



**Date:** December 22, 2003

**From:** Wes Jorgenson   
Assistant Director for Engineering  
City of Bellevue Utilities

**Subject:** Utilities Engineering Standards Update

Effective immediately, the following amendments are made to the City of Bellevue Utilities Engineering Standards, last updated September 15, 1998.

These revisions incorporate sections of the Utilities Code removed by the 2003 Utilities Code Update and changes to the standards related to commercial and multi-family on-site drainage facilities (except for requirements for runoff control and runoff treatment, which do not change).

**Under SANITARY SEWER ENGINEERING STANDARDS:**

Under S3-02 GENERAL DESIGN STANDARDS, add

- I. Electrical Service Grounding. Side sewers and sewer mains shall not be used for grounding of electrical systems or for the maintenance, integrity or continuity of any grounding attachment or connection.

Under S6-15 SIDE SEWER DEMOLITION, replace existing text with

Any property owner who plans to demolish or remove any structure connected to the public sewer system shall notify the utility and complete a utility abandonment form prior to the commencement of such work.

Side sewer demolition shall be performed prior to removal of building foundation. The side sewer for each building shall be excavated and removed from the building connection to the property line or the main as specified by the Utility. The property owner shall cap the end of the side sewer to remain in place. Side sewer demolition shall be performed in the presence of the City of Bellevue Wastewater Maintenance Engineering Technician (inspector). The inspector will inspect the stub to determine whether the side sewer can be re-used. If the inspector determines that the side sewer cannot be re-used, the property owner shall either abandon the side sewer or upgrade the side sewer through a side sewer permit or through a sewer system extension agreement.

**Under WATER ENGINEERING STANDARDS:**

Under W3-02 GENERAL DESIGN STANDARDS, add

- O. Electrical Service Grounding. Service connections or water utility distribution system piping shall not be used for grounding of electrical systems or for the maintenance, integrity or continuity of any grounding attachment or connection.

Under W3-08 CONNECTIONS TO EXISTING SYSTEM, add

- G. Any property owner who plans to demolish or remove any structure connected to the public water system shall notify the utility and complete a utility abandonment form prior to the commencement of such work. The utility will determine whether the water service can be re-used (if sufficiently sized for the new use). If the inspector determines that the water service cannot be reused, the property owner must pay for abandonment or upgrade of the water service through a water service application or through a water system extension agreement for new site improvements.

Under W3-10 SERVICES, add

- H. Water services shall be sized in accordance with the Uniform Plumbing Code. Combination domestic/fire services shall be sized to meet the greater of the two demands, subject to approval by the fire marshal and, for projects within the Bellevue city limits, the department of community development.

Under W3-13 IRRIGATION SYSTEM DESIGN AND PERFORMANCE REQUIREMENTS, replace the first paragraph with the following

New or re-developed irrigation systems shall comply with the following Irrigation System Design Requirements.

- A. Applicability. The requirements of this section shall apply to all proposed new irrigation systems that will be connected to the public water system, except that the requirements do not apply to the following:
1. Single-family residences; provided, that community area landscaping installed by the developer is not exempt.
  2. Any project with a total landscaped area of less than 500 square feet. If a project is phased, the total landscape area includes all phases.
- B. Location Restrictions.
1. Only low-volume irrigation systems may be installed in landscape strips less than five feet wide or in any parking lot landscape.
  2. Irrigation systems shall not be installed in turf strips less than five feet wide; in areas of turf where slopes exceed 3:1; in landscape berms exceeding a slope of 1:1; or in turf areas in right-of-way medians, curb strips or parking lots, with the exception that in right-of-way medians and curb strips, up to five percent of the landscape may be irrigated turf so long as all other requirements are met and the turf provides a functional use for pedestrians.

- C. Design and Installation Certification. Irrigation systems shall: be designed by a state-registered landscape architect, state-licensed professional engineer, or Irrigation Association certified irrigation designer (IACID); pass an audit by an Irrigation Association certified landscape irrigation auditor (IACLIA); and be certified as being designed, installed and operating at a minimum average distribution uniformity of 0.625 or greater.
- D. Manual Watering. Manual watering is permitted provided it meets the intent of the irrigation system requirements and overspray is minimized.

**Under SURFACE WATER ENGINEERING STANDARDS:**

Under D4-04.8 Private Drainage Systems, replace all text in this section with the following

D4-04.8(1) Private Single Family Drainage Systems

A. General

Private drainage systems for single family lots shall comply with all criteria for stormwater systems set forth herein unless specifically exempted.

In areas having an existing piped conveyance system, the stormwater outfalls for parking lot, driveway, and roadway drainage shall be made by the following (in order of preference):

- (1) Connecting the conveyance pipeline to an existing manhole or catch basin; or
- (2) Constructing a new manhole or catch basin on the existing storm drainage pipeline and connecting the conveyance pipeline to this new structure.

In areas having an existing piped conveyance system, the stormwater outfalls for roof, footing, and yard drains may be made by the two methods mentioned above or by the following (in order of preference):

- (1) Connecting the private drainage pipe to an existing storm drain manhole, catch basin or stub-out if provided within 100 feet and downslope of the property line; or
- (2) Coring the abutting conveyance pipeline and installing a saddle tee and providing a clean-out outside of the public right-of-way; or
- (3) Coring the abutting profile wall conveyance pipeline (PVC or corrugated polyethylene only; CMP may not be blind tapped) and installing an insert tee and clean-out outside of the right-of-way; or
- (4) Installing a tee fitting in the abutting conveyance pipeline and providing a clean-out outside of the public right-of-way; or
- (5) Connecting the private drainage pipe to an existing sidewalk drain; or

- (6) Providing a new sidewalk drain if the closest existing drainage system or stub-out is greater than 100 feet and downslope of the property line.
- (7) Outfalling to an open channel or stream, provided that the drainage path continues downstream to an established, known and well-functioning conveyance system, adequate erosion protection is provided and permits from other agencies are obtained, as needed.

