asphalt or a minimum of 2 inches, whichever is the greater, shall be placed and sealed with a paving grade asphalt within 30 calendar days. Cement concrete pavement shall be restored with an eight-sack mix, using either Type II or Type III cement, within 30 calendar days.

C. Controlled Density Backfill:

As an alternative to mechanical compaction, trench backfill above the bedding and below the base course or ATB may be accomplished by use of controlled density backfill (CDF) in a design mixture according to Section 2-09.3(1) E of WSDOT/APWA Standard Specifications. The contractor shall provide a mix design in writing and the CDF shall not be placed until the Engineer has reviewed the mix design. CDF shall meet the requirements of Section 6-02.3(5)C of the WSDOT/APWA Standard Specifications and shall be accepted based on a Certificate of Compliance. The producer shall provide a Certificate of Compliance for each truckload of control density fill. The Certificate of Compliance shall verify that the delivered material is in compliance with the mix design. Testing of CDF shall be in accordance with ASTM D4832.

Note: On crossings required to be opened to traffic, and prior to final trench restoration, steel plates shall be installed by the contractor as directed by the Director or designee.

8.4 Notification and Inspection

Consistent with Section 9.2 of these Standards, any applicant, utility, or others intending to trench existing or proposed traveled City roads shall notify the City as set forth in Section 9.2 of these Standards for all work associated with a land use permit, and not less than one working day prior to beginning utility construction. This notification shall include:

1. Location of the work and application/permit number
2. Method of compaction to be used
3. Day and hour when compaction is to be done
4. Day and hour when testing is to be done.

As set forth in Section 9.3 of these Standards, failure to notify may necessitate testing or retesting by the City at the expense of the Applicant or Utility. Furthermore, the work may be suspended pending satisfactory test results.

8.5 Final Adjustment (To Finish Grade)

- A. All utility covers, including drainage, which are located on proposed asphalt roadways, shall be temporarily placed at subgrade elevation prior to placing crushed surfacing material.
- B. Final adjustment of all covers and access entries shall be made following final paving by:
 - 1. Saw-cutting or neat-line jack hammering of the pavement around lids and covers. Opening should not be larger than 12 inches beyond the radius of the cover.
 - 2. Removing base material, surfacing course, and frame; adding raising bricks; replacing frame and cover no higher than finished grade of pavement and no lower than one-half inch below the pavement.
 - 3. Filling and mechanically compacting around the structure and frame with crushed surfacing material or ATB, or placing in 5-inch minimum thickness of cement concrete Class 4000 to within 2 inches of the top.
 - 4. Filling the remaining 2 inches with HMA compacted and sealed to provide a dense, uniform surface.
 - 5. Final adjustment of all covers and access entries shall be completed within 30 days of final paving.

8.6 Final Cleanup, Restoration of Surface Drainage and Erosion/Sediment Control

In addition to restoration of the road as described above, the responsible applicant, utility, contractor, etc., shall care for adjacent areas in compliance with Sections 1-04.11 "Final Cleanup" and 8-01 "Roadside Seeding" in the WSDOT/APWA Standard Specifications. In particular:

- A. Streets and roads shall be cleaned and swept both during and after the installation work.
- B. Disturbed soils shall be final graded, seeded and mulched after installation of utility. In limited areas seeding and mulching by hand, using approved methods, will be acceptable.
- C. Ditch lines with erodible soil and subject to rapid flows may require seeding, matting, netting, or rock lining to control erosion.
- D. Any silting of downstream drainage facilities, whether ditches or pipe and catch basins, which results from the construction activity shall be cleaned out and the work site restored to a stable condition as part of site cleanup.
- E. Remove all temporary erosion and sediment control materials and fencing and dispose of properly.