When a project includes the construction of a drainage system, private drainage systems shall connect to the proposed storm drain manholes, catch basins, stub-outs, or tees. The use of sidewalk drains shall not be permitted.

In areas without an existing drainage system, the private drainage system shall discharge in accordance with Section D4-02 (Discharge Locations) herein.

#### B. Roof, Footing, and Yard Drains

Roof and footing drain pipes shall be separate lines which may only be joined as a non-perforated pipeline at an elevation at least one (1) foot below the lowest footing drain invert elevation. The minimum cover over the storm drain stub at the property line shall be two (2) feet.

Clean-outs (4-inch minimum diameter) with factory manufactured fittings, shall be provided at all junctions and bends greater than 45 degrees. The maximum spacing between clean-outs shall not exceed 100 feet.

Roof, footing and yard drains shall not be connected to the sanitary sewer system.

Roof, footing and yard drains shall not be located within the public right-of-way except where connecting to the municipal drainage system.

Roof, footing and yard drain systems serving more than one parcel shall be within private utility easements.

Roof, footing, and yard drainage may be conveyed over steep banks in single wall, corrugated polyethylene tubing (CPT) provided:

- the overbank drain is privately owned and maintained;
- the minimum tubing slope is 15% or greater;
- the CPT is continuous and without joints from the top of the slope to the toe;
- the CPT is a minimum of 4 inches and a maximum of 6 inches in diameter;
- a yard drain or clean-out is placed at the top of the slope;
- the overbank drain is buried with a maximum cover of 1 foot.

CPT may not be used in the right-of-way, or for any other purpose except as a privately owned and maintained overbank drain.

#### C. Maintenance

Roof, footing, and yard drainage systems, drainage systems on commercial and multi-family properties, drainage facilities within private easements, and drainage facilities otherwise denoted as

private, shall be designed to provide access for maintenance and operation by the owners of such facilities.

#### D4-04.8 (2) Private Commercial and Multi-family Drainage Systems

##### A. General

In areas having an existing piped conveyance system, the stormwater outfalls for parking lot, driveway, and roadway drainage shall be made by the following (in order of preference):

- (1) Connecting the conveyance pipeline to an existing manhole or catch basin; or
- (2) Constructing a new manhole or catch basin on the existing storm drainage pipeline and connecting the conveyance pipeline to this new structure.

In areas having an existing piped conveyance system, the stormwater outfalls for roof, footing, and yard drains may be made by the two methods mentioned above or by the following (in order of preference):

- (1) Connecting the private drainage pipe to an existing storm drain manhole, catch basin or stub-out if provided within 100 feet and downslope of the property line; or
- (2) Coring the abutting conveyance pipeline and installing a saddle tee and providing a clean-out outside of the public right-of-way; or
- (3) Coring the abutting profile wall conveyance pipeline (PVC or corrugated polyethylene only; CMP may not be blind tapped) and installing an insert tee and clean-out outside of the right-of-way; or
- (4) Installing a tee fitting in the abutting conveyance pipeline and providing a clean-out outside of the public right-of-way; or
- (5) Connecting the private drainage pipe to an existing sidewalk drain; or
- (6) Providing a new sidewalk drain if the closest existing drainage system or stub-out is greater than 100 feet and downslope of the property line.
- (7) Outfalling to an open channel or stream, provided that the drainage path continues downstream to an established, known and well-functioning conveyance system, adequate erosion protection is provided and permits from other agencies are obtained, as needed.

When a project includes the construction of a drainage system, private drainage systems shall connect to the proposed storm drain manholes, catch basins, stub-outs, or tees. The use of sidewalk drains shall not be permitted.

In areas without an existing drainage system, the private drainage system shall discharge in accordance with Section D4-02 (Discharge Locations) herein.

## B. Runoff Control and Runoff Treatment Facilities

Runoff Control and Runoff Treatment Facilities shall comply with all criteria for stormwater systems set forth herein unless specifically exempted.

## C. Other Onsite Drainage Facilities

Drainage facilities for commercial and multi-family properties shall comply with all criteria for stormwater systems set forth herein, however, they are exempt from sections D4-04, D4-05, D7-02, D7-03, D8-04, D8-05 and Appendix D-1 Standard Details, except for any portions within these sections that relate to Runoff Control and/or Runoff Treatment Facilities.

Other on-site private drainage facilities shall be designed by a professional engineer licensed by the State of Washington to meet City Storm & Surface Water Utility Codes using industry standards and practices.

## D. Maintenance

Drainage systems on commercial and multi-family properties, drainage facilities within private easements, and drainage facilities otherwise denoted as private, shall be designed to provide access for maintenance and operation by the owners of such facilities.

Under D8-08 ABANDONING FACILITIES, add

### D8-08.3 Demolition or Removal of Structures

Any property owner who plans to demolish or remove any structure connected to the public drainage system shall:

- A. Notify the utility and complete a utility abandonment form prior to commencement of such work; and
- B. Verify the location of the existing on-site drainage facilities; and
- C. Cap, as necessary, connections that are no longer needed.